STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO REISSUE

A WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0031470-07-0

Permittee: Norway TN Sanitary District 1, 6419 Heg Park Road, Wind Lake, WI, 53185

Facility Where Discharge Occurs: Norway Tn Sanitary District 1 Wwtf, STH 36

Receiving Water And Location: Waubeesee Lake Drainage Canal, which joins the Wind lake Drainage Canal, to the SE Fox (IL) River.

Brief 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 ultimately 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.

Permit Drafter's Name, Address and Phone: Timothy Thompson, SER Headquarters, 2300 N. Martin Luther King, Milwaukee, WI, 53212, (414) 263-8525

Basin Engineer's Name, Address, and Phone: Timothy Thompson, 2300 N Dr Martin Luther King Jr Dr, , Milwaukee, WI 53212, (414) 263-8525

Date Permit Signed/Issued: **Enter Date Permit Signed/Issued**
Date of Effectiveness: **Enter Permit Effective Date**
Date of Expiration: **Enter Permit Expiration Date**

Following the public notice period, the Department has made a final determination to reissue the WPDES permit for the above-named permittee for this existing discharge. The permit application information from the WPDES permit file, comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, or revoke WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Stats.

Following is a summary of significant comments and any significant changes which have been made in the terms and conditions set forth in the draft permit:

<u>Comments Received from the Applicant, Individuals or Groups and Any Permit Changes as Applicable</u>
Two sets of comments were received from the Applicant – one during the first public notice period of the proposed permit, and the other, during the re-public notice period. Following are the combined comments, each of the comments is followed by Department's response:

1. Ammonia Limits

The proposed permit contains a daily maximum effluent ammonia limit of 24 mg/L for November through April. This was calculated in the Water Quality Based Effluent Limitations (WQBEL) memo dated January 2014 and was based on a maximum effluent pH value of 7.8. The following reference was made to NR106.33(2) in the memo: "since the 24 mg/L limit was not above the 40 mg/L threshold for November through April, the 24 mg/L would be included in the permit".

The Wisconsin Circuit Court issued a decision on July 11, 2014 that rendered NR 106.33(2) invalid. As a result of this decision, the seasonal 20 mg/L and 40 mg/L thresholds for including ammonia limits in municipal discharge permits are no longer applicable. Therefore, NR 106.33(1) must be used to determine the need to include ammonia limits based on statistical comparisons in NR 106.05. The WQBEL memo did not include any statistical analysis of the District's effluent ammonia. The ammonia levels in the District's effluent are often below the limits of detection, with the highest recorded ammonia level over the last five years of effluent data being only 0.10 mg/l. A statistical analysis of the District's effluent ammonia levels from the years 2010 – 2014 calculated the following upper 99th percentiles:

• Daily Average: 0.08 mg/l
• 4-day Average: 0.07 mg/l
• 30-day Average: 0.04 mg/l.

Therefore, the District believes there is no reasonable potential to even to come close to a daily maximum effluent ammonia concentration of 24 mg/L, and that this limit should be eliminated from the District's permit.

Furthermore, the District believes this same statistical effluent analysis using NR 106.05 may hold true for the proposed weekly and monthly average ammonia limits, and the Department should consider eliminating these limits as well.

The District is also requesting a reduction in monitoring requirements for ammonia. The measured effluent demonstrates that the District does not have the reasonable potential to exceed the water quality criteria and therefore reduced monitoring is reasonable. We request the monitoring requirement be reduced to a 24-hour flow proportional composite sample in the last calendar year of the permit, similar to other municipal permits that do not have an ammonia limit.

Department Response:
The DNR agrees that as a result of the court decision regarding NR 106.33(2) - using seasonal thresholds for including ammonia limits - the 24 gm/L (November – April) daily maximum limit is no longer necessary. Following a review of submitted ammonia data from 2009 to the present, which shows low effluent concentrations, and no reasonable potential to exceed a daily maximum limit, the daily maximum limit has been removed from the permit.

The reasonable potential process for ammonia is applied for the situations where limits are not included in the current permit. The current Norway's permit has weekly average limits based on chronic toxicity using pre 2004 criteria. Both the weekly and monthly average limits in the draft permit are based on the updated chronic criteria in accordance to the new ammonia rule, which became effective in 2004. Therefore the weekly and monthly average limits are retained in the permit. This also ensures that the facility will continue to be operated in a manner that optimizes the removal of ammonia within the design capabilities of the plant (s. NR 106.33(1)). This situation is not the same as the daily maximum limit because there is currently not a daily maximum limit in Norway's permit.

Based on the low levels and often non-detect effluent ammonia, the frequency of monitoring has been reduced from 3 times per week to once per week. Effluent ammonia still has to be monitored to track any discharge of excess ammonia should there be any occurrence of a plant upset or operational difficulties. Again, this ensures that the facility will continue to be operated in a manner that optimizes the removal of ammonia within the design capabilities of the plant (s. NR 106.33(1)).

