

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 the
Village of New Lebanon WWTP

Ohio EPA Permit No.: **1PB00021**

Application No.: **OH0026697**

<u>Name and Address of Applicant:</u>	<u>Name and Address of Where Facility Discharge Occurs:</u>
Village of New Lebanon 198 South Clayton Road New Lebanon, Ohio 45345	New Lebanon WWTP 200 Hepner Avenue New Lebanon, Ohio 45345
Receiving Water: Bear Creek	Subsequent Stream Network: Great Miami River to Ohio River

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Introduction

Development of a fact sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations (CFR), Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency (Ohio EPA), as well as the methods by which the public can participate in the process of finalizing those actions.

This fact sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES permit effluent limitations. The technical basis for the fact sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This fact sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act (CWA) and Ohio Water Pollution Control Law, Chapter 6111 of the Ohio Revised Code (ORC). 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 Environmental Protection Agency (U.S. EPA) in the effluent guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR Parts 405-499. Technology-based regulations for publicly-owned treatment works are listed in the secondary treatment regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the director may establish technology-based limits based on best professional judgment (BPJ).

Ohio EPA reviews the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations (WLAs) are used to develop these limits based on the pollutants that have been detected in the discharge, and the receiving water's assimilative capacity. The assimilative capacity depends on the flow in the water receiving the discharge, and the concentration of the pollutant upstream. The greater the upstream flow, and the lower the upstream concentration, the greater the assimilative capacity is. Assimilative capacity may represent dilution (as in allocations for metals), or it may also incorporate the break-down of pollutants in the receiving water (as in allocations for oxygen-demanding materials).

The need for water-quality-based limits is determined by comparing the WLA for a pollutant to a measure of the effluent quality. The measure of effluent quality is called Projected Effluent Quality (PEQ). This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. If there is a small data set for a given pollutant, the highest measured value is multiplied by a statistical factor to obtain a PEQ; for example if only one sample exists, the factor is 6.2, for two samples - 3.8, for three samples - 3.0. The factors continue to decline as samples sizes increase. These factors are intended to account for effluent variability, but if the pollutant concentrations are fairly constant, these factors may make PEQ appear larger than it would be shown to be if more sample results existed.

Summary of Permit Conditions

The permit is proposed to have a term of five years – the maximum allowed.

Effluent limits and monitoring requirements for the following parameters are proposed to be the same as in the current permit: flow, temperature, dissolved oxygen, 5-day carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), ammonia-nitrogen, total phosphorus, nitrite+nitrate-nitrogen, total Kjeldahl nitrogen, pH, total residual chlorine, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, Escherichia coli (E. coli) and residual chlorine.

More stringent water-quality-based limits are proposed for Ammonia. To meet the wasteload allocation (WLA), current Ammonia limits are proposed to decrease from a monthly concentration of 2.5 mg/L to 1.2 mg/l in the summer and from 6.0 mg/l to 5.8 mg/l in the winter. Effluent data shows the facility is able to meet these new limits and the village is agreeable to having these new limits established in this permit without a compliance schedule.

The renewed permit will retain the numerical oil and grease limit in the current permit, but will specify that the limit is based on the use of the currently accepted hexane extraction analytical method instead of the Freon extraction analytical method which is no longer an approved method.

Current monitoring requirements for free cyanide and hexavalent chromium are being removed from this permit because there were no detections over the past five years of data and because, with a lack of industrial dischargers, these pollutants are not expected to be present in the discharge.

Although monitoring would not otherwise be necessary for metals other than copper and mercury, they are included in this permit because the analytical method for those metals is the same as for copper.

In Part II of the permit, special conditions are included that address sanitary sewer overflow (SSO) reporting; operator certification, minimum staffing and operator of record requirements; and outfall signage.

Three new monitoring stations are being added to the permit to track how often and how much sewage is diverted into the on-site storage lagoon and then pumped back into the treatment plant and when and how much sewage overflows the storage lagoon. The permit does not authorize the storage lagoon overflow.

