



1202 Mieser Street
Muscatine IA 52761-1645
(563) 263-2752
Fax (563) 263-2720

MEMORANDUM

WATER & RESOURCE RECOVERY FACILITY

To: Greg Jenkins, Interim City Administrator

CC: Nancy Lueck, Finance Director
Cinda Hilger, Secretary

From: Jon Koch, WRRF Director

Date: February 13, 2020

Re: Struvite Reducer Purchase

INTRODUCTION: The Water and Resource Recovery Facility (WRRF) requested and has received a quote for the purchase of a HydroFlow 190i struvite reducing unit in the amount of \$29,270.00. A successful pilot study of the unit has been completed and purchasing the unit is recommended. This will be paid from the deferred Roughing Filter capital budget line which has \$91,000.00 remaining. There are no other manufacturers of this technology for this application.

BACKGROUND: Struvite is a hard mineral (magnesium ammonium phosphate) that builds up on the inside of pipes, pumps, tanks and anywhere else digested sludge has the appropriate mixing and air entrainment. The WRRF sees struvite in the digested sludge wetwell, suction pipe and sludge pumps. It is a debilitating material that completely clogs the 8 inch pipe and fills the pump cavities. Chiseling with an air hammer or chemical removal is the only way to remove it as jetting with high pressure has no effect. The WRRF spent over \$19,000.00 in chemicals and over 150 hours of labor fighting struvite in this location last year.

A pilot was run using a HydroFlow 190i unit installed on the suction pipe from the digested sludge wetwell. The unit induces a unique electrical signal into the pipe and the liquid inside. The minerals that form struvite form clusters within the liquid but do not adhere to the pipe and are easily pumped out. The pilot showed almost no new struvite formation to the pipe in the three months it was installed. This pipe typically requires chemical cleaning every three months or less. This unit is anticipated to greatly reduce or eliminate the need for chemical cleaning, labor costs and down-time.

RECOMMENDATION/RATIONALE: Staff recommends issuing a purchase order to HydroFlow Midwest in the amount of \$29,270.00 for the purchase and installation of the HydroFlow 190i unit.

BACKGROUND: HydroFlow 190i quote



HydroFLOW Midwest
 3309 W 134th St.
 Burnsville, MN 55337
 952-377-8860

February 7, 2020

Jon Koch
 Muscatine WWTP
 1202 Musser Street
 Muscatine, IA 52761
 Phone: W: (563) 263-2752 / C: (563) 554-4051
 Email: jkoch@muscatineiowa.gov

Dear Jon,

HydroFLOW is a proactive/preventative technology that helps save on maintenance costs as well as equipment repair and replacement. It is a green, sustainable, non-chemical technology that adds additional layers of protection to a system against the harmful effects of scale buildup and provides improved filtration efficiency.

Proposal is valid until February 28, 2020.

Item	Description	Quantity	Price
1-HydroFLOW i190*, 5 year warranty, Install & Industrial Surge Protector	Fits pipes up to 7.8"	1	\$29,270.00
Onsite Visits – if needed/requested after purchase			\$TBD/visit
Shipping/Handling	Standard 2 week delivery time		TBD
Tax			n/a
Total			TBD

* Muscatine WWTP to provide electrician to hard wire industrial unit and surge protection.

Payment Terms: 50% due upon receipt of Purchase Order, remainder due 15 days post installation or 30 days post receipt of downpayment [whichever is first].

Upon your approval HydroFLOW Midwest requests: The use of Muscatine WWTP's name in a referral letter for marketing purposes, no phone numbers or emails will be used.

Sincerely,
 Bjorn Pearson
 President
 HydroFLOW Midwest
bjorn@hydroflowmidwest.com
 952-377-8860

Acceptance of Proposal _____

PO# or Job Name _____

Date _____