

National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
for **Upper Tuscarawas Wastewater Treatment Plant No. 36 (WWTP)**

Public Notice No.: 15-05-070
Public Notice Date: May 28, 2015
Comment Period Ends: June 28, 2015

Ohio EPA Permit No.: **3PK00013*JD**
Application No.: **OH0064017**

Name and Address of Applicant:
Summit County Environmental Services
2525 State Road
Cuyahoga Falls, Ohio 44223

Name and Address of Facility Where
Discharge Occurs:
Upper Tuscarawas WWTP No. 36
1100 Loamshire Road
Akron, Ohio 44319
Summit County

Receiving Water: Tuscarawas River

Subsequent Stream Network: 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.

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 monitoring requirements proposed for the following parameters are the same as in the previous permit, although some monitoring frequencies have changed: flow, temperature, dissolved oxygen, 5-day carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids, ammonia, nitrate+nitrite, total Kjeldahl nitrogen, oil and grease, phosphorus, pH, cadmium, chromium, bis(2-ethylhexyl) phthalate, copper, free cyanide, *Escherichia coli* (*E. coli*), nickel, total filterable residue (total dissolved solids), and zinc.

Limits are proposed to be removed for dissolved hexavalent chromium because 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 continue.

In accordance with Ohio Administrative Code (OAC) 3745-33-07, it has been determined that the effluent from the Upper Tuscarawas WWTP shows acute toxicity to *Pimephales promelas*. The increased monitoring frequency is proposed to continue.

Monitoring for metals is proposed to be removed at downstream monitoring station 901 because the data isn't necessary for future water quality analysis.

This permit no longer authorizes the use of method 4500 CN-I from Standard Methods for free cyanide testing. As soon as possible, the permittee must begin using either ASTM D7237-10 or OIA-1677-09 both of which are approved methods for free cyanide listed in 40 CFR 136.

To ensure that data is obtained that allows Ohio EPA to make water quality-related decisions regarding bis(2-ethylhexyl) phthalate and free cyanide 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; pretreatment program requirements; 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 addressed 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 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 Elizabeth Buening, (614) 644-2138, Elizabeth.buening@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: http://epa.ohio.gov/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 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, written notification 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 3745-1-35. The permittee shall submit written notification regarding their intent to develop site specific WQS for parameters that are not priority pollutants to the above address no later than 30 days after the Public Notice Date.

Location of Discharge/Receiving Water Use Classification

The Upper Tuscarawas WWTP discharges to the Tuscarawas River at River Mile (RM) 119.8. Figure 1 shows the approximate location of the facility.

This segment of the Tuscarawas River is described by Ohio EPA River Code: 17-500, County: Summit, Ecoregion: Erie Drift Plain. The Tuscarawas River is designated for the following uses under Ohio's WQS (OAC 3745-1-24): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), Class B Primary Contact Recreation (PCR).

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 (PCR) 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 AWS and IWS.

Facility Description

The Upper Tuscarawas WWTP was constructed in 1987 and last upgraded in 2014. The average design flow is 4.0 million gallons per day (MGD). The Upper Tuscarawas WWTP serves the City of Green, Springfield and Coventry Townships and Stark County for a total of 8,200 customers. The Upper Tuscarawas WWTP has the following treatment processes:

- Bar Screen
- Grit Removal
- Primary Sedimentation
- Rotating Biological Contactor (RBC)
- Secondary Clarification
- Media Filtration
- Ferric-Chloride Addition
- Post Aeration
- Ultraviolet Disinfection

The Upper Tuscarawas WWTP has four internal bypasses. These internal bypasses are located around the RBCs and secondary clarifiers; around the sand filters; around post aeration; and around disinfection. Based on information received from the County, these bypasses were part of the plant's original construction and were

built so that individual unit processes could be isolated for maintenance; and that's primarily how they are used. Any flow that does bypass a unit process is monitored as part of the final effluent at outfall 001.

The Upper Tuscarawas WWTP has 100 percent separated sewers in the collection system.

Summit County has an approved pretreatment program at the Upper Tuscarawas WWTP. This approved pretreatment program has one categorical user that discharge 0.008 MGD of flow and one significant non-categorical user that discharge 0.001 MGD of flow.

The Upper Tuscarawas WWTP utilizes the following sewage sludge treatment processes:

- Aerobic Digestion
- Mechanical Dewatering – Filter Press
- Shipped to Quasar

Treated sludge is transferred to another NPDES permit holder. Table 1 shows the last five years of sludge removed from the Upper Tuscarawas WWTP.

Description of Existing Discharge

The Upper Tuscarawas WWTP had several effluent violations which are shown on Table 2. These violations were not caused by a known process error or upset condition.

