Mississippi Mills Wastewater Treatment Plant
Annual Report 2013

Please find below the **2013 Annual Performance Report** and other supporting documents for the **Mississippi Mills Wastewater Treatment Plant.** This report is a requirement of the Environmental Compliance Approval (ECA) (formerly known as the certificate of approval (CofA)**)** Number 2425-8DXR5U (issued February 16, 2011). The ECA allotted of the operation of both the lagoon treatment facility as well as the new wastewater treatment plant (WWTP). The new WWTP was brought into service on July 11, 2012.
This 2013 report is the first report based on treatment entirely from the new WWTP.

Summary:

Flow Exceedances:

There were no flow exceedances.

Bypass Events:

There was one bypass event due to equipment failure.

Overflow Events:

There were no overflow events

Spills:

There were two small sludge spills from a bio-filter line.

Effluent Compliance Limits

Parameter	Compliance Limit Met?		Treatment Objectives Met?	
	Concentration	Loadings	Concentration	Loadings
cBOD	YES	YES	YES	YES
Suspended Solids	**NO**	YES	**NO**	YES
Total Phosphorus	YES	YES	**NO**	**NO**
Total Ammonia	YES	YES	YES	YES
E. Coli (geo-mean)	N/A	N/A	YES	N/A

Flow Assessment:

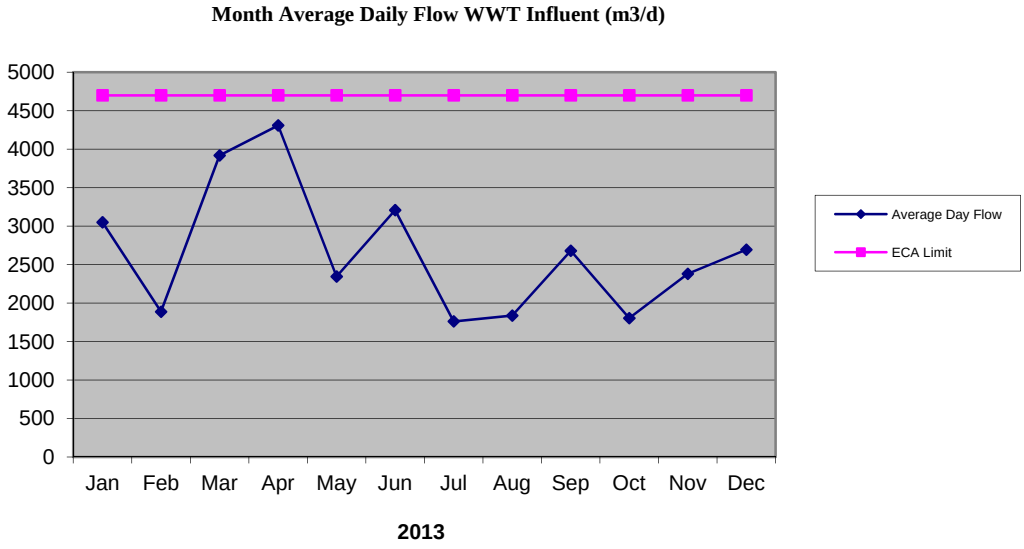
WWTP Influent Flow Limits:

The WWTP ECA approves:

- A design average daily treatment capacity of 4,700 m^3/d and a peak treatment capacity of 14,100 m^3/d.

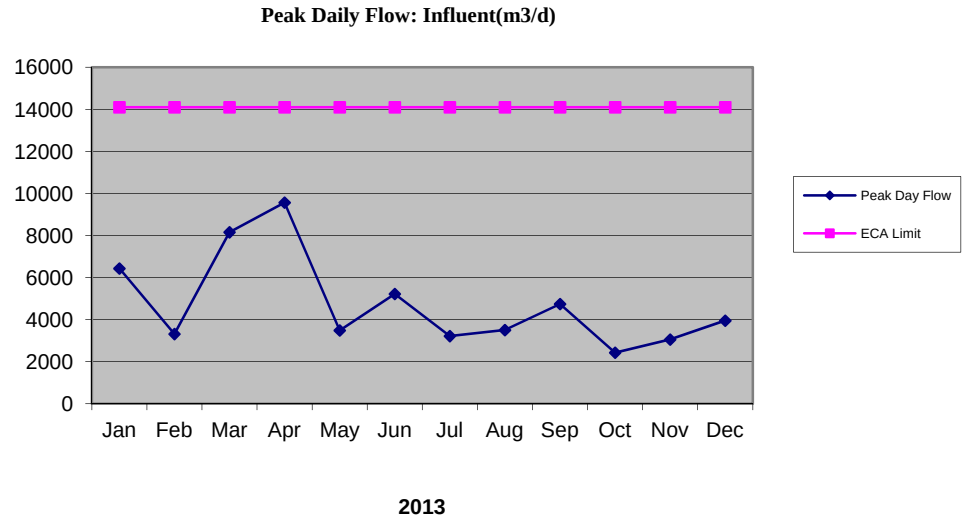
Average Day Flow:
The ECA limits the annual average day volume to 4700 m^3/d. With a 2013 annual average day flow of 2657 m^3/d, the new WWTP is at **56.5% capacity**.

The chart below depicts the month average day flow from the Gemmill's Bay Pumping Station.



Peak Day Flow:
The ECA limits the volume of wastewater pumped from the Gemmill's Bay pumping station to WWTP to 14,100 m^3/d. The peak raw sewage influent flow was 9566 m3/d therefore the compliance limit has not been exceeded.

The chart below depicts the peak flow rates from the Gemmill's Bay Pumping Station.



Capacity Assessment:

Year	2010	2011	2012 Jan - Jul (Lagoon)	2012 Jul– Dec (WWTP)	2013
Average Day Flow (m^3/d)	2770	2541	2380	1687	2657
ADF: Design Capacity (m^3/d)	3020	3020	3020	4700	4700
% of capacity, based on average daily flows	**91.7**	**84.1**	**78.8**	**35.9**	**56.5**
Maximum Day Flow (m^3/d)	13692	14989	16311	4901	9566

(a) A summary and interpretation of all monitoring data and a comparison to the effluent limits including an overview of the success and adequacy of the *Works*

Effluent Limits:

The requirements of the ECA for the treatment system are as follows:

Parameter	Effluent Limits	
	Concentration	Waste Loading
$cBOD_5$	25.0 mg/L	117.5 kg/d
Suspended Solids	15.0 mg/L	70.5 kg/d
Total Phosphorus		
Sep 01 – May 30	0.3 mg/L	1.41 kg/d
Jun 01 – Aug 31	0.2 mg/L	0.94 kg/d
Total Ammonia		
Sep 01 – Apr 30	15 mg/L	70.5 kg/d
May 01 – Aug 31	5 mg/L	23.5 kg/d
pH of the effluent maintained between 6.0 to 9.5 inclusive, at all times.		

