Permit Fact Sheet

General Information

Permit Number	WI-0031470-07-0	
Permittee Name:	Norway TN Sanitary District 1	
Address:	6419 Heg Park Road	
City/State/Zip:	Wind Lake WI 53185	
Discharge Location:	6419 Heg Park Road (effluent outfall is Waubeesee Lake Drainage Canal, SE 1/4 of NW 1/4, Sec 17, T4N, R20E, Racine County)	
Receiving Water:	Waubeesee Lake Drainage Canal, which joins the Wind lake Drainage Canal, to the SE Fox (IL) River	
StreamFlow ($Q_{7,10}$):	<0.01 cfs	
Stream Classification:	Warm Water Sport Fish	
Design Flow(s)	Daily Maximum	5.7 MGD
	Weekly Maximum	3.5 MGD
	Monthly Maximum	2.4 MGD
	Annual Average	1.6 MGD
Significant Industrial Loading?	No	
Operator at Proper Grade?	Yes	
Pretreatment Program Approval Date:	N/A	

1 Facility Description

The Town of Norway Sanitary District No.1 owns and operates a 1.6- million gallons per day (MGD) extended aeration, activated sludge plant, which went on-line in December 2000. The facility serves the Town of Norway sanitary district and a portion of the City of Muskego. Wastewater treatment train includes fine screening, alum addition for phosphorus removal, fine bubble activated sludge aeration, final clarification in two settling tanks, ultra violet (UV) light disinfection in a channel and additional aeration in a post aeration tank. Effluent passes through a 12-inch Parshall flume before discharging to Waubeesee Lake Drainage Canal, and untimately into the Fox (IL) River. Wastewater sludge is aerobically digested and hauled away by Pat's Sanitary who stores and landspreads biosolids under a separate WPDES permit. The facility does not accept hauled wastes and there is no industry within the Norway Sanitary District.

Sample Point Designation

Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
701	0.84 MGD Jan 2012-Aug 2014	Samples shall be taken after fine screening but before addition of return activated sludge (RAS) and alum.
001	0.83 MGD Jan 2012-Aug 2014	Composite samples are drawn from the channel before the UV light disinfection and post aeration. Grab samples are collected after the UV light disinfection and post aeration.
002	105 dry US tons in 2013	Aerobically digested sludge samples shall be collected prior to hauling and tests results shall be reported on Form 3400-49 'Waste Characteristics Report'. Hauled sludge reports shall be submitted on Form 3400-52 'Other Methods of Disposal or Distribution Report' following each year that the sludge is hauled.
101		Mercury Field Blank.

2 Influent - Proposed Monitoring

2.1 Sample Point Number: 701- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Comp	
Mercury, Total Recoverable		ng/L	1/6 Months	24-Hr Flow Prop Comp	Monitor during permit's last 2 calendar years.

2.1.1 Changes from Previous Permit:

- Monitoring for ammonia and phosphorus discontinued
- Monitoring for mercury included

2.1.2 Explanation of Monitoring Requirements

Influent ammonia monitoring no longer considered necessary. Influent monitoring for BOD and TSS are standard municipal wastewater requirements – to track percent removal. Minimum of quarterly mercury monitoring is required for all major wastewater facilities.

3 Inplant - Proposed Monitoring and Limitations

3.1 Sample Point Number: 101- Mercury Field Blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	1/6 Months	Blank	Monitor during permit's last 2 calendar years.

3.1.1 Changes from Previous Permit:

Mercury monitoring included

3.1.2 Explanation of Limits and Monitoring Requirements

Field blank for Mercury monitoring included per NR 106.145 requirements.

4 Surface Water - Proposed Monitoring and Limitations

4.1 Sample Point Number: 001- Effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	5.3 mg/L	Weekly	24-Hr Flow Prop Comp	April limit
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	3.6 mg/L	Weekly	24-Hr Flow Prop Comp	May-Sept limit
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.4 mg/L	Weekly	24-Hr Flow Prop Comp	October limit
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	11.4 mg/L	Weekly	24-Hr Flow Prop Comp	Nov-March limit
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.1 mg/L	Weekly	24-Hr Flow Prop Comp	April limit

