

National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
for Sandusky Water Pollution Control Plant

Public Notice No.: 13-04-062
Public Notice Date: April 24, 2013
Comment Period Ends: May 24, 2013

OEPA Permit No.: 2PF00001*OD
Application No.: OH0027332

Name and Address of Applicant:

City of Sandusky
222 Meigs Street
Sandusky, Ohio 44870

Name and Address of Facility Where
Discharge Occurs:

Sandusky Water Pollution Control Plant
304 Harrison Street
Sandusky, Ohio 44870

Receiving Water: Sandusky Bay

Subsequent
Stream Network: Lake Erie

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, 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, 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 and Ohio Water Pollution Control Law (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

Effluent limits based on available treatment technologies are required by Section 301(b) of the Clean Water Act. Many of these have already been established by 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 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 wasteload allocation for a pollutant to a measure of the effluent quality. The measure of effluent quality is called PEQ - Projected Effluent Quality. 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 Sandusky wastewater treatment plant has an average daily design flow of 15.7 million gallons per day (MGD). Its peak hydraulic capacity was expanded from 24 MGD to 42 MGD in order to accept more wet weather flow.

The concentration limits proposed for phosphorus are based on the provisions of OAC 3745-33-06(C). They are a continuation of existing permit limits.

Based on OAC 3745-33-05(C)(1)(c), the loading limits proposed for CBOD5, TSS, ammonia-nitrogen and phosphorus are based on a wet weather flow value of 22 MGD. They are a continuation of existing limits.

Based on best engineering judgment, it's proposed that the current monitoring requirements for dissolved oxygen, flow and temperature be continued. It is proposed that nitrate-nitrogen and nitrite-nitrogen monitoring continue as a single parameter, nitrate+nitrite-nitrogen.

The limits proposed for *E. coli*, oil and grease, and pH are based on Ohio water quality standards (OAC 3745-1-07) and are a continuation of existing permit limits.

Continuation of the current monitoring requirements for free cyanide, cadmium, total chromium, dissolved hexavalent chromium, copper, lead, nickel and zinc is proposed.

Based on best engineering judgment, monitoring for dissolved solids is proposed.

A general mercury variance was renewed for Sandusky WWTP. New limits are proposed for mercury.

Based on best engineering judgment, and the provisions of 40 CFR Part 132, Appendix F, Procedure 6, twice per year acute and chronic toxicity monitoring for *Ceriodaphnia dubia* is proposed for the life of the permit. Annual acute and chronic toxicity monitoring for *Pimephales promelas* is proposed for the life of the permit, which satisfies the minimum testing requirements of OAC 3754-33-07(B)(11) and will adequately characterize toxicity in the plant's effluent.

Monitoring and reporting requirements are proposed for each of the City's combined sewer overflows. The permit also requires that the City implement the nine minimum control measures at all of its CSOs. Additional CSO requirements, including the implementation of long-term controls, are addressed in a February 1995 Consent Order that was amended in December 1997: *State of Ohio vs. City of Sandusky*, Case No. 95-CV-053. In Part II of the permit, special conditions are included that address sanitary sewer overflow reporting; operator certification, minimum staffing and operator of record; whole effluent toxicity testing; outfall signage; and pretreatment program requirements.

Table of Contents

	Page
Introduction	1
Summary of Permit Conditions	2
Table of Contents	4
Procedures for Participation in the Formulation of Final Determinations	5
Location of Discharge/Receiving Water Use Classification	6
Facility Description	6
Description of Existing Discharge	7
Assessment of Impact on Receiving Waters	7
Development of Water Quality Based Effluent Limits	7
Reasonable Potential / Effluent Limits / Hazard Management Decisions	9
Other Requirements	12

List of Figures

Figure 1. Location of Sandusky WWTP	13
---	----

List of Tables

Table 1. Effluent Characterization Using Self-Monitoring Data	14
Table 2. Effluent Characterization Using Ohio EPA Data and Pretreatment Data	16
Table 3. Effluent Characterization for the Sandusky WWTP	17
Table 4. Summary of toxicity results on the Sandusky wastewater treatment plant effluent.....	18
Table 5. Sandusky Combined Sewer Overflow Discharges.....	19
Table 6. Water Quality Criteria in the Study Area.....	20
Table 7. Instream Conditions and Discharger Flow.....	21
Table 8. Summary of Effluent Limits to Maintain Applicable WQ Criteria.....	23
Table 9. Parameter Assessment.....	24
Table 10. Final Effluent Limits and Monitoring Requirements.....	25

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 OEPA 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 Megan Zale, (614) 644-2027, megan.zale@epa.state.oh.us.

Location of Discharge/Receiving Water Use Classification

The Sandusky WWTP discharges to the Sandusky Bay at river mile 1245.55. Figure 1 shows the approximate location of the facility.

This section of the Sandusky Bay is described by Ohio EPA River Code: 05-900, County: Erie. The Sandusky Bay is designated for the following uses under Ohio's Water Quality Standards (OAC 3745-1-31): Exceptional Warmwater Habitat (EWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), Public Water Supply (PWS), Superior High Quality Water (SHQW), and Bathing Water (BW).

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 water quality standards 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 Clean Water Act. Ohio WQS also include aquatic life use designations for waterbodies which can not meet the Clean Water Act goals because of human-caused conditions that can not 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) and wading only (Secondary Contact - 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 and industrial water supply.

