National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
for the City of Wellston North Wastewater Treatment Plant (WWTP)

Public Notice No.: 12-08-107
Public Notice Date: August 30, 2012
Comment Period Ends: September 30, 2012

Ohio EPA Permit No.: 0PC00013*LD
Application No.: OH0023507

Name and Address of Applicant:

City of Wellston
203 Broadway Street
Wellston, Ohio 45692

Name and Address of Facility Where Discharge Occurs:

Wellston WWTP North
1100 South Road Island Street
Wellston, Ohio 45692
Jackson County

Receiving Water: Meadow Run

Subsequent Stream Network: Little Raccoon Creek
Raccoon Creek
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 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.

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 the United States EPA (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 (WLA) 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 most parameters are the same as in the current permit. These are either continued from the existing permit due to plant design or in order to meet WQS. Changes to this permit include reducing the limit for ammonia during the winter season, proposing a new limit for lead, increasing the monitoring frequency of cadmium from once per quarter to once per month, including monitoring for selenium at once per month, and including monitoring for total filterable residue (total dissolved solids) once per two weeks.

Final effluent limits are proposed for *Escherichia coli.* New WQS for *E. coli* became effective in March 2010. No compliance schedule is necessary to meet the new limits.

The new limits are proposed because these parameters were placed in Group 5, which indicates they have the reasonable potential to exceed WQS. Selenium and total filterable residue were also placed in Group 5, but based on the limited data available to develop PEQs, monitoring rather than limits are proposed. Cadmium was placed in Group 4, which indicates monitoring is required. The frequency is proposed to be increased in order to collect additional data on the frequency and variability of this parameter in the effluent.

No other permit limits or monitoring requirements are proposed to be removed from the permit.

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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 and Compliance Section
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 Sara Hise, (614) 644-4824, sara.hise@epa.state.oh.us.

Location of Discharge/Receiving Water Use Classification

The Wellston North WWTP discharges to Meadow Run at River Mile (RM) 1.17. Figure 1 shows the approximate location of the facility.

This segment of Meadow Run is described by Ohio EPA River Code: 09-524, U.S. EPA River Reach #: 05090101 04, County: Jackson, Ecoregion: Western Allegheny Plateau. Meadow Run is designated for the following uses under Ohio's WQS (Ohio Administrative Code [OAC] 3745-1-07): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Class B Primary Contact Recreation (PCR). Meadow Run flows into Little Raccoon Creek which is also designated as a State Resource Water (SRW).

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 Clean Water Act. Ohio WQS also include aquatic life use designations for waterbodies which cannot meet the Clean Water Act goals because of human-caused conditions that cannot be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact) 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 AWS and IWS.

Facility Description

The Wellston North WWTP was originally constructed in 1939 and upgraded in 1961. The facility was most recently modified in 1991 and the discharge location into Meadow Run was moved from RM 1.2 to its current site RM 1.17. The Wellston North WWTP is an advanced treatment facility with an average design flow of 1.44 million gallons per day (MGD), and a peak hydraulic capacity of 6.5 MGD. Treatment processes and/or equipment include:

- Influent pumping;
- Preliminary screening;
- Grit removal;
- Activated sludge – vertical loop reactor;
- Secondary clarification;
- Post aeration; and
- Ultra-violet disinfection

Preliminary processing of wastewater involves screening the influent followed by grit removal. Wastewater is then sent to the vertical loop reactor. After biological treatment, wastewater flows into secondary clarifiers.

After final clarification, wastewater is disinfected by ultra-violet treatment prior to being discharged at outfall 001.

Sludge processing includes a filter press, sludge holding tanks, and sludge drying beds. Sludge from the Wellston North WWTP is removed for disposal in a landfill. The facility reported a total of 129 dry tons of sludge removed last year.

The collection system for the Wellston North WWTP is 100 percent separate sanitary sewers with no bypasses or overflows.

The Wellston North WWTP serves the City of Wellston as well as the Green Acres community for a total service population of 6,300. The water supply sources for the service area are public ground water wells and surface water.

Description of Existing Discharge

The annual effluent flow rates for the Wellston North WWTP have been relatively consistent. The 50^{th} percentile flow rate has been well below the average design flow of 1.44 MGD the entire reporting period.

According to the permit renewal application, there are no significant industrial users (defined as any industry discharging more than 25,000 gallons per day [gpd], industries subject to federal categorical standards for wastewater discharges, or any other industry classified as "significant" by the local pretreatment program due to the nature of the effluent from the industry) which discharge into the City's sewage collection system. One categorical user sends wastewater through the collection system with an average contribution of 0.00001 MGD.

Although the collection system has no bypasses or overflows, the City was required to develop and implement an infiltration/inflow (I/I) control plan in the previous permit to address sanitary sewer overflows (SSOs). The City determined that SSOs could be prevented through monitoring and maintenance of the system lift stations and through adding new lift stations. The duplex stations have two operable pumps with change-outs occurring in a timely fashion when a pump becomes inoperable. Additionally, the City also identified issues with grease in the system; this was corrected with the construction of a grease interceptor. The facility now reports an average I/I rate of 1 gpd. No further action is required at this time to address I/I issues.

