



# DEPARTMENT OF PUBLIC WORKS



## Clean Water Plant Memorandum

TO: Dr. Fred Abadi, Director

CC: Jeff Harenda, Alex Damien, Robin Watke, Judith Allen

FROM: Greg Markle

RE: WWTP Chemical Bids for 2018

DATE: November 6, 2017

### Polymer for Sludge Dewatering:

The low bid for Polymer was \$1.386/lb by SNF Polydyne for their product Clarifloc CE-1795. CE-1795 has been used as the primary product through the 2017 year with good result on the centrifuge. We recommend in favor of this bid. SNF Polydyne was the low bid last year at \$1.327/lb.

### Phosphorus removal; Ferric Chloride with Polyaluminum Chloride (PAC) as alternate:

The low bid for Ferric Chloride of \$1,297.00/dry ton as Ferric was submitted by Kemira Co for their product PIX-311. Kemira was the low bid last year at \$1,190.00/dry ton.

The Ferric alternative low bid for ChemTrade Logistics PAC was submitted at \$2,341/dry ton of aluminum for their product Hyper+Ion 1997. ChemTrade was alternative low bid last year at \$2,374.00/dry ton.

For comparison, this calculates to an equivalent of \$1.03/gallon for Kemira PIX-311 and \$1.19/gallon for ChemTrade Logistics Hyper+Ion 1997

We recommend that the low bid for Ferric Chloride of \$1,297.00/dry ton as Ferric as submitted by Kemira Co. be accepted. We also recommend that the low alternate chemical PAC bid from ChemTrade, be accepted as an alternative chemical with the provision that continued testing shows improved results.

Currently we are in our third month of testing ChemTrade Logistics Hyper+Ion 1997, in 2016 only a three-week test period was completed. While the Whole Effluent Toxicity (WET) test required by the terms of our permit was successful in conjunction with ChemTrade Logistics Hyper+Ion 1997 testing; the phosphorus removal rate was higher than previously demonstrated requiring a higher dosage rate compared to the dosage rate in 2016. The longer testing was needed as we discovered it took longer than three weeks to eliminate Ferric Chloride from the system.

Currently due to the higher than expected removal efficiency of phosphorus with the Hypoer+Ion 1997 this chemical is not showing an equivalent dosage rate compared to the Kemira PIX-311. However, data suggests that years of Ferric Chloride in the plants system has helped to reduce the theoretical removal rate and in time the Hyper+Ion in the system may prove the same results. It has also been suggested that the Hyper+Ion 1997 in conjunction with Hyper Ion 4107 is much more effective. We will be testing that combination in the next two weeks.

Our goal is to use the lowest cost chemical per removal efficiency.

<input type="checkbox"/> <b>ENGINEERING DIVISION</b> Alex Damien, PE City Engineer 130 Delafield St. Waukesha, WI 53188 262-524-3600	<input type="checkbox"/> <b>MUNICIPAL PARKING SERVICES</b> Fred Ripley Parking Supervisor 241 South St. Waukesha, WI 53186 262-524-3622 Fax – 262-650-2573	<input type="checkbox"/> <b>STREETS DIVISION</b> 300 Sentry Dr. Waukesha, WI 53186 262-524-3615 Fax – 262-524-3612	<input checked="" type="checkbox"/> <b>CLEAN WATER PLANT</b> Jeff Harenda Plant Manager 600 Sentry Dr. Waukesha, WI 53186 262-524-3625 Fax – 262-524-3632	<input type="checkbox"/> <b>WAUKESHA METRO TRANSIT</b> Brian Engelking Transit Manager 2311 Badger Dr. Waukesha, WI 53188 262-524-3634 Fax – 262-524-3646
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