National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for **City of Mansfield Wastewater Treatment Plant (WWTP)**

Public Notice No.: 209272
Public Notice Date: 1/22/2025
Comment Period Ends: 2/21/2025

Ohio EPA Permit No.: **2PE00001*ND**
Application No.: **OH0026328**

Name and Address of Applicant:
City of Mansfield
30 North Diamond Street
Mansfield, OH 44905

Name and Address of Facility Where Discharge Occurs:
Mansfield WWTP
385 South Illinois Avenue
Mansfield, OH 45133
Richland County

Receiving Water: **Rocky Fork of Mohican River**

Subsequent Stream Network: **Black Fork of Mohican River**
Mohican River
Walhonding River
Muskingum River
Ohio River

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.

Lower effluent limits are proposed for bis(2-ethylhexyl) phthalate due to promulgation of a lower water quality criterion since the last reasonable potential analysis and a reasonable potential to exceed the wasteload allocation.

A lower limit for total residual chlorine is proposed to be protective of water quality standards.

New monitoring is proposed for iron due reasonable potential to exceed the wasteload allocation. Using Director's discretion allowable under OAC 3745-33-07(A)(5), limits are not proposed.

Limits are proposed to be removed for copper, dissolved hexavalent chromium, and free cyanide due to a lack of reasonable potential to exceed the wasteload allocation.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from Mansfield WWTP shows acute and chronic toxicity to *Pimephales promelas*. New whole effluent toxicity (WET) limits are proposed, as is a 36-month compliance schedule to conduct a Toxicity Reduction Evaluation and attain compliance with the new limits.

Based on the provisions of OAC 3745-33-07(B), the Mansfield WWTP is placed in Category 3 with respect to WET for *Ceriodaphnia dubia*. No limits are proposed. Monitoring is proposed to continue at a reduced frequency.

Monitoring for *E. coli* at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change to once every two weeks, for the months of June through August. The increased frequency over a shorter duration will facilitate impairment assessment in the receiving stream.

Monitoring for selenium at influent station 601 is proposed to be removed due to a lack of reasonable potential to exceed the wasteload allocation at Outfall 002.

Monitoring for water temperature, dissolved oxygen, and pH is proposed to be removed from station 801, and dissolved oxygen is proposed to be removed from station 901. These data are not needed for reasonable potential analyses.

At bypass station 602:

- Monitoring for nitrate plus nitrite is proposed to be removed;
- Monitoring for "bypass occurrence" is proposed to be added;
- Monitoring for "flow rate" is proposed to be changed to "bypass volume".

Currently there are three approved methods for free cyanide listed in 40 CFR 136 that have a quantification level lower than water quality-based effluent limits, including ASTM D7237-10, OIA-1677-09, and ASTM D4282-02. (Note: The use of ASTM D4282-02 requires supporting documentation that it meets the requirement of a "sufficiently sensitive" test procedure as defined in 40 CFR 122.44(i)(1)(iv)).

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; storm water compliance; pretreatment program requirements; toxicity reduction evaluation (TRE); and outfall signage.

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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 David Brumbaugh at (614) 644-2138 or david.brumbaugh@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

Mansfield WWTP discharges to the Rocky Fork of the Mohican River at River Mile 11.18. Figure 1 shows the approximate location of the facility.

This segment of the Rocky Fork is described by Ohio EPA River Code: 17-733, Hydrologic Unit Code: 050400002-02-04, County: Richland, Ecoregion: Erie-Ontario Lake Plain. The Rocky Fork is designated for the following uses under Ohio's WQS (OAC 3745-1-24): Warmwater 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

Mansfield WWTP was constructed in 1960 and last upgraded in 1984. The average design flow is 12.0 million gallons per day (MGD) and the peak hydraulic capacity is 25 MGD. Mansfield WWTP serves the City of Mansfield, City of Ontario, and portions of Richland County, a population of approximately 55,800. Mansfield WWTP has the following treatment processes (Figure 2):

- Bar Screening
- Grit Removal
- Primary Sedimentation
- Pre-aeration
- Activated Sludge
- Secondary Clarification
- Chlorination/Dechlorination

Wet weather flows that exceed the secondary treatment capacity are diverted to an equalization (EQ) basin, which has a storage capacity of approximately 5 million gallons. The EQ basin is baffled and is aerated up to the time that it is full. Flows that do not exceed the EQ basin's capacity are stored and returned to the WWTP for full treatment. Mansfield WWTP has one bypass, an overflow of the equalization basin monitored as Station

602. When the EQ basin is full and begins to discharge overflow, the aeration is shut off and the basin functions as a flow-through settling tank, with disinfection treatment in the basin. Flows of approximately 58 MGD can discharge through the EQ basin, bypassing secondary treatment and blending with fully treated effluent from Outfall 001. The blended flow is monitored at Outfall 002 and discharged to Rocky Fork. The City of Mansfield has 100 % separate sewers in the collection system.

Mansfield WWTP has only one stormwater outfall, designated as internal monitoring station 603. Stormwater is collected and blended with fully treated effluent from Outfall 001 and bypass flows from Bypass 602, prior to monitoring at Outfall 002 and subsequent discharge to Rocky Fork.

The City of Mansfield has an approved pretreatment program which regulates 15 industrial users. Seven are significant categorical industrial users, which discharge 0.101 MGD of flow. Five are significant non-categorical industrial users, which discharge 0.02 MGD. The remaining three are non-significant categorical industrial users.

Mansfield WWTP utilizes the following sewage sludge treatment processes (Figure 3):

- Gravity Thickening
- Anaerobic Digestion
- Mechanical Dewatering – Centrifuge

Table 1 shows the last five years of sludge removed from Mansfield WWTP. Treated sludge is land applied, as monitored by station 581. Provisions for reporting sludge disposed of via landfill or transfer to another NPDES permit holder (588) are proposed to be included in the permit.

Mansfield WWTP is subject to the following additional conditions per Director's Final Findings and Orders (DFFO; issued June 13, 2014). A General Plan, dated November 21, 2014, was submitted to Ohio EPA in accordance with DFFOs. The General Plan proposed to implement several projects at Manfield WWTP, to be completed by June 2017 at an estimated cost of $5.4M. There are requirements of the General Plan that are not yet completed, the scope of which will be addressed under the DFFO and are outside the scope of this permit.

DESCRIPTION OF EXISTING DISCHARGE

Table 2 presents the effluent violations for Mansfield WWTP, which total 329 violations in the last five years. Effluent violations stem from a variety of issues, including but not limited to:

- Chlorine and *E. coli*: the sulfur dioxide feed was not flow-based, which has been reprogrammed; solids accumulation in the chlorine contact tanks periodically plugged the chlorine feed manifold, which has been resolved through installation of gates to improve hydraulics.
- *E. coli* at 002, CBOD5 and TSS at 602: peak flows overwhelming capacity of treatment systems;
- Ammonia: several occurred during a study of step feed system required by the DFFOs, others believed to be the result of a received slug load;
- Phosphorus: insufficient alum treatment, feed rate was raised
- TSS at 001; uneven flow splitting at the final clarifiers, plus a hydraulic limitation due to a trough configuration in Clarifier 4.

Table 3 presents the average annual effluent flow rate for Mansfield WWTP for the previous five years. Mansfield WWTP estimates there is an infiltration/inflow (I/I) rate to the collection system of 0.3 MGD during dry weather, though high and prolonged peaks are observed during wet weather. Mansfield WWTP is implementing a sewer lining program. The City is in discussion with an engineering consultant to develop a plan to assess and reduce I/I.

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

Table 5 presents data characterizing bypass activity at Mansfield WWTP for the previous five years. Bypasses are reported at station 602.

Table 6 presents data characterizing the annual total phosphorus load from Mansfield WWTP during the previous five years.

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

Table 8 presents a summary of unaltered Discharge Monitoring Report (DMR). Data are presented for the period January 2018 through December 2022, and current permit limits are provided for comparison.

Table 9 summarizes the chemical specific data for outfall 001 and 002 by presenting the average and maximum PEQ values.

Table 10 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

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. The Rocky Fork watershed assessment unit, which includes the Rocky Fork in the vicinity of Mansfield WWTP is listed as impaired for human health, recreation, and aquatic life on Ohio's 303(d) list.

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.