Facility Description

The Sandusky wastewater plant is a secondary treatment facility with an average design flow of 15.7 million gallons per day (MGD). Under wet weather conditions, the plant is capable of treating 42 MGD while still meeting its concentration limits. Wet stream processes are screening and influent pumping, aerated grit removal, primary settling, activated sludge aeration, phosphorus removal, secondary clarification, and ultraviolet disinfection. Solid stream processes are thickening of the waste activated sludge, sludge stabilization by anaerobic digestion, and recycling of stabilized sludge by land application at agronomic rates.

Sandusky's collection system is approximately 20 percent separate and 80 percent combined. There are 14 overflows on the combined portion of the system. These are direct discharges to Sandusky Bay, and one to Pipe Creek. The City's CSO control requirements are addressed in a February 1995 Consent Order that was amended in December 1997: State of Ohio vs. City of Sandusky, Case No. 95-CV-053. The City of Sandusky plans to install a sewer line to transfer CSO waste to a holding tank in the near future.

The City completed a number of sewer separation projects including: the Perry Street Project, the West End Sewer Separation, and the Downtown Sewer Separation. These projects were projected to remove approximately 84 million gallons of storm water from the combined sewer system.

The City completed the phased expansion of the wastewater plant as part of implementing its general plan for providing adequate treatment of sanitary sewer flows and reducing combined sewer overflow discharges. The average daily design flow of the plant increased from 14.7 to 15.7 MGD, and the peak hydraulic capacity increased from 24.0 to 42.0 MGD. This included an expansion of the secondary treatment facilities, effluent pumping and sludge storage. Hydraulic improvements allow the 42.0 MGD peak flow rate to be treated through the headworks, secondary treatment, disinfection and pumping.

Sandusky implements an Ohio EPA-approved industrial pretreatment program. Based on information in the 2012 NPDES renewal application, 2 categorical industrial users and 4 significant noncategorical industrial users discharge flows of approximately 0.50 MGD to the treatment plant.

Description of Existing Discharge

Table 1 presents a summary of unaltered Discharge Monitoring Report (DMR) data for outfall 2PF00001001. Data are presented for the period 2007-2012, and current permit limits are provided for comparison.

Table 2 presents additional chemical specific data compiled from data reported in annual pretreatment reports and data collected by Ohio EPA.

Table 3 summarizes the chemical specific data for outfall 001 by presenting the average and maximum Projected Effluent Quality (PEQ) values.

Table 4 summarizes the results of acute and chronic whole effluent toxicity tests of the final effluent.

Table 5 summarizes CSO discharges to the Sandusky Bay from Sandusky WWTP.

The City reports sanitary sewer overflow (SSO) occurrences under Station 300 in its NPDES permit. The City reported 9 SSOs in 2009, 5 in 2010 and 8 in 2011. Based on information from the City, all SSOs are corrected when they are discovered.

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 effluent testing conducted by the Agency.

Assessment of Impact on Receiving Waters

Information on the Lake Erie Western Basin Shoreline assessment unit is included in the Ohio 2012 Integrated Water Quality Monitoring and Assessment Report, Final Report (Ohio EPA Division of Surface Water, May 20, 2012). Sandusky Bay is included in this assessment unit. The assessment indicates aquatic life impairment, with nutrients, siltation, organic enrichment/dissolved oxygen and exotic species as high magnitude causes. Municipal point sources, combined sewer overflows, and nonirrigated crop production are listed as high magnitude sources of impairment. The assessment unit is also impaired for recreation use.

No monitoring of the area has been completed since 2001 and 2002. Monitoring is scheduled for 2013, and a TMDL (total maximum daily load) study is scheduled for 2016. The 2012 Integrated Water Quality Monitoring and Assessment Report can be found at <http://epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx>.

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 Sandusky WWTP were used to determine what parameters should undergo wasteload allocation. The parameters discharged are identified by the data available to Ohio EPA - Discharge Monitoring Report (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 2007 through December 2012
NPDES Application data / Pretreatment data	2009-2011
Ohio EPA compliance sampling data	2011

The data were examined, and the following values were removed from the evaluation to give a more reliable projection of effluent quality: 10 nitrate nitrogen values.

This data is evaluated statistically, and Projected Effluent Quality (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. The average and maximum PEQ values are presented in Table 3.

The PEQ values are used according to Ohio rules to compare to applicable water quality standards (WQS) and allowable wasteload allocation (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 wasteload allocation is done for that parameter. If either PEQ_{avg} or PEQ_{max} is greater than 25 percent of the applicable WQS, a wasteload allocation is conducted to determine whether the parameter exhibits reasonable potential and needs to have a limit or if monitoring is required. See Table 9 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 Water Quality Standards (OAC 3745-1). Most pollutants are allocated by a mass-balance method because they do not degrade in the receiving water.

Wasteload allocations for direct discharges to lakes are done using the following equation for average criteria: $WLA = (11 \times \text{Water Quality Criteria}) - (10 \times \text{Background Concentration})$. Allocations for maximum criteria are set equal to the Inside Mixing Zone Maximum values.

Ohio's water quality standard 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 water quality standards at the end-of-pipe, which are 12 ng/l (average) and 1700 ng/l (maximum) in the Ohio River basin, or 1.3 ng/l (average) and 1700 ng/l (maximum) in the Lake Erie basin.

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.

Water quality standards 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). Wasteload allocations can then be calculated using TUs as if they were water quality criteria.

