

## Appleton Water Treatment Plant Operations Synopsis April, May, June 2016

### 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 raw water turbidity increased by about 70% consistent with seasonal conditions. The average electrical energy “wire-to-water” ratio for the quarter decreased by about 1% as UV disinfection operations were refined.

WATER PLANT PARAMETERS	Previous (Q1 2016)			Current (Q2 2016)		
	January	February	March	April	May	June
<b>Water Treated</b>						
Finished (million gallons)	263.1	250.3	262.3	262.9	284.3	286.3
Finished (million gallons / day)	8.5	8.6	8.5	8.8	9.2	9.5
<b>Electrical Energy (WTF)</b>						
Consumption (Megawatt-hours)	587.3	536.3	569.9	560.1	592.9	645.6
MWH / million gallons produced	2.23	2.14	2.17	2.13	2.09	2.25
<b>Turbidity</b>						
Lake (NTU)	10.4	2.9	8.0	17.1	8.3	10.6
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%
<b>Water System Microbial Quality</b>						
Total Coliform Samples	81	81	82	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
<b>Disinfectant Contact Time</b>						
Minimum CT Ratio Required	1.0	1.0	1.0	1.0	1.0	1.0
Minimum CT Ratio Achieved	6.4	7.7	7.9	1.8	2.5	4.0
<b>Hardness</b>						
Lake Total / Calcium (mg/L)	209/119	217/117	204/118	200/109	187/108	185/100
Finished Total / Calcium (mg/L)	111/26	110/30	108/26	102/21	97/16	95/10
<b>Finished Water Quality</b>						
Total Chlorine (mg/L)	2.10	2.23	1.84	1.80	1.75	1.74
pH	8.5/8.8	8.7/8.9	8.5/8.8	8.5/8.8	8.3/8.8	8.3/9.0
Water Temperature (Degrees F)	33.6	34.3	36.9	43.5	58.1	71.1
Fluoride (mg/L)	0.70	0.70	0.70	0.68	0.67	0.69
Orthophosphate (mg/L)	0.69	0.69	0.67	0.70	0.74	0.72

### 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 and DBPR2 sampling requirements. Support was provided to consecutive customers with shipping of DBPR2 samples.

### **Safety**

- WTF Safety programs were maintained by completing scheduled safety inspections. There were no significant incidents to report.
- Water Treatment Facility staff completed annual respirator fit testing.

### **Operations**

- Matthias Elevated Tower was cleaned and inspected during the quarter. No major maintenance items were identified and the tower was returned to service.
- The Air Relief Valves associated with the Lime Treatment Residuals force main were replaced in a joint effort with DPW and AFD.
- The backup generators were upgraded to include emissions control equipment bringing them into compliance with air emissions standards and WPPI stand-by generation contract requirements.

### **RUPIP**

- Two UV Disinfection reactors were in continuous service during the quarter.

### **Softener Recoating Project**

- #4 Softener recoating and new fiberglass weir installation was completed during the quarter.
- Work on #3 Softener is underway with completion expected in August 2016.

### **Glendale Water Tower**

- Work progressed on schedule during the quarter as weather permitted.
- The bowl was raised into position during the quarter.
- Final completion is expected late summer 2016.

### **Staffing & Training**

- All Water Treatment Facility vacancies have been filled.