*Based on monthly average concentration and monthly average loading

Effluent Objectives

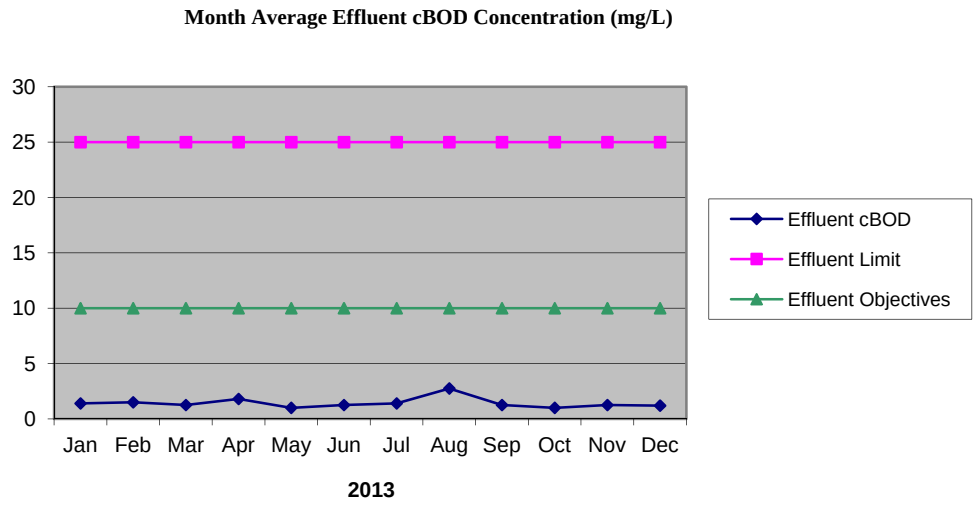
The requirements of the ECA for the treatment system are as follows:

Parameter	**Effluent Objectives**	
	Concentrations	Loading
$cBOD_5$	10.0 mg/L	47 kg/d
Suspended Solids	10.0 mg/L	47 kg/d
Total Phosphorus	0.15 mg/L	0.71 kg/d
Total Ammonia		
Sep 01 – Apr 30	12 mg/L	56.4 kg/d
May 01 – Aug 31	3.0 mg/L	14.1 kg/d
E. Coli	100 organisms per 100 millilitres (Monthly geometric Mean Density)	Not applicable

Please find attached a copy of OCWA's Performance Assessment Report (PAR) - this report summarizes flow and chemical analysis for samples taken throughout the year. A report for effluent pH, temperature and unionized ammonia is attached.

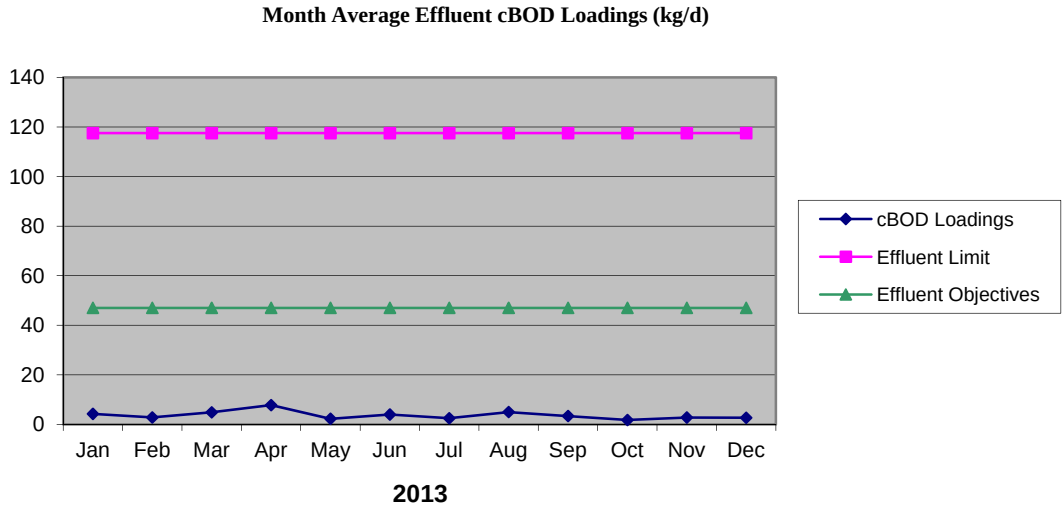
The ECA requires quarterly samples to be taken and analyzed for Acute Lethality. The effluent passed the requirements of these tests.
A report on Acute Lethality testing for the new WWTP is included. RBT = Rainbow Trout and DM = Daphnia Magna test results.

Effluent cBOD



Compliance Limit: The WWTP effluent met the compliance limits for cBOD effluent concentration.

Effluent cBOD Objectives: The WWTP effluent met the effluent objectives for cBOD effluent concentration.

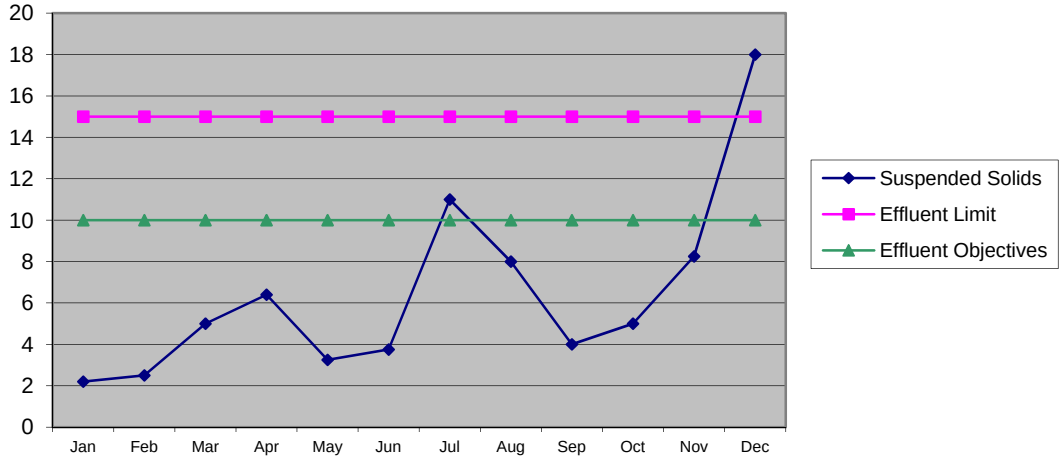


Compliance Limit: The WWTP effluent met the compliance limit for cBOD loadings.

Effluent Objectives: The WWTP effluent met the effluent objective for cBOD loadings.

Effluent Suspended Solids

Month Average Effluent Suspended Solids Concentration (mg/L)

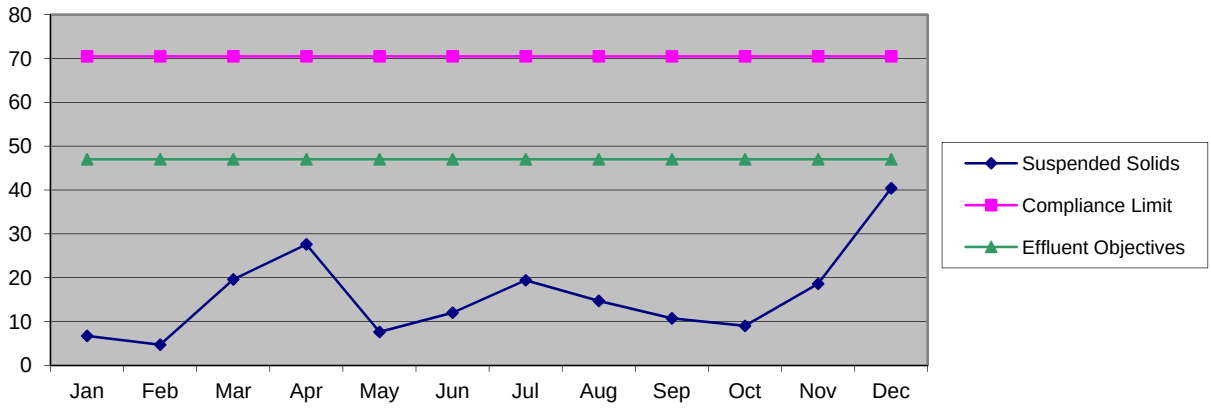


2013

Compliance Limit: The WWTP effluent failed to meet the compliance limit for effluent suspended solids concentration in December 2013.

