

# CWSRF PROJECT PLAN AMENDMENT FOR WASTEWATER TREATMENT PLANT AND COLLECTION SYSTEM IMPROVEMENTS CITY OF GRAND LEDGE, MICHIGAN



DRAFT

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## **SECTION 1.0 — SUMMARY AND RECOMMENDATION**

### **1.1 SUMMARY**

The Fiscal Year (FY) 2025 Project Plan Amendment for the City of Grand Ledge has been prepared using the Project Plan Preparation Guidance of the Clean Water State Revolving Fund (CWSRF) Administrative Rules updated in January of 2023. This Project Plan Amendment is being submitted as an amendment to the previously submitted and approved FY2023 Project Plan. While the rates have not been set yet for FY2025, the rates in 2024 are 2.50% and 2.75% for 20-year loans and 30-year loans, respectively. These rules call for compliance with the basic Federal Planning Requirements and the National Environmental Policy Act (NEPA). This Project Plan will serve as a basis for project prioritization and must be submitted to the Michigan Department of Environment, Great Lakes, & Energy (EGLE) by May 1, 2024, to be on the project priority list for the fiscal year of 2025. The EGLE project number for this Project Plan is #5825-01.

The proposed projects listed herein as part of this Project Plan Amendment are for WWTP and sanitary sewer system improvements. The sanitary sewer system occasionally experiences high levels of inflow and infiltration (I/I) during precipitation and snowmelt events and therefore has had periodic sanitary sewer overflows (SSOs). Based on an evaluation of the wastewater treatment system capacity conducted by Fishbeck in 2017, it was determined the WWTP was at 73% of its current 1.5 million gallon per day (mgd) hydraulic capacity and was exceeding its biological treatment capacity, and therefore has no excess capacity for the projected future growth or development.

In the FY2023 project plan, the City previously selected Optimization of Existing Facilities: Conversion to Membrane Bioreactors (MBRs). However, the actual construction costs to implement this alternative after bidding were beyond the financial constraints of the City and therefore, the City elected to pursue a re-evaluation of the project alternatives which are described in further detail in this Project Plan Amendment.

### **1.2 CONCLUSIONS**

This evaluation has determined that completing phased improvements to meet the proposed treatment goals to and meet the City's required design and hydraulic capacity is the most cost-effective and feasible approach.

Phase I will include the following:

1. Increasing the hydraulic capacity from 3.0 MGD to 8.0 MGD and increasing the annual average treatment rate from 1.5 MGD to 3.0 MGD
2. Implementing high-rate Aerobic Granular Sludge (AGS) process followed by Tertiary Filtration.
3. Other improvements will also be necessary to accomplish the overall objectives while optimally re-utilizing as much of the existing infrastructure as possible to reduce the capital cost including additional screening equipment, new grit removal, influent flow monitoring, influent pumping, UV disinfection, and reaeration.
4. Biosolids (sludge) handling improvements necessitated by the process changes include sludge thickening, converting one of the existing aeration tanks into an aerobic digester and replacement of a portion of the sludge transfer and decant lines to/from the existing sludge storage tanks west of Fitzgerald Park due to their current location which will be occupied by the AGS tanks.
5. Conversion of the existing treatment tanks to provide additional wet weather storage beyond the current wet weather storage tank to provide for the high flow events.

6. The conveyance storage and treatment rate improvements will provide the City with the ability to handle peak wet weather flows generated during a 25-year, 24-hour precipitation events and improve its ability to minimize the potential for SSOs during other events.

Phase II improvements would occur as the system growth requires additional capacity improvements for the wastewater treatment and biosolids handling. Over time, the City should also pursue policies as discussed herein to implement long-term improvements to the collection system that will reduce the amount of infiltration and inflow.

### **1.3 RECOMMENDATION**

The selected projects identified in this Plan are the most cost-effective and environmentally-sound alternatives. The following recommendations are therefore made:

- ≡ The City Council should pass a resolution formally adopting this Project Plan Amendment.
- ≡ The City Council should apply for a low-interest loan under the CWSRF program and complete the CWSRF required forms to potentially be eligible for grant funding or principal forgiveness.

## **SECTION 2.0 — PROJECT BACKGROUND**

### **2.1 STUDY AREA DESCRIPTION**

The study area is in the central portion of the Michigan’s Lower Peninsula, in Eaton and Clinton Counties. The City is located in the northeastern corner Eaton County, just west of the City of Lansing. The total City area comprises approximately 3.65 square miles (2336 acres) within the Eaton and Clinton Counties. A map of the sanitary sewer service area is shown in Figure 1 of the Fiscal Year (FY) 2023 CWSRF Project Plan.

#### **2.1.1 Land Use**

See FY2023 CWSRF Project Plan.

#### **2.1.2 Population Data**

See FY2023 CWSRF Project Plan.

#### **2.1.3 Economic Characteristics**

See FY2023 CWSRF Project Plan.

#### **2.1.4 Cultural and Environmental Settings**

See FY2023 CWSRF Project Plan.

### **2.2 EXISTING FACILITIES - GENERAL**

See FY2023 CWSRF Project Plan.

### **2.3 NEED FOR PROJECT AND BASIS OF DESIGN**

The City’s WWTP maintains compliance with its NPDES discharge permit but there have been several unpermitted discharges from sanitary sewer overflows (SSOs) and retention basin discharges caused by excessive wet weather flows. The City’s WWTP maintains compliance with its NPDES discharge permit but there have been several unpermitted discharges from sanitary sewer overflows (SSOs) and retention basin discharges caused by excessive wet weather flows. Enforcement actions and a summary of the recent SSOs and retention basin discharges is provided in Appendix C.

The existing WWTP hydraulic and treatment capacity is not sufficient to handle the projected regional development in the area. The estimated growth, as measured in residential equivalent units (REUs) will increase the wastewater loading. Because this predicted growth is based on several significant development projects with estimated demands, a phased expansion to the anticipated 20-year planning period is recommended such that the treatment capacity can be readily increased for a future phase (30-year planning period) when additional capacity is required. Table 2.1 presents the projected residential equivalent units (REUs) that will be served by this project (Phase I) as well as the future Phase II for the anticipated full buildout from regional development.

**Table 2.1. Total Project REUs Served by Project**

	Total REUs		
	Existing Service*	20-year Planning Proposed Project (Phase I)	30-year Planning Future Project Expansion (Phase II)
<b>Growth from Regional Development</b>			
South/East	0	1,165	2,165
West	0	900	1,700
North	0	400	600
Industrial Growth	0	300	600
<b>Subtotal</b>	<b>0</b>	<b>2,965</b>	<b>5,065</b>
Existing REUs*	4,135	4,135	4,135
<b>Total to be Served</b>	<b>4,135</b>	<b>7,100</b>	<b>9,200</b>

\*Approximate # of Existing Sewer REUs as of 2024

Table 2.2 provides the projected wastewater flows due to growth from the additional REUs.

**Table 2.2. Estimated Additional Flows**

Flow Source	20-year Planning Proposed Project (Phase I)	30-year Planning Future Project Expansion (Phase II)
Additional Residential & Commercial Average, MGD	0.80	0.54
Additional Industrial Average, MGD	0.50	0.50
WTP Average Backwash Waste Flows, MGD	0.28	0.0
<b>Total Additional Flows, MGD</b>	<b>1.58</b>	<b>1.04</b>
<b>Existing Average Flow, MGD</b>	<b>1.07</b>	
<b>Total Average Flow (after Phase I), MGD</b>	<b>2.65</b>	
<b>Total Average Flow (after Phase II), MGD</b>	<b>3.69</b>	

Notes:

1. Assumes 300 gallons per day per Residential/Commercial REU
2. Estimated industrial flows

## 2.4 DESIGN FLOWS

Table 2.3 summarizes the design flows for the City. The existing flow to the plant currently averages approximately 1.07 MGD with an estimated peak 25-year 24-hour flow of approximately 10.27 MGD under existing conditions. The table demonstrates that the WWTP is at 82% of the design treatment capacity (based on the REU loading).

The proposed WWTP improvements are based on an annual average design flow of 3.0 million gallons per day (MGD) for the entire plant to meet the current anticipated growth. The proposed peak hydraulic capacity is 8.0 MGD and flows greater than the peak hydraulic capacity would be stored in the retention basin which would then overflow

to the existing intermediate pumps and be pumped into the existing primary tanks, which would then overflow into the existing aeration basins and clarifiers which would be all be converted for wet weather storage and returned to the headworks after the event passes. In an extreme event (greater than a 25-year, 24-hour storm), if the storage capacity were to be exceeded, a relief overflow would be provided to the tertiary filters and thus any overflow would be filtered and disinfected prior to discharge to the Grand River.

**Table 2.3. Design Flow Rates**

Description	Existing WWTP Design		20-year Planning Proposed Project (Phase I)	30-year Planning Future Project Expansion (Phase II)
	Average	Design		
Influent or Sustained Treatment Rate	1.07	1.50	<b>3.0</b>	4.0
Peak Hydraulic Capacity (MGD)	3.0	3.0	<b>8.0</b>	TBD
REUs	4,135	4,995	<b>7,100</b>	9,200

The section below provides a more detailed evaluation of the predicted 25-year 24-hour hydrographs and the required wet weather storage for the project conditions.

## 2.5 DESIGN WASTEWATER CHARACTERISTICS

Table 2.3 summarizes the influent wastewater characteristics used in preparing the proposed WWTP improvements. Concentrations are based on existing data from the facility averaged over recent years and include the recycle flows. The table demonstrates that the existing average organic loading (as measured by BOD5) is 83% of the existing design capacity.

Typically, capacity expansion is required when average loading or flows exceed 80% of the design capacity. The recommended basis of design should provide the required peak hydraulic capacity and increase the sustained treatment capacity such that it provides the ability for the City to handle the additional growth of the system. The required wastewater treatment and biosolids handling would be completed in a phased approach with Phase II occurring when the system approaches approximately 80% of Phase I capacity.

**Table 2.4. Wastewater Influent Characteristics and Proposed Basis of Design**

	Unit	Existing Conditions	Existing Design Capacity	20-year Planning Proposed Project (Phase I)	30-year Planning Future Project Expansion (Phase II)
Sustained Treatment	MGD	1.07	1.50	3.00	4.00
Peak Hydraulic Capacity	MGD	3.00	3.00	8.00	8.00*
BOD5	mg/L	261	225	198	198
BOD5	lbs/day	2,332	2,816	4,957	6,609
TSS	mg/L	251	251	225	225
TSS	lbs/day	2,243	3,144	5,633	7,511
Ammonia-N	mg/L	20	30	30	30
Ammonia-N	lbs/day	175	376	751	1,001
Total-P	mg/L	5	6	6	6
Total-P	lbs/day	48.1	75	150	200

\*It is anticipated the Collection System Improvements to provide I&I reduction efforts will occur between Phase I and II Wastewater Improvements that will help to reduce future peak flows below the current average to peak ratios. In general, Ten States Standards also reduce this ratio as service area population increases.

## 2.6 NPDES PERMIT EFFLUENT LIMITATIONS

The treated effluent will continue to be discharged at the existing 24-inch outfall into the Grand River. The City's Draft NPDES permit with the revised effluent limits is included in Appendix A of this report for reference

## SECTION 3.0 — ALTERNATIVE ANALYSIS

This amendment addresses the analysis of an updated additional alternative (Alternative 3) to the Project Plan. The updated Alternative 3 for the Optimization of Existing Facilities -Conversion to High-Rate Extended Aeration (Modified) includes the following major items:

- New headworks screening and grit removal
- Conversion of existing grit removal tanks to influent pump station
- New AGS reactors (three total and one equalization basin for future treatment capabilities)
- Tertiary filtration using disk filters
- UV Disinfection and reaeration
- Biosolids thickening and aerobic digestion
- Other yard piping and site improvements
- Phase I collection system improvements that include increasing the capacity of the WRPS pump station and conversion of existing WWTP tanks to wet weather storage

The remaining alternatives are provided in the 2022 CWSRF Project Plan provided as follows:

- ≡ Alternative 1 – No Action
- ≡ Alternative 2 – Optimization of Existing Facilities: Expansion of Conventional Activated Sludge
- ≡ **Modified Alternative 3 – Optimization of Existing Facilities: Conversion to High-Rate Extended Aeration (Modified)**
- ≡ Alternative 4 – Optimization of Existing Facilities: Conversion to Membrane Bioreactors (MBRs)
- ≡ Alternative 5 – Regional Alternative: Connection to Existing Regional WWTP
- ≡ Alternative 6 – Regional Alternative: Construction of New Satellite WWTP

The City previously selected Alternative 4. However, the actual construction costs following on bidding in 2023 to implement this alternative was beyond the financial constraints of the City and was eliminated from further consideration.

A technical basis has been developed for the Modified Alternative 3 described below.

### 3.1 Modified Alternative 3 – Optimization of Existing Facilities: Conversion to High-Rate Extended Aeration (Aerobic Granular Sludge)

#### 3.1.1 Wastewater Treatment

##### Influent and Retention

The WWTP currently receives and treats sanitary wastewater from the City of Grand Ledge as well as portions of Oneida Township in Eaton County and Eagle Township in Clinton County. In the future, more flow is anticipated from Eagle Township and Oneida Township.

## Influent Flows

There is an existing 9-inch Parshall Flume flow meter on the raw wastewater flow. This flume will need to be replaced with a 12-inch flume to provide accurate measurement for flows above 5.7 MGD.

## Preliminary Treatment

### Screening Equipment

A ¼" automatically raked fixed bar screen was installed as part of the 2009 improvements project. The screen is in good working condition. This screen will have a new variable frequency drive motor installed to rake it faster so that it can provide raking at a sufficient rate to prevent blinding at a flow rate of up to 8.0 MGD. This screen will primarily be utilized as a backup/ overflow screen since the proposed Granular Activated Sludge process requires screening through a perforated plate screen.

A 24-inch bypass channel and channel grinder are currently provided for overflow and bypassing the automatic screening. This grinder will be removed, the channel geometry will be modified and a new perforated plate screen with washer-compactor will be provided. The new perforated plate screen and washer-compactor will have an 8.0 MGD throughput capacity. This channel will function as the primary channel and overflows will go to the existing bar screen via stop plates that have a shorter height than the channel walls.

### Grit Removal

The existing aerated grit chamber is ineffective at grit removal and the WWTP has indicated that minimal grit has been removed over recent years. This grit is likely accumulating in the downstream aeration basins.

A new vortex grit chamber and grit pumping and classifier equipment will be installed and rated for a maximum peak flow capacity of 12 MGD. Connections to the existing 24-inch wide channel downstream of the screening equipment will be made using two 24" slide gates for the inlet and outlet of the vortex grit chamber. A 24-inch bypass stop plate will be provided in the existing 24-inch wide channel to bypass the grit tank for maintenance purposes if the tank needs to be taken out-of-service.

The design parameters of the proposed grit removal equipment are:

Tank Diameter	12 feet
Design Peak flow capacity:	12 MGD
Grit design removal at peak flow:	Remove 95% of grit greater than 50 mesh in size. Remove 85% of grit greater than 70 mesh in size. Remove 65% of grit greater than 100 mesh in size.

### Influent Pumping

New submersible pumps for pumping raw influent to the treatment processes. Two smaller pumps will be used for normal dry weather conditions and the larger pumps will be used for wet weather conditions. The firm capacity of two small pumps and one large pump (One large pump out of service) would be 8.0 MGD.

#### **Pump Data:**

Type:	Wet Pit Submersible	
Capacity:	Dry Weather Pumps:	Two 1,400 gpm (2 MGD) @ 45' TDH (30 hp)
	Wet Weather Pumps:	Two 2,800 gpm (4 MGD) @ 65' TDH (70 hp)
Drive Type:	Variable Frequency	

### Secondary Treatment System

A new secondary treatment system is proposed for the plant. It will consist of three reactor tanks and one spare reactor tank for flow equalization, which can be converted to process treatment in the future, a new piping gallery and building to house the aeration blowers and controls. Additional components include low pressure air piping, influent and effluent water piping, waste sludge removal piping, and water level control release as required by the AGS process.

### Aerobic Granular Sludge (AGS)

An aerobic granular sludge (AGS) process will be utilized for high-rate biological treatment. This process promotes the development of a granular sludge, with a much higher settling rate than conventional activated sludge, thereby reducing the area and time required to clarify the wastewater after treatment. This reduces the footprint of the site. The benefits to this process include the ability to establish a high mixed liquor suspended solids (MLSS) concentration to treat a higher loading within a smaller tank volume. The AGS process is a sequencing batch reactor (SBR) process in which influent wastewater is treated using a batch process. Over the course of a treatment cycle, each reactor undergoes a sequence of filling, aeration and anoxic (or react), settling, and decant (or draw). The benefits of this process allow for all the treatment to occur in one tank and the use of a higher sidewater depth than with typical activated sludge processes plus some ability to obtain biological nutrient removal by optimizing the aeration and anoxic cycles or the dissolved oxygen levels to promote simultaneous nitrification and denitrification.

**Table 3.1. AGS Capacity**

Wastewater Improvements Phase	Total BOD <sub>5</sub> Design Load (lbs/day)	Dimensions of Reactors	Number of Reactors	Volume of Each Reactor (gallons )	Total Volume of Reactors (gallons)	BOD <sub>5</sub> loading (lbs BOD /day/1000 ft <sup>3</sup> )
Phase I (3.0 MGD)	4,960	46' x 80'	3	580,000	1,740,000	21.5
Phase II (4.0 MGD)	6,610	46' x 80'	4	580,000	2,240,000	21.5

**Notes:**

1. The Ten States Standards loading for Extended Aeration such as SBRs is 15 lb BOD/d/1000 ft<sup>3</sup>. However, up to 30 lbs BOD/d/1000 ft<sup>3</sup> is the manufacturer's recommended design loading and is typical for similar high-rate processes such as AGS.

Process Flow Equalization

Flows in excess of 8.0 MGD will be routed into one of the 530,000 gallon equalization tanks which will serve as an equalization basin and would eventually serve as a future fourth aerobic granular sludge (AGS) reactor (see previous Section). The equalization will be controlled using a control valve and flow meter to divert this excess flow to the equalization tank. This tank will include mixing and a drain sump to remove settled solids. This additional volume will also be available for storage of excess flows caused by wet weather.

Waste Sludge

Waste sludge is directed by a series of controllable valves by gravity to one of two sludge buffer tanks. These valves will allow proper wasting and control of activated granular sludge without the need for pumping. These valves will be controlled at the Control Panel and these process controls also promote the development of sludge granulation by selectively wasting from the zone of poor settleability within the reactor.

