National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit to Discharge to Waters of the State of Ohio
for American Bath Wastewater Treatment Plant (WWTP)

Public Notice No.: 196911
Public Notice Date: March 1, 2024
Comment Period Ends: March 31, 2024

Ohio EPA Permit No.: 2PH00007*MD
Application No.: OH0023841

Name and Address of Applicant:
Allen County Board of Commissioners
301 North Main Street
P.O. Box 1243
Lima, OH 45802

Name and Address of Facility Where Discharge Occurs:
American Bath WWTP
3226 N. Cole Street
Lima, OH 45801
Allen County

Receiving Water: Pike Run

Subsequent Stream Network: Ottawa River to Auglaize River to Maumee River to 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 dissolved hexavalent chromium based on the reasonable to exceed water quality standards. No schedule of compliance is proposed as American Bath WWTP is expected to be able to meet these limits immediately.

New monitoring is proposed for bis(2-ethylhexyl) phthalate based on the reasonable potential to exceed water quality standards.

Limits are proposed to be removed for free cyanide because no reasonable potential was observed.

Monitoring for copper and total filterable residue is proposed to be increased per Ohio EPA guidance.

Monitoring for dissolved oxygen, pH, and temperature at station 801, as well as monitoring for dissolved oxygen at station 901, is proposed to be removed as this data is not currently needed as part of the reasonable potential analysis.

Monitoring sampling type for pH at station 601 is proposed to change to multiple grab per Ohio EPA guidance.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from American Bath WWTP shows chronic toxicity to *Ceriodaphnia dubia.* Limits and increased monitoring are proposed. Annual chronic toxicity monitoring with the determination of acute endpoints for *Pimephales promelas* is proposed for the life of the permit. This satisfies the minimum testing requirements of Ohio Administrative Code (OAC) 3754-33-07(B)(11) and will adequately characterize toxicity in the plant's effluent.

To ensure that data is obtained that allows Ohio EPA to make water quality-related decisions regarding dissolved hexavalent chromium, 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; storm water compliance; supplemental effluent data; Maumee Nutrient TMDL; 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 Peggy Christie, 419-373-3006, Peggy.Christie@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

American Bath WWTP discharges to Pike Run at River Mile 8.2. Figure 1 shows the approximate location of the facility.

This segment of Pike Run is described by Ohio EPA River Code: 04-208, Hydrologic Unit Code: 04100007-04-04, County: Allen, Ecoregion: Huron-Erie Lake Plain. Pike Run is designated for the following uses under Ohio's WQS (OAC 3745-1-11): Modified 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

American Bath WWTP was constructed in 1996 and has not been upgraded. The average design flow is 1.5 million gallons per day (MGD) and the peak hydraulic capacity is 4.0 MGD. American Bath WWTP serves eastern American Township, western Bath Township, the Village of Cairo, and the Early-Lutz Roads Sewer Project for an approximate total of 7,984 customers. American Bath WWTP has the following treatment processes (Figure 2):

- Influent Pumping
- Mechanical Bar Screen
- Oxidation Ditch
- Biological Phosphorus Removal
- Alum Addition
- Final Settling
- UV Disinfection

The American Bath WWTP has 100% separate sewers in the collection system.

The American Bath WWTP does not have an approved pretreatment program.

American Bath WWTP utilizes the following sewage sludge treatment processes:

- Aerobic Digestion
- Gravity Belt Thickening
- Addition of polymer, lime, and ferric-chloride alum

Treated sludge is hauled to a landfill or transferred to another NPDES permit holder for further treatment and disposal.

DESCRIPTION OF EXISTING DISCHARGE

American Bath WWTP had one violation for phosphorus in 2021 and three violations for ammonia in 2022. The June 2022 ammonia violations were caused by a maintenance project on the oxidation ditch that has been completed.

Table 1 presents the average annual effluent flow rate for American Bath WWTP for the previous five years. American Bath WWTP has an estimated infiltration/inflow (I/I) rate of 0.3 MGD that does not cause known problems in the collection system. American Bath WWTP performs the following activities to minimize I/I: CCTV of sewer collection system, point repairs and sump pump removal.

Table 2 presents the number of SSOs reported by American Bath WWTP for the previous five years. SSOs are reported at station 300.

Table 3 presents data characterizing the annual total phosphorus load from American Bath WWTP during the previous five years.

Table 4 presents chemical specific data compiled from supplemental effluent testing data submitted as part of the NPDES renewal application and data collected by Ohio EPA.

Table 5 presents a summary of unaltered Discharge Monitoring Report (DMR). Data are presented for the period January 2018 to July 2023, and current permit limits are provided for comparison.

Table 6 summarizes the chemical specific data for outfall 001 by presenting the average and maximum PEQ values.

Table 7 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 Pike Run watershed assessment unit, which includes the Pike Run in the vicinity of American Bath WWTP, is listed as impaired for human health and recreation 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. A Total Daily Maximum Load (TMDL) report was approved for the Ottawa River which includes Pike Run in April 2014.

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 multi-metric 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 8) 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.