The wasteload allocation calculations for WET are similar to those for aquatic life criteria. These values are the levels of effluent toxicity that should not cause instream toxicity during critical low-flow conditions. For Sandusky WWTP, the wasteload allocation values are 1.0 TU_a and 11.0 TU_c.

The chronic toxicity unit (TU_c) is defined as 100 divided by the 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):

$$TU_c = 100/\text{geometric mean of NOEC and LOEC}$$

The acute toxicity unit (TU_a) is defined as 100 divided by the 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.

Reasonable Potential/ Effluent Limits/Hazard Management Decisions

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the water quality standards must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a water quality standard or do not require a wasteload allocation 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 wasteload allocations are selected from Table 6. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table 3, and the PEL_{max} is compared to the PEQ_{max}. Based on the calculated percentage of the allocated value [(PEQ_{avg} ÷ PEL_{avg}) X 100, or (PEQ_{max} ÷ PEL_{max}) X 100], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 9.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table 10 presents the final effluent limits and monitoring requirements proposed for Sandusky WWTP outfall 2PF00001001 and the basis for their recommendation.

The concentration limits proposed for total suspended solids, CBOD5, and ammonia-nitrogen are a continuation from the existing permit.

Proposed mass loading limits are based on a flow value of 22 MGD. This is a sustained wet weather flow that the plant is capable of treating while still maintaining compliance with its concentration limits. Basing mass loading limits on a wet weather flow is consistent with section (05)(C)(1)(c) of chapter 3745-33 of the Ohio Administrative Code.

The limits proposed for *E. coli*, pH, and oil and grease are based on Ohio water quality standards (OAC 3745-1-07).

Phosphorus is limited based on provisions of OAC 3745-33-06(C). Based on best engineering judgment, continued monitoring is proposed for nitrite-nitrogen and nitrate-nitrogen. It is proposed that these parameters be combined into the standard parameter nitrate-nitrite-nitrogen in order to more easily compare the levels with background water quality.

Mercury Reasonable Potential and Mercury Variance

The Ohio EPA risk assessment (Table 9) places mercury in group 5. This placement as well as the data in Tables 1, 3 and 6 indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality.

The Sandusky WWTP permit was modified in 2010 to include a mercury variance, and variance-based limits for mercury. Based on the monitoring results from 2012, and the new application information, the City has determined that the facility will not meet the 30-day average permit limit of 1.3 nanograms per liter (ng/l). However, the effluent data shows that the permittee can meet the mercury annual average value of 12 ng/l. The permittee's application has also demonstrated to the satisfaction of Ohio EPA that there is no readily apparent means of complying with the WQBEL without constructing prohibitively expensive end-of-pipe controls for mercury. Based upon these demonstrations, the Sandusky WWTP is eligible for the mercury variance under Rule 3745-33-07(D)(10)(a) of the Ohio Administrative Code (OAC).

The City submitted information supporting the renewal of the variance. The permittee investigated potential mercury sources, devised a collection system monitoring plan, and sent questionnaires to sources in the discharge area to reduce the amount of mercury being discharged. The calculation of the PEQavg value from recent data compared to the PEQavg calculated at the time the original variance was issued shows a reduction from 11.7 ng/L to 5.8 ng/L. The PMP schedule developed from the original variance continues to be implemented, and further reductions in mercury may be possible.

Ohio EPA has reviewed the mercury variance application and has determined that the application meets the requirements of the OAC. As a result, the variance is proposed to be issued as a condition in Part II of the NPDES permit, and the following requirements have been incorporated into the draft permit:

- mercury effluent limits developed from sampling data submitted by the City of 5.8 ng/l for the 30-day average limit;
- a requirement that the Sandusky WWTP make reasonable progress to meet the water-quality-based effluent limit for mercury by implementing the plan of study which has been developed as part of the pollutant minimization program;
- influent and effluent monitoring for mercury;
- a requirement that the average annual effluent concentration for mercury is less than or equal to 12 ng/l as specified in the plan of study;
- a summary of the elements of the plan of study;
- a requirement for Sandusky WWTP to use the most sensitive analytical method approved by U.S. EPA; and
- a requirement that Sandusky WWTP submit a certification to Ohio EPA stating that all required permit conditions for the plan of study have been satisfied once these have been completed. In addition, the certification must state that compliance with the WQBEL for mercury has not been achieved.

Ohio EPA has reviewed the mercury variance application and has determined that it meets the requirements of the Ohio Administrative Code. Items X and Y in Part II of the draft NPDES permit list the provisions of the mercury variance, and includes the following requirements:

- A variance-based monthly average effluent limit of 5.8 ng/l, which was developed from sampling data submitted by the permittee;
- A requirement that the permittee make reasonable progress to meet the water-quality-based effluent limit for mercury by implementing the plan of study, which has been developed as part of the Pollutant Minimization Program (PMP);
- Low-level mercury monitoring of the plant's influent and effluent;
- A requirement that the annual average mercury effluent concentration is less than or equal to 12 ng/l as specified in the plan of study;
- A summary of the elements of the plan of study;
- A requirement to submit an annual report on implementation of the PMP; and
- A requirement for submittal of a certification stating that all permit conditions related to implementing the plan of study and the PMP have been satisfied, but that compliance with the monthly average water quality-based effluent limit for mercury has not been achieved.

