

BASIS FOR DECISION MEMO

Permit Processor: Thomas Miller

Date: January 9, 2023

Permit No. MI0026751

Designated Site Name: Mackinac Island WWTP

Monitoring Point 001A: Authorization to discharge 0.96 MGD of treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Lake Huron.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>				<u>Maximum Limits for Quality or Concentration</u>				<u>Monitoring Frequency</u>	<u>Sample Type</u>	<u>Basis for Limits</u>
	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>			
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow	PWJ
Biochemical Oxygen Demand (BOD5)	240	360	(report)	lbs/day	30	45	(report)	mg/l	5X Weekly	24-Hr Composite	STS
Total Suspended Solids (TSS)	240	360	(report)	lbs/day	30	45	(report)	mg/l	5X Weekly	24-Hr Composite	STS
Total Phosphorus (as P)	8.0	---	(report)	lbs/day	1.0	---	(report)	mg/l	5X Weekly	24-Hr Composite	WQBEL
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/ 100 ml	5x Weekly	Grab	WQS
Total Residual Chlorine	---	---	---	---	---	---	0.5	mg/l	5x Weekly	Grab	WQBEL
Total Mercury April – November											
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Monthly	Calculation	WQC
Uncorrected	---	---	---	---	---	---	(report)	ng/l	Monthly	Grab	WQC
Field Duplicate	---	---	---	---	---	---	(report)	ng/l	Monthly	Grab	WQC
Field Blank	---	---	---	---	---	---	(report)	ng/l	Monthly	Preparation	WQC
Laboratory Method Blank	---	---	---	---	---	---	(report)	ng/l	Monthly	Preparation	WQC
	12-Month Rolling Avg				12-Month Rolling Avg						
Total Mercury	0.000075 / 0.00004	---	---	lbs/day	9.0 / 5.0	---	---	ng/l	Monthly	Calculation	WQV

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<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>				<u>Maximum Limits for Quality or Concentration</u>				<u>Monitoring Frequency</u>	<u>Sample Type</u>	<u>Basis for Limits</u>
	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Minimum % Monthly</u>	<u>7-Day</u>	<u>Minimum % Daily</u>	<u>Units</u>			
BOD5 Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation	STS
TSS Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation	STS
					<u>Minimum Daily</u>		<u>Maximum Daily</u>				
pH	---	---	---	---	6.5	---	9.0	S.U.	Daily	Grab	WQS
Dissolved Oxygen	---	---	---	---	4.0	---	---	mg/l	Daily	Grab	WQBEL

Monitoring Point 001A: Authorization to discharge 1.538 MGD of treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Lake Huron.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>				<u>Maximum Limits for Quality or Concentration</u>				<u>Monitoring Frequency</u>	<u>Sample Type</u>	<u>Basis for Limits</u>
	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>			
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow	PWJ
Biochemical Oxygen Demand (BOD5)	240 / 380	360 / 580	(report)	lbs/day	30	45	(report)	mg/l	5X Weekly	24-Hr Composite	STS
Total Suspended Solids (TSS)	240 / 380	360 / 580	(report)	lbs/day	30	45	(report)	mg/l	5X Weekly	24-Hr Composite	STS
Total Phosphorus (as P)	8.0 / 13	---	(report)	lbs/day	1.0	---	(report)	mg/l	5X Weekly	24-Hr Composite	WQBEL
Ammonia Nitrogen (as N)	(report)	---	(report)	lbs/day	(report)	---	(report)	mg/l	Weekly	24-Hr Composite	WQC
Chloride	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite	WQC
Sulfate April – November	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite	WQC
Zinc April – November	6.3	---	(report)	lbs/day	490	---	(report)	ug/l	Quarterly	24-Hr Composite	WQBEL
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/ 100 ml	5x Weekly	Grab	WQS
Total Residual Chlorine	---	---	---	---	---	---	0.5	mg/l	5x Weekly	Grab	WQBEL
Total Mercury April – November											
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Monthly	Calculation	WQC
Uncorrected	---	---	---	---	---	---	(report)	ng/l	Monthly	Grab	WQC
Field Duplicate	---	---	---	---	---	---	(report)	ng/l	Monthly	Grab	WQC
Field Blank	---	---	---	---	---	---	(report)	ng/l	Monthly	Preparation	WQC
Laboratory Method Blank	---	---	---	---	---	---	(report)	ng/l	Monthly	Preparation	WQC

