

National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for the **City of Norwalk Wastewater Treatment Plant**

Public Notice No.: 212303
Public Notice Date: 5/26/2025
Comment Period Ends: 6/25/2025

Ohio EPA Permit No.: **2PD00024*TD**
Application No.: **OH0052604**

Name and Address of Applicant:

City of Norwalk
38 Whittlesey Avenue
Norwalk, OH 44857

Name and Address of Facility Where

Discharge Occurs:

City of Norwalk Wastewater Treatment Plant
201 Plank Road
Norwalk, OH 44857
Huron County

Receiving Water: **West Branch Rattlesnake Creek**

Subsequent Stream Network: **Rattlesnake Creek, Huron River, Lake Erie**

INTRODUCTION

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations (CFR), Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency (Ohio EPA), as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act (CWA) and Ohio Water Pollution Control Law (Ohio Revised Code [ORC] 6111). Decisions to award variances to Water Quality Standards (WQS) or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Antidegradation provisions in Ohio Administrative Code (OAC) Chapter 3745-1 describe the conditions under which water quality may be lowered in surface waters. No antidegradation review was necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the CWA. Many of these have already been established by the United States Environmental Protection Agency (U.S. EPA) in the effluent guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR Parts 405-499. Technology-based regulations for publicly-owned treatment works are listed in the Secondary Treatment Regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the director may establish technology-based limits based on best professional judgment (BPJ).

Ohio EPA reviews the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations (WLAs) are used to develop these limits based on the pollutants that have been detected in the discharge, and the receiving water's assimilative capacity. The assimilative capacity depends on the flow in the water receiving the discharge, and the concentration of the pollutant upstream. The greater the upstream flow, and the lower the upstream concentration, the greater the assimilative capacity is. Assimilative capacity may represent dilution (as in allocations for metals), or it may also incorporate the break-down of pollutants in the receiving water (as in allocations for oxygen-demanding materials).

The need for water-quality-based limits is determined by comparing the WLA for a pollutant to a measure of the effluent quality. The measure of effluent quality is called Projected Effluent Quality (PEQ). This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. If there is a small data set for a given pollutant, the highest measured value is multiplied by a statistical factor to obtain a PEQ; for example if only one sample exists, the factor is 6.2, for two samples - 3.8, for three samples - 3.0. The factors continue to decline as samples sizes increase. These factors are intended to account for effluent variability, but if the pollutant concentrations are fairly constant, these factors may make PEQ appear larger than it would be shown to be if more sample results existed.

SUMMARY OF PERMIT CONDITIONS

The effluent limits and/or monitoring requirements proposed for all parameters are the same as in the current permit, except those listed below.

New effluent limits are proposed for bis(2-ethylhexyl) phthalate and copper because of the reasonable potential to exceed water quality standards. A 36-month compliance schedule is proposed for the plant to meet these limits. Based on the requirements in OAC Chapter 3745-33-07(C)(4), a Pollutant Minimization Program (PMP) is proposed to increase the probability that the water-quality-based effluent limits for bis(2-ethylhexyl) phthalate will actually be achieved, as the proposed limit is less than the quantification level. Details are in Part I, C of the permit.

Lower effluent limits are proposed for total residual chlorine, summer ammonia, and winter ammonia to protect water quality. Based on Norwalk's total residual chlorine and ammonia data, the facility should be able to meet the lower limits immediately without the need for a compliance schedule.

Lower monthly average effluent limits are proposed for mercury based on the facility's mercury variance. No compliance schedule is proposed.

Monitoring requirements are proposed to be removed for iron as no reasonable potential to exceed WQS has been demonstrated.

Free cyanide was placed into parameter evaluation group 5; this demonstrates free cyanide has the reasonable potential to exceed water quality standards. Limits for free cyanide are already protective of WQS, so the cyanide pollutant minimization program (PMP) is proposed to continue. Details are in Part II of the permit.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from Norwalk WWTP shows chronic and acute toxicity to *Pimephales promelas*. A chronic monthly average concentration limit of 1.0 TU_c is proposed to continue. A new maximum acute limit of 1.0 TU_a is proposed. A compliance schedule to meet the new acute toxicity limit and to perform a plant performance evaluation is proposed in Part I, C of the permit. The purpose of the plant performance evaluation is to adequately capture the progress of meeting these limits. Reasonable potential for toxicity of *Ceriodaphnia dubia* was not demonstrated during the course of the evaluation timeframe.

Monitoring for *Ceriodaphnia dubia* toxicity is proposed to be reduced to once a year at the effluent and upstream monitoring stations and the monthly effluent chronic toxicity limit of 1.0 TU_c is proposed to be removed.

New monitoring for total Kjeldahl nitrogen is being proposed at upstream monitoring station 801 and downstream monitoring station 901 to more accurately document the facility's nutrient load contribution to the receiving stream.

New monitoring for bis(2-ethylhexyl) phthalate is being proposed at influent monitoring station 601 to help facilitate reduction strategies as this parameter at the effluent has the reasonable potential to exceed water quality standards.

Monitoring for water temperature, pH, and dissolved oxygen is proposed to be removed at upstream monitoring station 801. Additionally, monitoring for dissolved oxygen is proposed to be removed at downstream monitoring station 901. Finally, monitoring for iron and total filterable residue is proposed to be removed at influent monitoring station 601. This is because this data is not currently needed as part of the reasonable potential analysis.

Monitoring for *E. coli* at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change from summer to June-August, and from monthly to once every two weeks. The higher frequency over a shorter period will facilitate impairment assessments in the receiving stream.

A new combined sewer overflow (CSO) location was discovered in 2019 in a retail store parking lot close by the Cline Street CSO location. Monitoring for this CSO as a separate location, numbered 006, is proposed. Monitoring for total suspended solids and CBOD is proposed to be removed from CSO stations 003 and 004 as the city has worked to separate their combined sewer system and only overflow occurrences and volume need be monitored.

A schedule of compliance for the City of Norwalk's CSO Long-Term Control Plan is included in Part I, C of the permit, which details the following requirements: completion of sanitary sewer collection system improvements to reduce or eliminate CSOs at CSO stations 003, 004, and 006; development and submission of a post-construction compliance monitoring plan; and development and submission of a long-term control plan completion evaluation report.

To ensure that data is obtained that allows Ohio EPA to make water quality-related decisions regarding total residual chlorine and bis(2-ethylhexyl) phthalate, a special condition is proposed in Part II of the permit that provides guidance on the analytical method detection limits (MDLs) the permittee should use in analyzing for these contaminants.

In Part II of the permit, special conditions are included that address sanitary sewer overflow (SSO) reporting; operator certification, minimum staffing and operator of record; whole effluent toxicity (WET) testing; stormwater compliance; mercury variance; combined sewer overflow (CSO) reporting; CSO Plan notification requirements; pretreatment program requirements; phosphorus reduction optimization; cyanide pollutant minimization program; downstream public water supply notification; and outfall signage.

Table of Contents

	Page
INTRODUCTION.....	1
SUMMARY OF PERMIT CONDITIONS	2
PROCEDURES FOR PARTICIPATION IN THE FORMULATION OF FINAL DETERMINATIONS	5
INFORMATION REGARDING CERTAIN WATER QUALITY BASED EFFLUENT LIMITS	5
LOCATION OF DISCHARGE/RECEIVING WATER USE CLASSIFICATION	7
FACILITY DESCRIPTION.....	7
DESCRIPTION OF EXISTING DISCHARGE	9
ASSESSMENT OF IMPACT ON RECEIVING WATERS	10
DEVELOPMENT OF WATER-QUALITY-BASED EFFLUENT LIMITS	12
REASONABLE POTENTIAL/EFFLUENT LIMITS/MANAGEMENT DECISIONS	14
OTHER REQUIREMENTS.....	18

List of Figures

Figure 1. Location of City of Norwalk Wastewater Treatment Plant	21
Figure 2. Diagram of Wastewater Treatment System	22

List of Tables

Table 1. Sewage Sludge Removal.....	23
Table 2. Effluent Violations for Outfall 001	23
Table 3. Average Annual Effluent Flow Rates	23
Table 4. Sanitary Sewer Overflows Discharges.....	24
Table 5. Combined Sewer Overflow Discharges for the Previous Five Years	24
Table 6. Calculated Summer Total Phosphorus Loadings	24
Table 7. Effluent Characterization Using Pretreatment Data.....	25
Table 8. Effluent Characterization Using Ohio EPA Data.....	26
Table 9. Effluent (Outfall 001) Characterization Using Self-Monitoring Data	27
Table 10. Projected Effluent Quality for Outfall 001.....	29
Table 11. Summary of Acute and Chronic Toxicity Results	30
Table 12. Aquatic Life Use Attainment Table	30
Table 13. Water Quality Criteria in the Study Area.....	31
Table 14. Instream Conditions and Discharger Flow.....	32
Table 15. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria.....	34
Table 16. Parameter Assessment.....	35
Table 17. Final Effluent Limits for Outfall 001	36

List of Attachments

Attachment 1. Cyanide Data from Pollutant Minimization Program.....	38
Attachment 2. Mercury Data from Pollutant Minimization Program	38
Attachment 3. Whole Effluent Toxicity Reasonable Potential Analysis	39

List of Addendums

Addendum 1. Acronyms	40
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PROCEDURES FOR PARTICIPATION IN THE FORMULATION OF FINAL DETERMINATIONS

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be emailed to HClerk@epa.ohio.gov or mailed to:

**Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049**

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted by email to epa.dswcomments@epa.ohio.gov (preferred method) or delivered in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049**

The Ohio EPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the draft permit, contact Sabrina Swayne, 614-644-2026, Sabrina.Swayne@epa.ohio.gov.

INFORMATION REGARDING CERTAIN WATER QUALITY BASED EFFLUENT LIMITS

This draft permit may contain proposed water-quality-based effluent limits (WQBELs) for parameters that **are not** priority pollutants. (See the following link for a list of the priority pollutants: https://epa.ohio.gov/static/Portals/35/pretreatment/Pretreatment_Program_Priority_Pollutant_Detection_Limits.pdf.) In accordance with ORC 6111.03(J)(3), the Director established these WQBELs after considering, to the extent consistent with the Federal Water Pollution Control Act, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties from those wastes and to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to

accomplishment of the purposes of this chapter. This determination was made based on data and information available at the time the permit was drafted, which included the contents of the timely submitted NPDES permit renewal application, along with any and all pertinent information available to the Director.

This public notice allows the permittee to provide to the Director for consideration during this public comment period additional site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness for achieving compliance with the proposed final effluent limitations for these parameters. The permittee shall email to epa.dswcomments@epa.ohio.gov (preferred method) or deliver or mail this information to:

Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049

Should the applicant need additional time to review, obtain or develop site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness of achieving compliance with these limitations, a written request for any additional time shall be sent to the above address no later than 30 days after the Public Notice Date on Page 1.

Should the applicant determine that compliance with the proposed WQBELs for parameters other than the priority pollutants is technically and/or economically unattainable, the permittee may submit an application for a variance to the applicable WQS used to develop the proposed effluent limitation in accordance with the terms and conditions set forth in OAC 3745-33-07(D). The permittee shall submit this application to the above address no later than 30 days after the Public Notice Date.