Effluent Objectives: The WWTP effluent failed to meet the effluent objective for suspended solids concentration in July and in December 2013.

Month Average Effluent Suspended Solids Loading (kg/d)

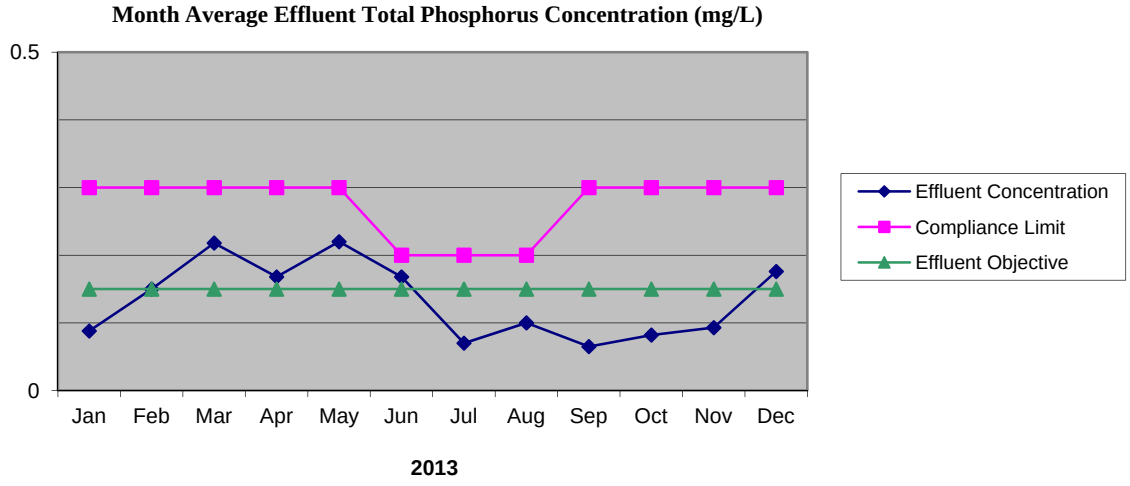


2013

Compliance Limits: The WWTP effluent met the compliance limit for total suspended solids loading.

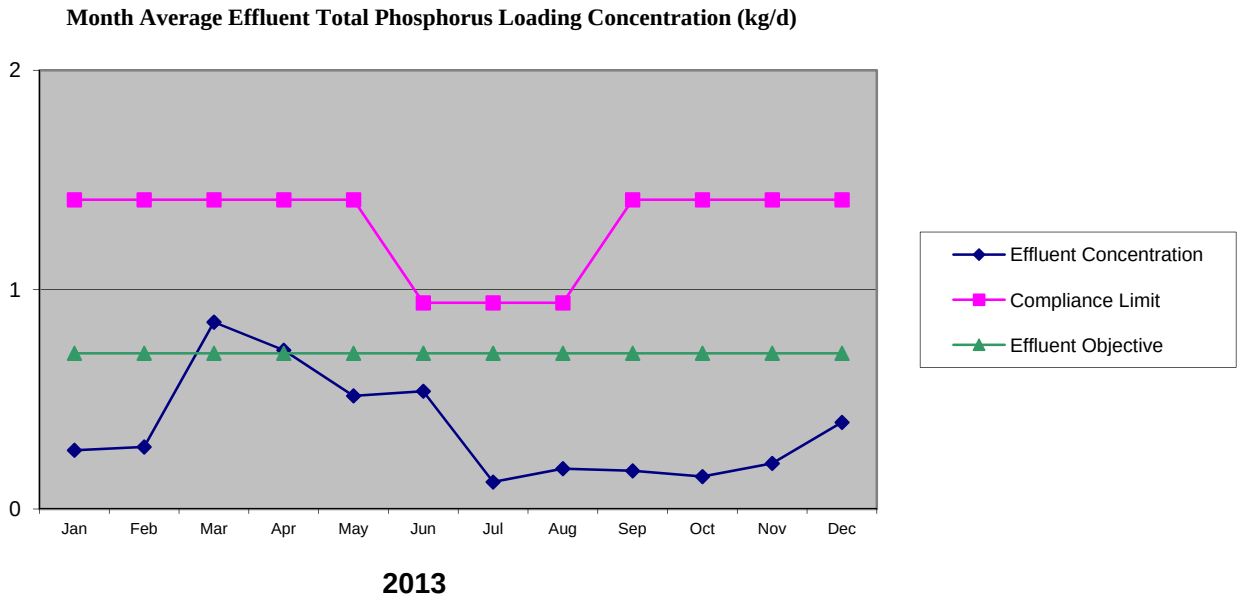
Effluent Objectives: The WWTP effluent met the total suspended solids loading requirement.

Effluent Phosphorus



Compliance Limits: The WWTP effluent met the Total Phosphorus treatment compliance limits.

Effluent Objectives: The WWTP effluent did not meet the Total Phosphorus treatment effluent objective in Mar, Apr, May, June and Dec.

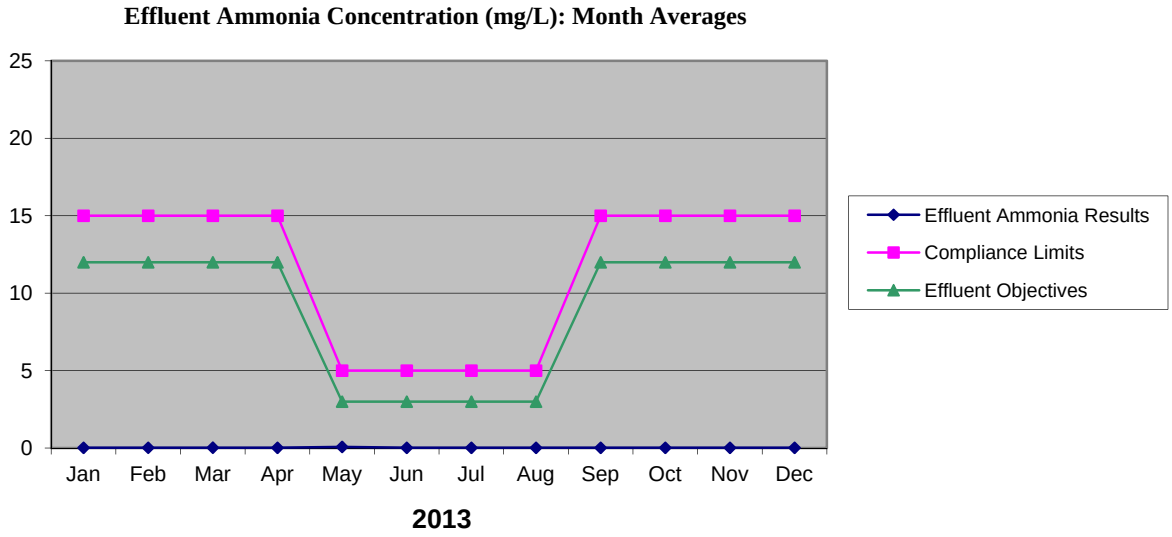


Compliance Limit: The WWTP effluent met the Total Phosphorus effluent loading compliance limit.

Effluent Objective: The WWTP effluent failed to meet the Total Phosphorus effluent loading objective in March and April.

