

**Appleton Wastewater Treatment Plant
Synopsis
October 2013 - December 2013**

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 11.14 Million Gallons (MG) of primary digested sludge to biosolids.

Table 1 – Wastewater Influent / Effluent Treatment Data

Characteristic	October 2013			November 2013			December 2013		
	Influent		Percent	Influent		Percent	Influent		Percent
AWWTP Flows (MG)									
Industrial Flow	64.5		22.0	56.6		15.1	55.6		18.6
Domestic Flow	228.1		78.0	317.9		84.9	242.7		81.4
Total Flow	292.6			374.5			298.3		
Pollutant Loadings (lbs)									
	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	992,640	6,348	99.4	751,730	11,491	98.5	756,491	14,274	98.1
TSS	2,749,816	10,379	99.6	1,293,445	7,557	99.4	1,335,494	9,653	99.3
Phosphorous	18,212	1,583	91.3	16,867	862	94.9	15,780	1,391	91.2
Ammonia	68,426	2,974	95.7	64,090	2,250	96.5	63,680	8,254	87.0

Work Completed:

- 35,545 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 \$26,660. To meet phosphorous discharge limits, 810 gallons of ferrous chloride was purchased and fed during the reporting period at a cost of \$610.
- Monthly effluent ammonia removal averaged 93.1% . The monthly average concentration for the three months was 1.74 mg/l. These concentration results are in compliance with the ammonia limit 18.0 mg/L for the three month period.
- An alternative re-route of large diameter pipe runs was completed for #2 Aeration Tank. The project piping serves to provide oxygen to the microlife in the tank. The tank will be returned to service in early 2014.
- On December 8th, a water main break occurred on the incoming private service to the WWTP. The break affected most processes and plumbing systems due to a loss of pressure. The plant processes were put on reclaimed final effluent in order to minimize damage to equipment. Water distribution crews repaired the main break and operations returned to normal the following day.

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Work in Progress:

- **Fine Screen Replacement Project:** Engineering study was delivered by Strand Associates engineers and reviewed and discussed by staff. Some staff members attended the Water Environment Federation annual conference and talked to manufacturer's representatives and observed equipment options. A design meeting with the engineers and AWWTP staff was held on October 16th, and agreement was reached on equipment and process options. It is anticipated that the engineers will have drawings and specification documents completed by early 2014.
- **Pretreatment Program Local Limit Evaluation (LLE) Project:** Sampling was completed during November. It is anticipated that a final report will be delivered by Strand Associates engineers by early 2014.
- **AWWTP Evaluation of Phosphorus Treatment Optimization and TMDL Compliance Project:** Efforts continued with bench testing and polymer dosing demonstrations conducted by engineers from CH2M Hill & McMahon. Staff attended two workshops during which compliance options and methods were discussed and evaluated. Engineering staff reviewed plant data and are expected to present a technical report in early 2014.
- **Utility Air Emissions Control Project:** S.E.H. completed an evaluation of WWTP emissions sources and completed emissions modeling to determine compliance alternatives. Their findings and recommendations were compiled in a technical report that was presented to staff in December. The AWWTP will be moving forward with the permit application process in early 2014.

Biosolids Program

- Biosolids hauling to the pilot compost site at the Outagamie landfill was completed in mid October along with windrow construction. WWTP staff monitored compost temperatures daily through the end of the year.

Regulatory Summary

- Monthly Discharge Monitoring reports for October, November and December were filed electronically on time for regulatory compliance.
- The third quarter short form was also completed and submitted on time.

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 and operations staff supported the TMDL project polymer feed demonstration through sample collection and analysis.

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EFFLUENT QUALITY SUMMARY

October 2012 – December 2013

<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>4.4 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>

2012

October	2	3	0.57	0.17	NA	NA	7.1/7.5
November	3	4	0.70	0.10	NA	NA	7.2/7.5
December	5	10	0.73	0.39	NA	NA	7.1/7.5

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	7.2/7.1
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	7.2/7.6
September	3	3	0.57	1.79	<0.01	22	7.3/7.6
October	3	4	0.65	1.21	NA	NA	7.3/7.7
November	4	2	0.28	0.62	NA	NA	7.4/7.7
December	6	4	0.57	3.38	NA	NA	7.1/7.5

YEAR 2013 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A. & B Leist Trucking	\$ 1,423.16	\$ 13,577.59	\$ 13,692.12	\$ 19,334.07	\$ 15,189.99	\$ 9,810.38	\$ 13,286.86	\$ 12,274.69	\$ 13,076.27	\$ 13,632.92	\$ 11,804.30	\$ 12,534.74	\$ 149,637.09
CSR & Sons*	\$ 185.33	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 185.33
Den-Bec Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hickory Meadows	\$ 13,533.61	\$ 9,904.51	\$ 21,369.30	\$ 47,757.74	\$ 17,311.90	\$ 21,191.41	\$ 16,772.54	\$ 14,014.97	\$ 17,744.91	\$ 28,125.65	\$ 28,876.20	\$ 9,355.46	\$ 245,958.20
Jeff Waldvogel Trkg.	\$ 14,062.23	\$ 12,620.09	\$ 12,404.72	\$ 11,619.37	\$ 12,857.59	\$ 14,647.31	\$ 15,621.80	\$ 13,527.03	\$ 12,361.07	\$ 13,679.42	\$ 13,281.16	\$ 9,957.09	\$ 156,638.88
KA Services *							\$ -	\$ 2,125.11	\$ 2,222.62	\$ 1,042.21	\$ 237.47	\$ -	
Sanimax	\$ 525.29	\$ 97.02	\$ -	\$ 264.20	\$ 246.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,133.09
Schwind Trucking	\$ 2,682.83	\$ 2,391.01	\$ 3,961.01	\$ 2,895.05	\$ 1,892.05	\$ 1,590.95	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,412.90
Van's Septic Service	\$ 11,210.00	\$ 5,657.20	\$ 11,133.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,000.80
Veolia	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Waldvogel Trucking	\$ 2,870.14	\$ 2,921.09	\$ 3,183.71	\$ 3,066.43	\$ 3,043.66	\$ 4,901.56	\$ 3,900.20	\$ 3,549.81	\$ 3,604.99	\$ 3,702.80	\$ 3,004.78	\$ 3,590.99	\$ 41,340.16
2013 Total	\$ 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
2012 Total	\$ 35,782.69	\$ 36,509.44	\$ 56,782.88	\$ 45,246.16	\$ 68,295.22	\$ 48,075.42	\$ 52,208.50	\$ 56,132.02	\$ 44,427.19	\$ 104,378.71	\$ 67,703.78	\$ 51,357.71	\$ 666,899.72

*New Hauler for 2013

Date: January 15, 2014
 Copies: K. Rindt (via email)
 C. Shaw (via email)
 B. Kreski
 Utilities Committee