Procedures for Participation in the Formulation of Final Determinations

The draft action shall be issued as a final action unless the Director revises the draft after consideration of the record of a public meeting or written comments, or upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty days of the date of the Public Notice, any person may request or petition for a public meeting for presentation of evidence, statements or opinions. The purpose of the public meeting is to obtain additional evidence. Statements concerning the issues raised by the party requesting the meeting are invited. Evidence may be presented by the applicant, the state, and other parties, and following presentation of such evidence other interested persons may present testimony of facts or statements of opinion.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

**Legal Records Section
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049**

Interested persons are invited to submit written comments upon the discharge permit. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049**

The Ohio EPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the draft permit, contact Matt Walbridge at (937) 285-6095 or matt.walbridge@epa.ohio.gov

Information Regarding Certain Water Quality Based Effluent Limits

This draft permit may contain proposed water quality based effluent limitations for parameters that **are not** priority pollutants. The following link provides a list of the priority pollutants:

http://epa.ohio.gov/portals/35/pretreatment/Pretreatment_Program_Priority_Pollutant_Detection_Limits.pdf

In accordance with Ohio Revised Code Section 6111.03(J)(3), the Director established these water quality based effluent limits after considering, to the extent consistent with the Federal Water Pollution Control Act, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties from those wastes and to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to accomplishment of the purposes of this chapter. This determination was made based on data and information available at the time the permit was drafted, which included the contents of the timely submitted National Pollutant Discharge Elimination System (NPDES) permit renewal application, along with any and all pertinent information available to the Director.

This public notice allows the permittee to provide to the Director for consideration during this public comment period additional site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness for achieving compliance with the proposed final effluent limitations for these parameters. The permittee shall deliver or mail this information to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049**

Should the applicant need additional time to review, obtain or develop site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness of achieving compliance with these limitations, written notification for any additional time shall be sent to the above address no later than 30 days after the Public Notice Date on Page 1.

Should the applicant determine that compliance with the proposed water quality based effluent limitations for parameters other than the priority pollutants is technically and/or economically unattainable, the permittee may submit an application for a variance to the applicable water quality standard(s) used to develop the proposed effluent limitation in accordance with the terms and conditions set forth in Ohio Administrative Code (OAC) Rule 3745-33-07(D). The permittee shall submit this application to the above address no later than 30 days after the Public Notice Date.

Alternately, the applicant may propose the development of site-specific water quality standard(s) pursuant to OAC Rule 3745-1-35. The permittee shall submit written notification regarding their intent to develop site specific water quality standards for parameters that are not priority pollutants to the above address no later than 30 days after the Public Notice Date.

Location of Discharge/Receiving Water Use Classification

The village of New Lebanon WWTP is located in Montgomery County and discharges to Bear Creek (Hydrologic Unit Code - HUC 0508000204) at approximately river mile (RM) 10.5.