The aquatic life use attainment status and causes and sources of impairments in the Mohican River watershed are reported in the OEPA document *Biological and Water Quality Study of the Mohican River and Select Tributaries (2007).* In addition to the 2007 study, a special study was conducted in the Rocky Fork basin during 2009 in the vicinity of the Peabody Barnes property at river mile 14.3. This study was undertaken as part of a Voluntary Action Program technical assistance request; results are documented in the *Biological Assessment of the Rocky Fork Mohican River - Peabody Barnes Property (2009)* report.

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 the fish and macroinvertebrate communities; these characteristics are combined into multimetric biological indices including the Index of Biotic Integrity and modified Index of Well-Being, which indicate the response of the fish community, and the Invertebrate Community Index, 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 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 11) 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, and comments and observations for each sampling location.

According to the survey reports, the Rocky Fork watershed is impaired for nutrient eutrophication, flow alteration, and low dissolved oxygen due to urban runoff, cropland with subsurface drainage, dams and impoundments, and channelization. Based on best technical judgement, final effluent limits for total phosphorus were incorporated into the current permit in 2017. Mansfield WWTP has reported 42 violations of these total phosphorus limits in the last five years. Without a final TMDL nor new stream survey data, Ohio EPA recommends against lower limits at this time, though a compliance schedule to complete a Phosphorus Optimization Evaluation is proposed. The low dissolved oxygen levels may also be attributed to effluent quality from Mansfield WWTP, which reported 42 violations of CBOD5 limits at bypass station 602, three violations of CBOD5 limits at Outfall 001, and two violations of the dissolved oxygen limits at Outfall 002.

The *2022 Ohio Integrated Water Quality Monitoring and Assessment Report* is available through the Ohio EPA, Division of Surface Water website at:
https://epa.ohio.gov/divisions-and-offices/surface-water/reports-data/ohio-integrated-water-quality-monitoring-and-assessment-report

The *Biological and Water Quality Study of the Mohican and Selected Tributaries* (2007) and the *Biological Assessment of the Rocky Fork Mohican River - Peabody Barnes Property* (2009) reports are available through the Ohio EPA, Division of Surface Water website at:
https://epa.ohio.gov/divisions-and-offices/surface-water/reports-data/biological-and-water-quality-reports

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 Mansfield 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 2018 through December 2022
Pretreatment data	2018-2022
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:

- Mercury – 23.9 ng/L, removed as high outlier

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 9). 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 12).

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. For free flowing streams, WLAs using this method are calculated using the following general equation: Discharger WLA = (downstream flow x WQS) - (upstream flow x background concentration). Discharger WLAs are divided by the discharge flow so that the allocations are expressed as concentrations. Mansfield WWTP is considered to be interactive with the Cleveland Cliffs Mansfield facility (2ID00003). These facilities were allocated together for most parameters due to the size of the plant discharges, the flows of the Rocky Fork and the relatively close proximity of the two plants. The exception was the ammonia WLA, which was done separately for each facility because ammonia is not considered to be a conservative parameter.

The available assimilative capacity was distributed among them using the conservative substance wasteload allocation (CONSWLA) water quality model for conservative parameters. CONSWLA is the model Ohio EPA typically uses in multiple discharger situations. CONSWLA model inputs for flow are fixed at their critical low levels and inputs for effluent flow are fixed at their design or 50th percentile levels. Background concentrations are fixed at a representative value (generally a 50th percentile). A mass balancing method is then used to allocate effluent concentrations that maintain WQS under these conditions. This technique is appropriate when data bases are unavailable to generate statistical distributions for inputs and if the parameters modeled are conservative.

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
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 13, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria. The data used in the WLA are listed in Table 12 and Table 13. The WLA results to maintain all applicable criteria are presented in Table 14.

Whole Effluent Toxicity Wasteload Allocation

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.

WQS for WET are expressed in Ohio's narrative "free from" WQS rule [OAC 3745-1-04(D)]. These "free froms" are translated into toxicity units (TUs) by the associated WQS Implementation Rule (OAC 3745-2-09). WLAs can then be calculated using TUs as if they were water quality criteria.

The WLA calculations for WET are similar to those for aquatic life criteria - using the chronic toxicity unit (TU_c) and 7Q10 flow for the average and the acute toxicity unit (TU_a) and 1Q10 flow for the maximum. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. For Mansfield WWTP, the WLA values are 0.4 TU_a and 1.22 TU_c.

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 (IC_{25}):

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

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/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 (LC_{50}) for the most sensitive test species:

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

This equation applies outside the mixing zone for all designated waters.

When the acute WLA is less than 1.0 TU_a, it may be defined as:

Downstream Dilution Ratio	Allowable Effluent Toxicity
(downstream flow to discharger flow)	(percent effects in 100% effluent)

up to 2	30
greater than 2 but less than 2.7	40
2.7 to 3.3	50

$$\text{Downstream Dilution Ratio} = \frac{1Q10 + [\text{WWTP flow rate}]}{[\text{WWTP flow rate}]} = \frac{0.24 \text{ cfs} + 18.57 \text{ cfs}}{18.57 \text{ cfs}} = 1.01$$

The acute WLA for Mansfield WWTP is 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.01.

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 14. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 9, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value [($PEQ_{avg} \div PEL_{avg}$) X 100, or ($PEQ_{max} \div PEL_{max}$) X 100)], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 15.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 16 and Table 17 presents the final effluent limits and monitoring requirements proposed for Mansfield WWTP station 001 and outfall 002, respectively, and the basis for their recommendation. Unless otherwise indicated, the monitoring frequencies proposed in the permit are continued from the existing permit.

Station 001

TSS and CBOD5 (winter)
The limits proposed for total suspended solids (TSS) and 5-day carbonaceous biochemical oxygen demand (CBOD5) are all based on plant design criteria and have been effective since the facility improvements in the 1980s. The TSS and CBOD5 limits are more stringent than the Secondary Treatment Standards in 40 CFR Part 133.

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

Outfall 002

E. coli, Oil & Grease, and pH
Limits proposed for *Escherichia coli,* oil and grease, and pH are based on WQS (OAC 3745-1-35 and 37). Primary contact recreation *E. coli* standards apply to the Rocky Fork.

Total Residual Chlorine
The existing daily effluent limit for total residual chlorine was evaluated using the WLA procedures and determined to not be protective of WQS for chlorine toxicity. A lower limit is proposed to be protective of aquatic life use. The effluent limit for chlorine is less than the quantification level of 0.050 mg/L.

Ammonia
The current limits for ammonia were evaluated using WLA procedures and determined to be protective of WQS for ammonia toxicity.

Bis(2-ethylhexyl) Phthalate
The Ohio EPA risk assessment (Table 15) places bis(2-ethylhexyl) phthalate in group 5. This placement, as well as the data in Table 8 and Table 9, indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For this parameter, the PEQ is greater than 100 percent of the WLA. Pollutants that meet this requirement must have permit limits under OAC 3745-33-07(A)(1). The thirty day average limits are based on human health criteria and the daily maximum limits are based on the OMZM. Based on a review of effluent data from the previous five years, the permittee is capable of complying with the lower limit (only two of 66 samples exceeded the new limit), therefore the lower limits are proposed to become effective immediately.

Iron
The Ohio EPA risk assessment (Table 15) places iron in group 5, which recommends limits to protect water quality. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), monitoring rather than limits is proposed for this parameter. The PEQ values calculated for iron (Table 9) may not be representative of its actual levels in the plant effluent since they were based on one data point. The purpose of the proposed monitoring is to collect additional data on the frequency of occurrence and variability of this pollutant in the plant's effluent.

Considering the magnitude of the reported values compared to the WLA, a tracking provision is proposed in Part II of the permit that requires the Mansfield WWTP to notify Ohio EPA if a sample result exceeds the preliminary effluent limit (Table 14). If certain conditions are met, the City is required to take steps to reduce the discharge level of this pollutant.

Copper and Selenium
The Ohio EPA risk assessment (Table 15) places copper and selenium in group 4. This placement, as well as the data in Table 8 and Table 9, 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 for Group 4 pollutants (where PEQ exceeds 50 percent of the WLA) is required by OAC 3745-33-07(A)(2). Limits for copper are proposed to be removed but monitoring will continue at the same frequency (monthly).

