

**Appleton Water Treatment Plant
Operations Synopsis
April, May, and June 2019**

Performance Summary

The table below presents selected water production and quality performance metrics for the current and previous reporting periods.

Treated Water Quality. All compliance parameters met or exceeded regulatory requirements.

Water Production. Compared with Q1 of 2019 (quarter over quarter or Q/Q), average water production increased by 3.4% consistent with seasonal demand. Compared with Q2 of 2018 (year over year or Y/Y), average water production decreased consistent with this spring's wet weather.

Raw Water Quality. Q/Q average raw water turbidity increased consistent with loss of Lake Winnebago ice cover. Y/Y average raw water turbidity is comparable to 2018.

Energy Efficiency. In terms of applied electrical energy, Q/Q efficiency improved by nearly 2%. However, Y/Y performance is consistent with Q2 of 2018.

WATER PLANT PARAMETERS	Previous (Q1 2019)			Current (Q2 2019)		
	January	February	March	April	May	June
Water Treated						
Finished (million gallons)	267.1	246.6	271.0	258.2	276.8	276.7
Finished (million gallons / day), average	8.6	7.9	8.7	8.3	8.9	8.9
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	440.3	427.2	476.2	433.4	457.9	470.8
MWH / million gallons produced	1.65	1.73	1.76	1.68	1.65	1.70
Turbidity						
Lake (NTU)	2.8	1.4	2.8	14.7	7.5	8.6
Finished (NTU)	0.02	0.02	0.02	0.02	0.02	0.02
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
Water System Microbial Quality						
Total Coliform Samples	81	81	81	81	82	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Disinfectant Contact Time						
Minimum CT Ratio Provided	0.5	1.3	1.0	1.7	2.4	4.3
Hardness						
Lake Total (mg/L)	194	201	202	180	164	163
Finished Total (mg/L)	106	110	105	91	74	72
Finished Water Quality						
Total Chlorine (mg/L)	1.93	1.90	1.88	1.85	1.87	1.83
pH (SU) Min/Max	8.8/8.9	8.8/8.9	8.8/8.9	8.7/8.9	8.1/8.7	8.5/8.9
Water Temperature (Degrees F)	33.4	34.9	36.5	42.3	55.6	67.3
Fluoride (mg/L)	0.64	0.67	0.70	0.74	0.70	0.72
Orthophosphate (mg/L)	.070	0.70	0.70	0.66	0.77	0.90

Laboratory

- In support of plant operations, staff conducted analyses according to method protocols for pH, turbidity, alkalinity, hardness, free/total chlorine, ammonia, phosphorus, potassium permanganate, and fluoride.
- In support of distribution operations, staff performed required 81+ monthly Coliform bacteria analyses along with heterotrophic plate count (HPC) testing.
- Staff collected and processed raw and finished water samples to comply with Disinfection By-Products Rule (DBPR) sampling requirements. Provided support to consecutive customers with shipping of DBPR2 samples.

Safety

- Maintained WTF Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.

Operations

- Cleaned Softener #4 and North Recarbonation basin.
- Operated two UV Disinfection reactors continuously during the quarter.
- Replaced lamps in UV Disinfection reactors N-2, S-1.
- Continued database development for the implementation of the new plant data management and reporting system (Hach WIMS).
- Initiated design phase for the Lake Station mechanical/electrical rehabilitation.
- Continued the Chemical Systems Upgrade Project Phase 1 with completion expected in August 2019.
- Continued update to the Distribution System Master Plan in collaboration with DPW. Study completion scheduled for Q3 of 2019.
- Initiated the Lindbergh Standpipe re-coating project with staff assisting in specifications development.

Staffing & Training

- All staff have completed City Safety as well as Utilities Department Safety training requirements for the year.
- The Operations Supervisor attended annual Supervisory Training.