Alternately, the applicant may propose the development of site-specific WQS pursuant to OAC 3745-1-39. The permittee shall submit written notification regarding their intent to develop site specific WQS for parameters that are not priority pollutants to the above address no later than 30 days after the Public Notice Date.

LOCATION OF DISCHARGE/RECEIVING WATER USE CLASSIFICATION

The City of Norwalk Wastewater Treatment Plant (Norwalk WWTP) discharges to the West Branch of Rattlesnake Creek at River Mile (RM) 2.35. Figure 1 shows the approximate location of the facility.

This segment of the West Branch of Rattlesnake Creek is described by Ohio EPA River Code: 12-001-004. Hydrologic Unit Code: 04100012-06-05, County: Huron, Ecoregion: Huron/Erie Lake Plains. The West Branch of Rattlesnake Creek is designated for the following uses under Ohio's WQS (OAC 3745-1-19): Warmwater Habitat, Agricultural Water Supply, Industrial Water Supply, and Primary Contact Recreation.

The West Branch of Rattlesnake Creek discharges to Rattlesnake Creek at RM 0.28. The properties of this stream segment are identical to its West Branch except is described by Ohio EPA River Code: 12-001-003 and County: Erie.

Rattlesnake Creek then subsequently discharges into the Huron River at RM 12.96. This segment of the Huron River is described by Ohio EPA River Code 12-001-000, Hydrologic Unit Code: 04100012-06-06, County: Erie, Ecoregion: Huron/Erie Lake Plains. Huron River is designated for the following uses under Ohio's WQS (OAC 3745-1-19): Exceptional Warmwater Habitat, Seasonal Salmonid Habitat, Agricultural Water Supply, Industrial Water Supply, and Primary Contact Recreation.

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric WQS are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal CWA. Ohio WQS also include aquatic life use designations for waterbodies which cannot meet the CWA goals because of human-caused conditions that cannot be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact Recreation) and wading only (Secondary Contact which are generally waters too shallow for swimming or canoeing).

Water supply uses are defined by the actual or potential use of the waterbody. Public Water Supply designations apply near existing water intakes so that waters are safe to drink with standard treatment. Most other waters are designated for agricultural water supply and industrial water supply.

FACILITY DESCRIPTION

Norwalk WWTP was constructed in 1930 and last upgraded in 2007. The average design flow is 3.5 million gallons per day (MGD) and after the planned construction project is completed the peak hydraulic capacity will be increased from 8.5 to 12-15 MGD. Norwalk WWTP serves the City of Norwalk and has the following treatment processes (Figure 2):

- Bar Screen
- Grit Removal

- Flow Equalization
- Primary Sedimentation
- Trickling Filter (Rock Media)
- Secondary Clarifiers
- Sand Filters
- Chemical Addition (Ferric Chloride)
- Ammonia Stripping
- Chlorination
- Dechlorination

In an effort to increase capacity at the wastewater treatment plant, improvements funded by Ohio EPA's Water Pollution Control Loan Fund (WPCLF) program are planned for 2025. These include the replacement of existing sand filters with new cloth media tertiary filters, UV disinfection, and expansion of the sludge dewatering capacity.

Flows exceeding the hydraulic capacity are diverted to a 2.8-million-gallon equalization basin. After the flow is decreased, the wastewater in the equalization tank is pumped back to the headworks. The Norwalk WWTP has one bypass; Station 009 is a secondary bypass to use provisionally in the event untreated or partially treated wastewater needs to bypass the secondary treatment system. If flows exceed the capacity of the secondary treatment system, excess flows are diverted after primary sedimentation at the Settled Flow Diversion Chamber and discharged directly to the West Branch of Rattlesnake Creek, bypassing secondary and disinfection treatments. No bypasses have been recorded since 2012.

In March of 2025, the City of Norwalk completed a project to finish complete separation of the combined sewer system. A 36-month compliance schedule is proposed in Part I,C for the permittee to develop and implement a post-construction compliance monitoring program to determine whether the remaining CSO outfalls can be safely eliminated. If the city determines that the outfalls cannot be eliminated, the outfalls will be reclassified as sanitary sewer overflows because there are no combined sewers in the collection system.

The City of Norwalk has an approved pretreatment program with two categorical users that discharge 0.01 MGD of flow and one significant non-categorical user that discharges 0.025 MGD of flow.

The city's primary potable water source is a surface intake on Norwalk Creek, which flows into the city's reservoirs on Old State Road. To bolster its supply, the city purchases about 53 million gallons of water annually from Northern Ohio Rural Water. The city also has the ability to pump water from the East Branch of the Huron River into the reservoir system.

Norwalk WWTP utilizes the following sewage sludge treatment processes:

- Gravity Thickening
- Anaerobic Digestion
- Chemical Addition (Polymer, Lime, Ferric-Chloride Alum)
- Digester Gas Utilization
- Other Dewatering

Table 1 shows the last five years of sludge removed from Norwalk WWTP. Treated sludge is primarily land applied in Huron and Erie counties. If needed, sludge can also be disposed of in a mixed-solid waste landfill.

Norwalk WWTP is currently covered under a No Exposure Certification for industrial stormwater, permit number 2GRN00604*BG.

DESCRIPTION OF EXISTING DISCHARGE

Table 2 presents the effluent violations for Norwalk WWTP during the previous five years. These violations were not caused by a known process error or upset condition.

Table 3 presents the average annual effluent flow rate for Norwalk WWTP for the previous five years. Norwalk WWTP estimates there is an infiltration/inflow (I/I) rate to the collection system of 0.3 MGD. The facility is currently in a design phase to modify/improve the collection system which includes eliminating leaks in the city's trunk sewers.

Table 4 presents the number of SSOs reported by Norwalk WWTP for the previous five years. SSOs are reported at station 300.

Table 5 presents the number of CSOs reported by Norwalk WWTP during the previous five years. Norwalk WWTP has two previously known combined sewer overflow (CSO) stations; Station 003 at Cline Street and Station 004 at Washington Street. A new combined sewer overflow (CSO) location was discovered in 2019 in a retail store parking lot close by the Cline Street CSO location. Monitoring for this CSO as a separate location, numbered 006, is proposed.

Table 6 presents data characterizing the total phosphorus load from Norwalk WWTP annually from May to October during the previous five years.

Table 7 presents chemical specific data compiled from data reported in annual pretreatment reports. Because this data is substantially identical to the application requirements in CFR 122.21(j), the Director has waived the requirement for submitting supplemental effluent testing data as part of the NPDES renewal application.

Table 8 presents chemical specific data compiled from data collected by Ohio EPA.

Table 9 presents a summary of unaltered Discharge Monitoring Report (DMR). Data are presented for the period January 2020 to December 2024, and current permit limits are provided for comparison.

Table 10 summarizes the chemical specific data for outfall 001 by presenting the average and maximum PEQ values.

Table 11 summarizes the results of acute and chronic Whole Effluent Toxicity (WET) tests of the final effluent, using the water flea (*Ceriodaphnia dubia*) and fathead minnow (*Pimephales promelas*) as test organisms.

ASSESSMENT OF IMPACT ON RECEIVING WATERS

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/physical, biological, and habitat data which have been collected by Ohio EPA pursuant to the Five-Year Basin Approach for Monitoring and NPDES Reissuance. Other data may be used provided it was collected in accordance with Ohio EPA methods and protocols as specified by the Ohio WQS and Ohio EPA guidance documents. Other information which may be evaluated includes but is not limited to: NPDES permittee self-monitoring data; effluent and mixing zone bioassays conducted by Ohio EPA, the permittee, or U.S. EPA.

In evaluating this data, Ohio EPA attempts to link environmental stresses and measured pollutant exposure to the health and diversity of biological communities. Stresses can include pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. Indicators of exposure to these stresses include whole effluent toxicity tests, fish tissue chemical data, and fish health biomarkers (for example, fish blood tests).

Use attainment is a term which describes the degree to which environmental indicators are either above or below criteria specified by the Ohio WQS (OAC 3745-1). Assessing use attainment status for aquatic life uses primarily relies on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-1). These criteria apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on measuring several characteristics of aquatic life communities; these characteristics are combined into multimetric biological indices including the Index of Biotic Integrity (IBI) and modified Index of Well-Being (MIwb), which indicate the response of the fish community, and the Invertebrate Community Index (ICI), which indicates the response of the macroinvertebrate community. Numerical criteria are broken down by ecoregion, use designation, and stream or river size. Ohio has five ecoregions defined by common topography, land use, potential vegetation and soil type.

Three attainment status results are possible at each sampling location - full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails to meet the biocriteria. Nonattainment means that either none of the applicable indices meet the biocriteria or one of the organism groups indicates poor or very poor performance. An aquatic life use attainment table (see Table 12) is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (i.e., full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and comments and observations for each sampling location.

Ohio EPA has multiple avenues to discuss data that has been collected and evaluated to determine attainment status results for receiving waters of the state. Resources available to review these data and determinations include but are not limited to the following: the Total Maximum Daily Load Program, Ohio's Integrated Report, and River Basin Biological and Water Quality Studies.

2005 TMDL

The Total Maximum Daily Load (TMDL) program focuses on identifying and restoring polluted rivers, streams, lakes and other surface water bodies. A TMDL is a written, quantitative assessment of water quality problems in a water body and contributing sources of pollution. It specifies the amount a pollutant needs to be reduced to meet water quality standards (WQS), allocates pollutant load reductions, and provides the basis for taking actions needed to restore a water body. A TMDL report was approved by U.S. EPA in September 2005 for the Huron River Watershed which includes the West Branch of Rattlesnake Creek. The report is based on survey sampling data from 1998.

The 2005 Huron River TMDL report lists the Huron River Mainstem Assessment Unit (04100012 030) which includes the City of Norwalk, as impaired for aquatic life, due to nutrients, pesticides, and flow and habitat alteration.

In the TMDL report, municipal point sources were listed as a source of aquatic life impairment for the West Branch of Rattlesnake Creek. Norwalk WWTP was at the time likely contributing to the nutrient impairments in the West Branch of Rattlesnake Creek due to frequency of CSO discharges. A compliance schedule item is proposed in Part I, C of the permit for the finalization of Norwalk's Long-Term Control Plan (LTCP). Through the LTCP the goal is to eliminate CSO locations in 2025 and continue monitoring to ensure elimination is a success. Additionally, to ensure nutrient load from the treatment plant remains low, monthly monitoring for nitrate plus nitrite is proposed to continue as well as weekly monitoring and concentration and loading limits for phosphorus discharge to the creek.

The TMDL also states that the Huron River Mainstem Assessment Unit is impaired for recreation, due to *Escherichia coli*. Norwalk WWTP had only a few *E. coli* violations that were documented during this permit cycle indicating the WWTP yet may still be contributing to recreation impairments in the stream. Effluent limits and monitoring for *E. coli* are proposed to continue for the life of the permit.

The Huron River Watershed TMDL is available through the Ohio EPA, Division of Surface Water website at: https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/35/tmdl/Huron_Final_Report_080905.pdf

2020 Biological Water Quality Report

In 2020, Ohio's Water Quality Standards group produced a report for the Huron River Basin that included water quality data collected in 2016. The report lists the West Branch Rattlesnake Creek at Lais Road, one mile downstream of Norwalk WWTP's effluent, as having a partial aquatic life use attainment status. The study points to nutrient and eutrophication biological indicators as a cause for this partial attainment status and lists municipal point-source discharges as the source of this eutrophication of the creek. Sanitary and combined sewer overflows and nutrient discharges from Norwalk could have contributed to this nutrient load. Conditions of Norwalk's LTCP are proposed in Part I, C of the permit and phosphorus limits are proposed to remain in effect at the facility's effluent. Additionally, monitoring of nutrients upstream and downstream of Norwalk's discharge is proposed for the benefit of future water quality related studies.

