



WWTF MPCA Permit Update

September 12th, 2023



Permit Renewal

- * On April 1, 2022, the City received its New Limits Notification letter from the MPCA.
- * Since then, the City has had several meetings with the MPCA, Minnesota Environmental Science and Economic Review Board (MESERB) attorneys, and consultants at Bolton & Menk to address the issues with the proposed limits and testing requirements.



What Stage Is The City's Permit At?

- * Right now, the City has received a draft version of the new NPDES permit.
- * We have a 30-day pre-public review period to send the MPCA any comments.
- * The EPA could still deny the chloride variance and, if so, would cause the draft permit to be changed prior to the 60-day public review period.



Permit Renewal Issues

- * Copper No issues meeting this limit
- * Total Dissolved Solids The MPCA has withdrawn this limit
- * Sulfate
- * Phosphorus
- * Chloride

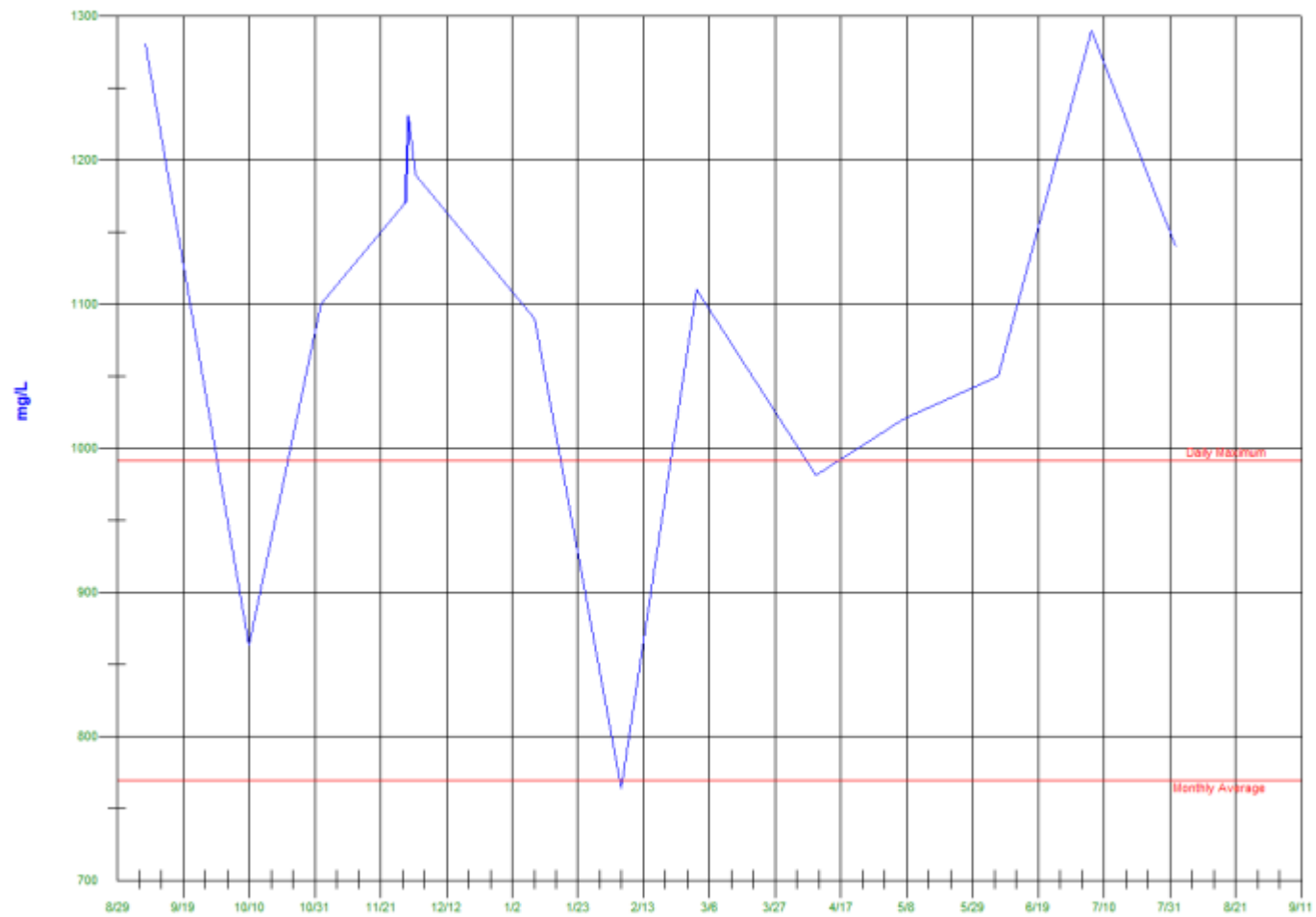


Sulfate

- * The new limit will be 769 mg/L monthly average with a 991 mg/L daily maximum.
- * Sulfates in ground water in the area are high.
- * Marshall's drinking water can occasionally exceed the 769 mg/l sulfate limit.
- * Industry in Marshall adds to our sulfate levels in wastewater.