Figure 1

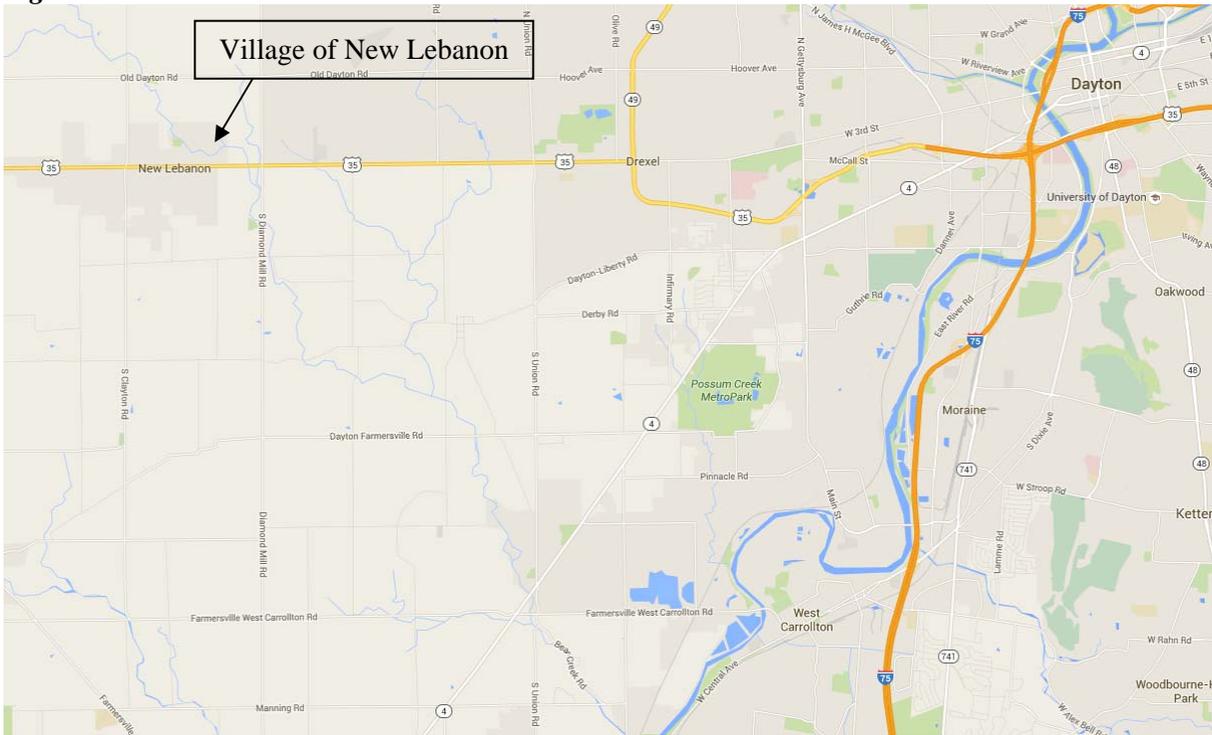


Figure 2



Assessment of Impact on Receiving Waters

Bear Creek is designated the following uses under Ohio's Water Quality Standards (WQS) in OAC 3745-1-18: Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Primary Contact Recreation (PCR). Bear Creek is identified as being in full attainment of its use designations.

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use, and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric WQS are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal CWA.

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 total population served by the New Lebanon WWTP is estimated to be around 4,000 people. The collection system is 100 percent separate sanitary sewers. Based on discharge flow data, the inflow/infiltration rate for the collection system is considered low. There is on-going sewer rehabilitation work to address I&I.

The New Lebanon WWTP was originally constructed in 1961 with the last significant upgrade in 1987. It is an advanced treatment facility with an average design flow of 0.8 million gallons per day (MGD). The treatment plant includes the following equipment and/or wet processes:

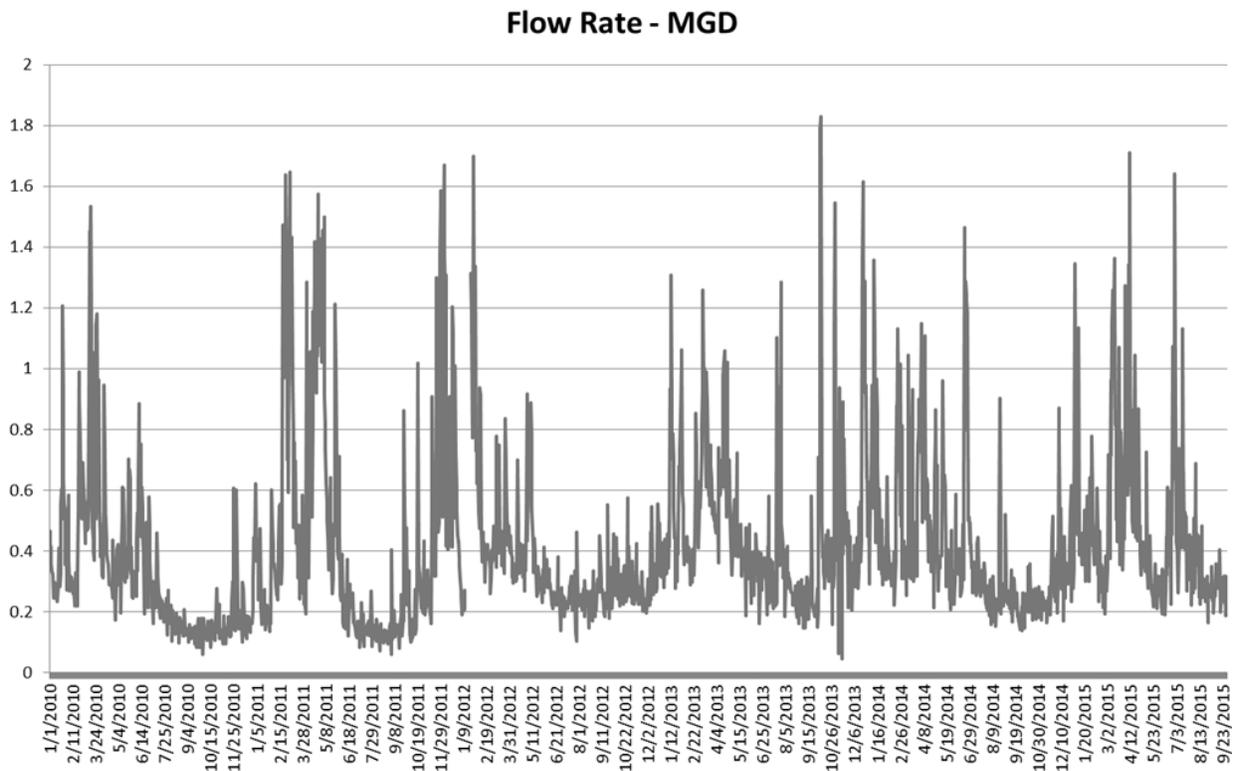
- Bar Screens
- Fine Screens
- Oxidation Ditches with surface aerators (disc)
- Secondary Clarification
- Chlorine Disinfection
- Dechlorination
- Post Aeration