The 2020 Huron River Basin Biological and Water Quality Study is available through the Ohio EPA, Division of Surface Water website at:

https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/35/tmdl/TSD/Huron%20River%20Watershed%202016/2016_Huron%20River_TSD_Final_Web.pdf

2024 Integrated Report

Pursuant to Section 303(d) of the Clean Water Act, each state is required to develop and submit a list to US EPA of its impaired and threatened waters (e.g. stream/river segments, lakes). For each water on the list, the state identifies the pollutant(s) causing the impairment, when known. Biennially, Ohio EPA produces the Integrated Water Quality Monitoring and Assessment Report (i.e. Integrated Report) which satisfies this requirement. The City of Norwalk watershed assessment unit (HUC12 04100012-06-05), which includes the West Branch of Rattlesnake Creek in the vicinity of Norwalk WWTP is not listed as impaired on Ohio's 303(d) list within the 2024 Integrated Report. This indicates that nutrient and CSO discharge control strategies at Norwalk WWTP have been effective in improving the recreation and aquatic life uses of the watershed and should continue.

The full 2024 Integrated Report is available through the Ohio EPA, Division of Surface Water website at: <https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/35/tmdl/2024intreport/Full-2024-IR.pdf>

DEVELOPMENT OF WATER-QUALITY-BASED EFFLUENT LIMITS

Determining appropriate effluent concentrations is a multiple-step process in which parameters are identified as likely to be discharged by a facility, evaluated with respect to Ohio water quality criteria, and examined to determine the likelihood that the existing effluent could violate the calculated limits.

Parameter Selection

Effluent data for the Norwalk WWTP were used to determine what parameters should undergo WLA. The parameters discharged are identified by the data available to Ohio EPA, DMR data submitted by the permittee, compliance sampling data collected by Ohio EPA, and any other data submitted by the permittee, such as priority pollutant scans required by the NPDES application or by pretreatment, or other special conditions in the NPDES permit. The sources of effluent data used in this evaluation are as follows:

Self-monitoring data (DMR)	January 2020 through December 2024
Pretreatment data	2020 through 2024
Ohio EPA compliance sampling data	2022

Statistical Outliers and Other Non-representative Data

The data were examined and the following values were removed from the evaluation as non-representative data:

Free Cyanide – 0.004 µg/L, 06/06/2023, 0.006 µg/L, 7/2/2024, 0.006 µg/L, 8/6/2024, non-representative (likely reported in incorrect units)

Iron – 15,000 µg/L, 5/4/2020, non-representative (outlier)

Bis(2-ethylhexyl) Phthalate – AA (5.0), 4/5/2022, same date as Ohio EPA sampling

Total Filterable Residue – 518 mg/L, 3/15/2022, same date as Ohio EPA sampling

This data is evaluated statistically, and PEQ values are calculated for each pollutant. Average PEQ (PEQ_{avg}) values represent the 95th percentile of monthly average data, and maximum PEQ (PEQ_{max}) values represent the 95th percentile of all data points (see Table 10). See Modeling Guidance #1 for more information on PEQ calculations, available through the Ohio EPA, Division of Surface Water website at:

<https://www.epa.ohio.gov/portals/35/guidance/model1.pdf>

The PEQ values are used according to Ohio rules to compare to applicable WQS and allowable WLA values for each pollutant evaluated. Initially, PEQ values are compared to the applicable average and maximum WQS. If both PEQ values are less than 25 percent of the applicable WQS, the pollutant does not have the reasonable potential to cause or contribute to exceedances of WQS, and no WLA is done for that parameter. If either PEQ_{avg} or PEQ_{max} is greater than 25 percent of the applicable WQS, a WLA is conducted to determine whether the parameter exhibits reasonable potential and needs to have a limit or if monitoring is required (see Table 13).

Wasteload Allocation

For those parameters that require a WLA, the results are based on the uses assigned to the receiving waterbody in OAC 3745-1. Dischargers are allocated pollutant loadings/concentrations based on the Ohio WQS (OAC 3745-1). Most pollutants are allocated by a mass-balance method because they do not break down in the receiving water. By rule, mixing zones are not authorized for pollutants, such as mercury, which have been designated as bioaccumulative chemicals of concern (BCCs). For BCCs, the WLA is set equal to the respective WQS value.

The methodology employed generally depends on whether the facility is considered a direct discharger to a (1) free-flowing receiving water/stream or (2) non-flowing receiving water/Lake.

For free-flowing streams, WLAs for both average and maximum criteria are performed using the following general equation:

$$\text{Discharger WLA} = (\text{Downstream Flow} \times \text{WQS}) - (\text{Upstream Flow} \times \text{Background Concentration}).$$

Discharger WLAs are divided by the discharge flow so that the allocations are expressed as concentrations.

Allocations for maximum criteria are set equal to the Inside Mixing Zone Maximum (IMZM) values.

The applicable waterbody uses for this facility's discharge and the associated stream design flows are as follows:

Aquatic life (Warmwater Habitat)		
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia	Average	Summer 30Q10
		Winter 30Q10
Wildlife		Annual 90Q10
Agricultural Water Supply		Harmonic mean flow
Human Health (nondrinking)		Harmonic mean flow

Allocations are developed using a percentage of stream design flow as specified in Table 14, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria.

The data used in the WLA are listed in Table 13 and Table 14. The WLA results to maintain all applicable criteria are presented in Table 15.

Whole Effluent Toxicity Wasteload Allocation

Whole effluent toxicity (WET) is the total toxic effect of an effluent on aquatic life measured directly with a toxicity test. Acute WET measures short term effects of the effluent while chronic WET measures longer term and potentially more subtle effects of the effluent. WQC for WET are 0.3 TUa for acute toxicity and 1.0 TUC for chronic toxicity (OAC 3745-1-44).

There are two separate reasonable potential procedures in Ohio - one for the Lake Erie watershed and one for the Ohio River watershed. Dischargers in the Ohio River watershed are assessed using OAC 3745-33-07(B). Dischargers in the Lake Erie watershed are assessed in accordance with the "Great Lakes Water Quality Initiative Implementation Procedures" contained in 40 CFR Part 132, Appendix F, Procedure 6.

The WLA calculations for WET are similar to those for aquatic life criteria - using the chronic toxicity unit (TUC) and 7Q10 flow for the average and the acute toxicity unit (TUa) and 1Q10 flow for the maximum. WET WLAs are based on meeting the values of 0.3 TUa and 1.0 TUC downstream of the discharge and include any available dilution. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. WLAs for acute toxicity are capped at 1.0 TUa unless the discharger demonstrates that an Area-of-Initial-Mixing (AIM) exists under OAC 3745-1-06, or that one of the factors in OAC 3745-33-07(B)(5)-(9) allows a higher TUa limit to be granted. For the purposes of establishing WET limitations, the values of 1.0 TUa and 1.0 TUC are the most restrictive limitations that can be applied in NPDES permits [OAC 3745-33-07(B)(10)].

For Norwalk WWTP, the WLA values for outfall 001 are 0.3 TUa and 1.0 TUC.

The chronic toxicity unit (TU_c) is defined as 100 divided by the estimate of the effluent concentration which causes a 25% reduction in growth or reproduction of test organisms (IC₂₅):

$$TU_c = 100/IC_{25}$$

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations except when the following equation is more restrictive (*Ceriodaphnia dubia* only):

$$TU_c = 100/\text{geometric mean of No Observed Effect Concentration and Lowest Observed Effect Concentration}$$

The acute toxicity unit (TU_a) is defined as 100 divided by the concentration in water having 50% chance of causing death to aquatic life (LC₅₀) for the most sensitive test species:

$$TU_a = 100/LC_{50}$$

This equation applies outside the mixing zone for all designated waters. Based on the above, a value of 1.0 TU_a is the lowest value that can be calculated using the equation. TU_a values between 0.2 and 1.0 are based on an interpolation of toxic effects where an LC₅₀ cannot be identified.

When the acute WLA is less than 1.0 TU_a, it may be defined as a ratio of the stream dilution to the effluent flow:

Acute Dilution Ratio (downstream flow to discharger flow)	Allowable Effluent Toxicity (percent effects in 100% effluent)
up to 2 to 1	30
greater than 2 to 1 but less than 2.7 to 1	40
2.7 to 1 to 3.3 to 1	50

$$\text{Acute Dilution Ratio} = \frac{1Q_{10} + [\text{WWTP flow rate}]}{[\text{WWTP flow rate}]} = \frac{0.018 \text{ cfs} + 5.415 \text{ cfs}}{5.415 \text{ cfs}} = 1.003$$

The acute WLA for Norwalk WWTP can be expressed as 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.003 to 1. If the acute dilution ratio is less than 3.3 to 1.0, and there is evidence that effluent values between 0.3 TU_a and 1.0 TU_a cause or contribute to violations of WQS, the permittee may be required to investigate and remediate toxicity in this range.

REASONABLE POTENTIAL/EFFLUENT LIMITS/MANAGEMENT DECISIONS

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the WQS must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a WQS or do not require a WLA based on the initial screening are assigned to either group 1 or 2. For the allocated parameters, the preliminary effluent limits (PEL) based on the most restrictive average and maximum WLAs are selected from Table 15. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 10, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value [(PEQ_{avg} ÷ PEL_{avg}) X 100, or (PEQ_{max} ÷ PEL_{max}) X 100], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 16.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 17 presents the final effluent limits and monitoring requirements proposed for Norwalk

WWTP outfall 001 and the basis for their recommendation. Unless otherwise indicated, the monitoring frequencies proposed in the permit are continued from the existing permit.

Dissolved Oxygen, Total Suspended Solids, and 5-Day Carbonaceous Biochemical Oxygen Demand

The limits proposed for dissolved oxygen, total suspended solids, and 5-day carbonaceous biochemical oxygen demand (CBOD5) are all based on plant design criteria. The TSS and CBOD5 limits are more stringent than the Secondary Treatment Standards in 40 CFR Part 133. The current dissolved oxygen limit is protective of WQS.

Oil and Grease, pH, and *Escherichia coli*

Limits proposed for oil and grease, pH, and *Escherichia coli* are based on WQS (OAC 3745-1-35 and 37). Primary contact recreation *E. coli* standards apply to the West Branch of Rattlesnake Creek.

Bis(2-ethylhexyl) Phthalate and Copper

The Ohio EPA risk assessment (Table 16) places bis(2-ethylhexyl) phthalate and copper in group 5. This placement, as well as the data in Table 9 and Table 10, indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters, the PEQ is between 75 and 100 percent of the WLA and certain conditions exist that increase the risk to the environment. Pollutants that meet this requirement must have permit limits under OAC 3745-33-07(A)(1). New concentration and loading limits are proposed for these parameters. Monthly monitoring is proposed to continue. 36-month compliance schedules are proposed in Part I, C of the permit for the plant to meet these limits.

