

**\*\*\*ATTACHMENTS\*\*\***

**CITY OF SHEBOYGAN**

**REQUEST FOR PUBLIC WORKS COMMITTEE CONSIDERATION**

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**ITEM DESCRIPTION:** Resolution informing the Wisconsin Department of Natural Resources (WDNR) that the 2019 Compliance Maintenance Annual Report (CMAR) has been reviewed.

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**REPORT PREPARED BY:** Steve Jossart, Superintendent of Wastewater

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**REPORT DATE:** May 15, 2020

**MEETING DATE:** June 11, 2020

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**FISCAL SUMMARY:**

Budget Line Item: N/A  
Budget Summary: N/A  
Budget Expenditure: N/A  
Budgeted Revenue: N/A

**STATUTORY REFERENCE:**

Wisconsin Statutes: NR 208 Wis  
Adm. Code  
Municipal Code: N/A

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**BACKGROUND / ANALYSIS:** The Compliance Maintenance Annual Report (CMAR) is required as a part of our Wisconsin Pollution Discharge Elimination System (WPDES) permit, for the purpose of assessing the management activities, physical condition and performance of the wastewater plant. The report covers a number of areas which include influent flow and loading, effluent quality and plant removal performance for Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), and Total Phosphorous, biosolids quality and management, staffing and preventive maintenance, operator certification, collection system performance and financial management. A letter grade is received for each section of the report along with an overall grade for the facility.

**STAFF COMMENTS:** The Sheboygan Wastewater Treatment Plant received an “A” grade for all areas of the report for 2019. Items we are focused on to maintain a perfect score for 2020 include, certifying additional operators for the Sanitary Sewage Collection Systems subclass, and improving plant nitrification during cold weather.

**ACTION REQUESTED:** The Wisconsin Department of Natural Resources requires a resolution be submitted as part of the Compliance Maintenance Annual Report documenting that the Common Council has reviewed the document. The CMAR is then electronically filed with a due date of June 30, 2020.

**ATTACHMENTS:**

- I. Res. No. 32-20-21
- II. Sheboygan Regional WWTP 2019 CMAR

III

Other Matters

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Res. No. 32 - 20 - 21. By Alderpersons Wolf and Sorenson. June 1, 2020.

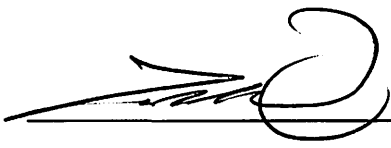
A RESOLUTION informing the Wisconsin Department of Natural Resources (WDNR) that the 2019 Compliance Maintenance Annual Report (CMAR) has been reviewed.

RESOLVED: That the City of Sheboygan hereby informs the WDNR that the Common Council has reviewed the 2019 CMAR, which is attached to this resolution.

BE IT FURTHER RESOLVED: That the Sheboygan Regional Wastewater Treatment Facility received an "A" grade for each section of the 2019 CMAR, and require no further action by council.

BE IT FURTHER RESOLVED: That the 2019 CMAR be accepted and placed on file.

AW

  
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\_\_\_\_\_

I HEREBY CERTIFY that the foregoing Resolution was duly passed by the Common Council of the City of Sheboygan, Wisconsin, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Dated \_\_\_\_\_ 20\_\_\_\_. \_\_\_\_\_, City Clerk

Approved \_\_\_\_\_ 20\_\_\_\_. \_\_\_\_\_, Mayor

# Compliance Maintenance Annual Report

Sheboygan Wastewater Treatment Plant

Last Updated: Reporting For:

5/29/2020

2019

## Influent Flow and Loading

### 1. Monthly Average Flows and BOD Loadings

1.1 Verify the following monthly flows and BOD loadings to your facility.

Influent No. 701	Influent Monthly Average Flow, MGD	x	Influent Monthly Average BOD Concentration mg/L	x	8.34	=	Influent Monthly Average BOD Loading, lbs/day
January	11.2340	x	169	x	8.34	=	15,855
February	9.8714	x	143	x	8.34	=	11,783
March	13.9820	x	98	x	8.34	=	11,450
April	15.9412	x	90	x	8.34	=	11,958
May	14.5912	x	90	x	8.34	=	10,932
June	12.2567	x	122	x	8.34	=	12,444
July	11.8670	x	114	x	8.34	=	11,309
August	10.3380	x	128	x	8.34	=	11,041
September	10.3719	x	130	x	8.34	=	11,235
October	16.8315	x	93	x	8.34	=	13,084
November	13.2741	x	117	x	8.34	=	12,975
December	13.8165	x	103	x	8.34	=	11,869

### 2. Maximum Monthly Design Flow and Design BOD Loading

2.1 Verify the design flow and loading for your facility.

Design	Design Factor	x	%	=	% of Design
Max Month Design Flow, MGD	25.2	x	90	=	22.68
		x	100	=	25.2
Design BOD, lbs/day	27940	x	90	=	25146
		x	100	=	27940

2.2 Verify the number of times the flow and BOD exceeded 90% or 100% of design, points earned, and score:

	Months of Influent	Number of times flow was greater than 90% of	Number of times flow was greater than 100% of	Number of times BOD was greater than 90% of design	Number of times BOD was greater than 100% of design
January	1	0	0	0	0
February	1	0	0	0	0
March	1	0	0	0	0
April	1	0	0	0	0
May	1	0	0	0	0
June	1	0	0	0	0
July	1	0	0	0	0
August	1	0	0	0	0
September	1	0	0	0	0
October	1	0	0	0	0
November	1	0	0	0	0
December	1	0	0	0	0
Points per each		2	1	3	2
Exceedances		0	0	0	0
Points		0	0	0	0
<b>Total Number of Points</b>					<b>0</b>

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## 3. Flow Meter

3.1 Was the influent flow meter calibrated in the last year?

- Yes Enter last calibration date (MM/DD/YYYY)

No

If No, please explain:

## 4. Sewer Use Ordinance

4.1 Did your community have a sewer use ordinance that limited or prohibited the discharge of excessive conventional pollutants ((C)BOD, SS, or pH) or toxic substances to the sewer from industries, commercial users, hauled waste, or residences?

- Yes  
 No

If No, please explain:

4.2 Was it necessary to enforce the ordinance?

- Yes  
 No

If Yes, please explain:

## 5. Septage Receiving

5.1 Did you have requests to receive septage at your facility?

- | Septic Tanks                         | Holding Tanks                        | Grease Traps                        |
|--------------------------------------|--------------------------------------|-------------------------------------|
| <input checked="" type="radio"/> Yes | <input checked="" type="radio"/> Yes | <input type="radio"/> Yes           |
| <input type="radio"/> No             | <input type="radio"/> No             | <input checked="" type="radio"/> No |

5.2 Did you receive septage at your facility? If yes, indicate volume in gallons.

- Septic Tanks  
 Yes  gallons  
 No

- Holding Tanks  
 Yes  gallons  
 No

- Grease Traps  
 Yes  gallons  
 No

5.2.1 If yes to any of the above, please explain if plant performance is affected when receiving any of these wastes.

## 6. Pretreatment

6.1 Did your facility experience operational problems, permit violations, biosolids quality concerns, or hazardous situations in the sewer system or treatment plant that were attributable to commercial or industrial discharges in the last year?

