



# DEFIANCE

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## 2022 CSO Annual Report

City of Defiance WWTP

NPDES Permit 2PD00013

January 31, 2023

Prepared by:

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## 1. Executive Summary

On February 28, 2020 the City of Defiance Second Amended Consent Order was Filed in the Court of Common Pleas Defiance, County, Ohio.

Section VII. REPORTING REQUIREMENT, paragraph 22 reads as follows:

Not later than February 1<sup>st</sup> of each calendar year, or as otherwise specified in the NPDES Permit, Defendant shall submit two copies of the annual report summarizing its CSO and CSO outfall discharges and CSO and CSO outfall control activities during the previous year, as required in the NPDES Permit and any future modifications of the permit. One copy of the report shall be sent to Ohio EPA, Division of Surface Water, Public Permits Unit, P.O. Box 1049 Columbus, Ohio 43216-1049; and one copy shall be sent to Ohio EPA Northwest District Office, Attention: Enforcement Coordinator. The report Shall include:

- A. An annual summary of the frequency and volume of CSO and CSO outfall discharges and the total annual loadings for the 5-day CBOD and total suspended solids. Information shall be provided for each CSO and CSO outfall station. The data shall be reported in the tabular format provided by Ohio EPA. Data for this annual summary may either be generated by Defendant's predictive collection system model using daily inputs of rainfall volume and duration, or it may be based on monitoring and sampling of the CSO and CSO outfall stations during wet weather events.
- B. A summary of actions taken to implement the nine minimum controls in accordance with the combined sewer system operational plan.
- C. Annual reports of progress of implementation for the Near-Term Projects listed in Paragraph 21
- D. Annual report shall summarize changes made within the predictive model which is used to generate data for the CSO outfall discharge summary.

## 2. Summary of Annual Frequency, Volume, and Loading of CSOs From Model

## City of Defiance

### 2022 CSO Overflow Volume and Activation Summary

Data generated by updated collection system hydraulic model  
(2021 Plant RG Data, 5.5 MGD for KB PS)

CSO Location	CSO Volume (MG/yr)	Total Activations	5-Day CBOD Loadings (lbs/yr)	Total Suspended Solids (lbs/yr)
<b>A01</b>	1.29	14	632	2259
<b>A02</b>	2.22	23	1089	3888
<b>A03</b>	0.16	7	78	280
<b>A04</b>	0.01	4	5	18
<b>A05</b>	0.84	8	412	1471
<b>A06</b>	0.56	9	275	981
<b>A09</b>	0.80	21	392	1401
<b>A10</b>	4.10	20	2011	7181
<b>A11</b>	5.52	12	2707	9668
<b>A12</b>	1.54	11	755	2697
<b>A13</b>	0.15	6	9	263
<b>A14</b>	1.97	11	966	3450
<b>A15</b>	0.12	5	59	210
<b>A16</b>	27.30	23	13388	47813
<b>A17</b>	2.73	14	1339	4781
<b>A18</b>	0.69	8	338	1208
<b>A19</b>	1.82	20	893	3188
<b>M06</b>	3.75	11	1839	6568
<b>M07</b>	18.99	26	9313	33259
<b>NE1</b>	6.93	27	3398	12137
<b>NE3</b>	2.23	11	1094	3906
<b>NE4</b>	2.19	15	1074	3836
<b>MH-1115</b>	0.51	7	250	893
<b>MH-1516</b>	0.05	2	24	88
<b>MH-1587</b>	0.60	9	294	1051
<b>MH-1639</b>	0.01	2	5	18
<b>MH-720</b>	0.00	0	0	0
<b>Total</b>	<b>87.08</b>		<b>42,639</b>	<b>152,513</b>

## 3.1 Combined Sewer System Operational Plan and Nine Minimum Controls

### 3.1.1 Operation and Maintenance

***In 2022 the city hired a contractor to perform spray lining of the interior of several manholes throughout the city. The contractor spray lined 153 vertical feet of manholes, preventing I & I into the sanitary sewers. The city paid \$60,954.00 to have this work performed.***

***Unscheduled repairs of the sewer system cost the city \$84,432.4 in 2022. The cost for these sewer repairs comes out of a line item in our annual operating budget. Most of these unscheduled repairs are sewer issues we find when televising our sewer system for preventative maintenance.***

### 3.1.2 Maximization of Collection System Storage

One method of increasing collection system storage volume is to keep the interceptor sewer and local sewers clean from debris. Storage will be maximized when the system is operating without obstacles or debris in the lines. This can be accomplished with proper maintenance of the collection system.