The Upper Tuscarawas WWTP estimates there is an infiltration/inflow (I/I) rate to the collection system of 0.432 MGD. The average annual effluent flow rate for the Upper Tuscarawas WWTP for the previous five years is presented on Table 3. The Upper Tuscarawas WWTP performs the following activities to minimize I/I: flow monitoring, dye testing, regular sewer inspections, regular rehabilitation and sewer repairs.

The Upper Tuscarawas WWTP reports SSOs at station 300. The number of SSOs and dates recorded is presented on Table 4.

Under the provisions of 40 CFR 122.21(j), the Director has waived the requirement for submittal of expanded effluent testing data as part of the NPDES renewal application. Ohio EPA has access to substantially identical information through the submission of annual pretreatment program reports and/or from Ohio EPA effluent testing conducted.

Table 5 presents chemical specific data compiled from data reported in annual pretreatment reports.

Table 6 presents a summary of unaltered Discharge Monitoring Report (DMR) data for outfall 001. Data are presented for the period January 2010 through December 2014, and current permit limits are provided for comparison.

Table 7 summarizes the chemical specific data for outfall 001 by presenting the average and maximum PEQ values.

Table 8 summarizes the results of acute and chronic WET tests of the final effluent.

Assessment of Impact on Receiving Waters

The Tuscarawas River has been identified as a priority impaired water on Ohio's 303(d) list. A final TMDL for the Tuscarawas River was approved by USEPA on September 15, 2009; this TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/MuskingumRiver.aspx#120213158-tuscarawas-river>.

However, the March 24, 2015, Supreme Court of Ohio decision *Fairfield Cty. Bd. of Commrs. v. Nally, Slip Opinion No. 2015-Ohio-991* vacated all previously approved TMDLs. As of May 18, 2015, this TMDL is considered a technical guidance document pending final TMDL approval.

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 7-15). 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 (IBI) and modified Index of Well-Being (MIwb), which indicate the response of the fish community, and the Invertebrate Community Index (ICI), which indicates the response of the macroinvertebrate community. Numerical criteria are broken down by ecoregion, use designation, and stream or river size. Ohio has five ecoregions defined by common topography, land use, potential vegetation and soil type.

Three attainment status results are possible at each sampling location -full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails 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 9) is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (i.e., full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and comments and observations for each sampling location.

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 Upper Tuscarawas 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 2010 through December 2014

Outliers

The data were examined, and the following values were removed from the evaluation to give a more reliable PEQ: nitrate+nitrite – 2.54 mg/L, March 3, 2010, dissolved hexavalent chromium – 2 µg/L, October 12, 2011, and lead – 3.2 µg/L, July 12, 2014. All three of these values were excluded because they were low values that negatively affected the statistics.

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 7).

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 14 for a summary of the screening results.

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 degrade in the receiving water. WLAs using this method are done 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.

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

Aquatic life (WWH)		
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia	Average	Summer 30Q10
		Winter 30Q10
AWS		Harmonic mean flow
Human Health (nondrinking)		Harmonic mean flow

Allocations are developed using a percentage of stream design flow as specified in Table 11, and allocations cannot exceed the Inside Mixing Zone Maximum (IMZM) criteria.

Ohio's WQS implementation rules [OAC 3745-2-05(A)(2)(d)(iv)] required a phase out of mixing zones for bioaccumulative chemicals of concern (BCCs) as of November 15, 2010. This rule applied statewide. Mercury is a BCC. The mixing zone phase-out means that as of November 15, 2010 all dischargers requiring mercury limits in their NPDES permit must meet WQS at the end-of-pipe, which for mercury are 12 ng/L (average) and 1700 ng/L (maximum) in the Ohio River basin.

The data used in the WLA are listed in Table 10 and Table 11. The WLA results to maintain all applicable criteria are presented in Table 12.

Whole Effluent Toxicity WLA

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 (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 the Upper Tuscarawas WWTP, the WLA values are 0.6 TU_a and 2.07 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 (IC₂₅):

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

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

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

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

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

This equation applies outside the mixing zone for warmwater, modified warmwater, exceptional warmwater, coldwater, and seasonal salmonid use designations.

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

<u>Dilution Ratio</u> <u>(downstream flow to discharger flow)</u>	<u>Allowable Effluent Toxicity</u> <u>(percent effects in 100% effluent)</u>
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

The acute WLA for the Upper Tuscarawas WWTP is 30 percent mortality in 100 percent effluent based on the dilution ratio of 1.9 to 1.

Reasonable Potential/ Effluent Limits/Hazard 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 6. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 7, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value

$[(PEQ_{avg} \div PEL_{avg}) \times 100, \text{ or } (PEQ_{max} \div PEL_{max}) \times 100]$, the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 13.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 14 presents the final effluent limits and monitoring requirements proposed for Upper Tuscarawas 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.