OAC rule 3745-33-07(C)(4) requires dischargers in the Lake Erie drainage basin to develop and conduct a pollutant minimization program (PMP), in accordance with rule 3745-33-09, for each pollutant with a water quality-based effluent limit below the quantification level. The proposed monthly effluent limit for bis(2-ethylhexyl) phthalate is 8.4 µg/L while the quantification level is 10 µg/L. Requirements for the PMP are included in Part I, C of the permit.

Summer Ammonia, Winter Ammonia, Total Residual Chlorine, and Free Cyanide

The Ohio EPA risk assessment (Table 16) places summer and winter ammonia as well as total residual chlorine and free cyanide in group 5. This placement, as well as the data in Table 9 and Table 10, indicates that the reasonable potential to exceed WQS exists. Lower concentration and loading limits are proposed for ammonia in the summer and winter seasons. Based on historical ammonia data, Norwalk WWTP should be able to meet these limits at the time of permit issuance and no compliance schedule is proposed.

A lower daily maximum limit is proposed for total residual chlorine. The effluent limit for chlorine is less than the quantification level of 0.050 mg/L. However, a pollutant minimization program is not required because the dosing rate of dechlorination chemicals ensures that the water quality-based effluent limit is being met. Based on the historical total residual chlorine data, Norwalk WWTP should be able to meet this limit right away and no compliance schedule is proposed.

Existing limits for free cyanide are already protective of WQS and monthly monitoring is proposed to continue at both the influent and effluent. Attachment 1 shows the pollutant minimization program results for total/free cyanide over the last five years. It is noted that the NPDES permit requires low-level free cyanide sample results to be reported in units of micrograms per liter (µg/L). The permittee needs to report sample results in the eDMR system in accordance with the requirements of the permit. A 12-month compliance schedule is proposed to require the city to submit an updated control strategy for maintaining effluent concentrations of free cyanide at or below the final effluent discharge limits in Part I, A of the permit. The previous control strategy for free cyanide was submitted on March 27, 2007. Requirements for the updated strategy are in Part I, C of the permit.

Cadmium, Chromium, Dissolved Hexavalent Chromium, Lead, Nickel, Total Filterable Residue, and Zinc

The Ohio EPA risk assessment (Table 16) places these parameters in groups 2 and 3. This placement, as well as the data in Table 9 and Table 10, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Reduced monitoring is proposed to continue to document that these pollutants continue to remain at low levels.

Aluminum, Antimony, Arsenic, Barium, Bromodichloromethane, Chloroform, Diethyl Phthalate, Iron, Manganese, Molybdenum, Silver, Strontium, and Toluene

The Ohio EPA risk assessment (Table 16) places the above parameters in groups 2 and 3. This placement, as well as the data in Table 9 and Table 10, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring requirements for iron are proposed to be removed. Data submitted through the pretreatment program will provide data for future reasonable potential analyses for each of these parameters.

Flow Rate and Water Temperature

Monitoring for these parameters is proposed to continue in order to evaluate the performance of the treatment plant.

Nitrate Plus Nitrite and Total Kjeldahl Nitrogen

Monitoring for nitrate plus nitrite and total Kjeldahl nitrogen (TKN) is proposed to continue at the effluent, and monitoring for TKN is proposed to begin at the upstream and downstream stations, in order to maintain a nutrient data set for use in the total maximum daily loads (TMDL) study/implementation process.

Dissolved Orthophosphate and Total Phosphorus

Phosphorus is limited based on provisions of OAC 3745-33-06(C). Monitoring for dissolved orthophosphate (as P) and total phosphorus is required by ORC 6111.03. This monitoring will further develop nutrient datasets that are used in stream and watershed assessments and studies. Because Ohio EPA monitoring, as well as other in-stream monitoring, for dissolved orthophosphate is taken by grab sample, grab samples are proposed for orthophosphate to maintain consistent data. The grab samples must be filtered within 15 minutes of collection using a 0.45-micron filter. The filtered sample must be analyzed within 48 hours.

Mercury

The Norwalk WWTP permit was renewed on April 1, 2011, to include a mercury variance, and variance-based limits for mercury. Based on the monitoring results from January 2020 through December 2024, and the new application information, Norwalk WWTP has determined that the facility will not meet the 30-day average permit limit of 1.3 ng/l. However, the effluent data shows that the permittee can meet the mercury annual average value of 12 ng/l. The permittee's application has also demonstrated to the satisfaction of Ohio EPA that there is no readily apparent means of complying with the WQBEL without constructing prohibitively expensive end-of-pipe controls for mercury. Additionally, studies completed by Norwalk WWTP demonstrate that there is legacy mercury pollution within the collection system. Based upon these demonstrations, the Norwalk WWTP is eligible for renewal of the mercury variance under OAC 3745-1-38(H).

Norwalk WWTP submitted information supporting the renewal of the variance. The permittee has worked with dentist offices, the city hospital, and local schools, to reduce the amount of mercury coming into the treatment plant before being discharged. The calculation of the PEQ_{avg} value from January 2020 to December 2024 compared to the PEQ_{avg} calculated at the time the original variance was issued, shows a reduction from 7.7 ng/L to 2.2 ng/L. The implementation of the Pollutant Minimization Program (PMP) schedule developed from the original variance is proposed to continue, and further reductions in mercury may be possible.

Ohio EPA has reviewed the mercury variance application and has determined that it meets the requirements of the OAC. A condition in Part II of the NPDES permit lists the provisions of the mercury variance, and includes the following requirements:

- A variance-based monthly average effluent limit of 2.2 ng/L, which was developed from sampling data submitted by the permittee;
- A requirement that the permittee make reasonable progress to meet the WQBEL for mercury by implementing the plan of study, which has been developed as part of the PMP;
- Low-level mercury monitoring of the plant's influent and effluent (See Attachment 2);
- A requirement that the annual average mercury effluent concentration is less than or equal to 12 ng/l as specified in the plan of study;
- A summary of the elements of the plan of study;
- A requirement to submit an annual report on implementation of the PMP; and
- A requirement for submittal of a certification stating that all permit conditions related to implementing the plan of study and the PMP have been satisfied, and whether compliance with the monthly average WQBEL for mercury has been achieved.

Whole Effluent Toxicity Reasonable Potential

Evaluating the acute and chronic *Pimephales promelas* (fathead minnows) toxicity results in Table 11 and Attachment 3, under the provisions of 40 CFR Part 132, Appendix F, Procedure 6, gives a chronic PEQ of 86.6 TU_c. Reasonable potential for fathead minnow toxicity is demonstrated since this value exceeds the WLA value 1.0 TU_c. Consistent with Procedure 6 and OAC 3745-33-07(B), a monthly average limit of 1.0 TU_c is proposed to continue and a daily maximum limit of 1.0 TU_a is proposed to begin. *Pimephales promelas* monitoring is proposed to continue on a semi-annual basis and a compliance schedule to meet the new acute limitation and perform a plant performance evaluation is proposed in Part I, C of the permit. The purpose of the plant performance evaluation is to adequately capture the progress of meeting these limits.

Reasonable potential for toxicity of *Ceriodaphnia dubia* (water fleas) was not demonstrated during the course of the evaluation timeframe. Effluent and upstream monitoring for water flea toxicity is proposed to be reduced to once a year and the monthly chronic toxicity limit of 1.0 TU_c is proposed to be removed.

Additional Monitoring Requirements

New monitoring for total Kjeldahl nitrogen is being proposed at upstream monitoring station 801 and downstream monitoring station 901 for future water quality related studies.

Monitoring for water temperature, pH, and dissolved oxygen is proposed to be removed at upstream monitoring station 801. Additionally, monitoring for dissolved oxygen is proposed to be removed at downstream monitoring station 901. Finally, monitoring for iron and total filterable residue is proposed to be removed at influent monitoring station 601. This is because this data is not currently needed as part of the reasonable potential analysis.

Monitoring for *E. coli* at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change from summer to June-August, and from monthly to once every two weeks. The higher frequency over a shorter period will facilitate impairment assessments in the receiving stream.

New CSO station 006 was discovered in the past five years and monitoring and reporting of any overflow occurrences at this separate station is proposed. Monitoring for total suspended solids and CBOD is proposed to be removed from CSO stations 003 and 004 as the city has worked to separate their combined sewer system and only overflow occurrences and volume need be monitored.

Additional monitoring requirements proposed at the final effluent, influent and upstream/downstream stations are included for all facilities in Ohio and vary according to the type and size of the discharge. In addition to permit compliance, this data is used to assist in the evaluation of effluent quality and treatment plant performance and for designing plant improvements and conducting future stream studies.

Sludge

Limits and monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: land application, removal to sanitary landfill, or transfer to another facility with an NPDES permit.

OTHER REQUIREMENTS

Compliance Schedule

New Limits – 36-month compliance schedules are proposed for the Norwalk WWTP to meet the new concentration and loading limits for bis(2-ethylhexyl) phthalate and copper. Requirements for a Pollutant Minimization Plan for bis(2-ethylhexyl) phthalate are also proposed. Details are in Part I, C of the permit.

Pretreatment Local Limits Review – A 12-month compliance schedule is proposed for the city to submit a technical justification for either revising its local industrial user limits or retaining its existing local limits. If revisions to local limits are required, the city must also submit a pretreatment program modification request. Details are in Part I, C of the permit.

CSO Post-Construction Compliance Monitoring – Within 4 months, the permittee shall submit a Post-Construction Compliance Monitoring Plan which details how the city will continue to monitor discharges at the remaining CSO outfalls. The city must also confirm the previous elimination of CSOs numbered 002 and 005, either by providing evidence of physical elimination or, if the combined sewer was converted to a stormwater sewer, by collecting data to demonstrate that all sanitary connections have been removed. The permittee shall begin implementing the Post-Construction Compliance Monitoring (PCCM) Plan no later than two months after the acceptance of the plan by Ohio EPA. No later than 36 months after the permit effective date, and after the acceptance of the PCCM Plan by the Ohio EPA, the permittee shall submit a Long-Term Control Plan Completion Evaluation Report. This report shall be adequate to determine whether complete separation of the combined sewer system and elimination of the CSOs has been achieved. Details are in Part I, C of the permit.

Fathead Minnow Toxicity – Rather than increasing the monitoring frequency for *Pimephales promelas* toxicity, Ohio EPA proposes Norwalk WWTP maintain monitoring at a semi-annual basis but also initiate and carry out a Plant Performance Evaluation (PPE) to deduce possible treatment process or operations or anything else that may be contributing to the toxicity of fathead minnows, as observed via whole effluent toxicity (WET) testing. In addition to the 4 years of PPE requirements, a 48-month compliance schedule is proposed for the Norwalk WWTP to meet the new fathead minnow acute toxicity limitation. Details are in Part I, C of the permit.

Free Cyanide Control Strategy Update – A 12-month compliance schedule is proposed for the city to submit an updated control strategy for maintaining effluent concentrations of free cyanide at or below the final effluent discharge limits in Part I, A of the permit. The previous control strategy for free cyanide was submitted on March 27, 2007. The updated control strategy should include existing information on plant processes, significant and non-significant industrial, commercial, and residential users of the treatment plant, and wastestreams or sewers tributary to the treatment plant. The strategy submission should additionally include an updated plan-of-study for locating/identifying potential sources of cyanide. Details are in Part I, C of the permit.