***In 2022 the city sewer collection department televised 46,804 feet of sewer line. The sewer Collection Department also cleaned 29,106 feet of main line sewer and performed root cutting on 2,734 feet of sewer.***

The city continues to operate the CSO regulators in the open position so as to allow the most amount of sanitary wastewater to be collected prior to overflowing during periods of high flows.

### 3.1.3 Modifications to the Industrial Pretreatment Program

***In 2022 all of our Industrial Users were inspected as part of our approved Pretreatment Program. The inspector again expressed the importance to not have any batch discharges that are not part of the routine operation of the facility. Batch discharge is prohibited during wet weather and is outlined in each industrial users permit.***

### 3.1.4 Maximization of Flow to the WWTP

***In 2022 a new Variable Frequency Drive was installed at the Kingsbury Lift Station to replace one that was installed in 2007. This new VFD will help maintain levels in the wet well as well as send variable controlled flows to the treatment plant.***

### 3.1.5 Elimination of Dry Weather Overflows

***The City continues to observe the sewer system for River Water Intrusion in areas of the CSO overflows. Inline check valves and "Duckbills" are used on the CSO outfall pipes to prevent river water from entering the sewer system. The inline check valves and the duckbills are inspected twice per year for proper operation and debris build-up.***

### 3.1.6 Control of Solids and Floatable Materials in CSO Discharges

The City Street Department performs routine cleaning of storm sewer catch basins and inlets, routine street sweeping activities, and leaf pickup services to reduce the amount of solid and floatable materials discharged during CSO activity. The City operates a compost site at the Water Pollution Control Facility to degrade leaves and other miscellaneous items that are harmful to the sewer system. The compost site is open to all citizens of Defiance to bring their yard waste for disposal.

In 2021 the City Street Department purchased two new leaf collection vehicles that perform the leaf collection task quicker and more efficiently.

### 3.1.7 Pollution Prevention Programs to Reduce Contaminants in CSO's

Hazardous material discharges to the sewer system are prohibited, and industrial discharges are monitored and regulated through the Industrial Pretreatment Program by the Assistant Superintendent. This has been helpful in reducing the level of contaminants in the CSOs.

### 3.1.8 Public Notification of CSO Discharges and Impacts

To access the yearly CSO Annual Report on the City of Defiance website you must do the following:

Go to [cityofdefiance.com](http://cityofdefiance.com), click on "Divisions", scroll down to "Water Pollution Control" and click on "combined sewer overflow" and then there is a blue box that is labeled "CSO Overflow Report".

***The City had no issues with implementing the "CSO Great Lakes Basin Public Notification Plan" in 2022***

### 3.1.9 Monitoring and Reporting of CSOs

***The city has eight real time flow meters installed at CSO bypass locations. These monitors send data to a "Dashboard" that shows water level in the sewers at these locations. In the event of an overflow, an alert is sent to cell phones to notify of the occurrence.***

## 4. CSO Long Term Control Plan and Second Amended Consent Order

In 2020 a Second Amended Consent Order was filed in Defiance County Court of Common Pleas on February 28, 2020.

### 4.1 Capital Projects in Second Amended Consent Order

All capital projects that were required in the Second Amended Consent Order have been completed. ***A Supplemental Environmental Project for extending the IWIP deadline was to install a storm sewer on Summit Street to separate clean water from the sanitary sewer. This project was completed in the fall of 2022.***

## 4.2 Compliance and Monitoring

The city's Sewer Maintenance Crew checks all regulators after any significant rainfall and every Monday or Tuesday if Monday is a Holiday. If there is a wet weather bypass then the crews will return and check the bypass until the overflow subsides. A copy of the CSO inspection forms can be found at the end of this report.

### 4.2.1 Post-Construction Compliance and Monitoring

The city has eight real time flow meters installed at CSO bypass locations. These monitors send data to a "Dashboard" that shows water level in the sewers at these locations. In the event of an overflow an alert is sent to cell phones to notify of the occurrence.