From March 2008 to December 2011, Wellston North WWTP reported a number of sample results which are violations of permit limits. The majority of violations were of the total recoverable copper limits and total suspended solids (TSS) limits. There were a few violations of low-level mercury, dissolved oxygen (DO), and five-day carbonaceous biochemical oxygen demand ($CBOD_5$).

Table 1 presents chemical specific data collected by Ohio EPA.

Table 2 presents a summary of unaltered Discharge Monitoring Report (DMR) data for outfall 0PC00013001. Data are presented for the period of January 2007 to December 2011, and current permit limits are provided for comparison.

Table 3 presents the average and maximum PEQ values for outfall 0PC00013001.

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

Assessment of Impact on Receiving Waters

An assessment of the impact of a permitted point source on the immediate receiving waters includes an evaluation of the available chemical/physical, biological, and habitat data which have been collected by Ohio

EPA pursuant to the Five-Year Basin Approach for Monitoring and NPDES Reissuance. Other data may be used provided it was collected in accordance with Ohio EPA methods and protocols as specified by the Ohio WQS and Ohio EPA guidance documents. Other information which may be evaluated includes, but is not limited to: NPDES permittee self-monitoring data; effluent and mixing zone bioassays conducted by Ohio EPA, the permittee, or U.S. EPA.

According to the draft *Integrated Water Quality Monitoring and Assessment Report* (Ohio EPA, 2012), the Little Raccoon Creek hydraulic unit (which contains Meadow Run), was last assessed in 2007. It is not scheduled for monitoring until 2014 and Total Maximum Daily Loads (TMDLs) are not scheduled until 2017. Currently Meadow Run has a non-attainment status for aquatic life use. The assessment information page for Meadow Run can be found at this website:
http://wwwapp.epa.ohio.gov/dsw/ir2012/wau.php?hu=050901010401

Causes of impairment include metals contamination, nutrients, pH, and direct habitat modification. Sources of impairment include acid mine drainage, agricultural sources, combined sewer overflows (CSOs), SSOs, and channelization.

The results of the 2007 biological and chemical sampling were reported in the document titled, "Meadow Run Water Quality and Bacteria Investigation." Full details can be found in the report; a summary is presented here. Included in the study is an assessment of biological (including habitat), surface water, and recreation (bacterial) conditions. A total of four biological, six water chemistry, and six bacterial stations were sampled in Meadow Run.

Specific objectives of the evaluation were:

- Establish the present biological conditions in Meadow Run by evaluating the fish and macroinvertebrate communities;
- Assess the physical habitat influences on stream biotic integrity;
- Identify the relative levels of inorganic and nutrient parameters in surface water;
- Determine recreational water quality;
- Evaluate influences from NPDES outfalls directly discharging to Meadow Run;
- Determine the attainment status of the WWH aquatic life use designation; and
- Compare results with historical conditions.

Samples were collected between May and October from several sampling locations. The sample results from 2007 are summarized as follows:

- Elevated nutrients at all sampling locations;
- Fecal coliform below the PCR criteria at all sampling locations;
- *E. coli* results above PCR criteria at four sampling locations;

The elevated fecal coliform and *E. coli* results from one sampling location (an unnamed tributary to Meadow Run) were eventually traced to a sanitary sewer cross-connected with a storm sewer. The cross connection was corrected. The overall conclusion of the report was that Meadow Run contains untreated or poorly treated sewage/wastewater. Potential sources of bacteria contamination include SSOs, CSOs, and possible unsewered areas.

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. The discharge of the Wellston North WWTP was considered to be interactive with the General Mills Wellston discharge (RM 3.1).

As a result, the discharge flows for these two facilities were combined in order to develop the WLAs which are common to both discharges. WLAs for pollutants not detected in the General Mills effluent were developed using on the Wellston North WWTP design flow for the effluent discharge rate, and the General Mills discharge was considered as upstream dilution water.

Parameter Selection
Effluent data for the Wellston North 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 2007 through December 2011
Ohio EPA sampling data	September and October 2007

Outliers
The data were examined, and the following values were removed from the evaluation to give a more reliable projection of effluent quality: total suspended solids (TSS) - 1/15/07 (49 mg/L), 2/14/07 (141 mg/L), 5/16/08 (139 mg/L), and cadmium - 2/6/08 (24 mg/L), 12/2/09 (24 mg/L).

This data is evaluated statistically, and PEQ values are calculated for each pollutant. Average PEQ (PEQ_{avg}) values represent the 95^{th} percentile of monthly average data, and maximum PEQ (PEQ_{max}) values represent the 95^{th} 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 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 8 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.

Wellston North WWTP was considered to be interactive with General Mills for all shared monitoring parameters. In this case, the only shared parameters between the two facilities were ammonia, phosphorus, and oil and grease. For the interactive model, the downstream flow rate was the combined effluent design flow of both facilities. Wellston North WWTP was not considered to be interactive with General Mills for non-shared monitoring parameters, and the General Mills discharge was considered to be dilution water. For the non-interactive model, the downstream flow rate was the effluent design flow of Wellston North WWTP. The upstream flow was the combined flow of the receiving water as recorded by the United States Geographical Survey (USGS) gage station plus the effluent design flow of General Mills.

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 6 (interactive flow) and Table 7 (non-interactive flow), and allocations cannot exceed the Inside Mixing Zone Maximum 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 (12 ng/L monthly average in the Ohio River basin).