Cadmium, Chromium, Dissolved Hexavalent Chromium, Free Cyanide, Lead, Mercury, Nickel, Total Filterable Residue, and Zinc
The Ohio EPA risk assessment (Table 15) places these parameters in groups 2 and 3. This placement, as well as the data in Table 8 and Table 9, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Limits for dissolved hexavalent chromium and free cyanide are proposed to be removed, monitoring will continue at the same frequency.

Antimony, Arsenic, Barium, Chloroform, Dimethyl Phthalate, Molybdenum, Strontium, and Toluene
The Ohio EPA risk assessment (Table 15) places these parameters in groups 2 and 3. This placement, as well as the data in Table 8 and Table 9, support that these parameters do not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. No new monitoring is proposed. Data for these parameters will be available for future reasonable potential analyses due to sampling requirements of the approved pretreatment program.

Flow Rate and Water Temperature
Monitoring for this parameter is proposed to continue in order to evaluate the performance of the treatment plant.

Nitrate plus Nitrite and Total Kjeldahl Nitrogen

The 2022 *Ohio Integrated Water Quality Monitoring and Assessment Report* (Ohio EPA) lists the Rocky Fork watershed as impaired for aquatic life. Nutrients and organic enrichment/dissolved oxygen are listed as "high magnitude" causes, and major municipal point sources are listed among the "high magnitude" sources. Considering this information and the fact that municipal WWTPs discharge a nutrient load to the river, monthly monitoring for nitrate + nitrite and total Kjeldahl nitrogen is proposed based on best technical judgment. This monitoring will contribute to a nutrient data set for use in the future studies. Nitrate plus nitrite was evaluated using WLA procedures and determined to be protective of WQS.

Total Phosphorus
Limits for total phosphorus are proposed to continue, based on best technical judgement. Justification for the limits is presented in the fact sheet for 2PE00001*MD (2017). This justification is still valid as no assessments of the receiving stream have been conducted to present new data. A 12-month compliance schedule is proposed for the permittee to complete a Phosphorus Optimization Evaluation.

Dissolved Orthophosphate
Monitoring for dissolved orthophosphate (as P) 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.

Whole Effluent Toxicity Reasonable Potential
Based on evaluating the WET data presented in Table 10, Attachment 1and other pertinent data under the provisions of OAC 3745-33-07(B), Mansfield WWTP is placed in Category 2 with respect to WET. Reasonable potential to cause toxicity has been demonstrated. Limits for acute and chronic toxicity are proposed. It is proposed that the final effluent limits for toxicity become effective 36 months from the effective date of the permit. A compliance schedule to perform a Toxicity Reduction Evaluation (TRE) is included in Part I.C. of the permit.

Based on evaluating the WET data presented in Table 10, Attachment 1, and other pertinent data under the provisions of OAC 3745-33-07(B), the Mansfield WWTP is placed in Category 3 with respect to WET for *Ceriodaphnia dubia*. No limits are proposed. Monitoring is proposed to continue at a reduced frequency.

Additional Monitoring Requirements
Monitoring for E. coli at upstream monitoring station 801 and downstream monitoring station 901 is proposed to change to once every two weeks, for the months of June through August. The increased frequency over a shorter duration will facilitate impairment assessment in the receiving stream.

Monitoring for selenium at influent station 601 is proposed to be removed due to lack of reasonable potential to exceed the wasteload allocation.

Monitoring for water temperature, dissolved oxygen, and pH is proposed to be removed from station 801, and dissolved oxygen is proposed to be removed from station 901. These data are not needed for reasonable potential analyses.

At bypass station 602:
- Monitoring for nitrate plus nitrite is proposed to be removed;
- Monitoring for "bypass occurrence" is proposed to be added;
- Monitoring for "flow rate" is proposed to be changed to "bypass volume".

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
Pretreatment Local Limits Review - A 6-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.

New WET Limits - A 36-month compliance schedule is proposed for the Mansfield WWTP to meet the new whole effluent toxicity limits and to conduct a Toxicity Reduction Evaluation (TRE). Details are in Part I.C of the permit.

Phosphorus Optimization – A 12-month compliance schedule is proposed for the permittee to complete a Phosphorus Optimization Evaluation plan, to assess opportunities to reduce total phosphorus loads using existing infrastructure. 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.

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 the Mansfield WWTP to have a Class IV 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.

Low-Level Free Cyanide Testing
Currently there are three approved methods for free cyanide listed in 40 CFR 136 that have a quantification level lower than water quality-based effluent limits:

- ASTM D7237-10, OIA-1677-09, and ASTM D4282-02. (Note: The use of ASTM D4282-02 requires supporting documentation that it meets the requirement of a "sufficiently sensitive" test procedure as defined in 40 CFR 122.44(i)(1)(iv)).

These methods will allow Ohio EPA to make more reliable water quality-related decisions regarding free cyanide. Because the quantification levels are lower than any water quality-based effluent limits, it will also be possible to directly evaluate compliance with free cyanide limits.

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. 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.

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

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

Storm Water Compliance
Parts IV, V, and VI have been included with the draft permit to ensure that any storm water flows from the facility site are properly regulated and managed.