Description of Existing Discharge

Table 1 shows the annual effluent flow rates based upon DMR data. The flow rates have been variable during the period of review.

Table 1: Effluent Flow Rates for Outfall 001 2010-2015				
Year	Annual Flow in MGD			
	50th Percentile	95th Percentile	Average	Maximum
2010	0.258	0.749	0.320	1.534
2011	0.311	1.348	0.459	1.67
2012	0.304	0.75	0.356	1.699
2013	0.398	0.99	0.470	1.828
2014	0.342	0.950	0.418	1.464
2015 Jan-Sept	0.403	1.132	0.475	1.71

Individual flow data points for these periods are reflected in the graph below:



Plant Bypasses and SSOs

New Lebanon is required to report SSO occurrences under station 300 in its NPDES permit. However, during the inspection done in preparation for renewal of this permit, it was revealed that the number of overflows they report are actually occurrences of when the storage lagoon at the influent overflows. They indicated that there have been no overflows in the sanitary sewer system. Discharge monitoring reports show the following bypasses have occurred:

Table 2: Plant Bypasses at the New Lebanon WWTP 2011- September 2015	
2011	5
2012	0
2013	1
2014	0
2015	0

New monitoring stations are included with the permit to require reporting of when and how much sewage is diverted to the storage lagoon, when and how much sewage is directed from the storage lagoon to the treatment plant and when and how much sewage overflows the storage lagoon.

Sludge

Sludge processing includes aerobic digestion and dewatering with land application of liquid sludge. Table 3 shows the total tons of sludge removed from 2009 through 2014, based upon discharge monitoring report (DMR) data.

Table 3: Dry Tons of Sludge Removed from New Lebanon WWTP 2009-2014	
2009	17.3
2010	0
2011	35.57
2012	30.89
2013	8.82
2014	30.35

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 New Lebanon WWTP was 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:

Discharge Monitoring Report (DMR) Data	January 2009 through July 2015
NPDES Permit Application Data	July 2017

This data is evaluated statistically, and PEQ values are calculated for each pollutant. Average PEQ (PEQ_{avg}) values represent the 95th percentile of monthly average data, and maximum PEQ (PEQ_{max}) values represent the 95th percentile of all data points. The average and maximum PEQ values are presented in Table A.

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 H for a summary of the screening results

Wasteload Allocation (WLA)

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.

Applicable waterbody uses for this facility’s discharge and the associated stream design flows are as follows:

Aquatic life – Warm Water Habitat (WWH)		
<u>Parameter</u>	<u>Limit Type</u>	<u>Stream Flow</u>
Toxics (metals, organics, etc.)	Average	Annual 7Q10
	Maximum	Annual 1Q10
Ammonia	Average	Summer 30Q10
		Winter 30Q10
Agricultural Water Supply		Harmonic mean flow
Human Health (nondrinking)		Harmonic mean flow

Allocations are developed using a percentage of stream design flow as specified in Table C, and allocations cannot exceed the Inside Mixing Zone Maximum criteria. The data used in the WLA are listed in Table A and Table C. The WLA results to maintain all applicable criteria are presented in Table D. Current ammonia limits were not found to be protective of aquatic life.

Reasonable Potential/ Effluent Limits/Hazard Management Decisions

After appropriate effluent limits are calculated, the reasonable potential of the discharger to violate the WQS must be determined. Each parameter is examined and placed in a defined "group". Parameters that do not have a WQS or do not require a WLA based on the initial screening are assigned to either group 1 or 2. For the allocated parameters, the preliminary effluent limits (PEL) based on the most restrictive average and maximum WLAs are selected from Table D. The average PEL (PEL_{avg}) is compared to the average PEQ (PEQ_{avg}) from Table C, 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 E.