The data used in the WLA are listed in Tables 5, 6 (interactive flow) and 7 (non-interactive flow). The WLA results to maintain all applicable criteria are presented in Table 8. The current ammonia limits have been evaluated using the WLA procedures. The current ammonia limit during the summer months is protective of WQS for ammonia toxicity but the current ammonia limit during the winter months is not protective of WQS for ammonia toxicity.

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 Wellston North WWTP, the WLA values are 1.0 TU_a and 1.53 TU_c.

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

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

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

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

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

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

This equation applies outside the mixing zone for 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:

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

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

Reasonable Potential and Effluent Limits

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 WLA are selected from Table 8. 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 [($PEQ_{avg} \div PEL_{avg}$) X 100, or ($PEQ_{max} \div PEL_{max}$) X 100)], the parameters are assigned to group 3, 4, or 5. The groupings are listed in Table 9.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Federal and State laws/regulation require that dischargers meet both treatment-technology-based limits and any more stringent standards needed to comply with state WQS. Permit limits are based on the more restrictive of the two. Table 10 presents the final effluent limits and monitoring requirements proposed for Wellston North WWTP outfall 0PC00013001 and the basis for their recommendation. The limits and monitoring requirements for outfall 001 are discussed in detail below. Loading limits are based on an average flow rate of 1.44 MGD except for ammonia, which is based on an average flow rate of 2.14 MGD (the combined average flow rates of Wellston North WWTP and General Mills).

Water Temperature, Precipitation, and Flow Rate
Monitoring is proposed to continue for water temperature, precipitation, and flow rate in order to assist in the evaluation of effluent quality and treatment plant performance, in accordance with Ohio EPA guidance.

Total Kjeldahl Nitrogen, Nitrite+Nitrate, and Phosphorus
Monitoring is proposed to continue for total kjeldahl nitrogen (TKN), nitrite+nitrate, and phosphorus in order to assist in the evaluation of effluent quality in accordance with Ohio EPA guidance. Monitoring for these parameters is important in order to provide data for potential nutrient sources in the Raccoon Creek watershed as implementation of the TMDL proceeds. In addition, the City was required to develop and implement a phosphorus reduction plan in the last permit. The City's solution was to improve the efficiency of the existing treatment system instead of utilizing chemical additives or installing new equipment to specifically reduce phosphorus. Monitoring for phosphorus is important to document the effectiveness of this solution.

Oil and Grease, pH, and E. coli
Limits proposed for oil and grease and pH are based on WQS and are a continuation of existing permit limits. The *E. coli* limits are based on WQS.

Dissolved Oxygen, Total Suspended Solids, and Five-day Carbonaceous Biochemical Oxygen Demand
Limits for DO, TSS, and $CBOD_5$ are based on plant design and are a continuation of existing permit limits.

Chromium, Chromium^{+6}, Nickel, Zinc, and Mercury
The Ohio EPA risk assessment (Table 9) places these parameters into Groups 2 or 3. This placement, as well as the data in Tables 2 and 3 supports that these parameters should not pose environmental hazards and limits are not necessary to protect water quality. However, these parameters continue to be detected in the effluent and monitoring is proposed to continue in order to ensure that concentrations remain at low levels.

Cadmium
The Ohio EPA risk assessment (Table 9) places this parameter in Group 4. This placement as well as the data in Tables 2 and 3 supports that this parameter does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. Monitoring for Group 4 pollutants is required by OAC 3745-33-07(A)(2). The frequency of monitoring is proposed to increase from once per quarter to once per month in order to collect additional data on the frequency of occurrence and variability of cadmium in the plant's effluent.

Ammonia
The limit for ammonia in the summer season is protective of water quality and is proposed to continue. The Ohio EPA risk assessment (Table 9) places ammonia in the winter season in Group 5. This placement as well as the data in Tables 2 and 3 indicate that the reasonable potential to exceed WQS exists and lower limits than in the previous permit are necessary to protect water quality. It is anticipated that the facility should be able to meet these limits when the permit goes into effect. Therefore, no interim limits or a schedule of compliance are proposed.

Selenium and Total Filterable Residue
The Ohio EPA risk assessment (Table 9) places selenium and total filterable residue (total dissolved solids) into Group 5. This placement as well as the data in Table 2 and 3 indicate the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. Using the discretion allowed the Director under OAC 3745-33-07(A)(5), monitoring is proposed rather than limits for these pollutants. The PEQ values calculated for selenium and total filterable residue (Table 3) may not be representative of the actual levels in the plant effluent because they were based on only one detection of each pollutant. The purpose of the proposed monitoring is to collect additional data on the frequency of occurrence and variability of these pollutants in the plant's effluent.

Copper and Lead
The Ohio EPA risk assessment (Table 9) places copper and lead into Group 5. This placement as well as the data in Tables 2 and 3 indicates the reasonable potential to exceed WQS and limits are necessary to protect water quality.

Although the current WLA would allow slightly higher limits for copper, anti-backsliding provisions in the OAC prevent the imposition of less stringent limits than those in the existing permit unless specific conditions have been satisfied. In the case of the Wellston North WWTP, none of those conditions have been satisfied, so the existing limits are proposed to continue (the anti-backsliding provisions of rule 3745-33-05 of the OAC requires that an anti-degradation review must be completed before an existing permit limit can be made less stringent; the rule requires other conditions to be satisfied as well).