Sanitary Sewer Overflow Reporting

Provisions for reporting SSOs are again proposed in this permit. These provisions include: the reporting of the system-wide number of SSO occurrences on monthly operating reports; telephone notification of Ohio EPA and

the local health department, and 5-day follow-up written reports for certain high risk SSOs; and preparation of an annual report that is submitted to Ohio EPA and made available to the public. Many of these provisions were already required under the “Noncompliance Notification”, “Records Retention”, and “Facility Operation and Quality Control” general conditions in Part III of Ohio NPDES permits.

Phosphorus Reduction Optimization Evaluation

Provisions are proposed in Part II of the permit for the facility to continue to implement treatment and/or control strategies aimed at reducing the discharge of phosphorus at the final outfall. An evaluation report must be completed and submitted as part of the next NPDES renewal application. The form and its instructions can be found at the following website: <https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/individual-wastewater-discharge-permit-applications-industrial-and-municipal-discharges->

CSO Public Notification

On January 8, 2018, US EPA promulgated the final Public Notification Requirements for Combined Sewer Overflows to the Great Lakes (“CSO Notification Rule”) in 40 CFR 122.38. The CSO Notification Rule implemented Section 425 of the Consolidated Appropriations Act of 2016, which required US EPA to work with the Great Lakes States to establish public notification requirements for combined sewer discharges to the Great Lakes. In Ohio, the rule applied to NPDES-permitted CSO discharges within the Lake Erie Basin. The requirements in the CSP Notification Rule address signage, initial notification of local public health departments and other potentially affected entities, initial notification of the public, annual notice provisions, and requires the development of a public notification plan.

Pursuant to the CSO Notification Rule, Norwalk WWTP’s CSO Public Notification Plan (“the Plan”) was submitted to Ohio EPA on August 24, 2018. Ohio EPA approved the Plan on September 26, 2018, and official implementation began on November 7, 2018.

In implementing the CSO Public Notification Plan, the CSO Notification Rule also requires permittees to prepare an Annual Report describing CSO discharges from its combined sewer system during the previous calendar year. The Annual Report must be made available to the public as well as US EPA and Ohio EPA by May 1st of each year. The following items are required to be included in the Annual Report:

- A description of the location and receiving water for each CSO discharge point, and, if applicable, any treatment provided;
- The date, location, approximate duration, measured or estimated volume, and cause (e.g. rainfall, snowmelt) of each wet weather CSO discharge that occurred during the past calendar year;
- The date, location, duration, volume, and cause of each dry weather CSO discharge that occurred during the past calendar year;
- A summary of available monitoring data for CSO discharges from the past calendar year;
- A description of any public access areas potentially impacted by each CSO discharge;
- Representative precipitation data in total inches to the nearest 0.1 inches that resulted in a CSO discharge, if precipitation was the cause of discharge;
- Permittee contact information, and;
- A concise summary of implementation of the Nine Minimum Controls and the status of implementation of the CSO long-term control plan (or other plans to reduce or prevent CSO discharges), including:
 - A description of key milestones remaining to complete implementation of the plan;
 - A description of the average annual number of CSO discharges anticipated after implementation of the long-term control plan (or other plan relevant to reduction of CSO overflows) is completed.

More information on the CSO Public Notification requirements is in Part II of the permit.

Operator Certification and Operator of Record

Operator certification requirements have been included in Part II of the permit in accordance with rules effective on August 15, 2018 (OAC 3745-7). These rules require Norwalk WWTP to have a Class III wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 001. These rules also require the permittee to designate one or more operator of record to oversee the technical operation of the treatment works and sewerage system.

Method Detection Limit Reporting

When submitting monitoring results in eDMR, the permittee must report all detected concentration values above the method detection limit (MDL), even if that value is below the quantification level, as indicated in Permit Guidance 9: *Limits below Quantification*. A detection above the MDL indicates the presence of a pollutant with strong confidence, which must be considered in reasonable potential analyses. Per OAC 3745-33-07(C)(2)(c), for the purpose of assessing compliance, any value reported below the quantification level shall be considered in compliance with an effluent limit. Details are in Part II of the permit.

Outfall Signage

Part II of the permit includes requirements for the permittee to place and maintain a sign at each outfall to the West Branch of Rattlesnake Creek providing information about the discharge. Signage at outfalls is required pursuant to OAC 3745-33-08(A).

Public Water Supply Notification

An addition to OAC 3745-33-08 requires that permittees discharging wastewater within ten miles of a downstream public water supply intake located on the same waterway must develop and implement notification procedures in conjunction with the downstream public water supply operator in the event of a spill, separate sewer overflow, bypass or upset that reaches waters of the state. Since the City of Norwalk operates a public water supply intake ten miles downstream from Norwalk WWTP, an item in Part II of the permit requires the continuation of established notification procedures.

Stormwater Compliance

To comply with industrial stormwater regulations, the permittee submitted a form for "No Exposure Certification" which was signed on August 9, 2024. The certification number is 2GRN00604*BG. Compliance with the industrial stormwater regulations must be re-affirmed every five years. No later than August 9, 2029, the permittee must submit a new form for "No Exposure Certification" or make other provisions to comply with the industrial stormwater regulations.

Part III

Part III of the permit details standard conditions that include monitoring, reporting requirements, compliance responsibilities, and general requirements.

