Basis for EPA's Disapproval of Minnesota Variance Granted to Mesabi Nugget

I. Introduction

On October 30, 2012, the Minnesota Pollution Control Agency (MPCA) sent EPA a request for approval of a water quality standards variance (WQS) for discharges by Mesabi Nugget Delaware, LLC into Second Creek of the Partridge River Basin (St. Louis County, Minnesota) covering the Mesabi Nugget Large Scale Demonstration Plant in Hoyt Lakes, which processes wastewater from Mesabi Nugget's commercial scale iron nugget production facility via Outfall 002, under MN Permit Number MN0067687. The variance, which would be effective until August 1, 2021, affects the Class 3C Industrial Water Supply use, hardness criterion and Class 4A Agricultural Irrigation use, bicarbonate, total dissolved solids, and specific conductance criteria applicable to Second Creek, Partridge River and St. Louis River.

Water quality criteria for the Industrial Water Supply and Agricultural Irrigation use designations for the four pollutants in question are specified in Minn. R. 7050.0223, subp. 4 (Class 3C standards) and 7050.0224, subp. 2 (Class 4A standards). The relevant standards are: 500 milligrams per liter (mg/L) for hardness, 250 mg/L for bicarbonates, 700 mg/l for total dissolved solids, and 1000 micromhos per centimeter (µmhos/cm) for specific conductance. Minnesota's regulations at Minn. R. 7050.0223, subp. 4 describe the affected industrial use as follows: "The quality of Class 3C waters of the state shall be such as to permit their use for industrial cooling and materials transport without a high degree of treatment being necessary to avoid severe fouling, corrosion, scaling, or other unsatisfactory conditions." Minnesota's regulations at 7050.0224, subp. 2 describe the class 4A use as follows: "The quality of Class 4A waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects upon any crops or vegetation usually grown in the waters or area, including truck garden crops."

The variance does not modify any other uses or criteria contained in Minnesota's WQS; the variance only pertains to four of the criteria to protect the Industrial Water Supply and Agricultural Irrigation uses. All other designated uses and criteria applicable to the impacted waters remain in place; including sulfate criteria for waters used for the production of wild rice and designated wild rice waters. The other uses identified in Minnesota's WQS applicable to Second Creek, Partridge River and St. Louis River are: Class 2, Aquatic Life and Recreation; Class 5, Aesthetic Enjoyment and Navigation; and Class 6, Other Uses.

On December 27, 2012, EPA approved the variance in accordance with Section 303(c) of the Clean Water Act (CWA), as a revision to Minnesota's WQS. EPA's decision was challenged in the United States District Court for the Minnesota District in *Water Legacy, et al. v. EPA,* No. 13-1323. On June 2, 2014, the Court granted the United States' unopposed motion for remand, and did so without vacating EPA's original decision. This Decision Document explains the basis for EPA's decision to disapprove the variance in accordance with Section 303(c) of the CWA.

II. Legal Background

A. Variances

Section 303 of the CWA requires states to adopt WQS for waters of the United States within their respective jurisdictions. Section 303(c) of the CWA requires, among other things, that state WQS include the designated use or uses to be made of the waters and water quality criteria based upon such uses. EPA's regulations governing state adoption and removal of designated used are at 40 C.F.R. Part 131. When a state adopts a designated use, the state must also adopt "water quality criteria that protect the designated use." 40 C.F.R. § 131.11(a).

It has been EPA's position since 1977 that, where a state satisfies all of the requirements in 40 C.F.R. Part 131 for removing designated uses (or subcategories of uses), EPA could also approve a state decision to limit the applicability of the use removal to only a single discharger and/or a single criterion via a variance for a limited time period, while continuing to apply the underlying use designation and criteria to the waterbody as a whole (*i.e.*, the underlying use designation and criteria would apply to all other dischargers other than the one for which a variance has been granted). This position was set forth in a Decision of the EPA General Counsel (*In Re Bethlehem Steel Corporation,* No. 58, March 29, 1977*)*. The General Counsel's decision reasoned that such a state decision can be approved by EPA as being consistent with the CWA and 40 C.F.R. Part 131 because the state's action in limiting the applicability of an otherwise approvable use removal to a single discharger and a single criterion for a limited time period would be more stringent than if the state made the use removal applicable to the water body as a whole; and Section 510 of the CWA allows states to adopt standards more stringent than necessary to meet the CWA's requirements. *See* 58 Fed. Reg. 20802, 20921-22 (April 16, 1993).