Figure 1. Location of Mansfield WWTP

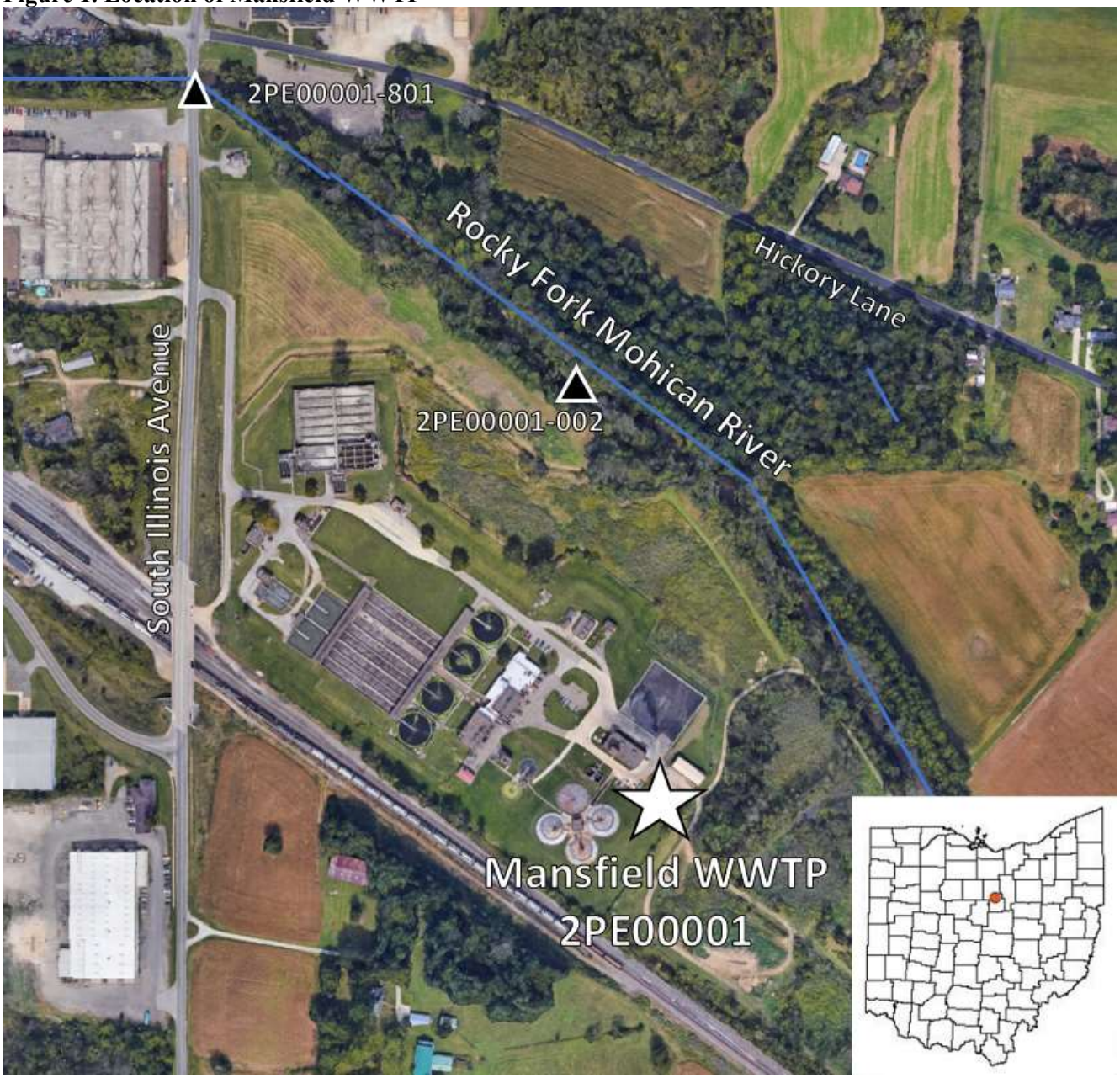


Figure 2. Diagram of Wastewater Treatment System

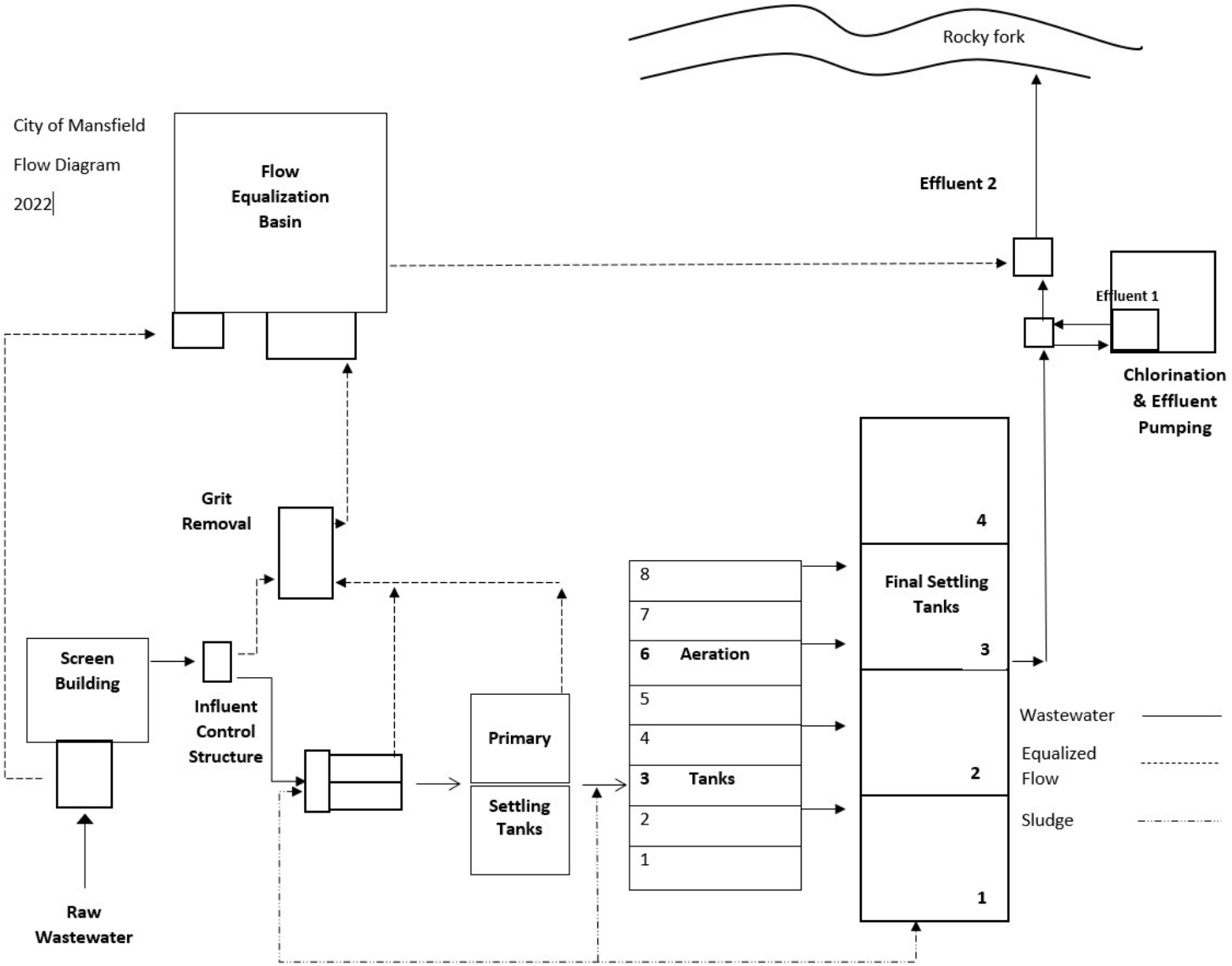


Figure 3. Diagram of Sludge Treatment System

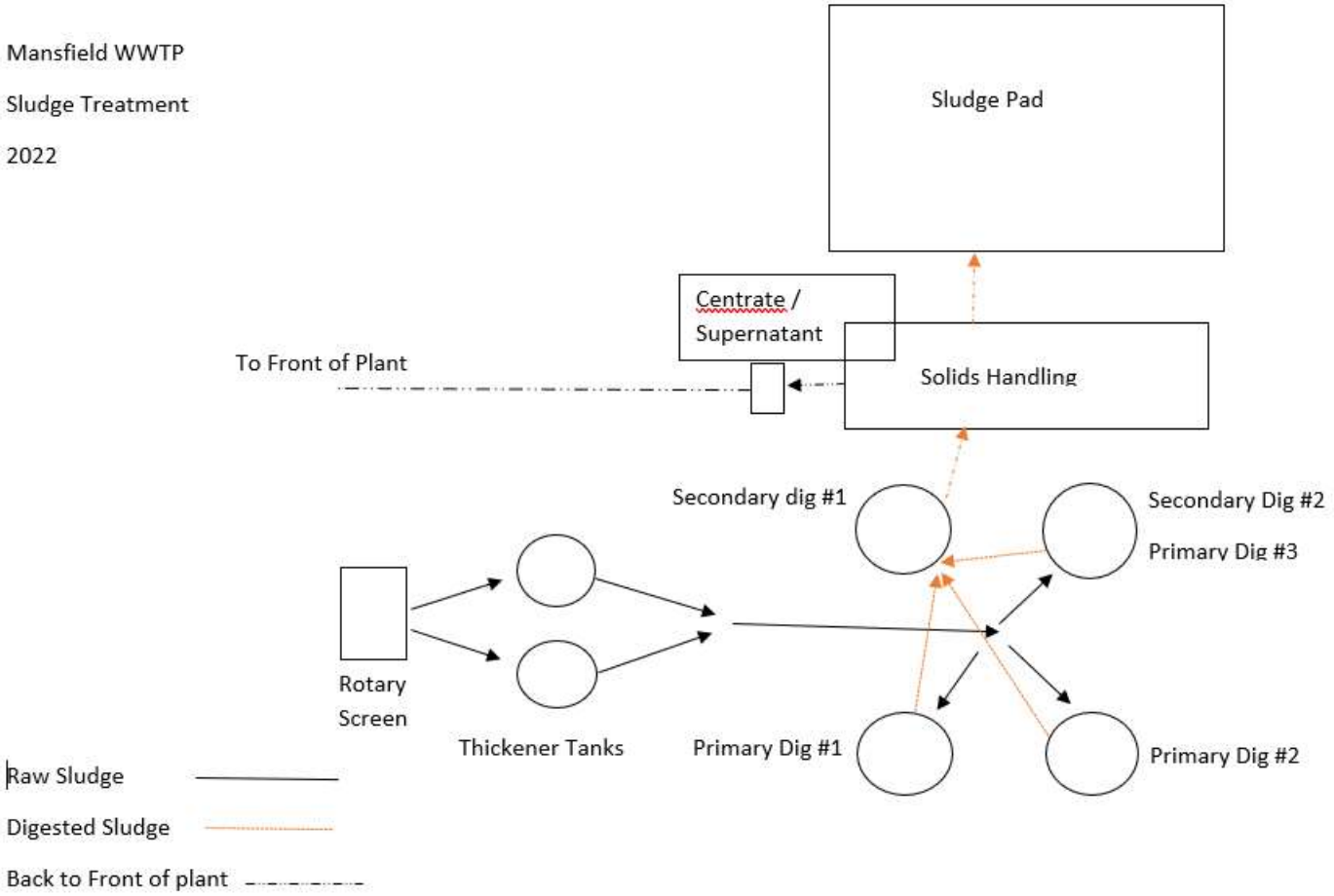
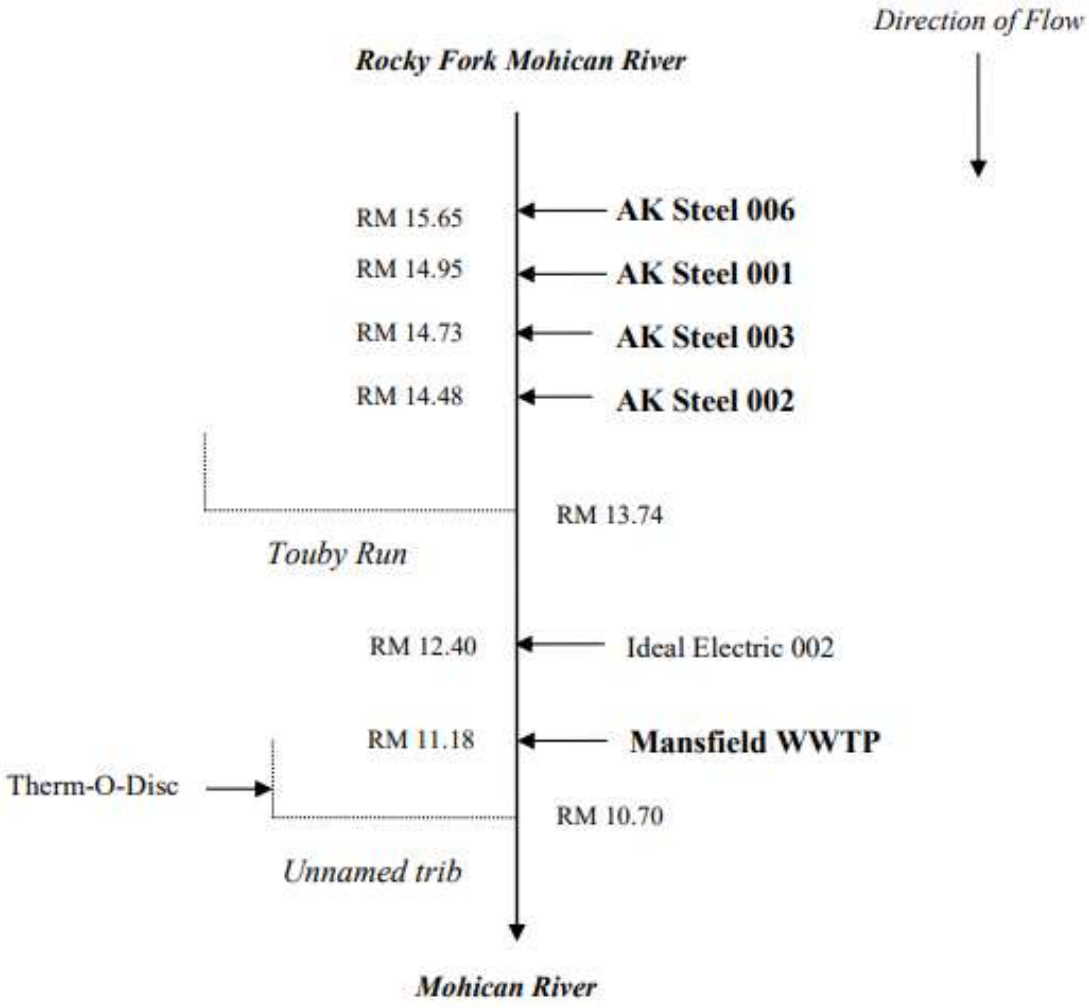


