

**Appleton Wastewater Treatment Plant
Operations Synopsis
April 2020 – June 2020**

Wastewater Treatment Program

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), phosphorous, and ammonia. The plant maintained good treatment and a healthy microbiological population with a sludge retention time of eight days. Dewatering processes functioned well and converted 18.5 Million Gallons (MG) of primary digested sludge to biosolids.
- Due to statewide shutdown of non-essential businesses in response to COVID-19, industrial and domestic flow decreased by 40% and 20% respectively compared to the second quarter of 2019.

Summary of Treatment

Parameter	April	May	June	Average
Industrial Flow (MG)	35.9	31.1	30.8	32.6
Domestic Flow (MG)	353.7	401.4	338.3	364.5
Total Flow (MG)	389.6	432.5	369.1	397.1
Influent CBOD Load (Avg Daily lbs)	19,680	24,755	24,735	23,057
Influent TSS Load (Avg Daily lbs)	38,505	49,369	43,051	43,642
Influent Phosphorous Load (Avg Daily lbs)	399	507	497	468
Influent Ammonia Load (Avg Daily lbs)	1,972	1,841	2,054	1,956
Effluent CBOD Load (Avg Daily lbs)	696	849	434	660
Effluent TSS Load (Avg Daily lbs)	218	414	190	274
Effluent Phosphorous Load (Avg Daily lbs)	12	20	16	16
Effluent Ammonia Load (Avg Daily lbs)	486	484	193	388
% Treatment Removal of CBOD	96.5	96.6	98.2	97.1
% Treatment Removal of TSS	99.4	99.2	99.6	99.4
% Treatment Removal of Phosphorous	97.0	96.1	96.8	96.6
% Treatment Removal of Ammonia	75.4	73.7	90.6	79.9

Work in Progress:

- **2020 Hypochlorite Fiberglass Reinforced Plastic Tank Relining Work:** Common Council approved a contract in January 2020 with Fiberglass Solutions for the relining of bulk storage fiberglass hypochlorite tanks. Fiberglass Solutions completed relining work in April.
- **2017 Appleton Wastewater Plant Improvement Projects:** (WAS Pumping System Replacement, High Pressure Blower #3 Replacement, Digester Biogas Mix Compressor Glycol Cooling System): The construction notice to proceed was authorized on March 4, 2019. Construction activities remained ongoing through the reporting period. The completion date of the project was authorized for extension to July 24th via change order to facilitate delivery of a new gas mix compressor. That includes the associated installation and start-up activities of the new gas mix compressor glycol cooling system.

- **Compost Site Evaluation:** Work by Coker Composting and Consulting (Coker) placed on hold until more information is known regarding pending WDNR regulations which could affect the beneficial use of biosolids and biosolids compost.
- **2019 Midway Road Lift Station Phase II Improvements Project:** The project includes replacement of the existing pumps, deteriorated pump rails, and electrical control panel (nearly 30 years old). Construction activities began in November 2019, with substantial completion achieved in December. Final construction completion occurred May 2020 with the installation of permanent concrete.
- **2019 Appleton Wastewater Plant Improvement Projects:** McMahon under professional engineering service contract for the multi-process improvements project. The project includes replacement of the Return Activated Sludge (RAS) pumps, process piping modifications (e.g. blended sludge, waste gas, and filtrate tank), primary clarifier concrete recoating, and outside secondary containment repairs for iron salt chemical offloading. McMahon continued preliminary engineering phase efforts during the reporting period. Contracts were approved by Common Council in early March with Great Lakes Mechanical and R-Industries. The repair contracts were separated into two categories based on the discipline of work, filtrate tank piping modifications and filtrate tank concrete joint leak repairs. That work was successfully completed by early May. The balance of the 2019 AWWTP Improvements Project scope will be publically bid in August or early September.
- **Primary Clarifiers #3 and #4 Cured In Place Piping (CIPP) Work:** Visu-Sewer initiated work on March 12, 2020 under the contract which was approved by Common Council in November 2019. Final completion occurred in May.

Regulatory Summary

- Monthly Discharge Monitoring reports for April, May and June were filed electronically on time for regulatory compliance.
- An effluent chlorine residual result greater than 0.038 mg/L was recorded on May 29th. After investigation, this WPDES permit exceedance was attributed to contaminated laboratory water and documentation error. Actions have been taken to resolve the laboratory water quality and training of documentation requirements.

Laboratory

- All sampling and laboratory testing procedures were performed in accordance with requirements outlined in the AWWTP Wisconsin Pollutant Discharge Elimination System (WPDES) permit.
- Discharge Monitoring Report (DMR) and Health Department testing program objectives associated with sampling and analysis were met during the reporting period.
- Successful Analysis of Double-Blind Proficiency samples for laboratory recertification occurred during the reporting period.

Staffing & Training

- In response to COVID-19, adjustments have been made to staff schedules and work areas to limit group sizes and face-to-face contact among employees.