Sulfate Concentration (mg/L)



Date (8/29/2022 to 8/29/2023)

Effluent Sulfate



Sulfate Compliance

- * Source reduction is the only way to meet the limit at the WWTF.
- * The City asked the MPCA for, and was granted, a 15-year Schedule of Compliance (SOC) along with flexibility to modify the final limit if, after 15 years, the MPCA's sulfate standard has been changed.
- * Annual requirements will include collecting monitoring data, working with local industries to reduce loadings, identify sources, & propose source reduction plans.
- * In addition, annual reports will need to be submitted to the MPCA.



Phosphorus

- * A new more stringent limit will need to be reached June through September when phosphorus can have a larger negative impact on the Redwood River.
- * Currently the City can just meet the proposed limit with no margin for mechanical/biological failure as we rely on a single phosphorus removal system.



Phosphorus Compliance

- * The City requested, and was granted, a 10-year SOC from the MPCA to provide more time to identify WWTF process improvements to ensure consistent compliance with the new limit.
- * As with sulfates the City will have annual requirements during the 10-year SOC.
- * The effluent filters that were installed in 2002 will need to be replaced to meet the more stringent phosphorus limits.



Phosphorus Compliance (continued)

- * Staying with chemical treatment or switching to biological phosphorus removal will need to be evaluated.
- * Bolton & Menk will be doing a facility plan in 2024.
- * This study, along with the rate study, will provide the City with a “road map” to final permit compliance.