To ensure that data is obtained that allows Ohio EPA to make water quality-related decisions regarding copper and lead, a special condition is proposed in Part II of the permit that provides guidance on the method detection limits the permittee should use in analyzing for these contaminants.

Additional Monitoring Requirements
Additional monitoring requirements proposed at the final effluent, influent, upstream/downstream and sludge 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, treatment plant performance, designing plant improvements, and conducting future stream studies.

Whole Effluent Toxicity Reasonable Potential
Evaluating the acute toxicity results in Table 4 under the provisions of 40 CFR Part 132, Appendix F, Procedure 6, does not provide a PEQ value for either species because the test results were below the detection limit. Reasonable potential for toxicity is not demonstrated. Limits proposed on other parameters are appropriate to prevent acute and chronic toxicity in the receiving water. However, annual toxicity testing is proposed consistent with the minimum monitoring requirements at OAC 3754-33-07(B)(11). The proposed monitoring will adequately characterize toxicity in the plant's effluent.

Other Requirements

Schedule of Compliance
A schedule of compliance to meet new copper and lead WQS is included in Part I.C of the permit.

Operator Certification and Operator of Record
Operator certification requirements have been included in Part II of the permit in accordance with rule 3745-7-02 of the OAC adopted in December 2006. These rules require the Wellston North WWTP to have a Class III wastewater treatment plant operator in charge of the sewage treatment plant operations discharging through outfall 0PC00013001. It also requires the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Outfall Signage
Part II of the permit includes requirements for signs to be placed at each outfall to Meadow Run, providing information about the discharge. Signage at outfalls is required pursuant to OAC 3745-33-08(A).

Storm Water
The City of Wellston has applied for a "No Exposure Certification." Parts IV, V, and VI have been removed from the final 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.