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.4 mg/L	Weekly	24-Hr Flow Prop Comp	May-Sept limit
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.0 mg/L	Weekly	24-Hr Flow Prop Comp	October limit
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.5 mg/L	Weekly	24-Hr Flow Prop Comp	Nov-March limit
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim limit. See permit for the phosphorus water quality based effluent limits effective at the end of Compliance Schedule.
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	5/Week	Grab	
Fecal Coliform	Geometric Mean	400 #/100 ml	2/Week	Grab	May through Sept only
Chloride	Weekly Avg	680 mg/L	4/Month	24-Hr Flow Prop Comp	This is an interim limit. Sampling shall be done on four consecutive days each month. See Chloride footnote in permit
Chloride		lbs/day	4/Month	Calculated	
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See WET footnote.
Chronic WET		rTUc	Once	24-Hr Flow Prop Comp	Monitor during permit's last calendar year. See WET footnote in permit.
Mercury, Total Recoverable		ng/L	1/6 Months	Grab	Monitor during permit's last 2 calendar years.
Temperature Maximum		deg F	Continuous	Continuous	Monitor during permit's last calendar year.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	

4.1.1 Changes from Previous Permit

- **Phosphorus:** The existing technology-based limit of 1.0 mg/L is retained as an interim limit and new final water quality based effluent limits are specified in conjunction with the Phosphorus compliance schedule. The final water quality based effluent limits for phosphorus are 0.075 mg/L six-month average (May-October, November-April), and 0.225 mg/L (monthly average). Final limits may be revised based on possible future Fox (IL) River TMDL evaluations.
- **Thermal:** Inclusion of effluent temperature monitoring during the permit's last calendar year.
- Monitoring frequency for **BOD, TSS and ammonia** reduced from 5/Week to 3/Week
- Limitation for **BOD** of 5 mg/L from May through October has been removed. 10 mg/L BOD limit now applies year round
- Monthly average **ammonia** limitations have been included
- **Total Nitrogen** monitoring has been included.

4.1.2 Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

See the Water Quality Based Effluent memo for the Norway SD #1 dated January 22, 2014 for applicable WQBELs.

- **Phosphorus:** Phosphorus rules for water quality based effluent limits became effective December 2010 as detailed in NR 217. The WQBEL for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL. This final effluent limit was derived from and complies with the applicable water quality criterion. Please see the phosphorus compliance schedule included in the Schedules section.

  Justification for not expressing phosphorus limits as a weekly average: For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly values. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL. This final effluent limit was derived from and complies with the applicable water quality criterion. Please see the phosphorus compliance schedule included in the Schedules section.

- **Thermal:** Changes to thermal rules became effective on October 1st, 2010. Chapter NR 102, Subchapter II of the Wisconsin Administrative Code establishes water quality standards for temperature, in order to protect fish and other aquatic life from lethal and sub-lethal effects. Water quality-based effluent limitations were evaluated, using Chapter NR 106, Subchapter V. Norway Sanitary District submitted an effluent Dissipative Cooling study report, which the Department reviewed. The review indicated that there is sufficient dissipation of heat and no adverse impact is expected on the fishery in the receiving stream. Therefore no effluent temperature limits are included.
- **BOD, Suspended Solids, pH, and fecal coliforms:** Standard municipal wastewater requirements for BOD, Suspended Solids, pH, and fecal coliforms are included based on NR 210 Sewage Treatment Works requirements for discharges to fish and aquatic life streams.

  The permittee objected to the more stringent BOD limit of 5 mg/L for the months of May through October in the current permit. As such, BOD limits were held in abeyance. Norway SD subsequently submitted a time-of-travel study of the effluent, to demonstrate that additional downstream dilution should be considered in establishing summer BOD limits greater than 5 mg/l. Since BOD acts as a pollutant in reducing dissolved oxygen from a

stream, and since BOD5 (or the amount of oxygen depletion over the course of five days) is used for regulatory purposes, the Department reviewed and agreed with the study result - that a significant portion of the five day oxygen might be occurring downstream of the Waubeesee Lake Drainage Canal, where more dilutionary flow is available.