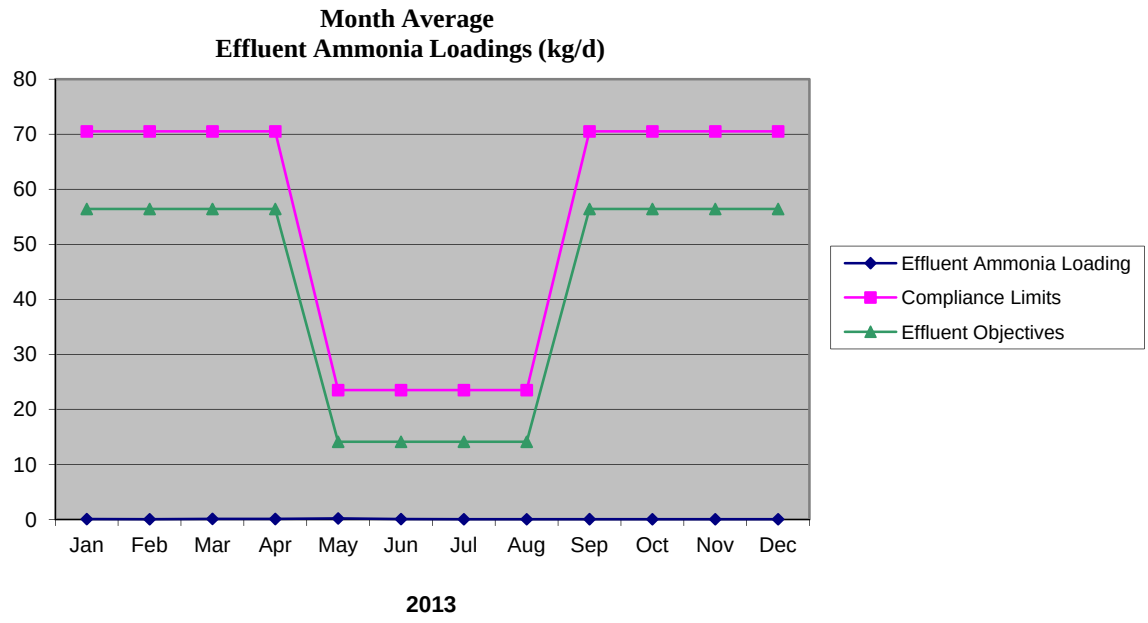
Please refer to section (b) below regarding a description of the operating problems encountered for phosphorus.

Effluent Ammonia Concentrations



Compliance Limit: The WWTP effluent met the total ammonia concentration compliance requirements.

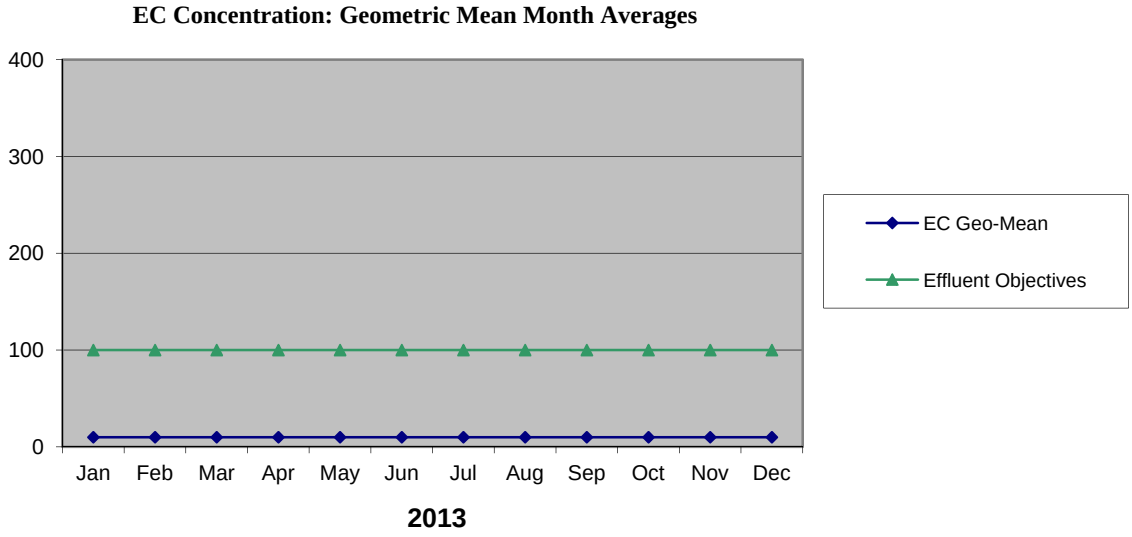
Effluent Objective: The WWTP effluent met the total ammonia concentration objectives.



Compliance Limit: The WWTP effluent met the total ammonia loading concentration compliance requirements.

Effluent Objective: The WWTP effluent met the total ammonia loading concentration objectives.

Effluent Bacteriological (Escherichia coli)



Compliance Limit: There is no compliance limit for this parameter.

Effluent Objective: The WWTP effluent met the bacteriological concentration objectives.

(b) A description of any operating problems encountered and corrective actions taken

Spring 2013: Controlling the effluent phosphors was especially challenging during the first winter of operation. Commissioning issues, like a frozen chemical feed line, combined with start-up concerns / issues of the new waste activated sludge thickening process (TWAS) and the new digestion (Autothermal thermophilic aerobic digestion – ATAD) process – this resulted with a higher that desirable amount of solids being held within the wastewater treatment process. When the sludge processing start-up issues were resolved, operators began processing the back-log of sludge. The additional phosphorus loading contributed from the sludge processing return streams was not anticipated.
Operators are learning to monitor these additional waste streams and to control the process based on conditions within the process. The purchase of laboratory equipment that will allow operators to closely monitor the phosphorus in various process streams. This information will allow operators to make adjustments in advance of any compliance concerns.

September:

Missed temperature reading – the ECA requires effluent temperature readings to be taken three times per week on alternating days. Those readings were not recorded for September 11 and 13.

Sludge (bio-filter) line blockage: Two separate, small spills were reported to MOE when staff members attempted to clear a blocked sludge line. The first occurred on September 19 (200 L) and the second spill occurred on September 24 (100 L).

October 20, 2013: during a planned power outage, the on-site generator at the Gemmill's Bay pumping station failed to start. The root cause was determined to be from a sudden failure of the charging system

for the starting battery. Additionally, the station control system and transfer switch also failed. Subsequent review indicated a history of failures with this specific type of charging system on other generators from the same manufacturer. From this the charging systems were changed out on both generator systems, at Gemmill's Bay and at the main sewage plant. Additionally improved alarming was added to indicate any future similar events.

December: the plant effluent failed to met the total suspended solids concentration unusually cold temperature froze the alum feed line and prevented proper chemical dosing.