Based on reasonable potential for requiring monitoring in NPDES permits [OAC 3745-33-07(A)], monitoring is proposed to continue for free cyanide, cadmium, total chromium, dissolved hexavalent chromium, copper, lead, nickel, and zinc. Monitoring is also proposed for total dissolved solids. Because these pollutants were included in Groups 2 and 3 under the risk assessment procedures (Table 9), monitoring at a frequency of once per month is proposed. The purpose of monitoring is to maintain a current data base on the level of these pollutants in the plant effluent. These data will be used to assess reasonable potential at future permit renewals.

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.

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.

The following pollutants were included in Group 2 and 3 under the risk assessment procedure (Table 9), and based on reasonable potential for requiring monitoring in NPDES permits [OAC 3745-33-07(A)], no monitoring is proposed: aluminum, arsenic, barium, manganese, chloroform, selenium, antimony, beryllium, silver, thallium, toluene, nitrobenzene, phenol, and molybdenum.

Whole Effluent Toxicity Reasonable Potential

The City submitted the results of ten definitive acute toxicity tests for fathead minnows and *C. dubia* conducted from June 2008 – August 2012 (Table 4). A review of that data shows no significant toxicity to fathead minnows, and only one test where the toxicity to *C. dubia* was observed. Considering that toxicity to *C. dubia* was observed in one test out of ten conducted over four years, the Agency does not believe that result is representative of toxicity levels in the Sandusky effluent.

Consistent with the provisions of 40 CFR Part 132, Appendix F, Procedure 6 and OAC 3745-33-07(B), semi-annual chronic testing with the determination of acute end points is proposed for *C. dubia* for the life of the permit. Annual chronic testing with the determination of acute endpoints is proposed for fathead minnows. In

addition, a reopener clause is proposed for modifying the permit to require a toxicity reduction evaluation and final toxicity limits. Criteria that the Agency will use for making this determination are included.

Other Requirements

Monitoring and reporting requirements are proposed for each of the City's combined sewer overflows. Overflow volume must be reported for each CSO. The permit also requires that the City implement the nine minimum control measures at all of its CSOs. Additional CSO requirements, including the implementation of long-term controls, are addressed in a February 1995 Consent Order that was amended in December 1997: *State of Ohio vs. City of Sandusky*, Case No. 95-CV-053.

Sanitary Sewer Overflow Reporting

Provisions for reporting sanitary sewer overflows (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

Operator certification requirements have been included in Part II, Item A of the permit in accordance with rules adopted in December 2006. These rules require the Sandusky WWTP to have a Class IV wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 2PF00001001 .

Operator of Record

In December 2006, Ohio Administrative Code rule revisions became effective that affect the requirements for certified operators for sewage collection systems and treatment works regulated under NPDES permits. Part II, Item A of this NPDES permit is included to implement rule 3745-7-02 of the Ohio Administrative Code (OAC). It requires the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Storm Water Compliance

All storm water drainage at the Sandusky WWTP is routed to the head of the plant. Because of this, the plant is not subject to the provisions of storm water regulations.

Outfall Signage

Part II of the permit includes requirements for the permittee to maintain signs at each outfall to the Sandusky Bay providing information about the discharge. Signage at outfalls is required pursuant to Ohio Administrative Code 3745-33-08(A).