- **Ammonia:** New weekly and monthly average ammonia limits are included in the proposed permit per Subchapter III of ch. NR 106 which establishes the procedure for calculating water quality based effluent limitations (WQBELs) (effective March 1, 2004). Evaluation of data indicated that Norway does not have a reasonable potential to exceed the daily maximum ammonia limit.
- Monitoring frequency for **BOD, TSS and ammonia** has been reduced from 5/Week to 3/Week; **phosphorus** 4/Week to 3/Week, based on a number of factors, including the consistency of wastewater characteristics (100% domestic - no industrial or hauled wastes) and good effluent quality.
- **Total Nitrogen Monitoring (NO2+NO3, TKN and Total N):** Based on the "Guidance for Total Nitrogen Monitoring in WPDES Permits" dated October 2012, quarterly effluent monitoring for Total Nitrogen is required for municipal majors discharging to the Mississippi River Basin.
- **Chloride:** Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code, Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. The 1-day P99 effluent concentrations for chloride were below the applicable acute limitation, so a daily maximum limit is not required. The 4-day P99 of 668 mg/L is above the applicable chronic limitation of 395 mg/L, so a chronic (weekly average) limit needs to be continued for the reissued permit. However, the permittee has applied for a variance from the chronic chloride water quality criterion, which requires EPA approval. Norway and the Department have agreed upon an interim limit of 680 mg/L, a target value of 600 mg/L and the implementation of chloride source reduction measures that are intended to lead to compliance with the target value by the end of the permit term. See the schedules section for the chloride compliance schedule.

<u>Chloride Source Reduction Measures</u>:

<u>Background:</u> Norway's plant chloride is mostly from domestic softener backwash. Every house hold uses private wells since there is no public water system throughout the sanitary sewer area, and virtually everyone has water softeners due to elevated hardness of the water. There are no industrial dischargers and hauled wastes are not accepted. There is a car wash, two restaurants and a few sports bars. Only one elementary school and one middle school are served by the sanitary district. Another chloride source is intrusion of road salt into the collection system due to winter road salting operation. Because of high ground water level (Norway S.D. is built around four lakes), infiltration of clear water into the collection system has always been a problem. Over the years the District has made concerted efforts to address the problem.

The following Chloride Source Reduction measures shall be implemented during the permit term. If any of these actions for reducing chloride in any waste stream are deemed infeasible, Norway S.D. shall, in its annual and final variance reports, provide clear analyses indicating why those specific actions are infeasible:

1) Amend Norway S.D.'s sewer use ordinance to require high efficiency demand initiated regeneration (DIR) type softeners for both newly installed and replacement softeners for residences and commercial businesses. *Although the Department of Commerce revised the plumbing code to require DIR softeners for both new and construction replacements in 2009 [Admin Rule at Comm 82.40(8)(j)], requiring DIR softeners in a revised SUO will provide additional enforcement mechanism.*

2) Evaluate the imposition of installation restrictions so that outside hose bibs for gardening, etc. are on unsoftened water. If restrictions are imposed, new homes and those homes that are replacing water softeners should be required to have plumbing restrictions for hard water by-passes, and the requirement should apply to

self-installed equipment as well. Request voluntary support from local water softening businesses and licensed installers in this regard. *In order to reduce baseline chloride levels at the plant*.

3) Evaluate chloride discharges from schools, car washes, hospitals, commercial institutions and any other large water users. Require high chloride contributors to implement measures to ensure implementation of measures to reduce chloride discharge. Strategies may include hiring qualified professionals to inspect, calibrate, and/or replace water softening units. Include discussions on these efforts and proposed follow-up actions in required chloride reports. *In order to reduce baseline chloride levels at the plant*.

4). Continue to identify areas in the collection system that may be experiencing high infiltration and inflow (I/I). Implement and/or require implementation of measures to address potential I/I problems. *Over the years, Norway has worked on tracking sources of I/I in the collection system and addressing the problem. Continuation of these efforts and timely implementation of necessary measures to address faulty sewer pipes, failing manhole covers, and bad lateral connections in all areas of the collection system will serve to keep plant clear water to the minimum and reduce baseline chloride load.*

5) Continue to educate the public about softener efficiency and chloride reductions. Over the years, Norway S.D. has worked hard on educating the public about chloride and softener efficiency through articles in the Norway News. *Continuation of this effort will serve to reduce baseline chloride levels.*

- **Whole Effluent Toxicity:** Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code. See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist.