Pike Run is impaired for recreation and human health due to the following: Bacteria, and polychlorinated biphenyls (PCBs). This indicates that American Bath WWTP is likely not contributing to the impairments in Pike Run as the treatment plant provides adequate disinfection via ultraviolet light and has not had any *E. coli* violations during the current permit cycle. An unsewered community, Gomer, downstream of the American Bath WWTP on Pike Run was sewered in April 2023 to the American II WWTP. This should have a positive impact on the bacteria impairment in the receiving stream. Pike Run is impaired for human health due to historical data. American Bath WWTP is likely not contributing to the human health impairment since it is historical and the WWTP is likely not a significant source of PCBs or mercury.

The TMDL is available through the Ohio EPA, Division of Surface Water website at:
https://epa.ohio.gov/static/Portals/35/tmdl/OttawaLima_Report_Final.pdf

The full Integrated Report is available through the Ohio EPA, Division of Surface Water website at:

https://epa.ohio.gov/static/Portals/35/tmdl/2022intreport/Full-2022-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 American Bath 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 June 2023
NPDES renewal application data	2022
Ohio EPA compliance sampling data	2022

Statistical Outliers and Other Non-representative Data

The data were examined, and no values were removed from the evaluation.

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 6). 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 9).

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:

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.

WLAs for direct discharges to lakes are performed using the following equation for average criteria:

Discharger WLA = (11 x WQS) – (10 x Background Concentration).

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 10, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria.

The data used in the WLA are listed in Table 9 and Table 10. The WLA results to maintain all applicable criteria are presented in Table 11.

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.

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 (i.e., TUa and TUc) by the associated WQS Implementation Rule (OAC 3745-2-09). The translation results in a numeric value of 0.3 TUa and 1.0 TUc. WLAs can then be calculated using these values as if they were water quality criteria.

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 American Bath WWTP, the WLA values for outfall 001 are 0.3 TUa and 1.0 TUc.

The chronic toxicity unit (TUc) 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):

$$TUc = 100/IC25$$

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):

TUc = 100/geometric mean of No Observed Effect Concentration and Lowest Observed Effect Concentration

The acute toxicity unit (TUa) 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:

$$TUa = 100/LC50$$

This equation applies outside the mixing zone for all designated waters. Based on the above, a value of 1.0 TUa is the lowest value that can be calculated using the equation. TUa 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 TUa, 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

$$\text{Acute Dilution Ratio} = \frac{1Q10 + [\text{WWTP flow rate}]}{[\text{WWTP flow rate}]} = \frac{0.016 \text{ cfs} + 2.32 \text{ cfs}}{2.32 \text{ cfs}} = 1.01$$

The acute WLA for American Bath WWTP can be expressed as 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.01 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 TUa and 1.0 TUa 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 11. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from

Table 6, 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 12.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 13 presents the final effluent limits and monitoring requirements proposed for American Bath 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.

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

The limits recommended for total suspended solids, ammonia, dissolved oxygen, and 5-day carbonaceous biochemical oxygen demand are technology-based treatment standards included in 40 CFR Part 122.29 and in Ohio Administrative Code 3745-01-05, Best Available Demonstrated Control Technology.

The current ammonia limits have been evaluated using the WLA procedures and are protective of WQS for ammonia toxicity.

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 contact recreation *E. coli* standards apply to Pike Run.

Mercury and Dissolved Hexavalent Chromium

The Ohio EPA risk assessment (Table 12) places mercury and dissolved hexavalent chromium in group 5. This placement, as well as the data in Table 5 and Table 6, 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). No schedule of compliance is proposed for meeting dissolved hexavalent chromium limits as American Bath WWTP is expected to be able to meet these limits immediately. The proposed mercury monitoring and limits remain unchanged from the current permit.

Copper and Bis(2-ethylhexyl) phthalate

The Ohio EPA risk assessment (Table 12) places copper and bis(2-ethylhexyl) phthalate in group 4. This placement, as well as the data in Table 5 and Table 6, 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). Monitoring frequency for copper is proposed to increase.

Cadmium, Chromium, Free Cyanide, Lead, Nickel, Total Filterable Residue, and Zinc

The Ohio EPA risk assessment (Table 12) places cadmium, chromium, free cyanide, lead, nickel, total filterable residue, and zinc in groups 2 and 3. This placement, as well as the data in Table 5 and Table 6, 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 is proposed to document that these pollutants continue to remain at low levels. Limits are proposed to be removed for free cyanide. Monitoring for total filterable residue is proposed to increase to be consistent with Ohio EPA monitoring guidance.

Antimony, Arsenic, Methyl Ethyl Ketone, Selenium

The Ohio EPA risk assessment (Table 12) places antimony, arsenic, methyl ethyl ketone, and selenium in groups 2 and 3. This placement, as well as the data in Table 5 and Table 6, 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 submitted with the next NPDES permit renewal application will provide data for future reasonable potential analyses for each of these parameters.

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.

In September 2023, the *Maumee Watershed Nutrient Total Maximum Daily Load* (TMDL) Report was approved by US EPA. The TMDL was developed to restore full attainment of the designated uses in the Western Basin of Lake Erie, which experience frequent and extensive harmful algal blooms due to nutrient contributions, much of which is delivered by the Maumee River. The TMDL assigned American Bath WWTP an individual wasteload allocation of 370 kg of total phosphorus for the critical season (March through July). Compliance with this individual wasteload allocation will be regulated through the Maumee Watershed Total Phosphorus NPDES General Permit, under which American Bath WWTP has been granted coverage.