- Yes  
 No

If yes, describe the situation and your community's response.

6.2 Did your facility accept hauled industrial wastes, landfill leachate, etc.?

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- Yes
- No

If yes, describe the types of wastes received and any procedures or other restrictions that were in place to protect the facility from the discharge of hauled industrial wastes.

Hauled in food processing wastes and landfill leachate were accepted at the facility during 2019. These wastes are screened for expected contaminants to ensure protection of the facility.

<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

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Sheboygan Wastewater Treatment Plant

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2019

## Effluent Quality and Plant Performance (BOD/CBOD)

### 1. Effluent (C)BOD Results

1.1 Verify the following monthly average effluent values, exceedances, and points for BOD or CBOD

Outfall No. 001	Monthly Average Limit (mg/L)	90% of Permit Limit > 10 (mg/L)	Effluent Monthly Average (mg/L)	Months of Discharge with a Limit	Permit Limit Exceedance	90% Permit Limit Exceedance
January	25	22.5	4	1	0	0
February	25	22.5	3	1	0	0
March	25	22.5	4	1	0	0
April	25	22.5	3	1	0	0
May	25	22.5	2	1	0	0
June	25	22.5	2	1	0	0
July	25	22.5	2	1	0	0
August	25	22.5	1	1	0	0
September	25	22.5	1	1	0	0
October	25	22.5	2	1	0	0
November	25	22.5	2	1	0	0
December	25	22.5	2	1	0	0

\* Equals limit if limit is <= 10

Months of discharge/yr	12		
Points per each exceedance with 12 months of discharge		7	3
Exceedances		0	0
Points		0	0
<b>Total number of points</b>			<b>0</b>

NOTE: For systems that discharge intermittently to state waters, the points per monthly exceedance for this section shall be based upon a multiplication factor of 12 months divided by the number of months of discharge. Example: For a wastewater facility discharging only 6 months of the year, the multiplication factor is  $12/6 = 2.0$

1.2 If any violations occurred, what action was taken to regain compliance?

### 2. Flow Meter Calibration

2.1 Was the effluent flow meter calibrated in the last year?

Yes Enter last calibration date (MM/DD/YYYY)

No

If No, please explain:

The facility does not have an effluent flow meter and reports influent flow only.

### 3. Treatment Problems

3.1 What problems, if any, were experienced over the last year that threatened treatment?

No problems occurred that threatened treatment during the year.

### 4. Other Monitoring and Limits

4.1 At any time in the past year was there an exceedance of a permit limit for any other pollutants such as chlorides, pH, residual chlorine, fecal coliform, or metals?

Yes

No

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If Yes, please explain:

4.2 At any time in the past year was there a failure of an effluent acute or chronic whole effluent toxicity (WET) test?

- Yes
- No

If Yes, please explain:

4.3 If the biomonitoring (WET) test did not pass, were steps taken to identify and/or reduce source(s) of toxicity?

- Yes
- No
- N/A

Please explain unless not applicable:

<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

# Compliance Maintenance Annual Report

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2019

## Effluent Quality and Plant Performance (Total Suspended Solids)

### 1. Effluent Total Suspended Solids Results

#### 1.1 Verify the following monthly average effluent values, exceedances, and points for TSS:

Outfall No. 001	Monthly Average Limit (mg/L)	90% of Permit Limit >10 (mg/L)	Effluent Monthly Average (mg/L)	Months of Discharge with a Limit	Permit Limit Exceedance	90% Permit Limit Exceedance
January	30	27	7	1	0	0
February	30	27	7	1	0	0
March	30	27	7	1	0	0
April	30	27	6	1	0	0
May	30	27	4	1	0	0
June	30	27	4	1	0	0
July	30	27	3	1	0	0
August	30	27	2	1	0	0
September	30	27	3	1	0	0
October	30	27	4	1	0	0
November	30	27	4	1	0	0
December	30	27	4	1	0	0

\* Equals limit if limit is <= 10

Months of Discharge/yr	12		
<b>Points per each exceedance with 12 months of discharge:</b>		<b>7</b>	<b>3</b>
Exceedances		0	0
Points		0	0
<b>Total Number of Points</b>			<b>0</b>

NOTE: For systems that discharge intermittently to state waters, the points per monthly exceedance for this section shall be based upon a multiplication factor of 12 months divided by the number of months of discharge.

Example: For a wastewater facility discharging only 6 months of the year, the multiplication factor is  $12/6 = 2.0$

#### 1.2 If any violations occurred, what action was taken to regain compliance?

<b>Total Points Generated</b>	0
<b>Score (100 - Total Points Generated)</b>	100
<b>Section Grade</b>	<b>A</b>

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## Effluent Quality and Plant Performance (Phosphorus)

### 1. Effluent Phosphorus Results

#### 1.1 Verify the following monthly average effluent values, exceedances, and points for Phosphorus

Outfall No. 001	Monthly Average phosphorus Limit (mg/L)	Effluent Monthly Average phosphorus (mg/L)	Months of Discharge with a Limit	Permit Limit Exceedance
January	.9	0.527	1	0
February	.9	0.538	1	0
March	.9	0.459	1	0
April	.9	0.434	1	0
May	.9	0.376	1	0
June	.9	0.352	1	0
July	.9	0.423	1	0
August	.9	0.322	1	0
September	.9	0.378	1	0
October	.9	0.255	1	0
November	.9	0.188	1	0
December	.9	0.282	1	0
Months of Discharge/yr			12	
<b>Points per each exceedance with 12 months of discharge:</b>				<b>10</b>
Exceedances				0
<b>Total Number of Points</b>				<b>0</b>

0

NOTE: For systems that discharge intermittently to waters of the state, the points per monthly exceedance for this section shall be based upon a multiplication factor of 12 months divided by the number of months of discharge.

Example: For a wastewater facility discharging only 6 months of the year, the multiplication factor is  $12/6 = 2.0$

#### 1.2 If any violations occurred, what action was taken to regain compliance?

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<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

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## Biosolids Quality and Management

### 1. Biosolids Use/Disposal

1.1 How did you use or dispose of your biosolids? (Check all that apply)

- Land applied under your permit
- Publicly Distributed Exceptional Quality Biosolids
- Hauled to another permitted facility
- Landfilled
- Incinerated
- Other

NOTE: If you did not remove biosolids from your system, please describe your system type such as lagoons, reed beds, recirculating sand filters, etc.

1.1.1 If you checked Other, please describe:

A small portion were distributed to the public during our open house and for use on our facility grounds. The majority of the material was purchased by a third party for use to enhance top soil and as a fertilizer. Biosolids from cleaning digester #8 was characterized and landfilled.

