

June 30, 2017

The Honorable Rhonda Pownell  
Mayor, City of Northfield  
801 Washington Street  
Northfield, MN 55057

RE: Update to New Water Quality Based Effluent Limits  
Northfield Wastewater Treatment Facility  
NPDES/SDS Permit No. MN0024368

Dear Mayor Pownell:

The Minnesota Pollution Control Agency (MPCA) sent a letter to the city of Northfield (City) on June 9, 2017, describing new phosphorus Water Quality Based Effluent Limits (WQBEL). Since then there has been an update to your limits. On June 27, the MPCA staff held a conference call with Northfield staff to discuss these changes. They are also outlined in this letter.

*Phosphorus* - As summarized in Table 1 below, the Facility will have the following new effluent limits listed in the limits and monitoring section of the permit.

**Table 1. Summary of Total Phosphorus Effluent Limits for the Northfield WWTF Permit**

Limit	Limit type	Effective Period	Basis
24.80 kilograms per day	Calendar month average	June – September	WQBEL
41.33 kilograms per day	Calendar month average	October – May	WQBEL
6,223 kilograms per year	12-month moving total	January – December	WQBEL
1.0 milligram per liter	Calendar month average	January – December	State Discharge Restriction

The June 9 letter described alternate daily mass limits than what is listed above. The previous letter included an 11.81 kilogram per day June – September limit and a 19.68 kilogram per day October-May limit. These limits are equivalent to the wasteload allocations established in the Cannon River TMDL study.

Although the effluent limits in the permit will be higher than what was originally communicated, there will be language added to the permit text that discusses the long-term goal of maintaining effluent levels consistent with the wasteload allocations. The following is draft language for this requirement:

*This permit includes total phosphorus (TP) limits as follows: 1.0 mg/L TP calendar month average (SDR); 41.33 kg/day (Oct-May) and 24.80 kg/day (June-Sept) calendar month average; and 6,223 kg/yr 12-month moving total. The June-September daily mass WQBEL is based off a long-term average wasteload allocation of 11.81 kg/day. The long-term average wasteload allocation of 11.81 kg/day is based on achieving eutrophication standards in Lake Byllesby. The MPCA projects that the Northfield WWTF will have to average 11.81 kg/day as a long-term average to comply with the 24.80 kg/day monthly average limit. If it is found that the long-term average of 11.81 kg/day is not achieved with the 24.80 kg/day monthly average effluent limit, the effluent limit will be adjusted down to ensure that the long-term average wasteload allocation of 11.81 kg/day is achieved [Minn. R. 7001]*

Upon review by the MPCA, it appears that the Facility can comply with the new limits at current conditions and at design flow and loading. Please provide a response to the following:

1. Concurrence that the Facility can meet the proposed limit at the current flow and design flow and loadings, or submit documentation of reasons the Facility will not be able to meet the new limit at current or design flow and loadings.

Please provide the requested information by August 8, 2017.

If you have any questions or would like to set up a meeting with MPCA staff regarding; the new limit(s), the requested information, or any of the information enclosed with this letter, please contact me at [shauna.bendt@state.mn.us](mailto:shauna.bendt@state.mn.us) or at 651-757-2282.

Sincerely,

*Shauna Bendt*

This document has been electronically signed.

Shauna Bendt

Environmental Specialist 3

Municipal Wastewater Section

Municipal Division

cc: Justin Wagner, Utilities Manager  
Rich Kucera, Wastewater Plant Supervisor

Enclosures: Northfield WWTF Effluent Limitations Summary

Fill in white portion of form only

ELR staff will complete shaded areas

**Effluent Limitations Summary**

Domestic /Sewage

Version 150112

Attach map marking outfall to receiving water

Target completion date:

<b>TO:</b> Steven Weiss	Assigned ELR staff: Scott Kyser		<b>Submittal Date:</b>	
<b>From:</b> Permit Writer / Rev.Engineer	Shauna Bendt / EuDale Mathiason		<b>Phone:</b>	651-757-2282
<b>Permit number:</b>	MN0024368	<b>Outfall #:</b>	SD006	<b>Exp.date:</b> 10/31/2015
<b>Permittee name:</b>	City of Northfield			
<b>Facility name/location:</b>	Northfield WWTF / 1450 Hwy 3 North, Northfield, MN			
<b>Outfall location (PLS coordinates):</b>	T112N R19W S30		<b>County:</b> Dakota	

**Design Parameters**

<b>Reason:</b> reissuance	<b>Existing Facility</b> EPA Major: <input checked="" type="checkbox"/> Class: <b>A</b>	<b>Proposed Facility</b> EPA Major: <input checked="" type="checkbox"/> Class: <b>A</b>
<b>Type of Facility / Disinfection</b>	aeration/chemical P removal	Same
<b>Stab Ponds: discharge pond acreage (mid-depth)</b>		
<b>Waste Flow Type</b>	continuous	
<b>Nondeg Design Flow date:</b> Nov 5, 1984	3.4 mgd	
<b>Avg Wet Weather Design Flow (mgd)</b>	5.2 mgd	
<b>Avg Dry Weather Design Flow (mgd)</b>	3.23 mgd	
<b>Avg Annual Design Flow (mgd)</b>		
<b>Receiving water</b>	Cannon River	