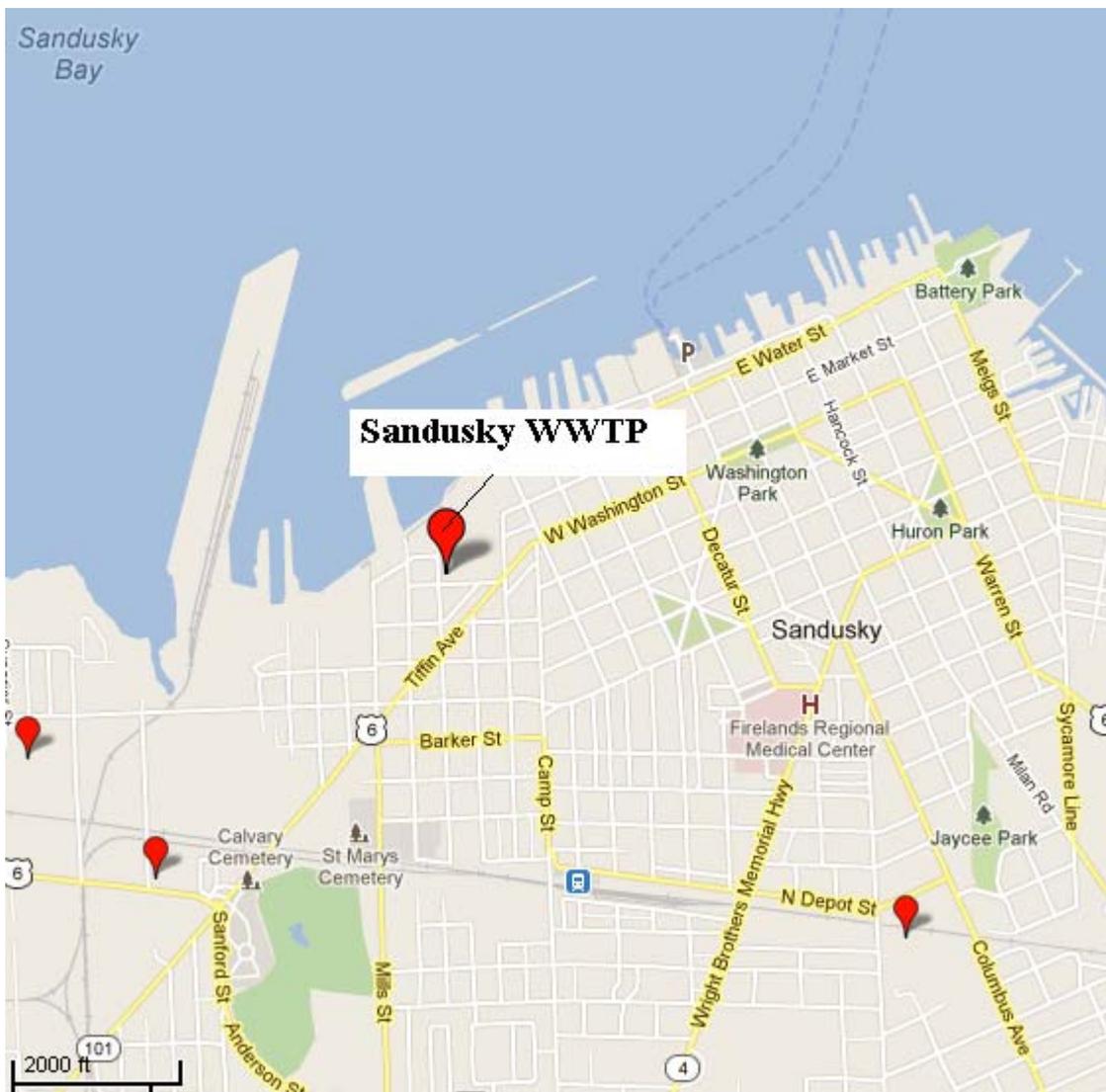


Figure 1. Location of Sandusky wastewater treatment plant.

Table 1. Effluent Characterization Using Self-Monitoring Data

Summary of current permit limits and unaltered discharge monitoring report data for Sandusky WWTP outfall 2PF00001001 (January 2007 - December 2012). All values are based on annual records unless otherwise indicated. * = For minimum pH, 5th percentile shown in place of 50th percentile; ** = For dissolved oxygen, 5th percentile shown in place of 95th percentile; a = weekly average.

Parameter	Season	Units	Current Permit Limits		# Obs	Percentiles		Data Range
			30 day	Daily		50th	95th	
Water Temperature	Annual	C	Monitor		2192	16	25	1-153
Dissolved Oxygen	Summer	mg/L	Monitor		732	6.2	8.6	0.3-14.4
Dissolved Oxygen	Winter	mg/L	Monitor		511	7.6	10.1	0.9-16.6
pH, Maximum	Annual	S.U.	-	9.0 max.	2190	7.2	7.8	6.6-9
pH, Minimum	Annual	S.U.	-	6.5 min.	2190	7	7.6	6-8.2
Total Suspended Solids	Annual	mg/L	19	29	1490	6	15.55	0-161
Oil and Grease, Hexane	Annual	mg/L	-	10	60	0	2.18	0-3.7
Nitrogen, Ammonia (NH3)	Summer	mg/L	14	21	512	1.6	10.69	0-21.4
Nitrogen, Ammonia (NH3)	Winter	mg/L	14	21	337	5.07	15.44	0-19.3
Nitrogen, Nitrate (NO3)	Annual	mg/L	Monitor		71	9.36	20.47	1.07-23.3
Nitrogen, Nitrite (NO2)	Annual	mg/L	Monitor		72	0.41	1.0704	0-5.86
Cyanide, Free	Annual	mg/L	Monitor		88	0	0.00565	0-0.011
Phosphorus, Total (P)	Annual	ug/L	1.0	1.5	300	0.5	1.0	0.1-1.22
Nickel, Total Recoverable	Annual	ug/L	Monitor		72	0	6	0-8
Zinc, Total Recoverable	Annual	ug/L	Monitor		72	32	61.4	0-75
Cadmium, Total Recoverable	Annual	ug/L	Monitor		72	0	0	0-0
Lead, Total Recoverable	Annual	ug/L	Monitor		72	0	0	0-0
Chromium, Total Recoverable	Annual	ug/L	Monitor		72	0	8	0-11
Copper, Total Recoverable	Annual	ug/L	Monitor		72	0	7.45	0-19
Chromium, Dissolved Hexavalent	Annual	ug/L	Monitor		72	0	0	0-0.167
Fecal Coliform	Summer	#/100ml	1000	2000	508	168.5	1682.5	1-92800
E. coli	Summer	#/100ml	126	189	296	48	442.5	1-4520
Flow Rate	Summer	MGD	Monitor		732	9.4	17.9	5.5-41.5
Flow Rate	Winter	MGD	Monitor		511	10.5	23.7	3.8-41.3

Table 1 continued

Parameter	Season	Units	Current Permit Limits		# Obs	Percentiles		Data Range
			30 day	Daily		50th	95th	
Flow Rate	Annual	MGD	Monitor		2192	10.05	23.145	3.8-42.7
Mercury, Total (Low Level)	Annual	ng/L	0.0916	11.7	72	1.75	6.004	0-16
CBOD5	Summer	mg/L	14	21	513	3	7	0-15
CBOD5	Winter	mg/L	14	21	338	6	13	2-32

Table 2. Effluent Characterization Using Ohio EPA Data and Pretreatment Data

Summary of analytical results for Sandusky WWTP outfall 2PF00001001. Units ug/l unless otherwise noted; OEPA = data from analyses by Ohio EPA; PT = data from pretreatment program reports; NT = not tested; ND = not detected (detection limit).