Nitrate and Nitrite and Total Kjeldahl Nitrogen
Monitoring for nitrate and nitrate and total Kjeldahl nitrogen (TKN) is proposed to continue. The purpose of the monitoring is to maintain a nutrient data set for use in the future.

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

Whole Effluent Toxicity
Evaluating the acute and chronic toxicity results for *Ceriodaphnia dubia* in Table 7, and Attachment 1, under the provisions of 40 CFR Part 132, Appendix F, Procedure 6, gives a chronic PEQ of 2.0 TU_c. Reasonable potential for 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 and a daily maximum limit of 1.0 TU_a and increased monitoring are proposed.

The acute and chronic toxicity results for *Pimephales promelas* in Table 7, and Attachment 1 show that there have been no detections of toxicity. Under the provisions of 40 CFR Part 132, Appendix F, Procedure 6, no PEQ values can be calculated. Reasonable potential for toxicity is not demonstrated. While this indicates that the plant's effluent does not currently pose a toxicity problem, annual chronic toxicity testing with the determination of acute endpoints proposed consistent with the minimum monitoring requirements at OAC 3745-33-07(B)(11). The proposed monitoring will adequately characterize toxicity in the plant's effluent.

Additional Monitoring Requirements
Monitoring for dissolved oxygen, pH, and temperature at station 801, as well as monitoring for dissolved oxygen at station 901, is proposed to be removed as this data is not currently needed as part of the reasonable potential analysis.

Monitoring sampling type for pH at station 601 is proposed to change to multiple grab per Ohio EPA guidance.

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

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 American Bath 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(s) of record to oversee the technical operation of the treatment works and sewerage system.

Sufficiently Sensitive Method
Part II of the permit includes a condition requiring American Bath WWTP to use laboratory analytical methods with a sufficiently sensitive MDL for dissolved hexavalent chromium.

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.

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

NPDES Renewal Application Supplemental Effluent Data
The permittee must submit supplemental effluent data as part of the next NPDES permit renewal application. A minimum of three samples must be tested for 101 parameters, each collected within four and one-half years of the application submission date. The complete list of parameters to be analyzed is contained in Table 2 of "Appendix J to Part 122 - NPDES Permit Testing Requirements for Publicly Owned Treatment Works (§122.21(j))." Existing effluent data may be used, if available, in lieu of sampling performed solely for the purpose of the renewal application. See Part II of the permit for details.

Part III

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

Storm Water Compliance
To comply with industrial storm water regulations, the permittee submitted a form for "No Exposure Certification" which was signed on January 17, 2023. The certification number is 2GRN00729*AG. Compliance with the industrial storm water regulations must be re-affirmed every five years. No later than January 16, 2028, the permittee must submit a new form for "No Exposure Certification" or make other provisions to comply with the industrial storm water regulations.