The final effluent limits are determined by evaluating the groupings in conjunction with other applicable rules and regulations. Table F presents the final effluent limits and monitoring requirements proposed for the New Lebanon WWTP outfall 1PB00021001 and the basis for their recommendation.

Oil and Grease, pH, E. coli, and Dissolved Oxygen

Limits proposed for oil and grease, pH, and dissolved oxygen are based on WQS (OAC 3745-1), and are a continuation of existing permit limits.

E. coli limits are proposed to continue from the previous permit.

TSS, Ammonia, and CBOD₅

The limits for TSS and CBOD₅ are proposed to continue from the previous permit. The concentration limits for these parameters are based upon the treatment technology associated with the plant design of the New Lebanon WWTP. The loading limits are based upon the plant's average design flow of 0.8 MGD.

The Ohio EPA risk assessment (Table E) places Ammonia in Group 5. This placement, as well as the data in Tables A and D indicate that the reasonable potential to exceed WQS exists and limits are necessary to protect water quality. The PEQ is greater than 100 percent of the wasteload allocation AND/OR the PEQ is between 75 and 100 percent of the wasteload allocation and certain conditions exist that increase the risk to the environment. Pollutants that meet this requirement must have permit limits under OAC Rule 3745-33-07(A)(1).

Ammonia limits, based on water quality standards and the wasteload allocation are proposed to be reduced from a monthly concentration of 2.5 mg/L to 1.2 mg/l in the summer and from 6.0 mg/l to 5.8 mg/l in the winter.

Nitrate+Nitrite and TKN

The continuation of monitoring for nitrate+nitrite and TKN is proposed based on best engineering judgment. Monitoring nitrate+nitrite and TKN at the upstream and downstream stations is also proposed. The purpose of the monitoring is to maintain a data set for tracking nutrient levels in the Lower Great Miami River basin.

Cadmium, Chromium, Hexavalent Chromium, Free Cyanide, Mercury, Nickel, Lead, Silver, and Zinc

Based on reasonable potential for requiring monitoring in NPDES permits [OAC 3745-33-07(A)], monitoring is proposed to continue for cadmium, chromium, mercury, nickel, lead, silver and zinc because all these parameters were grouped into Group 2 of the Parameter Assessment (Table E). The purpose of the monitoring is to maintain a current data base on the level of these contaminants in the plant effluent. This data will be used to assess reasonable potential at future permit renewals.

Monitoring requirements for hexavalent chromium and free cyanide are not proposed as supported by monitoring showing they have not been detected and because there are no known sources that could potentially contribute these pollutants.

Copper

Ohio EPA risk assessment (Table E) places Copper in group 4. This placement, as well as the data in Tables A and D support that this parameter does not have the reasonable potential to contribute to WQS exceedances, and limits are not necessary to protect water quality. However, monitoring for Group 4 pollutants (where PEQ exceeds 50 percent of the WLA) is required by OAC Rule 3745-33-07(A)(2).

Other Requirements

Sanitary Sewer Overflow Reporting

Provisions for reporting SSOs are again proposed in this permit. These provisions include: the reporting of the system-wide number of SSO occurrences on monthly operating reports; telephone notification of Ohio EPA and the local health department, and 5-day follow up written reports for certain high risk SSOs; and preparation of an annual report that is submitted to Ohio EPA and made available to the public. Many of these provisions were already required under the “Noncompliance Notification”, “Records Retention”, and “Facility Operation and Quality Control” general conditions in Part III of Ohio NPDES permits.

Operator Certification

Operator certification requirements have been included in Part II, Item A of the permit. The permit establishes that the New Lebanon WWTP have a Class II wastewater treatment plant operator in charge of the sewage treatment plant operations.

Operator of Record

In December 2006, 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 OAC 3745-7-02. It requires the permittee to designate one or more operator of record to oversee the technical operation of the treatment works.

Sludge

Limits and monitoring requirements for the disposal of sewage sludge by land application or transfer to another facility with an NPDES permit are based on OAC 3745-40:

Specific Monitoring Requirements

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.

Outfall Signage

Pursuant to OAC 3745-33-08(A), Part II of the permit includes a requirement for the permittee to maintain a sign at the outfall to the receiving stream providing information about the discharge.