Flow Rate and Water Temperature

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

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

The limits proposed for these parameters are all based on plant design criteria. These limits are protective of WQS. 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 3745-1-07). Class B PCR *E. coli* standards apply to the Tuscarawas River.

Bis(2-ethylhexyl) phthalate

The Ohio EPA risk assessment (Table 13) places bis(2-ethylhexyl) phthalate in group 5. This placement, as well as the data in Tables 6 and 7, indicates that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. For these parameters, the PEQ is greater than 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). The limits for bis(2-ethylhexyl) phthalate are proposed to continue.

Dissolved Hexavalent Chromium and Total Filterable Residue

The Ohio EPA risk assessment (Table 13) places dissolved hexavalent chromium and total filterable residue in group 4. This placement, as well as the data in Tables 6 and 7, 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 dissolved hexavalent chromium are proposed to be removed but monitoring will continue at the same frequency.

Nitrate+Nitrite, Cadmium, Copper, Chromium, Lead, Mercury, Nickel, and Zinc

The Ohio EPA risk assessment (Table 13) places nitrate+nitrite, cadmium, copper, chromium, lead, mercury, nickel, and zinc in groups 2 and 3. This placement, as well as the data in Tables 6 and 7, 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 at a reduced frequency is proposed to document that these pollutants continue to remain at low levels.

Arsenic, Silver, Molybdenum, Free Cyanide, and Selenium

The Ohio EPA risk assessment (Table 13) places arsenic, silver, molybdenum, free cyanide, and selenium in group 2; this placement, as well as the data in Tables 6 and 7, 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.

Phosphorus and Total Kjeldahl Nitrogen

The 2014 Ohio Integrated Water Quality Monitoring and Assessment Report (Ohio EPA) lists the Tuscarawas River 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 total Kjeldahl nitrogen is proposed based on BEJ. Monitoring for phosphorus and nitrate + nitrite at the upstream and downstream stations also is proposed. The limits for phosphorus (summer only) is proposed to continue. The purpose of the monitoring is to maintain a data set for use in future nutrient-related water quality studies.

Whole Effluent Toxicity Reasonable Potential

Based on evaluating the WET data presented in Table 8 and other pertinent data under the provisions of OAC 3745-33-07(B), the Upper Tuscarawas WWTP is placed in Category 3 with respect to WET. No limits are proposed, but increased acute testing is proposed to continue for *Pimephales promelas* and *Ceriodaphnia dubia* for the duration of the permit.

Additional Monitoring Requirements

Monitoring for metals is proposed to be removed at downstream monitoring station 901 because the data isn't necessary for future water quality analysis.

Sludge

Limits and monitoring requirements proposed for the disposal of sewage sludge by the following management practices are based on OAC 3745-40: 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 County 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 County must also submit a pretreatment program modification request. 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 adopted in December 2006 (OAC 3745-7-02). These rules require the Upper Tuscarawas WWTP to have a Class III wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 00X. These rules also require the permittee to designate one or more operator of record to oversee the technical operation of the “treatment works”.

Low-Level Free Cyanide Testing

Currently there are two approved methods for free cyanide listed in 40 CFR 136.3 that have quantification levels lower than any water quality-based effluent limits:

- ASTM D7237-10 and OIA-1677-09 - Flow injection followed by gas diffusion amperometry

These methods will allow Ohio EPA 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.

New NPDES permits no longer authorize the use of method 4500 CN-I from Standard Methods for free cyanide testing. The new permits require permittees to begin using one of these approved methods as soon as possible. If a permittee must use method 4500 CN-I during the transition to an approved method, they are instructed to report the results on their DMR and enter “Method 4500 CN-I” in the remarks section.

Method Detection Limit

The reported data for bis(2-ethylhexyl) phthalate and free cyanide shows that the Upper Tuscarawas WWTP used an analytical method with a MDL that is not sensitive enough to properly evaluate the discharge with regard to the WLA for this parameter. As a result, Part II of the permit includes a condition requiring the Upper Tuscarawas WWTP to use an analytical method with an appropriate MDL.

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. As an alternative to complying with Parts IV, V, and VI, the Upper Tuscarawas WWTP may seek permit coverage under the general permit for industrial storm water (permit # OHR000005) or submit a “No Exposure Certification.” Parts IV, V, and VI will be removed from the final permit if: 1) the Upper Tuscarawas WWTP submits a Notice of Intent (NOI) for coverage under the general permit for industrial storm water or submits a No Exposure Certification, 2) Ohio EPA determines that the facility is eligible for coverage under the general permit or meets the requirements for a No Exposure Certification, and 3) the determination by Ohio EPA can be made prior to the issuance of the final permit.