(c) summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works

Maintenance Summary

OCWA: Mississippi Mills WWTP:

WO#	Completion Date	Comments
1516678	12/18/2013	Exterior lighting at some buildings needed to be replaced due to age. Due to age some fixtures will need to be replaced for security reasons.
2471350	01/23/2013	Confined space gas meter. Purchase of a unit on behalf of the municipality at no additional cost than the purchase price to take advantage of a multi unit order we are making for other areas and done so to seduce costs. Upon receipt, the unit will be handed over to town staff and training will be provided by supplier.
2471860	01/23/2013	Misc. hardware. Purchase of stainless steel bolts, washers and nuts to be added to stock and used/replaced as required when working on piping/valves etc at the sewage pumping stations.
2471861	01/23/2013	Purchase of replacement batteries for the PLC SCADA packs, alarm diallers and UPS`s used within the system
2471866	01/23/2013	Whitetail Ridge SPS Supply and install alarm dialer for new pumping station.
2882552	05/29/2013	SCADA control change for attenuation control. A change in the design was required for the control of the attenuation pumps. Added the ability to run on a timer cycle to ensure that plant was not overloaded.
2882558	05/29/2013	VPN switch. A new VPN switch was required to allow

WO#	Completion Date	Comments
		for proper communication to the Gemmill's Bay SPS.
2882569	10/16/2013	Septage receiving upgrade. Inlet piping for septage receiving and point for 1 1/2" cleaning hose.
2943005	10/02/2013	Boiler #2 burner replaced. Also acquired cleaning rods.
2943006	09/30/2013	Replace cracked compressor cooling tubes
2974560	11/18/2013	Cord and parts to make a cord whip for portable welder/generator. Require these parts and wire to make up a whip for use during power outages. This can be attached to the generator and hooked up to sewage pumping station like Robert St. SPS.
2977952	01/14/2014	Battery charger replacement and alarm modifications. For Gemmill's Bay and the Mississippi Mills DWS.
2993646	12/30/2013	Purchase a spare flame rod for makeup air units. Flame rod in stock.
3003899	01/06/2014	Replace PRV on Boiler #1

Gemmill's Bay sewage pumping station

WO#	Completion Date	Comments
2867165	01/21/2013	Replace compressor head at Island St SPS
2862494	04/30/2013	Vac truck services to clear debris from stations
2919313	07/30/2013	Emergency Vac Truck Service. Both pumps failed at Robert St SPS
2924976	08/19/2013	Emergency Vac Truck Service. Both pumps failed at Robert St SPS
2924977	09/17/2013	Vac truck services to clear debris from stations
2929490	08/23/2013	Vac truck services for Robert St SPS
2961437	01/10/2014	Replace VFD for Pump #1 Drive failed during power outage
2961438	10/11/2013	System control repair for Gemmill's Bay SPS
2974020	11/12/2013	Pump diagnostic for failed pump at Robert St SPS

Town of Mississippi Mills

System Details (End of 2013)

- Estimated Population Served – 5,350
- 2326 Residential and 287 Non Residential Accounts;
- Length of Distribution System – 34.80km (4.25km are new development / under warranty);
- Weighted Age of System = 42.2 Years

System Maintenance and Repairs

- Sewer Cleaning and CCTV work on approximately 7.2km of sanitary sewers in the Town's north east service quadrant bound by Main Street/Ottawa Street and the Mississippi River;
- Various manhole repairs on Almonte Street, Main Street and Bridge Street to address surface inflow;

Capital Investments / New Development

- Initiated Sludge Characterization Work for Lagoon Sludge – Geofirma
- Completed Detailed Designs / MOE Approvals for Spring Street Sanitary Pump Station Upgrade – Planned in 2014;
- Completed Detailed Designs / MOE Approvals for Spring Street and Clyde Street Trunk Sewer Upgrades – Planned in 2014;
- April 2013 – Approximately 200m of 200mm PVC sanitary sewers on Finner Court / Easement (Creekside Subdivision);

System Planning and Administration

- Feb 19/13 (Reso 63-13) – Town Council approves update to Water and Wastewater Financial Plan – Watson & Associates Economists Ltd.;
- March 19/13 (Reso 102-13) - Town Council approves the 2013 Water and Sewer Budget.
- March 19/13 - Town Council receives the 2012 Annual Report from OCWA for the Town's wastewater system as per requirements of the Ontario Water Resources Act (Reso 127-13);
- April 23/13 – Development Charges Bylaw is amended to include growth related water and sewer works identified within the 2012 Water and Wastewater Infrastructure Master Plan;
- Dec 17/13 (Reso 438-13) – Town Completes Asset Management Plan – Includes Linear Sanitary Sewers
- Dec 2013 – David Hoffmann – Wastewater Treatment Class II Renewal

Customer Requests

- 5 - Blocked/Partially Blocked Sewer Laterals (Private Plumbing Issue)
- 4 - Blocked/Partially Blocked Sewer Laterals (Public Lateral Repaired)
- 2 – Reports of Sewer Odour

(d) A summary of any effluent quality assurance or control measures undertaken in the reporting period

All sample analysis for compliance reporting are shipped to and analyzed by Exova of Canada, an accredited laboratory in Ottawa.

Quality Control & Compliance with Provincial Regulations

OCWA uses internal compliance auditing techniques by teams from within the organization but not from within the facility work team. OCWA operates the Mississippi Mills Wastewater Treatment Plant in accordance with provincial regulations. Here is how we do it:

- Use of Accredited Labs. Analytical tests to monitor your water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analyst(s) performing the test methods.

- Operation by Licensed Operators. The wastewater treatment plant is operated and maintained by the Ontario Clean Water Agency's competent and licensed staff. The mandatory licensing program for operators of drinking water facilities is regulated under the Ontario Water Resources Act (OWRA) Regulation 129/04. Licensing means that an individual meets the education and experience requirements and has successfully passed the certification exam.

- Sampling and Analytical requirements. OCWA follows a sampling and analysis schedule required by the ECA.

- Adherence to Ministry Guidelines and Procedures. To ensure the protection of the Public's health and operational excellence, OCWA adheres to the guidelines and procedures developed by the Ministry of Environment

(e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment

Ensuring the annual calibration of the flow meters is the responsibilities of OCWA's Instrumentation Technician. Attached is a copy of the annual calibration reports for review.

(f) A description of efforts made and results achieved in meeting the Effluent Objectives

Please refer to previous sections for information on effluent objectives for cBOD, Suspended Solids, Total Phosphorus, Ammonia and Bacteriological testing.

(g) A tabulation of the volume of sludge removed from the *Works* during the reporting period and a summary of the location to where the sludge was disposed

Sludge 388,000 kg of sludge were removed from the wastewater treatment facility and applied to agricultural land under the Nutrient Plan Submission ID 20811.

See the attached Biosolids customized report for details regarding sample analysis.

The facility is anticipating an increase in the amount of biosolids processed in 2014 as the facility is now accepting septage.

(h) A summary of any complaints during the reporting period and any steps taken to address the complaints

The operating authority did not receive any complaints for the wastewater treatment system. Please refer to the Maintenance section – Town of Mississippi Mills – Customer requests for

(i) A summary of all by-pass, spill or abnormal discharge events

Bypass Events: There was one (1) bypass event during this reporting period. In October approximately 205 m3 of raw wastewater was released to the Mississippi River due to equipment failure.
Attached are two reports (Day and Month reports) of the bypass event.

Spills – refer to previous section for sludge / bio-filter spill.

Abnormal discharge: As noted previously, there were several instances where the effluent quality failed to meet the requirements of the ECA objectives and one instance of an effluent limit being exceeded.