### 3. Biosolids Metals

Number of biosolids outfalls in your WPDES permit:

3.1 For each outfall tested, verify the biosolids metal quality values for your facility during the last calendar year.

#### Outfall No. 004 - EQ Dried Sludge

Parameter	80% of Limit	H.Q. Limit	Ceiling Limit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	80% Value	High Quality	Ceiling
Arsenic		41		5.83			<4.9		6.7		3.71	6.5			<7		0	0
Cadmium		39		.805			.69		.6		1.27	.85			.86		0	0
Copper		1500		363			460		436		448	555			441		0	0
Lead		300		21.6			30.4		29.4		23.6	37.9			34.5		0	0
Mercury		17		1.56			.38		.52		.442	.47			.51		0	0
Molybdenum	60		75	9.65			10.4		8.9		10.3	9.3			10.1	0		0
Nickel				31.3			34.6		26.2		31.9	27.2			25.4	0		0
Selenium				1.82			4.1		3.1		2.48	3.1			4.7	0		0
Zinc		2800		634			669		592		688	610			633		0	0

3.1.1 Number of times any of the metals exceeded the high quality limits OR 80% of the limit for molybdenum, nickel, or selenium = 0

Exceedence Points

- 0 (0 Points)
- 1-2 (10 Points)
- > 2 (15 Points)

3.1.2 If you exceeded the high quality limits, did you cumulatively track the metals loading at each land application site? (check applicable box)

- Yes
- No (10 points)
- N/A - Did not exceed limits or no HQ limit applies (0 points)
- N/A - Did not land apply biosolids until limit was met (0 points)

3.1.3 Number of times any of the metals exceeded the ceiling limits = 0

Exceedence Points

- 0 (0 Points)
- 1 (10 Points)
- > 1 (15 Points)

3.1.4 Were biosolids land applied which exceeded the ceiling limit?

- Yes (20 Points)

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● No (0 Points)

3.1.5 If any metal limit (high quality or ceiling) was exceeded at any time, what action was taken? Has the source of the metals been identified?

0

## 4. Pathogen Control (per outfall):

4.1 Verify the following information. If any information is incorrect, use the Report Issue button under the Options header in the left-side menu.

Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	01/01/2019 - 02/28/2019
Density:	2
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality sludge from the sludge dryer

Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	03/01/2019 - 04/30/2019
Density:	8
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality sludge from the sludge dryer

Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	05/01/2019 - 06/30/2019
Density:	4
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality Sludge from the sludge dryer

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Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	07/01/2019 - 08/31/2019
Density:	2
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality Sludge from the sludge dryer
Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	09/01/2019 - 10/31/2019
Density:	2
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality Sludge from the sludge dryer
Outfall Number:	004
Biosolids Class:	A
Bacteria Type and Limit:	Fecal Coliform
Sample Dates:	11/01/2019 - 12/31/2019
Density:	3
Sample Concentration Amount:	MPN/G TS
Requirement Met:	Yes
Land Applied:	Yes
Process:	Heat Drying
Process Description:	Exceptional quality Sludge from the sludge dryer
<p>4.2 If exceeded Class B limit or did not meet the process criteria at the time of land application.</p> <p>4.2.1 Was the limit exceeded or the process criteria not met at the time of land application?</p> <p><input type="radio"/> Yes (40 Points)</p> <p><input checked="" type="radio"/> No</p> <p>If yes, what action was taken?</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
<p>5. Vector Attraction Reduction (per outfall):</p> <p>5.1 Verify the following information. If any of the information is incorrect, use the Report Issue button under the Options header in the left-side menu.</p>	

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Outfall Number:	004
Method Date:	01/14/2019
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	>90
Results (if applicable):	95.50

Outfall Number:	004
Method Date:	04/08/2019
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	>90
Results (if applicable):	97.70

Outfall Number:	004
Method Date:	06/10/2019
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	>90
Results (if applicable):	96.80

Outfall Number:	004
Method Date:	08/12/2019
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	>90
Results (if applicable):	95.90

Outfall Number:	004
Method Date:	09/23/2019
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids
Requirement Met:	Yes
Land Applied:	Yes
Limit (if applicable):	>90
Results (if applicable):	97

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Outfall Number:	004	0
Method Date:	12/09/2019	
Option Used To Satisfy Requirement:	Drying With Unstabilized Solids	
Requirement Met:	Yes	
Land Applied:	Yes	
Limit (if applicable):	>90	
Results (if applicable):	95.80	
<p>5.2 Was the limit exceeded or the process criteria not met at the time of land application?</p> <p><input type="radio"/> Yes (40 Points)</p> <p><input checked="" type="radio"/> No</p> <p>If yes, what action was taken?</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
<p>6. Biosolids Storage</p> <p>6.1 How many days of actual, current biosolids storage capacity did your wastewater treatment facility have either on-site or off-site?</p> <p><input checked="" type="radio"/> &gt;= 180 days (0 Points)</p> <p><input type="radio"/> 150 - 179 days (10 Points)</p> <p><input type="radio"/> 120 - 149 days (20 Points)</p> <p><input type="radio"/> 90 - 119 days (30 Points)</p> <p><input type="radio"/> &lt; 90 days (40 Points)</p> <p><input type="radio"/> N/A (0 Points)</p> <p>6.2 If you checked N/A above, explain why.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
<p>7. Issues</p> <p>7.1 Describe any outstanding biosolids issues with treatment, use or overall management:</p> <div style="border: 1px solid black; padding: 5px;"> <p>No issues with biosolids management or treatment.</p> </div>		

<b>Total Points Generated</b>	0
<b>Score (100 - Total Points Generated)</b>	100
<b>Section Grade</b>	A

# Compliance Maintenance Annual Report

Sheboygan Wastewater Treatment Plant

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2019

## Staffing and Preventative Maintenance (All Treatment Plants)

### 1. Plant Staffing

1.1 Was your wastewater treatment plant adequately staffed last year?

- Yes
- No

If No, please explain:

Could use more help/staff for:

1.2 Did your wastewater staff have adequate time to properly operate and maintain the plant and fulfill all wastewater management tasks including recordkeeping?

- Yes
- No

If No, please explain:

### 2. Preventative Maintenance

2.1 Did your plant have a documented AND implemented plan for preventative maintenance on major equipment items?

- Yes (Continue with question 2)
- No (40 points)

If No, please explain, then go to question 3:

2.2 Did this preventative maintenance program depict frequency of intervals, types of lubrication, and other tasks necessary for each piece of equipment?

- Yes
- No (10 points)

2.3 Were these preventative maintenance tasks, as well as major equipment repairs, recorded and filed so future maintenance problems can be assessed properly?

- Yes
  - Paper file system
  - Computer system
  - Both paper and computer system
- No (10 points)

0

### 3. O&M Manual

3.1 Does your plant have a detailed O&M and Manufacturer Equipment Manuals that can be used as a reference when needed?

- Yes
- No

### 4. Overall Maintenance /Repairs

4.1 Rate the overall maintenance of your wastewater plant.

- Excellent
- Very good
- Good
- Fair
- Poor

Describe your rating:

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The plant is well maintained, has adequate in line spares and there is the flexibility to take equipment off line without affecting the process. The staff has improved the documentation of repairs and inspections, and are using the information to better understand why repeat failures occur. We continuing to rebuild equipment throughout the facility and installed a new Electrical Switch Gear System in 2019. The replacement of the switch gear and regular rebuilding of older equipment has resulted in improved plant reliability and less breakdown repairs.