Outfall Signage

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

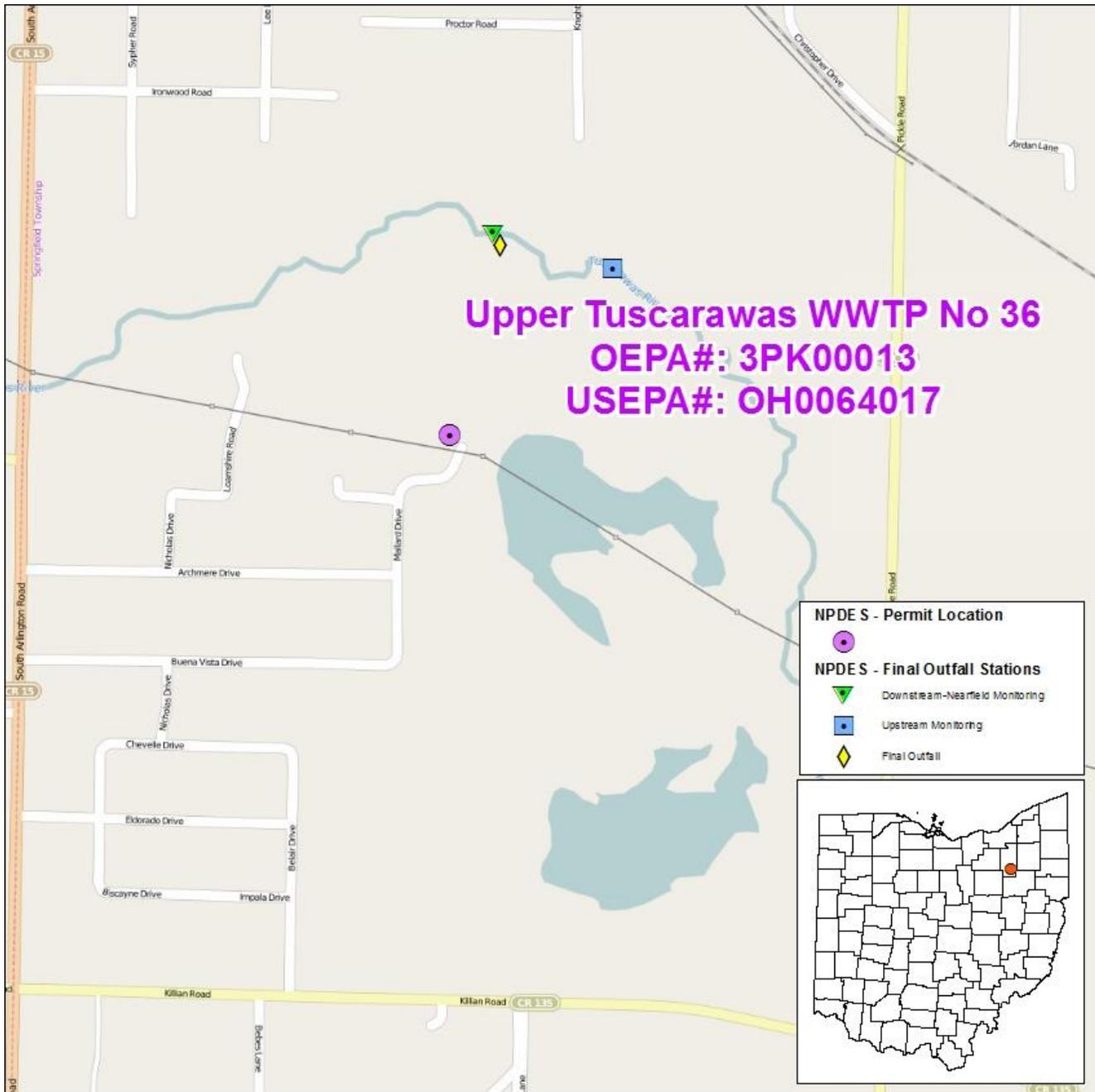


Figure 1. Location of the Upper Tuscarawas WWTP No. 36

Table 1. Sewage Sludge Removal

Fact Sheet for NPDES Permit Renewal, Upper Tuscarawas WWTP No. 36, 2015

Sampling Station	Dry Tons Removed				
	2010	2011	2012	2013	2014
581	0	0	0	0	0
586	0	523.34	457.22	502.88	539.53
588	183.28	96.63	0	0	0
<i>Total</i>	<i>183.28</i>	<i>619.97</i>	<i>457.22</i>	<i>502.88</i>	<i>539.53</i>

