

**Appleton Water Treatment Plant  
Operations Synopsis  
April, May, and June 2013**

**Summary**

All produced water met Wisconsin Department of Natural Resources (WDNR) and Safe Drinking Water Act (SDWA) Standards during the quarter. The following table summarizes selected water production and quality performance metrics for the current and previous reporting periods.

WATER PLANT PARAMETERS	Previous (Q1)			Current (Q2)		
	January	February	March	April	May	June
<b>Water Treated</b>						
Finished (million gallons)	260	240	252	242	273	263
Finished (million gallons / day)	8.4	8.1	8.0	8.1	8.8	8.8
<b>Electrical Energy (WTF)</b>						
Consumption (Megawatt-hours)	636.9	539.1	583.9	511.8	544.2	526.1
MWH / million gallons produced	2.45	2.25	2.32	2.11	1.99	2.00
<b>Turbidity</b>						
Lake (NTU)	6.2	3.9	3.8	11.9	11.4	10.5
Finished (NTU)	0.03	0.03	0.02	0.02	0.02	0.02
Finished (<0.1 NTU standard)	100%	100%	100%	100%	100%	100%
<b>Water System Microbial Quality</b>						
Total Coliform Samples	81	81	81	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	1.08	7.57	2.73	1.82	1.94	1.79
<b>Hardness</b>						
Lake Total / Calcium (mg/L)	204/99	199/99	206/107	207/111	185/98	180/93
Finished Total / Calcium (mg/L)	109/50	98/39	98/42	102/42	97/28	90/21
<b>Finished Water Quality</b>						
Total Chlorine (mg/L)	2.29	2.18	2.19	2.25	2.23	2.13
pH	8.8/9.2	8.8/9.2	8.8/9.1	8.8/9.2	8.8/9.2	8.7/9.2
Water Temperature (Degrees F)	34.9	35.4	37.4	39.2	56.5	69.3
Fluoride (mg/L)	0.76	0.75	0.73	0.75	0.74	0.73
Orthophosphate (mg/L)	0.64	0.74	0.68	0.70	0.73	0.75

**Laboratory**

- In support of plant operations, staff conducted successful analyses according to method protocols for all parameters including pH, turbidity, alkalinity, hardness, free and 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 completed quarterly sampling for disinfection by-product rule monitoring in coordination with wholesale water customers (DBPR-2).

## Safety

- WTF Safety programs were maintained by completing monthly safety meetings and all inspections. There was one minor incident in May in the laboratory where first aid was self-administered.

## Water Plant Projects

- **RUPIP:** The Regulatory Upgrade and Process Improvement Project (RUPIP) work continued apace during the quarter.
  - Additional design meetings were conducted by the Engineer during the quarter. Topics included SCADA standards, UV disinfection, lime and ammonia feed systems, dual-media filtration modifications, and disinfection contact basin modifications.
  - Plant staff began informal demonstration testing of the GAC Filters to meet more stringent effluent turbidity goals. Testing objectives included simulated operations to accommodate expected construction sequencing, increased hydraulic loadings, and identification of potential issues with increased backwash frequencies.
  - The evaluation of Proposals and Statements of Qualifications for pre-selection of a UV Disinfection System was completed. Based on life-cycle costs and other factors, the Calgon UV system was selected.
  - SCADA system integration services were incorporated into the engineer's scope of work via contract amendment. This approach streamlines this portion of the project reducing costs and expediting implementation.
  - The pre-design report was submitted by the engineer in April. Changes and comments will be incorporated in the 60% design submittal which is expected from the engineer in early July.
- **Membrane Operations:** All membranes were transitioned to "single pass" mode. The effects of this change can be seen in the Electrical Energy Consumption metric (MWH consumed / million gallons produced). The average for this metric fell by over 13%, quarter-on-quarter.
- **PRV:** The design for the Linwood/Reeve PRV station is about 90% complete. Construction has been re-scheduled for spring 2014 to avoid creating congestion during normal school months and related activities. The station will facilitate remote monitoring and control of water movement between the Main and Ridgeway Pressure Zones.
- **PAC Fire Monitoring & Suppression:** The contract for project engineering services was awarded to Donohue. Design work is expected to commence in the third quarter.

## Staffing

- Relief Operator Brian Kreski accepted a promotion to Environmental Programs Coordinator in the Wastewater division. The position will be refilled.
- Relief Operator Adam Smith resigned to accept a similar position. The position will be refilled.