**Table 3.2. Waste Sludge**

WAS	Existing Average Day	Phase I Design Capacity (3.0 MGD)	Phase II Design Capacity (4.0 MGD)
Waste Sludge (lb/day)	1,300	4,298	5,730
Waste Sludge at 0.5% (gpm)	21.7	71.8	95.7

Tertiary Treatment

To meet NPDES requirements for advanced wastewater treatment as well as the TSS and phosphorus permit limits, a new tertiary treatment system will be constructed. Total phosphorus remaining after secondary treatment system will be removed from the TSS by a cloth media disk filter (CMDf) system. The filters are equipped with their own backwash system. The system will be designed to meet a maximum design flow of 8 MGD. Each tertiary filter will be rated for a flow rate of 4.0 MGD with a firm capacity to treat 8 MGD (one filter offline). The following data applies: The backwash flow from the filters (maximum daily rate of 0.15 MGD) will be routed back to the influent channel upstream of the raw wastewater pumps.

**Table 3.3. Tertiary Filtration**

Parameter	Design	Influent	Effluent
Max Design Flow (MGD)	8.0	-	-
Flow per Filter (MGD)	4.0		
Number of Filter Units	3 (2 duty and 1 standby)	-	-
Solids Loading Rate (lbs TSS/day/ft2)	0.58	-	-
Average TSS (mg/L)	-	10-20	5
Average Phosphorus (mg/L)	-	0.5	0.3

Disinfection, Reaeration, & Effluent Metering

Disinfection will be accomplished by ultraviolet (UV) disinfection. Following tertiary filtration, tertiary effluent will be routed by gravity piping to a new UV disinfection system. The system will consist of an open channel UV system that will be constructed in one of the chambers within the existing chlorine contact tank. The UV system is packaged with two power distribution centers and one system control center. One of the UV equipment modules can be removed from the channel while the other modules within the channel remain in service. The UV system will be sized to match the capacity of the secondary treatment system. The following data applies:

UV system design flow capacity:	4 MGD
UV system peak flow capacity:	8 MGD
UV Design Transmittance:	65% minimum
Number of Channels:	2 (1 bank per channel)
Number of Modules per Bank:	9 (8 duty and 1 standby)
Number of Lamps per Module:	9
Total Number of UV Lamps:	72 per bank (144 total)

The UV system control panel will transmit status and alarms to the plant control systems.

Reaeration

Reaeration to meet the NDPEs limit for dissolved oxygen will be provided by using two chamber of the existing chlorine contact chamber that will be equipped with fine bubble aeration diffusers fed by a small blower. Two blower packages will be provided for redundancy and housed within the existing blower building.

Effluent Flow Meter

Effluent flow will be measured by a new magnetic flow meter after the tertiary filters.

Chemical Feed

Biological phosphorus removal is possible within the AGS process by optimizing the duration of aerobic / anoxic/ anaerobic cycles. Other AGS plants have been able to remove phosphorus to less than 0.5 mg/L without chemical addition to a great degree. However, to consistently meet the total phosphorus NPDES permit limitations, it may be necessary to add aluminum sulfate (alum) to the AGS influent for chemical precipitation of phosphorus as a replacement to ferric chloride. This evaluation assumes the use of conventional aluminum sulfate (48% solution)

would be used with an estimated active concentration of alum ( $\text{Al}_2\text{O}_3$ ) of 8.3%. A new pump system to replace the existing system will be installed for this purpose. It is assumed that the aluminum to phosphorus ratio is 2:1.

The chemical feed pumps, exposed piping, discharge piping, new buried chemical feed pipe would be installed to the reactor basins with an optional feed to the reactor effluent prior to filtration. Two chemical feed pumps will be provided and sized to provide sufficient turndown for design and minimum flows. Table 3.4 provides the design assumptions.

**Table 3.4. Chemical Feed**

Description	Unit	Minimum	Design
Design Flow	MGD	1.05	4.00
Influent P	mg/L	6	6
Total P	lb/day	53	200
Al:P ratio		2	2
Al	g/mol	27	27
P	g/mol	31	31
Required Al	lb/day	92	349
% as $\text{Al}_2\text{O}_3$		8.3%	8.3%
% as $\text{Al}^{3+}$		4.4%	4.4%
Density of Alum (48%)	lb/gal	11.2	11.2
Alum (48%) Feed	gpd	186	710.4
Alum (48%) Feed	gph	7.8	29.6
Required 30-day storage	gallons	5,595	21,313

A minimum alum storage will be provided by the two (2) existing fiberglass tanks sized to store the required 30 days of alum at the design flow.

### 3.1.2 Biosolids Handling

#### Existing Biosolids Handling

##### Biosolids Disposal

The City's biosolids are currently disposed of by land application to agricultural fields during the spring and fall months as Class B biosolids. Their program has always had a surplus of available farmers participating and this so not likely to change in the near future. Michigan Part 503 Class B biosolids requires that pathogens be reduced to levels that do not pose a threat to public health and the environment when applied according to specified conditions. At a minimum, all land applied biosolids must meet Class B pathogen reduction standards. This requires either a reduction in volatile solids (>38%) or using lime stabilization by raising the pH above 12 and holding for a set duration.

##### Biosolids Stabilization

The WWTP currently uses lime stabilization for the biosolids stabilization prior to land application for the existing 1.5 MGD design flow rate. Currently the plant uses a manual bag feeder to mix dry 50-lb bags of hydrated lime into a lime slurry in the lime feeder room and then inject the slurry into the waste sludge force main as it is pumped to the sludge storage tank west of Fitzgerald Park. This process is very messy, unsafe, and labor intensive and should

be replaced with a different process or upgraded if lime stabilization is continued to be utilized. The use of bag feeders is a very labor-intensive process and presents a safety risk due to the inherent risks of using hydrate lime. A lime silo that utilizes a pneumatic unloading and transport system from the trucks could be installed. This system would then utilize vibrators and gravity feeders to a batch slurry tank with pumps to pump the prepared slurry to blend with the pumped sludge being transferred to the storage tank. Relocating this system from the Administration Building is desirable since the handling and slurry preparation is such a dirty process.

Alternately, the sludge could be aerobically digested utilizing one of the existing process aeration tanks although this may slightly affect the marketability of the biosolids product to the farmers. Since the tanks already exist and the amount of piping and diffusers necessary to convert one of the tanks to aerobic digestion is minimal, it is recommended that this option be pursued.

If the project budget is exceeded, one of these two options (new lime silo and handling system or aerobic digestion) could be considered for a deductible alternate to keep the project budget within the available funding.

### Biosolids Storage

The WWTP stores biosolids in three partially buried concrete biosolids sludge tanks with sufficient volume to store up to 180 days of biosolids (as required by EGLE). A summary of the existing biosolids tanks is provided in Table 3.5.

**Table 3.5. Existing Biosolids Storage Tanks**

Tank	Construction Year	Type	Dimensions	Approximate Volume (gallons)
1989 Storage Tank 1	1989	Concrete	42 feet x 65 feet x 12 feet deep	245,000
1989 Storage Tank 2	1989	Concrete	42 feet x 65 feet x 12 feet deep	245,000
2005 Storage Tank 3	2005	Concrete	49 feet x 67 feet x 12.5 feet deep	310,000
<b>Total Storage Volume</b>				<b>800,000</b>
<b>Required Volume at Existing Flow (180-day)<sup>1</sup></b>				<b>711,000</b>
<b>Required Volume at 1.5 MGD Design Flow (180-day)<sup>1</sup></b>				<b>955,000</b>
<b>Required Volume at 1.5 MGD Design Flow (180-day)<sup>2</sup></b>				<b>756,000</b>

**Notes:**

1. 5% solids at specified noted flow rate after decanting with 0.35 lb lime per 1 lb VSS
2. 5% solids at specified noted flow rate after decanting without lime addition

The above table demonstrates the City has sufficient sludge storage volume for current flows but is approaching the required volume for the design flows with lime stabilization. Due to limited project funding availability, it is recommended that sludge storage be constructed when it is needed in a future phase. It is also recognized that if sludge thickening can be increased to 8% and lime is not added that the required storage volume will be reduced significantly therefore making the existing storage volume sufficient for several more years.

Sludge Thickening with Rotary Drum Thickening (RDT)

To reduce the required biosolids storage volume, a mechanical thickener will be constructed to increase the solids concentration of the waste sludge sent to sludge storage. For this project, a rotary drum thickener (RDT) will be installed. An RDT uses a polymer to flocculate the sludge into a larger particle that can be separated from the water using a screen. The flocculated sludge is agitated and fed to a slowly rotating drum filter. In wastewater applications, solids concentrations up to 8% can typically be achieved (compared to the current 5% solids by manual decanting of the sludge storage tanks). The following design applies:

**Table 3.6. Rotary Drum Thickener Design**

Description	Item
Operation	4 to 5 days per week <sup>1</sup>
	6 hours per day
	24 to 30 hours per week
Solids Loading (dry)	30,000 lb per week
Required Solids Loading (dry)	1000 lb per hour
Flow Rate (at 1.5% solids)	400 gpm

1. During the initial years, the times of operation would be much lower since average flows are lower

For this evaluation, it is assumed that one 1000 lb per hour RDT would be installed in Phase I and a second RDT would be installed in Phase II when the design flow exceeds 3.0 MGD or longer periods of operation could be used.

### Aerobic Digestion

Digestion of biosolids is the process of decomposing the biosolids removed from the primary and secondary treatment process using biological processes. The benefits to digestion include the reduction of the total solids as measured by the volatile solids (i.e., organic solids) and pathogen reduction to meet Class B biosolids requirements. Biosolids are digested in either aerobic or anaerobic processes. Aerobic digestion occurs in the presence of oxygen to convert the volatile solids into carbon dioxide and biomass. Aeration is provided to provide oxygen and solids mixing. The benefits of aerobic digestion include lower capital cost, lower odor potential (than anaerobic processes) and simple operation. The drawbacks when compared to anaerobic digestion are higher energy usage and lack of beneficial reuse of the methane generated during anaerobic digestion for sludge heating and power generation. Because anaerobic digestion requires a significantly higher capital cost the payback is typically limited until the design loading increases above 5 mgd.

**Table 3.7. Aerobic Digestion**

Description	Item
Design Loading	70 lb Volatile Solids per 1000 cuft
Require Volume	44,350 cuft 332,620 gallons
Volume of Converted Aeration Basins	167,500 gallons (each) 335,000 gallons total

The recommended design standards for aerobic digestion include mixing requirements to prevent solids buildup that can inhibit sludge disposal and treatment. Because air is used most commonly for mixing, the required air flow rate for mixing energy is limiting factor rather than the air flow for oxygen transfer (typically much lower). For this analysis it is assumed two new blowers would provide the air flow for mixing. However, other technologies such as mechanical mixing or compressed gas mixing can lower the aeration requirements which could be explored during a final design. The air can typically be cycled off and on to reduce energy requirements and provide additional decanting of liquid to create a thicker product.

### 3.1.3 Collection System and Wet Weather Flows

#### System Description

The Grand Ledge Collection System consists of six different subareas. The Whitney Street Pump Station Subarea consists of the area along the east side of the City South of the Grand River mostly within the City limits but also including a portion of Oneida Township north of Willow Highway (Oneida Woods Trail and River Bend Trail). This area is conveyed across the river to the north side of the river at the end of Oneida Woods Trail and there is a pump station adjacent to Whitney Street behind the Grand Ledge Recycling Center. The Whitney Street Pump Station lifts the flow and then it is conveyed into the North Side Subarea, which is then carried across the River on the Bridge Street (M-100) Bridge and then into the West River Pump Station (WRPS) which is about one block west of Bridge Street on West River Street. At WRPS, the flow from the north side plus the Whitney Street Pump Station Subarea is lifted into the River Interceptor Sewer.

The central area on the south side of the river north of West Saginaw Highway is tributary by gravity to the River Interceptor Sewer. This River Interceptor Subarea is one of the largest subareas in the City's collection system. Sanitary Sewer Overflows (SSOs) have occurred from this sub area from the River Interceptor Sewer at Russell Street and near the WRPS. Near the WRPS, there is an overflow manhole which overflows into the WRPS wetwell and when the pumps cannot keep up, an SSO to the River occurs from the wetwell.

Approximately 1,200 feet downstream of the WRPS, the Spring Street Sub area discharges into the River Interceptor Sewer in line with Spring Street where it intersects the sewer at the river. Historically, SSOs had occurred from the River Interceptor Sewer near the location where the Spring Street Sewer connects. However, as part of the 2009 improvements, this overflow location was eliminated and is no longer utilized.

The next contribution to the River Interceptor Sewer occurs approximately 300 feet upstream of the Wastewater Treatment Plant (WWTP) and includes the area north of the river along West Main Street. The sewers from this sub area cross under the river as an inverted siphon with two pipes (one for normal flows and a second one -if needed).

The River Interceptor Sewer terminates into a Diversion Chamber at the front end of the WWTP, where the flow can either be sent to the WWTP for treatment or diverted to a retention basin during high flows.

The last subarea is the area along the Sandstone Creek Valley and extends along the entire Southwest area of the City and includes areas south and west of Saginaw Highway. This sub area is tributary to the West Jefferson Pump Station (WJPS) and the WJPS discharges into a force main which empties into a gravity sewer at the south end of Fitzgerald Park which then travels along the length of the park and empties into the upstream end of the Flow Diversion Chamber at the WWTP independent of the River Interceptor Sewer.

A map of the Grand Ledge Collection System showing the subareas described above is shown in Figure 3-1 below and a schematic of the existing system is shown in Figure 3-2.

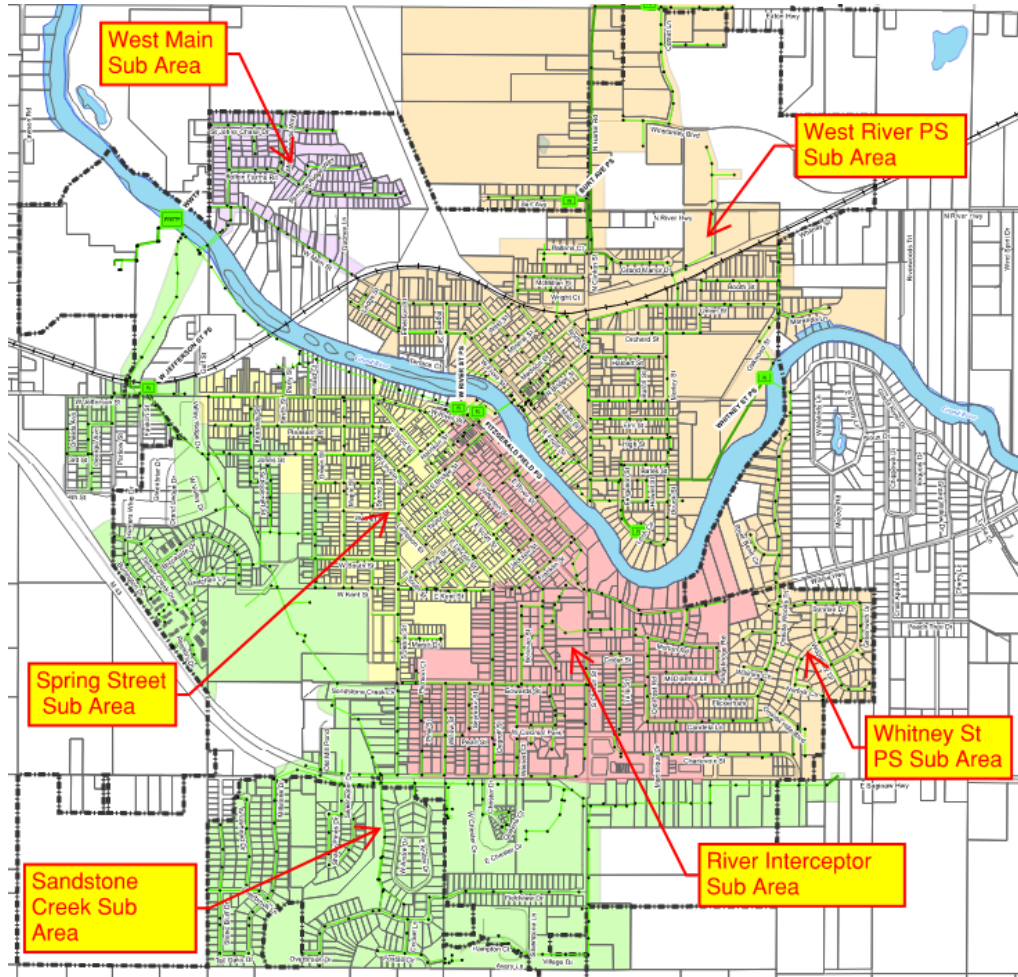


Figure 3.1. Grand Ledge Collection System Sub Areas

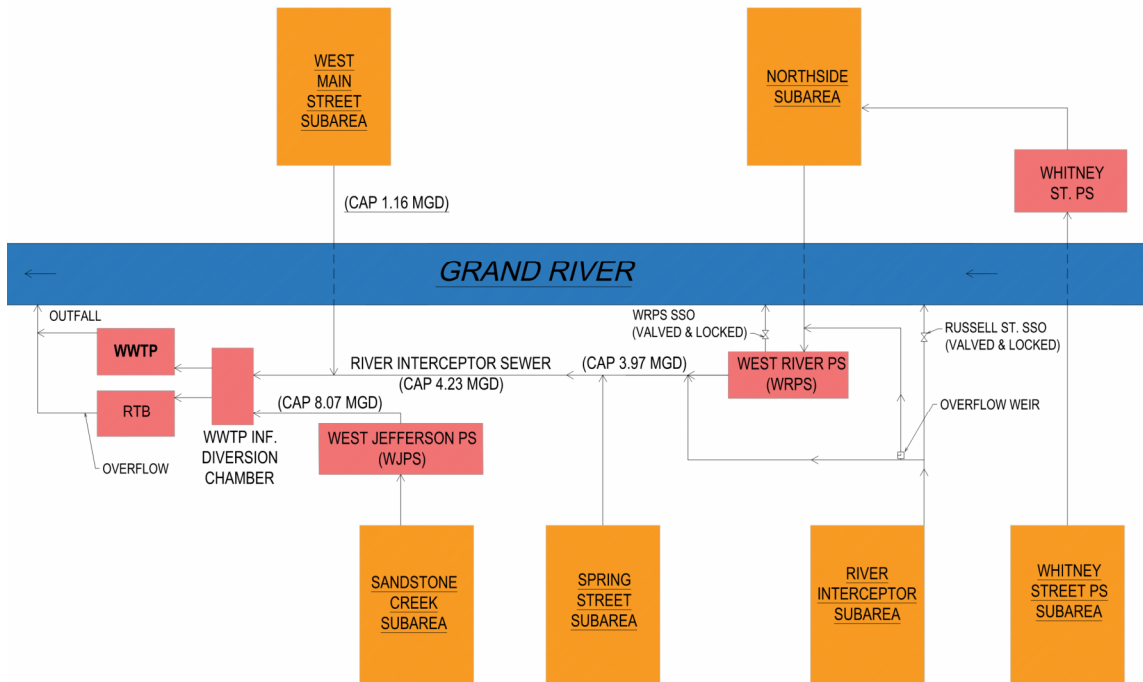


Figure 3.2. Existing Grand Ledge Collection System Schematic

### Capacity Analysis

The generally accepted standard for wastewater collection systems in Michigan is to be capable of conveying and treating the wastewater that is generated during a 25-year, 24-hour rainfall event (approximately 4.16 inches for Grand Ledge). Although the Grand Ledge Sanitary Sewer System is separated, during significant rainfall events, the flows in the system increase to the point where SSOs and retention basin discharges occur. As mentioned earlier, SSOs in the collection system occur at Russell Street and the WRPS from the River Interceptor Sewer. Historically, SSOs also occurred at the location where the Spring Street Sewer intercepts the River Interceptor Sewer. In 2009, a project was completed which included a 300,000-gallon wet weather retention basin and a diversion structure at the head end of the WWTP. This allowed for excess flows to be diverted into the retention basin. An outlet weir and disinfection facilities were also included. Discharges from the retention basin are classified as partially treated discharges since they are sampled and disinfected. With the completion of the 2009 project, there are no longer discharges from the Spring Street overflow and it has since been decommissioned. However, SSOs still occur at WRPS and occasionally at Russell Street. The majority of the wet weather discharges now occur from the retention basin at the WWTP.