Figure 1. Location of American Bath WWTP

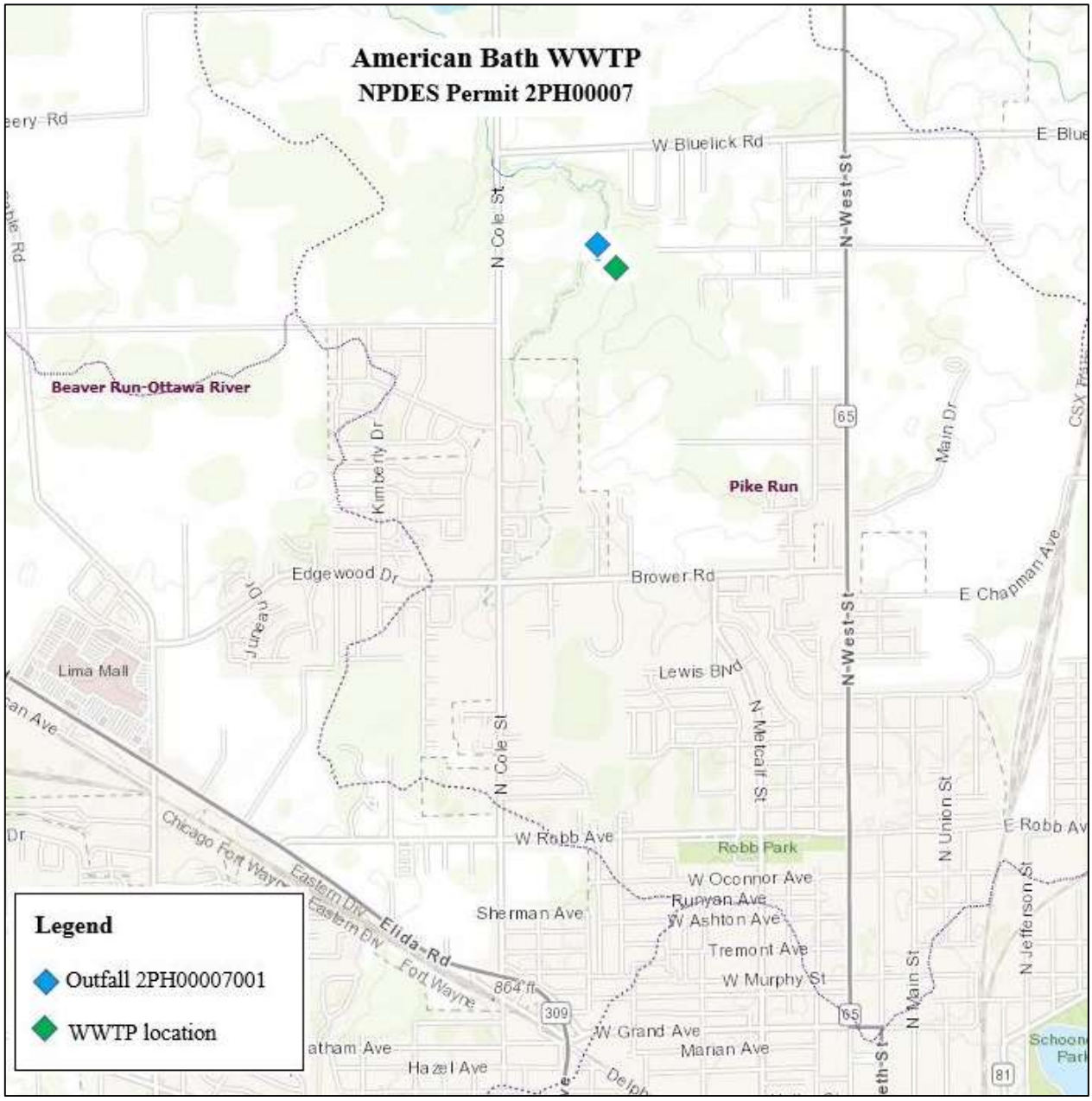

Figure 2. Diagram of Wastewater Treatment System

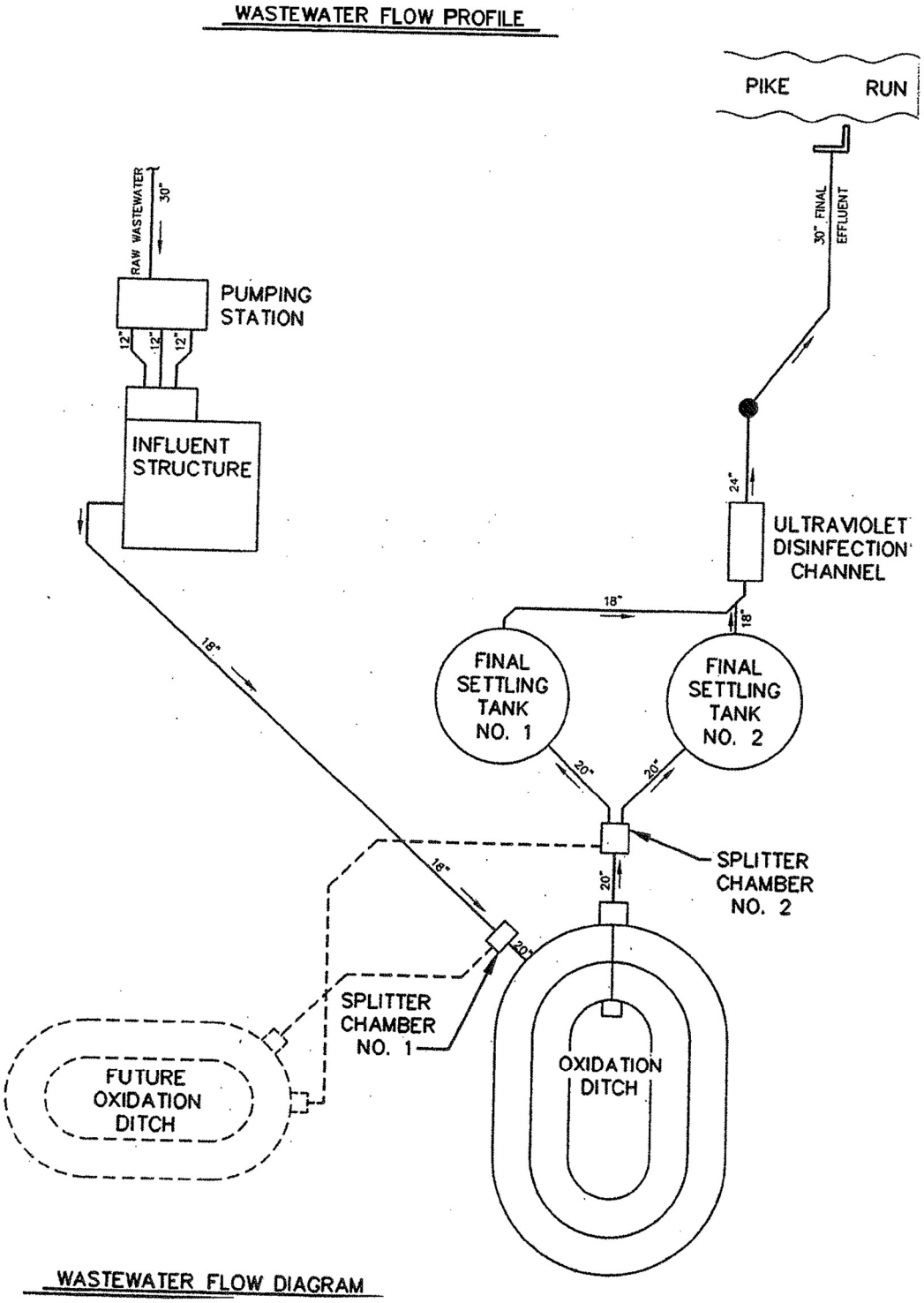

Table 1. Average Annual Effluent Flow Rates

Flow Rate (Million Gallons per Day)					
Year	**# obs**	**Average**	**Median**	**95th Percentile**	**Maximum**
2018	365	1.3	1.0	2.7	6.0
2019	365	1.5	1.1	3.2	8.1
2020	366	1.3	1.1	2.9	5.5
2021	365	1.2	1.0	2.6	6.0
2022	365	1.1	0.9	1.9	5.9
2023[a]	181	1.2	1.0	2.6	5.4