Figure 4. Rocky Fork Mohican River Study Area



RM = River mile
WWTP = wastewater treatment plant

Table 1. Sewage Sludge Removal

Year	Dry Tons Removed
2019[a]	0
2020	1230
2021	2350
2022	512
2023	1920
2024[b]	308

[a]Data from November and December only
[b]Data from January through October only

Table 2. Effluent Violations for Outfall 001

Station	Parameter	2019[a]	2020	2021	2022	2023	2024[b]	Total
	CBOD5	0	0	0	2	0	0	**2**
001	Total Suspended Solids	0	28	3	6	1	3	**41**
	Chlorine	0	0	0	0	1	0	**1**
	Copper	0	1	4	0	2	6	**13**
	Dissolved Oxygen	0	0	0	1	0	0	**1**
	E. coli	0	23	7	2	13	9	**54**
	Ammonia	0	4	4	4	0	0	**12**
	pH, Maximum	0	0	0	0	0	1	**1**
	pH, Minimum	0	0	0	0	1	0	**1**
002	Phosphorus, Total (P)	0	21	5	0	0	0	**26**
	CBOD5	0	21	10	7	8	2	**48**
602	Total Suspended Solids	0	13	4	3	5	2	**27**
Total		**0**	**111**	**37**	**25**	**31**	**23**	**227**

[a]Data from November and December only
[b]Data from January through October only

Table 3. Average Annual Effluent Flow Rates From Outfall 001

	Annual Flow (MGD)		
Year	50th Percentile	95th Percentile	Maximum
2019[a]	8.50	15.00	17.00
2020	10.90	16.80	19.10
2021	9.30	18.08	19.10
2022	9.40	17.20	18.60
2023	9.60	15.88	19.10
2024[b]	8.30	16.60	19.60

MGD = million gallons per day.
[a]Data from November and December only
[b]Data from January through October only

Table 4. Sanitary Sewer Overflows Discharges

Year	Occurrences
2019[a]	0
2020	5
2021	0
2022	5
2023	7
2024 [b]	6

[a]Data from November and December only
[b]Data from January through October only

Table 5. Bypass Discharges at Station 602

Year	Number of days	Total Volume (Million Gallons)	Median TSS (mg/L)	Median CBOD5 (mg/L)
2019[a]	0	0	0	0
2020	43	397.1	40	53
2021	26	14.2	16	74.5
2022	11	10.2	32	58
2023	22	19.8	32	81
2024 [b]	15	11.5	28	60

[a]Data from November and December only
[b]Data from January through October only

Table 6. Calculated Annual Total Phosphorus Loadings

Year	Median Phosphorus (mg/L)	Median Flow (MGD)	Median Loading (kg/day)
2019[a]	0.7	8.50	22.5
2020	0.9	10.90	37.1
2021	0.7	9.30	24.6
2022	0.5	9.40	17.8
2023	0.5	9.60	18.2
2024 [b]	0.3	8.30	9.4

MGD = million gallons per day
[a]Data from November and December only
[b]Data from January through October only

Table 7. Effluent Characterization Using Pretreatment Data

Parameter	Units	Ohio EPA	Pretreatment				
		3/21/2022	8/27/2020	9/1/2021	8/11/2022	8/21/2023	9/24/2024
Aluminum	µg/L	1800	NT	NT	NT	NT	NT
Ammonia	mg/L	0.288	NT	NT	NT	NT	NT
Antimony	µg/L	NT	AA (1)	1.1	AA (0.8)	AA (0.41)	AA (5)
Arsenic	µg/L	2.37	2	1.4	1.4	AA (1.5)	AA (5)
Barium	µg/L	74.2	NT	NT	NT	NT	NT
Bis(2-ethylhexyl) phthalate	µg/L	AA (3.08)	AA (1.83)	AA (1.83)	8.6	AA (1.6)	AA (5)
Cadmium	µg/L	AA (0.008)	AA (0.1)	AA (0.1)	AA (0.1)	AA (0.2)	AA (3)
Chloroform	µg/L	NT	1.7	0.6	1.7	AA (0.3)	AA (5)
Chromium	µg/L	3.56	2	1.8	2.1	AA (0.5)	AA (7)
Copper	µg/L	27	8	8	9	AA (4.8)	13
Dimethyl phthalate	µg/L	AA (0.68)	1.62	AA (1.38)	AA (1.38)	AA (1.2)	AA (10)
Free cyanide	µg/L	5.17	NT	NT	NT	NT	NT
Iron	µg/L	1290	NT	NT	NT	NT	NT
Lead	µg/L	AA (0.105)	1	AA (0.2)	AA (0.2)	5.3	AA (10)
Manganese	µg/L	225	NT	NT	NT	NT	NT
Mercury	ng/L	NT	1	2.4	3	AA (0.2)	AA (0.5)
Molybdenum	µg/L	NT	10	7	7.6	AA (0.66)	AA (20)
Nickel	µg/L	4.32	6	3.6	3.1	AA (0.8)	AA (8)
Nitrate + Nitrite	mg/L	3.84	NT	NT	NT	NT	NT
Selenium	µg/L	AA (1.2)	1	0.5	0.3	AA (2.4)	AA (4)
Strontium	mg/L	487	NT	NT	NT	NT	NT
Toluene	µg/L	NT	1.2	0.6	0.5	AA (0.3)	AA (5)
Total Filterable Residue	mg/L	624	NT	NT	NT	NT	NT
Zinc	µg/L	46.2	35	20	20	88	21