<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

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## Operator Certification and Education

<p><b>1. Operator-In-Charge</b></p> <p>1.1 Did you have a designated operator-in-charge during the report year?</p> <p>● Yes (0 points)</p> <p>○ No (20 points)</p> <p>Name: <input style="width: 150px;" type="text" value="Steve Jossart"/></p> <p>Certification No: <input style="width: 150px;" type="text" value="12990"/></p>	0																																																																																								
<p><b>2. Certification Requirements</b></p> <p>2.1 In accordance with Chapter NR 114.56 and 114.57, Wisconsin Administrative Code, what level and subclass(es) were required for the operator-in-charge (OIC) to operate the wastewater treatment plant and what level and subclass(es) were held by the operator-in-charge?</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Sub Class</th> <th rowspan="2">SubClass Description</th> <th>WWTP</th> <th colspan="3">OIC</th> </tr> <tr> <th>Advanced</th> <th>OIT</th> <th>Basic</th> <th>Advanced</th> </tr> </thead> <tbody> <tr><td>A1</td><td>Suspended Growth Processes</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>A2</td><td>Attached Growth Processes</td><td></td><td></td><td></td><td></td></tr> <tr><td>A3</td><td>Recirculating Media Filters</td><td></td><td></td><td></td><td></td></tr> <tr><td>A4</td><td>Ponds, Lagoons and Natural</td><td></td><td></td><td></td><td></td></tr> <tr><td>A5</td><td>Anaerobic Treatment Of Liquid</td><td></td><td></td><td></td><td></td></tr> <tr><td>B</td><td>Solids Separation</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>C</td><td>Biological Solids/Sludges</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>P</td><td>Total Phosphorus</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>N</td><td>Total Nitrogen</td><td></td><td></td><td></td><td></td></tr> <tr><td>D</td><td>Disinfection</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>L</td><td>Laboratory</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>U</td><td>Unique Treatment Systems</td><td></td><td></td><td></td><td></td></tr> <tr><td>SS</td><td>Sanitary Sewage Collection</td><td>X</td><td>NA</td><td>NA</td><td>NA</td></tr> </tbody> </table> <p>2.2 Was the operator-in-charge certified at the appropriate level and subclass(es) to operate this plant? (Note: Certification in subclass SS, N and A5 not required in 2019; subclass SS is basic level only.)</p> <p>● Yes (0 points)</p> <p>○ No (20 points)</p>	Sub Class	SubClass Description	WWTP	OIC			Advanced	OIT	Basic	Advanced	A1	Suspended Growth Processes	X				A2	Attached Growth Processes					A3	Recirculating Media Filters					A4	Ponds, Lagoons and Natural					A5	Anaerobic Treatment Of Liquid					B	Solids Separation	X				C	Biological Solids/Sludges	X				P	Total Phosphorus	X				N	Total Nitrogen					D	Disinfection	X				L	Laboratory	X				U	Unique Treatment Systems					SS	Sanitary Sewage Collection	X	NA	NA	NA	0
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<p><b>3. Succession Planning</b></p> <p>3.1 In the event of the loss of your designated operator-in-charge, did you have a contingency plan to ensure the continued proper operation and maintenance of the plant that includes one or more of the following options (check all that apply)?</p> <p><input checked="" type="checkbox"/> One or more additional certified operators on staff</p> <p><input type="checkbox"/> An arrangement with another certified operator</p> <p><input type="checkbox"/> An arrangement with another community with a certified operator</p> <p><input type="checkbox"/> An operator on staff who has an operator-in-training certificate for your plant and is expected to be certified within one year</p> <p><input type="checkbox"/> A consultant to serve as your certified operator</p> <p><input type="checkbox"/> None of the above (20 points)</p> <p>If "None of the above" is selected, please explain:</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	0																																																																																								
<p><b>4. Continuing Education Credits</b></p>																																																																																									

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4.1 If you had a designated operator-in-charge, was the operator-in-charge earning Continuing Education Credits at the following rates?

OIT and Basic Certification:

- Averaging 6 or more CECs per year.
- Averaging less than 6 CECs per year.

Advanced Certification:

- Averaging 8 or more CECs per year.
- Averaging less than 8 CECs per year.

<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

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## Financial Management

### 1. Provider of Financial Information

Name:

Marty Halverson

Telephone:

(920) 459-3304

(XXX) XXX-XXXX

E-Mail Address  
(optional):

### 2. Treatment Works Operating Revenues

2.1 Are User Charges or other revenues sufficient to cover O&M expenses for your wastewater treatment plant AND/OR collection system ?

- Yes (0 points)
- No (40 points)

If No, please explain:

2.2 When was the User Charge System or other revenue source(s) last reviewed and/or revised?  
Year:

2019

- 0-2 years ago (0 points)
- 3 or more years ago (20 points)
- N/A (private facility)

2.3 Did you have a special account (e.g., CWF required segregated Replacement Fund, etc.) or financial resources available for repairing or replacing equipment for your wastewater treatment plant and/or collection system?

- Yes (0 points)
- No (40 points)

### REPLACEMENT FUNDS [PUBLIC MUNICIPAL FACILITIES SHALL COMPLETE QUESTION 3]

### 3. Equipment Replacement Funds

3.1 When was the Equipment Replacement Fund last reviewed and/or revised?

Year:

2019

- 1-2 years ago (0 points)
- 3 or more years ago (20 points)
- N/A

If N/A, please explain:

### 3.2 Equipment Replacement Fund Activity

3.2.1 Ending Balance Reported on Last Year's CMAR

\$ 6,125,100.61

3.2.2 Adjustments - if necessary (e.g. earned interest, audit correction, withdrawal of excess funds, increase making up previous shortfall, etc.)

\$ 0.00

3.2.3 Adjusted January 1st Beginning Balance

\$ 6,125,100.61

3.2.4 Additions to Fund (e.g. portion of User Fee, earned interest, etc.)

+ \$ 0.00

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3.2.5 Subtractions from Fund (e.g., equipment replacement, major repairs - use description box 3.2.6.1 below\*)

\$ 0.00

3.2.6 Ending Balance as of December 31st for CMAR Reporting Year

\$ 6,125,100.61

All Sources: This ending balance should include all Equipment Replacement Funds whether held in a bank account(s), certificate(s) of deposit, etc.

3.2.6.1 Indicate adjustments, equipment purchases, and/or major repairs from 3.2.5 above.

3.3 What amount should be in your Replacement Fund?

\$ 1,745,725.00

0

Please note: If you had a CWFP loan, this amount was originally based on the Financial Assistance Agreement (FAA) and should be regularly updated as needed. Further calculation instructions and an example can be found by clicking the SectionInstructions link under Info header in the left-side menu.

3.3.1 Is the December 31 Ending Balance in your Replacement Fund above, (#3.2.6) equal to, or greater than the amount that should be in it (#3.3)?

- Yes
- No

If No, please explain.

## 4. Future Planning

4.1 During the next ten years, will you be involved in formal planning for upgrading, rehabilitating, or new construction of your treatment facility or collection system?

