



# 2022 Compliance Maintenance Annual Report

June 15<sup>th</sup> 2023

Madison Metropolitan Sewerage District



# Legal Requirements

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Wisconsin State Legislature

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Department of Natural Resources (NR)

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Statute Ch. 283- Pollution Discharge Elimination

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Implemented by NR 208

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Wisconsin Pollution Discharge Elimination System (WPDES) Permit Requirement

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Approval of report and resolution by governing body





# Purpose

## **Protects Public Health and the Environment**

Initiates action to avoid water quality degradation

## **Serves as an Educational Tool**

Promotes owner awareness and responsibility for treatment needs

## **Identifies Improvement Areas**

Maximizes useful life and performance through improved operations and maintenance

## **Initiates New Projects**

Promotes formal planning, design and construction

**NR 208.01 Purpose.** This chapter implements ch. 283, Stats., encourages and, where necessary, requires owners of publicly and privately owned domestic wastewater treatment works to take necessary actions to avoid water quality degradation, and prevent violations of WPDES permit effluent limits and conditions. This chapter promotes an owner's awareness and responsibility for wastewater conveyance and treatment needs; maximizes the useful life and performance of treatment works through improved operation and maintenance; and initiates formal planning, design and construction to prevent WPDES permit violations.

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# Report Content

**(5) CONTENT.** The CMAR shall include an evaluation of the following sections and information, as it applies to a specific treatment works and as determined by the department under s. NR 208.05 (1):

- (a) Influent flow and loading.
- (b) Effluent quality and plant performance (BOD/CBOD).
- (c) Effluent quality and plant performance (total suspended solids-TSS).
- (d) Effluent quality and plant performance (ammonia-NH<sub>3</sub>).
- (e) Effluent quality and plant performance (phosphorus-P).
- (f) Effluent quality and plant performance (total nitrogen-total N).
- (g) Groundwater quality.
- (h) Ponds and lagoon leakage.
- (i) Biosolids quality and management.
- (j) Staffing and preventative maintenance.
- (k) Operator certification and education.
- (L) Financial management.
- (m) Sanitary sewer collection systems.
- (n) Grading summary.
- (o) Resolution or owner statement.

Report automatically generates section grades

SCORE	GRADE	GRADE POINTS	GRADE MEANING	RESPONSE RANGE
91-100	A	4	Good	Voluntary
81-90	B	3	Satisfactory	Voluntary
71-80	C	2	Marginal	Recommendation
61-70	D	1	Poor	Action
<61	F	0	Fail	Action

\*NSWWTP omits total nitrogen, groundwater quality, and ponds and lagoon leakage sections

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# 2022 Grade Summary

Grade	Section
C	Influent Flow and Loadings
A	Effluent Quality: Biochemical Oxygen Demand
A	Effluent Quality: Total Suspended Solids
A	Effluent Quality: Ammonia
A	Effluent Quality: Phosphorus
D	Biosolids Quality and Management
A	Staffing and Preventative Maintenance
A	Operator Certification and Education
A	Financial Management
A	Collection Systems