2. Thermal Limits
The proposed permit contains weekly average maximum temperature limits for various months of the year. We submitted a Dissipative Cooling Study and Request Form 3400- 198 to you on November 26, 2014. We also submitted supplemental information to you and Nick Lent at the DNR on December 3, 2014. We believe the Dissipative Cooling Study and related information illustrated that there is adequate cooling of the District's effluent so that the Canal would not exceed sub-lethal temperature criteria. The study also showed that the temperature profile of the Canal would allow aquatic life to migrate upstream or downstream of the outfall without impediment. Therefore, the District requests eliminating temperature limits and monitoring from the proposed permit.

Department Response:
The Applicant carried out a Dissipative Cooling Study and submitted a report to the Department during the draft permit's public notice period. The Department reviewed the report and agreed that the Applicant has successfully demonstrated that there is adequate cooling of the effluent in the Waubeesee Lake Drainage Canal. Temperature limits have been removed from the permit.

3. Whole Effluent Toxicity Testing
The proposed permit includes chronic whole effluent toxicity (WET) testing for each quarter during the 2018/2019 fiscal year. The District previously demonstrated that chronic WET tests had failed due to chlorides from domestic water softener backwash. The District continues to execute a chloride source reduction program and additional Requirements, annual progress reports and compliance schedule are contained in the proposed permit

The WQBEL memo indicates that chronic WET testing had been held in abeyance in the previous permit pursuant to NR 106.89(3). The memo goes on to state, "Since additional chloride source reduction measures are necessary to reach a level where chloride toxicity is unlikely, this waiver shall be continued for the proposed permit." Therefore, the District requests that the requirement for chronic WET testing be eliminated from the proposed permit until completion of source reduction activities and review by the Department for the need for WET testing as provided in NR 106.89(4).

Department Response:
The Department agrees that Norway previously demonstrated, in accordance with [(NR 106.89(3)], that chronic WET tests had failed due to chlorides from domestic water softener backwash. It is expected that implementation of additional chloride source reduction activities would reduce chloride concentration during the proposed permit term. The chronic WET monitoring included in the draft permit is to provide chronic WET data to use for a re-evaluation of the situation at the next reissuance of the permit. Quarterly chronic WET monitoring is required during the final year of the permit.

4. Chloride Variance
Section 1.2.1.10 Chloride Variance – Implement Source Reduction Measures, Item 2 of the proposed permit includes evaluation of a centralized softening system to eliminate the use of individual softeners throughout the District. Currently, there are approximately 2,000 properties that are served by the District, all of which have individual private wells. A central softening system would require installation of a community water system, which would entail the installation of wells, water transmission lines, a central treatment and softening plant, water storage, water distribution piping and laterals to each property.

It may also require a system to remove radium if deep wells are needed. The capital cost for a community water system of this size would be approximately $25 to $30 million, plus $1.5 to $2 million per year to operate.

Additionally, in NR 106.90(4), there is no mention about converting to a community water system. The code only states that if a community has a centralized water softener, they must evaluate high efficiency ion exchange, another type of softening system or blending hard and soft water. Therefore, the District requests that this item be removed from the proposed permit due to the substantial adverse economic and social impacts that installing a centralized water system would have on the community.

Department Response:
The Department agrees that installation of a centralized softening system may result in substantial adverse economic and social impact on the community. This item has been removed from the permit.

5. Mercury Monitoring
The proposed permit requires testing for mercury in the influent, effluent and a field blank every 6 months. The District has indicated that there are no mercury sources in the service area. The WQBEL memo showed that based on 12 tests, the 30 day P99 was less than the most restrictive criterion of 1.3 ng/L, so no limit was recommended for the permit. Mercury testing is very expensive, so the District requests that testing only be required during the last year of the permit in 2019.

Department Response:
Evaluation of submitted mercury data showed a 30-day P99 of 1.13 ng/L. This is only slightly less than the 1.3 ng/L mercury limit based on wildlife criteria. However, considering that Norway S.D. is a small community with no hospitals or dental offices, the proposed mercury monitoring has ben reduced from every 6 months through the permit term to every 6 months during the last 2 years of the permit. This would provide additional data for the next reissuance permit limits' evaluation.

6. Phosphorus Limits and Future Development of a TMDL
The District's treatment plant discharges to the Waubeesee Lake Drainage Canal, which flows into the Wind Lake Drainage Canal and eventually into the Fox (IL) River in Racine County. As stated in the WQBEL memo, the Fox River exceeds the phosphorus standard both up- and downstream of the confluence of the Waubeesee/Wind Canal system. The WQBEL memo recommended an interim limit of 1.0 mg/l. It also recommended imposition of more stringent effluent limits based upon the numeric water quality standard. The proposed permit has these more stringent limits taking effect on December 31, 2017 or December 31, 2023, depending on the outcome of the Operational Evaluation Report.