Figure 1. Location of the City of Norwalk Wastewater Treatment Plant

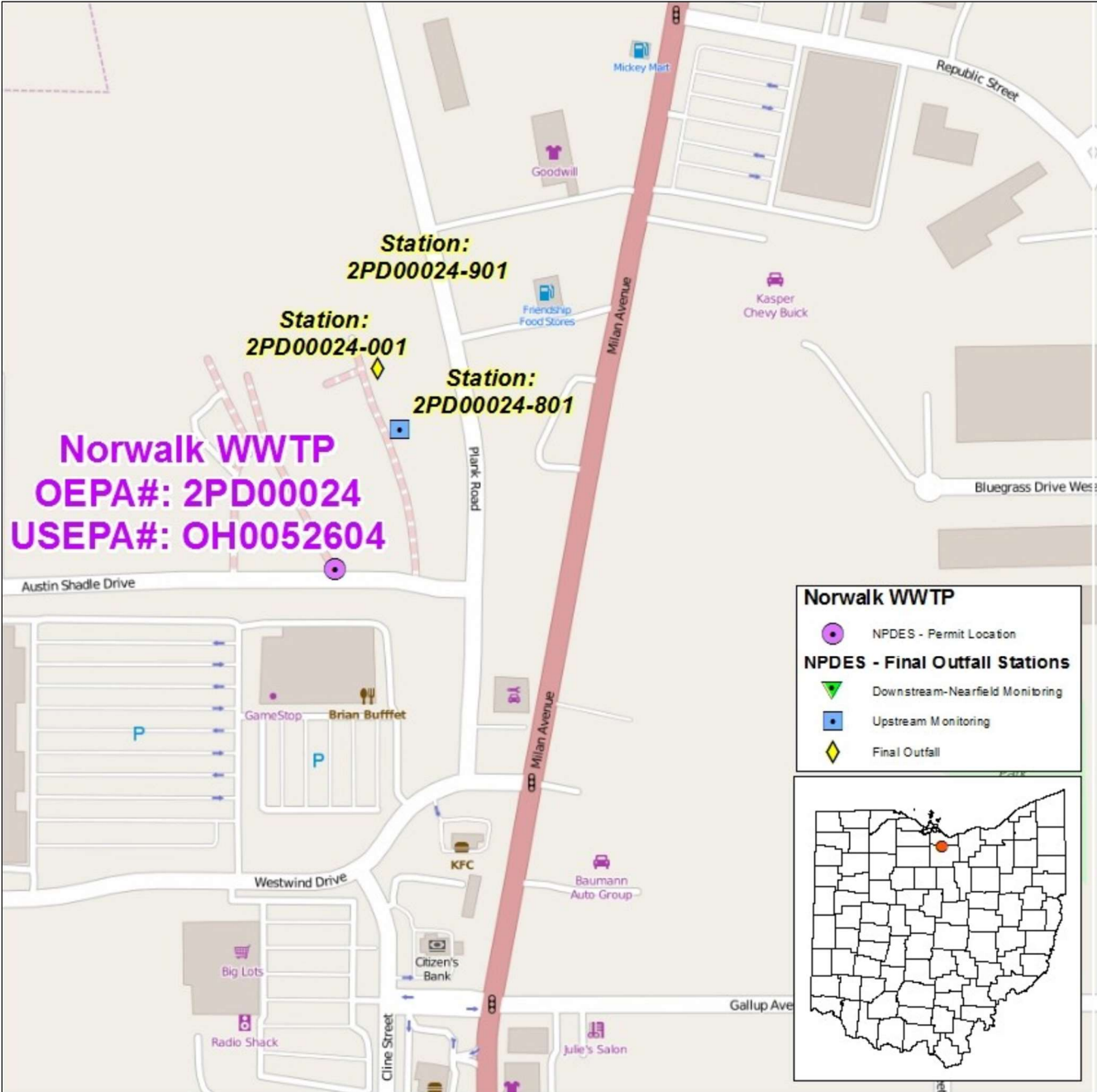


Figure 2. Diagram of Wastewater Treatment System

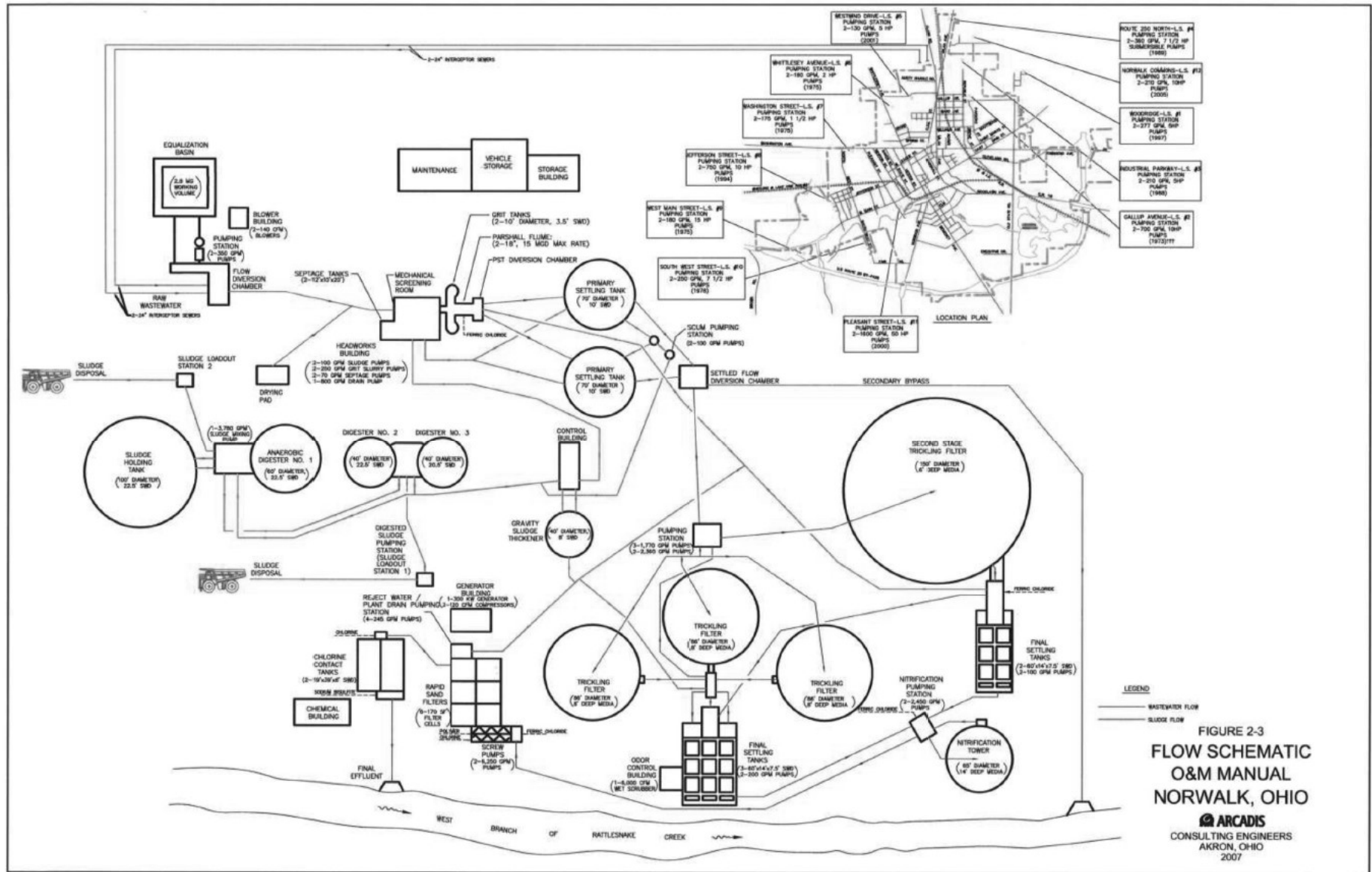


FIGURE 2-3
 FLOW SCHEMATIC
 O&M MANUAL
 NORWALK, OHIO
 ARCADIS
 CONSULTING ENGINEERS
 AKRON, OHIO
 2007

Table 1. Sewage Sludge Removal

Year	Dry Tons Removed
2020	252
2021	406
2022	365
2023	358
2024	379

Table 2. Effluent Violations for Outfall 001

Parameter	2020	2021	2022	2023	2024	Total
Ammonia (Summer)	1	0	0	0	3	4
Chronic Toxicity, <i>Pimephales promelas</i>	0	1	1	0	1	3
<i>E. coli</i>	1	0	0	0	0	1
Free Cyanide (Low-Level)	0	1	0	1	0	2
Mercury (Low-Level)	0	0	1	0	0	1
pH (Minimum)	0	0	0	1	0	1
Total Residual Chlorine	0	1	0	0	0	1
Total Suspended Solids	0	0	0	0	1	1
Total	2	3	2	2	5	14

Table 3. Average Annual Effluent Flow Rates

Year	Annual Flow (MGD)		
	50th Percentile	95th Percentile	Maximum
2020	2.28	5.16	7.15
2021	1.84	4.44	7.03
2022	1.84	4.72	7.62
2023	1.95	4.81	7.21
2024	1.96	5.07	7.60

MGD = million gallons per day.

Table 4. Sanitary Sewer Overflows Discharges

Year	Occurrences
2020	0
2021	1
2022	2
2023	1
2024	2
Total	6

Table 5. Combined Sewer Overflow Discharges for the Previous Five Years

Outfall	Occurrences (n)					Volume (MG)				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
003	33	51	34	25	21	10.01	1.84	8.01	4.37	8.79
004	14	11	10	13	4	0.37	5.10	9.12	12.73	3.11

n = number of occurrences

MG = millions of gallons

Table 6. Calculated Summer Total Phosphorus Loadings

Year	n	Median Phosphorus (mg/L)	Median Flow (MGD)	Median Loading (kg/day)
2020	24	0.31	1.83	2.46
2021	23	0.25	1.53	1.89
2022	24	0.24	1.76	1.61
2023	24	0.23	1.65	1.36
2024	25	0.21	1.66	1.51

Summer = May to October

MGD = million gallons per day

n = number of samples

Table 7. Effluent Characterization Using Pretreatment Data

Parameter	Units	7/14/2020	7/19/2021	7/18/2022	7/10/2023	8/7/2024
Antimony	µg/L	AA (1.0)	AA (0.8)	AA (0.8)	AA (0.41)	AA (0.8)
Arsenic	µg/L	1.0	AA (0.3)	0.6	AA (1.5)	0.5
Bis(2-ethylhexyl) Phthalate	µg/L	AA (1.1)	AA (1.83)	AA (1.56)	AA (1.6)	AA (1.83)
Bromodichloromethane	µg/L	2.1	0.8	0.5	2.3	2.2
Cadmium	µg/L	AA (0.1)	0.2	AA (0.1)	AA (0.2)	AA (0.1)
Chloroform	µg/L	8.4	1.7	2.0	9.6	15.4
Chromium	µg/L	2.0	2.8	2.7	0.9	AA (1.5)
Copper	µg/L	11	9.0	26	9.0	7.4
Diethyl Phthalate	µg/L	AA (0.76)	AA (1.04)	AA (0.82)	AA (0.82)	AA (1.04)
Lead	µg/L	AA (0.1)	0.4	0.6	3.5	AA (0.2)
Mercury (Low-Level)	ng/L	1.2	1.8	1.2	1.0	1.0
Molybdenum	µg/L	8.0	6.3	6.6	6.1	6.2
Nickel	µg/L	6.0	4.1	4.8	4.7	4.4
Selenium	µg/L	AA (0.3)	0.5	0.8	AA (2.4)	0.4
Silver	µg/L	AA (0.4)	AA (0.4)	AA (0.4)	AA (0.07)	AA (0.4)
Toluene	µg/L	AA (0.4)	AA (0.3)	AA (0.3)	0.7	AA (0.3)
Zinc	µg/L	15	17	14	10	7.4

AA = not-detected (analytical method detection limit)

Table 8. Effluent Characterization Using Ohio EPA Data

Parameter	Units	3/15/2022	4/5/2022
Aluminum	µg/L	AA (54)	54.7
Ammonia	mg/L	0.063	0.326
Antimony	µg/L	0.397	0.46
Arsenic	µg/L	0.687	0.875
Barium	µg/L	14.8	17.7
Bis(2-ethylhexyl) Phthalate	µg/L	AA (2.89)	AA (2.86)
Bromodichloromethane	µg/L	AA (0.236)	AA (0.236)
Cadmium	µg/L	0.0387	0.0317
Chloroform	µg/L	0.385	AA (0.316)
Chromium	µg/L	0.858	1.42
Copper	µg/L	9.94	13
Diethyl Phthalate	µg/L	2.47	2.23
Iron	µg/L	1660	2360
Lead	µg/L	0.162	0.362
Manganese	µg/L	14	22.6
Nickel	µg/L	4.06	3.04
Nitrate Plus Nitrite	mg/L	11.7	15.3
Selenium	µg/L	AA (1.2)	AA (1.2)
Silver	µg/L	0.0148	0.037
Strontium	µg/L	228	200
Toluene	µg/L	AA (0.234)	AA (0.234)
Total Filterable Residue	mg/L	522	636
Zinc	µg/L	18	20.3

AA = not detected (analytical method detection limit)

Data reported under Station K01S0

Table 9. Effluent (Outfall 001) Characterization Using Self-Monitoring Data

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30-Day	Daily		50th	95th	
Water Temperature	Annual	°C	-- Monitor --		1774	15.8	24.0	5.30 - 148
Dissolved Oxygen	Annual	mg/L	--	5.0 ^m	1796	8.10	6.90*	5.00 - 13.9
Total Suspended Solids	Summer	mg/L	20	30 ^w	359	4.30	14.4	0 - 37.0
		kg/day	265	397 ^w	359	29.4	156	0 - 472
	Winter	mg/L	25	40 ^w	347	5.00	17.6	0 - 33.0
		kg/day	332	530 ^w	347	42.1	280	0 - 853
Oil and Grease	Annual	mg/L	--	10.0	118	< 5.00	< 5.00	0 - 10.0
Ammonia	Summer	mg/L	1.5	2.3 ^w	358	< 0.210	0.982	0 - 3.09
		kg/day	20	31 ^w	358	< 1.07	9.89	0 - 36.2
	Winter	mg/L	4.8	7.2 ^w	335	< 0.210	1.57	0 - 15.3
		kg/day	64	95 ^w	335	< 1.14	24.6	0 - 266
Total Kjeldahl Nitrogen	Annual	mg/L	-- Monitor --		59	1.27	4.28	0 - 8.44
Nitrate + Nitrite	Annual	mg/L	-- Monitor --		59	13.3	19.4	6.26 - 26.5
Phosphorus	Annual	mg/L	1.0	1.5 ^w	236	0.240	0.578	0.110 - 1.25
		kg/day	13	20 ^w	236	1.88	6.94	0.559 - 14.5
Orthophosphate	Annual	mg/L	-- Monitor --		59	0.0900	0.211	0 - 0.490
Iron	Annual	µg/L	-- Monitor --		59	940	2360	0 - 2800
Nickel	Annual	µg/L	-- Monitor --		19	--	--	< 10.0
Zinc	Annual	µg/L	-- Monitor --		19	13.0	24.1	0 - 25.0
Cadmium	Annual	µg/L	-- Monitor --		19	< 0.500	0.0600	0 - 0.600
Lead	Annual	µg/L	-- Monitor --		19	2.00	6.56	0 - 8.00
Chromium	Annual	µg/L	-- Monitor --		19	--	--	< 10.0
Copper	Annual	µg/L	-- Monitor --		59	< 10.0	18.0	0 - 20.0
Dissolved Hexavalent Chromium	Annual	µg/L	-- Monitor --		19	--	--	< 4.00
<i>E. coli</i>	Annual	#/100 mL	126	284 ^a	365	19.0	322	1.00 - 2420
Bis(2-ethylhexyl) Phthalate	Annual	µg/L	-- Monitor --		59	< 5.00	< 5.00	0 - 9.20
Flow Rate	Annual	MGD	-- Monitor --		1796	1.95	4.93	1.05 - 7.62
Total Residual Chlorine	Annual	mg/L	--	0.017	920	< 0.05	< 0.05	0 - 0.280
Mercury (Low-Level)	Annual	ng/L	6.8	1100	59	0.947	2.53	0 - 5.62
		kg/day	0.000090	0.015	59	0.00000647	0.0000274	0 - 0.0000468
Free Cyanide (Low-Level)	Annual	µg/L	5.2	22	60	< 3.00	5.10	0 - 10.0
		kg/day	0.069	0.29	60	< 0.0152	0.0285	0 - 0.0572