Table 2. Effluent Violations for Outfall 001

Parameter	2010	2011	2012	2013	2014
Ammonia	0	0	13	28	27
Bis(2-ethylhexyl) Phthalate	2	0	2	0	0

E. coli	0	0	18	12	12
Fecal Coliform	3	4	0	0	0
Dissolved Oxygen	0	2	2	0	1
Oil & Grease	0	0	1	0	0
pH (minimum)	0	0	5	11	2
Phosphorus	0	0	3	2	6
Total Suspended Solids	0	2	14	1	5
<i>Total</i>	5	8	58	54	53

Table 3. Average Annual Effluent Flow Rates

Year	Annual Flow in MGD		
	50th Percentile	95th Percentile	Maximum
2010	2.61	3.398	4.2
2011	3.04	4.39	6.87
2012	2.68	3.59	6.19
2013	2.96	3.708	5.68

2014	3.41	4.55	7.29
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MGD = Million gallons per day

Table 4. Sanitary Sewer Overflows Discharge

Year	Number
2010	2
2011	4
2012	1
2013	0
2014	1

Table 5. Effluent Characterization Using Pretreatment Data

Parameter (µg/L)	7/12/2014	7/10/2013	7/19/2012	7/19/2011
Arsenic	2.6	AA (1.0)	AA (1.0)	AA (1.0)
Barium	20.8	ND	ND	ND
Bis(2-ethylhexyl)phthalate	AA (10)	AA (10)	AA (4.0)	AA (4.0)
Cadmium	AA (1.0)	AA (0.5)	AA (0.5)	AA (0.5)
Chromium	AA (1.0)	AA (0.5)	AA (0.5)	AA (0.5)
Copper	AA (1.0)	AA (2.0)	AA (1.0)	6
Lead	3.2	AA (2.0)	AA (2.0)	AA (2.0)
Molybdenum	2.2	AA (1.0)	ND	ND
Nickel	2.7	AA (1.0)	AA (1.0)	AA (1.0)
Selenium	AA (1.0)	AA (1.0)	AA (1.0)	AA (1.0)
Silver	AA (1.0)	AA (1.0)	AA (1.0)	AA (1.0)
Zinc	16.1	26	79	22

AA = Not-detected (analytical method detection limit)

ND = Not determined

Table 6. Effluent Characterization Using Self-Monitoring Data

Summary of current permit limits and unaltered discharge monitoring report for the Upper Tuscarawas outfall 3PK00013001 (January 2010 - December 2014). All values are based on annual records unless otherwise indicated.

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50 th	95 th	
Water Temperature	Annual	°C	--	Monitor	1826	17	22.3	10.7-137
Dissolved Oxygen	Summer	mg/L	--	5.0 min	920	7.02	8.46	4.94-9.2
Dissolved Oxygen	Winter	mg/L	--	5.0 min	903	7.98	9.36	4.04-9.91
Total Filterable Residue	Annual	mg/L	Monitor	--	59	1110	1410	740-1590
Total Suspended Solids	Annual	mg/L	12	18 ^a	721	6	18	0-31
Total Suspended Solids	Annual	kg/day	182	272 ^a	721	67	222	0-400
Oil and Grease	Annual	mg/L	--	10	121	0	6	0-15
Ammonia	Summer	mg/L	1.5	2.25 ^a	362	1.5	4.5	0.3-8
Ammonia	Winter	mg/L	--	Monitor	361	2.4	5.8	0.3-8.5
Ammonia	Summer	kg/day	22.7	34.1 ^a	362	17.1	50.7	3.4-97.5
Ammonia	Winter	kg/day	--	Monitor	361	26.9	74.8	3.22-94.9

Kjeldahl Nitrogen, Total	Annual	mg/L	Monitor	--	79	2.83	5.55	0-7.1
Nitrate+Nitrite	Annual	mg/L	Monitor	--	60	16.9	20.8	2.54-30.4
Phosphorus	Annual	mg/L	1.0	1.5 ^a	246	0.6	1.18	0.1-3.1
Phosphorus	Annual	kg/day	15.1	22.7	246	6.6	14.6	1.42-29.8
Cyanide, Free	Annual	mg/L	Monitor	--	32	0	0	0-0
Nickel	Annual	µg/L	Monitor	--	32	0	3	0-3.32
Zinc	Annual	µg/L	Monitor	--	32	32.3	62	0-64
Cadmium	Annual	µg/L	Monitor	--	32	0	0	0-0
Lead	Annual	µg/L	Monitor	--	32	0	5.59	0-6.02

Table 6. (Continued)

