



December 17, 2018

PWSID #43603648
MC – Manitowoc County

Ms. Deb Neuser, Clerk
City of Manitowoc
900 Quay Street
Manitowoc, WI 54220

Mr. Nilaksh Kothari, General Manager
Manitowoc Public Utilities
1303 South 8th Street, P.O. Box 1090
Manitowoc, WI 54221-1090

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DEC 18 2018
CITY CLERKS OFFICE

Subject: Start-Up Approval for Sumachlor 50 Addition to Manitowoc Waterworks Submerged Filtration Plant

Dear Ms. Neuser and Mr. Kothari:

On Monday, December 17, 2018, I inspected the Sumachlor 50 (aluminum chlorhydrate - ACH) chemical feed system, equipment and appurtenances at the submerged membrane filtration plant. Rob Michaelson and Brian Branam of Manitowoc Public Utilities (MPU) were also present. The purpose of this project is to avoid irreversible fouling of the membrane modules at this filter plant, by addition of a coagulant ahead of the filters.

The installation appears to meet the Department's June 13, 2018, approval and the December 17, 2018 revised approval. In general, the system consists of the following:

1. A curbed containment area in a lower level of the plant that holds:
 - a. Two fiberglass bulk storage tanks, each with 490-gallon capacity
 - b. One polyethylene day tank of 65-gallon capacity and a transfer pump (spare on the shelf)
 - c. Sonic measuring capability to determine use
 - d. A skid containing two, ProMinent positive displacement diaphragm pumps, model GMAZ0708NPT2Q100UDCI1300EN Gamma-X4, which are flow paced with a max capacity of 48 gallons per day. The target dose of 2.0 mg/L is achieved at 14 MGD with settings of 75 percent stroke length and 58 percent speed.
2. Corporation stops, check valves and removable injection nozzles are installed in the 3:00 position on the horizontal, low-lift pump discharge pipes, upstream of the 500-micron strainers. Positive pressure is maintained.

Effective immediately, Manitowoc Public Utilities has approval to begin adding Sumachlor 50 to the raw water at the filter plant. This approval is subject to the following requirements:

1. Immediately begin recording the daily amount of Sumachlor 50 used using your on-line, electronic monthly operating report (eMOR) under the column, Coagulant.

2. With respect to the potential impacts of excess aluminum from the Sumachlor 50 on corrosion control and as discussed previously with Bridget Kelly and myself, conduct the following:
 - a. Prior to beginning Sumachlor 50 addition, collect a sample from EP 82 and analyze it for aluminum. Report the results electronically to the DNR's data system.
 - b. Within 7 days of initiating Sumachlor 50 addition, collect and analyze an entry point sample at EP 81 and EP 82 for aluminum. Report the results electronically to the DNR's data system.
 - c. Within 30 days of initiating Sumachlor 50 addition, collect and analyze samples from the entry point and five distribution system sites for water quality parameters.

If you have any questions regarding this approval, please feel free to contact me by phone at (920) 662-5414 or by email at wendy.anderson@wi.gov.

Sincerely,



Wendy Anderson, P.E.
Water Supply Engineer

Ecopy: NER FILE
Rob Michaelson, MPU
Miranda Sachtschale, DNR