Table 9. Effluent (Outfall 001) Characterization Using Self-Monitoring Data

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30-Day	Daily		50th	95th	
Acute Toxicity, <i>Ceriodaphnia dubia</i>	Annual	TU _a	--	1.0	10	--	--	< 0.200
Chronic Toxicity, <i>Ceriodaphnia dubia</i>	Annual	TU _c	1.0	--	10	--	--	< 1.00
Acute Toxicity, <i>Pimephales promelas</i>	Annual	TU _a	--	1.0	10	< 0.200	0.465	0 - 0.600
Chronic Toxicity, <i>Pimephales promelas</i>	Annual	TU _c	1.0	--	10	< 1.00	15.7	0 - 24.1
pH, Maximum	Annual	S.U.	--	9.0	1796	7.70	7.90	6.90 - 8.20
pH, Minimum	Annual	S.U.	--	6.5 ^m	1796	7.50	7.00*	6.40 - 8.00
Total Filterable Residue	Annual	mg/L	- - Monitor - -		60	520	705.8	362 - 1380
Carbonaceous Biochemical Oxygen Demand (5 day)	Summer	mg/L	15	23 ^w	309	3.70	6.12	0 - 13.0
		kg/day	199	305 ^w	309	23.3	91.2	0 - 247
	Winter	mg/L	25	40 ^w	288	4.50	8.23	2.20 - 16.3
		kg/day	332	530 ^w	288	38.2	123	12.5 - 376

* = For minimum pH and dissolved oxygen, 5th percentile shown in place of 95th percentile

^w = Weekly average

^m = Minimum limit

Table 10. Projected Effluent Quality for Outfall 001

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Aluminum	µg/L	2	1	152	208
Ammonia (Summer*)	mg/L	238	38	0.66	1.09
Ammonia (Winter*)	mg/L	168	78	0.99	2.10
Antimony	µg/L	3	2	1.01	1.38
Arsenic	µg/L	6	5	1.53	2.10
Barium	µg/L	2	2	49.1	67.30
Bis(2-ethylhexyl) Phthalate	µg/L	66	1	6.72	9.20
Bromodichloromethane	µg/L	7	5	3.36	4.60
Cadmium	µg/L	26	4	0.57	0.78
Chloroform	µg/L	7	6	22.5	30.00
Chromium	µg/L	7	6	4.09	5.60
Copper	µg/L	67	34	15.8	21.92
Diethyl Phthalate	µg/L	7	2	3.61	4.94
Dissolved Hexavalent Chromium	µg/L	19	0	--	--
Free Cyanide (Low-Level)	µg/L	58	8	4.83	7.60
Iron	µg/L	61	60	2151	3315.50
Lead	µg/L	27	15	7.01	9.60
Manganese	µg/L	2	2	62.7	85.88
Mercury (Low-Level)	ng/L	65	52	2.19	3.37
Molybdenum	µg/L	5	5	13.4	18.40
Nickel	µg/L	27	7	4.38	6.39
Nitrate + Nitrite	mg/L	62	62	17.7	22.23
Selenium	µg/L	4	3	1.52	2.08
Silver	µg/L	2	2	0.10	0.14
Strontium	µg/L	2	2	632	866.40
Toluene	µg/L	6	1	1.07	1.47
Total Filterable Residue	mg/L	62	62	651	770.49
Total Residual Chlorine	mg/L	890	1	0.12	0.17
Zinc	µg/L	27	22	21.8	31.06

MDL = analytical method detection limit

PEQ = projected effluent quality

* Per OAC 3745-2-04(E)(3), ammonia PEQ is based on data collected during the following months:

Summer – June through September

Winter – December through February

Table 11. Summary of Acute and Chronic Toxicity Results

Date	<i>Ceriodaphnia dubia</i>		<i>Pimephales promelas</i>	
	TU _a	TU _c	TU _a	TU _c
5/10/2020	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
11/6/2020	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
5/9/2021	AA (0.2)	AA (1.0)	0.6	24.06
11/7/2021	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
5/6/2022	AA (0.2)	AA (1.0)	0.3	5.59
11/8/2022	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
5/7/2023	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
11/12/2023	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
5/14/2024	AA (0.2)	AA (1.0)	0.2	1.41
11/3/2024	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)

AA = non-detection; analytical method detection limit of 0.2 TU_a, 1.0 TU_c
 TU_a = acute toxicity unit
 TU_c = chronic toxicity unit

Table 12. Aquatic Life Use Attainment Table

Location	RM	Use	IBI	MIwb	ICI	QHEI	Attainment Status	Causes	Source
Rattlesnake Creek at Shaw Mill Rd.	0.23	WWH	52	-	MG ^{NS}	59.3	Full	-	-
West Branch Rattlesnake Creek at Lais Road (Downstream Norwalk WWTP)	1.38	WWH	36	-	Fair	67.0	Partial	Nutrient and eutrophication biological indicators	Municipal point source discharge
Huron River downstream U.S. 250	12.3	EWH	53	9.7	54	79.3	Full	-	-

Data gathered from *Biological and Water Quality Study of the Huron River Basin, 2016, Sampling Station 501080*

RM = river mile

WWH = warmwater habitat

IBI = index of biotic integrity score

ICI = invertebrate community index score

MIwb = modified index of well-being score

MG^{NS} = marginally good / non-significant departure from biocriteria (≤ 4 IBI or ICI units)

QHEI = qualitative habitat evaluation index

Table 13. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria				Maximum Aquatic Life	Inside Mixing Zone Maximum
		Average					
		Wildlife	Human Health	Agriculture	Aquatic Life		
Aluminum	µg/L	--	4500	--	--	--	--
Ammonia (Summer)	mg/L	--	--	--	1.4	--	--
Ammonia (Winter)	mg/L	--	--	--	3.6	--	--
Antimony	µg/L	--	780	--	190	900	1800
Arsenic	µg/L	--	580	100	150	340	680
Barium	µg/L	--	160000	--	1400	5800	12000
Bis(2-ethylhexyl) Phthalate	µg/L	--	32 ^c	--	8.4	1100	2100
Bromodichloromethane	µg/L	--	180 ^c	--	340	3100	6200
Cadmium	µg/L	--	730	50	4.8	12	24
Chloroform	µg/L	--	1700 ^c	--	140	1300	2600
Chromium	µg/L	--	14000	100	170	3700	7300
Copper	µg/L	--	64000	500	20	32	63
Diethyl Phthalate	µg/L	--	--	--	220	980	2000
Dissolved Hexavalent Chromium	µg/L	--	14000	--	11	16	31
Free Cyanide (Low-Level)	µg/L	--	48000	--	5.2	22	44
Iron	µg/L	--	--	5000	--	--	--
Lead	µg/L	--	--	100	19	370	730
Manganese	µg/L	--	61000	--	--	--	--
Mercury (Low-Level)	ng/L	1.3	3.1	10000	910	1700	3400
Molybdenum	µg/L	--	10000	--	20000	190000	370000
Nickel	µg/L	--	43000	200	110	970	1900
Nitrate + Nitrite	mg/L	--	--	100	--	--	--
Selenium	µg/L	--	3100	50	5	62	120
Silver	µg/L	--	11000	--	1.3	7.1	14
Strontium	µg/L	--	1400000	--	64000	170000	340000
Toluene	µg/L	--	51000	--	62	560	1100
Total Filterable Residue	mg/L	--	--	--	1500	--	--
Total Residual Chlorine	mg/L	--	--	--	0.011	0.019	0.038
Zinc	µg/L	--	35000	25000	250	250	500

^c = carcinogen

Table 14. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
<i>Stream Flows</i>				
1Q10	cfs	Annual	0.018	USGS gauge 04199000 drainage area ratio
7Q10	cfs	Annual	0.021	USGS gauge 04199000 drainage area ratio
30Q10	cfs	Summer	0.03	USGS gauge 04199000 drainage area ratio
		Winter	0.097	USGS gauge 04199000 drainage area ratio
90Q10	cfs	Annual	0.05	USGS gauge 04199000 drainage area ratio
Harmonic Mean	cfs	Annual	0.185	USGS gauge 04199000 drainage area ratio
Mixing Assumption	%	Average	25	
		Maximum	100	
<i>Hardness, OMZ</i>				
<i>Hardness, OMZ</i>	mg/L	Annual	237	901 Station; 50th percentile; 2020-2024; n =60
<i>Hardness, IMZ</i>				
<i>Hardness, IMZ</i>	mg/L	Annual	237	901 Station; 50th percentile; 2020-2024; n =60
<i>pH</i>				
<i>pH</i>	S.U.	Summer	7.8	901 Station; 75th percentile; 2020-2024; n=20
		Winter	7.9	901 Station; 75th percentile; 2020-2024; n=14
<i>Temperature</i>				
<i>Temperature</i>	°C	Summer	22.6	901 Station; 75th percentile; 2020-2024; n=20
		Winter	11.5	901 Station; 75th percentile; 2020-2024; n=14
<i>Norwalk WWTP flow</i>	cfs	Annual	5.4153	Plant design flow from NPDES Application
<i>Background Water Quality</i>				
Aluminum	µg/L	Annual	71.65	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Ammonia	mg/L	Summer	0.105	Station 801; 2020-2024; n=20; 18<MDL; 1/2 MDL
		Winter	0.105	Station 801; 2020-2024; n=13; 13<MDL; 1/2 MDL
Antimony	µg/L	Annual	0	No representative data available.
Arsenic	µg/L	Annual	0.8525	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Barium	µg/L	Annual	54.55	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Bis(2-ethylhexyl) Phthalate	µg/L	Annual	0	No representative data available.
Bromodichloromethane	µg/L	Annual	0	No representative data available.
Cadmium	µg/L	Annual	0.049	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Chloroform	µg/L	Annual	0	No representative data available.
Chromium	µg/L	Annual	0.2285	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Diethyl Phthalate	µg/L	Annual	0	No representative data available.
Dissolved Hexavalent Chromium	µg/L	Annual	5	BWQR; 2018; n=18; 17<MDL; median
Copper	µg/L	Annual	1.79	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Free Cyanide (Low-Level)	µg/L	Annual	2.5	BWQR; 2018; n=14; 13<MDL; median
Iron	µg/L	Annual	230	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Lead	µg/L	Annual	0.12325	EA3; 2022; n=2; 1<MDL; Station K01W06; mean
Manganese	µg/L	Annual	51.6	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Mercury (Low-Level)	ng/L	Annual	0	No representative data available.
Molybdenum	µg/L	Annual	0	No representative data available.
Nickel	µg/L	Annual	1.839	EA3; 2022; n=2; 0<MDL; Station K01W06; mean

Parameter	Units	Season	Value	Basis
Nitrate + Nitrite	mg/L	Annual	0.63	Station 801; 2020-2024; n=60; 21<MDL; DL = 0.50 mg/L; median
Selenium	µg/L	Annual	1.03	EA3; 2022; n=2; 1<MDL; Station K01W06; mean
Silver	µg/L	Annual	0	No representative data available.
Strontium	µg/L	Annual	305.5	EA3; 2022; n=2; 0<MDL; Station K01W06; mean
Toluene	µg/L	Annual	0	No representative data available.
Total Filterable Residue	mg/L	Annual	402	BWQR; 2018; n=349; 0<MDL; median
Total Residual Chlorine	mg/L	Annual	0	No representative data available.
Zinc	µg/L	Annual	13.15	EA3; 2022; n=2; 0<MDL; Station K01W06; mean