Figure 1. Location of the Wellston North WWTP Facility

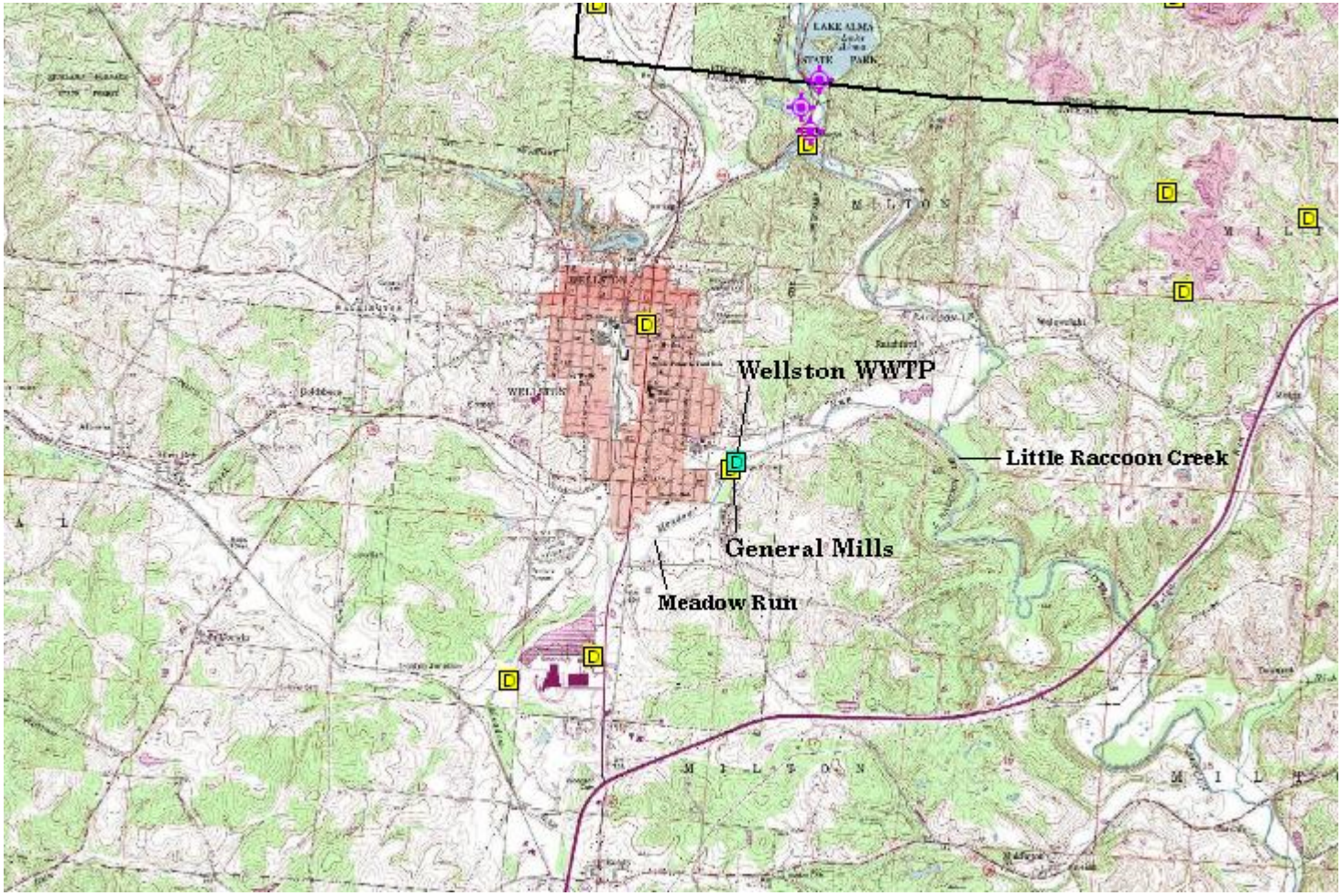

Table 1. Effluent Data Characterization Using Ohio EPA Bioassay Sampling Event

Ohio EPA Bioassay - 3/1/2011		
Parameter	**Result[1]**	**Units**
Aluminium	ND (200)	µg/L
Ammonia	2.98	mg/L
Arsenic	ND (2)	µg/L
Barium	35	µg/L
Cadmium	ND (0.2)	µg/L
Calcium	54	mg/L
Chloride	80.9	mg/L
Chloroform	0.8	µg/L
Chromium	ND (2)	µg/L
Copper	2.3	µg/L
Cyanide, total	14	µg/L
Iron	182	µg/L
Lead	ND (2)	µg/L
Magnesium	11	µg/L
Manganese	56	µg/L
Nickel	3.9	µg/L
Nitrate+nitrite	4.03	mg/L
Phenolics	27.7	µg/L
Phosphorus	0.377	mg/L
Selenium	2	µg/L
Total dissolved solids	378	mg/L
Total Kjeldahl Nitrogen	3.93	mg/L
Total suspended solids	19	mg/L
Zinc	27	µg/L

[1] = number shown in parentheses is the method detection limit
ND = Not detected

Table 2. Effluent Characterization Based on Self-Monitoring Data

Summary of current permit limits and unaltered MOR data for Wellston North WWTP outfall 0PC00013001:

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50th	95th	
Outfall 001								
Water Temperature	Annual	C	MONITOR		1826	15.3	23.4	1.3-25.2
Total Precipitation	Annual	Inches	MONITOR		1735	0	0.8	0-3.8
Dissolved Oxygen	Summer	mg/l		7.0	920	9.16	10.2	6.2-12.1
Dissolved Oxygen	Winter	mg/l		7.0	906	9.25	11	6.18-14.2
pH, Maximum	Annual	S.U.		9.0	547	7.45	7.68	7-8.07
pH, Minimum	Annual	S.U.		6.5	547	7.34	7.56	6.82-7.75
Total Suspended Solids	Annual	mg/l	12	18	783	2	6	1-141
Oil and Grease, Total	Annual	mg/l	10 MAXIMUM		122	0	3.79	0-5.3
Nitrogen, Ammonia (NH3)	Winter	mg/l	9.7	14.6	392	0.142	1.41	0.0208-5.86
Nitrogen, Ammonia (NH3)	Summer	mg/l	1.5	2.5	389	0.342	6.15	0.0159-12.2
Nitrogen Kjeldahl, Total	Annual	mg/l	MONITOR		183	2.1	8.76	0-18.9
Nitrite Plus Nitrate, Total	Annual	mg/l	MONITOR		46	10.4	18.7	0-19.6
Phosphorus, Total (P)	Annual	mg/l	MONITOR		201	0.83	2.45	0.11-3.66
Nickel, Total Recoverable	Annual	ug/l	MONITOR		17	0	10.2	0-11
Zinc, Total Recoverable	Annual	ug/l	MONITOR		32	40	69.7	0-86
Cadmium, Total Recoverable	Annual	ug/l	MONITOR		32	0	13.6	0-24
Lead, Total Recoverable	Annual	ug/l	MONITOR		62	0	34.2	0-54
Chromium, Total Recoverable	Annual	ug/l	MONITOR		17	0	2	0-10
Copper, Total Recoverable	Annual	ug/l	20	34	59	10	24.2	0-44
Chromium, Dissolved Hexavalent	Annual	ug/l	MONITOR		49	0	6	0-10
Fecal Coliform	Annual	#/100 ml	1000	2000	392	64	203	1-866
Flow Rate	Annual	MGD	MONITOR		1826	0.803	2.94	0.186-71.2
Mercury, Total (Low Level)	Annual	ng/l	MONITOR		32	1.35	6.05	0-18.6
Acute Toxicity, Ceriodaphnia dubia	Annual	TUa	MONITOR		3	0	0	0-0
Chronic Toxicity, Ceriodaphnia dubia	Annual	TUc	MONITOR		3	0	0	0-0
Acute Toxicity, Pimephales promelas	Annual	TUa	MONITOR		3	0	0	0-0
Chronic Toxicity, Pimephales promelas	Annual	TUc	MONITOR		3	0	0	0-0
pH, Maximum	Annual	S.U.		9.0	1276	7.51	7.71	7.14-7.95