- Yes - If Yes, please provide major project information, if not already listed below.
- No

Project #	Project Description	Estimated Cost	Approximate Construction Year
1	Replacing/refurbishing primary and secondary clarifier drives. The plan is to replace each clarifier drive over the course of the next 4 - 5 years.	800000	2023
2	Fine bubble diffuser system maintenance and aeration basin repairs. The scope will also include the replacement of the beams supporting the walls in the anoxic and anaerobic zones.	900000	2022
3	Sanitary Sewer Lining Projects. The city of Sheboygan is setting aside money annually to line sanitary sewers in conjunction with street replacement projects over the next five years. The estimated cost is the total cost of the work over the next five years.	3000000	2023
4	Re-building/replacing secondary digester #6 floating cover.	450000	2020
5	Replacement aeration blower.	250000	2021
6	Influent Building HVAC Replacement.	300000	2021
7	Replace #3 Raw Influent Pump.	200000	2025
8	Screen/Scum Rejects System Upgrade	125000	2022
9	Bleach and Bisulfite Tank Replacement	250000	2024
10	Administrative Building HVAC Controls	200000	2024
11	Ferric Chloride Tank Replacement	150000	2025
12	Grit System Modifications	125000	2024

## 5. Financial Management General Comments

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## ENERGY EFFICIENCY AND USE

### 6. Collection System

#### 6.1 Energy Usage

6.1.1 Enter the monthly energy usage from the different energy sources:

#### COLLECTION SYSTEM PUMPAGE: Total Power Consumed

Number of Municipally Owned Pump/Lift Stations:

	Electricity Consumed (kWh)	Natural Gas Consumed (therms)
January	66,401	320
February	55,994	546
March	78,334	323
April	67,406	102
May	68,628	40
June	59,330	8
July	57,024	0
August	44,775	1
September	41,524	0
October	69,587	0
November	56,289	99
December	65,639	277
<b>Total</b>	<b>730,931</b>	<b>1,716</b>
<b>Average</b>	<b>60,911</b>	<b>191</b>

#### 6.1.2 Comments:

### 6.2 Energy Related Processes and Equipment

6.2.1 Indicate equipment and practices utilized at your pump/lift stations (Check all that apply):

- Comminution or Screening
- Extended Shaft Pumps
- Flow Metering and Recording
- Pneumatic Pumping
- SCADA System
- Self-Priming Pumps
- Submersible Pumps
- Variable Speed Drives
- Other:

#### 6.2.2 Comments:

6.3 Has an Energy Study been performed for your pump/lift stations?

- No
- Yes

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Year:

By Whom:

Describe and Comment:

## 6.4 Future Energy Related Equipment

6.4.1 What energy efficient equipment or practices do you have planned for the future for your pump/lift stations?

We have plans to update some of the lift station pumps with VFD's in the next 5 - 10 years. We are working with Wisconsin Focus on Energy and are a member of DOE's Better Plants Program.

## 7. Treatment Facility

### 7.1 Energy Usage

7.1.1 Enter the monthly energy usage from the different energy sources:

#### TREATMENT PLANT: Total Power Consumed/Month

	Electricity Consumed (kWh)	Total Influent Flow (MG)	Electricity Consumed/Flow (kWh/MG)	Total Influent BOD (1000 lbs)	Electricity Consumed/Total Influent BOD (kWh/1000lbs)	Natural Gas Consumed (therms)
January	549,600	348.25	1,578	491.51	1,118	17,512
February	434,400	276.40	1,572	329.92	1,317	6,244
March	435,600	433.44	1,005	354.95	1,227	5,246
April	427,500	478.24	894	358.74	1,192	22,484
May	526,500	452.33	1,164	338.89	1,554	19,129
June	477,000	367.70	1,297	373.32	1,278	16,329
July	596,700	367.88	1,622	350.58	1,702	13,305
August	545,400	320.48	1,702	342.27	1,593	11,676
September	535,500	311.16	1,721	337.05	1,589	10,682
October	543,600	521.78	1,042	405.60	1,340	6,393
November	428,400	398.22	1,076	389.25	1,101	2,463
December	471,600	428.31	1,101	367.94	1,282	18,309
<b>Total</b>	<b>5,971,800</b>	<b>4,704.19</b>		<b>4,440.02</b>		<b>149,772</b>
<b>Average</b>	<b>497,650</b>	<b>392.02</b>	<b>1,315</b>	<b>370.00</b>	<b>1,358</b>	<b>12,481</b>

7.1.2 Comments:

### 7.2 Energy Related Processes and Equipment

7.2.1 Indicate equipment and practices utilized at your treatment facility (Check all that apply):

- Aerobic Digestion
- Anaerobic Digestion
- Biological Phosphorus Removal
- Coarse Bubble Diffusers
- Dissolved O2 Monitoring and Aeration Control

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- Effluent Pumping
- Fine Bubble Diffusers
- Influent Pumping
- Mechanical Sludge Processing
- Nitrification
- SCADA System
- UV Disinfection
- Variable Speed Drives
- Other:

## 7.2.2 Comments:

## 7.3 Future Energy Related Equipment

7.3.1 What energy efficient equipment or practices do you have planned for the future for your treatment facility?

## 8. Biogas Generation

8.1 Do you generate/produce biogas at your facility?

- No
- Yes

If Yes, how is the biogas used (Check all that apply):

- Flared Off
- Building Heat
- Process Heat
- Generate Electricity
- Other:

## 9. Energy Efficiency Study

9.1 Has an Energy Study been performed for your treatment facility?

- No
- Yes

Entire facility

Year:

2005

By Whom:

Focus on Energy

Describe and Comment:

We have plans to have an audit done within the next few years as a part of the better plants program.

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<input type="checkbox"/> Part of the facility Year: <input type="text"/> By Whom: <input type="text"/> Describe and Comment: <input type="text"/>
---

<b>Total Points Generated</b>	<b>0</b>
<b>Score (100 - Total Points Generated)</b>	<b>100</b>
<b>Section Grade</b>	<b>A</b>

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## Sanitary Sewer Collection Systems

### 1. Capacity, Management, Operation, and Maintenance (CMOM) Program

#### 1.1 Do you have a CMOM program that is being implemented?

- Yes
- No

If No, explain:

#### 1.2 Do you have a CMOM program that contains all the applicable components and items according to Wisc. Adm Code NR 210.23 (4)?

- Yes
- No (30 points)
- N/A

If No or N/A, explain:

#### 1.3 Does your CMOM program contain the following components and items? (check the components and items that apply)

- Goals [NR 210.23 (4)(a)]

Describe the major goals you had for your collection system last year:

Provide the proper resources for effective system management, operation and maintenance.  
Improve sewer infrastructure through sewer replacement and lining.  
Eliminate sanitary sewer overflows.

Did you accomplish them?

- Yes
- No

If No, explain:

- Organization [NR 210.23 (4) (b)]

Does this chapter of your CMOM include:

- Organizational structure and positions (eg. organizational chart and position descriptions)
- Internal and external lines of communication responsibilities
- Person(s) responsible for reporting overflow events to the department and the public

- Legal Authority [NR 210.23 (4) (c)]

What is the legally binding document that regulates the use of your sewer system?

City of Sheboygan Sewer Use Ordinance

If you have a Sewer Use Ordinance or other similar document, when was it last reviewed and revised? (MM/DD/YYYY) 2016-12-05

Does your sewer use ordinance or other legally binding document address the following:

- Private property inflow and infiltration
- New sewer and building sewer design, construction, installation, testing and inspection
- Rehabilitated sewer and lift station installation, testing and inspection
- Sewage flows satellite system and large private users are monitored and controlled, as necessary
- Fat, oil and grease control
- Enforcement procedures for sewer use non-compliance

- Operation and Maintenance [NR 210.23 (4) (d)]

Does your operation and maintenance program and equipment include the following:

- Equipment and replacement part inventories
- Up-to-date sewer system map

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- A management system (computer database and/or file system) for collection system information for O&M activities, investigation and rehabilitation
- A description of routine operation and maintenance activities (see question 2 below)
- Capacity assessment program
- Basement back assessment and correction
- Regular O&M training

Design and Performance Provisions [NR 210.23 (4) (e)]

What standards and procedures are established for the design, construction, and inspection of the sewer collection system, including building sewers and interceptor sewers on private property?

