



DEFIANCE

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2021 CSO Annual Report

City of Defiance WWTP

NPDES Permit 2PD00013

February 1, 2022

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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 1st 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

City of Defiance

2021 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)	Total Activations	5-Day CBOD Loadings (lbs)	Total Suspended Solids (lbs)
A01	0.31	16	40	256
A02	0.50	25	64	414
A03	0.01	4	1	5
A04	0.00	0	0	0
A05	0.18	6	24	152
A06	0.05	8	7	45
A09	0.34	24	44	285
A10	0.95	24	124	794
A11	2.74	11	356	2,285
A12	0.60	6	78	500
A13	0.01	5	1	6
A14	0.82	7	106	682
A15	0.00	3	1	4
A16	19.98	25	2,596	16,671
A17	0.91	14	118	761
A18	0.09	6	11	74
A19	0.29	22	38	241
M06	1.28	8	166	1,065
M07	11.55	30	1,502	9,641
NE1	3.92	29	510	3,274
NE3	0.84	7	109	701
NE4	0.87	13	112	722
MH-1115	0.01	6	1	8
MH-1516	0.00	0	0	0
MH-1587	0.08	8	10	66
MH-1639	0.00	0	0	0
MH-720	0.00	0	0	0
Total	46.31		6,020	38,652

3.1 Combined Sewer System Operational Plan and Nine Minimum Controls

3.1.1 Operation and Maintenance

In 2021 the city hired a contractor to perform “Mr. Manhole” rehabilitation on 10 sanitary manholes throughout the city. This “Mr. Manhole” rehabilitation method not only replaces the lids and casting but also replaces the chimney of the manholes which in turn prevents inflow and infiltration. This rehabilitation of the manholes cost the city \$18,500 to have this work performed.

Unscheduled repairs of the sewer system cost the City \$68,516 in 2021. The cost for these sewer repairs comes out of a line item in our annual operating budget.

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 2021 the city sewer collection department televised 93,087 feet of sewer line. The sewer Collection Department also cleaned 85,679 feet of main line sewer and performed root cutting on 12,543 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 2021 inspections of all our Industrial Users was performed. While conducting these inspections the inspector explained to the industries the overflow possibilities during wet weather. It was also discussed that no batch discharges are allowed during periods of high flows due to precipitation.

3.1.4 Maximization of Flow to the WWTP

In 2021 a new 168 horsepower pump was installed at Kingsbury Lift Station. This pump replaced a pump that was inoperable and not feasible to fix. This new pump will allow us to pump more flow from our Kingsbury Lift Station to our Treatment Plant. With the new pump efficiency allowing us to pump more flow to the treatment plant it is anticipated that there will be less overflows at our A-16 CSO.

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. Back flow devices and “Duckbills” are used on the CSO outfall pipes to prevent river water from entering the sewer system.

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, 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 2021

3.1.9 Monitoring and Reporting of CSOs

The city has eight real time flow meters on 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 is to install a storm sewer on Summit Street to separate clean water from the sanitary sewer. This project is currently being Engineered and is scheduled to be completed in 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 on 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 a 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 CSO Annual Report is in compliance with the existing Second Amended Consent Order schedule.