To evaluate the capability of the system, SSO records dating back to June of 2000 were evaluated. During the period from June 2000 to January 2024, a total of 73 discharges were reported from 43 distinct rainfall or snowmelt events. Of these 43 events, 14 resulted in a significant amount of overflow volume at either the WWTP, WRPS or Russell Street. In almost all these cases, increased conveyance capacity in the River Interceptor or treatment capacity would have eliminated the potential for SSOs in the system or partially treated overflows from the retention basin. Of the 14 significant events analyzed, the events of October 14-15, 2017, and February 20-22, 2018 are worthy of note and are described below.

### Event of October 14-15, 2017

Rainfall fell over 2 calendar days and was measured at the WWTP at 3.28" and so the event was evaluated using this total plus the hourly distribution from the Lansing Airport rain gauge (since local hourly rainfall data was not available), plus flow metering data for the same period.

The bulk of the rain fell from about 700 on 10/14 until about 700 on 10/15 over a period of about 24+ hours according to the Lansing Airport gage.

The influent flows peaked beyond normal levels for about 7 hours at WRPS but only had an excess volume of about 25,000 gallons there. There were no SSOs at WRPS or partially treated discharges at the WWTP.

The influent flows at the WWTP peaked beyond normal levels (2 MGD) for about 8.25 hours but only had an excess volume of almost 205,000 gallons (actual 204,931). There were no partially treated discharges at the WWTP and with increased treatment capacity there also would not be any partially treated discharges in the future. If a 25-year, 24-hour wet weather event (4.2 inches total) were to be experienced, under the same rainfall distribution conditions, it is estimated that that the excess volume at the WWTP would be 260,000 gallons under this scenario.

### Event of February 20-22, 2018

A significant rainfall measuring 3.2" fell on Feb 20-21, 2018 but immediately prior to this rainfall there was snow on the ground which was measured at 1.23" (as water depth) the day prior. On February 20, the temperatures rose significantly with high temperatures of 50 degrees on 2/20/18 and 59 on 2/21/18. The rainfall plus the significant snowmelt (total depth of 4.43") probably produced something very close to a 25-year, 24-hour rainfall/runoff event since the snowmelt can contribute significantly to foundation drain inflow since it can trap moisture near the basement foundations which ultimately end up in the foundation drains.

During this event, the flow pumped at WRPS (which was mainly the flow from the north side of the river plus some excess flow from the Grand River Interceptor Sewer that overflow into the pump station wetwell averaged 1.75 MGD and peaked at 1.94 MGD. Also, the flow to treatment at the WWTP (not including that portion of the flow diverted to the wet weather retention basin) averaged 3.29 MGD and peaked at 5.43 MGD. During this event, there were discharges at Russell Street, WRPS and WWTP Retention Basin totaling 3.18, 3.27 and 3.89 MG or a total at these three locations of 10.34 MG.

The SSO at Russell Street was over 31 hours from 0630 on 2/20 until 1525 on 2/21. The average SSO rate at Russell Street was 1.53 MGD. The SSO at WRPS was over 32.75 hours from 0650 on 2/20 until 1535 on 2/21. The average SSO rate at WRPS was 1.57 MGD. The partially treated discharge at the WWTP was over 49.5 hours from 1245 on 2/20 until 1415 on 2/22. The average discharge rate at the WWTP was 0.53 MGD.

It is not possible with the data available to quantify the conveyance rate needed west of WRPS since some of the pumped flow was merely circulated back to the wetwell or overflowed at Russell Street since there was no check valve to prevent high levels in the River Interceptor Sewer from backing up further to the east. The current conveyance capacity of the river interceptor sewer immediately west of WRPS is 3.97 MGD. At flows above this, the sewer starts to overflow back to the wetwell via the overflow sewer just east of the pump station. At this flow rate it is likely that overflows will also start at WRPS or if the levels are high enough, at Russell Street. Also, it is likely that, during peak flows, a portion of the flow pumped at WRPS from the north side of the river was likely just circulated back into the River Interceptor Sewer during this event and thereby contributed to the overflow rates occurring at Russell Street and WRPS. By adding a check valve on the River Interceptor Sewer at WRPS plus

additional pumps and by surcharging the sewer, it is estimated that a revised conveyance capacity of 5.4 MGD can be achieved west of WRPS.

Providing additional treatment and storage capacity at the WWTP will significantly reduce the potential for partially treated discharges at the WWTP. With the ability to treat hydraulic flows of up to 8 MGD during wet weather (about a 4 MGD increase over current levels), this event would not have generated any SSO's.

Since the average pumping rate was 1.75 MGD at WRPS, to avoid any discharge at this location during an event such as what was experienced in February of 2018, a conveyance capacity to the west of WRPS of 4.85 MGD ( $=1.75+1.53+1.57$ ) from both the pumps and the sewers would have been required. By providing an overflow weir from the existing river interceptor sewer that flows to the pump wetwell in addition to a check valve on the river interceptor sewer and new, higher capacity pumps, the full capacity of the river interceptor sewer could be utilized with surcharge of the sewer at the upstream end. By providing new, higher capacity pumps, a capacity of approximately 5.4 MGD can be provided or an increase of about 1.43 MGD.

Increasing the conveyance capacity from the WRPS station to 5.4 MGD by adding an inline check valve to the sewer and adding three new 1900 gpm (2.7 MGD) capacity pumps to push into the downstream sewer plus providing additional treatment capacity will address the 25-year, 24-hour storm event. In the future, if additional capacity were desired, the higher capacity pumps could pump into an alternate force main that could discharge into the existing 24-inch gravity sewer downstream of the West Jefferson Pump Station (WJPS) (Sandstone Creek Subarea). This would result in a revised conveyance capacity of approximately 9.4 MGD, 5.4 MGD with pumps and 3.97 MGD through the river interceptor sewer. The revised system Schematic is shown below in Figure 3-3.

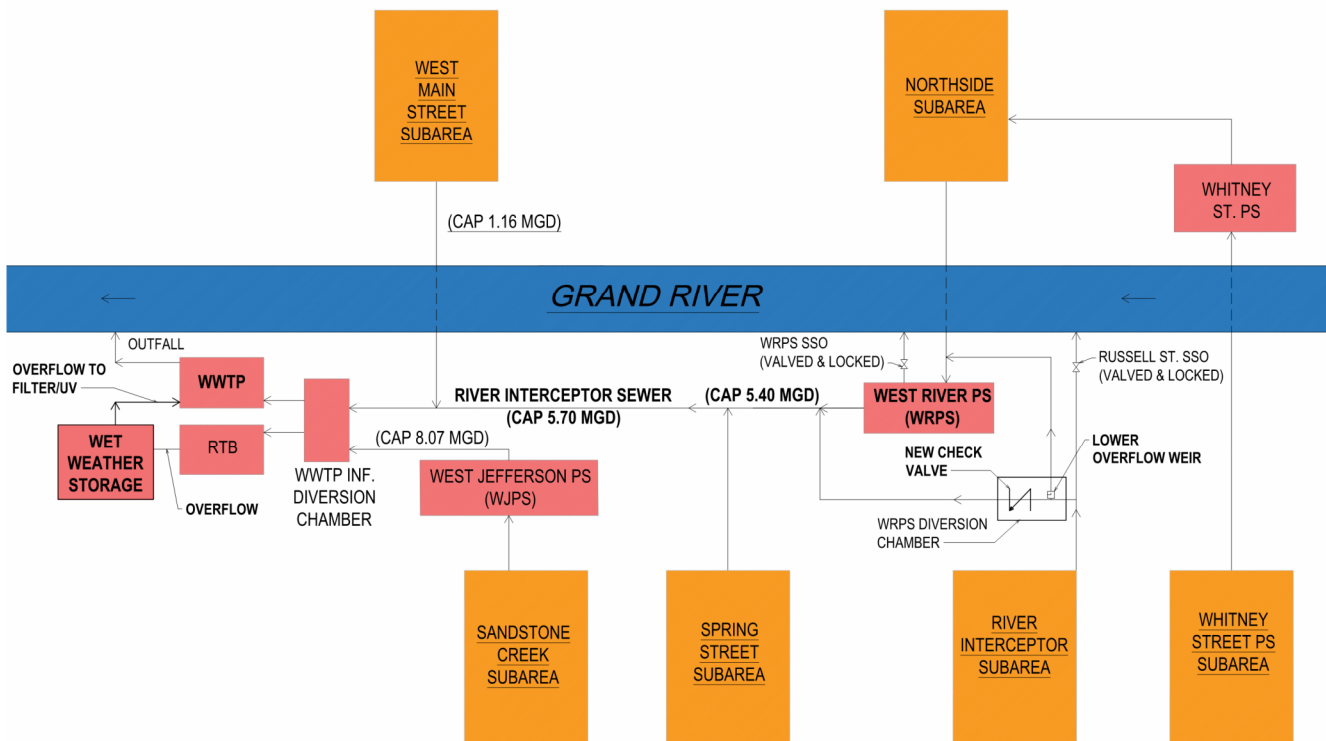


Figure 3.3. Revised Grand Ledge Collection System Schematic

## WWTP RTK Unit Hydrograph

An RTK Unit Hydrograph was projected using flow monitoring data at the WWTP from 2017/18 from three significant storm events (June 16, 2017, October 14, 2017, and October 22, 2017). The 15-minute and hourly rainfall from the Lansing Capitol Airport rain gauge (KLAN) was used for the precipitation timing and the totals were from the WWTP Rain Gauge. The hydrograph was then used to estimate the flows to the WWTP during a 25-year, 24-hour rainfall event (approximately 4.16 inches for Grand Ledge). Figure 3-4 depicts the predicted total flows for this storm event on top of the existing wastewater flows and the future peak wastewater flows after the projected future growth from Phase I and Phase II. The estimated flows assume a peak daily base flow condition and no reduction of infiltration and inflow.

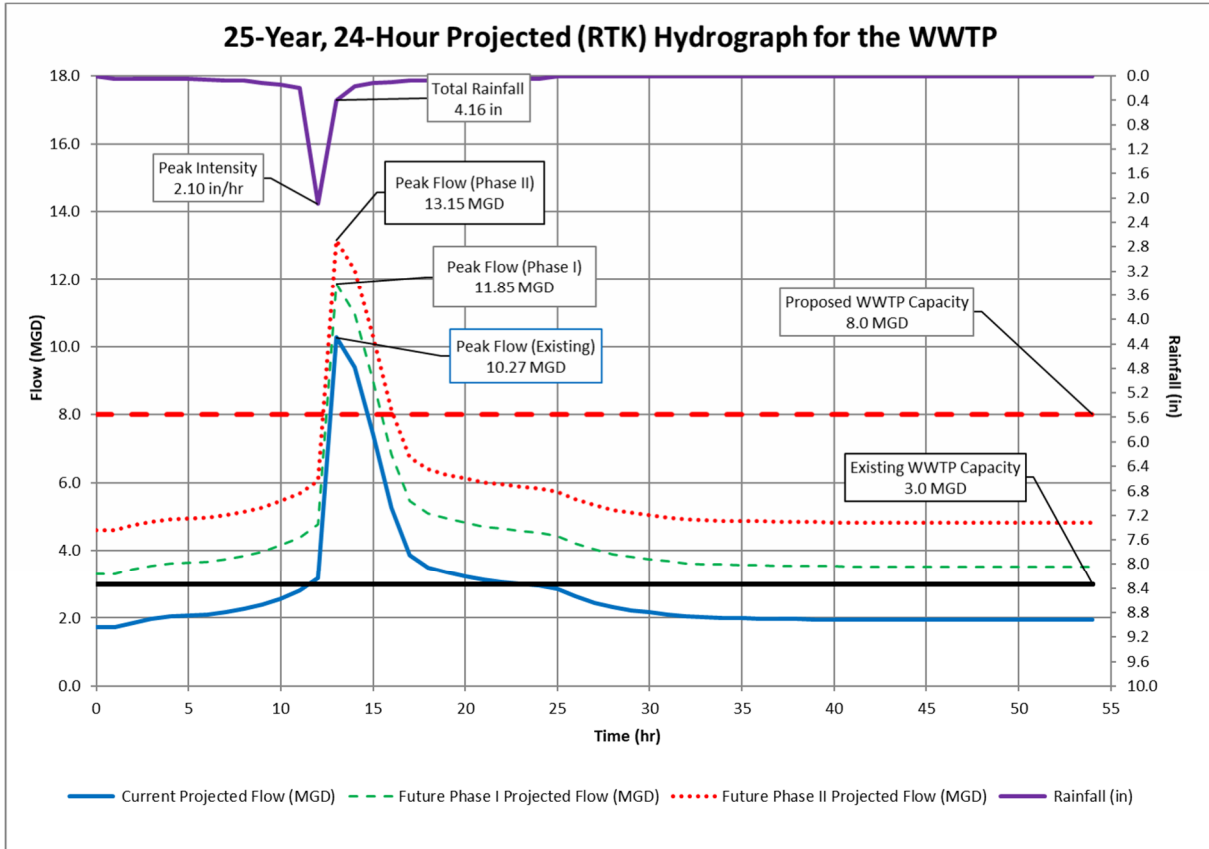


Figure 3.4. Preliminary WWTP RTK Unit Hydrograph

The estimated wet weather storage requirements for the existing WWTP were determined for both the existing peak hydraulic throughput capacity (3.0 MGD) and the proposed WWTP peak hydraulic throughput capacity (8.0 MGD). These volumes were determined by calculating the area above the peak hydraulic throughput capacity and the projected flow for each. Based on this analysis, the required storage volume for a 25-year, 24-hour event would be 0.33 MG after Phase I system growth and 0.49 MG after Phase II system growth. This analysis assumes no reduction due to system I&I removal. Approximately 0.96 MG will be available by using the existing 0.3 MG Retention Basin plus re-use of the existing primary tanks, one aeration basin and the existing final clarifiers. In addition, if half of the proposed AGS Equalization Basin were available (0.26 MG), a total of 1.22 MG would be available for storage versus the potential required volume of between 0.33-0.49 MG.

**Table 3.8. Required Storage for 25-year, 24-hour Storm**

	Units	At 3 MGD	At 8 MGD
Existing Projected Flow	MG	0.94	0.15
Projected Flow after Phase I System Growth	MG	2.96	0.33
Projected Flow after Phase II System Growth	MG	5.94	0.49

Collection System Evaluation and Recommendation

This section outlines the revised alternative for a phased approach to implementing the collection system improvements and provides an evaluation in comparison with the previously identified selected alternative.

Phased Collection System Improvements

The following collection system improvements are recommended to be implemented in a phased approach to reduce overall cost impact on the City and allow the City time to identify and remove sources of wet weather flow. The improvements recommended for this Phase I to be completed in Fiscal Year (FY) 2025 to provide the Grand Ledge Collection System with additional conveyance capacity to address the flows from a 25-year, 24-hour precipitation event.

Phase I Improvements

- ≡ Construct an Overflow Chamber with a weir and rubber inline check valve on the River Interceptor Sewer just upstream of WRPS.
- ≡ Although it has been indicated that the existing interceptor sewer has previously been lined and all the manholes have bolt-down lids, some additional ballast and possibly supplemental venting may be required for some of the manhole lids immediately west of WRPS to resist blowoff during surcharge events.
- ≡ Provide three additional pumps at WRPS such that a firm capacity to pump 6.0 MGD into the river interceptor sewer can be provided along with sufficient standby power generation capable of operating two pumps during loss of utility power.
- ≡ Modify the existing retention basin at the WWTP to allow for a maximum influent rate of 8 MGD into the retention basin. With this influent rate plus having the ability to pump 6.2 MGD using the existing intermediate lift pumps into additional storage tanks (re-purposed existing primary and secondary treatment tanks), a total of 0.96 MG would be available for storage (0.47 MG more than what is estimated per Table 3.8).
- ≡ If a portion (assume 50%) of the Proposed AGS Equalization were available in advance of a wet weather event, the available storage could be increased by about 0.26 MG, after Phase I the total available storage volume would be 1.22 MG (or 0.73 MG above what is required per Table 3.8 above).
- ≡ If I&I reduction efforts are successful, the storage volumes could be reduced more in the future.
- ≡ Provide a maximum hydraulic influent rate of 8 MGD into the WWTP for treatment. See Section 3.1.1 (wastewater treatment) of this report.
- ≡ In an extreme wet weather event, it is desirable for the wet weather storage tanks to be provided with a means to overflow and receive controlled, partial treatment rather than just releasing untreated flow to the river. It is recommended that a means to route overflows from the storage tanks to the CMDF filters and then through the UV disinfection and reaeration prior to discharge to the river. Given that this flow will have

received three stages of settling prior to the filters, and would overflow very infrequently, it is unlikely that the plant permit discharge levels would be exceeded during this type of event.