[a] data set ends June 30, 2023

Table 2. Sanitary Sewer Overflows Discharges

Year	Number of SSOs
2018	1
2019	4
2020	2
2021	3
2022	0
2023[a]	1
Total	**11**

[a] data set ends June 30, 2023

Table 3. Calculated Annual Total Phosphorus Loadings

Year	Median Phosphorus (mg/L)	Median Flow (MGD)	Median Loading (kg/day)
2018	0.64	1.0	2.4
2019	0.72	1.1	3.0
2020	0.67	1.1	2.8
2021	0.73	0.99	2.7
2022	0.63	0.90	2.1
2023[a]	0.62	1.0	2.3

[a] = data set ends on 6/30/23
MGD = million gallons per day

Table 4. Effluent Characterization Using Supplemental Effluent Data and Ohio EPA Data

Parameter	Ohio EPA 10/18/2022	Ohio EPA 11/15/2022	Form 2A 6/5/2020	Form 2A 6/9/2021	Form 2A 6/11/2021
Total Filterable Residue (mg/L)	498	494	NT	NT	NT
Antimony	0.318	0.411	AA (5)	AA (5)	AA (5)
Arsenic	0.602	0.506	AA (5)	AA (5)	AA (5)
Cadmium	AA (0.0221)	AA (0.0221)	NT	NT	NT
Chromium	AA (0.163)	AA (0.163)	NT	NT	NT
Copper	1.15	1.46	NT	NT	NT
Lead	AA (0.0977)	0.103	NT	NT	NT
Nickel	0.583	AA (0.168)	NT	NT	NT
Selenium	0.323	AA (0.24)	AA (4)	AA (4)	AA (4)
Zinc	27.2	26.7	NT	NT	NT
Nitrate + Nitrite (mg/L)	5.54	5.84	NT	NT	NT
Methyl Ethyl Ketone	AA (0.511)	1.11	NT	NT	NT
Bis(2-ethylhexyl) phthalate (DEHP)	AA (1.73)	1.78	AA (5)	AA (5)	AA (5)

AA = not-detected (analytical method detection limit)
NT = not tested
Units are in µg/L unless noted

Table 5. Effluent Characterization Using Self-Monitoring Data

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
Water Temperature	°C	Monitoring Only		1371	15	23	6 - 25
Dissolved Oxygen	mg/L	--	5.0[m]	1371	7.9	6.7**	5 - 78
Total Suspended Solids	kg/day	68	102[w]	794	< 13.3	26.8	0 - 98.9
Total Suspended Solids	mg/L	12	18[w]	794	< 4	6.07	0 - 14
Oil and Grease	mg/L	--	10.0	68	< 5	< 5	0 - 7.2
Nitrogen, Ammonia - Summer	kg/day	5.7	8.5[w]	385	< .617	.563	0 - 16.2
Nitrogen, Ammonia - Summer	mg/L	1.0	1.5[w]	385	< .2	.162	0 - 6.16
Nitrogen, Ammonia - Winter	kg/day	17.0	25.5[w]	409	< .641	< .641	0 - 6.4
Nitrogen, Ammonia - Winter	mg/L	3.0	4.5[w]	409	< .2	< .2	0 - .95
Nitrogen Kjeldahl, Total	mg/L	Monitoring Only		68	.835	1.39	0 - 10.4
Nitrite Plus Nitrate, Total	mg/L	Monitoring Only		68	4.5	6.48	2.25 - 7.34
Phosphorus, Total	kg/day	5.7	8.5[w]	238	2.5	4.67	.624 - 7.09
Phosphorus, Total	mg/L	1.0	1.5[w]	238	.66	1	.24 - 1.61
Orthophosphate, Dissolved	mg/L	Monitoring Only		66	.65	1.09	0 - 2.07
Cyanide, Free	mg/L	Monitoring Only		11	--	--	< .003
Nickel, TR	µg/L	Monitoring Only		22	--	--	< 8
Zinc, TR	µg/L	Monitoring Only		22	24	30	0 - 34
Cadmium, TR	µg/L	Monitoring Only		22	--	--	< 3
Lead, TR	µg/L	Monitoring Only		22	--	--	< 10
Chromium, TR	µg/L	Monitoring Only		22	< 7	< 7	0 - 10
Copper, TR	µg/L	Monitoring Only		22	< 8	< 8	0 - 13
Chromium, Dissolved Hexavalent	µg/L	Monitoring Only		28	--	--	< 10
E. coli	#/100 mL	126	284[w]	312	2	15	0 - 2420
Flow Rate	MGD	Monitoring Only		2007	1.02	2.78	.435 - 8.11
Mercury, Total	kg/day	0.0000074	0.0097	19	< .00000128	.00000662	0 - .00000955
Mercury, Total	ng/L	1.3	1700	19	< .5	.996	0 - 1.8
Cyanide, Free (Low-Level)	kg/day	0.030	0.13	57	< .0127	< .0127	0 - .0107