BWQR = 2018 Background Water Quality Report

DL = detection limit

EA3 = Ecological Assessment and Analysis Application

MDL = analytical method detection limit

n = number of samples

NPDES = National Pollutant Discharge Elimination System

Ohio EPA = Ohio Environmental Protection Agency

USGS = United States Geological Survey

WWTP = wastewater treatment plant

Table 15. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter	Units	Outside Mixing Zone Criteria				Maximum Aquatic Life	Inside Mixing Zone Maximum
		Average					
		Wildlife	Human Health	Agri-culture	Aquatic Life		
Aluminum	µg/L	--	4538	--	--	--	--
Ammonia (Summer)	mg/L	--	--	--	1.41	--	--
Ammonia (Winter)	mg/L	--	--	--	3.66	--	--
Antimony	µg/L	--	787	--	190	903	1800
Arsenic	µg/L	--	585	101	150	341	680
Barium	µg/L	--	161366	--	1401	5819	12000
Bis(2-ethylhexyl) Phthalate	µg/L	--	32	--	8.4	1104	2100
Bromodichloromethane	µg/L	--	182	--	340	3110	6200
Cadmium	µg/L	--	736	50	4.8	12	24
Chloroform	µg/L	--	1715	--	140	1304	2600
Chromium	µg/L	--	14120	101	170	3712	7300
Copper	µg/L	--	64547	504	20	32	63
Diethyl Phthalate	µg/L	--	--	--	220	983	2000
Dissolved Hexavalent Chromium	µg/L	--	14120	--	11	16	31
Free Cyanide (Low-Level)	µg/L	--	48410	--	5.2	22	44
Iron	µg/L	--	--	5041	--	--	--
Lead	µg/L	--	--	101	19	371	730
Manganese	µg/L	--	61521	--	--	--	--
Mercury (Low-Level)	ng/L	1.3	3.1	10000	910	1700	3400
Molybdenum	µg/L	--	10085	--	20019	190632	370000
Nickel	µg/L	--	43367	202	110	973	1900
Nitrate + Nitrite	mg/L	--	--	101	--	--	--
Selenium	µg/L	--	3126	50	5	62	120
Silver	µg/L	--	11094	--	1.3	7.1	14
Strontium	µg/L	--	1411954	--	64062	170564	340000
Toluene	µg/L	--	51436	--	62	562	1100
Total Filterable Residue	mg/L	--	--	--	1501	--	--
Total Residual Chlorine	mg/L	--	--	--	0.011	0.019	0.038
Zinc	µg/L	--	35299	25213	250	251	500

Table 16. Parameter Assessment

Group 1:	Due to a lack of criteria, the following parameters could not be evaluated at this time.		
	<i>No parameters were placed in this group</i>		
Group 2:	PEQ < 25 percent of WQS or all data below minimum detection limit. WLA not required. No limit recommended; monitoring optional.		
	Aluminum	Antimony	Arsenic
	Barium	Bromodichloromethane	Cadmium
	Chloroform	Chromium	Diethyl Phthalate
	Dissolved Hexavalent Chromium	Manganese	Molybdenum
	Nickel	Nitrate + Nitrite	Silver
	Strontium	Toluene	Zinc
Group 3:	PEQ _{max} < 50 percent of maximum PEL and PEQ _{avg} < 50 percent of average PEL. No limit recommended; monitoring optional.		
	Iron	Lead	Selenium
	Total Filterable Residue		
Group 4:	PEQ _{max} ≥ 50 percent, but < 100 percent of the maximum PEL or PEQ _{avg} ≥ 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.		
	<i>No parameters were placed in this group</i>		
Group 5:	Maximum PEQ ≥ 100 percent of the maximum PEL or average PEQ ≥ 100 percent of the average PEL, or either the average or maximum PEQ is between 75 and 100 percent of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.		
	<u>Limits to Protect Numeric Water Quality Criteria</u>		
	<i>Parameter</i>	<i>Units</i>	<i>Recommended Effluent Limits</i>
			<i>Average</i>
			<i>Maximum</i>
	Ammonia (Summer)	mg/L	1.4
	Ammonia (Winter)	mg/L	3.7
	Bis(2-ethylhexyl) Phthalate	µg/L	8.4
	Copper	µg/L	20
	Free Cyanide (Low-Level)	µg/L	5.2
	Mercury (Low-Level)	ng/L	1.3
	Total Residual Chlorine	mg/L	0.011

Bis(2-ethylhexyl) phthalate, copper, and free cyanide (low-level) become Group 5 parameters based upon the river loading capacity test [OAC 3745-2-06(B)(1)(b)]

PEL = preliminary effluent limit

PEQ = projected effluent quality

WLA = wasteload allocation

WQS = water quality standard

Table 17. Final Effluent Limits for Outfall 001

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^b
		Daily Maximum	30 Day Average	Daily Maximum	30 Day Average	
Water Temperature	°C	----- Monitor -----				M ^c
Dissolved Oxygen	mg/L	5.0 ^m	--	--	--	PD
TSS (Summer)	mg/L	30 ^d	20	397 ^d	265	PD
TSS (Winter)	mg/L	40 ^d	25	530 ^d	332	PD
Oil & Grease	mg/L	10.0	--	--	--	WQS
Ammonia (Summer)	mg/L	2.1 ^d	1.4	28 ^d	19	PD/WLA
Ammonia (Winter)	mg/L	5.5 ^d	3.7	73 ^d	49	PD/WLA
Total Kjeldahl Nitrogen	mg/L	----- Monitor -----				BTJ
Nitrate + Nitrite	mg/L	----- Monitor -----				BTJ
Phosphorus	mg/L	1.5 ^d	1.0	20 ^d	13	PMR/PTS
Orthophosphate	mg/L	----- Monitor -----				PMR
Nickel	µg/L	----- Monitor -----				M
Zinc	µg/L	----- Monitor -----				M
Cadmium	µg/L	----- Monitor -----				M
Lead	µg/L	----- Monitor -----				M
Chromium	µg/L	----- Monitor -----				M
Copper	µg/L	32	20	0.42	0.26	RP
Dissolved Hexavalent Chromium	µg/L	----- Monitor -----				M
<i>E. coli</i>	#/100 mL	284 ^d	126	--	--	WQS
Bis(2-ethylhexyl) Phthalate	µg/L	1104	8.4	15	0.11	RP
Flow Rate	MGD	----- Monitor -----				M ^c
Total Residual Chlorine	mg/L	0.011	--	--	--	RP
Mercury (Low-Level)	ng/L	1100	2.2	0.0146	0.000029	VAR
Free Cyanide (Low-Level)	µg/L	22	5.2	0.29	0.069	WLA
Acute Toxicity, <i>Ceriodaphnia dubia</i>	TUa	----- Monitor -----				WET
Chronic Toxicity, <i>Ceriodaphnia dubia</i>	TUc	----- Monitor -----				WET
Acute Toxicity, <i>Pimephales promelas</i>	TUa	1.0	--	--	--	WET
Chronic Toxicity, <i>Pimephales promelas</i>	TUc	--	1.0	--	--	WET
pH, maximum	SU	9.0	--	--	--	WQS
pH, minimum	SU	6.5 ^m	--	--	--	WQS
Total Filterable Residue	mg/L	----- Monitor -----				M
CBOD5 (Summer)	mg/L	23 ^d	15	305 ^d	199	PD
CBOD5 (Winter)	mg/L	40 ^d	25	530 ^d	332	PD

^a Effluent loadings based on average design discharge flow of 3.5 MGD.

^b Definitions:

BTJ = Best Technical Judgment

M = Division of Surface Water NPDES Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges

OAC = Ohio Administrative Code

PD = Plant Design (OAC 3745-33-05(E))
PMR = Phosphorus monitoring requirements (ORC 6111.03)
PTS = Phosphorus Treatment Standards (OAC 3745-33-06 (C))
RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in permits (OAC 3745-33-07(A))
VAR = Variance from a WQS (Mercury variance (OAC 3745-1-38(J)))
WET = Requiring water quality-based effluent limits and monitoring requirements for whole effluent toxicity in NPDES permits [40 CFR Part 132, Appendix F, Procedure 6 and OAC 3745-33-07(B)]
WLA = Wasteload Allocation procedures (OAC 3745-2)
WQS = Ohio Water Quality Standards (OAC 3745-1)

^c Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

^d 7-day average limit.

^m minimum limit

Attachment 1. Cyanide Data from Pollutant Minimization Program

Date	Total Cyanide in Influent (mg/L)	Free Cyanide in Effluent (mg/L)	Reduction
11/8/2022	0.031	<0.003	90%
12/6/2022	<0.005	0.007	-40%
1/10/2023	<0.005	<0.003	40%
2/7/2023	<0.005	<0.003	40%
3/7/2023	<0.010	<0.003	70%
4/4/2023	<0.010	<0.003	70%
5/9/2023	<0.005	<0.003	40%
6/6/2023	<0.010	0.004	60%
7/11/2023	<0.005	0.007	-40%
8/15/2023	<0.010	<0.003	70%
9/5/2023	0.045	<0.003	93%
10/3/2023	0.025	<0.003	88%
Average	0.014	0.004	71%

Attachment 2. Mercury Data from Pollutant Minimization Program

Date	Low-Level Mercury in Influent (ng/L)	Low-Level Mercury in Effluent (ng/L)	Reduction
11/2/2021	5.63	<0.50	91%
12/7/2021	7.86	0.67	91%
1/4/2022	5.98	0.655	89%
2/8/2022	11.6	1.18	90%
3/8/2022	10.6	2.84	73%
4/5/2022	6.94	1.64	76%
5/10/2022	5.69	2.76	51%
6/21/2022	5.14	1.36	74%
7/5/2022	17.2	0.708	96%
8/3/2022	8.75	0.533	94%
9/14/2022	12.3	<0.50	96%
10/5/2022	9.87	<0.50	95%
Average	8.96	1.37	85%

Attachment 3. Whole Effluent Toxicity Reasonable Potential Analysis

	Water Flea (<i>Ceriodaphnia dubia</i>)		Fathead Minnow (<i>Pimephales promelas</i>)	
	Acute	Chronic	Acute	Chronic
WLA (TU)	0.3	1.0	0.3	1.0
Total # of Tests	10	10	10	10
Maximum Value (TU)	AA (0.2)	AA (1.0)	0.6	24.06
Coefficient of Variation ¹ (standard deviation/mean) [Where # tests ≥ 10]	--	--	0.5	2.0
Multiplying Factor ²	--	--	1.6	3.6
PEQ (Maximum Value x Multiplying Factor)	--	--	0.96	86.6
Reasonable Potential Demonstrated? (Yes/No) (Yes if PEQ > WLA)	No	No	Yes	Yes

¹ 40 CFR Part 132, Appendix F, Paragraph D(3)

² 40 CFR Part 132, Appendix F, Table F6-1

Addendum 1. Acronyms

ABS	Anti-backsliding
BPJ	Best professional judgment
CFR	Code of Federal Regulations
CMOM	Capacity Management, Operation, and Maintenance
CONSWLA	Conservative substance wasteload allocation
CSO	Combined sewer overflow
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DMT	Dissolved metal translator
IMZM	Inside mixing zone maximum
LTCP	Long-term Control Plan
MDL	Analytical method detection limit
MGD	Million gallons per day
NPDES	National Pollutant Discharge Elimination System
OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
PEL	Preliminary effluent limit
PEQ	Projected effluent quality
PMP	Pollution Minimization Program
PPE	Plant performance evaluation
SSO	Sanitary sewer overflow
TMDL	Total Daily Maximum Load
TRE	Toxicity reduction evaluation
TU	Toxicity unit
U.S. EPA	United States Environmental Protection Agency
WET	Whole effluent toxicity
WLA	Wasteload allocation
WPCF	Water Pollution Control Facility
WQBEL	Water-quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater Treatment Plant