- ≡ The cost of these improvements is much less than the previously selected alternative which included construction of a new force main along Jefferson Street and sewer through Fitzgerald Park along with a 3.5 MG storage tank.

### Phase II Improvements (future)

The above improvements will allow for the system to provide treatment for a 25-year, 24-hour precipitation event under existing conditions.

Since the system is known to have issues with infiltration and inflow, it is also recommended that the City pursue the removal of inflow from foundation drains and any other sources that are connected to the sanitary sewer system since these inflows will likely continue to cause problems in the future and could cause localized high flows and thus sanitary sewer overflows (SSO's). Foundation drain removals can be accomplished through a rate-incentivized program that provides a lower rate for homes that can document that their foundation drains have been removed or are known not to be connected to the system and provides a higher rate for homeowners that are known to have connected foundation drains or refuse to have them removed. In addition, as building permits for modifications are issued, a requirement to do a foundation investigation should be included. The specific details of this program would need to be investigated. If excess funds are available at the completion of this program, specific areas with known connected drains could initially be pursued for removal.

Based on previous investigations there are approximately 39 houses with existing foundation drains and sump pumps connected to sanitary sewers that could relatively easily be removed and rerouted to storm sewers. During wet weather, these homes could contribute between 2-6 gpm to the sanitary sewer system or approximately 0.11-0.33 MGD and in some cases even higher. Their contribution can vary greatly depending on the proximity of roof drains to the roof line and whether the groundwater in the area is relatively high. Specific investigations could be performed to assess whether the cost of removal is warranted but assuming that this quantity could probably be removed at a cost of between \$3000 and \$6000 per home depending on the length of sump pump conveyance line required. This would result in a cost of approximately \$117,000 to 234,000 or between 354,000 to \$709,000 per MGD removed. The cost per MGD removed might seem high but if more drains in a particular area could be removed, the cost per MGD removed would likely go down.

The City has previously completed several investigations of I&I including dye tracing and smoke testing. Completing a sanitary sewer evaluation of the most problematic subareas subject to I&I and a review of previous efforts will help the City identify where separation and sewer rehabilitation will be beneficial. Sewer rehabilitation not only remove I&I it also prolongs the life of the sanitary sewers and manholes that have reached the end of its service life and can be more cost effective than full replacement.

## SECTION 4.0 — SELECTED ALTERNATIVE

### 4.1 PROPOSED FACILITIES

The proposed project consists of all improvements described in section herein under the recommended CWSRF Project Plan Amendment Alternative 3 provided in Figure 4-1 below.

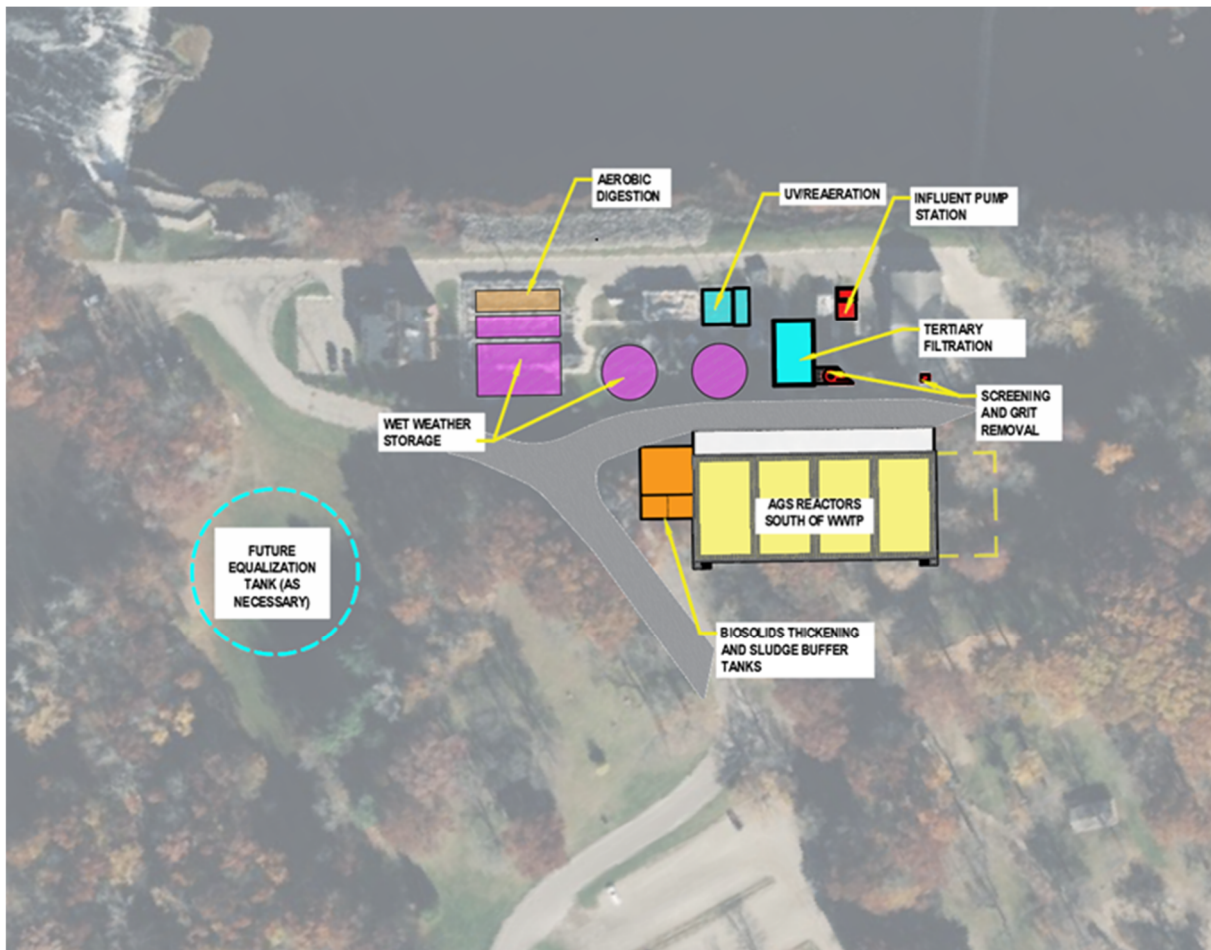


Figure 4.1. Alternative 3 Optimization of Existing Facilities: Conversion to High-Rate Extended Aeration

## 4.2 SCHEDULE

These projects will be coordinated with other City utility projects when applicable. Table 4.1 provides a proposed fiscal year 2025 quarter 1.5 or 2 loan closing schedule for the project using either Conventional Design-Bid-Build Approach or a Fixed Price Design-Build project delivery method.

**Table 4.1. Proposed Design and Construction Schedule**

<i>Financing Schedule</i>	<i>CWSRF FY2025 Q2</i>	<i>CWSRF FY2025 Q1.5</i>
<b>Action</b>	<b>Conventional Design Bid Build (DBB)</b>	<b>Fixed-Price Design Build (FDB)</b>
Select Design or Design-Build Team	May 2024	May 2024
Solicit Fixed Price Design Build Price	NA	June 2024
Develop 30% Construction Drawings	July 2024	July 2024
Develop 60% Construction Drawings	September 2024	August 2024
Submit Plans for Part 41 Permit Review	November 2024	September 2024
Part 41 Construction Permit	December 2025	October 2024
Pre-Order Long Lead Time Equipment and Materials	NA	October 2024
Bid Advertisement	December 2025	
Bid Opening	January 2025	
Submit Part III Application	January 2025	December 2024
Commence Construction	June 2025	January 2025
Complete Construction	March 2027	July 2026

## 4.3 COST ESTIMATE AND PROJECT USER COSTS

The estimated FY2025 project cost for the construction costs only of the proposed project is approximately \$52,400,000 including 20% contingency. A cost summary breakdown for the proposed Phase I improvements is provided in Appendix A.

The estimated user costs for the Modified Alternative 3 are provided in Table 4.2 and assume a 30-year loan at 4.00% interest. These costs summarize the total impact of the project capital cost per REU and does not account for prior adjustments to sewer rates. The impact on OM&R costs for this Alternative will be negligible compared to the City's existing OM&R and would likely be reduced based on the proposed process changes (removal of lime stabilization, efficient blowers, improved preliminary treatment, thicker biosolids storage etc.).

**Table 4.2. Proposed Project User Costs**

Descriptions	FY2025
Total Phase Project Cost	\$52,400,000
Interest Rate	4.00%
Term (years)	30
No. of REUs	4,135
Total Annual Debt Repayment	\$3,030,300
Total Annual Debt Repayment (Residential)	\$2,727,270
Total Monthly Cost for Project per Residential REU	\$61.07
Total Cost of Loan	\$90,909,000
Interest Paid	\$38,509,000

**Notes**

1. Assumes 90% residential contribution to fund
2. As of 2024, City sewer has 4,135 REUs

## **SECTION 5.0 — PUBLIC PARTICIPATION**

### **5.1 GENERAL**

The Project Plan was advertised on the City’s website on **Friday April 5, 2024** (refer to Appendix D for all public participation documentation.) A hard copy of the Draft Project Plan Amendment was provided to the City on April 5, 2024 to be placed at the location below for public viewing:

≡ **City of Grand Ledge City Hall:** 310 Greenwood Street, Grand Ledge, MI 48837

A public meeting was held on **April 22, 2024** to review the work associated with the proposed Project Plan. The meeting reviewed the information presented in the Project Plan, including estimated user costs and to receive comments and views of interested persons. Copies of correspondence related to agency notifications, as well as other relevant correspondence, are included in Appendix A.

### **5.2 RESOLUTION**

The City Council made a resolution regarding this Project Plan Amendment during the public meeting on April 22, 2024. The signed resolution is included in Appendix D.

### **5.3 PUBLIC MEETING**

Appendix D includes the public meeting notice, proof of 15-day notice, a meeting agenda, the public meeting attendance list, a memo of resident questions and answers during the public meeting, and a photocopy of the slides presented at the meeting.

### **5.4 ADDITIONAL EGLE SUBMITTAL FORMS**

**Appendix E includes the following:**

- ≡ **EGLE’s signed Project Plan Submittal Form**
- ≡ **The Project Priority List (PPL) Scoring Data Form**
- ≡ **The signed Project Useful Life and Cost Analysis Certification Form**

## *Appendix A — Project Costs*



**DRAFT**

**ENGINEER'S OPINION OF PROBABLE PROJECT COST**

2101 Aurelius Rd. Ste. 2A; Holt, MI 48842

Telephone: 517-694-7760

PROJECT: Grand Ledge WWTP and Collection System Improvements  
 LOCATION: Grand Ledge  
 BASIS FOR ESTIMATE: [X] CONCEPTUAL [ ] PRELIMINARY [ ] FINAL  
 WORK: WWTP Improvements - Cost Summary

DATE: 4/5/2024  
 PROJECT NO.: 20221119  
 ESTIMATOR: DIU  
 CHECKED BY: DJB  
 CURRENT ENR: 13532

NUMBER	DESCRIPTION	QUANT.	UNIT	UNIT	TOTAL
				AMOUNT	AMOUNT
1	Site Work/Demolition/Existing Tank Conversion to WW Storage	1	LS	\$909,000	\$909,000
2	WWTP Electrical, Emergency Power, and SCADA	1	LS	\$2,375,000	\$2,375,000
3	Yard Piping	1	LS	\$995,000	\$995,000
4	Headworks Perforated Plate Screen	1	LS	\$1,195,000	\$1,195,000
5	Grit Removal and Influent PS	1	LS	\$1,836,000	\$1,836,000
6	Aerobic Granular Sludge and Equalization	1	LS	\$19,795,000	\$19,695,000
7	Tertiary Filters	1	LS	\$2,545,000	\$2,545,000
8	Ultraviolet Disinfection and Reaeration	1	LS	\$1,545,000	\$1,545,000
9	Aerobic Digestion (Converted Aeration Basins)	1	LS	\$899,000	\$899,000
10	Sludge Thickening	1	LS	\$2,133,000	\$2,133,000
11	Collection System Improvements	1	LS	\$1,000,000	\$1,000,000
12	West River Pump Station	1	LS	\$489,000	\$489,000
13	General Conditions, Mobilization, Bonds, and Insurance	16	%		\$5,699,000
14	<b>Construction Subtotal</b>				<b>\$41,400,000</b>
15	Estimating Contingency	20	%		\$8,100,000
16	<b>Total Estimated Construction Cost</b>				<b>\$49,500,000</b>
17	Design/Construction Engineering	6	%		\$2,800,000
18	Administrative, Legal, Finance				\$75,000
	<b>TOTAL PROJECT COST</b>				<b>\$52,400,000</b>

*Appendix B — NDPES Permit*

PERMIT NO. MI0020800

  
**STATE OF MICHIGAN**  
**DEPARTMENT OF ENVIRONMENT, GREAT LAKES,**  
**AND ENERGY**

**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the federal Clean Water Act (federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq.*, as amended); Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2019-06,

**City of Grand Ledge**  
310 Greenwood Street  
Grand Ledge, MI 48837

is authorized to discharge from the **Grand Ledge Wastewater Treatment Plant** located at

109 Fitzgerald Park Drive  
Grand Ledge, MI 48837

designated as **Grand Ledge WWTP**

to the receiving water named the Grand River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on April 4, 2023.

**This permit takes effect on June 1, 2023.** The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date, this permit shall supersede National Pollutant Discharge Elimination System (NPDES) Permit No. MI0020800 (expiring October 1, 2022).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2027**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environment, Great Lakes, and Energy (Department) by **April 4, 2027**.

**Issued** May 31, 2023.

Original signed by Matt Staron for  
Christine Alexander, Manager  
Permits Section  
Water Resources Division

## PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiEnviro Portal system. The MiEnviro Portal website is located at <https://mienviro.michigan.gov/ncore/>. Payment shall be submitted or postmarked by January 15 for notices mailed by December 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after December 1.

**Annual Permit Fee Classification:** Municipal Major, less than 10 MGD (Individual Permit)

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiEnviro Portal system. The MiEnviro Portal website is located at <https://mienviro.michigan.gov/ncore/>. Payment shall be submitted or postmarked no later than January 31 of each year for notices mailed by December 15. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after December 15.

## ANTIDegradation

The Department has determined that the permittee's Antidegradation Demonstration, based on information required by Subrule (4) of R 323.1098, shows that lowering of water quality is necessary to support the identified important social and economic development in the area. This determination is solely for the purpose of satisfying state water quality regulations and is not intended to supplant local requirements, including land use or zoning laws. It is not, and should not be construed as, a finding by the Department that the proposed development meets local requirements or ordinances.

## CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Lansing District Office of the Water Resources Division. The Lansing District Office is located at 525 West Allegan Street, 1st Floor, South Tower, Lansing, MI 48933, Telephone: 517-284-6651, Fax: 517-241-3571.

## CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

**PART I**

**Section A. Limitations and Monitoring Requirements**

**1. Final Effluent Limitations, Monitoring Point 001A – Prior to Completion of Facility Upgrade**

During the period beginning on the effective date of this permit and lasting until the completion of the facility upgrade to 3.9 MGD capacity, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Grand River at Latitude 42.762387, Longitude -84.761341. Such discharge shall be limited and monitored by the permittee as specified below.

Parameter	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				Monitoring Frequency	Sample Type
	Monthly	7-Day	Daily	Units	Monthly	7-Day	Daily	Units		
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand (CBOD5)	310	500	(report)	lbs/day	25	40	(report)	mg/l	5x Weekly	24-Hr Composite
Total Suspended Solids (TSS)	380	560	(report)	lbs/day	30	45	(report)	mg/l	5x Weekly	24-Hr Composite
Ammonia Nitrogen (as N)	---	---	---	---	---	---	(report)	mg/l	5x Weekly	24-Hr Composite
Total Phosphorus (as P)	12	---	(report)	lbs/day	1.0	---	(report)	mg/l	5x Weekly	24-Hr Composite
Chloride	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite
Sulfate	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/100 ml	Daily	Grab
Total Residual Chlorine	---	---	---	---	---	---	38	ug/l	Daily	Grab
Total Mercury										
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Quarterly	Calculation
Uncorrected	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Duplicate	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
Laboratory Method Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
	<b>12-Month Rolling Average</b>				<b>12-Month Rolling Average</b>					
Total Mercury	0.000025	---	---	lbs/day	2.0	---	---	ng/l	Quarterly	Calculation
					<b>Minimum % Monthly</b>		<b>Minimum % Daily</b>			
CBOD5 Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation
TSS Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation

**PART I**

**Section A. Limitations and Monitoring Requirements**

<u>Parameter</u>					<u>Minimum Daily</u>		<u>Maximum Daily</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Sample Type</u>
pH	---	---	---	---	6.5	---	9.0	S.U.	Daily	Grab
Dissolved Oxygen	---	---	---	---	4.0	---	---	mg/l	Daily	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 1.5 MGD.

- a. **Narrative Standard**  
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Sampling Locations**  
Samples for CBOD5, TSS, Ammonia Nitrogen, Total Phosphorus, Chloride, and Sulfate shall be taken prior to disinfection. Samples for Fecal Coliform Bacteria, Total Residual Chlorine, Total Mercury, pH, and Dissolved Oxygen shall be taken after disinfection. The Department may approve alternate sampling locations that are demonstrated by the permittee to be representative of the effluent.
- c. **Quarterly Monitoring**  
Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "\*G" on the Discharge Monitoring Report (DMR). (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "\*G" on the first day of the month only).
- d. **Total Residual Chlorine (TRC)**  
Compliance with the TRC limit shall be determined on the basis of one (1) or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over at least eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.
- e. **Percent Removal Requirements**  
Monthly percent removal shall be calculated based on the monthly average effluent CBOD5 and TSS concentrations and the monthly average influent concentrations for approximately the same period. Daily percent removal shall be calculated based on the daily effluent CBOD5 and TSS concentrations and the daily influent concentrations for the same day. Reporting of Daily percent removal is only required on days on which an influent sample is obtained. The calculation shall be made as follows for each parameter: Percent removal = (influent concentration - effluent concentration) / influent concentration x 100.