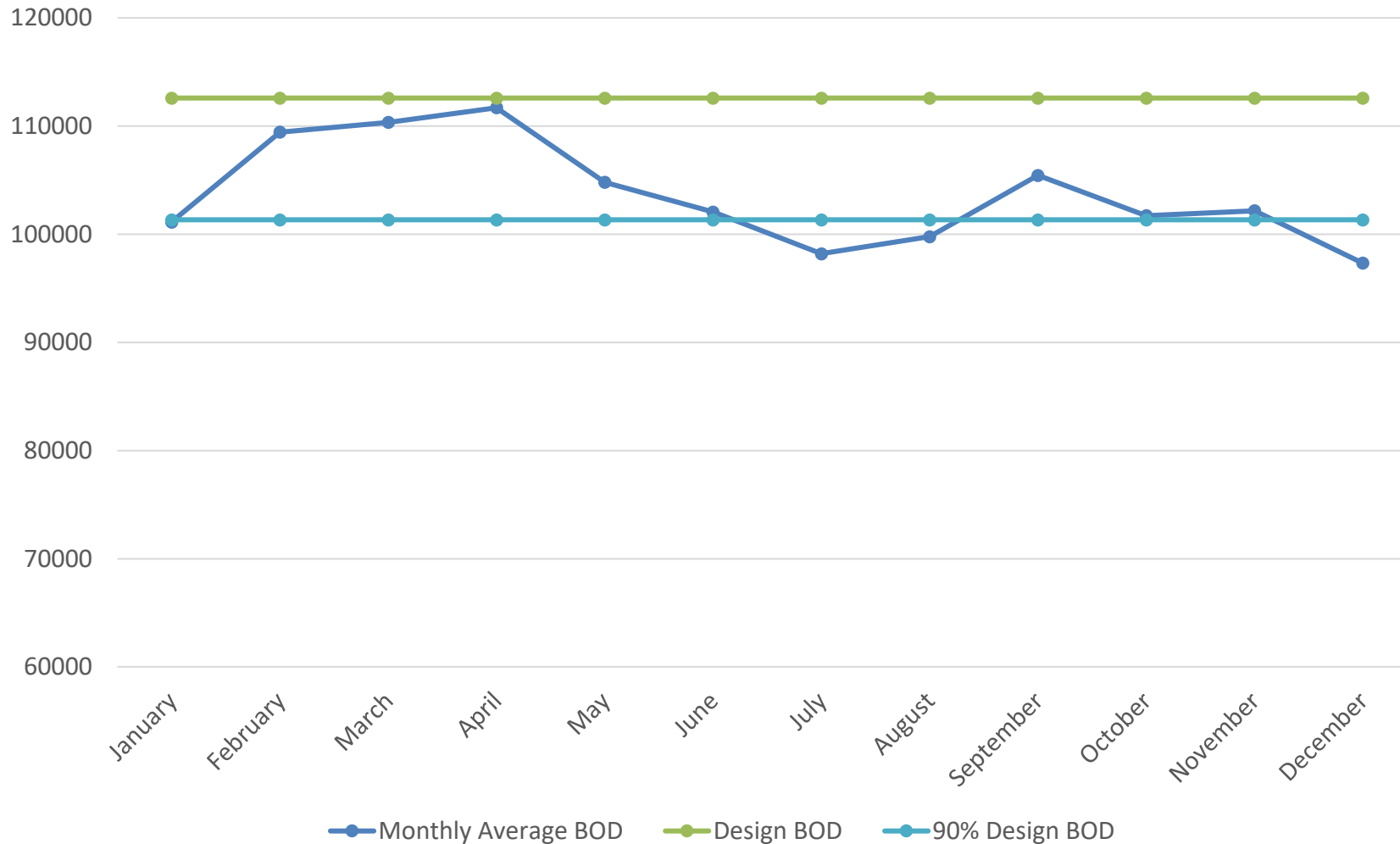
GPA: 3.43

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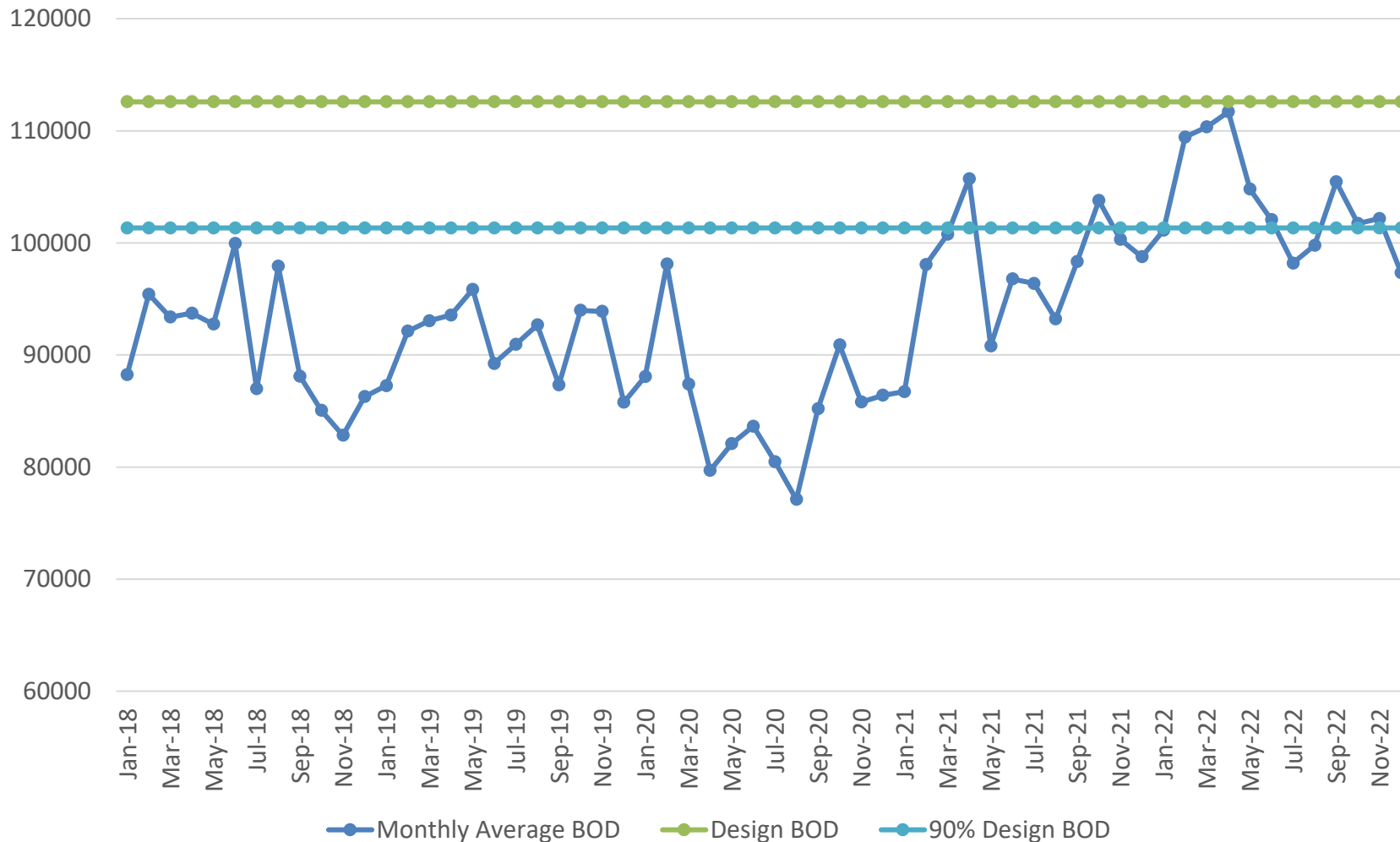
# Influent BOD Loading

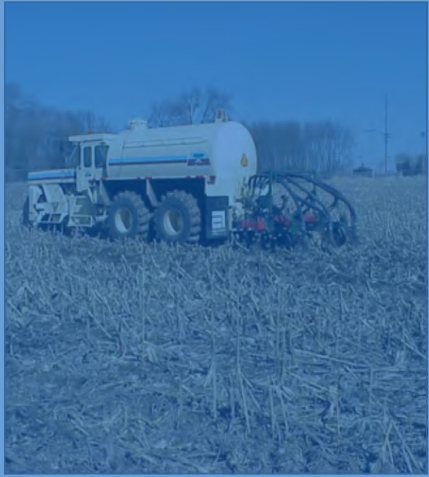
2022 Monthly Average BOD Loadings (lbs/day)



# Influent BOD Loading

Monthly Average Influent BOD Loadings (lbs/day)