The Fox (IL) River was added to the impaired water list in 2012, which in the future will result in the development of a TMDL for the entire Fox (IL) River Watershed, including the District's discharge into the Waubeesee Lake Drainage Canal. Section 3.2.1.5(C) of the proposed permit states that final limits may be revised based on possible future Fox (IL) River TMDL evaluations. The more stringent limit is based upon the downstream impaired water of the Fox River and DNR's reliance upon the fact that "most of the streams in Southeastern Wisconsin exceed the 0.075 mg/L standard." The DNR did not perform an analysis based upon the District's actual discharge or its actual contribution to the Fox River, an impaired water over seven miles downstream.

The District requests that the Department defer imposition of the more stringent water quality limits based upon the numeric water quality standards while the TMDL is being developed. The District's situation is similar to numerous other dischargers in water bodies where TMDLs are in development. If a more stringent water quality based effluent limit becomes effective before the TMDL is approved by the EPA, the District may be subject to more stringent

limits than are necessary to meet the water quality criterion in the watershed as determined by the TMDL. In order to change the limits, the discharger would have to request limits based upon the TMDL and perform an antidegradation analysis. Additionally, under the proposed permit, the District is required to prepare an Operational Evaluation Report to meet the more stringent limits. If the TMDL determines a different limit, either more or less stringent, the District will have to go through this process all over again.

Since the TMDL is a site specific analysis of the water body, it is a more accurate representation of the proper limits for the District's wastewater treatment plant. The District understands the importance of the water quality based effluent limits to address impaired waters in the State, but this limit should be based upon site specific scientific information, not general statewide number water quality criteria. Furthermore, we understand that the Waubeesee Lake and Wind Lake Drainage Canals are not classified as impaired waterways and are not listed on the 303(d) list. We should note that these are man-made agricultural drainage canals that are periodically dredged by the Norway-Dover Drainage District.

The District requests that the DNR wait until after the TMDL has been developed and approved by the EPA to impose a water quality based limit based on the TMDL, since it will be more closely tied to the actual site specific data for the water body to which the District discharges. The DNR recently acknowledged in its proposed revisions to the Phosphorus Implementation Guidance that where the point source discharged to a receiving water that flows into a stream/river that exceeds its applicable criteria upstream of the confluence, as it does in this case, that the exceedance in the downstream water is "likely coming from other phosphorus loadings in the watershed" and that the phosphorus limitation should be based upon local water quality concerns (See "Proposed Program Guidance Updates – Phosphorus Implementation Guidance" p. 50.) In this case, there has been no demonstration by the Department that the District has the reasonable potential to exceed the water quality criteria of the waterbody that it discharges to and therefore, the imposition of any more stringent limit should be deferred until the TMDL is developed. Additionally, the District requests that the Phosphorus Compliance Schedule in Section 5.2 of the proposed permit be deferred until after the TMDL process has been completed.

Department Response:
The Department recognizes that a TMDL would eventually be developed for the entire Fox (IL) River Watershed, including the Waubeesee Lake Drainage Canal to which Norway S.D. treatment plant discharges and that, upon EPA's approval of the TMDL, TMDL-derived limitations may be included in WPDES permits in addition to or in lieu of the calculated limitations in s. NR 217.13, Wis. Adm. Code (current applicable limitations). Pursuant to s. NR 217.16, Wis. Adm. Code, several factors need to be considered to determine whether or not a TMDL-derived limitation would be included in the WPDES permit in lieu of or in addition to the existing calculated phosphorus limitation. It is not appropriate to assume that TMDL-derived limitations would be the solely applicable phosphorus limitations. The Department must continue to reissue WPDES permits based on current scientific information available in accordance with ch. NR 217. The Department cannot, delay reissuances of permits statewide (or delay imposing any phosphorus water quality based effluent limitations or defer the phosphorus compliance schedule) for discharges to impaired watersheds until TMDLs are developed. It would stagnate the WPDES permit program and would be inconsistent with permit backlog expectations established by U.S. EPA. The Department also recognizes that Waubeesee Lake Drainage and Wind Lake Drainage Canals are not currently classified as impaired waters and are not listed on the 303(d) list. However, phosphorus tends to be a conservative pollutant in streams and it is likely that the phosphorus reaching the Fox River comprises a significant portion of the phosphorus from the Sanitary District plant.

<u>Comments Received from EPA or Other Government Agencies and Any Permit Changes as Applicable</u>
No comments received.

As provided by s. 283.63, Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signature date above). Further information regarding the conduct and nature of public adjudicatory hearings may be obtained by contacting the Department of Natural Resources, Bureau of Watershed Management, WPDES Permits, Box 7921, Madison, Wisconsin 53707 and by review of ch. NR 203, Wis. Adm. Code, s. 283.63 Stats., and applicable code law.

Information on file for this permit action may be inspected and copied at either the above named permit drafter's address or the above named basin engineer's address, Monday through Friday (except holidays), between 9:00 a.m. and 3:30 p.m. Information on this permit action may also be obtained by calling the permit drafter at (414) 263-8525 or by writing to the Department. Reasonable costs (usually 20 cents per page) will be charged for copies of information in the file other than the public notice and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.