**PART I****Section A. Limitations and Monitoring Requirements**

## f. Final Effluent Limitation for Total Mercury

The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any quarter is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that quarter, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.5. of this permit.

## g. Total Mercury Testing and Additional Reporting Requirements

The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry," EPA-821-R-02-019, August 2002. The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, "Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance)," EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than 10 samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every 10 samples collected. A "sampling event" shall be defined herein as all sampling for total mercury conducted on the same day, provided the same sampling team collected all samples using the same sampling methods, procedures, and equipment on that day. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

**PART I**

**Section A. Limitations and Monitoring Requirements**

**2. Final Effluent Limitations, Monitoring Point 001A – After Completion of Facility Upgrade**

The permittee shall notify the Department 60 days prior to the completion of upgrades at the facility to bring the wastewater treatment plant to 3.9 MGD capacity. During the period beginning on the completion of the facility upgrade to 3.9 MGD capacity, and lasting until the expiration date of this permit, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Grand River at Latitude 42.762387, Longitude -84.761341. Such discharge shall be limited and monitored by the permittee as specified below.

Parameter	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				Monitoring Frequency	Sample Type
	Monthly	7-Day	Daily	Units	Monthly	7-Day	Daily	Units		
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand (CBOD5)										
May – October	130	320	(report)	lbs/day	4	---	10	mg/l	5x Weekly	24-Hr Composite
November – April	810	1,300	(report)	lbs/day	25	40	(report)	mg/l	5x Weekly	24-Hr Composite
Total Suspended Solids (TSS)										
May – October	650	980	(report)	lbs/day	20	30	(report)	mg/l	5x Weekly	24-Hr Composite
November – April	980	1,500	(report)	lbs/day	30	45	(report)	mg/l	5x Weekly	24-Hr Composite
Ammonia Nitrogen (as N)										
May – October	16	65	(report)	lbs/day	0.5	---	2.0	mg/l	5x Weekly	24-Hr Composite
November	260	---	(report)	lbs/day	8.0	---	(report)	mg/l	5x Weekly	24-Hr Composite
December – March	320	---	(report)	lbs/day	10	---	(report)	mg/l	5x Weekly	24-Hr Composite
April	390	---	(report)	lbs/day	12	---	(report)	mg/l	5x Weekly	24-Hr Composite
Total Phosphorus (as P)	12	---	(report)	lbs/day	1.0	---	(report)	mg/l	5x Weekly	24-Hr Composite
Chloride	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite
Sulfate	---	---	---	---	---	---	(report)	mg/l	Monthly	24-Hr Composite
Acute Toxicity – <i>C. dubia</i>	---	---	---	---	---	---	(report)	TU <sub>A</sub>	Quarterly	24-Hr Composite
							<b>Individual Chronic Value</b>			
Chronic Toxicity – <i>C. dubia</i>	---	---	---	---	5.1	---	(report)	TU <sub>C</sub>	Quarterly	24-Hr Composite

PART I

Section A. Limitations and Monitoring Requirements

<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>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>		
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/ 100 ml	Daily	Grab
Total Mercury										
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Quarterly	Calculation
Uncorrected	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Duplicate	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
Laboratory Method Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
	<b>12-Month Rolling Average</b>				<b>12-Month Rolling Average</b>					
Total Mercury	0.000065	---	---	lbs/day	2.0	---	---	ng/l	Quarterly	Calculation
					<b>Minimum % Monthly</b>		<b>Minimum % Daily</b>			
CBOD5 Minimum % Removal										
November – April	---	---	---	---	85	---	(report)	%	Monthly	Calculation
TSS Minimum % Removal										
November – April	---	---	---	---	85	---	(report)	%	Monthly	Calculation
					<b>Minimum Daily</b>		<b>Maximum Daily</b>			
pH	---	---	---	---	6.5	---	9.0	S.U.	Daily	Grab
Dissolved Oxygen	---	---	---	---	3.0	---	---	mg/l	Daily	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 3.9 MGD.

- a. Narrative Standard  
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. Sampling Locations  
Samples for CBOD5, TSS, Ammonia Nitrogen, Total Phosphorus, Chloride, Sulfate, Acute Toxicity, and Chronic Toxicity shall be taken prior to disinfection. Samples for Fecal Coliform Bacteria, Total Mercury, pH, and Dissolved Oxygen shall be taken after disinfection. The Department may approve alternate sampling locations that are demonstrated by the permittee to be representative of the effluent.

**PART I****Section A. Limitations and Monitoring Requirements**

- c. **Quarterly Monitoring**  
Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "\*G" on the Discharge Monitoring Report (DMR). (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "\*G" on the first day of the month only).
- d. **Ultraviolet Disinfection**  
It is understood that ultraviolet light will be used to achieve compliance with the fecal coliform limitations. If disinfection other than ultraviolet light will be used, the permittee shall notify the Department in accordance with Part II.C.12. of this permit.
- e. **Percent Removal Requirements**  
Monthly percent removal shall be calculated based on the monthly average effluent CBOD5 and TSS concentrations and the monthly average influent concentrations for approximately the same period. Daily percent removal shall be calculated based on the daily effluent CBOD5 and TSS concentrations and the daily influent concentrations for the same day. Reporting of Daily percent removal is only required on days on which an influent sample is obtained. The calculation shall be made as follows for each parameter: Percent removal = (influent concentration - effluent concentration) / influent concentration x 100.
- f. **Final Effluent Limitation for Total Mercury**  
The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any quarter is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that quarter, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.5. of this permit.
- g. **Total Mercury Testing and Additional Reporting Requirements**  
The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry," EPA-821-R-02-019, August 2002. The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, "Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance)," EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in

**PART I****Section A. Limitations and Monitoring Requirements**

conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than 10 samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every 10 samples collected. A "sampling event" shall be defined herein as all sampling for total mercury conducted on the same day, provided the same sampling team collected all samples using the same sampling methods, procedures, and equipment on that day. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

**h. Whole Effluent Toxicity Final Requirements**

Test species shall include *Ceriodaphnia dubia*. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 3 mg/l, the pH of the toxicity test shall be maintained at a pH of 8 Standard Units. If multiple chronic toxicity tests for the same species are performed during the month, the maximum  $TU_A$  value and monthly average  $TU_C$  value for the species shall be reported. Completed toxicity test reports for each test conducted shall be retained by the permittee in accordance with the requirements of Part II.B.5. of this permit and shall be available for review by the Department upon request. After 2 years of toxicity testing and upon approval from the Department, the monitoring frequency may be reduced to no less than annually if the test data indicate that the toxicity requirements of R 323.1219 of the Michigan Administrative Code are consistently being met. Toxicity test data acceptability is contingent upon validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

1) When monitoring shows persistent exceedance of the 5.1  $TU_C$  limit for effluent toxicity or data indicate persistent exceedance of the acute toxicity requirements of R 323.1219, the Department will determine whether the permittee must implement the toxicity control program requirements specified in 2), below.

2) Upon written notification by the Department, the following conditions apply. Within 90 days of the notification, the permittee shall implement a Toxicity Reduction Evaluation (TRE). The objective of the TRE shall be to reduce the toxicity of the final effluent from Monitoring Point 001A to  $<5.1 TU_C$  and  $<1.0 TU_A$ . The following documents are available as guidance to reduce toxicity to acceptable levels: Phase I, EPA/600/6-91/005F (chronic), EPA/600/6-91/003 (acute); Phase II, EPA/600/R-92/080 (acute and chronic); Phase III, EPA/600/R-92/081 (acute and chronic); and Publicly Owned Treatment Works (POTWs), EPA/833B-99/002. The TRE shall include quarterly chronic toxicity tests of the discharge from Monitoring Point 001A for the duration of the TRE. The tests shall be conducted and reported as specified above. Annual reports shall be submitted to the Department within 30 days of the completion of the last test of each annual cycle.

3) This permit may be modified in accordance with applicable laws and rules to include additional whole effluent toxicity control requirements as necessary.

## PART I

## Section A. Limitations and Monitoring Requirements

## 3. Quantification Levels and Analytical Methods for Selected Parameters

Maximum acceptable quantification levels (QLs) are specified for selected parameters in the table below. These QLs apply to all monitoring conducted in compliance with this permit if and when the parameters specified herein are monitored. This includes monitoring conducted to meet the requirements of the application for permit reissuance. These QLs shall be considered the maximum acceptable unless a higher QL is appropriate because of sample matrix interference. Justification for higher QLs shall be submitted to the Department within 30 days of such determination.

Where necessary to help ensure that the QLs specified herein can be achieved, analytical methods may also be specified in the table below. The sampling procedures, preservation and handling, and analytical protocol for all monitoring conducted in compliance with this permit, including monitoring conducted to meet the requirements of the application for permit reissuance, shall be in accordance with the methods specified herein, or in accordance with Part II.B.2. of this permit if no method is specified herein, unless an alternate method is approved by the Department. The Department will consider only alternate methods that meet the requirements of Part II.B.2. and whose QLs are at least as sensitive (i.e., low) as those specified herein. **Not all QLs are expressed in the same units in the table below.** The table is continued on the following page:

Parameter	QL	Units	Analytical Method
1,2-Diphenylhydrazine (as Azobenzene)	3.0	ug/l	
2,4,6-Trichlorophenol	5.0	ug/l	
2,4-Dinitrophenol	19	ug/l	
3,3'-Dichlorobenzidine	1.5	ug/l	
4-Chloro-3-Methylphenol	7.0	ug/l	
4,4'-DDD	0.01	ug/l	
4,4'-DDE	0.01	ug/l	
4,4'-DDT	0.01	ug/l	
Acrylonitrile	1.0	ug/l	
Aldrin	0.01	ug/l	
Alpha-Endosulfan	0.01	ug/l	
Alpha-Hexachlorocyclohexane	0.01	ug/l	
Antimony, Total	1	ug/l	
Arsenic, Total	1	ug/l	
Barium, Total	5	ug/l	
Benzidine	0.1	ug/l	
Beryllium, Total	1	ug/l	
Beta-Endosulfan	0.01	ug/l	
Beta-Hexachlorocyclohexane	0.01	ug/l	
Bis (2-Chloroethyl) Ether	1.0	ug/l	
Bis (2-Ethylhexyl) Phthalate	5.0	ug/l	
Boron, Total	20	ug/l	
Cadmium, Total	0.2	ug/l	
Chlordane	0.01	ug/l	
Chloride	1.0	mg/l	
Chromium, Hexavalent	5	ug/l	
Chromium, Total	10	ug/l	
Copper, Total	1	ug/l	
Cyanide, Available	2	ug/l	EPA Method OIA 1677

**PART I**

**Section A. Limitations and Monitoring Requirements**

Parameter	QL	Units	Analytical Method
Cyanide, Total	5	ug/l	
Delta-Hexachlorocyclohexane	0.01	ug/l	
Dieldrin	0.01	ug/l	
Di-N-Butyl Phthalate	9.0	ug/l	
Endosulfan Sulfate	0.01	ug/l	
Endrin	0.01	ug/l	
Endrin Aldehyde	0.01	ug/l	
Fluoranthene	1.0	ug/l	
Heptachlor	0.01	ug/l	
Heptachlor Epoxide	0.01	ug/l	
Hexachlorobenzene	0.01	ug/l	
Hexachlorobutadiene	0.01	ug/l	
Hexachlorocyclopentadiene	0.01	ug/l	
Hexachloroethane	5.0	ug/l	
Lead, Total	1	ug/l	
Lindane	0.01	ug/l	
Lithium, Total	10	ug/l	
Mercury, Total	0.5	ng/l	EPA Method 1631E
Nickel, Total	5	ug/l	
PCB-1016	0.1	ug/l	
PCB-1221	0.1	ug/l	
PCB-1232	0.1	ug/l	
PCB-1242	0.1	ug/l	
PCB-1248	0.1	ug/l	
PCB-1254	0.1	ug/l	
PCB-1260	0.1	ug/l	
Pentachlorophenol	1.8	ug/l	
Perfluorooctane sulfonate (PFOS)	2.0	ng/l	While EPA Method 1633 remains draft, analyses may be performed using that method, or ASTM D7979, or an isotope dilution method (sometimes referred to as Method 537 modified). Once EPA Method 1633 is promulgated, only that method may be used.
Perfluorooctanoic acid (PFOA)			
Perfluorobutanesulfonic acid (PFBS)			
Phenanthrene	1.0	ug/l	
Phosphorus (as P), Total	10	ug/l	
Selenium, Total	1.0	ug/l	
Silver, Total	0.5	ug/l	
Strontium, Total	1000	ug/l	
Sulfate	2.0	mg/l	
Sulfide, Total	20	ug/l	
Thallium, Total	1	ug/l	
Toxaphene	0.1	ug/l	
Vinyl Chloride	1.0	ug/l	
Zinc, Total	10	ug/l	

**PART I**

**Section A. Limitations and Monitoring Requirements**

**4. Additional Monitoring Requirements**

As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001A for the constituents identified below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in October 2023, May 2024, March 2025, and August 2026. Grab samples shall be collected for available cyanide, total phenols, and the Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) and Volatile Organic Compounds identified below. For all other parameters, 24-hour composite samples shall be collected.

Prior to completion of the facility upgrade to 3.9 MGD capacity, test species for whole effluent toxicity monitoring shall include fathead minnow **and** *Ceriodaphnia dubia*. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 3 mg/l, the pH of the toxicity test shall be maintained at a pH of 8 Standard Units. Acute and chronic toxicity data shall be included in the reporting for the toxicity test results. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request. The permittee shall report to the Department any whole effluent toxicity test results greater than 1.0 TU<sub>A</sub> or 11.8 TU<sub>C</sub> within five (5) days of becoming aware of the result.

After completion of the facility upgrade to 3.9 MGD capacity, test species for whole effluent toxicity monitoring shall include fathead minnow. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 3 mg/l, the pH of the toxicity test shall be maintained at a pH of 8 Standard Units. Acute and chronic toxicity data shall be included in the reporting for the toxicity test results. Toxicity test data acceptability is contingent upon the validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request. The permittee shall report to the Department any whole effluent toxicity test results greater than 1.0 TU<sub>A</sub> or 5.1 TU<sub>C</sub> within five (5) days of becoming aware of the result.

The results of such additional monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittee shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

Whole Effluent Toxicity (1.5 MGD capacity)

acute toxicity                      chronic toxicity

Whole Effluent Toxicity (3.9 MGD capacity)

acute toxicity (fathead minnow)                      chronic toxicity (fathead minnow)

Hardness

calcium carbonate

Perfluoroalkyl and Polyfluoroalkyl Substances

Perfluorooctanesulfonic acid (PFOS)      Perfluorooctanoic acid (PFOA)  
 Perfluorobutanesulfonic acid (PFBS)

Metals (Total Recoverable), Cyanide and Total Phenols

antimony	arsenic	available cyanide	nickel
beryllium	cadmium	chromium	zinc
copper	lead	thallium	
selenium	silver	total phenols	

## PART I

## Section A. Limitations and Monitoring Requirements

Volatile Organic Compounds

acrolein	acrylonitrile	benzene	bromoform
carbon tetrachloride	chlorobenzene	chlorodibromomethane	chloroethane
2-chloroethylvinyl ether	chloroform	dichlorobromomethane	1,1-dichloroethane
1,2-dichloroethane	trans-1,2-dichloroethylene	1,1-dichloroethylene	1,2-dichloropropane
1,3-dichloropropylene	ethylbenzene	methyl bromide	methyl chloride
methylene chloride	1,1,2,2-tetrachloroethane	tetrachloroethylene	toluene
1,1,1-trichloroethane	1,1,2-trichloroethane	trichloroethylene	vinyl chloride

Acid-Extractable Compounds

4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol
4,6-dinitro-o-cresol	2,4-dinitrophenol	2-nitrophenol	4-nitrophenol
pentachlorophenol	phenol	2,4,6-trichlorophenol	

Base/Neutral Compounds

acenaphthene	acenaphthylene	anthracene	benzidine
benzo(a)anthracene	benzo(a)pyrene	3,4-benzofluoranthene	benzo(ghi)perylene
benzo(k)fluoranthene	bis(2-chloroethoxy)methane	bis(2-chloroethyl)ether	
bis(2-chloroisopropyl)ether	4-bromophenyl phenyl ether	butylbenzyl phthalate	2-chloronaphthalene
bis(2-ethylhexyl)phthalate	chrysene	di-n-butyl phthalate	di-n-octyl phthalate
4-chlorophenyl phenyl ether	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
dibenzo(a,h)anthracene	diethyl phthalate	dimethyl phthalate	2,4-dinitrotoluene
3,3'-dichlorobenzidine	1,2-diphenylhydrazine	fluoranthene	fluorene
2,6-dinitrotoluene	hexachlorobutadiene	hexachlorocyclopentadiene	hexachloroethane
hexachlorobenzene	isophorone	naphthalene	nitrobenzene
indeno(1,2,3-cd)pyrene	n-nitrosodimethylamine	n-nitrosodiphenylamine	phenanthrene
n-nitrosodi-n-propylamine	1,2,4-trichlorobenzene		
pyrene			

**PART I****Section A. Limitations and Monitoring Requirements****5. Pollutant Minimization Program for Total Mercury**

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. The permittee shall continue to implement the Pollutant Minimization Program approved on July 16, 2009, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

- a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;
- b. a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and
- c. implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year, the permittee shall submit a status report to the Department for the previous calendar year that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b. above.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

**PART I****Section A. Limitations and Monitoring Requirements****6. Pollutant Minimization and Source Evaluation Program for Perfluorooctanesulfonic Acid (PFOS), Perfluorooctanoic Acid (PFOA), and Perfluorobutanesulfonic Acid (PFBS)**

The goal of the Pollutant Minimization and Source Evaluation Program is to identify and address sources of PFOS, PFOA, and PFBS and to reduce and maintain the effluent concentrations of PFOS, PFOA, and PFBS at or below the water quality-based effluent limitations (WQBELs). The WQBELs are 12 ng/l for PFOS, 3,300 ng/l for PFOA, and 13,000,000 ng/l for PFBS.