Applicable State  
Regulations:

Receiving Water

Use Class: 2B,3C,4A,4B,5,6

ORVW (Y/N): No

Designation  
Date:**Effluent Limitations**

Final Limits for Existing Permit

Final Limits for Proposed Permit

Substance or Characteristic	mg/L		kg/day		mg/L		kg/day	
	AVG monthly		AVG monthly		AVG monthly		AVG monthly	
CBOD <sub>5</sub>	25		322		25		322	
Total Suspended Solids	30		386		30		386	
Fecal Coliform (Geometric mean):	200 orgs/100mL		NA		200 orgs/100mL			
	Apr-Oct				Apr-Oct			
Ammonia-N:	Jun 1 - Sep 30		8.9		8.9		175	
	Oct 1 - Nov 30		34		34		668	
	Dec 1 - Mar 31		monitor only		monitor only			
	Apr 1 - May 31		20		20		393	
pH (Range) (Standard Units)	6.0-9.0		NA		6.0-9.0		NA	
Dissolved Oxygen (daily minimum)	monitor		NA		monitor		NA	
<b>TOXICS</b> (units µg/L) unless otherwise specified	AVG monthly	MAX daily	AVG monthly	MAX daily	AVG monthly	MAX daily	AVG monthly	MAX daily
Residual Chlorine (dechlorination required)	NA		NA	NA	NA		NA	NA
Total Copper		113 ug/L		1.45		113 ug/L		1.45
Mercury (units are ng/L and mg/day)	CalMoAvg	12MoAvg	CalMoAvg	Basis:	CalMoAvg		CalMoAvg	Basis:

(enter remarks at bottom of form)  
SDR: State Discharge RestrictionCompleted by: \_\_\_\_\_  
Completed by: \_\_\_\_\_Date: \_\_\_\_\_  
Date: \_\_\_\_\_



Date: \_\_\_\_\_

Domestic/Sewage

*ELR staff will complete shaded areas*

Permittee: City of Northfield

## Effluent Limitations Summary

Outfall#: SD006

Version 150112

### Effluent Limitations

Substance or Characteristic	Final Limits for Existing Permit				Final Limits for Proposed Permit			
Phosphorus Management Plan (PMP)	None							
Is mass limit frozen by nondeg?					SDR = State Discharge Restriction			
Does this facility participate in a Phosphorus trading agreement ? Yes	CalMoAvg mg/L	12MoAvg mg/L	CalMoAvg kg/day	CYTDTot (kg/yr)	CalMoAvg mg/L	mg/L	CalMoAvg kg/day	12MoMTot (kg/yr)
Phosphorus, Total	1.0		19.6	7174	1.0		see below	6,223
Effective Period	Jan-Dec		Jan-Dec	Jan-Dec	Jan-Dec			Jan-Dec
Phosphorus Limit Basis					SDR		WQBEL	WQBEL

Completed by: LFK

Date: 6/26/17

Remarks: see below

**Significant Industrial Users of municipal system** (contact Regional office staff for input)

Pollutant/Analyte (if known)	Industry (name and type)
All Flexs Inc	Metal Finishing
Malt-O-Meal	
Multek Flexible Circuits	Electroplating

## Monitoring for Toxics

Pollutant/Analyte	Information source: (DMR, special requirements, priority pollutants, leachate, etc.)

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

## Wetland Impacts

Location of impacted wetland (PLS coordinates):	Effluent limit review      Date:
Potential impact: <input type="checkbox"/> filling <input type="checkbox"/> excavation <input type="checkbox"/> drainage <input type="checkbox"/> discharge to	Completed by: _____

**Variances** see attached documentation

[illegible]

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

**TMDL Requirements** see Comments section at end of Checklist

[illegible]

## Effluent Limitations Summary

Outfall#: SD006

**Additional Monitoring Requirements** (List effluent monitoring only if an effluent limit is **not** assigned)

**I** = Influent **E** = Effluent **S** = Receiving water (Attach Information Protocol with detailed requirements for receiving water monitoring)

[illegible]

Dissolved Oxygen: effluent data not reviewed; standard effluent monitoring requirement

Reviewed by: Scott Kyser

Date: 3-20-2017

Reviewed by: \_\_\_\_\_

Date:

Reviewed by: \_\_\_\_\_

Date:

Remarks:

Mercury minimization plan required

Phosphorus - The Cannon River Watershed effluent limits are as follows: 1.0 mg/L TP calendar month average (SDR); 41.33 kg/day (Oct-May) and 24.80 kg/day (June-Sept) calendar month average; and 6,223 kg/yr 12-month moving total. The WQBEL is based off of a long-term average wasteload allocation of 11.81 kg/day. The long-term average wasteload allocation of 11.81 kg/day is based on achieving eutrophication standards in Lake Byllesby. The MPCA projects that the Northfield WWTF will have to average 11.81 kg/day as a long-term average to comply with the 24.80 kg/day monthly average limit. If it is found that the long-term average of 11.81 kg/day is not achieved with the 24.80 kg/day monthly average effluent limit, the effluent limit will be adjusted down to ensure that the long-term average wasteload allocation of 11.81 kg/day is achieved [Minn. R. 7001]. Please refer to the Cannon River Watershed Upstream of Lake Byllesby TP review for additional information. LFK 6/26/17