B. Requirements applicable to the Great Lakes System

Section 118(c)(2)(A) of the CWA imposed a number of unique requirements for the Great Lakes System, including that EPA publish guidance that "specif[ies] numerical limits on pollutants in ambient Great Lakes waters to protect human health, aquatic life, and wildlife." In Section 118(a)(2)(C), Congress required that the Great Lakes States adopt WQS consistent with such guidance. To meet these Great Lakes-specific requirements, EPA promulgated the "Water Quality Guidance for the Great Lakes System" (Guidance) at 40 C.F.R. Part 132, which "identifies minimum water quality standards, antidegradation policies, and implementation procedures for the Great Lakes System to protect human health, aquatic life, and wildlife." 40 C.F.R. § 132.1(a). With respect to the Great Lakes System, the additional WQS requirements in 40 C.F.R. Part 132 supplement, rather than supplant, the nationally-applicable requirements of 40 C.F.R. Part 131.

As described above, 40 C.F.R. Part 131 generally requires that states adopt designated uses for

their water bodies and criteria necessary to protect those uses. These requirements apply nationwide, including to the Great Lakes States and the Great Lakes System. In addition to the requirements of 40 C.F.R. Part 131, 40 C.F.R. Part 132 also requires the Great Lakes States to adopt and apply additional criteria necessary to protect human health, aquatic life, and wildlife to all waters of the Great Lakes System, generally without regard to use designation. *See* 40 C.F.R. § 132.4(d).[1] Procedure 2 in Appendix F to 40 C.F.R. Part 132 includes a limited exception to this requirement: it allows Great Lakes States to relax the applicability of the Great Lakes-specific criteria necessary to protect human health, aquatic life, and wildlife through a variance if, among other things, the state demonstrates that achievement of those criteria is not feasible,[2] however such a variance may not exceed five years. *See* 40 C.F.R. Part 132, Appendix F, Procedure 2, Paragraph B. Currently, there is no comparable specific limitation on the duration of use removals or variances under EPA's nationally applicable WQS regulations at 40 C.F.R. Part 131.

Minnesota's WQS regulations mirror the federal framework of general WQS that are supplemented by a set of Great Lakes-specific WQS. Minnesota adopted WQS regulations of general applicability at Minn. R. 7050. These regulations include a generally-applicable WQS variance provision at Minn. R. 7050.0190. Minnesota also adopted, at Minn. R. 7052, Great Lakes-specific WQS regulations in accordance with 40 C.F.R. Part 132. As part of its Great Lakes-specific WQS, Minnesota adopted at Minn. R. 7052.0280 a procedure based on the variance procedure in 40 C.F.R. Part 132 that applies to "GLI pollutant-specific variance requests," and that includes a five-year limit on the duration of such variances. On August 8, 2000, EPA approved Minn. R. 7052 in accordance with 40 C.F.R. § 132.5(g) as "being consistent with" the requirements of 40 C.F.R. Part 132. *See* 65 Fed. Reg. 48517 (August 8, 2000).

MPCA originally granted the variance for Mesabi in accordance with the variance provision in Minnesota's WQS of general applicability at Minn. R. 7050.0190 because the variance sought to relax Minnesota's Industrial Water Supply and Agricultural Irrigation use designations and criteria that Minnesota adopted to protect those use designations. The variance for Mesabi did not pertain to criteria adopted in accordance with 40 C.F.R. Part 132 to protect human health, aquatic life, or wildlife. Consequently, the applicable federal requirements regarding the variance are the nationally-applicable requirements set forth in 40 C.F.R. Part 131, not the additional, supplemental Great Lakes-specific requirements set forth in 40 C.F.R. Part 132. Therefore, the five-year limit on variances from the criteria to protect human health, aquatic life, and wildlife in Procedure 2 to Appendix F of 40 C.F.R. Part 132 (and Minn. R. 7050.0280) does not apply with respect to Minnesota's decision.[3]

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[1] The only exception to this general rule is that certain drinking water-based human health criteria derived in accordance with the 40 C.F.R. Part 132 only apply to certain waters of the Great Lakes System that have been designated as public water supplies in accordance with 40 C.F.R. § 131.10. *See* 40 C.F.R. § 132.4(d)(3)(i).

[2] *See* 58 Fed. Reg. 20925 ("No use removal provision exists in the proposed Guidance because, in general, permanent removal of CWA goal uses would have little or no effect on the applicable water quality criteria. . . . In effect, the variance provision included in the proposed Guidance, in addition to providing the variance function provided for in 40 CFR 131, provides a method, appropriate to the Great Lakes, analogous to the Federal use removal provision.")