- a. Within 90 days of written notification by the Department or after the permittee notifies the Department that the final effluent concentration of PFOS, PFOA, or PFBS has exceeded the WQBELs, the permittee shall submit to the Department an approvable Pollutant Minimization and Source Evaluation Program for PFOS, PFOA, and PFBS to proceed toward the goal. The Pollutant Minimization and Source Evaluation Program shall include the following:
- 1) identification of and strategies to identify any potential and probable PFOS, PFOA, and PFBS sources;
  - 2) monitoring plan for the permitted facility's influent and effluent, as well as effluent from suspected sources;
  - 3) implemented measures thus far to eliminate, reduce, and/or control sources, and an assessment of the degree of success and the strategies used to measure success; and
  - 4) proposed measures and implementation schedules for elimination, control, and/or reduction of the identified sources (prioritizing highest loadings and concentrations), and the strategies that will be used to measure success.
- b. Two times annually, on or before February 1 and August 1 of each year following Department approval of the Pollutant Minimization and Source Evaluation Program, the permittee shall submit to the Department a status report for the prior six (6) month period. Status reports shall include:
- 1) complete list of known or suspected PFOS, PFOA, and PFBS sources;
  - 2) summary of influent and effluent monitoring data;
  - 3) summary of monitoring data from known or suspected sources;
  - 4) history and compliance status for sources;
  - 5) implemented measures to eliminate, reduce, or control sources, (prioritizing highest loadings and concentrations), and an assessment of the degree of success and the strategies used to measure success;
  - 6) proposed measures and schedules for elimination, control, or reduction of any newly identified PFOS, PFOA, and PFBS sources (prioritizing highest loadings and concentrations), and the strategies that will be used to measure success;
  - 7) barriers to implementation and revisions to the implementation schedule; and
  - 8) any laboratory reports not previously supplied.

Any information generated as a result of the Pollutant Minimization and Source Evaluation Program set forth in this permit may be used to support a request to modify the Pollutant Minimization and Source Evaluation Program or to demonstrate that the requirement has been completed satisfactorily.

**PART I****Section A. Limitations and Monitoring Requirements**

A request for modification of the approved Pollutant Minimization and Source Evaluation Program shall be submitted in writing to the Department along with supporting documentation for review and approval. The Department may approve modifications to the approved Pollutant Minimization and Source Evaluation Program, including a reduction in the frequency of the influent and known or potential source monitoring requirements. Approval of a Pollutant Minimization and Source Evaluation Program modification does not require a permit modification.

This permit may be modified in accordance with applicable laws and rules to include additional PFOS, PFOA, and PFBS conditions and/or limitations as necessary.

**7. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements**

In accordance with Section 324.3112a of the NREPA, if untreated or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the permittee shall immediately, but not more than 24 hours after the discharge begins, notify local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located, that the discharge is occurring. The permittee shall also notify the Department via its MiEnviro Portal system on the form entitled "Report of Discharge (CSO\SSO\RTB)." The MiEnviro Portal website is located at <https://mienviro.michigan.gov/ncore/>. At the conclusion of the discharge, the permittee shall make all such notifications specified in, and in accordance with, Section 324.3112a of the NREPA, and shall notify the Department via its MiEnviro Portal system on the form entitled "Report of Discharge (CSO\SSO\RTB)."

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of untreated or partially treated sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification.

Additionally, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The results of this testing shall be submitted to the Department via MiEnviro Portal as part of the notification specified above, or, if the results are not yet available, submitted as soon as they become available. This testing is not required if it has been waived by the local health department, or if the discharge(s) did not affect surface waters. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

**PART I****Section A. Limitations and Monitoring Requirements****8. Facility Contact**

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
  - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
  - for a partnership, a general partner,
  - for a sole proprietorship, the proprietor, or
  - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
  - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
  - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section releases the permittee from properly submitting reports and forms as required by law.

**9. Monthly Operating Reports**

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated R 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Within 30 days of the effective date of this permit, the permittee shall submit to the Department a revised treatment facility monitoring program to address monitoring requirement changes reflected in this permit, or submit justification explaining why monitoring requirement changes reflected in this permit do not necessitate revisions to the treatment facility monitoring program. The permittee shall implement the revised treatment facility monitoring program upon approval from the Department. Applicable forms and guidance are available on the Department's web site at [https://www.michigan.gov/egle/0,9429,7-135-3313\\_71618\\_44117---,00.html](https://www.michigan.gov/egle/0,9429,7-135-3313_71618_44117---,00.html). The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

## PART I

## Section A. Limitations and Monitoring Requirements

## 10. Asset Management

The permittee shall at all times properly operate and maintain all facilities (i.e., the sewer system and treatment works as defined in Part 41 of the NREPA), and control systems installed or used by the permittee to operate the sewer system and treatment works and achieve and maintain compliance with the conditions of this permit (also see Part II.D.3 of this permit). The requirements of an Asset Management Program function to achieve the goals of effective performance, adequate funding, and adequate operator staffing and training. Asset management is a planning process for ensuring that optimum value is gained for each asset and that financial resources are available to rehabilitate and replace those assets when necessary. Asset management is centered on a framework of five (5) core elements: the current state of the assets; the required sustainable level of service; the assets critical to sustained performance; the minimum life-cycle costs; and the best long-term funding strategy.

## a. Asset Management Program Requirements

The permittee shall continue to implement the Asset Management Plan approved on March 12, 2020, and approved modifications thereto. The Asset Management Plan contains a schedule for the development and implementation of an Asset Management Program that meets the requirements outlined below in 1) – 4):

1) *Maintenance Staff.* The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. The level of staffing needed shall be determined by taking into account the work involved in operating the sewer system and treatment works, planning for and conducting maintenance, and complying with this permit.

2) *Collection System Map.* The permittee shall complete a map of the sewer collection system it owns and operates. The map shall be of sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by the Department. **Note: Items below referencing combined sewer systems are not applicable to separate sewer systems.** Such map(s) shall include but not be limited to the following:

- a) all sanitary sewer lines and related manholes;
- b) all combined sewer lines, related manholes, catch basins and CSO regulators;
- c) all known or suspected connections between the sanitary sewer or combined sewer and storm drain systems;
- d) all outfalls, including the treatment plant outfall(s), combined sewer treatment facility outfalls, untreated CSOs, and any known SSOs;
- e) all pump stations and force mains;
- f) the wastewater treatment facility(ies), including all treatment processes;
- g) all surface waters (labeled);
- h) other major appurtenances such as inverted siphons and air release valves;
- i) a numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j) the scale and a north arrow;

**PART I****Section A. Limitations and Monitoring Requirements**

- k) the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow; and
  - l) the manhole interior material, rim elevation (optional), and invert elevations.
- 3) *Inventory and assessment of fixed assets.* The permittee shall complete an inventory and assessment of operations-related fixed assets including portions of the collection system owned and operated by the permittee. Fixed assets are assets that are normally stationary (e.g., pumps, blowers, buildings, manholes, and sewer lines). The inventory and assessment shall be based on current conditions and shall be kept up-to-date and available for review by the Department.
- a) The fixed asset inventory shall include the following:
    - (1) a brief description of the fixed asset, its design capacity (e.g., pump: 120 gallons per minute), its level of redundancy, and its tag number if applicable;
    - (2) the location of the fixed asset;
    - (3) the year the fixed asset was installed;
    - (4) the present condition of the fixed asset (e.g., excellent, good, fair, poor); and
    - (5) the current fixed asset (replacement) cost in dollars for year specified in accordance with approved schedules;
  - b) The fixed asset assessment shall include a "Business Risk Evaluation" that combines the probability of failure of the fixed asset and the criticality of the fixed asset, as follows:
    - (1) Rate the probability of failure of the fixed asset on a scale of 1-5 (low to high) using criteria such as maintenance history, failure history, and remaining percentage of useful life (or years remaining);
    - (2) Rate the criticality of the fixed asset on a scale of 1-5 (low to high) based on the consequence of failure versus the desired level of service for the facility; and
    - (3) Compute the Business Risk Factor of the fixed asset by multiplying the failure rating from (1) by the criticality rating from (2).
- 4) *Operation, Maintenance & Replacement (OM&R) Budget and Rate Sufficiency for the Sewer System and Treatment Works.* The permittee shall complete an assessment of its user rates and replacement fund, including the following:
- a) beginning and end dates of fiscal year;
  - b) name of the department, committee, board, or other organization that sets rates for the operation of the sewer system and treatment works;
  - c) amount in the permittee's replacement fund in dollars for year specified in accordance with approved schedules;
  - d) replacement fund strategy of all assets with a useful life of 20 years or less;
  - e) expenditures for maintenance, corrective action and capital improvement taken during the fiscal year;

**PART I****Section A. Limitations and Monitoring Requirements**

- f) OM&R budget for the fiscal year; and
  - g) rate calculation demonstrating sufficient revenues to cover OM&R expenses. If the rate calculation shows there are insufficient revenues to cover OM&R expenses, the permittee shall document, within three (3) fiscal years after submittal of the Asset Management Plan, that there is at least one rate adjustment that reduces the revenue gap by at least 10 percent. The permittee may prepare and submit an alternate plan, subject to Department approval, for addressing the revenue gap. The ultimate goal of the Asset Management Program is to ensure sufficient revenues to cover OM&R expenses.
- b. Annual Reporting
- The permittee shall develop a written report that summarizes asset management activities completed during the previous year and planned for the upcoming year. The written report shall be submitted to the Department on or before September 1 of each year. The written report shall include:
- 1) a description of the staffing levels maintained during the year;
  - 2) a description of inspections and maintenance activities conducted and corrective actions taken during the previous year;
  - 3) expenditures for collection system maintenance activities, treatment works maintenance activities, corrective actions, and capital improvement during the previous year;
  - 4) a summary of assets/areas identified for inspection/action (including capital improvement) in the upcoming year based on the five (5) core elements and the Business Risk Factors computed in accordance with condition a.3)b)(3) above;
  - 5) a maintenance budget and capital improvement budget for the upcoming year that take into account implementation of an effective Asset Management Program that meets the five (5) core elements;
  - 6) an updated asset inventory based on the original submission; and
  - 7) an updated OM&R budget with an updated rate schedule that includes the amount of insufficient revenues, if any.

**PART I****Section A. Limitations and Monitoring Requirements****11. Discharge Monitoring Report – Quality Assurance Study Program**

The permittee shall participate in the Discharge Monitoring Report – Quality Assurance (DMR-QA) Study Program. The purpose of the DMR-QA Study Program is to annually evaluate the proficiency of all in-house and/or contract laboratory(ies) that perform, on behalf of the facility authorized to discharge under this permit, the analytical testing required under this permit. In accordance with Section 308 of the Clean Water Act (33 U.S.C. § 1318); and R 323.2138 and R 323.2154 of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, participation in the DMR-QA Study Program is required for all major facilities, and for minor facilities selected for participation by the Department.

Annually and in accordance with DMR-QA Study Program requirements and submittal due dates, the permittee shall submit to the Michigan DMR-QA Study Program state coordinator all documentation required by the DMR-QA Study. DMR-QA Study Program participation is required only for the analytes required under this permit and only when those analytes are also identified in the DMR-QA Study.

If the permitted facility's status as a major facility should change, participation in the DMR-QA Study Program may be reevaluated. Questions concerning participation in the DMR-QA Study Program should be directed to the Michigan DMR-QA Study Program state coordinator.

All forms and instructions required for participation in the DMR-QA Study Program, including submittal due dates and state coordinator contact information, can be found at <https://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program>.

**12. Continuous Monitoring**

If continuous monitoring equipment is used and becomes temporarily inoperable, the permittee shall manually obtain a minimum of three (3) equally spaced grab samples/readings within each 24-hour period for the affected parameter(s). On such days, in the comment field on the Daily tab of the DMR, the permittee shall indicate "continuous monitoring system inoperable," the date on which the system is expected to become operable again, and the number of samples/readings obtained during each 24-hour period.

**13. PFAS Data Reporting Requirements**

The permittee shall submit the complete laboratory analysis of each PFAS sample. This may be in addition to required DMR reporting. Submittals shall be made via the MiEnviro Portal using the PFAS POTW Effluent Monitoring Report form. Until EPA Method 1633 is promulgated, the complete laboratory analysis of each PFAS sample shall constitute the first 28 analytes identified on the PFAS POTW Effluent Monitoring Report form. Following promulgation of EPA Method 1633, the complete laboratory analysis of each PFAS sample shall constitute all 40 analytes identified on the PFAS POTW Effluent Monitoring Report form.

**PART I**

**Section B. Storm Water Pollution Prevention**

Section B. Storm Water Pollution Prevention is not required for this permit.

**PART I****Section C. Industrial Waste Pretreatment Program****1. Industrial Waste Pretreatment Program**

It is understood that the permittee does not receive the discharge of any type or quantity of substance which may cause interference with the operation of the treatment works; and, therefore, the permittee is not required to immediately develop an industrial pretreatment program in accordance with Section 307 of the Federal Water Pollution Control Act. The permittee is required to comply with Section 307 of the Federal Water Pollution Control Act upon accepting any such discharge for treatment. The permittee is required to notify the Department within 30 days if any user discharges or proposes to discharge such wastes to the permittee for treatment.

Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

- a. pollutants which cause pass-through or interference;
- b. pollutants which create a fire hazard or explosion hazard in the sewerage system, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
- c. pollutants which will cause corrosive structural damage to the sewerage system; but in no case, discharges with pH less than 5.0, unless the works is specifically designed to accommodate such discharges;
- d. solid or viscous pollutants in amounts which will cause obstruction to the flow in the sewerage system resulting in interference;
- e. any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment plant;
- f. heat in amounts which will inhibit biological activity in the treatment plant resulting in interference; but in no case, heat in such quantities that the temperature at the treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Department, upon request of the permittee, approves alternate temperature limits;
- g. pollutants which result in the presence of toxic gases, vapors or fumes within the sewerage system in a quantity that may cause acute worker health and safety problems; and
- h. any trucked or hauled pollutants, except at discharge points designated by the permittee.

If information is gained by the Department that the permittee receives or is about to receive industrial wastes, then this permit may be modified in accordance with applicable laws and rules to incorporate the requirements of Section 307 of the Federal Water Pollution Control Act.

**PART I****Section D. Residuals Management Program****1. Residuals Management Program for Land Application of Biosolids**

The permittee is authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the permittee's approved Residuals Management Program (RMP) approved on October 5, 2000, and approved modifications thereto, and the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules). The approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit. The Part 24 Rules can be obtained via the internet at <https://www.michigan.gov/egle/about/organization/water-resources/biosolids/laws-and-rules>.

**a. Annual Report**

On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiEnviro Portal system at <https://mienviro.michigan.gov/ncore/>. At a minimum, the report shall contain:

1) a certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP; and

2) a completed Annual Report Form for Reporting Biosolids, available at <https://mienviro.michigan.gov/ncore/>.

**b. Modifications to the Approved RMP**

Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications to the Department for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

**c. Record Keeping**

Records required by the Part 24 Rules shall be kept for a minimum of five (5) years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

**d. Contact Information**

RMP-related submittals shall be made to the Department.

## PART II

### Section A. Definitions

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

**Acute toxic unit (TUA)** means 100/LC50 where the LC50 is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

**Annual monitoring frequency** refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Authorized public agency** means a state, local, or county agency that is designated pursuant to the provisions of Section 9110 of Part 91, Soil and Sedimentation Control, of the NREPA, to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

**Best management practices (BMPs)** means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

**Bioaccumulative chemical of concern (BCC)** means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

**Biosolids** are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

**Bulk biosolids means** biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

**CAFO** means concentrated animal feeding operation.

**Certificate of Coverage (COC)** is a document, issued by the Department, which authorizes a discharge under a general permit.

**Chronic toxic unit (TUC )** means 100/MATC or 100/IC25, where the maximum acceptable toxicant concentration (MATC) and IC25 are expressed as a percent effluent in the test medium.

**Class B biosolids** refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules, Land Application of Biosolids, promulgated under Part 31 of the NREPA. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

**Combined sewer system** is a sewer system in which storm water runoff is combined with sanitary wastes.

**PART II****Section A. Definitions**

**Composite sample** is a sample collected over time, either by continuous sampling or by mixing discrete samples. A composite sample represents the average wastewater characteristics present during the compositing period. Various methods for compositing are available and are based on either time or flow-proportioning, the choice of which will depend on the permit requirements.

**Continuous monitoring** refers to sampling/readings that occur at regular and consistent intervals throughout a 24-hour period and at a frequency sufficient to capture data that are representative of the discharge. The maximum acceptable interval between samples/readings shall be one (1) hour.

**Daily concentration**

FOR PARAMETERS OTHER THAN pH, DISSOLVED OXYGEN, TEMPERATURE, AND CONDUCTIVITY – Daily concentration is the sum of the concentrations of the individual samples of a parameter taken within a calendar day divided by the number of samples taken within that calendar day. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations. For guidance and examples showing how to report and perform calculations using results below quantification levels, see the document entitled “Reporting Results Below Quantification,” available at <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/MiEnviro/results-below-quantification.pdf>.

FOR pH, DISSOLVED OXYGEN, TEMPERATURE, AND CONDUCTIVITY – The daily concentration used to determine compliance with maximum daily pH, temperature, and conductivity limitations is the highest pH, temperature, and conductivity readings obtained within a calendar day. The daily concentration used to determine compliance with minimum daily pH and dissolved oxygen limitations is the lowest pH and dissolved oxygen readings obtained within a calendar day.

**Daily loading** is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMRs.

**Daily monitoring frequency** refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Department** means the Michigan Department of Environment, Great Lakes, and Energy.

**Detection level** means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

**Discharge** means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

**EC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

**Fecal coliform bacteria monthly**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the “AVERAGE” column under “QUALITY OR CONCENTRATION” on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

**PART II****Section A. Definitions**

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the “AVERAGE” column under “QUALITY OR CONCENTRATION” on the DMR.

**Fecal coliform bacteria 7-day**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**Flow-proportioned composite sample** is a composite sample in which either a) the volume of each portion of the composite is proportional to the effluent flow rate at the time that portion is obtained; or b) a constant sample volume is obtained at varying time intervals proportional to the effluent flow rate.

**General permit** means an NPDES permit authorizing a category of similar discharges.

**Geometric mean** is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

**Grab sample** is a single sample taken at neither a set time nor flow.

**IC<sub>25</sub>** means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

**Illicit connection** means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

**Illicit discharge** means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

**PART II****Section A. Definitions**

**Individual permit** means a site-specific NPDES permit.

**Inlet** means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

**Interference** is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts a POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

**Land application** means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

**LC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

**Maximum acceptable toxicant concentration (MATC)** means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

**Maximum extent practicable** means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

**MBTU/hr** means million British Thermal Units per hour.

**MGD** means million gallons per day.

**Monthly concentration** is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**PART II****Section A. Definitions**

**Monthly loading** is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

**Monthly monitoring frequency** refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Municipal separate storm sewer** means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a POTW as defined in the Code of Federal Regulations at 40 CFR 122.2.