Table A. Effluent Data and Projected Effluent Quality Values for the New Lebanon WWTP

Parameter	Units	Number of Samples	Number > MDL	PEQ Average	PEQ Maximum
Ammonia-S	mg/l	144	22	0.24895	0.43736
Ammonia-W	mg/l	112	13	0.17147	0.28161
Cadmium - TR	ug/l	9	0	--	--
Chromium - TR	ug/l	9	0	--	--
Chromium VI - Diss	ug/l	9	0	--	--
Copper - TR	ug/l	9	5	13.2714	18.18
Cyanide - free	mg/l	9	0	--	--
Lead - TR	ug/l	9	0	--	--
Mercury - TR (BCC)	ng/l	9	0	--	--
Nickel - TR	ug/l	9	0	--	--
Zinc - TR	ug/l	9	9	35.478	48.6

BCC - Bioaccumulative Chemical of Concern
 TR - Total Residual
 Diss - Dissolved
 MDL - Method Detection Limit

Table B. Water Quality Criteria applicable to Bear Creek (Warm Water Habitat)

Parameter	Units	Outside Mixing Zone Criteria			Maximum Aquatic Life	Inside Mixing Zone Maximum
		Average		Maximum		
		Human Health	Agri-culture			
Ammonia-S	mg/l	--	--	1.1	--	--
Ammonia-W	mg/l	--	--	3.9	--	--
Cadmium - TR	ug/l	--	50	5.3	14	27
Chromium - TR	ug/l	--	100	190	4000	8000
Chromium VI - Diss	ug/l	--	--	11	16	31
Copper - TR	ug/l	1300	500	21	35	70
Cyanide - free	mg/l	220	--	0.012	0.046	0.092
Lead - TR	ug/l	--	100	22	420	840
Mercury - TR (BCC)	ng/l	12	10000	910	1700	3400
Nickel - TR	ug/l	4600	200	120	1100	2100
Zinc - TR	ug/l	69000	25000	270	270	550

BCC - Bioaccumulative Chemical of Concern

Table C. Instream Conditions and Discharger Flow

<u>Parameter</u>	<u>Units</u>	<u>Season</u>	<u>Value</u>	<u>Basis</u>
<i>Stream Flows</i>				
1Q10	cfs	annual	0	Paul Gledhill 2010 (verified by James Connon)
		annual	0.046	Paul Gledhill 2010 (verified by James Connon)
7Q10	cfs	summer	0.046	Paul Gledhill 2010 (verified by James Connon)
		winter	0.416	Paul Gledhill 2010 (verified by James Connon)
30Q10	cfs	summer	0.093	Paul Gledhill 2010 (verified by James Connon)
		winter	0.601	Paul Gledhill 2010 (verified by James Connon)
90Q10	cfs	annual	0.231	
Harmonic Mean	cfs	annual	1.83	Paul Gledhill 2010 (verified by James Connon)
Mixing Assumption	%	average	100	
		maximum	100	
<i>Hardness</i>	mg/l	annual	264	Bear Creek near Miamisburg @ Soldiers Home - Miamisburg Rd
<i>pH</i>	S.U.	summer	7.965	Facility DMRs
		winter	7.9175	Facility DMRs
<i>Temperature</i>	C	summer	23.25	Facility DMRs
		winter	9.675	Facility DMRs
<i>New Lebanon STP flow</i>	cfs	annual	1.24	NPDES Permit
<i>Background Water Quality</i>				
Ammonia-S	mg/l		0.03	STORET; 2010; n=6; 0<MDL;
Ammonia-W	mg/l		0.25	unimpacted stream data for the state of Ohio; 1988; n=740; 336<MDL;
Cadmium - TR	ug/l		42.05	STORET; 2010; n=6; 0<MDL;
Chromium - TR	ug/l		14.9	unimpacted stream data for the state of Ohio; ; n=157; 143<MDL;
Chromium VI - Diss	ug/l		0	No representative data available.
Copper - TR	ug/l		1.4	STORET; 2010; n=3; 0<MDL;
Cyanide - free	mg/l		0	No representative data available.
Lead - TR	ug/l		1	STORET; 2010; n=3; 0<MDL;
Mercury - TR (BCC)	ng/l		0	No representative data available.
Nickel - TR	ug/l		1.8	STORET; 2010; n=3; 0<MDL;
Zinc - TR	ug/l		11.67	STORET; 2010; n=3; 0<MDL;