PARAMETER	OEPA (9/20/11)	OEPA (10/18/11)	PT (8/18/09)	PT (8/24/10)	PT (9/20/11)
Antimony, Total	NT	NT	ND	ND	ND
Arsenic, Total	ND	ND	ND	ND	ND
Beryllium, Total	NT	ND	ND	ND	ND
Cadmium, Total	ND	ND	ND	ND	ND
Chromium, Total	ND	ND	ND	20	8
Copper, Total	2.4	ND	ND	ND	ND
Lead, Total	ND	ND	ND	ND	ND
Mercury, Total	ND	ND	ND	ND	ND
Nickel, Total	4.2	4	ND	8	ND
Selenium, Total	ND	ND	ND	ND	ND
Silver, Total	NT	NT	ND	ND	ND
Thallium, Total	NT	NT	ND	ND	ND
Zinc, Total	12	26	17	21	23
Dissolved Solids (mg/L)	550	534	NT	NT	NT
Dibromofluoromethane	ND	ND	10	NT	8.69
Toluene	ND	ND	10.9	ND	11
Bromofluorobenzene	NT	NT	11	NT	11.1
Fluorobiphenyl	NT	NT	65.3	NT	53.1
Fluorophenol	NT	NT	62.7	NT	47.3
Nitrobenzene	NT	NT	67.8	ND	50.8
Phenol	ND	ND	55.1	ND	34
Terphenyl	NT	NT	62.1	NT	64.8
Tribromophenol	NT	NT	69.2	NT	62.6

Table 3. Effluent Data for the Sandusky WWTP

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Aluminum	ug/l	2	0	--	--
Arsenic - TR	ug/l	2	0	--	--
Barium	ug/l	2	2	47.158	64.6
Cadmium - TR	ug/l	73	0	--	--
Chloroform (Trichloromethane)	ug/l	5	3	1.679	2.3
Chromium - TR	ug/l	76	7	7.1378	11.177
Chromium VI - Diss	ug/l	71	1	8.76	12
Copper - TR	ug/l	76	23	7.0013	10.969
Cyanide - free	mg/l	89	7	0.004603	0.007143
Dissolved solids (ave)	mg/l	2	2	1525.7	2090
Iron - TR	ug/l	2	2	1406.418	1926.6
Lead - TR	ug/l	76	2	3.942	5.4
Manganese - TR	ug/l	2	1	47.158	64.6
Mercury - TR (BCC)	ng/l	76	70	4.1587	6.3543
Nickel - TR	ug/l	76	20	5.1295	7.3163
Nitrate-N + Nitrite-N	mg/l	131	130	19.24	27.37
Oil & grease	mg/l	73	12	1.7784	2.7162
Selenium - TR	ug/l	5	0	--	--
Strontium	ug/l	2	2	965.352	1322.4
Zinc - TR	ug/l	76	74	49.499	68.814
Antimony	ug/l	3	0	--	--
Beryllium	ug/l	3	0	--	--
Nitrobenzene	ug/l	2	2	188.0772	257.64
Phenol (wwh,ewh,mwh)	ug/l	2	2	152.8474	209.38
Silver (wwh,ewh,mwh)	ug/l	3	0	--	--
Thallium	ug/l	3	0	--	--
Toluene	ug/l	2	2	30.514	41.8
Phosphorus	mg/l	298	298	0.88044	1.2454

Table 4. Summary of toxicity results on the Sandusky wastewater treatment plant effluent

Test Date	P. promelas			C. dubia		
	TUa	% mortality (24 hr screening)	% mortality (48 hr screening)	TUa	% mortality (24 hr screening)	% mortality (48 hr screening)
6/11/2008	0.3	-	-	AA	-	-
8/27/2008	AA	-	-	AA	-	-
6/16/2009	AA	-	-	AA	-	-
8/24/2009	AA	-	-	AA	-	-
6/15/2010	0.2	-	-	AA	-	-
8/3/2010	AA	-	-	2.6	-	-
6/3/2011	AA	-	-	AA	-	-
8/9/2011	AA	-	-	AA	-	-
9/19/2011*	-	0	0	-	0	0
10/17/2011*	-	0	0	-	0	0
6/12/2012	AA	-	-	AA	-	-
8/3/2012	AA	-	-	AA	-	-

* = Ohio EPA screening test

AA = not tested

TUa = acute toxicity units

TUc = chronic toxicity units

Table 5. Sandusky Combined Sewer Overflow Discharges

Overflow Volume (in millions of gallons):

<u>Station No.</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
004	8.195	4.701	1.627
005	1.636	5.525	1.543
006	52.952	101.78	14.086
007	9.491	9.69	2.893
008	2.078	8.89	1.014
009	10.223	5.636	2.074
011	3.665	3.063	1.172
013	4.591	5.632	2.165
014	1.945	3.47	1.329
015	1.492	1.073	0.461
016	10.43	15.359	1.742
017	120.977	168.944	35.374
018		0.999	
019	6.196	27.08	2.137
021	1.295	4.176	0.075

Overflow Occurrences (# of occurrences):

<u>Station No.</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
004	25	19	24
005	25	35	21
006	29	37	26
007	29	35	22
008	25	27	19
009	29	28	21
011	25	30	18
013	28	32	21
014	25	30	26
015	24	25	15
016	29	37	27
017	29	24	23
018		6	
019	26	34	22
021	28	37	5