Parameter	Unit	Current Limits		# Obs	Percentiles		Data Range
		30 Day	Daily		50th	95th	
Cyanide, Free (Low-Level)	µg/L	5.2	22	57	< 3	< 3	0 - 3.3
Acute Toxicity, *Ceriodaphnia dubia*	TUa	Monitoring Only		5	--	--	< .2
Chronic Toxicity, *Ceriodaphnia dubia*	TUc	Monitoring Only		5	< 1	.88	0 - 1.1
Acute Toxicity, *Pimephales promelas*	TUa	Monitoring Only		5	--	--	< .2
Chronic Toxicity, *Pimephales promelas*	TUc	Monitoring Only		5	--	--	< 1
pH, Maximum	S.U.	--	9.0	1371	7.1	7.5	6.7 - 7.9
pH, Minimum	S.U.	--	6.5[m]	1371	7	6.8*	6.5 - 7.6
Residue, Total Filterable	mg/L	Monitoring Only		22	482	557	372 - 662
CBOD 5 day	kg/day	56.8	85.2[w]	788	< 6.06	28.3	0 - 91.3
CBOD 5 day	mg/L	10	15[w]	788	< 2	7.07	0 - 21

* = 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

Table 6. Projected Effluent Quality for Outfall 001

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Ammonia (Summer)	mg/L	253	14	3.14776	4.312
Ammonia (Winter)	mg/L	204	9	0.13	0.23
Antimony	µg/L	2	2	1.140114	1.5618
Arsenic - TR	µg/L	2	2	1.669948	2.2876
Bis(2-ethylhexyl) phthalate	µg/L	2	1	4.93772	6.764
Cadmium - TR	µg/L	25	0	--	--
Chromium - TR	µg/L	25	1	9.49	13
Dissolved Hexavalent Chromium	µg/L	31	1	8.76	12
Copper - TR	µg/L	25	3	12.337	16.9
Cyanide - free	µg/L	57	1	2.409	3.3
Total Filterable Residue	mg/L	25	25	549	623
Lead - TR	µg/L	2	1	0.285722	0.3914
Mercury	ng/L	22	10	1.1	1.9
Methyl ethyl ketone	µg/L	2	1	3.07914	4.218
Nickel - TR	µg/L	2	1	1.617242	2.2154
Nitrate-N + Nitrite-N	mg/L	70	70	5.6	6.8
Selenium - TR	µg/L	2	1	0.896002	1.2274
Zinc - TR	µg/L	25	24	31.2	41

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 7. Summary of Acute and Chronic Toxicity Results

Date	*Ceriodaphnia dubia*		*Pimephales promelas*	
	Acute (Tu_a)	**Chronic (Tu_c)**	**Acute (Tu_a)**	**Chronic (Tu_c)**
7/10/2018	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
6/4/2019	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
6/5/2020	AA (0.02)	1.1	AA (0.2)	AA (1.0)
6/11/2021	AA (0.2)	AA (1.0)	AA (0.2)	AA (1.0)
6/1/2022	AH ()	AH ()	AH ()	AH ()
7/25/2022	AA (0.2)	1.1	AA (0.2)	AA (1.0)
9/19/2022	0.4	AE ()	NT	NT
10/24/2022	AA (0.2)	AA (1.0)	NT	NT
6/19/2023	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
AE = analytical data not valid
AH = sample not taken
NT = not tested
TU_a = acute toxicity unit
TU_c = chronic toxicity unit

Table 8. Use Attainment Table

Pike Run (04-208) **(HELP) MWH Confirmed**								
River Miles Fish/Invert.	**IBI**	**MIwb**	**ICI**	**QHEI**	**Landmark**	**Attainment Status**	**Cause(s)**	**Source(s)**
8.3[H] / 8.5	24	NA	High Fair	51.0	Ust. American Bath WWTP	FULL	NA	NA
7.6[H] / 7.56	20	NA	High Fair	58.0	Cole Rd. (Dst. WWTP)	FULL	NA	NA
4.6[H] / 4.61	26	NA	G	38.5	State Rd.	FULL	NA	NA
0.8[H] / 0.84	30	NA	High Fair	41.0	Lima Gomer Rd.	FULL	NA	NA

Data gathered from *Biological and Water Quality Study of Ottawa River and Principal Tributaries, 2010*
Rd = road
Dst. = downstream
Ust. = upstream
ICI = invertebrate community index
IBI = index of biotic integrity
QHEI = quality habitat evaluation index
MWH = modified warmwater habitat
MIwb = modified index of well being
G = good
[H] = headwater site (drainage area < 20mi^2) sampled with headwater methods and analyzed with only IBI biocriteria metrics calibrated for small streams
HELP = Huron Erie Lake Plains