### 4.2.2 River Water Intrusion

***At a minimum the city crews check the regulators for any signs of debris, malfunctions and river water intrusion.***

### 4.2.3 CSO Annual Report

***Submission of this 2022 CSO Annual Report is in compliance with the existing Second Amended Consent Order schedule.***

**CITY OF DEFIANCE WATER POLLUTION CONTROL  
CSO RAINFALL INFORMATION FOR 2022**

DATE	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr	PREC in	DUR hr
1	0.10	2.0	0.02	0.4	0.00	0.0	0.01	0.2	0.00	0.0	0.01	0.2	0.25	0.8	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
2	0.00	0.0	0.57	9.4	0.01	0.2	0.07	1.4	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.2
3	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.50	5.2	0.00	0.0	0.00	0.0	0.64	1.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
4	0.00	0.0	0.00	0.0	0.00	0.0	0.12	2.4	0.00	0.0	0.00	0.0	0.27	2.2	0.00	0.0	0.07	1.4	0.00	0.0	0.00	0.0	0.00	0.0
5	0.00	0.0	0.00	0.0	0.15	1.6	0.07	1.4	0.28	4.8	0.00	0.0	0.37	1.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
6	0.00	0.0	0.00	0.0	0.36	3.4	0.15	2.6	0.12	2.4	1.10	4.2	0.25	1.2	0.00	0.0	0.00	0.0	0.03	0.6	0.00	0.0	0.00	0.0
7	0.00	0.0	0.00	0.0	0.02	0.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.79	4.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
8	0.09	1.8	0.01	0.2	0.00	0.0	0.01	0.2	0.00	0.0	0.61	2.6	0.00	0.0	0.82	2.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
9	0.00	0.0	0.00	0.0	0.00	0.0	0.02	0.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.06	1.0
10	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
11	0.00	0.0	0.23	4.2	0.01	0.2	0.05	0.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.55	4.4	0.00	0.0	0.00	0.0	0.00	0.0
12	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.11	2.0	0.07	0.8	0.07	1.4	0.00	0.0
13	0.00	0.0	0.00	0.0	0.00	0.0	0.18	3.0	0.00	0.0	0.72	2.0	0.00	0.0	0.29	3.0	0.00	0.0	0.02	0.4	0.00	0.0	0.00	0.0
14	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.01	0.2	*	*	0.00	0.0	0.33	2.2	0.00	0.0	0.08	1.0	0.00	0.0	0.36	4.8
15	0.00	0.0	0.00	0.0	0.00	0.0	0.05	1.0	0.28	3.8	*	*	0.34	4.8	0.00	0.0	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0
16	0.00	0.0	0.28	1.6	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.02	0.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
17	0.00	0.0	0.75	9.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.76	3.4	0.00	0.0	0.60	1.4	0.01	0.2	0.00	0.0	0.00	0.0
18	0.00	0.0	0.00	0.0	0.50	4.2	0.12	1.8	0.15	3.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.05	1.0	0.00	0.0	0.00	0.0
19	0.00	0.0	0.00	0.0	0.36	5.6	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
20	0.00	0.0	0.00	0.0	0.00	0.0	0.02	0.4	0.00	0.0	0.00	0.0	0.00	0.0	*	*	0.60	1.4	0.00	0.0	0.00	0.0	0.00	0.0
21	0.00	0.0	0.14	1.8	0.00	0.0	0.02	0.4	0.01	0.2	0.00	0.0	0.04	0.8	1.00	2.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
22	0.00	0.0	0.17	2.8	0.18	3.6	0.00	0.0	0.00	0.0	0.00	0.0	0.02	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.18	2.6
23	0.04	0.8	0.00	0.0	0.41	1.8	0.00	0.0	0.00	0.0	0.00	0.0	0.57	2.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
24	0.02	0.4	0.06	1.2	0.00	0.0	0.10	1.4	0.00	0.0	0.00	0.0	0.00	0.0	0.03	0.2	0.13	0.4	0.00	0.0	0.07	1.2	0.00	0.0
25	0.00	0.0	0.01	0.2	0.05	1.0	0.15	2.4	0.33	2.6	0.01	0.2	0.00	0.0	0.00	0.0	0.10	2.0	0.34	3.4	0.00	0.0	0.00	0.0
26	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.26	2.4	0.00	0.0	0.00	0.0	0.00	0.0	0.14	0.8	0.02	0.4	0.55	2.0	0.00	0.0
27	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.03	0.6	0.00	0.0	0.08	0.6	0.00	0.0	0.84	6.6	0.00	0.0
28	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.04	0.6	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
29	0.00	0.0			0.06	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.07	1.0	0.04	0.2	0.00	0.0	0.08	0.6	0.00	0.0
30	0.00	0.0			0.04	0.8	0.51	4.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.33	3.6	0.00	0.0	0.77	13.0
31	0.00	0.0			0.04	0.6			0.00	0.0			0.00	0.0	0.00	0.0			0.05	1.0			0.06	1.2
TOT	0.25	5.00	2.25	31.00	2.20	23.80	1.65	23.60	1.94	24.60	2.46	9.40	2.92	19.00	4.02	17.20	2.42	14.60	1.00	12.40	1.62	12.00	1.44	22.80
AVE	0.01	0.161	0.08	1.107	0.071	0.8	0.055	0.787	0.063	0.794	0.088	0.336	0.094	0.613	0.134	0.573	0.081	0.487	0.032	0.4	0.054	0.4	0.046	0.735

