Appleton Water Treatment Plant
Operations Synopsis
October, November, December 2014

Summary

The following table summarizes 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 decreased by about 12% consistent with reduced fall/winter demand. Average raw water turbidity decreased significantly during the quarter as Lake Winnebago iced over. Average purchased electrical energy consumption was above normal during the month of December due to functional testing of newly installed UV reactors. CT ratios were reduced during November and December due to RUPIP construction activities and lower water temperatures. Distribution system lead and copper sample results were received indicating levels well below EPA action and maximum contaminant level goals.

WATER PLANT PARAMETERS	Previous (Q3)			Current (Q4)		
	July	August	September	October	November	December
Water Treated						
Finished (million gallons)	297	291	265	251	246	249
Finished (million gallons / day)	9.6	9.4	8.8	8.1	8.2	8.0
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	608.0	612.9	548.6	516.8	513.2	544.9
MWH / million gallons produced	2.05	1.68	2.07	2.06	2.08	2.19
Turbidity						
Lake (NTU)	39.9	44.3	36.5	24.4	28.1	5.5
Finished (NTU)	0.03	0.02	0.03	0.03	0.04	0.03
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
Water System Microbial Quality						
Total Coliform Samples	81	81	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Disinfectant Contact Time						
Minimum CT Ratio Required	1.0	1.0	1.0	1.0	1.0	1.0
Minimum CT Ratio Achieved	2.50	2.62	3.54	2.30	1.29	1.28
Hardness						
Lake Total / Calcium (mg/L)	167/88	164/89	179/95	180/96	193/95	195/103
Finished Total / Calcium (mg/L)	85/18	87/16	91/18	94/13	106/26	109/28
Finished Water Quality						
Total Chlorine (mg/L)	2.15	2.18	2.15	1.93	2.16	2.14
pH	8.5/9.2	8.7/9.2	8.6/9.1	8.4/9.0	8.3/9.2	8.4/8.8
Water Temperature (Degrees F)	73.4	74.1	67.3	54.7	38.7	34.2
Fluoride (mg/L)	0.70	0.66	0.76	0.79	0.78	0.78
Orthophosphate (mg/L)	0.84	0.84	0.71	0.70	0.64	0.73

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.
- Completed another round of Disinfection Byproducts Rule 2 (DBPR2) sampling and provided technical support to wholesale water customers sampling activities.
- Communicated lead and copper sampling results to customers that participated in the lead and copper monitoring program. Results indicated continued compliance with EPA standards.

Safety

WTF Safety programs were maintained by completing scheduled safety meetings and all inspections. There were no significant incidents to report. Technical staff continues to evaluate requirements, protocols, and supporting personal protective equipment (PPE) for the handling and use of aqua ammonia.

Operations

- Completed transition to the WDNR's new on-line system for monthly operations reporting.
- The 5-year regulatory inspection of the Lindbergh Standpipe was completed with no major deficiencies identified.
- Completed the annual calibration and inspection of the Waverly Sanitary District sanitary sewer billing meter. The meter accuracy was found to be within guidelines.

Water Plant Projects

RUPIP: The Regulatory Upgrade and Process Improvement Project made the following major progress during the quarter:

- #3 High Density Lime System was installed and is undergoing testing along with continued testing of the previously installed #4 system.
- Completed piping work associated with the new filter aid polymer system.
- The UV reactors were installed and functionally tested.
- SCADA system control software was installed and testing was begun.
- #2 CT Basin work was completed.

PAC Fire Suppression: Construction activities have begun to install permanent carbon dioxide gas piping, rerouted silo venting, and gas monitoring instrumentation with completed construction targeted for the second quarter of 2015.

Distribution System Projects

Glendale Water Tower: A preliminary design report was submitted for review by staff. Construction is expected to be complete in 2016.

Lindbergh Mixing Evaluation: A recommendation to install active mixing was submitted and accepted with procurement and installation expected in 2015.

#3 PRV: Construction of the new PRV station was completed and functional testing begun. Full commissioning and training is expected for the first quarter of 2015.

Staffing & Training

- Water Plant Operator Dan Trewartha retired during the quarter.
- Former Water Plant Operator Dave Kelter was rehired to fill the Water Plant Operator vacancy.
- Multiple training sessions were conducted to familiarize staff with the UV Disinfection equipment.
- Performance Evaluations were completed for all staff.