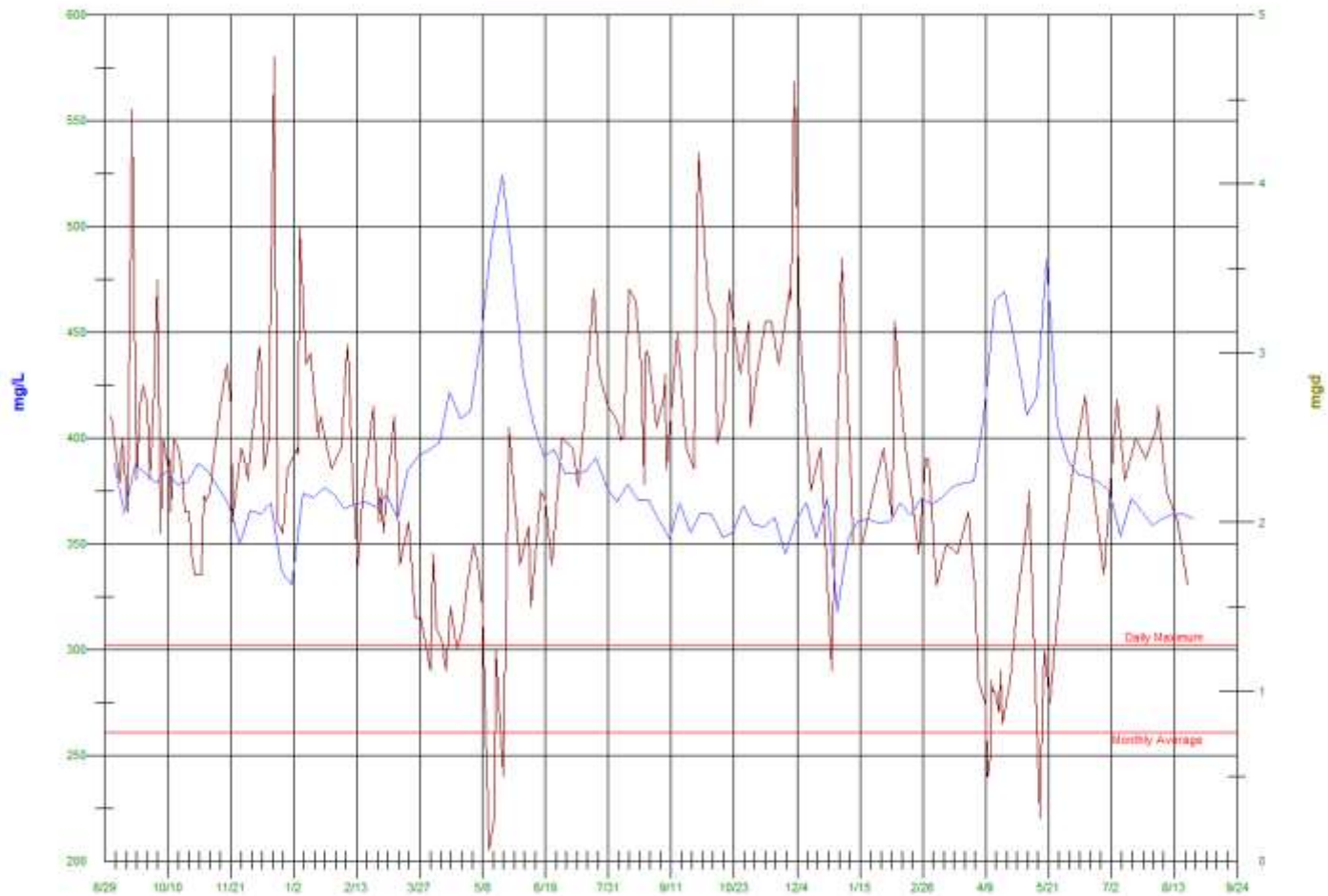


Chlorides

- * The concentration limit is 261 mg/l monthly average with a 302 mg/l daily maximum.
- * Because the 261 mg/L limit is a concentration limit, not a mass loading limit, lower than normal flows (dry years) drive the concentration levels higher pushing the City out of compliance.



Flow and Chlorides (mg/L)



Date [8/29/2021 to 8/29/2023]
/ Effluent Chlorides / Effluent Flow (Wkly Avg)



Chlorides (continued)

- * The limits will become enforceable on April 1st, 2024.
- * The City has applied for a 10-year chloride variance to allow us time to meet the limits.
- * While the MPCA has agreed to the 10-year variance the EPA also has to approve the extension of time.
- * The City needs the new permit to be in place prior to the April 1st, 2024, chloride limit taking effect, or the City would be in violation of it's current permit.



Chloride Compliance

- * If more residents and businesses don't comply with softener optimizations, replacements, or removals City government will need to step in, or the City will be in non-compliance with the permit and face fines.
- * If the EPA approves the City's chloride variance this will happen in 10 years.
- * If variance is not approved this will happen April 1st of 2024.



Chloride Compliance (continued)

- * The City will have to continue to work with local industries to reduce chlorides.
- * The promoting of the chloride reduction grant to optimize, replace, or remove water softeners will need to be continued.
- * Benchmark goals will need to be met throughout the variance.
- * In addition, annual reports will need to be submitted to the MPCA.



Water Softener Rebate Program

- * Local water softening companies have done a great job!
- * The City continues to use social media, radio, and printed ads to get the message out.
- * City staff has mailed flyers, made phone calls, sent emails, and have done in person visits with some success.



Water Softener Rebate Program

- * The city still has around \$50,000 of the original \$100,000 grant funds available.
- * The deadline to apply for the grant funded program is April 30th of 2024.
- * City staff recommends continuing the program past the grant time frame with \$40,000 annually funded by wastewater's enterprise fund.



Water Softener Rebate Program

- * To increase participation staff has worked with Bolton & Menk and the MPCA to allow opening the program up to residential do-it-yourself (DIY) installations for \$500 rebates.
- * Also offering \$500 rebates for removing and going without a water softener. This option would be for residents & businesses.



Water Softener Rebate Program Lessons Learned

- * The easy work has been done. Early adopters have already taken advantage of the salt savings by optimizing, replacing, or by simply discontinuing using their water softener.
- * Some residents, businesses, and organizations refuse to optimize or replace outdated equipment even after being shown the potential savings.
- * Some larger commercial systems are expensive to replace even when considering the savings.
- * Some residents just don't want to change.



Chloride Compliance Options

- * Set a deadline to have water softener optimized, replaced, or prove that you don't use a softener.
- * Once the deadline has passed, add a monthly surcharge to utility bills until residents/businesses prove that they are complying.
- * Industries would also have to comply; this would be done via the Significant Industrial User (SIU) agreements they have with the City.
- * Full ban of all salt-based water softeners in Marshall.



Questions?