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50 th	95 th	
Chromium	Annual	µg/L	Monitor	--	32	0	0	0-0
Copper	Annual	µg/L	Monitor	--	32	3.09	8	0-9
Dissolved Hexavalent Chromium	Annual	µg/L	23	31	60	0	13	0-15
Dissolved Hexavalent Chromium	Annual	kg/day	0.348	0.469	60	0	0.153	0-0.201
E. coli	Annual	#/100 mL	161	362 ^a	269	310	1960	3-46000
Bis(2-ethylhexyl)phthalate	Annual	µg/L	17	2100	32	0	19	0-40
Bis(2-ethylhexyl)phthalate	Annual	kg/day	0.26	31.8	32	0	0.183	0-0.391
Flow Rate	Summer	MGD	--	Monitor	920	2.82	4.05	2.13-7.29
Flow Rate	Winter	MGD	--	Monitor	906	3.02	4.19	2.14-6.54
Flow Rate	Annual	MGD	--	Monitor	1826	2.88	4.12	2.13-7.29
Mercury	Annual	ng/L	Monitor	--	32	1.49	3.68	0.51-4.59
pH, Maximum	Annual	S.U.	--	9.0	1826	7.46	8.14	6.6-8.99
pH, Minimum	Annual	S.U.	--	6.5	1826	6.93	7.55	4.27-9.92

CBOD ₅	Annual	µg/L	10	15 ^a	712	4	9	0-17
CBOD ₅	Annual	kg/day	151	227 ^a	712	51.6	126	0-278

a = Weekly average

CBOD₅ = 5-Day carbonaceous biochemical oxygen demand

MGD = Million gallons per day

Table 7. Projected Effluent Quality

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Ammonia (Summer)	mg/L	242	242	2.4058	4.0506
Ammonia (Winter)	mg/L	180	180	3.977	6.8996
Arsenic	µg/L	4	1	4.9348	6.76
Barium	µg/L	1	1	94.1408	128.96
Bis(2-ethylhexyl)phthalate	µg/L	36	11	32.12	44
Cadmium	µg/L	36	0	--	--
Chromium	µg/L	36	0	--	--
Dissolved Hexavalent Chromium	µg/L	59	24	10.422	15.703
Copper	µg/L	36	23	6.549	10.145
Cyanide, Free	mg/L	32	0	--	--
Total Filterable Residue	mg/L	59	59	1285.6	1484.1
Lead	µg/L	35	9	4.8945	6.2161
Mercury	ng/L	32	32	2.9223	4.4067
Molybdenum	µg/L	2	1	6.1028	8.36
Nickel	µg/L	36	12	2.6747	3.3161
Nitrate+Nitrite	mg/L	59	59	19.892	23.353
Selenium	µg/L	4	0	--	--
Silver	µg/L	4	0	--	--

Zinc	µg/L	36	34	55.383	81.57
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PEQ = Projected Effluent Quality

MDL = Method Detection Limit

Table 8. Summary of Acute and Chronic Toxicity Test Results

Date	<i>Ceriodaphnia Dubia</i>		<i>Pimephales promelas</i>	
	Acute Toxicity (TU _a)	Chronic Toxicity (TU _c)	Acute Toxicity (TU _a)	Chronic Toxicity (TU _c)
6/3/2010	AA	AA	1.1	AA
12/21/2010	AA	AA	AA	AA
6/14/2011	AA	3.82	0.2	AA
12/6/2011	AA	ND	0.2	ND
6/11/2012	AA	AA	AA	AA
12/11/2012	AA	ND	AA	ND
6/6/2013	AA	AA	AA	AA
12/8/2013	AA	ND	AA	ND
6/3/2014	AA	AA	0.5	1.02
12/16/2014	AA	ND	AA	ND

AA = Non-detection; analytical method detection limit of 0.2 TU_a, 1.0 TU_c

ND = Not determined

Table 9. Use Attainment Table

River Mile	Aquatic Life Use Attainment Status	Recreation Use Attainment Status	QHEI	Impaired Cause	Impaired Source
Tuscarawas River - Erie Ontario Lake Plain Ecoregion - WWH existing					
126.7	NON	NON	70.5	Habitat alteration, siltation, organic enrichment, pathogen	Suburbanization, channelization
123.1	PART	FULL	70.5	Flow alteration, organic enrichment, nutrients	Suburbanization, channelization
122.7	PART	FULL	62.5	Flow alteration, organic enrichment, nutrients	Suburbanization, channelization
122.5	PART	FULL	71.0	Flow alteration, organic enrichment, nutrients	Suburbanization, channelization
120.1	FULL	FULL	75.0		
119.3	FULL	FULL	58.0		