**Municipal separate storm sewer system (MS4)** means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Clean Water Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

**National Pretreatment Standards** are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Clean Water Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

**No observed adverse effect level (NOAEL)** means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

**Noncontact cooling water** is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

**Nondomestic user** is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

**Nonstructural controls** are practices or procedures implemented by employees at a facility to manage storm water or to prevent contamination of storm water.

**NPDES** means National Pollutant Discharge Elimination System.

**Outfall** is the location at which a point source discharge first enters a surface water of the state.

**Part 91 agency** means an agency that is designated by a county board of commissioners pursuant to the provisions of Section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of Section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation control activities under Part 615, Supervisor of Wells; Part 631, Reclamation of Mining Lands; or Part 632, Nonferrous Metallic Mineral Mining, of the NREPA, pursuant to the provisions of Section 9115 of Part 91 of the NREPA.

**Part 91 permit** means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

**PART II****Section A. Definitions**

**Partially treated sewage** is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's NPDES permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

**PFAS** means perfluoroalkyl and polyfluoroalkyl substances.

**Point of discharge** is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

**Point source discharge** means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

**Polluting material** means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules, Spillage of Oil and Polluting Materials, promulgated under Part 31 of the NREPA (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

**POTW** is a publicly owned treatment work.

**Predevelopment** is the last land use prior to the planned new development or redevelopment.

**Pretreatment** is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

**Public** (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

**Public body** means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

**Qualified Personnel** means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

**Qualifying storm event** means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

**Quantification level** means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

**Quarterly monitoring frequency** refers to a three-month period, defined as January through March, April through June, July through September, and October through December (or otherwise defined in the permit). When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

## PART II

### Section A. Definitions

**Regional Administrator** is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

**Regulated area** means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

**Secondary containment structure** means a unit, other than the primary container, in which significant materials are packaged or held, which is required by state or federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface waters or groundwaters of the state.

**Separate storm sewer system** means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

**Significant industrial user** is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

**Significant materials** means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111, Hazardous Waste Management, of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

**Significant spills and significant leaks** means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

**Special-use area** means storm water discharges for which the Department has determined that additional monitoring is needed from: secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water.

**Stoichiometric** means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

**Storm water means** storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

**Storm water discharge point** is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including outfalls which discharge directly to surface waters of the state, and points of discharge which discharge directly into separate storm sewer systems.

**PART II****Section A. Definitions**

**Structural controls** are physical features or structures used at a facility to manage or treat storm water.

**SWPPP** means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

**Tier I value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

**Tier II value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

**Total maximum daily loads (TMDLs)** are required by the Clean Water Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

**Toxicity reduction evaluation (TRE)** means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

**Water Quality Standards** means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

**Weekly monitoring frequency** refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value, or observation shall be reported for that period if a discharge occurs during that period. If the calendar week begins in one month and ends in the following month, the analytical result, reading, value, or observation shall be reported in the month in which monitoring was conducted.

**WWSL** is a wastewater stabilization lagoon.

**WWSL discharge event** is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14-day period.

**3-portion composite sample** is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

**7-day concentration**

FOR WWSLS THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the “MAXIMUM” column under

**PART II****Section A. Definitions**

“QUALITY OR CONCENTRATION” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**7-day loading**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**24-hour composite sample** is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period and in which the volume of each portion is proportional to the discharge flow rate at the time that portion is taken. A time-proportioned composite sample may be used upon approval from the Department if the permittee demonstrates it is representative of the discharge.

**PART II****Section B. Monitoring Procedures****1. Representative Samples**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

**2. Test Procedures**

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Clean Water Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations.** For lists of approved test methods, go to <https://www.epa.gov/cwa-methods>. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Manager of the Permits Section, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control program.

**3. Instrumentation**

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

**4. Recording Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

**5. Records Retention**

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

## PART II

### Section C. Reporting Requirements

#### 1. Start-Up Notification

The permittee shall notify the Department of start-up if one of the following conditions applies and in accordance with the applicable condition:

a. Non-CAFOs

1) **If this is an individual permit** and the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department via MiEnviro Portal within 14 days following the effective date of this permit, and then again 60 days prior to commencement of the discharge.

2) **If this is a general permit** and the permittee will not discharge during the first 60 days following the effective date of the Certificate of Coverage (COC) issued under this general permit, the permittee shall notify the Department via MiEnviro Portal within 14 days following the effective date of the COC, and then again 60 days prior to commencement of the discharge.

b. CAFOs

1) **If this is an individual permit** and the permittee will not populate with animals during the first 60 days following the effective date of this permit, the permittee shall notify the Department via MiEnviro Portal within 14 days following the effective date of this permit, and then again 60 days prior to populating with animals.

2) **If this is a general permit** and the permittee will not populate with animals during 60 days following the effective date of the Certificate of Coverage (COC) issued under this general permit, the permittee shall notify the Department via MiEnviro Portal within 14 days following the effective date of the COC, and then again 60 days prior to populating with animals.

#### 2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiEnviro Portal system.

The permittee shall utilize the information provided on the MiEnviro Portal website, located at <https://mienviro.michigan.gov/ncore/>, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

#### 3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10 (April 1 for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous

## PART II

### Section C. Reporting Requirements

year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples. Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

#### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act, 1987 PA 96, as amended, for assurance of proper facility operation, shall be submitted as required by the Department.

#### 5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Department via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>) indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

#### 6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Clean Water Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. 24-Hour Reporting  
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC). A written submission shall also be provided via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>) within five (5) days.
- b. Other Reporting  
The permittee shall report, in writing via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>), all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

## PART II

### Section C. Reporting Requirements

#### 7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, by calling the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706.

Within 10 days of the release, the permittee shall submit to the Department via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>) a full written explanation as to the cause of the release, the discovery of the release, response measures (clean-up and/or recovery) taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

#### 8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

#### 9. Bypass Prohibition and Notification

- a. Bypass Prohibition  
Bypass is prohibited, and the Department may take an enforcement action, unless:
  - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
  - 3) the permittee submitted notices as required under 9.b. or 9.c. below.

## PART II

### Section C. Reporting Requirements

- b. **Notice of Anticipated Bypass**  
If the permittee knows in advance of the need for a bypass, the permittee shall submit written notification to the Department before the anticipated date of the bypass. This notification shall be submitted at least 10 days before the date of the bypass; however, the Department will accept fewer than 10 days advance notice if adequate explanation for this is provided. The notification shall provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions specified in a. above.
- c. **Notice of Unanticipated Bypass**  
As soon as possible but no later than 24 hours from the time the permittee becomes aware of the unanticipated bypass, the permittee shall notify the Department by calling the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if notification is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706.
- d. **Written Report of Bypass**  
A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. **Bypass Not Exceeding Limitations**  
The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.
- f. **Definitions**
- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
  - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

### 10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

### 11. Notification of Changes in Discharge

The permittee shall notify the Department via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>), as soon as possible but within no more than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than

## PART II

### Section C. Reporting Requirements

detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

#### 12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by written notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such written notice, the permit or, if applicable, the facility's COC, may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

#### 13. Transfer of Ownership or Control

In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the following requirements apply: Not less than 30 days prior to the actual transfer of ownership or control – for non-CAFOs, or within 30 days of the actual transfer of ownership or control – for CAFOs, the permittee shall submit to the Department via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>) a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

#### 14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

## PART II

### Section C. Reporting Requirements

#### 15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Clean Water Act and the NREPA.

The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

#### 16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>) all such reports or notifications as required by this permit, on forms provided by the Department.

## PART II

### Section D. Management Responsibilities

#### 1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Clean Water Act and constitutes grounds for enforcement action; for permit or COC termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

#### 2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

#### 3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

#### 4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

#### 5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

#### 6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a POTW, these facilities shall be approved under Part 41 of the NREPA.

## PART II

### Section D. Management Responsibilities

#### 7. Waste Treatment Residues

Residuals (i.e., solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

#### 8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

#### 9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Clean Water Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit and required to be submitted to the Department shall be available for public inspection via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>). As required by the Clean Water Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Clean Water Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

#### 10. Duty to Provide Information

The permittee shall furnish to the Department via MiEnviro Portal (<https://mienviro.michigan.gov/ncore/>), within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

**PART II****Section E. Activities Not Authorized by This Permit****1. Discharge to the Groundwaters**

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

**2. POTW Construction**

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

**3. Civil and Criminal Liability**

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

**4. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Clean Water Act except as are exempted by federal regulations.

**5. State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

**6. Property Rights**

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

## *Appendix C — Enforcement Actions*



**STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER BUREAU**

In the matter of:

ACO-SW07-002  
Date Entered: 4-21-09

City of Grand Ledge  
200 East Jefferson Street  
Grand Ledge, Michigan 48837

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**ADMINISTRATIVE CONSENT ORDER**

This document results from allegations by the Department of Environmental Quality (DEQ), Water Bureau (WB). The DEQ alleges the City of Grand Ledge (City) located at 200 East Jefferson Street, Grand Ledge, Michigan, Eaton County, is in violation of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.3101 et seq. The City and the DEQ agree to resolve the violations set forth herein through entry of an Administrative Consent Order (Consent Order).

**I. STIPULATIONS**

The City and the DEQ stipulate as follows:

- 1.1 The NREPA MCL 324.101 et seq., is an act that controls pollution to protect the environment and natural resources in the state.
- 1.2 Pollution Control, Part 31, Water Resources Protection, of the NREPA (Part 31), MCL 324.3101 et seq., and the rules promulgated pursuant thereto, provides for the protection, conservation, and the control of pollution of the water resources of the state.
- 1.3 The DEQ is authorized by Section 3112(4) of Part 31 of the NREPA to enter orders requiring persons to abate pollution, and the director of the DEQ may delegate this authority to a designee under Section 301(b) of the NREPA, MCL 324.301(b).
- 1.4 The City consents to the issuance and entry of this Consent Order and stipulates that the entry of this Consent Order constitutes a final order of the DEQ and is enforceable as

such under Section 3112(4) of Part 31. The City agrees not to contest the issuance of this Consent Order, and that the resolution of this matter by the entry of this Consent Order is appropriate and acceptable. It is also agreed that this Consent Order shall become effective on the date it is signed by the chief of the WB, delegate of the director, pursuant to Section 301(b) of the NREPA.

- 1.5 The City and the DEQ agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by the City that the law has been violated.
- 1.6 The Signatory to this Consent Order on behalf of the City agrees and attests that he is fully authorized to assure that the City will comply with all requirements under this Consent Order.
- 1.7 The City shall achieve compliance with the aforementioned regulations in accordance with the requirements contained in Section III, Compliance Program, of this Consent Order.

## **II. FINDINGS**

- 2.1 The City owns and operates a sanitary sewer collection system and an activated sludge, wastewater treatment plant (WWTP) located at 109 Fitzgerald Park Drive, Grand Ledge, Michigan, and is authorized to discharge treated municipal wastewater to the Grand River in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. MI0020800. The City provides sanitary sewer collection and treatment services to the City itself and to a portion of Oneida and Eagle Townships, through existing Wastewater Service Agreements.
- 2.2 The current design flow of the WWTP is 1.5 million gallons per day (MGD) with a peak firm capacity of 3.0 MGD. Based upon the review of the City's monthly discharge monitoring reports submitted by the City, average monthly flows to the WWTP appear to range from 0.6 MGD, during dry weather to over 1.0 MGD during wet weather. The City will experience a peaking factor of approximately three to four times the dry weather flow

during wet weather events due to inflow and infiltration which periodically results in sanitary sewer overflows (SSO) to waters of the State of Michigan (state).

- 2.3 The City's sanitary sewer collection system is comprised of six pump stations, approximately 2.15 miles of force main and 41.55 miles of gravity sanitary sewer. Since 1994, the City has completed a great deal of sanitary sewer collection system work such as replacing 35 manholes, installing 28 new manholes, replacing 2.60 miles of sanitary sewers, replacing 10,071 feet of sanitary service lateral and replacing the West Jefferson Pumping Station. The City has also been actively working to remove inflow and infiltration (I/I) from the sanitary sewer collection system and diverting it to the storm sewer system.
- 2.4 On May 10, 2000, the DEQ issued its "Strategy for the Regulatory Control and Correction of Illegal Overflows from Separate Sanitary Sewer Systems in Michigan." Under the Strategy, the DEQ required Michigan municipalities to report all known SSOs that have occurred in the five years previous to 2000. Section 3112(a) of Part 31, enacted on July 10, 2000, legally requires each responsible entity to promptly report the occurrence of all SSOs immediately, but not more than 24 hours after the discharge begins, to the DEQ, local health departments as defined in section 1105 of the public health code, 1978 PA 368, MCL 333.1105 and a daily newspaper of general circulation in the county or counties in which a municipality notified is located.
- 2.5 The following chart lists the dates and discharge volumes of SSOs that the DEQ alleges to have occurred from the City's sanitary sewer collection system since September 2000. The SSO events with the "Reason for the Discharge" on the following chart were reported to the DEQ by the City. Approximately 22,005,940 gallons of raw sanitary sewage, diluted by wet weather conditions has been discharged to waters of the state. The City and the DEQ agree that these alleged violations are resolved pursuant to this Consent Order.

**List of Dates and Volume of Discharges from the City Sanitary Sewer Collection System:**

<b>DATE</b>	<b>VOLUME (gallons)</b>	<b>RECEIVING WATER</b>	<b>REASON FOR DISCHARGE</b>
5/18/00	6,848,000	Grand River	Heavy rainfall event
9/23/00	1,952,000	Grand River	Rain event (3.75 inches in 12 hours).
2/9-2/10/01	2,675,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall and snowmelt event.
5/16/01	253,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall (1.67 inches).
3/5/04	121,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall (0.97 inches).
5/20-5/21/04	28,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall.
5/22/04	2,671,000	Grand River	Heavy rainfall event.
5/23-5/24/04	4,042,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall.
8/21/04	940	Grand River	Sewer main plugged from construction debris disposal by a third party.
1/13-1/14/05	3,378,000	Grand River	Discharge from outfalls 004 & 006 due to heavy rainfall (2 inches) and snowmelt event.
3/13/06	32,000	Grand River	Discharge from outfall 006 due to heavy rainfall.
8/11/06	5,000	Grand River	Sewage back-up in a third party business owner's building. Owner pumped it to the Grand River via a storm sewer. City ordered pumping to cease.
4/9/07	300	Grand River	Grease buildup from restaurant without a grease trap cause blockage in sewer, which then overflowed from MH cover to street and storm sewer.
6/6-6/7/08	678,000	Grand River	Severe storm caused power outages resulting in the failure of the primary and secondary power feeds to the WWTP.
9/14/2008	794,000	Grand River	Discharge from outfall due to heavy rainfall
12/27-12/28/08	2,445,000	Grand River	Discharge from outfall 006 due to infiltration and inflow into sanitary sewer system from melting snow. 1.76 inches water equivalent, melted over 24 hours and .66 inches of rainfall between 7 a.m. 12/27 and 7 a.m. 12/28.
<b>TOTAL ESTIMATED VOLUME DISCHARGED &gt;25,923,240 GALLONS</b>			

### III. COMPLIANCE PROGRAM

IT IS THEREFORE AGREED AND ORDERED THAT the City shall take the following actions to prevent further violations of Part 31:

- 3.1 The remedial design standard as defined in the DEQ SSO Policy Guidance dated December 27, 2002, is a 25-year, 24-hour storm using a Soil Conservation Service (SCS) Type II Rainfall Distribution during growth conditions and normal soil moisture (remedial design standard). This remedial design standard will remain the goal of all projects described in this Consent Order. A ten year, one hour storm under dormant and growth conditions will be considered a comparable alternative remedial design standard as defined in the DEQ SSO Clarification Statement dated October 23, 2003 (alternative design standard). Upon completion of the SSO remediation project, all SSO events that result from events that exceed the remedial design standard and alternative design standard will be considered for DEQ discretion of assessing an enforcement action as allowed for by Part 31 (enforcement discretion).
- 3.2 .MDEQ acknowledges that the City has submitted an Ordinance that has been in effect since July 28, 2008 and which allows the City to conduct all necessary investigations of source of inflow and infiltration and illicit connections of non-sanitary water and wastewater from privately owned property to the City's sanitary sewer system.
- 3.3 Not later than May 27, 2009, the City shall submit a copy of the final sewerage system plans and specifications to the address in paragraph 3.12 of this Consent Order for review and approval that details the projects that will be implemented to prevent SSO's during peak flow rain events and normal operation, consistent with the remedial design standard defined in paragraph 3.1 of this Consent Order.
- 3.4 The construction of the projects detailed in the approved plans and specifications required by paragraph 3.3 of this Consent Order shall be completed not later than **December 1, 2012** and in sufficient time to support submission of an approvable work plan to the DEQ for review and approval not later than **December 1, 2012**, for conducting

a 12 month long Project Performance Certification Program (PPC) to certify that the upgraded sewerage system meets all applicable state and federal laws regulating SSOs using as guidance the remedial design standard or the alternative design standard.

- 3.5 Following review and approval of the approvable work plan to conduct the PPC by the DEQ, the approved PPC work plan and schedule will become part of this Consent Order by reference.
- 3.6 On or before **September 1, 2014**, the City shall submit to the DEQ for review and approval, the PPC Program report. If the City is not able to certify that the upgraded sewerage system meets all applicable state and federal laws regulating SSOs using as guidance the remedial design standard or the alternative design standard then the City shall submit an approvable **draft corrective action plan on or before December 1, 2014**.
- 3.7 If needed, by paragraph 3.6 of this Consent Order, the City shall submit an approvable **final corrective action plan** to the DEQ for review and approval no later than **June 1, 2015**. The corrective action plan shall include appropriate projects and engineering and structural improvements to the sewer system and/or WWTP with corresponding schedules, and may include the removal of infiltration and inflow (I/I) from privately owned businesses and residences including but not limited to the removal of footing drains and roof drains directly connected to the sewer system and rehabilitation of service laterals, to meet applicable state and federal law regulating SSOs using as guidance the remedial design standard or alternative design standard. Such projects and appropriate engineering and structural improvements may include storage and/or additional removal of I/I. For each project the City shall include the following information: 1) submit the basis of design, 2) submit complete plans and specifications within six (6) months after approval of the long term corrective action plan, 3) submit a schedule for starting construction, and 4) submit a schedule for completing construction. The schedules shall

be incorporated by reference and enforceable under paragraph 4.5 of this Consent Order. All corrective action plan projects shall be completed on or before December 1, 2019.