Table 6. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Wildlife	Average		Aquatic Life	Maximum Aquatic Life	
			Human Health	Agri-culture			
Aluminum	ug/l	--	4500	--	--	--	--
Arsenic - TR	ug/l	--	580	100	150	340	680
Barium	ug/l	--	160000	--	220	2000	4000
Cadmium - TR	ug/l	--	730	50	3.7	8.1	16
Chloroform (Trichloromethane)	ug/l	--	1700c	--	140	1300	2600
Chromium - TR	ug/l	--	14000	100	130	2700	5500
Chromium VI - Diss	ug/l	--	14000	--	11	16	31
Copper - TR	ug/l	--	64000	500	14	23	45
Cyanide - free	mg/l	--	48	--	0.0052	0.022	0.044
Dissolved solids (ave)	mg/l	--	--	--	1500	--	--
Iron - TR	ug/l	--	--	5000	--	--	--
Lead - TR	ug/l	--	--	100	12	240	470
Manganese - TR	ug/l	--	61000	--	--	--	--
Mercury - TR (BCC)	ng/l	1.3	3.1	10000	910	1700	3400
Nickel - TR	ug/l	--	43000	200	80	720	1400
Nitrate-N + Nitrite-N	mg/l	--	--	100	--	--	--
Oil & grease	mg/l	--	--	--	--	10	--
Selenium - TR	ug/l	--	3100	50	5	--	--
Strontium	ug/l	--	1400000	--	21000	40000	81000
Zinc - TR	ug/l	--	35000	25000	190	190	370
Antimony	ug/l	--	780	--	190	900	1800
Beryllium	ug/l	--	130c	100	25	210	430
Nitrobenzene	ug/l	--	--	--	380	2000	4000
Phenol (wwh,ewh,mwh)	ug/l	--	2400	--	400	4700	9400
Silver (wwh,ewh,mwh)	ug/l	--	11000	--	1.3	3.9	7.7
Thallium	ug/l	--	--	--	17	79	160
Toluene	ug/l	--	51000	--	62	560	1100
Molybdenum	ug/l	--	10000	--	20000	190000	370000
Phosphorus	mg/l	--	--	--	--	--	--

Table 7. Instream Conditions and Discharger Flow

<u>Parameter</u>	<u>Units</u>	<u>Season</u>	<u>Value</u>	<u>Basis</u>
Mixing Assumption	%	average	25	
	%	maximum	100	
<i>Hardness</i>	mg/l	annual	167	Ohio EPA data; Station 300900; Sandusky Bay Ambient Station Off Johnson's Island; 8 samples
<i>Sandusky WPC flow</i>	cfs	annual	24.3	
<i>Background Water Quality</i>				
Aluminum	ug/l		495	Ohio EPA; 2010-12; n=8; 1<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Arsenic - TR	ug/l		2.577	Ohio EPA; 2010-12; n=9; 3<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Barium	ug/l		33.33	Ohio EPA; 2010-12; n=9; 0<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Cadmium - TR	ug/l		0	Ohio EPA; 2010-12; n=9; 9<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Chloroform (Trichloromethane)	ug/l		0	No representative data available.
Chromium - TR	ug/l		0	Ohio EPA; 2010-12; n=9; 9<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Chromium VI - Diss	ug/l			No representative data available.
Copper - TR	ug/l		1.566	Ohio EPA; 2010-12; n=9; 6<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Cyanide - free	mg/l			No representative data available.
Dissolved solids (ave)	mg/l		250	Ohio EPA; 2010-12; n=17; 0<MDL; Average value; Sandusky Bay Ambient Station Off Johnson's Island
Iron - TR	ug/l		710.77	Ohio EPA; 2010-12; n=9; 0<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Lead - TR	ug/l		0	Ohio EPA; 2010-12; n=9; 9<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Manganese - TR	ug/l		50.889	Ohio EPA; 2010-12; n=9; 0<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Mercury - TR (BCC)	ng/l			No representative data available.
Nickel - TR	ug/l		2.711	Ohio EPA; 2010-12; n=9; 2<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's Island
Nitrate-N + Nitrite-N	mg/l		0.05	Ohio EPA; 2010-12; n=17; 11<MDL; Average value; Sandusky Bay Ambient Station Off Johnson's Island
Oil & grease	mg/l		0	No representative data available.

<u>Parameter</u>	<u>Units</u>	<u>Season</u>	<u>Value</u>	<u>Basis</u>
Selenium - TR	ug/l		0	Ohio EPA; 2010-12; n=9; 9<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's I
Strontium	ug/l		849.11	Ohio EPA; 2010-12; n=9; 0<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's I
Zinc - TR	ug/l		6.667	Ohio EPA; 2010-12; n=9; 8<MDL; Median value; Sandusky Bay Ambient Station Off Johnson's I
Antimony	ug/l		0	No representative data available.
Beryllium	ug/l		0	No representative data available.
Nitrobenzene	ug/l		0	No representative data available.
Phenol (wwh,ewh,mwh)	ug/l		0	No representative data available.
Silver (wwh,ewh,mwh)	ug/l		0	No representative data available.
Thallium	ug/l		0	No representative data available.
Toluene	ug/l		0	No representative data available.
Molybdenum	ug/l		0	No representative data available.
Phosphorus	mg/l		0.051	Ohio EPA; 2010-12; n=17; 0<MDL; Average value; Sandusky Bay Ambient Station Off Johnson's Island

