

**Appleton Wastewater Treatment Plant
Operations Synopsis
July 2020 – September 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 17.8 Million Gallons (MG) of primary digested sludge to biosolids.

Summary of Treatment

Parameter	July	August	September	Average
Industrial Flow (MG)	30.1	33.8	36.6	33.5
Domestic Flow (MG)	324.9	205.2	212.4	247.5
Total Flow (MG)	355.0	239.0	249.0	281.0
Influent CBOD Load (Avg Daily lbs)	21,583	21,796	21,094	21,491
Influent TSS Load (Avg Daily lbs)	44,656	43,872	44,675	44,401
Influent Phosphorous Load (Avg Daily lbs)	395	431	441	422
Influent Ammonia Load (Avg Daily lbs)	1,995	2,028	1,796	1,940
Effluent CBOD Load (Avg Daily lbs)	460	402	408	423
Effluent TSS Load (Avg Daily lbs)	311	189	191	230
Effluent Phosphorous Load (Avg Daily lbs)	30	19	23	24
Effluent Ammonia Load (Avg Daily lbs)	72	73	57	67
% Treatment Removal of CBOD	97.9	98.2	98.1	98.0
% Treatment Removal of TSS	99.3	99.6	99.6	99.5
% Treatment Removal of Phosphorous	92.4	95.6	94.8	94.3
% Treatment Removal of Ammonia	96.4	96.4	96.8	96.5

Work in Progress:

- 2017 Appleton Wastewater Plant Improvement Projects: (WAS Pumping System Replacement, High Pressure Blower #3 Replacement, Digester Biogas Mix Compressor Glycol Cooling System): Start-up of High-Pressure Blower #3 and new WAS pumps occurred during the first half of 2020. The installation and successful start-up of the new gas mix compressor glycol cooling system occurred during the current reporting period. The contractor continues to work on remaining punchlist items with final project completion set to occur during the final quarter of 2020.
- 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 flare, and filtrate tank), primary clarifier concrete recoating, and outside secondary containment repairs for iron salt chemical offloading.
 - Filtrate Tank Repairs: Contracts were approved by Common Council in early March 2020 with Great Lakes Mechanical and R-Industries. These 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 advanced

ahead of the other project elements because of the consequences work proceeding during the months with low-level ammonia effluent limits. Work was successfully completed in May 2020.

- McMahon continued design and engineering services associated with bidding documents for RAS pumps replacement, process piping modifications, primary clarifier concrete recoating, and outside secondary containment repairs for iron salt chemical. Mid-November 17, 2020 was established as the public construction bid closing date.

Regulatory Summary

- Monthly Discharge Monitoring reports for July, August, and September were filed electronically on time for regulatory compliance.

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 Single-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, as well as virtual meetings which limit group sizes and face-to-face contact among employees.