Table 9. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum	
		Wildlife	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia (Summer)	mg/L	--	--	--	2.8	--	--
Ammonia (Winter)	mg/L	--	--	--	9.7	--	--
Antimony	µg/L	--	780	--	190	900	1800
Arsenic - TR	µg/L	--	580	100	150	340	680
Bis(2-ethylhexyl) phthalate	µg/L	--	32[c]	--	8.4	1100	2100
Cadmium - TR	µg/L	--	730	50	5.8	16	31
Chromium - TR	µg/L	--	14000	100	210	4400	8900
Hexavalent Chromium (Dissolved)	µg/L	--	14000	--	11	16	31
Copper - TR	µg/L	--	64000	500	24	39	79
Cyanide - free	µg/L	--	48000	--	5.2	22	44
Total Filterable Residue	mg/L	--	--	--	1500	--	--
Lead - TR	µg/L	--	--	100	26	500	990
Mercury	ng/L	1.3	3.1	10000	910	1700	3400
Methyl ethyl ketone	µg/L	--	--	--	22000	200000	400000
Nickel - TR	µg/L	--	43000	200	130	1200	2400
Nitrate-N + Nitrite-N	mg/L	--	--	100	--	--	--
Selenium - TR	µg/L	--	3100	50	5	62	120
Zinc - TR	µg/L	--	35000	25000	300	300	610

Table 10. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
Stream Flows				
1Q10	cfs	annual	0.016	USGS Gauge 04186500 adjusted for DA
7Q10	cfs	annual	0.03	USGS Gauge 04186500 adjusted for DA
		summer	0	
		winter	0	
30Q10	cfs	summer	0.06	USGS Gauge 04186500 adjusted for DA
		winter	0.231	USGS Gauge 04186500 adjusted for DA
90Q10	cfs	annual	0.105	USGS Gauge 04186500 adjusted for DA
Harmonic Mean	cfs	annual	0.367	USGS Gauge 04186500 adjusted for DA
Mixing Assumption	%	average	25	
		maximum	100	
Hardness, OMZ	mg/L	annual	300	EDMR, 901 station, median, n=67
Hardness, IMZ	mg/L	annual	300	EDMR, 901 station, median, n=67
pH	S.U.	summer	7.6	EDMR, 901 station, 75 percentile, n=21
		winter	7.3	EDMR, 901 station, 75 percentile, n=17
Temperature	ºC	summer	22	EDMR, 901 station, 75 percentile, n=21
		winter	10	EDMR, 901, station, 75 percentile, n=17
American Bath WWTP flow	cfs	annual	2.3208	Average Daily Design Flow
Background Water Quality				
Ammonia (Summer)	mg/L	summer	0.1	EDMR; 2018-2023; n=21; 17<MDL; 801 Station; Median
Ammonia (Winter)	mg/L	winter	0.1	EDMR; 2018-2023; n=17; 13<MDL; 801 Station; Median
Antimony	µg/L	annual	0	No representative data available.
Arsenic - TR	µg/L	annual	1.41	OEPA; 2022; n=2; 0<MDL; Station P04P24
Bis(2-ethylhexyl) phthalate	µg/L	annual	0	No representative data available.
Cadmium - TR	µg/L	annual	0.0475	OEPA; 2022; n=2; 0<MDL; Station P04P24
Chromium - TR	µg/L	annual	0	OEPA; 2022; n=2; 2<MDL; Station P04P24
Hexavalent Chromium (Dissolved)	µg/L	annual	0	No representative data available.
Copper - TR	µg/L	annual	1.875	OEPA; 2022; n=2; 0<MDL; Station P04P24
Cyanide - free	µg/L	annual	0	No representative data available.
Dissolved Solids	mg/L	annual	395	OEPA; 2010; n=5; 0<MDL; Station P04P24
Lead - TR	µg/L	annual	0.186	OEPA; 2022; n=2; 0<MDL; Station P04P24
Mercury	ng/L	annual	0	No representative data available.
Methyl ethyl ketone	µg/L	annual	0	No representative data available.
Nickel - TR	µg/L	annual	1.475	OEPA; 2022; n=2; 0<MDL; Station P04P24
Nitrate-N + Nitrite-N	mg/L	annual	1.435	EDMR; 2018-2023; n=68; 2<MDL; 801 Station; Median

Parameter	Units	Season	Value	Basis
Selenium - TR	µg/L	annual	0.2875	OEPA; 2022; n=2; 0<MDL; Station P04P24
Zinc - TR	µg/L	annual	0	OEPA; 2022; n=2; 2<MDL; Station P04P24

MDL = analytical method detection limit
n = number of samples
EDMR = Electronic Discharge Monitoring Reports
Ohio EPA = Ohio Environmental Protection Agency
DA = Drainage Area

Table 11. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Average				Maximum Aquatic Life	
		Wildlife	Human Health	Agri-culture	Aquatic Life		
Ammonia (Summer)	mg/L	--	--	--	2.87	--	--
Ammonia (Winter)	mg/L	--	--	--	10.67	--	--
Antimony	µg/L	--	811	--	191	906	1800
Arsenic - TR	µg/L	--	603	104	150	342	680
Bis(2-ethylhexyl) phthalate	µg/L	--	33	--	8.4	1108	2100
Cadmium - TR	µg/L	--	759	52	5.8	16	31
Chromium - TR	µg/L	--	14553	104	211	4430	8900
Hexavalent Chromium (Dissolved)	µg/L	--	14553	--	11	16	31
Copper - TR	µg/L	--	66530	520	24	39	79
Cyanide - free	µg/L	--	49898	--	5.2	22	44
Total Filterable Residue	mg/L	--	--	--	1504	--	--
Lead - TR	µg/L	--	--	104	26	503	990
Mercury[A]	ng/L	1.3	3.1	10000	910	1700	3400
Methyl ethyl ketone	µg/L	--	--	--	22071	201379	400000
Nickel - TR	µg/L	--	44700	208	130	1208	2400
Nitrate-N + Nitrite-N	mg/L	--	--	104	--	--	--
Selenium - TR	µg/L	--	3223	52	5	62	120
Zinc - TR	µg/L	--	36384	25988	301	302	610