Septage Received: In June the plant started receiving septage. Between June and December 748 m3 (34 loads) of septage were received

List of Attachments

PARs: WWTP Performance Assessment Report
Customized Report: WWTP: Effluent pH, Temperature and Unionized Ammonia
Customized Report: WWTP Acute Lethality: Daphnia magna (DM) and Rainbow Trout (RBT)
Meter Calibration Reports
Biosolids Quality Report
Bypass / Overflow Daily Report: WWTP
Bypass / Overflow Month Report: WWTP

END

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon

From 01/01/2013 to 12/31/2013

Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)

	01/2013	02/2013	03/2013	04/2013	05/2013	06/2013	07/2013	08/2013	09/2013	10/2013	11/2013	12/2013	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Flow:																
Raw: Total Flow 1000 m3	94.553	52.823	121.492	129.277	72.689	96.248	54.622	56.935	80.402	55.922	71.402	83.512	969.878			
Raw: Avg. Day Flow 1000 m3/day	3.05	1.887	3.919	4.309	2.345	3.208	1.762	1.837	2.68	1.804	2.38	2.694		2.657		
Raw: Max. Day Flow 1000 m3/day	6.435	3.318	8.157	9.566	3.489	5.223	3.22	3.507	4.744	2.43	3.057	3.955			9.566	
Eff: Total Flow 1000 m3	94.553	52.823	121.492	129.277	72.691	96.248	54.622	56.932	80.402	55.922	67.518	69.504	951.984			
Eff: Avg. Day Flow 1000 m3/day	3.05	1.887	3.919	4.309	2.345	3.208	1.762	1.837	2.68	1.804	2.251	2.242		2.608		
Eff: Max. Day Flow 1000 m3/day	6.435	3.318	8.157	9.566	3.489	5.223	3.22	3.504	4.744	2.43	2.569	3.139			9.566	
Biochemical O2 Demand:																
Raw: Avg. BOD5 (mg/L)	144.6	120.25	97.25	57.0	101.75	63.5	148.2	170.0	118.0	150.0	80.75	124.8		114.675	271.0	
Raw: Number of Samples BOD5	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Eff: Avg. BOD5 (mg/L)	< 1.0	< 1.5	< 1.25	< 2.8	< 1.25	< 1.0	< 1.4	< 3.0	< 1.0	< 1.0	< 1.5	< 1.2		< 1.492	9.0	0
Eff: Number of Samples BOD5	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
BOD Loading (kg/d)	< 3.05	< 2.83	< 4.899	< 12.066	< 2.931	< 3.208	< 2.467	< 5.51	< 2.68	< 1.804	< 3.376	< 2.69		< 3.959	12.066	
BOD5 Percent Removal	< 99.308	< 98.753	< 98.715	< 95.088	< 98.771	< 98.425	< 99.055	< 98.235	< 99.153	< 99.333	< 98.142	< 99.038			99.333	
Carbonaceous Biochemical Oxygen Demand:																
Raw: Avg. CBOD5 (mg/L)	108.0	103.75	84.0	51.6	71.5	36.75	129.4	130.75	74.25	108.0	70.75	104.0		89.396	175.0	
Raw: Number of Samples CBOD5	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Eff: Avg. CBOD5 (mg/L)	< 1.4	< 1.5	< 1.25	< 1.8	< 1.0	< 1.25	< 1.4	< 2.75	< 1.25	< 1.0	< 1.25	< 1.2		< 1.421	8.0	25.0
Eff: Number of Samples CBOD5	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
CBOD5 Loading (kg/d)	< 4.27	< 2.83	< 4.899	< 7.757	< 2.345	< 4.01	< 2.467	< 5.05	< 3.35	< 1.804	< 2.813	< 2.69		< 3.69	7.757	117.5
CBOD5 Percent Removal	< 98.704	< 98.554	< 98.512	< 96.512	< 98.601	< 96.599	< 98.918	< 97.897	< 98.316	< 99.074	< 98.233	< 98.846			99.074	
Suspended Solids:																
Raw: Avg. SS (mg/L)	249.8	163.75	125.0	102.0	157.25	269.0	210.2	161.25	310.5	296.2	119.25	168.8		194.417	791.0	
Raw: Number of Samples SS	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			

Note: 1. The Total, Average, Max and Criteria summaries are not included in the wastewater XML files submitted to the MOE.

2. The annual average concentrations are calculated by taking the arithmatic mean of the monthly average concentration in the effluent calculated for any particular calendar year.

Parameters List: OCWA PDC - MEWS

CBOD5 - Carbonaceous Biochemical Oxygen Demand 5 Day; BOD5 - Biochemical Oxygen Demand, 5 Day, Total Demand; Suspended Solids - Residue, Particulate; NH3 + NH4 as N - Ammonium + Ammonia, Total Unfil. Reac. ; Total Phosphorus - Phosphorus, Unfiltered Total TKN - Nitrogen,Total Kjeldahl Unf. Tot; Nitrate as N - Nitrate, Unfiltered Reactive; Nitrite as N - Nitrite, Unfiltered Reactive; E coli - Escherichia Coli MF

Legend:

Tag group:

EFF-Effluent,RAW-Raw Sewage

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon
From 01/01/2013 to 12/31/2013

Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)

	01/2013	02/2013	03/2013	04/2013	05/2013	06/2013	07/2013	08/2013	09/2013	10/2013	11/2013	12/2013	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Suspended Solids:																
Eff: Avg. SS (mg/L)	< 2.2	< 2.5	5.0	< 6.4	< 3.25	< 3.75	< 11.0	8.0	4.0	< 5.0	8.25	18.0		< 6.446	42.0	15.0
Eff: Number of Samples SS	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
SS Loading (kg/d)	< 6.71	< 4.716	19.596	< 27.579	< 7.621	< 12.031	< 19.382	14.692	10.72	< 9.02	18.567	40.357		< 15.916	40.357	70.5
SS Percent Removal	< 99.119	< 98.473	96.0	< 93.725	< 97.933	< 98.606	< 94.767	95.039	98.712	< 98.312	93.082	89.336			99.119	
Phosphorus:																
Raw: Avg. Phos (mg/L)	6.106	3.75	2.878	1.882	3.093	4.693	5.288	6.548	6.89	6.718	2.818	3.696		4.53	19.4	
Raw: Number of Samples Phos	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Eff: Avg. Phos (mg/L)	0.088	0.15	0.218	0.168	0.22	0.168	0.07	0.1	0.065	0.082	0.093	0.176		0.133	0.38	0.3
Eff: Number of Samples Phos	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Phos. Loading (kg/d)	0.268	0.283	0.852	0.724	0.516	0.537	0.123	0.184	0.174	0.148	0.208	0.395		0.368	0.852	0.94
Total Phos Percent Removal	98.559	96.0	92.441	91.073	92.886	96.43	98.676	98.473	99.057	98.779	96.717	95.238			99.057	
Nitrogen Series:																
Raw: Avg. NH3 + NH4 (mg/L)	21.858	20.975	14.428	11.08	14.5	12.04	24.58	24.35	16.825	21.84	17.775	20.62		18.406	36.7	
Raw: Number of Samples NH3 + NH4	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Eff: Avg. NH3 + NH4 (mg/L)	< 0.02	< 0.023	< 0.028	< 0.02	0.078	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02		< 0.026	0.12	15.0
Eff: Number of Samples NH3 + NH4	7.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	55.0			
NH3 + NH4 Loading (kg/d)	< 0.061	< 0.042	< 0.108	< 0.086	0.182	< 0.064	< 0.035	< 0.037	< 0.054	< 0.036	< 0.045	< 0.045		< 0.066	0.182	23.5
Raw: Avg. TKN (mg/L)	33.52	32.6	30.925	16.22	20.95	23.99	38.24	38.2	29.825	36.88	25.9	29.36		29.718	63.6	
Raw: # of SamplesTKN	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	53.0			
Eff: Avg. Nitrate (mg/L)	26.2													26.2	26.2	0
Eff: Number of Samples Nitrate	1.0												1.0			
Eff: Avg. Nitrite (mg/L)	< 0.1													< 0.1	< 0.1	0
Eff: Number of Samples Nitrite	1.0												1.0			

Note: 1. The Total, Average, Max and Criteria summaries are not included in the wastewater XML files submitted to the MOE.

