

# OPINION

## Prior Lake-Spring Lake Watershed District supports second alum treatment

BY FRED CORRIGAN  
Guest Commentary

At its regular board meeting on Dec. 12, the Prior Lake-Spring Lake Watershed District's Board of Managers voted to continue to invest in alum treatments for Spring Lake and allocated nearly \$300,000 for a second alum treatment. With a budget just under \$2 million, this expenditure represents a significant contribution of 2018 funding toward improving Spring Lake's water quality.

Spring Lake's poor water quality was the focus of a study in 2011 that was initiated by the Minnesota Pollution Control Agency and was required by the Environmental Protection Agency, called a Total Maximum Load Study. The 2011 study indicated that 49 percent of the total phosphorus in Spring Lake was internal and primarily released from bottom sediments. The resulting total maximum load implementation plan that was put together by the district, city of Prior Lake and the Minnesota Pollution Control Agency identified an aluminum sulfate treatment to significantly reduce the internal loading to Spring Lake. Alum is a chemical compound that is soluble in water and is used as a coagulating agent to bind to sediments that contain phosphorus.

In 2012, the Board of Managers authorized a plan of action, which recommended the alum be spread over three applications with an initial dose in 2013 that would cost nearly \$500,000. In 2012, prior to the alum treatment, total phosphorus was over 120 micrograms/liter when the state standard was 40. After the alum treatment, even with flooding in 2014, it dropped to about 48 micrograms/liter and has stayed in that vicinity until 2017, where it is now about 71 micrograms/liter.

Spring Lake's poor water quality story began prior to the 1850s European settlement of the area, which was recorded to be 60 micrograms/liter. In 2016, given the results of a sediment core sampling, the Minnesota Pollution Control Agency agreed to increase the standard for Spring Lake to 60 micrograms/liter, with permission from the EPA. Barr Engineering conducted a sediment core analysis in August 2016 and determined the alum continued to bind to phosphorus, the lake met the new total phosphorus standard and the district should continue monitoring to determine when the next application would be needed.

This year, staff created a decision guide for the next alum treatment to be used by the Board of Managers to help guide their decision on alum treatments for water

bodies. Staff recommended treating Spring Lake in 2018, primarily because total phosphorus has increased from 48 micrograms/liter in 2014 to 71 micrograms/liter in 2017. The Board of Managers agreed with the staff recommendation and the district will contract for an alum dosing in either the spring or fall of 2018.

But internal loading in Spring Lake is only half of the picture. Other sources of total phosphorus come from streams, ditches, wetland and overland runoff. To address external sources, the district constructed its ferric chloride plant in 1998 which uses ferric chloride to bind to phosphorus in water coming in from the upper watershed and sediments settle out in a desiltation pond, where they stay until the pond is dredged. The cleaner water then continues into Spring Lake. In addition, the district has restored three wetlands that clean stormwater runoff before it reaches Spring Lake.

In 2018, the district will draft its new Water Resources Management Plan and will continue implementing practices to meet the 60 micrograms/liter standard by reducing internal and external pollution of Spring Lake throughout the next decade.

*Fred Corrigan serves as president on the Prior Lake-Spring Lake Watershed District's Board of Managers.*