- State Plumbing Code, DNR NR 110 Standards and/or local Municipal Code Requirements
- Construction, Inspection, and Testing
- Others:

Overflow Emergency Response Plan [NR 210.23 (4) (f)]

Does your emergency response capability include:

- Responsible personnel communication procedures
- Response order, timing and clean-up
- Public notification protocols
- Training
- Emergency operation protocols and implementation procedures

Annual Self-Auditing of your CMOM Program [NR 210.23 (5)]

Special Studies Last Year (check only those that apply):

- Infiltration/Inflow (I/I) Analysis
- Sewer System Evaluation Survey (SSES)
- Sewer Evaluation and Capacity Management Plan (SECAP)
- Lift Station Evaluation Report
- Others:

## 2. Operation and Maintenance

2.1 Did your sanitary sewer collection system maintenance program include the following maintenance activities? Complete all that apply and indicate the amount maintained.

Cleaning	42.4	% of system/year
Root removal	1.0	% of system/year
Flow monitoring	75	% of system/year
Smoke testing	0	% of system/year
Sewer line televising	2.6	% of system/year
Manhole inspections	42.4	% of system/year
Lift station O&M	55	# per L.S./year
Manhole rehabilitation	0.6	% of manholes rehabbed
Mainline rehabilitation	0.1	% of sewer lines rehabbed
Private sewer inspections	0	% of system/year

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Private sewer I/I removal  % of private services

River or water crossings  % of pipe crossings evaluated or maintained

Please include additional comments about your sanitary sewer collection system below:

Manhole inspections are estimated based off of sewer cleaning data. These inspections are now being tracked through our GIS system and we will have an inspection count going forward.

We have increased our reported miles of Sanitary Sewer which is now being calculated through our GIS system to provide a more accurate measurement.

### 3. Performance Indicators

3.1 Provide the following collection system and flow information for the past year.

50.95	Total actual amount of precipitation last year in inches
32	Annual average precipitation (for your location)
205.28	Miles of sanitary sewer
5	Number of lift stations
0	Number of lift station failures
1	Number of sewer pipe failures
2	Number of basement backup occurrences
36	Number of complaints
12.88	Average daily flow in MGD (if available)
16.83	Peak monthly flow in MGD (if available)
	Peak hourly flow in MGD (if available)

3.2 Performance ratios for the past year:

0.00	Lift station failures (failures/year)
0.00	Sewer pipe failures (pipe failures/sewer mile/yr)
0.00	Sanitary sewer overflows (number/sewer mile/yr)
0.01	Basement backups (number/sewer mile)
0.18	Complaints (number/sewer mile)
1.3	Peaking factor ratio (Peak Monthly:Annual Daily Avg)
0.0	Peaking factor ratio (Peak Hourly:Annual Daily Avg)

### 4. Overflows

#### LIST OF SANITARY SEWER (SSO) AND TREATMENT FACILITY (TFO) OVERFLOWS REPORTED \*\*

Date	Location	Cause	Estimated Volume (MG)
None reported			

\*\* If there were any SSOs or TFOs that are not listed above, please contact the DNR and stop work on this section until corrected.

### 5. Infiltration / Inflow (I/I)

5.1 Was infiltration/inflow (I/I) significant in your community last year?

- Yes
- No

If Yes, please describe:

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Increased flow from storm water infiltration can increase flow to the plant by 3 - 4 times the average flow. During peak events, influent screening and grit removal may be bypassed for short periods of time.

5.2 Has infiltration/inflow and resultant high flows affected performance or created problems in your collection system, lift stations, or treatment plant at any time in the past year?

Yes

No

If Yes, please describe:

5.3 Explain any infiltration/inflow (I/I) changes this year from previous years:

Due to increased precipitation during 2019, the average flow rate to the plant was up approximately 2.0 MGD from average.

5.4 What is being done to address infiltration/inflow in your collection system?

The city continues to rehabilitate sewers and repair manholes each year to improve the integrity of the system.

<b>Total Points Generated</b>	0
<b>Score (100 - Total Points Generated)</b>	100
<b>Section Grade</b>	A

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## Grading Summary

WPDES No: 0025411

SECTIONS	LETTER GRADE	GRADE POINTS	WEIGHTING FACTORS	SECTION POINTS
Influent	A	4	3	12
BOD/CBOD	A	4	10	40
TSS	A	4	5	20
Phosphorus	A	4	3	12
Biosolids	A	4	5	20
Staffing/PM	A	4	1	4
OpCert	A	4	1	4
Financial	A	4	1	4
Collection	A	4	3	12
<b>TOTALS</b>			<b>32</b>	<b>128</b>
<b>GRADE POINT AVERAGE (GPA) = 4.00</b>				

### Notes:

- A = Voluntary Range (Response Optional)
- B = Voluntary Range (Response Optional)
- C = Recommendation Range (Response Required)
- D = Action Range (Response Required)
- F = Action Range (Response Required)

# Activity by Water/Waste Type - Summary

Orders Received Between 01/01/2019 - 12/31/2019

W/W Type	Total Trips	Total Ent Vo	Total Mtr Vol
Milk House	50	65400	81331
Gibsville Cheese	441	2289136	2249430
Residential Septage	2	7900	7437
Alliant Energy - Ash Water	1884	11232303	9973760
HT Dom Waste	906	3672203	3138273
HT NonDom Waste	2	6000	5605
Dried Biosolids	188	0	0
Non Domestic Other	1	5200	5208
ST Dom Waste	83	260380	220104
<b>Grand Totals</b>	<b>3557</b>	<b>17,538,522</b>	<b>15,681,148</b>