## Biosolids Management



### **One Instance of Nitrogen Over Application**

Lost 30 points, dropped score down to a D

### **Replacing Old Technology**

New Terragators are equipped with GPS and Autosteer technology

### **Cause of Over Application**

4 sites are run at a time with a 5<sup>th</sup> as backup

Only 3 new machines

Old equipment uses different type of cultivator bars

Farmers may prefer more tillage even if new equipment is available

70% of sites applied with new technology in 2022

### **New QA/QC Measures**

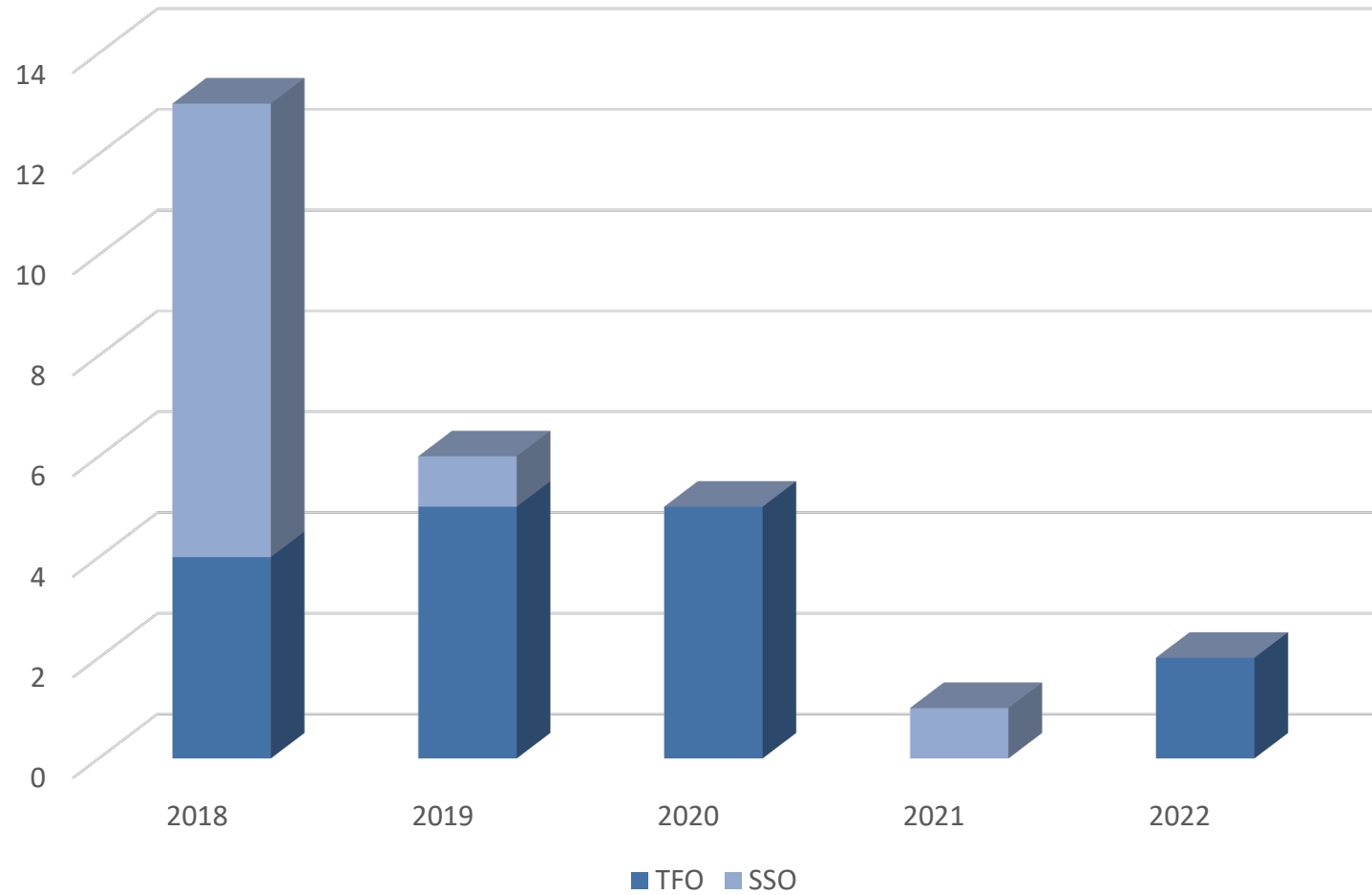
New QA/QC processes went into effect after spring of 2021 which flags erroneous data