[3] In its December 27, 2012, decision approving the variance, EPA evaluated whether the pollutants at issue with the

C. Water quality standard submission requirements and EPA review authority

As described above, 40 C.F.R. § 131.6 provides that states must submit, among other things, the following to EPA for review when they adopt new or revised designated uses:

> (a) Use designations consistent with the provisions of section 101(a)(2) and 303(c)(2) of the Act.
> (b) Methods used and analyses conducted to support water quality standards revisions.
> . . . .
> (f) General information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which may affect their application and implementation.

40 C.F.R. § 131.5(a) provides that, in reviewing new or revised use designations, EPA must determine, among other things:

> (1) Whether the State has adopted water uses which are consistent with the requirements of the Clean Water Act;
> . . . .
> (4) Whether the State standards which do not include the uses specified in section 101(a)(2) of the Act are based upon appropriate technical and scientific data and analyses, and
> (5) Whether the State submission meets the requirements included in §131.6 of this part. . . .

40 C.F.R. § 131.21(c) provides that new or revised WQS that are adopted by states do not become applicable WQS for purposes of the CWA until after they have been submitted to and approved by EPA in accordance with section 303(c) of the CWA.

III. EPA's Evaluation of the Variance

A. Whether the record shows that the state satisfied the Federal requirements for a temporary downgrade of its water quality standards in adopting a variance from water quality standards for Mesabi.

Under Minnesota's WQS the waters affected by this action were assigned the designated uses described in detail above in Section I. These standards were approved previously by EPA as required by 40 C.F.R. § 131.21 and are the applicable WQS unless and until EPA approves or promulgates new or revised WQS. The variance for Mesabi would have impacted two of those use designations -- 3C (Industrial Water Supply) and 4A (Agricultural Irrigation) -- and only four of the criteria for those uses: hardness, specific conductance, TDS, and bicarbonates. The

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variance were included in Table 5 to 40 C.F.R. Part 132 because EPA erroneously assumed that the five-year limit on variance from 40 C.F.R. Part 132 was applicable. Because the five-year variance limit in 40 C.F.R. Part 132 does not apply with respect to Minnesota's decision to grant a variance pertaining to the Industrial Water Supply and Agricultural Irrigation use designations and criteria, it is unnecessary to evaluate whether the four pollutants that are the subject of the variance are included in Table 5 to 40 C.F.R. Part 132.

variance would not have affected the previously approved WQS that were not modified by this variance and remain applicable to the waters at issue.

MPCA's variance to the criteria for four parameters for the 3C (Industrial Water Supply) and 4A (Agricultural Irrigation) designated uses would have effectively established a nine-year restricted agricultural irrigation and industrial use applicable to Mesabi. To accomplish this, Minnesota attempted to perform an attainability analysis consistent with § 131.10(g) to demonstrate why it is not feasible to attain certain aspects (the four criteria mentioned above) of those designated uses before 2021. MPCA adopted the nine-year variance after considering the current use and value of the water. But MPCA failed to demonstrate sufficiently that a nine-year variance is reasonable, as opposed to a shorter variance.

In addition, EPA erred in concluding that Minnesota adequately demonstrated that it was not feasible to attain the uses for the duration of the variance. This is because, though the state adequately demonstrated that it is not feasible for Mesabi to *immediately* attain the uses,[4] the state did not demonstrate that it is not feasible to remedy the problem sooner than the nine years covered by the variance (extending to 2021). Instead, MPCA only explicitly determined that:

> "…given the uncertainty at this time over the nature and volume of the wastewater (due to the ongoing air emission control studies and the subsequent need for site-specific bench and/or pilot testing) and the lack of a successful full-scale demonstration at a similar facility, a reasonable period of time for additional evaluation and testing was needed before an informed decision on the selection and/or design of additional treatment can be made."

MPCA Citizens' Board Findings of Fact and Conclusion of Law (October 24, 2012) at 7.

The state's conclusion that "a reasonable period of time is needed" is not the same as affirmatively demonstrating that it is not feasible to attain the uses until 2021. For example, the state's record might include a schedule of steps Mesabi would have to take in order to control its discharges sufficiently to attain the uses, with a demonstration as to why those steps are necessary and could not feasibly be completed any sooner than 2021. Additionally, in evaluating the feasibility of attaining the uses following this disapproval, the state should take into account any new information that has come to light since the original variance decision, including information on what air controls have been selected and any further information regarding the implementation of treatment technology (including energy needs, disposal of waste streams) and how that impacts the time when the use can be feasibly attained.