QHEI = Qualitative Habitat Evaluation Index

Table 10. 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		
Ammonia (Summer)	mg/L	--	--	0.9	--	--
Ammonia (Winter)	mg/L	--	--	3.1	--	--
Arsenic	µg/L	--	100	150	340	680
Barium	µg/L	--	--	220	2000	4000
Bis(2-ethylhexyl)phthalate	µg/L	59 ^c	--	8.4	1100	2100
Cadmium	µg/L	--	50	5.5	14	29
Chromium	µg/L	--	100	200	4200	8400
Dissolved Hexavalent Chromium	µg/L	--	--	11	16	31
Copper	µg/L	1300	500	22	37	74
Cyanide, Free	mg/L	220	--	0.012	0.046	0.092
Total Filterable Residue	mg/L	--	--	1500	--	--
Lead	µg/L	--	100	24	450	910
Mercury	ng/L	12	10000	910	1700	3400
Molybdenum	µg/L	--	--	20000	190000	370000
Nickel	µg/L	4600	200	120	1100	2200
Nitrate+Nitrite	mg/L	--	100	--	--	--
Selenium	µg/L	11000	50	5	--	--
Silver	µg/L	--	--	1.3	9.4	19
Zinc	µg/L	69000	25000	290	290	570

c = Carcinogen

Table 11. Instream Conditions and Discharger Flow

Parameter	Units	Season	Value	Basis
1Q10	cfs	annual	5.69	Previous WLA
7Q10	cfs	annual	6.64	Previous WLA
30Q10	cfs	summer	7.59	Previous WLA
30Q10	cfs	winter	8.15	Previous WLA
Harmonic Mean	cfs	annual	16.14	Previous WLA
Mixing Assumption	%	average	100	
Mixing Assumption	%	maximum	100	
Hardness	mg/L	annual	280	DMR Station 901, 2010-2014, n=60
pH	S.U.	summer	8.115	DMR Station 901, 2010-2014, n=20
pH	S.U.	winter	8.0375	DMR Station 901, 2010-2014, n=14
Temperature	°C	summer	22.675	DMR Station 901, 2010-2014, n=20
Temperature	°C	winter	7.625	DMR Station 901, 2010-2014, n=14
Upper Tuscarawas WWTP flow	cfs	annual	6.19	NPDES Renewal Application
Ammonia	mg/L	summer	0.065	DMR; 2010-2014; n=20; 2<MDL; Station 801; Median
Ammonia	mg/L	winter	0.095	DMR; 2010-2014; n=14; 0<MDL; Station 801; Median
Arsenic	µg/L	annual	2.56	STORET; 2003, 2004; n=9; 0<MDL; Stations R06G01, R06P27
Barium	µg/L	annual	97.9	STORET; 2003, 2004; n=9; 0<MDL; Stations R06G01, R06P27
Bis(2-ethylhexyl)phthalate	µg/L	annual	--	No representative data available.
Cadmium	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27
Chromium	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27
Dissolved Hexavalent Chromium	µg/L	annual	--	No representative data available.
Copper	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27

Cyanide, Free	mg/L	annual	--	No representative data available.
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Table 11. (Continued)

Parameter	Units	Season	Value	Basis
Total Filterable Residue	mg/L	annual	514	STORET; 2003, 2004; n=9; 0<MDL; Stations R06G01, R06P27
Lead	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27
Mercury	ng/L	annual	--	No representative data available.
Molybdenum	µg/L	annual	--	No representative data available.
Nickel	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27
Nitrate+Nitrite	mg/L	annual	2.2	DMR; 2010-2014; n=41; 0<MDL; Station 801; Median
Selenium	µg/L	annual	0	STORET; 2003, 2004; n=9; 9<MDL; Stations R06G01, R06P27
Silver	µg/L	annual	--	No representative data available.
Zinc	µg/L	annual	6	STORET; 2003, 2004; n=9; 8<MDL; Stations R06G01, R06P27

WWTP = Wastewater Treatment Plant

DMR = Discharge Monitoring Report

USGS = United States Geological Survey

MDL = Method Detection Limit

STORET = United States Environmental Protection Agency STORage and RETrieval Data Warehouse

WLA = Wasteload allocation

Table 12. 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	--	--	--	--	--
Ammonia (Winter)	mg/L	--	--	--	--	--
Arsenic	µg/L	--	354	308	650	680
Barium	µg/L	--	--	351	3748	4000
Bis(2-ethylhexyl)phthalate	µg/L	213	--	17	2111	2100
Cadmium	µg/L	--	180	11	27	29
Chromium	µg/L	--	361	415	8061	8400
Dissolved Hexavalent Chromium	µg/L	--	--	23	31	31
Copper	µg/L	4690	1804	46	71	74
Cyanide, Free	mg/L	794	--	0.025	0.088	0.092
Total Filterable Residue	mg/L	--	--	2558	--	--
Lead	µg/L	--	361	50	864	910
Mercury	ng/L	12	10000	910	1700	3400
Molybdenum	µg/L	--	--	41454	364653	370000
Nickel	µg/L	16594	721	249	2111	2200
Nitrate+Nitrite	mg/L	--	355	--	--	--
Selenium	µg/L	39682	180	10	--	--
Silver	µg/L	--	--	2.7	18	19
Zinc	µg/L	248897	90170	595	551	570