AA = not-detected (analytical method detection limit)
NT = not tested

Table 8. Effluent Characterization using Self-Monitored Data

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
Outfall 001							
TSS – Summer	kg/day	546	818[w]	505	221	1010	0 - 5460
TSS – Summer	mg/L	12	18[w]	505	7.00	22.0	0 - 176
TSS - Winter	kg/day	1140	1820[w]	514	318	1180	54.5 - 4490
TSS - Winter	mg/L	25	40[w]	514	8.00	23.4	1.00 - 85.0
Ammonia	mg/L	- - - - Monitor - - - -		1205	1264	0.400	3.30
Flow Rate	MGD	- - - - Monitor - - - -		1795	1796	9.50	16.9
CBOD 5 day - Summer	kg/day	455	682[w]	458	134	382	0 - 2310
CBOD 5 day - Summer	mg/L	10	15[w]	458	4.00	9.00	0 - 53.0
CBOD 5 day - Winter	kg/day	1140	1820[w]	486	186	500	0 - 930
CBOD 5 day - Winter	mg/L	25	40[w]	486	4.00	10.0	0 - 15.0
Outfall 002							
Water Temperature	°C	- - - - Monitor - - - -		1796	15.3	21.0	7.40 - 24.3
Dissolved Oxygen	mg/L	--	5.0[m]	1794	9.60	5.80*	4.70 - 18.2
Oil and Grease	mg/L	--	10	238	< 1.00	1.82	0 - 6.00
Ammonia - Summer	kg/day	77.3	159[w]	625	12.5	130	0 - 420
Ammonia – Summer	mg/L	1.7	3.5[w]	625	0.400	3.19	0 - 7.20
Ammonia - Winter	kg/day	200	300[w]	639	23.4	160	0 - 718
Ammonia - Winter	mg/L	4.4	6.6[w]	639	0.500	3.20	0 - 13.0
Nitrogen Kjeldahl, Total	mg/L	- - - - Monitor - - - -		59	3.10	11.1	0 - 20.7
Nitrite Plus Nitrate	mg/L	- - - - Monitor - - - -		59	10.6	18.2	1.00 - 20.2
Phosphorus, Total	kg/day	45.5	68.2[w]	522	21.7	66.2	0 - 222
Phosphorus, Total	mg/L	1.0	1.5[w]	522	0.600	1.40	0 - 3.30
Orthophosphate	mg/L	- - - - Monitor - - - -		59	0.300	1.10	0 - 1.60
Selenium, TR	µg/L	- - - - Monitor - - - -		19	< 10.0	4.66	0 - 16.0
Nickel, TR	µg/L	- - - - Monitor - - - -		19	< 10.0	7.18	0 - 11.5
Zinc, TR	µg/L	- - - - Monitor - - - -		19	15.5	23.1	0 - 33.0
Cadmium, TR	µg/L	- - - - Monitor - - - -		19	--	--	< 10.0
Lead, TR	µg/L	- - - - Monitor - - - -		19	< 10.0	1.29	0 - 2.10
Chromium, TR	µg/L	- - - - Monitor - - - -		19	< 10.0	0.170	0 - 1.70
Copper, TR	kg/day	23	36	310	7.10	17.1	0 - 76.0
Copper, TR	µg/L	1.05	1.64	310	0.279	0.904	0 - 3.62
Chromium, Dissolved Hexavalent	kg/day	15	21	58	< 4.00	< 4.00	0 - 4.00
Chromium, Dissolved Hexavalent	µg/L	0.682	0.954	58	< 0.117	< 0.117	0 - 0.273
E. coli	#/100 mL	126	284[w]	502	114	2420	1.00 - 2420

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
Bis(2-ethylhexyl) Phthalate	kg/day	13	1470	60	< 2.00	< 2.00	0 - 6.40
Bis(2-ethylhexyl) Phthalate	µg/L	0.591	66.8	60	< 0.058	< 0.058	0 - 0.187
Flow Rate	MGD	- - - - Monitor - - - -		1796	9.90	18.2	4.30 - 50.9
Chlorine, Total Residual	mg/L	0.014	0.024	621	0.0050	0.0170	0 - 0.160
Mercury, Total	ng/L	- - - - Monitor - - - -		59	1.30	3.74	0 - 6.40
Cyanide, Free	µg/L	13	51	59	< 2.00	8.22	0 - 11.6
Cyanide, Free	kg/day	0.591	2.32	59	< 6.28	289	0 - 422
Acute Toxicity, *Ceriodaphnia dubia*	TUa	- - - - Monitor - - - -		19	--	--	< .2
Chronic Toxicity, *Ceriodaphnia dubia*	TUc	- - - - Monitor - - - -		19	< 1	3.03	0 - 3.1
Acute Toxicity, *Pimephales promelas*	TUa	- - - - Monitor - - - -		19	< .2	1.26	0 - 2.7
Chronic Toxicity, *Pimephales promelas*	TUc	- - - - Monitor - - - -		19	< 1	16	0 - 21.4
pH, Maximum	S.U.	--	9.0	1796	7.30	8.60	6.50 - 9.80
pH, Minimum	S.U.	--	6.5	1796	7.00	6.60*	6.40 - 9.40
Residue, Total Filterable	mg/L	- - - - Monitor - - - -		177	610	734	310 - 890

* = For minimum pH, 5th percentile shown in place of 50th percentile.
** = For dissolved oxygen, 5th percentile shown in place of 95th percentile.
^{w} = weekly average.
^{m} = minimum limit

Table 9. Projected Effluent Quality for Outfall 001

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Aluminum	µg/L	1	1	8147	11160
Ammonia (Summer)	mg/L	431	352	4.82	6.47
Ammonia (Winter)	mg/L	317	275	3.59	7.52
Antimony	µg/L	4	1	2.09	2.86
Arsenic	µg/L	5	4	3.98	5.45
Barium	µg/L	1	1	1.30	1.79
Bis(2-ethylhexyl) Phthalate [A]	µg/L	66	2	6.28	8.60
Cadmium [A]	µg/L	26	0	--	--
Chlorine	mg/L	644	437	0.011	0.026
Chloroform	µg/L	3	3	3.72	5.10
Chromium [A]	µg/L	26	5	2.17	3.59
Chromium, Dissolved Hexavalent	µg/L	43	1	3.21	4.40
Copper [A]	µg/L	320	239	13.3	20.1
Cyanide, Free	µg/L	61	21	6.79	10.5
Dimethyl Phthalate	µg/L	5	1	2.72	3.73
Iron	µg/L	1	1	5839	7998
Lead [A]	µg/L	26	6	4.13	5.58
Manganese	µg/L	1	1	1018	1395
Mercury (BCC) [A]	ng/L	65	57	3.19	4.96
Molybdenum	µg/L	4	3	19.0	26.0
Nickel [A]	µg/L	26	14	8.93	9.36
Nitrate + Nitrite[A]	mg/L	61	61	20.3	31.1
Nitrogen Kjeldahl, Total	mg/L	60	54	10.6	16.8
Phosphorus	mg/L	531	521	1.07	1.90
Selenium [A]	µg/L	13	4	3.97	5.44
Strontium	µg/L	1	1	2204	3019
Toluene	µg/L	4	3	2.28	3.12
Total Filterable Residue [A]	mg/L	182	182	686	769
Zinc [A]	µg/L	26	24	36.7	57.5

[A] = DMR data combined with Ohio EPA and/or Pretreatment Program data
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
BCC = Bioaccumulative Chemical of Concern

