

**Appleton Wastewater Treatment Plant
Synopsis
April 2016 - June 2016**

Wastewater Treatment Program

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met all Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits including carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), pH, phosphorous, and ammonia. (See Table 1). The plant maintained good treatment and a healthy microbiological population with a sludge retention time of eight days. Dewatering processes functioned well and converted 12.71 Million Gallons (MG) of primary digested sludge to biosolids.

Table 1 – Wastewater Influent / Effluent Treatment Data

Characteristic	April 2016			May 2016			June 2016		
	Influent		Percent	Influent		Percent	Influent		Percent
AWWTP Flows (MG)									
Industrial Flow	52.4		10.6%	49.2		13.5%	50.3		12.3%
Domestic Flow	442.7		89.4%	316.0		86.5%	359.2		87.7%
Total Flow	495.1			365.2			409.5		
Pollutant Loadings (lbs)	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	829,936	7,395	99.1%	797,975	10,947	98.6%	840,294	11,793	98.6%
TSS	1,729,730	4,961	99.7%	1,653,488	6,349	99.6%	1,715,660	6,338	99.6%
Phosphorous	16,329	387	97.6%	15,358	805	94.8%	15,181	955	95.7%
Ammonia	49,077	1,347	97.3%	61,421	2,196	96.4%	54,709	2,705	95.1%

Work Completed:

- 19,320 gallons of spent sulfuric acid (i.e. ferrous sulfate) was used for phosphorus removal during the reporting period. The chemical cost savings for using ferrous sulfate was approximately \$13,910. As part of the Phosphorous Treatment Optimization study, 12,450 gallons of ferric chloride was purchased and fed at a cost \$8,960 in an effort to evaluate chemical removal strategies.
- Monthly effluent ammonia removal averaged 96.3% through the three month period. The plant average effluent concentration for the three month period was 0.58 mg/L. This is in compliance with the ammonia limit for the time period.
- AWWTP mechanical staff and managers were notified of and responded to a Sanitary Sewer Overflow (SSO) on April 5, 2016, when a contractor struck an unmarked sewer lateral downstream from the Lawe St. lift station. With cooperation of Neenah Papers, City staff, and the contractor, repairs were made in a timely manner which greatly reduced the volume of the SSO.

Work in Progress:

- **Digester Improvements Project:** August Winter and Sons general contractor started work in early April. AWWTP staff worked with the contractor to isolate and purge digester gas lines for piping and valve installation. Structure cleaning and painting and fabric cover seam sealing was completed on schedule. Equipment start-up and training is set for mid-July, and it is anticipated that the project will be completed before August 1st.

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- **Scarlet Oak Lift Station Improvement Project:** New pump and control panel installation was accomplished in June, with AWWTP mechanical staff attending equipment start-up and training. McMahon engineers have generated a project punch list which the contractor should complete before August 1st.

Regulatory Summary

- Monthly Discharge Monitoring reports for April, May and June were filed electronically on time for regulatory compliance. The 2016 2nd quarter short form was also submitted.
- Plant management staff reviewed the language in the proposed Wisconsin Pollution Discharge Elimination System (WPDES) discharge permit. Comments were forwarded to WDNR staff for their review and comment.

Laboratory Program

- Program objectives for regulatory and process sampling and analysis were met including results for the Discharge Monitoring Report (DMR) and Health Department pool testing program.
- Lab personnel completed the analysis of Double Blind Proficiency samples for laboratory recertification.
- Lab staff completed first – half compliance monitoring sampling and pretreatment monitoring sampling to comply with 2016 requirements. They also aided operations staff in preparing for chlorine residual testing during the disinfection season which started May 1st.
- Lab and operations staff are working cooperatively to implement a new probe for BOD analysis.

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EFFLUENT QUALITY SUMMARY

April 2015 – June 2016

<i>Effluent Parameter:</i>	<i>CBOD mg/L</i>	<i>TSS mg/L</i>	<i>Total Phosphorus mg/L</i>	<i>Ammonia-Nitrogen mg/L</i>	<i>Chlorine Residual mg/L</i>	<i>Fecal Coliform Colonies/ 100 ml</i>	<i>pH s.u.</i>
<i>WPDES LIMITS:</i>	<i>25 mg/L monthly avg.</i>	<i>30 mg/L monthly avg.</i>	<i>1 mg/L monthly avg.</i>	<i>10 mg/L monthly avg.</i>	<i>0.037 mg/L daily limit</i>	<i>400 col/100ml geom. mean</i>	<i>6.0 - 9.0 daily limit</i>

2015

April	3	4	0.11	0.51	NA	NA	7.0/7.2
May	3	2	0.19	0.31	<0.01	11	7.1/7.4
June	3	2	0.15	0.42	<0.01	17	7.1/7.6
July	3	2	0.26	0.20	<0.01	10	6.8/7.2
August	3	2	0.56	0.49	<0.01	12	7.0/7.4
September	3	2	0.33	0.69	<0.01	37	7.0/7.3
October	6	6	0.53	0.95	NA	NA	7.1/7.2
November	2	3	0.45	0.21	NA	NA	7.2/7.3
December	4	7	0.26	0.97	NA	NA	7.1/7.1

2016

January	2	2	0.16	0.24	NA	NA	7.1/7.4
February	3	4	0.20	0.95	NA	NA	6.9/7.2
March	3	2	0.12	0.86	NA	NA	7.2/7.4
April	2	1	0.10	0.32	NA	NA	7.4/7.6
May	4	2	0.27	0.66	<0.01	2	7.0/7.4
June	3	2	0.28	0.75	<0.01	10	7.0/7.4

YEAR 2016 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A. & B Leist Trucking	\$ 118,437.13	\$124,789.23	\$ 140,298.77	\$ 138,987.23	\$ 104,492.67	\$114,404.27							\$ 741,409.30
Hickory Meadows	\$ 25,223.73	\$ 21,173.99	\$ 42,742.19	\$ 25,456.57	\$ 13,815.17	\$ 20,261.80							\$ 148,673.45
Jeff Waldvogel Trktr.	\$ 26,878.60	\$ 25,936.68	\$ 28,830.91	\$ 26,536.01	\$ 27,584.51	\$ 29,965.62							\$ 165,732.33
Waldvogel Trucking	\$ 2,103.06	\$ 2,944.38	\$ 2,743.41	\$ 3,093.38	\$ 2,100.87	\$ 2,039.84							\$ 15,024.94
2016 Total	\$ 172,642.52	\$174,844.28	\$ 214,615.28	\$ 194,073.19	\$ 147,993.22	\$166,671.53	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,070,840.02
2015 Total *	\$74,477.92	\$59,745.63	\$115,103.25	\$125,573.11	\$116,373.53	\$145,077.58	\$87,128.58	\$147,240.34	\$139,098.92	\$106,381.19	\$141,165.31	\$ 209,311.16	\$ 1,466,676.52

* Tier Rate Structure increase effective July 1, 2015.

Date: July 14, 2016
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 Utilities Committee