

**Appleton Water Treatment Plant  
Operations Synopsis  
July, August, September 2017**

**Summary**

The table below presents selected water production and quality performance metrics for the current and previous reporting periods. All compliance parameters met or exceeded regulatory requirements. During the quarter, average water production increased by about 7% and average lake turbidity doubled consistent with seasonal change. As expected, the average ratio of electrical energy consumption to production volume has plateaued following transition to conventional filtration and UV disinfection.

WATER PLANT PARAMETERS	Previous (Q2 2017)			Current (Q3 2017)		
	April	May	June	July	August	September
<b>Water Treated</b>						
Finished (million gallons)	251.0	281.2	290.9	303.9	310.4	282.6
Finished (million gallons / day)	8.4	9.1	9.7	9.8	10.0	9.4
<b>Electrical Energy (WTF)</b>						
Consumption (Megawatt-hours)	438.0	456.7	478.6	517.7	509.8	475.2
MWH / million gallons produced	1.74	1.62	1.64	1.70	1.64	1.68
<b>Turbidity</b>						
Lake (NTU)	7.7	9.2	18.9	17.1	31.1	27.5
Finished (NTU)	0.02	0.03	0.02	0.02	0.02	0.02
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
<b>Water System Microbial Quality</b>						
Total Coliform Samples	81	81	82	81	83	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
<b>Disinfectant Contact Time</b>						
Minimum CT Ratio Provided	2.1	3.1	3.1	5.7	5.7	4.9
<b>Hardness</b>						
Lake Total / Calcium (mg/L)	193/104	193/107	186/96	178/93	163/80	166/79
Finished Total / Calcium (mg/L)	90/33	86/27	82/23	84/20	78/18	82/19
<b>Finished Water Quality</b>						
Total Chlorine (mg/L)	2.06	2.01	1.86	1.76	1.83	1.88
pH (SU) Min/Max	8.6/8.8	8.5/8.8	8.1/9.0	8.2/8.9	8.1/8.8	8.3/8.8
Water Temperature (Degrees F)	47.1	57.6	70.0	75.9	73.6	69.8
Fluoride (mg/L)	0.68	0.72	0.74	0.72	0.72	0.68
Orthophosphate (mg/L)	0.69	0.72	0.79	0.82	0.80	0.68

**Laboratory**

- In support of plant operations, staff conducted analyses according to method protocols for pH, turbidity, alkalinity, hardness, free/total chlorine, ammonia, phosphorus, 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 LT2, DBPR2, HAB sampling requirements. Support was provided to consecutive customers with shipping of DBPR2 samples. Lead and copper monitoring was completed.

### **Safety**

- WTF Safety programs were maintained by completing scheduled safety inspections. There were no significant incidents to report.
- Chemical unloading procedures are under review for potential improvements.

### **Operations**

- Completed Lake Station electrical maintenance (IR scanning, MCC cleaning and inspection).
- North reservoir re-coating project 90% completed.
- #4 Softener cleaned for coating warranty inspection.
- Completed annual Waverly sanitary meter calibration check.
- Chemical systems design and rehabilitation project began.
- Database development continues for the implementation of the new plant data management and reporting system (Hach WIMS).
- Two UV Disinfection reactors were in continuous service during the quarter.

### **RUPIP**

- Merrick Systems continued lime system warranty work to resolve level transmitter issues.

### **Staffing & Training**

- All staff have completed mandatory department and City safety and employee training for the year.
- Operations Supervisor, Joe Myers, received the 2017 Operator's Meritorious Service Award from the Wisconsin Section of the American Water Works Association for consistent and outstanding service in providing a quality water supply to the public.