Note: USGS= United States Geological Survey, DMR=Discharge Monitoring Report, cfs=cubic feet per second, STORET=EPA Storage and RETrieval data management system, OEPA=Ohio Environmental Protection Agency, MDL=Method Detection Limit

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

Parameter	Units	Outside Mixing Zone Criteria			Maximum Aquatic Life	Inside Mixing Zone Maximum
		Average				
		Human Health	Agri-culture	Aquatic Life		
Ammonia-S	mg/l	--	--	1.2	--	--
Ammonia-W	mg/l	--	--	5.8	--	--
Cadmium - TR	ug/l	--	62	5.3	14	27
Chromium - TR	ug/l	--	226	196	4000	8000
Chromium VI - Diss	ug/l	--	--	11	16	31
Copper - TR	ug/l	3216	1236	22	35	70
Cyanide - free	mg/l	545	--	0.012	0.046	0.092
Lead - TR	ug/l	--	246	23	420	840
Mercury - TR (BCC)	ng/l	12	10000	910	1700	3400
Nickel - TR	ug/l	11386	493	124	1100	2100
Zinc - TR	ug/l	170813	61878	280	270	550

- ^A Allocation must not exceed the Inside Mixing Zone Maximum.
- ^B Bioaccumulative Chemical of Concern (BCC); no mixing zone allowed after 11/15/2010, WQS must be met at end-of-pipe, unless the requirements for an exception are met as listed in 3745-2-08(L).
- ^C Parameter would not require a WLA based on reasonable potential procedures, but allocation requested for use in pretreatment program.
- ^D WLA based on applicable dissolved metal translator.

Table E. Parameter Assessment

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

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

Cadmium - TR	Chromium - TR	Chromium VI - Diss
Cyanide - free	Lead - TR	Mercury - TR (BCC)
Nickel - TR	Zinc - TR	

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

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.

Copper - TR

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

Limits to Protect Numeric Water Quality Criteria

<u>Parameter</u>	<u>Units</u>	<u>Period</u>	<u>Recommended Effluent Limits</u>	
			<u>Average</u>	<u>Maximum</u>
Ammonia	mg/l	Summer	1.2	--
		Winter	5.8	--

Table F. 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, EP
Dissolved Oxygen	mg/L	----- Not less than 5.0 -----				WQS, EP
Total Suspended Solids	mg/L	30	45 ^c	137	91 ^c	PD, EP
Oil and Grease	mg/L	--	10	--	--	WQS, EP
Ammonia	mg/L					
Summer		1.2	1.8 ^c	3.6	5.5 ^c	WLA, BEJ
Winter		5.8	8.7 ^c	17.6	26.3 ^c	WLA, BEJ
Total Kjeldahl Nitrogen	mg/L	----- Monitor -----				M, EP
Nitrite + Nitrate	mg/L	----- Monitor -----				M, EP
Phosphorus	mg/L	----- Monitor -----				M, EP
Nickel	µg/L	----- Monitor -----				M, EP
Silver	µg/L	----- Monitor -----				M, EP
Zinc	µg/L	----- Monitor -----				M, EP
Cadmium	µg/L	----- Monitor -----				M, EP
Lead	µg/L	----- Monitor -----				M, EP
Chromium	µg/L	----- Monitor -----				M, EP
Copper	µg/L	----- Monitor -----				RP
E. coli						
Summer Only	#/100ml	161	362 ^c	--	--	ABS, EP
Flow	MGD	----- Monitor -----				M, EP
Chlorine	mg/L	--	0.025	--	--	EP
Mercury	ng/L	----- Monitor -----				RP
pH	S.U.	----- 6.5 to 9.0 -----				WQS, EP
CBOD ₅ ^d	mg/L					
Summer		25	40 ^c	75.7	121.1 ^c	PD, EP
Winter		15	25 ^c	45.4	75.7 ^c	PD, EP

^a Effluent loadings based on average design discharge flow of 0.8 MGD.

^b **Definitions:** ABS = Antiregressing Rule [OAC 3745-33-05(F) and 40 CFR Part 122.44(1)];

BEJ = Best Engineering Judgment;

EP = Existing Permit;

M = BEJ of Permit Guidance 1: Monitoring Frequency Requirements for Sanitary Discharges;

PD = Plant Design Criteria;

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

WLA = Wasteload Allocation procedures (OAC 3745-2);

WQS = Ohio Water Quality Standards (OAC 3745-1-07).

^c Weekly average limit.

^d CBOD₅ = 5-day carbonaceous biochemical oxygen demand