  Being a major wastewater facility, annual acute WET testing is included in the proposed permit. Chronic WET monitoring has been waived until the last calendar year of permit (July-Sept 2019). The reason is that several years ago, the permittee was able to demonstrate that chloride was the sole source of its chronic whole effluent toxicity (WET). This was in accordance with NR 106.89 (3)(b), which requires a demonstration be made by the permittee to show that chloride is the sole source of toxicity when chlorides are above the WQBEL but below 2x WQBEL. NR 106.89(4) also states that once that demonstration is made, WET monitoring and limits could be held in abeyance until the source reduction activities are complete. The situation is still true for Norway. It is expected that source reduction activities may reduce chloride concentrations during the permit term. The required chronic WET testing would provide WET data to use to re-evaluate this situation at the next reissuance.

5 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	B	Liquid	Norway does not land apply but hauls sludge to another facility			
Does sludge management demonstrate compliance? Yes						

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? No Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

5.1 Sample Point Number: 002- Hauled Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Grab Comp	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Grab Comp	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Grab Comp	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Grab Comp	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Grab Comp	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Grab Comp	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Grab Comp	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Grab Comp	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Grab Comp	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Grab Comp	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Grab Comp	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Grab Comp	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Grab Comp	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Grab Comp	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Grab Comp	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Grab Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Grab Comp	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Grab Comp	Once in 2016
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Grab Comp	Once in 2016

5.1.1 Changes from Previous Permit:

No changes

5.1.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204 Wis. Adm. Code. Ceiling and high quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k).

Monitoring for metals and total solids is usually required as part of the contract between the generator and the receiving facility. The monitoring information may also be useful to the Department in tracking the level of each pollutant in sludge.

6 Compliance Schedules

6.1 Chloride Target Value – 600 mg/L

As a condition of the variance to the water quality based effluent limitation(s) for chloride granted in accordance with s. NR 106.83(2), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
Annual Chloride Progress Report: Submit an annual progress report that shall indicate which chloride source reduction measures have been implemented (with supporting documentation) during the period from April 1, 2015 to March 31, 2016. The report shall include an analysis of trends in weekly average and annual average effluent chloride concentrations and weekly average and annual total calculated mass discharge of chloride based on chloride sampling and flow data. The report shall also include an analysis of the effect on the effluent of significant loadings of chloride such as loads from industries road salt intrusion into the collection system and from hauled wastes. Note that the weekly average interim limitations of 680 mg/L remains enforceable until new enforceable limits are established in the next permit issuance. The first annual chloride progress report is to be submitted by the Date Due.	03/31/2016
Annual Chloride Progress Report #2: Submit a chloride progress report that shall indicate which chloride source reduction measures have been implemented during the period from April 1, 2016 to March 31, 2017. The report shall include an analysis of trends in weekly average and annual average effluent chloride concentrations and weekly average and annual total calculated mass discharge of chloride based on chloride sampling and flow data. The report shall also include an analysis of the effect on the effluent of significant loadings of chloride such as loads from industries road salt intrusion into the collection system and from hauled wastes.	03/31/2017
Annual Chloride Progress Report #3: Submit a chloride progress report that shall indicate which	03/31/2018

chloride source reduction measures have been implemented during the period from April 1, 2017 to March 31, 2018. The report shall include an analysis of trends in weekly average and annual average effluent chloride concentrations and weekly average and annual total calculated mass discharge of chloride based on chloride sampling and flow data. The report shall also include an analysis of the effect on the effluent of significant loadings of chloride such as loads from industries road salt intrusion into the collection system and from hauled wastes.	
Annual Chloride Progress Report #4: Submit a chloride progress report that shall indicate which chloride source reduction measures have been implemented during the period from April 1, 2018 to March 31, 2019. The report shall include an analysis of trends in weekly average and annual average effluent chloride concentrations and weekly average and annual total calculated mass discharge of chloride based on chloride sampling and flow data. The report shall also include an analysis of the effect on the effluent of significant loadings of chloride such as loads from industries road salt intrusion into the collection system and from hauled wastes.	03/31/2019
Final Chloride Report: Submit a final report documenting the success in meeting the chloride target value of 600 mg/L, weekly average, as well as the anticipated future reduction in chloride sources and chloride effluent concentrations. he report shall indicate which chloride source reduction measures have been implemented during the period from April 1, 2019 to Dec 31, 2019. The report shall include an analysis of trends in weekly average and annual average effluent chloride concentrations and weekly average and annual total calculated mass discharge of chloride based on chloride sampling and flow data. The report shall also include an analysis of the effect on the effluent of significant loadings of chloride such as loads from industries road salt intrusion into the collection system and from hauled wastes. This report shall also include proposed target values and source reduction measures for negotiations with the department if the permittee intends to seek a renewed chloride variance per s. NR 106.83, Wis. Adm. Code, for the reissued permit. Note that the target value is the benchmark for evaluating the effectiveness of the chloride source reduction measures, but is not an enforceable limitation under the terms of this permit.	12/31/2019