19 fewer instances of overapplication this year





# Historical Overflows

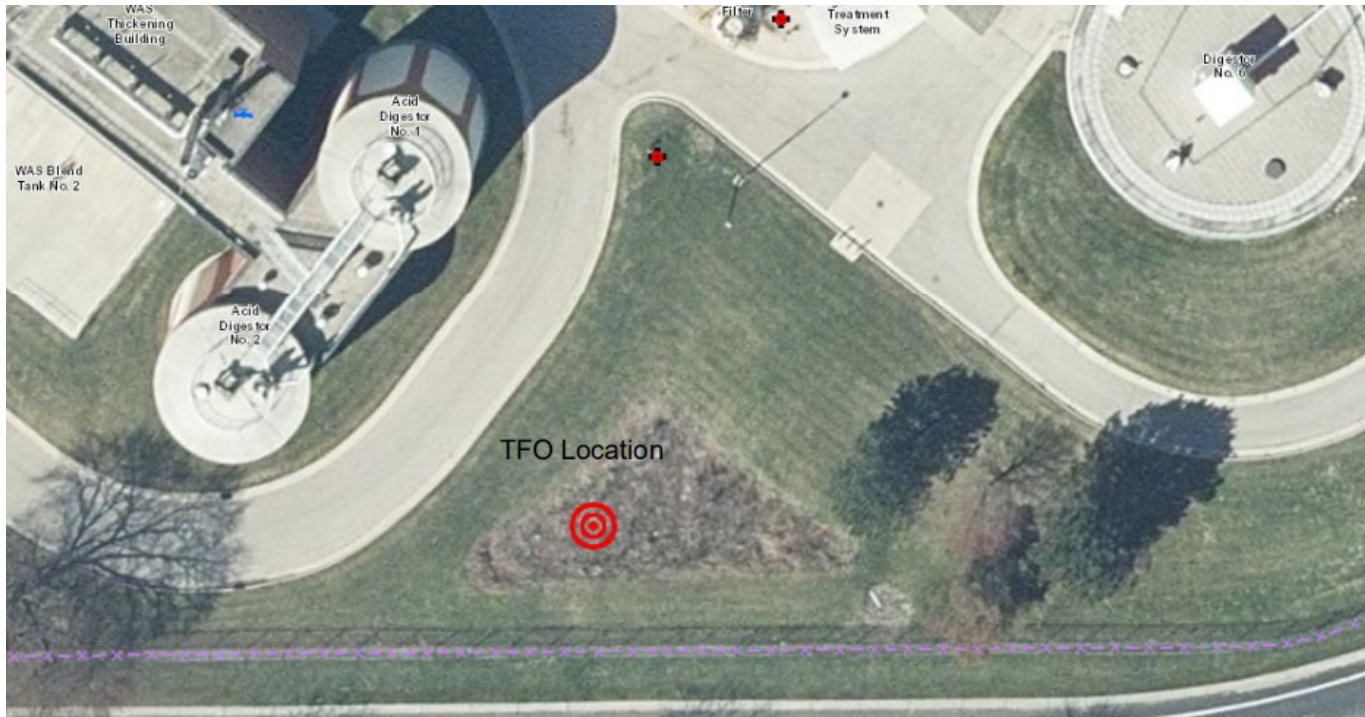


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# 2022 Overflows

August 30<sup>th</sup>



September 9<sup>th</sup>



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# Resolution

The Commission is requested to adopt Resolution 2023-06-15-R4, accepting the Compliance Maintenance Annual Report and the required response actions therein.

- GPA: 3.43
- Responses required for grades below “B”
- Influent BOD loading: commencement of liquids processing phase 2
- Biosolids management: continued replacement of aging equipment
- Actions to prevent overflow reoccurrence
- Certification and submission due by June 30<sup>th</sup>, 2023





# Questions?

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