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50th	95th	
pH, Minimum	Annual	S.U.		6.5	1279	7.42	7.64	7.09-7.9
CBOD 5 day	Summer	mg/l	10	15	394	1.7	3.1	0.23-9.4
CBOD 5 day	Winter	mg/l	10	15	382	2.5	6.2	0.8-12
Outfall 300								
Bypass Occurrence	Annual	No./Day	MONITOR		6	1	1.75	0-2
Bypass Total Hours Per Day	Annual	Hrs/Day	MONITOR		10	2	22.2	0.33-24
Overflow Occurrence	Annual	No./Month	MONITOR		15	1	1.3	1-2
Outfall 586								
Sludge Fee Weight	Annual	dry tons	MONITOR		32	1.22	2.14	0.77-2.31
Sludge Weight	Annual	Dry Tons	MONITOR		131	1.92	2.67	0-2.74
Outfall 601								
Water Temperature	Annual	C	MONITOR		1826	15	22	5.5-24
pH, Maximum	Annual	S.U.	MONITOR		1826	7.4	7.63	6.91-9.02
pH, Minimum	Annual	S.U.	MONITOR		1826	7.25	7.49	6.58-7.66
Total Suspended Solids	Annual	mg/l	MONITOR		783	83	187	9-426
Flow, Peak Rate	Annual	MGD	MONITOR		1826	0.818	2.94	0.186-8.62
CBOD 5 day	Summer	mg/l	MONITOR		394	118	198	20-228
CBOD 5 day	Winter	mg/l	MONITOR		382	93	176	17-1510
Outfall 801								
Water Temperature	Annual	C	MONITOR		60	12.8	22.5	0-23.8
Dissolved Oxygen	Summer	mg/l	MONITOR		30	7.39	9.11	6.03-9.17
Dissolved Oxygen	Winter	mg/l	MONITOR		30	10.1	12.8	5.31-13.3
pH	Annual	S.U.	MONITOR		60	7.7	8.15	7.03-8.44
Nitrogen, Ammonia (NH3)	Summer	mg/l	MONITOR		30	0.117	0.45	0.0349-0.733
Nitrogen, Ammonia (NH3)	Winter	mg/l	MONITOR		30	0.107	0.428	0.0253-0.86
Fecal Coliform	Annual	#/100 ml	MONITOR		29	950	3800	115-4300

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50th	95th	
48-Hr. Acute Toxicity *Ceriodaphnia dubia*	Annual	% Affected	MONITOR		3	0	0	0-0
96-Hr. Acute Toxicity *Pimephales promela*	Annual	% Affected	MONITOR		3	5	11.3	0-12
7-Day Chronic Toxicity *Ceriodaphnia dubia*	Annual	% Affected	MONITOR		3	0	0	0-0
7-Day Chronic Toxicity *Pimephales promelas*	Annual	% Affected	MONITOR		3	10	23.5	2-25
CBOD 5 day	Summer	mg/l	MONITOR		7	1.94	4.06	1.05-4.6
CBOD 5 day	Winter	mg/l	MONITOR		10	1.48	2.21	0.82-2.62
Outfall 901								
Water Temperature	Annual	C	MONITOR		60	13.8	23.3	0.7-24.4
Dissolved Oxygen	Summer	mg/l	MONITOR		30	7.41	8.91	1.02-9.13
Dissolved Oxygen	Winter	mg/l	MONITOR		30	9.96	12	5.09-12.8
pH	Annual	S.U.	MONITOR		60	7.61	7.94	7.08-8.6
Nitrogen, Ammonia (NH3)	Summer	mg/l	MONITOR		30	0.138	0.92	0.0345-1.92
Nitrogen, Ammonia (NH3)	Winter	mg/l	MONITOR		30	0.12	0.858	0.0278-1.86
Fecal Coliform	Annual	#/100 ml	MONITOR		30	505	2250	160-2430
CBOD 5 day	Summer	mg/l	MONITOR		5	1.7	1.92	1.22-1.94
CBOD 5 day	Winter	mg/l	MONITOR		7	1.62	1.89	1.14-1.97

Table 3. Projected Effluent Quality Values

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Ammonia-Summer	mg/L	262	262	0.65845	1.4408
Ammonia-Winter	mg/L	194	194	6.0891	10.624
Barium[1]	µg/L	1	1	158.41	217
Cadmium	µg/L	31	9	4.38	6
Chloroform (Trichloromethane) [1]	µg/L	1	1	3.6208	4.96
Chromium[1]	µg/L	18	1	10.22	14
Chromium^{+6} (dissolved)	µg/L	49	3	7.3	10
Copper	µg/L	59	31	20.605	31.275
Dissolved solids (average) [1]	mg/L	1	1	1710.828	2343.6
Lead	µg/L	63	14	39.42	54
Manganese[1]	µg/L	1	1	253.456	347.2
Mercury	ng/L	32	31	5.1197	8.5268
Nickel	µg/L	18	3	11.242	15.4
Nitrate + Nitrite	mg/L	47	46	17.191	25.064
Phosphorus	mg/L	201	201	1.87026	2.562
Selenium[1]	µg/L	1	1	9.052	12.4
Total Kjeldahl nitrogen	mg/L	184	178	4.7366	6.8826
Zinc	µg/L	33	32	59.89	82.565

[1] = Data set is based on Ohio EPA bioassay conducted in February 2011

Table 4. Summary of Acute Toxicity Test Results

	Ceriodaphnia dubia 48 hours			*Pimephales promelas 96 hour*		
Test Date	LC_{50}[c]	%M[d]	TU_a[e]	LC_{50}[c]	%M[d]	TU_a[e]
6/1/2009[a]	> 100	0	BD	> 100	0	BD
3/1/2011[b]	> 100	0	ND	> 100	0	BD