A. Whether the state considered the water quality standards of downstream waters and ensured that its variance provided for the attainment and maintenance of the water quality standard of downstream waters.

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[4] *See* MPCA Citizens' Board Findings of Fact and Conclusion of Law (October 24, 2012) at 5-7, Paragraphs 24, 28, 32 (each of which focus on the technical infeasibility of attaining uses "immediately" or "at this time"); *see also id.* at 8, Paragraphs 36-37 (focusing on financial impacts to Mesabi "for immediate installation of treatment").

The waters downstream of Second Creek are, in order, the Partridge River, the St. Louis River, and Lake Superior. As noted above, the variance only pertains to four of the criteria to protect the Industrial Water Supply and Agricultural Irrigation uses. All other designated uses and narrative and numeric criteria applicable to the impacted downstream waters remain in place and so, with the possible exception of the Industrial Water Supply and Agricultural Irrigation uses (which are discussed below), Minnesota's WQS continue to "provide for the attainment and maintenance of the water quality standards of downstream waters."

With regard to the Industrial Water Supply and Agricultural Irrigation uses, MPCA explained:

> In general, under average stream flow conditions the applicable water quality standards for the variance parameters would continue to be exceeded in Second Creek downstream of the SD001 discharge over the short term; however, water quality standards for these parameters would continue to be met in the Partridge and St. Louis Rivers. Under "worst - case" 7Q10 low flow conditions (which by definition would occur only approximately 0.2 percent of the time), the SD001 discharge when considered alone was projected to result in standards continuing to be exceeded in Second Creek for all four variance parameters and exceedances being extended to the Partridge River for TDS and specific conductance.

MPCA Citizens' Board Findings of Fact and Conclusion of Law (October 24, 2012) at 10. The variance, therefore, effectively removed or modified the Industrial Water Supply and Agricultural Irrigation uses applicable to all downstream waters such as Second Creek, Partridge River and St. Louis River, to the extent Mesabi's discharges could result in exceedances of the four variance criteria in any of those waters.

Finally, MPCA further determined with respect to Second Creek and water bodies downstream such as the Partridge River and St. Louis River:

> There is no known historic, present or foreseeable actual use of these waters for the Class 3C or 4A use classifications. In addition, the proposed permit includes a provision that prohibits the discharge to Second Creek from April 1 to August 31 of each year, which is generally the same timeframe as any irrigation would potentially occur and for which the Class 4A standards would be most protective of an agricultural designated use. Based on the MPCA staff review of the data submitted by Mesabi Nugget, the MPCA staff conclude that granting of a variance to Mesabi for the four listed parameters will not result in the removal of an existing actual use of these waters.

Id. at 10. *See also id.* at 4 ("[t]here is no known historic, existing or foreseeable future use of Second Creek or Partridge River for the Class 3C or 4A designated uses").[5]

Based on the above, EPA believes that MPCA adequately provided for the attainment and maintenance of the water quality standard of downstream waters.

[5] It is worth noting, again, that the variance does not remove, relax or modify any applicable in-stream or downstream wild rice uses or the sulfate criteria in Minnesota's WQS necessary to protect wild rice uses.

B. Whether the uses being removed could not be achieved by the imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices for nonpoint source control.

These provisions require that a use is deemed attainable if the water quality necessary to support the use can be achieved by the imposition of effluent limits required under Sections 301(b) and 306 of the CWA and cost effective and reasonable best management practices for nonpoint source controls. According to the fact sheet that MPCA provided in support of the variance, the limitations that are required under Sections 301(b) and 306 of the CWA for the discharges at issue here are total suspended solids (TSS) limitations based on the New Source Performance Standards (NSPS) for the Iron and Steel Manufacturing Point Source Category, Other Operations Subcategory set forth in 40 C.F.R. Part 420, Subpart M. Those limits have been included in Mesabi's permit. There is no reason to conclude that imposition of the TSS limits required by the applicable NSPS will result in attainment of the criteria for hardness, bicarbonate, TDS or conductivity that are the subject of the variance.

In addition, attainment and/or nonattainment of the uses at issue (class 3C, Industrial Water Supply, and class 4A, Agricultural Irrigation) is a function of the point source discharges at issue here, not nonpoint source pollution. Thus, attainment of the criteria for the four parameters at issue here cannot be achieved by the imposition of cost effective and reasonable best management practices for nonpoint source controls. Consequently, EPA believes that Minnesota adequately demonstrated that the uses being removed could not be achieved by the imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices for nonpoint source control.