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>				<u>Maximum Limits for Quality or Concentration</u>				<u>Monitoring Frequency</u>	<u>Sample Type</u>	<u>Basis for Limits</u>
	<u>12-Month Rolling Avg</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>	<u>12-Month Rolling Avg</u>	<u>7-Day</u>	<u>Daily</u>	<u>Units</u>			
Total Mercury	0.000075 / 0.00064	---	---	lbs/day	9.0 / 5.0	---	---	ng/l	Monthly	Calculation	WQV
					<u>Minimum % Monthly</u>		<u>Minimum % Daily</u>				
BOD5 Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation	STS
TSS Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation	STS
					<u>Minimum Daily</u>		<u>Maximum Daily</u>				
pH	---	---	---	---	6.5	---	9.0	S.U.	Daily	Grab	WQS
Dissolved Oxygen	---	---	---	---	4.0	---	---	mg/l	Daily	Grab	WQBEL

PERMIT CONDITIONS:

Interim Effluent Limitations, Monitoring Point 001A (0.96 MGD)

Final Effluent Limitations, Monitoring Point 001A (1.538 MGD)

Quantification Levels and Analytical Methods for Selected Parameters

Additional Monitoring Requirements

Pollutant Minimization Program for Total Mercury

Short Term Waste Characterization Study

Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

Facility Contact

Monthly Operating Reports

Asset Management

Discharge Monitoring Requirements – Quality Assurance Study Program

Continuous Monitoring

Storm Water Pollution Prevention

Industrial Waste Pretreatment Program

Residuals Management Program for Land Application of Biosolids

NOTES:

For information pertaining to the non-attainment status for certain designated uses of the receiving water and how it informed the establishment of certain permit conditions, see the Department's document named "WQBEL Biologist Recommendations_MI0026751_01-18-2023."

Monitoring requirements for chloride and sulfate have been included in the draft permit in accordance with the Department's [Chloride and Sulfate Water Quality Values Implementation Plan \(michigan.gov\)](#).

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Monitoring for total mercury, chloride, and sulfate is limited to the non-winter months due to ice cover on the great lakes making the transport of winter mercury sampling to a lab on the mainland infeasible.

Per the current PFOS/PFOA/PFBs statewide strategy the facility will be required to monitor for this group of chemicals as part of the additional monitoring requirement scans. The additional monitoring requirement start date has been pushed back to allow time for upgrades and the facility to prepare for the increased permit requirements.

Similarly, asset management language has been included in the permit as is required for all EPA Major facilities. However, the starting date has been pushed back to allow time for the facility to complete the planned upgrades.

A note about the TRC added after PN: A Total Residual Chlorine limit of 0.5 is retained in the permit based off the March 24, 2017, demonstration that this limit meets the 38 ug/l at the end of the effluent pipe which is 1.5 miles downstream of the monitoring location.

This permit was re-public noticed without the new Part I.A.1. effluent limitation table additions which were included in the first public notice draft. This makes this modification effluent limit table the same as the extended effluent limitation table.

Limit Change Key

Normal Type = existing requirement - carried over from previous version of permit

Bold Type = new requirement - not in previous version of permit

Italic = deleted requirement - not carried over from previous version of permit

Basis for Limits Key

WQBEL - Water Quality-Based Effluent Limit

STS - Secondary Treatment Standard

AWT - Advanced Wastewater Treatment

WQC - Water Quality Concern

WQS - Water Quality Standard

WQV - Water Quality Variance

PWJ - Permit Writer's Judgment