2. The annual average concentrations are calculated by taking the arithmatic mean of the monthly average concentration in the effluent calculated for any particular calendar year.

Parameters List: OCWA PDC - MEWS

CBOD5 - Carbonaceous Biochemical Oxygen Demand 5 Day; BOD5 - Biochemical Oxygen Demand, 5 Day, Total Demand; Suspended Solids - Residue, Particulate; NH3 + NH4 as N - Ammonium + Ammonia, Total Unfil. Reac. ; Total Phosphorus - Phosphorus, Unfiltered Total TKN - Nitrogen,Total Kjeldahl Unf. Tot; Nitrate as N - Nitrate, Unfiltered Reactive; Nitrite as N - Nitrite, Unfiltered Reactive; E coli - Escherichia Coli MF

Legend:

Tag group:

EFF-Effluent,RAW-Raw Sewage

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon
From 01/01/2013 to 12/31/2013

Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)

	01/2013	02/2013	03/2013	04/2013	05/2013	06/2013	07/2013	08/2013	09/2013	10/2013	11/2013	12/2013	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Disinfection:																
Eff: Geometric Mean E. Coli per 100 ml	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	6.687	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		< 9.701	< 10.0	200.0
Eff: Number of Samples E. Coli per 100 ml	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0				

Note: 1. The Total, Average, Max and Criteria summaries are not included in the wastewater XML files submitted to the MOE.

2. The annual average concentrations are calculated by taking the arithmatic mean of the monthly average concentration in the effluent calculated for any particular calendar year.

Parameters List: OCWA PDC - MEWS

CBOD5 - Carbonaceous Biochemical Oxygen Demand 5 Day; BOD5 - Biochemical Oxygen Demand, 5 Day, Total Demand; Suspended Solids - Residue, Particulate; NH3 + NH4 as N - Ammonium + Ammonia, Total Unfil. Reac. ; Total Phosphorus - Phosphorus, Unfiltered Total TKN - Nitrogen,Total Kjeldahl Unf. Tot; Nitrate as N - Nitrate, Unfiltered Reactive; Nitrite as N - Nitrite, Unfiltered Reactive; E coli - Escherichia Coli MF

Legend:

Tag group:

EFF-Effluent,RAW-Raw Sewage

Ontario Clean Water Agency
Monthly Process Data Report

Printed on: 2/14/2014
d_monthlyprocessrep

Municipality: Town of Almonte
Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Classification: Class 3 Wastewater Treatment
Receiver: Mississippi River

Period: 01/01/2013 to 12/31/2013
Serviced Population: 4,910
Total Design Capacity(m³/day): 0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
Final Effluent\Effluent - Effluent													
Un-ionized Ammonia (NH3) (mg/L)													
Cnt	6.0	4.0	2.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	52.0
Max	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.001	0.001	0.001	0.0	0.002
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
pH													
Cnt	16.0	15.0	15.0	16.0	15.0	13.0	16.0	18.0	16.0	22.0	16.0	16.0	194.0
Max	7.69	7.83	7.81	7.83	7.87	7.63	7.63	7.79	8.18	8.22	8.11	7.63	8.22
Min	7.47	7.56	7.45	7.61	7.42	7.26	7.02	7.38	7.76	7.43	7.49	6.99	6.99
Temperature (C)													
Cnt	16.0	15.0	15.0	16.0	15.0	12.0	16.0	18.0	16.0	22.0	16.0	16.0	193.0
Max	10.8	10.2	10.8	12.3	17.3	19.1	22.0	22.8	19.0	17.8	14.6	11.6	22.8
Min	6.1	6.2	6.8	7.0	12.2	14.5	17.0	19.5	16.0	13.5	9.7	8.1	6.1

Note: ? Calculation not verifiable. At least one result reported as < and at least one result reported >.

Ontario Clean Water Agency
Monthly Process Data Report

Printed on: 2/14/2014
d_monthlyprocessrep

Municipality: Town of Almonte
Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Classification: Class 3 Wastewater Treatment
Receiver: Mississippi River

Period: 01/01/2013 to 12/31/2013
Serviced Population: 4,910
Total Design Capacity(m^3/day): 0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
Final Effluent\Effluent - Effluent													
DM (%mortality @100% effl. conc)													
Max	0			0			0			0			0
Min	0			0			0			0			0
RBT (% Mortality @ 100% eff)													
Max	20.0			0			0			0			20.0
Min	20.0			0			0			0			0

Note: ? Calculation not verifiable. At least one result reported as < and at least one result reported >.

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Ottawa Valley Hub
122 Patterson Crescent
Carleton Place, ON, K7C 4P3
Tel: 613 257 4990 Fax:613 257 5727

Calibration / Inspection Check

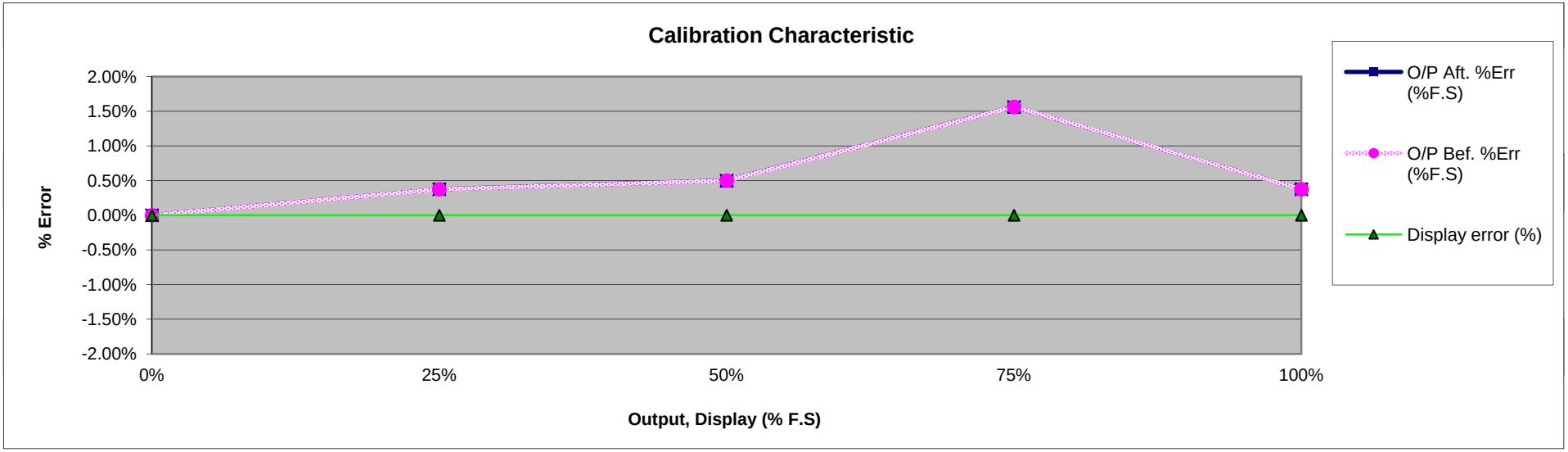
Project:	MISSISSIPPI MILLS WWTP	Description	METER FLOW LAGOON EFFLUENT
Equipment ID:	0000190024	Make:	MILL
Model# :	OCMIII	Type:	Parshall Flume
Serial# :	31955459	Project Org.:	5678
INT.DIA:	12 "	Work Order Ref.:	
Cal. FS:	liter/s	Range:	0-21554.57 m^3/d
Customer FS:	liter/s	Sensor Factors:	

Technician: Tom K.