- 3.8 On or before **December 1, 2019** the City shall submit to the DEQ for review and approval, a work plan for conducting a 12 month long Project Performance Certification Program (PPC) to certify that the **updated sewerage system** meets all applicable state and federal laws regulating SSOs using as guidance the remedial design standard or the alternative design standard:
- 3.9 On or before **April 1, 2021**, the City shall submit to the DEQ for review and approval, the PPC Program report.
- 3.10 The City shall submit progress reports to the DEQ beginning upon the entry date of this Consent Order on an annual basis, and shall be due on or before January 15 of each calendar year. The submittal of progress reports shall cease upon termination of this Consent Order.
- 3.11 For purposes of this ACO, the following terms shall be defined as follows:
- a. "Approvable Plans" of various types which the City is required to submit by paragraph 3.1 through 3.10 of this Consent Order means plans which, when submitted to the DEQ, fully address the subject matter required by those paragraphs.
  - b. "Dormant Conditions," as that term is used in the Remedial Design Standard and Alternative Design Standard, shall mean the period between November 1 and March 31.
  - c. "Growth Conditions," as that term is used in the Remedial Design Standard and Alternative Design Standard, shall mean the period between April 1 and October 31.
  - d. "Normal Antecedent Moisture Conditions" for purposes of this ACO, "normal antecedent moisture conditions" will be considered present in the review of a

storm event. Normal antecedent moisture conditions will be as is determined by the National Weather Service (NWS), organized under the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), for the City of Grand Ledge for the day or days of the event.

- 3.12 The City shall submit all reports, work plans, specifications, schedules, or any other writing required by this section to the Lansing District Supervisor, DEQ-WB Lansing District, P.O. Box 30242, 4<sup>th</sup> Floor, North Tower, Lansing, Michigan 48909. Alternatively, mailings requiring a street address may be sent to the Lansing District Supervisor at DEQ-WB Lansing District, Constitution Hall, 525 West Allegan Street, 4<sup>th</sup> Floor, North Tower Lansing, Michigan 48933. The cover letter with each submittal shall identify the specific paragraph and requirement of this Consent Order that the submittal is intended to satisfy.

#### **IV. DEQ APPROVAL OF SUBMITTALS**

- 4.1 For any work plan, proposal, or other document, excluding applications for permits or licenses, that are required by this Consent Order to be submitted to the DEQ by the City, all DEQ approvals, including approvals with modifications, shall be in writing, and the following process and terms of approval shall apply.
- 4.2 All work plans, proposals, and other documents required to be submitted by this Consent Order shall include all of the information required by the applicable statute and/or rule, and all of the information required by the applicable paragraph(s) of this Consent Order.
- 4.3 In the event the DEQ disapproves a work plan, proposal, or other document, it will notify the City, in writing, specifying the reasons for such disapproval. The City shall submit, within 30 days of receipt of such disapproval, a revised work plan, proposal, or other document which adequately addresses the reasons for the DEQ's disapproval. If the revised work plan, proposal, or other document is still not acceptable to the DEQ, the DEQ will notify the City of this disapproval.

- 4.4 In the event the DEQ approves with specific modifications, a work plan, proposal, or other document, it will notify the City, in writing, specifying the modifications required to be made to such work plan, proposal, or other document prior to its implementation and the specific reasons for such modifications. The DEQ may require the City to submit, prior to implementation and within 30 days of receipt of such approval with specific modifications, a revised work plan, proposal, or other document which adequately addresses such modifications. If the revised work plan, proposal, or other document is still not acceptable to the DEQ, the DEQ will notify the City of this disapproval.
- 4.5 Upon DEQ approval, or approval with modifications, of a work plan, proposal, or other document, such work plan, proposal, or other document shall be incorporated by reference into this Consent Order and shall be enforceable in accordance with the provisions of this Consent Order.
- 4.6 Failure by the City to submit an approvable work plan, proposal, or other document, within the applicable time periods specified above, constitutes a violation of this Consent Order and shall subject the City to the enforcement provisions of this Consent Order, including the stipulated penalty provisions specified in paragraph 9.3.
- 4.7 Any delays caused by the City's failure to submit an approvable work plan, proposal, or other document when due shall in no way affect or alter the City's responsibility to comply with any other deadline(s) specified in this Consent Order.
- 4.8 No informal advice, (i.e., verbal) guidance, suggestions, or comments by the DEQ regarding reports, work plans, plans, specifications, schedules or any other writing submitted by the City will be construed as relieving the City of its obligation to obtain written approval, if and when required by this Consent Order.

#### **V. EXTENSIONS**

5.1 The City and the DEQ agree that the DEQ may grant the City a reasonable extension of the specified deadlines set forth in this Consent Order. Any extension shall be preceded by a written request in duplicate to the DEQ, WB, Enforcement Unit Chief, Constitution Hall, 525 West Allegan Street, Lansing, Michigan 48909-7773, and the Lansing District Supervisor at the address in paragraph 3.12, no later than ten business days prior to the pertinent deadline, and shall include:

- a. Identification of the specific deadline(s) of this Consent Order that will not be met.
- b. A detailed description of the circumstances that will prevent the City from meeting the deadline(s).
- c. A description of the measures the City has taken and/or intends to take to meet the required deadline.
- d. The length of the extension requested and the specific date on which the obligation will be met.

The district supervisor, in consultation with the Enforcement Unit Chief, shall respond in writing to such requests. No change or modification to this Consent Order shall be valid unless in writing from the DEQ, and if applicable, signed by both parties.

#### **VI. REPORTING**

6.1 The City shall verbally report any violation(s) of the terms and conditions of this Consent Order to the Lansing District Supervisor within 48 hours following detection of such violation(s) and shall follow such notification with a written report within ten calendar days following detection of such violation(s). The written report shall include a detailed

description of the violation(s), as well as a description of any actions proposed or taken to correct the violation(s). The City shall report any anticipated violation(s) of this Consent Order to the above-referenced individual in advance of the relevant deadlines whenever possible and, if applicable, in accordance with paragraph 10.3 of this Consent Order. A request for an extension before the specified deadlines set forth in this Consent Order shall be construed as a report of an anticipated violation of that deadline requirement.

#### **VII. RETENTION OF RECORDS**

- 7.1 Upon request by an authorized representative of the DEQ, the City shall make available to the DEQ all records, plans, logs, and other documents required to be maintained under this Consent Order or pursuant to Part 31 or its rules. All such documents shall be retained by the City for at least a period of three years from the date of generation of the record unless a longer period of record retention is required by Part 31 or its rules.

#### **VIII. RIGHT OF ENTRY**

- 8.1 The City shall allow any authorized representative or contractor of the DEQ, upon presentation of proper credentials, to enter upon the premises of the facility at all reasonable times for the purpose of monitoring compliance with the provisions of this Consent Order. This paragraph in no way limits the authority of the DEQ to conduct tests and inspections pursuant to the NREPA and the rules promulgated thereunder, or any other applicable statutory provision.

#### **IX. PENALTIES**

- 9.1 The City agrees to pay to the State of Michigan **\$3,186.21** as partial compensation for the cost of investigations and enforcement activities arising from the alleged violations specified in Section II of this Consent Order. Payment shall be made within 30 days of the effective date of this Consent Order in accordance with paragraph 9.7.

- 9.2 The City agrees to pay a civil fine of **\$22,500 DOLLARS** for the alleged violations specified in Section II of this Consent Order. Payment shall be made within 30 days of the effective date of this Consent Order in accordance with paragraph 9.7.
- 9.3 For each failure to comply with the provisions of Section III and IV of this Consent Order, the City shall pay stipulated penalties of **\$500** per violation per day for 1 to 7 days of violation, **\$1,000** per violation per day for 8 to 14 days of violation, and **\$1,500** per violation per day for each day of violation thereafter. Failure to perform any of the following requirements shall be considered separate violations of this Consent Order and are subject to stipulated penalties under this paragraph:
- a. Failure to verbally report violations and submit written reports by the required dates in accordance with paragraph 6.1.
  - b. Failure to retain records on site in accordance with paragraph 7.1.
  - c. Failure to pay civil fines, costs, or stipulated or interest penalties by the required dates in accordance with this section.
- 9.4 Stipulated penalties accruing under paragraphs 9.3 or 9.4 shall be paid within 30 days after written demand by the DEQ in accordance with paragraph 9.7.
- 9.5 To ensure timely payment of the above civil fine, costs, and stipulated penalties, the City shall pay an interest penalty to the General Fund of the State of Michigan each time it fails to make a complete or timely payment. This interest penalty shall be based on the rate set forth at MCL 600.6013(8), using the unpaid balance of the amount due as principal, and calculated from the due date for the payment until the delinquent payment is finally made in full.
- 9.6 The City agrees to pay all funds due pursuant to this agreement by check made payable to the State of Michigan and delivered to the DEQ, Revenue Control Unit, P.O. Box 30657, Lansing, Michigan 48909-8157. To ensure proper credit, all payments

made pursuant to this Consent Order must include the **Payment Identification No. WTR3086**.

- 9.7 The City agrees not to contest the legality of the civil fine or costs paid pursuant to paragraphs 9.1, and 9.2, above. The City further agrees not to contest the legality of any stipulated penalties or interest penalties assessed pursuant to paragraph 9.3 and 9.4, above, but reserves the right to dispute the factual basis upon which a demand by the DEQ for stipulated penalties or interest penalties is made.

#### **X. FORCE MAJEURE**

- 10.1 The City shall perform the requirements of this Consent Order within the time limits established herein, unless performance is prevented or delayed by events that constitute a "Force Majeure." Any delay in the performance attributable to a "Force Majeure" shall not be deemed a violation of the City's obligations under this Consent Order in accordance with this section.
- 10.2 For the purpose of this Consent Order, "Force Majeure" means an occurrence or nonoccurrence arising from causes not foreseeable, beyond the control of, and without the fault of the City, such as: an Act of God, untimely review of permit applications or submissions by the DEQ or other applicable authority, and acts or omissions of third parties that could not have been avoided or overcome by the City's diligence and that delay the performance of an obligation under this Consent Order. "Force Majeure" does not include, among other things, unanticipated or increased costs, changed financial circumstances, or failure to obtain a permit or license as a result of the City's actions or omissions.
- 10.3 The City shall notify the DEQ, by telephone, within 48 hours of discovering any event that causes or may cause a delay in its compliance with any provision of this Consent Order. Verbal notice shall be followed by written notice within ten calendar days and shall describe, in detail, the anticipated length of delay, the precise cause or causes of delay,

the measures taken by the City to prevent or minimize the delay, and the timetable by which those measures shall be implemented. The City shall adopt all reasonable measures to avoid or minimize any such delay.

- 10.4 Failure of the City to comply with the notice requirements and time provisions under paragraph 10.3 shall render this Section X void and of no force and effect as to the particular incident involved. The DEQ may, at its sole discretion and in appropriate circumstances, waive in writing the notice requirements of paragraph 10.3, above.
- 10.5 If the parties agree that the delay or anticipated delay was beyond the control of the City, this may be so stipulated, and the parties to this Consent Order may agree upon an appropriate modification of this Consent Order. The burden of proving that any delay was beyond the reasonable control of the City, and that all the requirements of this Section X have been met by the City, rests with the City. Disputes arising under this section are to be resolved in accordance with Section 631 of the Revised Judicature Act (MCL 600.631 et. seq.)
- 10.6 An extension of one compliance date based upon a particular incident does not necessarily mean that the City qualifies for an extension of a subsequent compliance date without providing proof regarding each incremental step or other requirement for which an extension is sought.

#### **XI. GENERAL PROVISIONS**

- 11.1 With respect to any violations not specifically addressed and resolved by this Consent Order, the DEQ reserves the right to pursue any other remedies to which it is entitled for any failure on the part of the City to comply with the requirements of the NREPA and its rules.
- 11.2 The DEQ and the City consent to enforcement of this Consent Order in the same manner and by the same procedures for all final orders entered pursuant to Part 31,

MCL 324.3101 et seq.; and enforcement pursuant to Part 17, Michigan Environmental Protection Act, of the NREPA, MCL 324.1701 et seq.

- 11.3 This Consent Order in no way affects the City's responsibility to comply with any other applicable state, federal, or local laws or regulations.
- 11.4 The WB reserves its right to pursue appropriate action, including injunctive relief to enforce the provisions of this Consent Order, and at its discretion, may also seek stipulated fines or statutory fines for any violation of this Consent Order. However, the WB is precluded from seeking both a stipulated fine under this Consent Order and a statutory fine for the same violation.
- 11.5 Nothing in this Consent Order is or shall be considered to affect any liability the City may have for natural resource damages caused by the City's ownership and/or operation of the facility. The State of Michigan does not waive any rights to bring an appropriate action to recover such damages to the natural resources.
- 11.6 In the event the City sells or transfers the facility, it shall advise any purchaser or transferee of the existence of this Consent Order in connection with such sale or transfer. Within 30 calendar days, the City shall also notify the WB Lansing District Supervisor, in writing, of such sale or transfer, the identity and address of any purchaser or transferee, and confirm the fact that notice of this Consent Order has been given to the purchaser and/or transferee. The purchaser and/or transferee of this Consent Order must agree, in writing, to assume all of the obligations of this Consent Order. A copy of that agreement shall be forwarded to the WB Lansing District Supervisor within 30 days of assuming the obligations of this Consent Order.
- 11.7 The provisions of this Consent Order shall apply to and be binding upon the parties to this action, and their successors and assigns.

11.8 This Consent Order constitutes a civil settlement and satisfaction as to the resolution of the violations specifically addressed herein; however, it does not resolve any criminal action that may result from these same violations.

## **XII. TERMINATION**

12.1 This Consent Order shall remain in full force and effect until terminated by a written Termination Notice (TN) issued by the DEQ. Prior to issuance of a written TN, the City shall submit a request consisting of a written certification that the City has fully complied with the requirements of this Consent Order and has made payment of any fines, including stipulated penalties, required in this Consent Order. Specifically, this certification shall include:


- a. The date of compliance with each provision of the compliance program in Section III, and the date any fines or penalties were paid.
- b. A statement that all required information has been reported to the district supervisor.
- c. Confirmation that all records required to be maintained pursuant to this Consent Order are being maintained at the facility.

The DEQ may also request additional relevant information. The DEQ shall not unreasonably withhold issuance of a TN.

**Signatories**

The undersigned CERTIFY they are fully authorized by the party they represent to enter into this Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it.

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
\_\_\_\_\_  
Frank J. Baldwin, Field Operation Division Chief  
Water Bureau

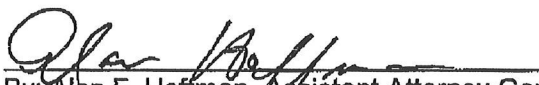
4/13/09  
Date

**CITY OF GRAND LEDGE**

  
By: Jon W. Bayless

\_\_\_\_\_  
Title: City Administrator  
4/13/2009  
Date

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
By: Alan F. Hoffman, Assistant Attorney General  
For: S. Peter Manning, Chief  
Environment, Natural Resources, and Agriculture Division  
Michigan Department of Attorney General

4/17/09  
Date



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
LANSING DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

March 11, 2021

Violation Notice No. VN-011551

VIA E-MAIL

Mr. David Gutchess, Supervisor  
Wastewater Treatment Plant  
City of Grand Ledge  
109 Fitzgerald Park Drive  
Grand Ledge, Michigan 48837

Dear Mr. Gutchess:

SUBJECT: National Pollutant Discharge Elimination System (NPDES)  
NPDES Permit No. MI0020800  
Designated Name: Grand Ledge WWTP  
Violation Notice

The Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), has determined that the Grand Ledge Wastewater Treatment Plant (WWTP) is in violation of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); MCL 324.3101 et seq., and the Administrative Rules promulgated thereunder, being 2006 AACS R 323.2101 et seq., as amended; and NPDES Permit No. MI0020800.

The WRD's Lansing District Office was notified on February 20, 2018; March 14, 2019; June 20, 2019; September 9, 2019; December 30, 2019; January 11, 2020; and May 19, 2020, that a discharge of raw or partially-treated sewage had occurred from the Grand Ledge sewer system. The discharge of raw or partially-treated sewage from a sewer system onto land or into the waters of the state is a violation of Part 31 of the NREPA.

The concerns identified in this Violation Notice were previously addressed in Administrative Consent Order (ACO) ACO- SW07-002, issued April 21, 2009. In response to the ACO, the City of Grand Ledge implemented improvements to its collection system to eliminate discharges of Sanitary Sewer Overflows during wet weather. Various improvements to the system included construction of an equalization basin at the WWTP, a thorough cleaning of the interceptor to maximize flow, and raising the bypass elevations at Manhole 95 and the West River Pump Station.

The City of Grand Ledge, WWTP and Collection System Improvements, Project Performance Certification Addendum 2 (dated December 21, 2018), concludes that the terms of ACO-SW07-002 were satisfied because the hydraulic model shows the system can transport

Grand Ledge WWTP  
NPDES Permit No. MI0020800  
Violation Notice No. VN-011551  
March 11, 2021  
Page 2

the 25-year, 24-hour design storm. Despite these improvements, diluted raw sewage discharges continue to occur during periods of wet weather.

The violations identified in this Violation Notice are continuing. The violations identified in this Violation Notice are violations of Part 31 of the NREPA and NPDES Permit No. MI0020800. Grand Ledge WWTP should take immediate action to maintain compliance with the terms and conditions of Part 31 of the NREPA and NPDES Permit No. MI0020800. No written response is required at this time.

If you have any factual information you would like us to consider regarding the violations identified in this Violation Notice, please provide it in a written response.

We anticipate and appreciate your cooperation in resolving this matter. Should you require further information regarding this Violation Notice or you would like to arrange a meeting to discuss it, please contact me at [CampbellS32@Michigan.gov](mailto:CampbellS32@Michigan.gov); 517-243-9939; or EGLE, WRD, Lansing District Office, 525 West Allegan Street, Constitution Hall, 1st Floor South, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarah Campbell". The signature is fluid and cursive, with the first name "Sarah" being larger and more prominent than the last name "Campbell".

Sarah Campbell  
Lansing District Office  
Water Resources Division

sc/sea

cc.: Ms. Katelyn Wysocki, EGLE  
Ms. Cheri Meyer, EGLE, WRD  
Mr. Charles Bennett, EGLE, WRD