\* Rain gauge malfunction



## B – Daily Stormwater Regulator Inspection Logs

City of Defiance, WPC									
Daily Storm Water Regulator Inspection Log									
<b>Date:</b> _____									
Location	Normal Ops.	72 Hrs. Precip. (Y/N)	Debris in Weir	Debris in Gate	Gate Stuck	Mechanical Problem	SI - River Over MH's	SI - River not Over MH's	
M-6	Perry St.								
M-7	Clinton St.								
NE-1	Clinton St.								
NE-3	East River Dr.								
NE-4	Carpenter Rd.								
A-1	Sunday St.								
A-2	Lincoln Dr.								
A-3	Wayne Ave.								
A-4	Jefferson Ave.								
A-5	Riverside Ave.								
A-6	Riverside Ave.								
A-9	Summit St. S.								
A-10	Hopkins St.								
A-11	Auglaize St.								
A-12	Second St.								
A-13	St. Paul St.								
A-14	Minneapolis St.								
A-15	Front St.								
A-16	Summit St. N.								
A-17	Bassard Dr.								
A-18	Glenwood Dr.								
A-19	Huron Dr.								
ND =	Not Discharging	DO =	Dry Weather Overflow			FD =	Fixed DO		
SI =	Surcharged Interceptor	WO =	Wet Weather Overflow			FW =	Fixed WO		
CITY OF DEFIANCE, WPC									
* SAMPLING POINTS REQUIRED TWICE / YEAR / NPDES DISCHARGE PERMIT # 2PD00013*TD									
<b>Location:</b>					<b>Permit ID#:</b>		<b>Note on Bottle:</b>		
Regulator A-6 (Riverside Ave. by Bus Barn)					2PD00013007		Location		
Regulator A-11 (Auglaize St. South of Third St.)					2PD00013012		Date		
Regulator A-16 (North end of Summit St.)					2PD00013017		Time		
Regulator A-17 (Bassard Dr.)					2PD00013018				
Regulator NE-3 (East River Dr. Across from Pontiac Park)					2PD00013032				
<b>Operator of Record Signature:</b> _____									
<b>Checked BY:</b> _____									

CITY OF DEFIANCE					
WATER POLLUTION CONTROL DIVISION					
<b>DATE:</b>		<b>Combined Sewer Overflow Checklist</b>			
<b>CSO #</b>	<b>SECTION #</b>	<b>LOCATION</b>		<b>CONDITION</b>	
720	10	South Clinton St.			
1115	7	Ayersville Ave.			
1516	3	East River Dr.			
1587	3	Ralston Ave.			
1639	3	Northwest Lift Station			
CONDITION FOUND CODE					
ND =	Not Discharging		WO =	Wet Weather Overflow	
SI =	Surcharged Interceptor		FD =	Fixed DO	
DO =	Dry Weather Overflow		FW =	Fixed WO	
<b>Operator of Record Signature:</b>					
_____					
<b>Checked By:</b>					
_____					
csochecklistrevised12-14-20					