[a] Entity test
[b] Ohio EPA test
[c] LC_{50} = median lethal concentration
[d] percent mortality in 100% effluent
[e] = TU_a = acute toxicity units
BD = below detection
ND = not determined

Table 5. Water Quality Criteria in the Study Area

Parameter	Units	Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum	
		Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia-Summer	mg/L	--	--	1.5	--	--
Ammonia-Winter	mg/L	--	--	5.8	--	--
Barium	µg/L	--	--	220	2000	4000
Cadmium	µg/L	--	50	4	9.1	18
Chloroform (Trichloromethane)	µg/L	4700	--	140	1300	2600
Chromium	µg/L	--	100	140	3000	6000
Chromium^{+6} (dissolved)	µg/L	--	--	11	16	31
Copper	µg/L	1300	500	16	25	50
Dissolved solids (average)	mg/L	--	--	1500	--	--
Lead	µg/L	--	100	14	270	540
Manganese	µg/L	--	--	--	--	--
Mercury	ng/L	12	10000	910	1700	3400
Nickel	µg/L	4600	200	88	790	1600
Nitrate + Nitrite	mg/L	--	100	--	--	--
Oil & grease	mg/L	--	--	--	10	--
Phosphorus	mg/L	--	--	--	--	--
Selenium	µg/L	11000	50	5	--	--
Zinc	µg/L	69000	25000	200	200	410

Table 6. Instream Conditions and Discharger Flow for Wellston North WWTP and General Mills Interactive Model

Parameter	Units	Season	Value	Basis
Stream Flows				
1Q10	cfs	annual	0.086	USGS Gage 03201990
7Q10	cfs	annual	0.1	USGS Gage 03201990
		summer	0	
		winter	0	
30Q10	cfs	summer	0.148	USGS Gage 03201990
		winter	0.987	USGS Gage 03201990
90Q10	cfs	annual	0	
Harmonic Mean	cfs	annual	1.34	USGS Index Gage 03202000
Mixing Assumption	%	average	100	
	%	maximum	100	
Hardness	mg/L	annual	186	STORET, n=5, 2007, Station W03W18
pH	S.U.	summer	7.8	Station 901, n=20
		winter	7.68	Station 901, n=14
Temperature	C	summer	23.03	Station 901, n=20
		winter	5.33	Station 901, n=14
Wellston WWTP flow	cfs	annual	3.31	Combined flow for Wellston WWTP and General Mills
Background Water Quality				
Ammonia-Summer	mg/L		0.085	STORET; 2007-2011; n=11; 8<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Ammonia-Winter	mg/L		0.085	STORET; 2007-2011; n=11; 8<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Oil & grease	mg/L		0	No representative data available.
Phosphorus	mg/L		6.69	STORET; 2007-2011; n=11; 11<MDL; 50th percentile, stations W03W27,W03W15,W03P40

MDL = method detection limit
n = number of samples

Table 7. Instream Conditions and Discharger Flow for Wellston North WWTP Non-interactive Model

Parameter	Units	Season	Value	Basis
Stream Flows				
1Q10	cfs	annual	1.169	USGS gage 03201990 (plus effluent flow from General Mills)
7Q10	cfs	annual	1.18	USGS gage 03201990 (plus effluent flow from General Mills)
		summer	0	
		winter	0	
30Q10	cfs	summer	1.231	USGS gage 03201990 (plus effluent flow from General Mills)
		winter	2.07	USGS gage 03201990 (plus effluent flow from General Mills)
90Q10	cfs	annual	0	
Harmonic Mean	cfs	annual	2.43	USGS index station 03202000 (plus effluent flow from General Mills)
Mixing Assumption	%	average	100	
	%	maximum	100	
Hardness	mg/L	annual	186	STORET, n=5,2007, Station ID W03W18
Wellston WWTP flow	cfs	annual	2.23	Design flow (as listed in permit application)
Background Water Quality				
Barium	µg/L		7.5	STORET; 2007,2011; n=11; 4<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Cadmium	µg/L		0.1	STORET; 2007,2011; n=11; 10<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Chloroform (Trichloromethane)	µg/L		0	No representative data available.
Chromium	µg/L		15	STORET; 2007,2011; n=11; 10<MDL; 50th percentile, stations W03W27,W03W15,W03P40
$Chromium^{+6}$ (dissolved)	µg/L		0	No representative data available.
Copper	µg/L		5	STORET; 2007,2011; n=11; 10<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Dissolved solids (average)	mg/L		618	STORET; 2007,2011; n=11; 11<MDL; 50th percentile, stations W03W27,W03W15,W03P40

Parameter	Units	Season	Value	Basis
Lead	µg/L		1	STORET; 2007,2011; n=11; 10<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Manganese	µg/L		348	STORET; 2007,2011; n=11; 11<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Mercury	ng/L		0	No representative data available.
Nickel	µg/L		20	STORET; 2007,2011; n=11; 10<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Nitrate + Nitrite	mg/L		0.19	STORET; 2007,2011; n=11; 3<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Total Kjeldahl Nitrogen	mg/L		0.89	STORET; 2007,2011; n=11; 0<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Selenium	µg/L		0	STORET; 2007,2011; n=11; 0<MDL; 50th percentile, stations W03W27,W03W15,W03P40
Zinc	µg/L		5	STORET; 2007,2011; n=11; 6<MDL; 50th percentile, stations W03W27,W03W15,W03P40