Table 13. Parameter Assessment

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

No Parameters meet these criteria

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

Arsenic	Chromium	Nitrate+Nitrite	Silver
Molybdenum	Nickel	Selenium	Lead
Cyanide, Free	Mercury	Cadmium	

Group 3: PEQ_{max} < 50 percent of maximum PEL and PEQ_{avg} < 50 percent of average PEL. No limit recommended; monitoring optional.

Copper	Barium	Zinc
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Group 4: PEQ_{max} >= 50 percent, but < 100 percent of the maximum PEL or PEQ_{avg} >= 50 percent, but < 100 percent of the average PEL. Monitoring is appropriate.

Total Filterable Residue	Dissolved Hexavalent Chromium
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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

<u>Parameter</u>	<u>Units</u>	<u>Period</u>	<u>Recommended Effluent Limits</u>	
			<u>Average</u>	<u>Maximum</u>
Bis(2-ethylhexyl)phthalate	µg/L	Annual	17	2100

PEQ = Projected Effluent Quality
 PEL = Projected Effluent Limit
 WLA = Wasteload allocation
 WQS = Water quality standard

Table 14. Final Effluent Limits for Outfall 001

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^b
		30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	
Acute Toxicity						
<i>Ceriodaphnia dubia</i>	TU _a	----- Monitor -----				WET
<i>Pimephales promelas</i>	TU _a	----- Monitor -----				WET
Chronic Toxicity						
<i>Ceriodaphnia dubia</i>	TU _c	----- Monitor -----				WET
<i>Pimephales promelas</i>	TU _c	----- Monitor -----				WET
Ammonia						
Summer	mg/L	1.5	2.25 ^c	22.7	34.1 ^c	EP, PD
Winter	mg/L	----- Monitor -----				EP, PD
Bis(2-ethylhexyl)phthalate	µg/L	17.0	2100	0.26	31.8	EP, RP
Cadmium	µg/L	----- Monitor -----				EP, M
CBOD ₅	mg/L	10	15 ^c	151	227 ^c	EP, PD
Chromium	µg/L	----- Monitor -----				EP, M
Copper	µg/L	----- Monitor -----				EP, M
Cyanide, Free	mg/L	----- Monitor -----				EP, M
Dissolved Oxygen	mg/L	5.0 minimum		--	--	EP, PD
<i>E. coli</i>						
Summer Only	#/100 mL	161	362 ^c	--	--	WQS, EP
Flow Rate	MGD	----- Monitor -----				EP, M
Dissolved Hexavalent Chromium	µg/L	----- Monitor -----				EP, RP
Lead	µg/L	----- Monitor -----				EP, M
Mercury	ng/L	----- Monitor -----				EP, M
Nickel	µg/L	----- Monitor -----				EP, M
Nitrate+Nitrite	mg/L	----- Monitor -----				EP, M
Oil & Grease	mg/L	--	10	--	--	WQS, EP

Table 14. (Continued)

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^b
		30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	
pH	SU	6.5 - 9.0		--	--	WQS, EP
Phosphorus	mg/L	1.0	1.5 ^c	15.1	22.7 ^c	EP, M
Total Filterable Residue	mg/L	----- Monitor -----				EP, RP
Kjeldahl Nitrogen, Total	mg/L	----- Monitor -----				EP, M
Total Suspended Solids	mg/L	12.0	18 ^c	182	272 ^c	EP, PD
Water Temperature	°C	----- Monitor -----				EP, M
Zinc	µg/L	----- Monitor -----				EP, M

a = Effluent loadings based on average design discharge flow of 4.0 MGD.

b = Definitions

BEJ = Best Engineering Judgment

EP = Existing Permit

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

RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A))

WET = Whole Effluent Toxicity (CFR 40 part 132, Great Lakes Initiative procedure 6 and OAC 3745-33-07(B))

WLA = Wasteload Allocation procedures (OAC 3745-2)

WQS = Ohio Water Quality Standards (OAC 3745-1)

c = Weekly average limit

CBOD₅ = 5-Day carbonaceous biochemical oxygen demand

PD = Plant Design

MGD = Million gallons per day

S.U. = Standard Units

TU_a = Acute toxicity units

TU_c = Chronic toxicity units