[A] Bioaccumulative Chemical of Concern (BCC); no mixing zone allowed after 11/15/2010, WQS must be met at end-of-pipe, unless requirements for an exception are met as listed in OAC 3745-2-05(A)(2)(e)(ii)

Table 12. Parameter Assessment

Group 1: Due to a lack of criteria, the following parameters could not be evaluated at this time.
No Parameters in this group

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

Antimony	Arsenic - TR	Cadmium - TR
Chromium - TR	Lead - TR	Methyl ethyl ketone
Nickel - TR	Nitrate-N + Nitrite-N	Selenium - TR
Zinc - TR		

Group 3: PEQmax < 50 percent of maximum PEL and PEQavg < 50 percent of average PEL.
No limit recommended; monitoring optional.

Cyanide - free	Total Filterable Residue

Group 4: PEQmax >= 50 percent, but < 100 percent of the maximum PEL or
PEQavg >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Bis(2-ethylhexyl) phthalate	Copper - TR

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*	*Average*	*Maximum*
Hexavalent Chromium (Dissolved)	µg/L	11	16
Mercury	ng/L	1.3	1700

PEL = preliminary effluent limit
PEQ = projected effluent quality
WLA = wasteload allocation
WQS = water quality standard

Table 13. 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]	--	--	--	WQS
TSS	mg/L	18[d]	12	102[d]	68	BADCT
Oil & Grease	mg/L	10	--	--	--	WQS
Ammonia (summer)	mg/L	1.5 [d]	1.0	8.5 [d]	5.7	BADCT
Ammonia (winter)	mg/L	4.5 [d]	3.0	25.5 [d]	17.0	BADCT
Total Kjeldahl Nitrogen	mg/L	- - - - - - - - - - Monitor - - - - - - - - - -				M
Nitrate plus Nitrite	mg/L	- - - - - - - - - - Monitor - - - - - - - - - -				M
Phosphorus	mg/L	1.5[d]	1.0	8.5[d]	5.7	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	- - - - - - - - - - Monitor - - - - - - - - - -				M
Dissolved Hexavalent Chromium	µg/L	16	11	0.09	0.06	RP/WLA
E. coli	#/100 mL	284 [d]	126	--	--	WQS
Bis(2-ethylhexyl) Phthalate	µg/L	- - - - - - - - - - Monitor - - - - - - - - - -				RP
Flow Rate	MGD	- - - - - - - - - - Monitor - - - - - - - - - -				M[c]
Mercury	ng/L	1700	1.3	0.0097	0.0000074	WQS
Free Cyanide	µg/L	- - - - - - - - - - Monitor - - - - - - - - - -				M
Acute Toxicity, *Ceriodaphnia dubia*	TUa	1.0	--	--	--	WET
Chronic Toxicity, *Ceriodaphnia dubia*	TUc	--	1.0	--	--	WET
Acute Toxicity, *Pimephales promelas*	TUa	- - - - - - - - - - Monitor - - - - - - - - - -				WET
Chronic Toxicity, *Pimephales promelas*	TUc	- - - - - - - - - - Monitor - - - - - - - - - -				WET
Total Filterable Residue	mg/L	- - - - - - - - - - Monitor - - - - - - - - - -				M
pH, maximum	SU	9.0	--	--	--	WQS
pH, minimum	SU	6.5[m]	--	--	--	WQS
CBOD5	mg/L	15[d]	10	85.2[d]	56.8	BADCT

[a] Effluent loadings based on average design discharge flow of 1.5 MGD.

[b] Definitions:
BADCT = Best Available Demonstrated Control Technology, 40 CFR Part 122.29, and OAC 3745-1-05
M = Permit Guidance 1: Monitoring frequency requirements for Sanitary Discharges
OAC = Ohio Administrative Code
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))

WQS = Ohio Water Quality Standards (OAC 3745-1)
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. Whole Effluent Toxicity Reasonable Potential Analysis

	Water Flea (*Ceriodaphnia dubia*)		Fathead Minnow (*Pimephales promelas*)	
	Acute	**Chronic**	**Acute**	**Chronic**
WLA (TU)	0.3	1.0	0.3	1.0
Total # of Tests	9	9	7	7
Maximum Value (TU)	0.4	1.1	--	--
Coefficient of Variation[1] [Where # tests < 10]	--	0.6	--	--
Multiplying Factors[2]	--	1.8	--	--
PEQ (Maximum Value x Multiplying Factor)	--	2.0	--	--
Reasonable Potential Demonstrated? (Yes/No) (Yes if PEQ > WLA)	No	Yes	No	No

[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