

**Appleton Water Treatment Plant
Operations Synopsis
July, August, September 2018**

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 Q2 of 2018 (quarter over quarter or Q/Q), average water production increased by 4.5% consistent with seasonal demand. Notably, compared with Q3 of 2017 (year over year or Y/Y), average water production increased by 2.1%.

Raw Water Quality. Average raw water turbidity increased Q/Q by about 263% as expected due to Lake Winnebago seasonal effects. Average raw water turbidity increased Y/Y by 21%.

Energy Efficiency. In terms of applied electrical energy efficiency, Q/Q and Y/Y performance was unchanged at about 1.67 MWH / million gallons produced.

WATER PLANT PARAMETERS	Previous (Q2 2018)			Current (Q3 2018)		
	April	May	June	July	August	September
Water Treated						
Finished (million gallons)	258.1	302.5	302.6	326.2	309.4	278.3
Finished (million gallons / day)	8.6	9.8	10.1	10.5	10.0	9.3
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	432.1	503.1	507.5	563.9	510.0	460.3
MWH / million gallons produced	1.67	1.66	1.68	1.72	1.65	1.65
Turbidity						
Lake (NTU)	9.0	5.9	10.2	24.8	26.5	40.1
Finished (NTU)	0.02	0.03	0.02	0.02	0.02	0.03
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	1.4	2.2	4.6	6.1	5.5	3.6
Hardness						
Lake Total (mg/L)	191	182	172	156	150	158
Finished Total (mg/L)	92	78	76	79	76	79
Finished Water Quality						
Total Chlorine (mg/L)	1.64	1.75	1.92	1.85	1.82	1.91
pH (SU) Min/Max	8.5/8.8	8.3/8.7	8.2/8.7	8.3/8.7	8.5/9.1	8.3/9.1
Water Temperature (Degrees F)	38.7	61.7	72.3	79.3	77.7	71.1
Fluoride (mg/L)	0.65	0.67	0.70	0.68	0.67	0.67
Orthophosphate (mg/L)	0.56	0.59	0.59	0.81	0.75	0.71

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 DBPR2 sampling requirements. Provided support to consecutive customers with shipping of DBPR2 samples.
- Continued Unregulated Contaminant Monitoring (UCMR4) sampling for the quarter.

Safety

- Maintained WTF Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.
- Staff completed required First Aid / CPR training as per Confined Space Entry policy.

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Cleaned Softeners #1 and #2.
- Removed the North Pretreatment Basin from service for cleaning.
- Placed the North Recarbonation Basin in service. Removed the South Recarbonation Basin from service for cleaning.
- Continued database development for the implementation of the new plant data management and reporting system (Hach WIMS).
- Continued assessment/concept design phase for the Lake Station upgrade and Second Intake project.
- Awarded the Chemical Systems Upgrade Project Phase 1 to August Winter.
- Continued update to the Distribution System Master Plan in collaboration with DPW.
- Maintained finished water quality despite major increase in Lake turbidity due to weather and high algae concentrations (September 17-29).

Staffing & Training

- The Operations Supervisor completed annual mandatory supervisory training. Staff completed department and City safety training and respirator fit testing planned for the quarter.
- The Relief Operator vacancy resulting from a resignation was filled by a Water Plant Operator (effective 12/31/18).