MDL = method detection limit
n = number of samples

Table 8. Summary of Effluent Limits to Maintain Applicable Water Quality Criteria

		Outside Mixing Zone Criteria				Inside Mixing Zone Maximum
		Average			Maximum	
Parameter	Units	Human Health	Agri-culture	Aquatic Life	Aquatic Life	
Ammonia-Summer	mg/L	--	--	--	--	--
Ammonia-Winter	mg/L	--	--	7.5	--	--
Barium	µg/L	--	--	332	3044	4000
Cadmium	µg/L	--	104	6.1	14	18
Chloroform (Trichloromethane)	µg/L	9822	--	214	1981	2600
Chromium	µg/L	--	193	206	4565	6000
Chromium^{+6} (dissolved)	µg/L	--	--	17	24	31
Copper	µg/L	2711	1039	22	35	50
Dissolved solids (average)	mg/L	--	--	1967	--	--
Lead	µg/L	--	208	21	411	540
Manganese	µg/L	--	--	--	--	--
Mercury	ng/L	12	10000	910	1700	3400
Nickel	µg/L	9591	396	124	1194	1600
Nitrate + Nitrite	mg/L	--	209	--	--	--
Total Kjeldahl nitrogen	mg/L	--	--	--	--	--
Oil & grease	mg/L	--	--	--	10	--
Phosphorus	mg/L	--	--	--	--	--
Selenium	µg/L	22987	104	7.6	--	--
Zinc	µg/L	144183	52237	303	302	410

Table 9. Parameter Assessment for Outfall 0PC00013001

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

Manganese	Total Kjeldahl nitrogen	Phosphorus

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

Chromium	Nitrate + Nitrite
Nickel	Chloroform (Trichloromethane)

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

$Chromium^{+6}$ (dissolved)	Mercury	Zinc
Barium	Oil & Grease	

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.

Cadmium

Group 5: Maximum PEQ >= 100 percent of the maximum PEL or average PEQ >= 100 percent of the average PEL, or either the average or maximum PEQ is between 75 and 100 percent of the PEL and certain conditions that increase the risk to the environment are present. Limit recommended.

Limits to Protect Numeric Water Quality Criteria

			Recommended Effluent Limits	
Parameter	Units	Period	Average	Maximum
Copper	µg/L		22	35
Lead	µg/L		21	411
Selenium	µg/L		7.6	--
Dissolved solids (average)	mg/L		1967	--
Ammonia-Winter	mg/L		7.5	--

Copper becomes a Group 5 parameter based upon the loading test [OAC 3745-2-06(B)].

Dissolved solids (average) becomes a Group 5 parameter based upon the loading test [OAC 3745-2-06(B)].

PEL = preliminary effluent limit
PEQ = projected effluent quality
OAC = Ohio Administrative Code
WLA = wasteload allocation
WQS = water quality standards

Table 10. Final Effluent Limits and Monitoring Requirements for Outfall 0PC00013001

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Total precipitation	inches	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP
Temperature	°C	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Dissolved Oxygen	mg/L	- - - - - - - -	7.0 mg/L minimum	- - - - - - - - - - - -		M[c]
$CBOD_5$	mg/L	10	25[d]	54.6	81.8[d]	EP/PD
Suspended Solids	mg/L	12	18[d]	65.5	98.2[d]	EP/PD
Total Filterable Residue (Dissolved Solids)	mg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WLA/M[c]
Ammonia-Nitrogen	mg/L					
Summer		1.5	2.5[d]	8.18	13.7[d]	EP/BPT
Winter		7.5	11.3[d]	40.9	61.6[d]	WLA
Total Kjeldahl Nitrogen	mg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		BEJ
Nitrite + Nitrate	mg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		BEJ
Phosphorus	mg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		BEJ
Oil and Grease	mg/L	- - - - - - - - -	Not to exceed 10.0	- - - - - - - - - - -		WQS
pH	S.U.	- - - - - - - - - - - - -	6.5 to 9.0	- - - - - - - - - - - -		WQS
Fecal coliforms	#/100mL	1000	2000[d]	--	--	WQS/EP
E. coli	#/100mL	161	362[d]	--	--	WQS
Hex. Chromium (Dissolved)	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP
Chromium	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP
Nickel	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP
Cadmium	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		EP/WLA
Selenium	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WLA/ M[c]
Copper	µg/L	20	34	0.11	0.186	ABS/WLA/IMZM
Lead	µg/L	21	411	0.115	2.25	WLA
Mercury	ng/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		BEJ
Zinc	µg/L	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Whole Effluent Toxicity						
Acute	TU_a					
Ceriodaphnia dubia		- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WET/EP
Pimephales promelas		- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WET/EP
Chronic	TU_c					
Ceriodaphnia dubia		- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WET/EP
Pimephales promelas		- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		WET/EP

[a] Effluent loadings based on average design discharge flow of 1.44 MGD

[b] Definitions:

ABS = Antibacksliding Rule (OAC 3745-33-05(E) and 40 CFR Part 122.44(l))
BEJ = Best Engineering Judgment
BPT = Best Practicable Waste Treatment Technology, 40 CFR Part 133, Secondary Treatment Regulation
EP = Existing Permit
M = 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 (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)

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

[d] 7 day average limit.