C. Whether, prior to adding or removing the Class 3C and 4A uses, Minnesota provided notice and an opportunity for a public hearing.

MPCA provided public notice on the draft variance and NPDES permit for Mesabi Nugget LLC on January 30, 2012. The notice provided a 30-day comment period and an opportunity to request a hearing. MPCA provided a second public notice on October 12, 2012, of the MPCA Citizens Board meeting to act on the variance request. MPCA received and responded to comments, providing a copy of its response to comments as part of its submittal. Minnesota's regulations governing variances at Minn. R. 7000.7000(4) provide that:

> After a variance application is complete, the commissioner shall make a preliminary determination as to whether the variance should be issued or denied. The commissioner shall prepare a notice of the completed application and the preliminary determination, The notice must include a statement as to the manner in which the public may submit comments on the variance application and the manner in which a person may serve a request pursuant to part 7000.0650, subpart 4 or 7000.1800, asking that a contested case hearing or public informational meeting be held on the variance application. The notice must provide the public 30 days in which to submit these comments or requests.

Based on the above, EPA believes that Minnesota adequately addressed the requirements to

provide notice and an opportunity for public hearing.

D. Whether in granting this variance Minnestoa removed an existing use of the affected waters and whether the uses removed by the variance could be attained through implementation of technology-based limits and best management practices.

As discussed above, the variance would have applied to four parameters applicable to the Industrial Water Supply and Agricultural Irrigation use designations. EPA's regulations specify that a state may not remove a designated use if it is an existing use.

In evaluating whether obtaining a variance from Industrial Water Supply and Agricultural Irrigation uses would meet the requirements of 40 C.F.R. §131.10(h)(1), MPCA evaluated whether such uses were existing uses. In doing so, as mentioned above, MPCA determined with respect to Second Creek, Partridge River and St. Louis River:

> There is no known historic, present or foreseeable actual use of these waters for the Class 3C or 4A use classifications. In addition, the proposed permit includes a provision that prohibits the discharge to Second Creek from April 1 to August 31 of each year, which is generally the same timeframe as any irrigation would potentially occur and for which the Class 4A standards would be most protective of an agricultural designated use. Based on the MPCA staff review of the data submitted by Mesabi Nugget, the MPCA staff conclude that granting of a variance to Mesabi for the four listed parameters will not result in the removal of an existing actual use of these waters.

Id. at 10. *See also id.* at 4 ("[t]here is no known historic, existing or foreseeable future use of Second Creek or Partridge River for the Class 3C or 4A designated uses").

Based on the above, EPA believes that MPCA adequately addressed the requirements of 40 C.F.R. §131.10(h)(1) when it originally granted the variance.

In regard to 40 C.F.R. §131.10(h)(2), as discussed above in the consideration of the requirements of 40 C.F.R. §131.10(d), the uses impacted by the variance for the four criteria at issue here cannot be attained by implementing TSS effluent limits required under Sections 301(b) and 306 of the CW A and by implementing cost-effective and reasonable best management practices for nonpoint source control. Based on this, EPA believes that MPCA adequately demonstrated that the Mesabi variance did not remove any existing uses and that the 3C and 4A uses could not be attained by implementing cost-effective and reasonable best management practices for nonpoint source control.

IV. Conclusion

EPA, therefore, disapproves the variance because Minnesota did not fully justify the length of the time period of the variance and did not provide appropriate technical and scientific data and

analyses demonstrating that it is not feasible to attain the Industrial Water Supply and Agricultural Irrigation designated uses sooner than 2021. One change Minnesota could make to meet CWA requirements would be to develop and provide to EPA the methods used, analyses conducted, scientific rationale, and other information demonstrating the appropriateness under all applicable aspects of 40 C.F.R. Part 131 of any variance granted for Mesabi. This could include, but not necessarily be limited to, developing, consistent with state administrative processes, information demonstrating that it is not feasible to attain the Industrial Supply and Agricultural Irrigation designated uses for the entire duration of the variance. If Minnesota chooses to take action following today's disapproval to again grant Mesabi a variance, Minnesota should provide the public with notice of and an opportunity to comment on any such variance before submitting it to EPA for approval in accordance with Section 303(c) of the Clean Water Act. In light of this disapproval, EPA is withdrawing its December 27, 2012, decision in this matter and replacing it with today's decision.