

**Appleton Wastewater Treatment Plant  
Synopsis  
January 2014 - March 2014**

**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 nine days. Dewatering processes functioned well and converted 13.66 Million Gallons (MG) of primary digested sludge to biosolids.

**Table 1 – Wastewater Influent / Effluent Treatment Data**

Characteristic	January 2014			February 2014			March 2014		
	Influent		Percent	Influent		Percent	Influent		Percent
<b>AWWTP Flows (MG)</b>									
Industrial Flow	63.0		23.9%	62.7		23.6%	63.3		15.9%
Domestic Flow	200.9		76.1%	202.8		76.4%	335.6		84.1%
Total Flow	263.9			265.5			398.9		
<b>Pollutant Loadings (lbs)</b>									
	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	806,089	17,981	97.8%	799,664	11,027	98.6%	808,735	13,100	98.4%
TSS	1,451,319	10,921	99.2%	1,596,250	10,174	99.4%	1,552,826	9,815	99.4%
Phosphorous	16,703	1,402	91.6%	16,708	1,303	98.2%	16,333	1,012	93.8%
Ammonia	62,216	44,765	28.0%	60,921	21,328	65.0%	56,525	6,658	88.2%

**Work Completed:**

- 22,975 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 \$16,540. To meet phosphorous discharge limits, 4,250 gallons of ferrous chloride was purchased and fed during the reporting period at a cost \$3,060.
- Monthly effluent ammonia removal averages gradually improved through the three month period. Removal efficiencies suffered until the air piping re-route project was completed and the aeration tank was returned to service in mid January. The plant was in compliance with the ammonia limit for the months of February and March.

**Work in Progress:**

- **Fine Screen Replacement Project:** Staff provided comments to Strand Associates engineers on the drawings and specs for the Fine Screen Replacement Project. It is anticipated that the project will be released for bids in April.
- **Pretreatment Program Local Limit Evaluation (LLE) Project:** The final report from Strand Associates engineers was delivered in late March. Implementation of recommendations will include limit modifications and notification to and discussions with WWTP industrial users.

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- **AWWTP Evaluation of Phosphorus Treatment Optimization and TMDL Compliance Project:** Efforts continued with polymer dosing demonstrations conducted by engineers from CH2M Hill & McMahon. Continuing discussions, an engineer's technical report and evaluation of plant optimization alternatives are expected to lead to chemical feed trials during the coming months.
- **Utility Air Emissions Control Project:** S.E.H provided a draft Type A Air Pollution Registration Operation Permit Application for the AWWTP. This document was finalized and submitted to the WDNR. S.E.H. also compiled the 2013 Air Emission Inventory and submitted to the DNR during the reporting period. This report is an annual requirement under NR 438 now that the AWWTP has obtained its Air Pollution Operation Permit.
- **Personnel:** January saw the resignation of two staff members from the AWWTP. Managers have been working with HR to recruit qualified replacements. It is anticipated that the positions will be filled by the end of April.

**Regulatory Summary**

- Monthly Discharge Monitoring reports for January, February and March were filed electronically on time for regulatory compliance. The 2014 1<sup>st</sup> quarter short form was also submitted.

**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 will be conducting compliance monitoring sampling and pretreatment monitoring sampling to comply with 2014 requirements. They will also aid operations staff in preparing for chlorine residual testing during the upcoming disinfection season.
- Lab and operations staff continued to support the TMDL project polymer feed demonstration through chemical feed adjustments and further sample collection and analysis. They also supported engineering staff in bench testing and treatment alternative trials.

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**EFFLUENT QUALITY SUMMARY  
January 2013 – March 2014**

<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>

**2013**

January	6	6	0.60	0.73	NA	NA	7.1/7.4
February	7	5	0.54	0.43	NA	NA	7.1/7.3
March	7	8	0.56	0.51	NA	NA	6.9/7.3
April	3	4	0.18	0.85	NA	NA	7.0/7.3
May	4	3	0.33	0.89	<0.01	9	7.1/7.4
June	4	3	0.35	1.85	<0.01	9	7.1/7.3
July	3	1	0.43	0.33	<0.01	21	7.3/7.6
August	3	2	0.60	0.58	<0.01	7	7.2/7.5
September	3	3	0.57	1.79	<0.01	22	7.3/7.6
October	3	4	0.65	1.21	NA	NA	7.2/7.8
November	4	2	0.28	0.62	NA	NA	7.5/7.7
December	6	4	0.57	3.38	NA	NA	7.2/7.5

**2014**

January	8	5	0.63	20.08	NA	NA	7.5/7.6
February	5	5	0.58	9.56	NA	NA	7.1/7.4
March	4	3	0.34	2.21	NA	NA	6.9/7.1

**YEAR 2014 RECEIVING STATION REVENUE**

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 14,313.06	\$ 14,872.60	\$ 57,727.42										\$ 86,913.08
CSR & Sons	\$ -	\$ -	\$ -										\$ -
Den-Bec Inc.	\$ -	\$ -	\$ -										\$ -
Hickory Meadows	\$ 9,439.68	\$ 5,582.53	\$ 10,391.43										\$ 25,413.64
Jeff Waldvogel Trkg.	\$ 12,124.46	\$ 12,509.84	\$ 15,168.38										\$ 39,802.68
K.A. Services	\$ -	\$ -	\$ -										\$ -
Saximax	\$ -	\$ -	\$ -										\$ -
Schwinn Trucking	\$ -	\$ -	\$ -										\$ -
Van's Septic Service	\$ -	\$ -	\$ -										\$ -
Veolia	\$ -	\$ -	\$ -										\$ -
Waldvogel Trucking	\$ 3,345.74	\$ 3,190.94	\$ 3,209.25										\$ 9,745.93
<b>2014 Total</b>	\$ 39,222.94	\$ 36,155.91	\$ 86,496.48	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 161,875.33
<b>2013 Total</b>	\$ 46,492.59	\$ 47,168.51	\$ 65,744.46	\$ 84,936.86	\$ 50,541.77	\$ 52,141.61	\$ 49,581.40	\$ 45,491.61	\$ 49,009.86	\$ 60,183.00	\$ 57,203.91	\$ 35,438.28	\$ 643,933.86

Date: April 11, 2014  
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