SEPTIC TANKS  
TOTAL = 260,380

HOLDING TANKS  
TOTAL = 3,678,203

## Annual Loading Summary - Daily Averages

Month	Inf Total Flow - MGD - Daily MGD 6	Carb Inf BOD mg/L OK 11	Inf BOD Load lbs/day 12	INF. SUS. SOL. mg/l 48	Inf TSS Load lbs/day 42	Inf Ammonia Nitrogen mgN/l 62	Inf Ammonia Load lbs/day 64	Inf Tot Phos mg/l 61	Inf Phos Load lbs/day 63	Prim Eff BOD MG/L 1111	Prim Eff BOD Load lbs/day 1112	Prim Eff. SUS. SOL. mg/l 1148	Prim Eff TSS Load lbs/day 1142
Jan 2019	11.234	169	15,349	344	39,510	19.63	1,992	3.9	359	107.0	10,196	58.9	5,461
Feb 2019	9.871	143	12,041	190	15,536	17.56	1,496	3.7	305	102.2	8,519	59.6	4,892
Mar 2019	13.982	98	10,493	149	14,546	12.47	1,702	2.9	291	89.9	10,287	56.3	6,456
Apr 2019	15.941	90	10,012	144	17,770	14.35	1,865	2.7	348	73.6	9,723	42.0	5,538
May 2019	14.591	90	10,407	209	25,322	14.06	1,682	2.9	350	72.9	9,022	45.8	5,545
Jun 2019	12.257	122	12,610	201	20,633	15.00	1,389	3.8	384	80.4	8,348	50.1	5,116
Jul 2019	11.867	114	12,043	245	23,817	19.14	1,801	4.5	430	81.9	7,959	42.7	4,293
Aug 2019	10.338	128	11,037	254	22,288	15.95	1,458	4.7	406	95.6	8,530	47.0	4,032
Sep 2019	10.372	130	11,520	249	21,680	20.18	1,702	4.6	399	83.5	7,285	46.4	4,009
Oct 2019	16.831	93	11,855	133	19,033	15.65	2,096	3.4	474	77.8	10,686	45.7	6,726
Nov 2019	13.274	117	14,248	162	17,814	16.75	1,847	3.6	394	86.2	9,134	51.1	5,689
Dec 2019	13.817	103	12,800	174	18,648	17.39	1,920	3.9	428	78.0	8,435	48.2	5,558
Minimum	9.871	90	10,012	133	14,546	12.47	1,389	2.7	291	72.9	7,285	42.0	4,009
Maximum	16.831	169	15,349	344	39,510	20.18	2,096	4.7	474	107.0	10,686	59.6	6,726
Average	12.865	116	12,035	205	21,383	16.51	1,746	3.7	381	85.8	9,010	49.5	5,276

Month	Prim Eff Tot Phos mg/l 1152	Pri Eff Phos Load lbs/day 1153	Eff cBOD mg/L 4021	Eff cBOD Load lbs/day 4022	Eff cBOD % Removal % 4025	EFF. SUS. SOL. mg/l 4068	Eff TSS Load lbs/day 4042	Eff TSS % Removal % 4043	Eff Ammonia Nitrogen mgN/L 4121	Eff Ammonia Load lbs/day 4122	Eff Ammonia % Removal % 4123	Eff Tot Phos mg/L 4125	Eff Phos Load lbs/day 4126	Eff Phos % Removal % 4127
Jan 2019	3.4	314.3	3.8	368	97.4	7	640	96.8	1.10	111	94.51	0.5	49	86.2
Feb 2019	3.7	302.3	3.4	294	97.6	7	579	96.0	1.20	99	92.77	0.5	44	85.4
Mar 2019	2.8	297.2	3.9	517	93.0	7	843	92.3	2.44	288	78.99	0.5	50	81.2
Apr 2019	2.1	264.8	2.9	431	94.7	6	788	93.7	5.52	717	62.31	0.4	57	82.3
May 2019	1.8	224.3	2.1	266	97.2	4	502	97.1	2.14	263	84.23	0.4	46	86.4
Jun 2019	2.7	270.2	2.5	269	97.8	4	394	98.0	3.40	306	78.34	0.4	36	90.6
Jul 2019	3.1	299.7	2.4	238	98.0	3	292	98.7	0.72	135	93.30	0.4	42	89.9
Aug 2019	3.9	332.6	2.1	183	98.3	3	219	98.9	0.22	24	98.28	0.3	28	93.0
Sep 2019	3.7	319.3	2.1	176	98.4	3	252	98.8	0.63	55	96.41	0.4	33	91.9
Oct 2019	2.8	390.3	2.4	366	97.0	4	699	96.1	1.15	213	90.04	0.3	41	92.3
Nov 2019	2.8	308.0	2.7	319	97.8	4	424	97.5	0.37	43	97.56	0.2	21	94.7
Dec 2019	3.0	325.0	2.6	293	97.5	4	538	96.8	0.72	82	95.89	0.3	33	92.3
Minimum	1.8	224.3	2.1	176	93.0	3	219	92.3	0.22	24	62.31	0.2	21	81.2
Maximum	3.9	390.3	3.9	517	98.4	7	843	98.9	5.52	717	98.28	0.5	57	94.7
Average	3.0	304.0	2.7	310	97.1	5	514	96.7	1.63	195	88.55	0.4	40	88.9

### Annual Loading Summary - Daily Averages

	Inf Total Flow - MGD - Daily MGD	Carb Inf BOD mg/L	Inf BOD Load lbs/day	INF. SUS. SOL. mg/l	Inf TSS Load lbs/day	Inf Ammonia Nitrogen mgN/l	Inf Ammonia Load lbs/day	Inf Tot Phos mg/l	Inf Phos Load lbs/day	Prim Eff BOD MG/L	Prim Eff BOD Load lbs/day	Prim Eff. SUS. SOL. mg/l	Prim Eff TSS Load lbs/day
Month	6	11	12	48	42	62	64	61	63	1111	1112	1148	1142
Jan 2019	11.234	169	15,349	344	39,510	19.63	1,992	3.9	359	107.0	10,196	58.9	5,461
Feb 2019	9.871	143	12,041	190	15,536	17.56	1,496	3.7	305	102.2	8,519	59.6	4,892
Mar 2019	13.982	98	10,493	149	14,546	12.47	1,702	2.9	291	89.9	10,287	56.3	6,456
Apr 2019	15.941	90	10,012	144	17,770	14.35	1,865	2.7	348	73.6	9,723	42.0	5,538
May 2019	14.591	90	10,407	209	25,322	14.06	1,682	2.9	350	72.9	9,022	45.8	5,545
Jun 2019	12.257	122	12,610	201	20,633	15.00	1,389	3.8	384	80.4	8,348	50.1	5,116
Jul 2019	11.867	114	12,043	245	23,817	19.14	1,801	4.5	430	81.9	7,959	42.7	4,293
Aug 2019	10.338	128	11,037	254	22,288	15.95	1,458	4.7	406	95.6	8,530	47.0	4,032
Sep 2019	10.372	130	11,520	249	21,680	20.18	1,702	4.6	399	83.5	7,285	46.4	4,009
Oct 2019	16.831	93	11,855	133	19,033	15.65	2,096	3.4	474	77.8	10,686	45.7	6,726
Nov 2019	13.274	117	14,248	162	17,814	16.75	1,847	3.6	394	86.2	9,134	51.1	5,689
Dec 2019	13.817	103	12,800	174	18,648	17.39	1,920	3.9	428	78.0	8,435	48.2	5,558
Minimum	9.871	90	10,012	133	14,546	12.47	1,389	2.7	291	72.9	7,285	42.0	4,009
Maximum	16.831	169	15,349	344	39,510	20.18	2,096	4.7	474	107.0	10,686	59.6	6,726
Average	12.865	116	12,035	205	21,383	16.51	1,746	3.7	381	85.8	9,010	49.5	5,276