Table 8. Summary of Effluent Limits to Maintain Applicable WQ Criteria

Parameter	Units	Outside Mixing Zone Criteria					Inside Mixing Zone Maximum
		Wildlife	Average			Maximum	
			Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Aluminum	ug/l	--	44550	--	--	--	--
Arsenic - TR	ug/l	--	6354	1074	1624	--	680
Barium	ug/l	--	1759667	--	2087	--	4000
Cadmium - TR	ug/l	--	8030	550	41	--	16
Chloroform (Trichloromethane)	ug/l	--	18700	--	1540	--	2600
Chromium - TR	ug/l	--	154000	1100	1430	--	5500
Chromium VI - Diss	ug/l	--	154000	--	121	--	31
Copper - TR	ug/l	--	703984	5484	138	--	45
Cyanide - free	mg/l	--	528	--	0.057	--	0.044
Dissolved solids (ave)	mg/l	--	--	--	14000	--	--
Iron - TR	ug/l	--	--	47892	--	--	--
Lead - TR	ug/l	--	--	1100	132	--	470
Manganese - TR	ug/l	--	670491	--	--	--	--
Mercury - TR (BCC)	ng/l	1.3	3.1	10000	910	--	3400
Nickel - TR	ug/l	--	472973	2173	853	--	1400
Nitrate-N + Nitrite-N	mg/l	--	--	1100	--	--	--
Oil & grease	mg/l	--	--	--	--	--	--
Selenium - TR	ug/l	--	34100	550	55	--	--
Strontium	ug/l	--	15391509	--	222509	--	81000
Zinc - TR	ug/l	--	384933	274933	2023	--	370
Antimony	ug/l	--	8580	--	2090	--	1800
Beryllium	ug/l	--	1430	1100	275	--	430
Nitrobenzene	ug/l	--	--	--	4180	--	4000
Phenol (wwh,ewh,mwh)	ug/l	--	26400	--	4400	--	9400
Silver (wwh,ewh,mwh)	ug/l	--	121000	--	14	--	7.7
Thallium	ug/l	--	--	--	187	--	160
Toluene	ug/l	--	561000	--	682	--	1100
Molybdenum	ug/l	--	110000	--	220000	--	370000
Phosphorus	mg/l	--	--	--	--	--	--

Table 9. Parameter Assessment

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

Phosphorus

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

Aluminum	Arsenic - TR	Barium
Cadmium - TR	Chloroform (Trichloromethane)	Chromium - TR
Manganese - TR	Nickel - TR	Nitrate-N + Nitrite-N
Selenium - TR	Strontium	Antimony
Beryllium	Silver (wwh,ewh,mwh)	Thallium
Molybdenum		

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

Chromium VI - Diss	Copper - TR	Cyanide - free
Dissolved solids (ave)	Iron - TR	Lead - TR
Zinc - TR	Nitrobenzene	Phenol (wwh,ewh,mwh)
Toluene		

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.

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>
Mercury - TR (BCC)	ng/l		1.3	1700

Table 10. Final Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limitations				Basis ^b
		Concentration		Loading (kg/day) ^a		
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Temperature	°C	----- Monitor -----				M
Dissolved Oxygen	mg/l	----- Monitor -----				M
Suspended Solids	mg/l	19	29 ^c	1590	2420 ^c	EP
Oil and Grease	mg/l	--	10	--	--	WQS, EP
Ammonia-N	mg/l	14	21 ^c	1170	1750 ^c	EP
Nitrite(N) + Nitrate(N)	mg/l	----- Monitor -----				M
Phosphorus, Total	mg/l	1.0	1.5 ^c	83.3	125 ^c	PT, EP
Cyanide, Free	mg/l	----- Monitor -----				M, EP
Nickel, T. R.	µg/l	----- Monitor -----				EP, M
Zinc, T. R.	µg/l	----- Monitor -----				EP, M
Cadmium, T. R.	µg/l	----- Monitor -----				EP, M
Lead, T. R.	µg/l	----- Monitor -----				EP, M
Chromium, T. R.	µg/l	----- Monitor -----				EP, M
Copper, T. R.	µg/l	----- Monitor -----				EP, M
Hex. Chromium (Dissolved)	µg/l	----- Monitor -----				EP, RP, M
Mercury, T.	ng/l	5.8	1100			VAR, EP
<i>E. coli</i>						
Summer Only	#/100ml	126	189 ^c	--	--	WQS, EP
Flow	MGD	----- Monitor -----				M
Whole Effluent Toxicity						
Acute	TUa	----- Monitor -----				WET
Chronic	TUc	----- Monitor -----				WET
pH	S.U.	----- 6.5 to 9.0 -----				WQS, EP
Total Filterable Residue (Dissolved Solids)	mg/l	----- Monitor -----				RP
CBOD ₅	mg/l	14	21 ^c	1170	1750 ^c	EP

^a Effluent loadings based on a wet weather discharge flow of 22 MGD based on plant treatment capability. The average design flow of the plant is 15.7 MGD. Any increase in the average design flow is subject to the provisions of the antidegradation rule (OAC 3745-1-05).

^b **Definitions:** EP = Existing Permit; M = Best Engineering Judgment of 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 [OAC 3745-33-07(A)]; VAR = mercury variance-based limits, OAC 3745-33-07(D)(10); WET = Minimum testing requirements for whole effluent toxicity [OAC 3745-33-07(B)(11)] (P. promelas) and 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); WLA/IMZM = Wasteload Allocation limited by Inside Mixing Zone Maximum; WQS = Ohio Water Quality Standards (OAC 3745-1-07).

^c Weekly average limit.