Signature: _____

Date: 10/4/2013

No.	V. Setting (m/sec)	P(psi)	Head (cm)	Head (m/w.c)	Flow (m^3/D)	CAL. Standard	Display Before	Display After	Display error (%)	O/P. Theo (mAdc)	O/P. Before CAL.(mAdc)	O/P. After CAL.(mAdc)	O/P Bef. %Err (%F.S)	O/P Aft. %Err (%F.S)
1			0.00		0.00					4.00	4.00	4.00	0.00%	0.00%
2			20.92		5388					8.00	8.06	8.06	0.38%	0.38%
3			32.98		10777					12.00	12.08	12.08	0.50%	0.50%
4			43.05		16165					16.00	16.25	16.25	1.56%	1.56%
5			51.20		21554					20.00	20.06	20.06	0.37%	0.37%



Comments:

Ontario Clean Water Agency
Monthly Process Data Report

Municipality: Town of Almonte
Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Classification: Class 3 Wastewater Treatment
Receiver: Mississippi River

Period: 01/01/2013 to 12/31/2013
Serviced Population: 4,910
Total Design Capacity(m³/day): 0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
Biosolids Utilization\Thickening - Dewatered Sludge Cake													
Hauled Mass Off Site (kg)													
Cnt										2.0			2.0
Sum										388,000.0			388,000.0
Biosolids Utilization\Biosolids quality - Dewatered - Dewatered Sludge Cake													
Total Solids													
Avg				166,000.0	164,500.0	106,333.333	175,000.0	183,000.0	183,500.0	174,666.667	179,500.0	112,666.667	155,900.0
Cnt				1.0	2.0	3.0	2.0	2.0	2.0	3.0	2.0	3.0	20.0
Total Volatile Solids													
Avg				91,500.0	90,200.0	58,200.0	93,100.0	95,650.0	98,900.0	90,300.0	96,250.0	62,200.0	83,590.0
Cnt				1.0	2.0	3.0	2.0	2.0	2.0	3.0	2.0	3.0	20.0
Total Phosphorus (ug/g)													
Avg				35,200.0	38,450.0	33,600.0	33,500.0	27,850.0	34,650.0	21,770.0	33,100.0	31,350.0	31,417.222
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
pH													
Avg				6.25	6.655	6.94	7.01	6.985	6.955	7.127	6.99	6.91	6.918
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Moisture (%)													
Avg				83.5	83.6	44.0	81.5	81.025	81.875	82.517	83.8	83.775	79.743
Cnt				1.0	1.0	2.0	3.0	4.0	4.0	6.0	3.0	4.0	28.0
E Coli (cfu/g)													
Avg				< 61.0	61.0	1,250.0	< 89.667	< 133.25	< 270.75	< 65.5	< 60.0	< 182.5	< 207.5
Cnt				1.0	1.0	2.0	3.0	4.0	4.0	6.0	3.0	4.0	28.0
Aluminum, Al (ug/g)													
Avg				81,700.0	80,300.0	77,900.0	74,400.0	75,050.0	45,945.0	78,766.667	77,650.0	78,750.0	74,332.778
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Arsenic, As (ug/g)													
Avg				3.0	3.0	2.0	2.5	2.5	2.5	2.0	2.0	2.0	2.333
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Cadmium, Cd (ug/g)													
Avg				1.6	1.65	1.25	1.2	1.0	1.3	1.533	1.15	1.05	1.3
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Cobalt, Co (ug/g)													
Avg				2.0	2.5	2.5	2.5	2.0	3.0	2.0	2.5	2.0	2.333
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0

Ontario Clean Water Agency
Monthly Process Data Report

Municipality: Town of Almonte
Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Classification: Class 3 Wastewater Treatment
Receiver: Mississippi River

Period: 01/01/2013 to 12/31/2013
Serviced Population: 4,910
Total Design Capacity(m^3/day): 0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
Biosolids Utilization\Biosolids quality - Dewatered - Dewatered Sludge Cake													
Copper, Cu (ug/g)													
Avg				511.0	599.5	474.0	480.5	481.0	515.5	477.667	488.5	457.5	496.5
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Chromium, Cr (ug/g)													
Avg				14.0	16.5	15.5	17.0	17.0	22.5	17.667	19.0	17.0	17.556
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Potassium, K (ug/g)													
Avg				900.0	1,050.0	1,050.0	900.0	1,100.0	1,150.0	1,066.667	800.0	900.0	1,000.0
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Molybdenum, Mo (ug/g)													
Avg				4.0	4.5	3.5	3.0	3.0	4.0	3.0	3.0	3.5	3.444
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Sodium, Na (ug/g)													
Avg				1,400.0	1,850.0	1,800.0	1,550.0	1,300.0	1,600.0	1,406.667	1,250.0	1,300.0	1,495.556
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Nickel, Ni (ug/g)													
Avg				15.0	18.5	16.0	15.5	15.5	18.0	14.333	14.0	13.5	15.556
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Lead, Pb (ug/g)													
Avg				19.0	19.5	18.0	18.5	18.0	22.0	19.0	18.5	15.0	18.611
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Mercury, Hg (ug/g)													
Avg				0.4	0.4	0.4	0.5	0.4	0.45	0.4	0.5	0.45	0.433
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Selenium, Se (ug/g)													
Avg				3.0	3.5	2.5	3.0	3.0	3.0	3.0	2.5	2.5	2.889
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0
Zinc, Zn (ug/g)													
Avg				530.0	578.5	468.5	472.0	510.0	570.5	494.333	517.5	483.5	511.889
Cnt				1.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	18.0

Note: ? Calculation not verifiable. At least one result reported as < and at least one result reported >.

Ontario Clean Water Agency
Recording of Bypassing Daily Report

Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Year: 2013

Date	Location	Type	Station	Start Time (hh:mm)	Duration Hours	Volume m3	Disinfect	Reason	BOD5 (mg/L)	SS (mg/L)	TP (mg/L)	E.Coli (# / 100mL)
10/20/2013	SPS	Primary	PRBY	02:58	3.0	205.00	Yes	Equipment Failure	14.00	9.00	0.62	390,000

Definitions:

Primary Effluent - The discharge of raw sewage subject to no treatment except grit removal and/or chlorination.

Secondary Effluent - The discharge of sewage that has undergone solids removal and bypassed the secondary treatment process.

Legend:

Station: PRBY - Overflow: Gemmills Bay SPS

Ontario Clean Water Agency
Recording of ByPassing Monthly Report

Facility: [5678] - Mississippi Mills Wastewater
Works: [110000873] - Mississippi Mills WWTP (new)
Year: 2013

Month	<<< Primary Bypass # of Events	Duration (hours)	>>> Volume (m^3)	<<< Secondary Bypass # of Events	Duration (hours)	>>> Volume (m^3)	<<< Tertiary Bypasses # of Events	Duration (hours)	>>> Volume (m^3)
JAN									
FEB									
MAR									
APR									
MAY									
JUN									
JUL									
AUG									
SEP									
OCT	1	3.0	205.00						
NOV									
DEC									
Total:	1	3.0	205.00						

Volume of bypass as % of Average Flow: 0.02 %

% = (Volume of Bypass/365)/Average Daily Flow*100

Average Daily Flow: 2,657.20