Appendix A – Rainfall Data Table

**CITY OF DEFIANCE WATER POLLUTION CONTROL
CSO RAINFALL INFORMATION FOR 2021**

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	0.42	3.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
2	0.01	0.2	0.01	0.2	0.00	0.0	0.00	0.0	0.12	1.8	0.55	7.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
3	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.09	1.8	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.56	2.2	0.00	0.0	0.00	0.4
4	0.00	0.0	0.16	2.4	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.22	2.2	0.15	1.8	0.00	0.0	0.00	0.0
5	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	0.70	5.2
6	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.09	1.6	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
7	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.10	0.8	0.65	1.4	0.01	0.2	0.23	1.2	0.09	1.6	0.00	0.0	0.00	0.0
8	0.00	0.0	0.00	0.0	0.00	0.0	0.34	3.6	0.27	3.6	0.08	1.0	0.02	0.4	0.00	0.0	0.00	0.0	0.84	1.6	0.00	0.0	0.00	0.0
9	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.70	6.2	0.00	0.0	0.01	0.2	0.10	1.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
10	0.00	0.0	0.01	0.2	0.00	0.0	0.28	3.4	0.05	0.8	0.00	0.0	0.33	3.8	0.03	0.4	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0
11	0.00	0.0	0.00	0.0	0.00	0.0	0.37	3.4	0.00	0.0	0.00	0.0	0.67	5.0	0.67	2.4	0.00	0.0	0.01	0.2	0.12	1.8	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	0.33	2.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
13	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	0.05	0.8	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0
14	0.05	1.0	0.04	0.8	0.00	0.0	0.00	0.0	0.00	0.0	0.04	0.8	0.00	0.0	0.00	0.0	0.19	0.6	0.54	5.8	0.09	18.0	0.16	1.6
15	0.09	1.8	0.09	1.4	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.59	1.6	0.22	2.6	0.00	0.0	0.97	6.0	0.00	0.0	0.02	0.4
16	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.81	8.8	0.02	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.13	1.8
17	0.02	0.4	0.00	0.0	0.07	1.2	0.03	0.6	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.21	2.8	0.10	2.0
18	0.01	0.2	0.00	0.0	0.17	3.4	0.00	0.0	0.00	0.0	0.38	2.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.12	1.6
19	0.02	0.4	0.00	0.0	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	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	0.17	3.2	0.00	0.0	0.59	2.4	0.00	0.0	0.00	0.0	0.03	0.6	0.11	1.0	0.00	0.0	0.00	0.0
21	0.00	0.0	0.04	0.8	0.00	0.0	0.01	0.2	0.00	0.0	0.01	0.2	0.00	0.0	0.00	0.0	1.59	7.8	0.23	0.6	0.14	2.8	0.00	0.0
22	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			0.05	1.0	0.00	0.0	0.00	0.0
23	0.00	0.0	0.00	0.0	0.06	0.2	0.00	0.0	0.10	0.6	0.00	0.0	0.55	2.4	0.00	0.0	0.17	3.4	0.00	0.0	0.04	0.2	0.00	0.0
24	0.00	0.0	0.00	0.0	0.01	0.2	0.12	2.4	0.00	0.0	0.04	0.4	0.32	0.6	0.03	0.4	0.01	0.2	1.71	10.6	0.09	1.6	0.09	1.2
25	0.01	1.0	0.00	0.0	0.72	5.4	0.00	0.0	0.04	0.2	0.71	4.2	0.00	0.0	0.30	1.4	0.25	2.0	0.45	5.4	0.08	1.6	0.01	0.2
26	0.01	0.2	0.08	1.6	0.00	0.0	0.03	0.4	0.51	2.8	0.00	0.0	0.01	0.2	0.11	1.2	0.00	0.0	0.00	0.0	0.00	0.0	0.42	3.2
27	0.00	0.0	0.01	0.2	0.31	4.0	0.00	0.0	0.32	1.4	0.00	0.0	0.00	0.0	0.11	1.0	0.03	0.2	0.05	0.2	0.01	0.2	0.01	0.2
28	0.00	0.0	0.00	0.0	0.02	0.4	0.18	3.0	0.61	4.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.32	4.6	0.01	0.2	0.37	3.0
29	0.00	0.0			0.00	0.0	0.09	1.6	0.00	0.0	0.00	0.0	0.01	0.2	0.61	1.0	0.00	0.0	0.24	4.6	0.01	0.2	0.03	0.6
30	0.15	2.8			0.01	0.2	0.00	0.0	0.00	0.0	0.67	3.2	0.04	0.2	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.01	0.2
31	0.01	0.2			0.00	0.0			0.00	0.0			0.00	0.0	0.03	0.2			0.00	0.0			0.00	0.0
TOT	0.80	11.60	0.45	7.80	1.39	15.40	1.65	22.40	2.90	24.80	3.18	22.60	4.39	27.80	2.25	12.40	2.72	18.20	6.33	47.40	0.81	29.60	2.76	25.20
AVE	0.03	0.374	0.016	0.279	0.045	0.5	0.055	0.747	0.094	0.8	0.106	0.753	0.142	0.897	0.073	0.4	0.094	0.628	0.204	1.529	0.027	0.987	0.089	0.813

B – Daily Stormwater Regulator Inspection Logs

City of Defiance, WPC									
Daily Storm Water Regulator Inspection Log									
Date:									
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									
<u>Location:</u>					<u>Permit ID#:</u>		<u>Note on Bottle:</u>		
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				
Operator of Record Signature:									

Checked BY:									

CITY OF DEFIANCE						
WATER POLLUTION CONTROL DIVISION						
DATE:		Combined Sewer Overflow Checklist				
CSO #	SECTION #	LOCATION			CONDITION	
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		
Operator of Record Signature:						

Checked By:						

csochecklistrevised12-14-20						