6.2 Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus

The permittee shall comply with the WQBELs for Phosphorus as specified. No later than 30 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification requirement.

Required Action	Due Date
Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in phosphorus discharges from the treatment plant during the period prior to complying with final phosphorus WQBELs and, where possible, enable compliance with final phosphorus WQBELs by 03/31/2018. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than 03/31/2018 and state whether the measures, improvements, and modifications will enable compliance with final phosphorus WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report. If the operational evaluation report concludes that the facility can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements,	03/31/2016

and minor facility modifications, the permittee shall comply with the final phosphorus WQBEL by 03/31/2018 and is not required to comply with the milestones identified below for years 3 through 9 of this compliance schedule ('Preliminary Compliance Alternatives Plan', 'Final Compliance Alternatives Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet WQBELs', 'Complete Construction', 'Achieve Compliance'). STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final phosphorus WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final phosphorus WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final phosphorus WQBELs sooner than 03/31/2024	
Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting phosphorus WQBELs.	03/31/2017
Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment facility is necessary to achieve final phosphorus WQBELs, the submittal shall include a preliminary engineering design report. If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan. If water quality trading will be undertaken, the plan must state that trading will be pursued.	03/31/2018
Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment is necessary to meet final phosphorus WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110, Wis. Adm. Code. If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report addressing any treatment system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code. If the plan concludes water quality trading will be used, the submittal shall identify potential trading partners. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2019
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL	03/31/2020

Compliance' in the Surface Water section of this permit.	
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2021
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2021
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2022
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2023
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	02/28/2024
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2024

6.3 CMOM (Capacity, Management, Operation and Maintenance) Program Development

Required Action	Due Date
Complete Program Development: Complete development of CMOM Program by August 1, 2016. See CMOM requirements in the Standard Requirements section.	08/01/2016

6.4 Explanation of Compliance Schedules

Chloride Target Value

This compliance schedule is a condition of receiving a variance from the chronic water quality based chloride limit of 395 mg/L. Since a compliance schedule is being granted, an interim limit is required, and for Norway, that limit is established

at 680 mg/L, which is same as that of current permit. Retaining an interim limit of 680 mg/L may suggest that no progress has been made with previous source reduction measures; however, a review of mass levels for chloride indicate that there is a downward trend of mass in the effluent. Also notable is that over the course of the past several years, the sanitary district took aggressive measures to reduce excess infiltration and inflow into the collection system. An incidental effect of these measures is that there is often less 'clear water' that would reduce the effluent chloride concentration. As a result, the effluent mass may be a better indicator of progress of source reduction. In addition to the overall trend, the baseline mass of chloride has also decreased. The annual reports shall document progress made towards meeting the chloride target value of 600 mg/L by the end of the permit term.

Water Quality Base Effluent Limits (WQBELs) for Total Phosphorus

Subsection NR 217.17, Wis. Adm. Code, allows the department to provide a schedule of compliance for water quality based phosphorus limits where the permittee cannot immediately achieve compliance. This compliance schedule requires the permittee to comply with the final water quality based phosphorus limits within 9 years. The duration of this compliance schedule will be re-evaluated upon permit reissuance to determine if the compliance schedule length is still necessary and appropriate.

CMOM (Capacity, Management, Operation and Maintenance) Program Development

The permittee shall by August 1, 2016 submit to the Department verification that a CMOM program, for the sewage collection system, has been developed which is consistent with the requirements of NR 210.23, Wis. Adm. Code.

7 Other Comments:

None

8 Attachments:

1. Water Quality-Based Effluent Limitations Recommendations
2. Public Notice

9 Proposed Expiration Date:

March 31, 2020

Prepared By:

Timothy Thompson Wastewater Engineer

Date: 01/30/2015