Table 10. Summary of Acute and Chronic Toxicity Results

	Ceriodaphnia Dubia		*Pimephales promelas*	
Date	**TU_a**	**TU_c**	**TU_a**	**TU_c**
11/4/2019	AA	1.3	AA	AA
2/11/2020	AA	AA	AA	AA
5/4/2020	AA	AA	0.3	AA
8/28/2020	AA	AA	AA	AA
11/15/2020	AA	AA	1.1	AA
2/14/2021	AA	2.8	0.7	8.0
5/18/2021	AA	AA	2.7	15.4
8/11/2021	AA	AA	AA	AA
11/9/2021	AA	AA	AA	AA
2/20/2022	AA	AA	AA	AA
5/17/2022	AA	AA	AA	AA
8/9/2022	AA	AA	AA	AA
11/7/2022	AA	AA	AA	AA
2/7/2023	AA	AA	AA	AA
5/15/2023	AA	AA	AA	AA
8/15/2023	AA	AA	AA	AA
11/14/2023	AA	AA	AA	AA
2/13/2024	AA	1.7	AA	AA
5/14/2024	AA	1.4	0.2	AA
8/21/2024	AA	AA	AA	AA

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 11. Use Attainment Table

Stream	RM	Use	Attainment Status	Causes	Sources
Rocky Fork Mohican R. upst E.D.S.	14.60	WWH	Partial	Reduced habitat/ Siltation	Channelization/ Urban-Industrial Runoff
Rocky Fork Mohican R. at U.S. 30	14.32	WWH	FULL		
Rocky Fork Mohican R. at Longview Ave.	14.23	WWH	Partial	Nutrient/Eutrophication biological indicators, Metals	Unspecified urban stormwater, Contaminated sediments
Rocky Fork Mohican R. at Main St.	14.05	WWH	NON	Reduced habitat/ Siltation	Channelization Urban-industrial runoff
Rocky Fork Mohican R. at St. Rt. 39 (Park Ave. East)	12.49	WWH	NON	Nutrient/Eutrophication biological indicators	Unspecified urban stormwater
Rocky Fork Mohican R. at St. Rt. 39	10.13	WWH	NON	Nutrient/Eutrophication biological indicators, Organic enrichment biological indicators (sewage)	Unspecified urban stormwater, Municipal point source discharges
Rocky Fork Mohican R. upst Lucas at Smart Rd.	4.38	WWH	FULL		

Data gathered from *Biological and Water Quality Study of the Mohican River and Selected Tributaries 2007*; July 2009; and *Biological Assessment of the Rocky Fork Mohican River – Peabody Barnes Property*; October 2009.
RM = River Mile
Use Desig = Use Designation
WWH = warmwater habitat
Upst = upstream

Table 12. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum Aquatic Life	
		Human Health	Agri-culture	Aquatic Life		
Aluminum	µg/L	--	--	--	--	--
Ammonia (Summer)	mg/L	--	--	2.1	--	--
Ammonia (Winter)	mg/L	--	--	4.6	--	--
Antimony	µg/L	640	--	190	900	1800
Arsenic	µg/L	--	100	150	340	680
Barium	µg/L	--	--	1500	6400	13000
Bis(2-ethylhexyl) Phthalate [C]	µg/L	3.7	--	8.4	1100	2100
Cadmium	µg/L	--	50	5.3	14	27
Chlorine	mg/L	--	--	0.011	0.019	0.038
Chloroform [C]	µg/L	20000	--	140	1300	2600
Chromium	µg/L	--	100	190	4000	8000
Chromium, Dissolved Hexavalent	µg/L	--	--	11	16	31
Copper	µg/L	--	500	22	35	70
Cyanide, Free	µg/L	400	--	12	46	92
Dimethyl Phthalate	µg/L	2000	--	1100	3200	6400
Iron	µg/L	--	5000	--	--	--
Lead	µg/L	--	100	22	430	850
Manganese	µg/L	--	--	--	--	--
Mercury [B]	ng/L	12	10000	910	1700	1700
Molybdenum	µg/L	--	--	20000	190000	370000
Nickel	µg/L	4600	200	120	1100	2100
Nitrate + Nitrite	mg/L	--	100	--	--	--
Nitrogen Kjeldahl, Total	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Selenium	µg/L	4200	50	5	62	120
Strontium	µg/L	--	--	75000	190000	390000
Toluene	µg/L	520	--	62	560	1100
Total Filterable Residue	mg/L	--	--	1500	--	--
Zinc	µg/L	26000	25000	270	270	550

[B] = Bioaccumulative Chemical of Concern (BCC)

[c] = carcinogen

Table 13. Instream Conditions and Discharger Flow

Parameter	Units		Value	Basis
Upstream Flows - Rocky Fork Mohican River				
7Q10	cfs	annual	0.38	USGS gage #03129197, 2013-2022
1Q10	cfs	annual	0.24	USGS gage #03129197, 2013-2022
30Q10	cfs	summer	0.84	USGS gage #03129197, 2013-2022
		winter	7.07	USGS gage #03129197, 2013-2022
Harmonic Mean Flow	cfs	annual	3.95	USGS gage #03129197, 2013-2022
Mixing Assumption	%	average	100	Stream-to-discharge ratio
	%	max	100	Stream-to-discharge ratio
Instream Hardness	mg/L	annual	266	Mansfield 901, n=20, 2018-22
Instream pH	S.U.	summer	7.73	Mansfield 901, n=20, 2018-22
		winter	7.73	Mansfield 901, n=14, 2018-22
Instream Temperature	ºC	summer	20.4	Mansfield 901, n=20, 2018-22
		winter	12.1	Mansfield 901, n=14, 2018-22
Discharge Flows				
Mansfield WWTP - 002	cfs (MGD)	design	18.57 (12)	NPDES Permit Application
Cleveland Cliffs - 001	cfs (MGD)	95th %	3.25 (2.1)	DSW Permits Staff
Cleveland Cliffs - 006	cfs (MGD)	95th %	0.48 (0.31)	DSW Permits Staff
Background Water Quality				
Ammonia	mg/L	summer	0	Mansfield 801; n=20, 14<MDL, 2018-22
Ammonia	mg/L	winter	0	Mansfield 801; n=14, 8<MDL, 2018-22
Arsenic	µg/L	annual	2.12	EA3; n=5, 0<MDL; 2007
Barium	µg/L	annual	56.2	EA3; n=5, 0<MDL; 2007
Bis(2-ethylhexyl) Phthalate	µg/L	annual	0	EA3; n =1, 1<MDL; 2007
Cadmium	µg/L	annual	0	EA3; n=5, 5<MDL; 2007
Chlorine, Total Residual	mg/L	annual	0	No representative data available.
Chromium	µg/L	annual	0	EA3; 5 values, 5<MDL; 2007
Dissolved Hexavalent Chromium	µg/L	annual	0	No representative data available.
Copper	µg/L	annual	0	EA3; n=5, 5<MDL; 2007
Cyanide, Free	mg/L	annual	0	No representative data available.
Lead	µg/L	annual	0	EA3; n=5, 5<MDL; 2007
Mercury	ng/L	annual	0	No representative data available.
Molybdenum	µg/L	annual	0	No representative data available.
Nickel	µg/L	annual	0	EA3; n=5, 5<MDL; 2007

Parameter	Units		Value	Basis
Selenium	µg/L	annual	0	EA3; n=5, 5<MDL; 2007
Total Filterable Residue	mg/L	annual	415	EA3; n=5, 0<MDL; 2007
Zinc	µg/L	annual	0	EA3; n=5, 5<MDL; 2007

EA3 = Ohio EPA Ecological Assessment and Analysis Application - Station R01W16
MDL = analytical method detection limit
n = number of samples
NPDES = National Pollutant Discharge Elimination System
Ohio EPA = Ohio Environmental Protection Agency
WWTP = wastewater treatment plant

Table 14. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter	Units	Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum Aquatic Life	
		Human Health	Agri-culture	Aquatic Life		
Ammonia (Summer)	mg/L	--	--	2.67	--	--
Ammonia (Winter)	mg/L	--	--	8.12	--	--
Arsenic [B]	µg/L	--	140	181	410	680
Bis(2-ethylhexyl) Phthalate	µg/L	5.3	--	10	1336	2100
Cadmium [B]	µg/L	--	71	6.4	17	27
Chlorine, Total Residual	mg/L	--	--	0.0135	0.023	0.038
Chromium [B]	µg/L	--	119	193	4045	8000
Dissolved Hexavalent Chromium	µg/L	--	--	13	19	31
Copper	µg/L	--	606 [A]	23	36	70
Cyanide, Free	µg/L	570 [A]	--	15	56	92
Iron	µg/L	--	6671	--	--	--
Lead [B]	µg/L	--	119	22	435	850
Mercury (BCC)	ng/L	12	10000 [A]	910	1700	3400
Molybdenum [B]	µg/L	--	--	24305	230525	370000
Nickel [B]	µg/L	6550 [A]	280	142	1329	2100
Selenium [B]	µg/L	5984 [A]	71	6.1	75	120
Silver [B]	µg/L	--	--	1.6		
Total Filterable Residue	mg/L	--	--	1824	--	--
Zinc [B]	µg/L	30850 [A]	29664 [A]	275	273	550

[A] Allocation must not exceed the Inside Mixing Zone Maximum
[B] Parameter would not require a WLA based on reasonable potential procedures, but allocation requested by Permits Group.
[C] Bioaccumulative Chemical of Concern (BCC), WQS must be met at end-of-pipe, unless the requirements for an exclusion are met as listed in 3745-2-05(A)(2)(e)(ii).