	Prim Eff Tot Phos mg/l	Pri Eff Phos Load lbs/day	Eff cBOD mg/L	Eff cBOD Load lbs/day	Eff cBOD % Removal	EFF. SUS. SOL. mg/l	Eff TSS Load lbs/day	Eff TSS % Removal	Eff Ammonia Nitrogen mgN/L	Eff Ammonia Load lbs/day	Eff Ammonia % Removal	Eff Tot Phos mg/L	Eff Phos Load lbs/day	Eff Phos % Removal
Month	1152	1153	4021	4022	4025	4088	4042	4043	4121	4122	4123	4125	4126	4127
Jan 2019	3.4	314.3	3.8	368	97.4	7	640	98.8	1.10	111	94.51	0.527	49	86.2
Feb 2019	3.7	302.3	3.4	294	97.6	7	579	96.0	1.20	99	92.77	0.538	44	85.4
Mar 2019	2.8	297.2	3.9	517	93.0	7	843	92.3	2.44	288	78.99	0.459	50	81.2
Apr 2019	2.1	264.8	2.9	431	94.7	6	788	93.7	5.52	717	62.31	0.434	57	82.3
May 2019	1.8	224.3	2.1	266	97.2	4	502	97.1	2.14	263	84.23	0.376	46	86.4
Jun 2019	2.7	270.2	2.5	269	97.8	4	394	98.0	3.40	306	78.34	0.352	36	90.6
Jul 2019	3.1	299.7	2.4	238	98.0	3	292	98.7	0.72	135	93.30	0.423	42	89.9
Aug 2019	3.9	332.6	2.1	183	98.3	3	219	98.9	0.22	24	98.28	0.322	28	93.0
Sep 2019	3.7	319.3	2.1	176	98.4	3	252	98.8	0.63	55	96.41	0.378	33	91.9
Oct 2019	2.8	390.3	2.4	366	97.0	4	699	96.1	1.15	213	90.04	0.255	41	92.3
Nov 2019	2.8	308.0	2.7	319	97.8	4	424	97.5	0.37	43	97.56	0.188	21	94.7
Dec 2019	3.0	325.0	2.6	293	97.5	4	538	96.8	0.72	82	95.89	0.282	33	92.3
Minimum	1.8	224.3	2.1	176	93.0	3	219	92.3	0.22	24	62.31	0.2	21	81.2
Maximum	3.9	390.3	3.9	517	98.4	7	843	98.9	5.52	717	98.28	0.5	57	94.7
Average	3.0	304.0	2.7	310	97.1	5	514	96.7	1.63	195	88.55	0.4	40	88.9

## Summary of Bi-Monthly Dried Biosolids Analysis For Year 2019

#004	Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Zinc	Total NH4-N	TKN	Total Phos.	Water Ext. Phos.	Tot. Rec. Potassium	Total Solids	Fecal Coliform
Sample Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(%)	(%)	(%)	(%)	(%)	(%)	(MPN/g TS)
01/14/2019	5.83	0.805	363	21.6	1.560	9.65	31.3	1.820	634	0.50	4.61	2.81	0.020	0.05	95.52	2
04/8/2019	< 4.90	0.690	460	30.4	0.380	10.40	34.6	4.100	669	0.51	4.09	3.76	0.023	0.10	97.66	8
6/10/2019	6.70	0.600	436	29.4	0.520	8.90	26.2	3.100	592	0.53	3.98	5.20	0.020	0.12	96.80	4
8/12/2019	3.71	1.270	448	23.6	0.442	10.30	31.9	2.480	688	0.57	3.42	2.05	0.035	0.06	95.94	2
9/23/2019	6.50	0.850	555	37.9	0.470	9.30	27.2	3.100	610	0.59	4.07	4.17	0.027	0.09	96.95	2
12/9/2019	< 7.00	0.860	441	34.5	0.510	10.10	25.4	4.700	633	0.43	4.57	3.76	0.038	0.08	95.77	3
<b>Average</b>	5.77	0.846	451	29.6	0.647	9.78	29.4	3.217	638	0.52	4.12	3.63	0.027	0.08	96.44	4

Silo	Fecal Coliform
Sample Date	(CFU/gTS)
01/14/2019	4
03/22/2019	5
6/10/2019	3
8/12/2019	2
09/23/2019	2
12/9/2019	2
<b>Average</b>	3

Laboratory Doing Analysis: Cardinal Environmental

Pace Analytical Service, Inc.

Environmental Science Corp.

	<b>Total Wastewater Electrical Cost \$</b>	<b>Total Lift Station Electrical Cost \$</b>	<b>Total Wastewater Natural Gas Cost \$</b>	<b>Total Lift Station Natural Gas Cost \$</b>	<b>Total Monthly Lift Station Electrical Usage kWh</b>	<b>Total Monthly Lift Station Natural Gas Usage Therms</b>
Jan-19	\$50,438.24	\$8,170.20	\$7,796.67	\$199.27	66,401	320
Feb-19	\$41,494.96	\$6,645.27	\$2,570.75	\$268.26	55,994	546
Mar-19	\$50,269.49	\$9,656.43	\$2,165.18	\$183.55	78,334	323
Apr-19	\$42,447.13	\$7,319.42	\$7,356.50	\$76.59	67,406	102
May-19	\$47,054.05	\$7,326.16	\$7,132.01	\$47.64	68,628	40
Jun-19	\$45,762.93	\$6,540.16	\$6,492.48	\$38.93	59,330	8
Jul-19	\$52,011.77	\$6,295.91	\$4,636.25	\$33.54	57,024	0
Aug-19	\$48,188.22	\$5,796.90	\$4,399.16	\$32.81	44,775	1
Sep-19	\$43,410.10	\$4,545.84	\$4,564.57	\$35.76	41,524	0
Oct-19	\$57,727.69	\$10,842.47	\$2,942.25	\$32.42	69,587	0
Nov-19	\$39,512.79	\$6,572.99	\$1,020.60	\$77.08	56,289	99
Dec-19	\$44,598.37	\$7,825.85	\$5,247.74	\$162.99	65,639	277

Month	# of Days	kWh	Avg kWh/Day	Cost	Electric Avg Cost/Day	Power Generated kWh	% of Power Generated	Total Power Consumed	# of Days	Therms	Avg Therms/Day
Jan-19	33	549,600	16,655	\$42,268.04	\$1,280.85	4,411	0.80%	554,011	29	17512.4	603.9
Feb-19	28	434,400	15,514	\$34,849.69	\$1,244.63	1,013	0.23%	435,413	29	6244.4	215.3
Mar-19	26	435,600	16,754	\$40,613.06	\$1,562.04	5,794	1.31%	441,394	31	5245.9	169.2
Apr-19	26	427,500	16,442	\$35,127.71	\$1,351.07	28,586	6.27%	456,086	30	22484.2	749.5
May-19	30	526,500	17,550	\$39,727.89	\$1,324.26	14,357	2.65%	540,857	29	19129.2	659.6
Jun-19	29	477,000	16,448	\$39,222.77	\$1,352.51	21,635	4.34%	498,635	32	16329.1	510.3
Jul-19	33	596,700	18,082	\$45,715.86	\$1,385.33	10,614	1.75%	607,314	30	13305.4	443.5
Aug-19	30	545,400	18,180	\$42,391.32	\$1,413.04	9,698	1.75%	555,098	29	11676.4	402.6
Sep-19	31	535,500	17,274	\$38,864.26	\$1,253.69	7,688	1.42%	543,188	32	10681.8	333.8
Oct-19	30	543,600	18,120	\$46,885.22	\$1,562.84	8,509	1.54%	552109	29	6393.2	220.5
Nov-19	28	428,400	15,300	\$32,939.80	\$1,176.42	0	0.00%	428400	30	2462.6	82.1
Dec-19	29	471,600	16,262	\$36,772.52	\$1,268.02	0	0.00%	471600	32	18309.2	572.2