Table 15. Parameter Assessment

Group 1: Due to a lack of numeric criteria, the following parameters were not evaluated at this time.

Aluminum	Manganese	

Group 2: PEQ < 25 percent of WQS or all data below minimum detection limit. WLA not required. No limit recommended; monitoring optional.

Antimony	Arsenic	Barium
Cadmium	Chloroform	Chromium
Dimethyl Phthalate	Lead	Molybdenum
Nickel	Nitrate + Nitrite	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.

Cyanide, Free	Dissolved Hexavalent Chromium	Mercury
Total Filterable Residue		

Group 4: $PEQ_{max} \geq$ 50 percent, but < 100 percent of the maximum PEL or $PEQ_{avg} \geq$ 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Ammonia (summer & winter)	Copper	Selenium

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.

Limits to Protect Numeric Water Quality Criteria

			Recommended Effluent Limits	
Parameter	Units	Period	Average	Maximum
Bis(2-ethylhexyl) Phthalate	µg/L	annual	5.3	1336
Chlorine, Total Residual	mg/L	annual	0.014	0.023
Iron [A]	µg/L	annual	6671	--

[A] = becomes a Group 5 parameter based upon the loading test [OAC 3745-2-06(B)]
PEL = preliminary effluent limit
PEQ = projected effluent quality
WLA = wasteload allocation
WQS = water quality standard

Table 16. 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	
TSS (summer)	mg/L	18[d]	12	818[d]	546	PD
TSS (winter)	mg/L	40[d]	25	1820[d]	1140	PD
Ammonia (summer)	mg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
Flow Rate	MGD	- - - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
CBOD5 (summer)	mg/L	15[d]	10	682[d]	455	PD
CBOD5 (winter)	mg/L	40[d]	25	1820[d]	1140	PD

[a] Effluent loadings based on average design discharge flow of 12.0 MGD.

[b] Definitions: M = Division of Surface Water NPDES Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges
PD = Plant Design (OAC 3745-33-05(E))

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

Table 17. Final Effluent Limits for Outfall 002

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]	--	--	--	WQS
Oil & Grease	mg/L	10	--	--	--	WQS
Ammonia (summer)	mg/L	3.5[d]	1.7	300[d]	200	WLA/ABS
Ammonia (winter)	mg/L	6.6[d]	4.4	159[d]	77.3	WLA/ABS
Total Kjeldahl Nitrogen	mg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M
Nitrate plus Nitrite	mg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M
Phosphorus	mg/L	1.5[d]	1.0	68.2[d]	45.5	BTJ
Orthophosphate	mg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				PMR
Selenium	µg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				RP
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	- - - - - - - - - - - Monitor - - - - - - - - - - -				RP
Dissolved Hexavalent Chromium	µg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M
E. coli	#/100 mL	284[d]	126	--	--	WQS
Bis(2-ethylhexyl) Phthalate	µg/L	1336	5.3	66.8	0.24	WLA
Flow Rate	MGD	- - - - - - - - - - - Monitor - - - - - - - - - - -				M[c]
Chlorine	mg/L	0.023	0.014	--	--	PD/WLA
Mercury	ng/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M
Free Cyanide	µg/L	- - - - - - - - - - - Monitor - - - - - - - - - - -				M

Parameter	Units	Concentration		Loading (kg/day)[a]		Basis[b]
		Daily Maximum	30 Day Average	Daily Maximum	30 Day Average	
Acute Toxicity, *Ceriodaphnia dubia*	TUa	- - - - - - - - - - - Monitor - - - - - - - - - - - -				WET1
Chronic Toxicity, *Ceriodaphnia dubia*	TUc	- - - - - - - - - - - Monitor - - - - - - - - - - - -				WET1
Acute Toxicity, *Pimephales promelas*	TUa	1.0	--	--	--	WET2
Chronic Toxicity, *Pimephales promelas*	TUc	--	1.22	--	--	WET2
pH, maximum	SU	9.0	--	--	--	WQS
pH, minimum	SU	6.5[m]	--	--	--	WQS
Total Filterable Residue	mg/L	- - - - - - - - - - - Monitor - - - - - - - - - - - -				M

[a] Effluent loadings based on average design discharge flow of 12.0 MGD.

[b] Definitions:
ABS = Antibacksliding Rule (OAC 3745-33-05(F) and 40 CFR Part 122.44(l))
BTJ = Best Technical Judgment
M = Division of Surface Water NPDES Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges
PD = Plant Design (OAC 3745-33-05(E))
PMR = Phosphorus monitoring requirements (ORC 6111.03)
RP = Reasonable Potential for requiring monitoring in permits (OAC 3745-33-07(A))
WET1 = Minimum testing requirements for whole effluent toxicity [OAC 3745-33-07(B)(11)]
WET2 = Reasonable potential for requiring water quality-based effluent limits and monitoring requirements for whole effluent toxicity in NPDES permits [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. Whole Effluent Toxicity Reasonable Potential Analysis

WET testing produced only non-detection results for acute toxicity in *Ceriodaphnia dubia*, therefore this falls under Hazard Category 4. The reasonable potential analyses were only performed for *Ceriodaphnia dubia* chronic toxicity (TUc Cd) and *Pimephales promelas* acute (TUa Pp) and chronic toxicity (TUc Pp).

Hazard Category Summary

	Ceriodaphnia dubia		***Pimephales promelas***	
	Acute	**Chronic**	**Acute**	**Chronic**
Effluent Toxicity (Table A)	4	3	2	2
Near-Field Impact (Table B)	--		--	
Far-field Impact (Table C)		--		--
	3		2	

Hazard Categories: 1: Toxicity adequately documented 3: Toxicity possible
2: Toxicity strongly suspected 4: No toxicity

Table A. Effluent Toxicity

	Ceriodaphnia dubia		***Pimephales promelas***	
	Acute	**Chronic**	**Acute**	**Chronic**
WLA	0.304	1.38	0.304	1.38
# of tests	20	20	20	20
Maximum value	AA	2.8	2.7	15.4
Percent of tests >WLA	--	15	15	10
Geometric mean	--	1.11	0.27	1.27
Average Exceedance (Geomean * Percent of tests >WLA)	--	0.17	0.04	0.13
Average Exceedance / WLA	--	0.12	0.13	0.09

Attribute Evaluated	**Hazard Category 1**	**Hazard Category 2**	**Hazard Category 3**	**Hazard Category 4**
Degree of Toxicity	Adequately Documented	Strongly Suspected	Possible	None
(1) Minimum number of tests	3 TUa Cd TUa Pp TUc Pp	1	0 or 1	0 or 1
(2) Percent of tests >WLA	>30	20 to 30	10 to 20 TUa Cd TUa Pp TUc Pp	10
(3) Average Exceedance/WLA[1] (Tables B and C data not available)				
(a) Acute[2]	≥ 0.3	> 0.3	≥ 0.2	< 0.2 TUa Pp
(b) Chronic	≥ 0.3	>0.3	≥ 0.2	< 0.2 TUc Cd TUc Pp
(4) Maximum TU value (Tables 3B and 3C data not available)	≥(3xWLA) TUa Pp TUc Pp	≥WLA TUc Cd	≥WLA	<WLA

[1] Compare (per cent exceedances x geometric mean TU) to table factor.
[2] Use 0.3 x WLA for situations where AIM exists.

Attachment 2. 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