Permit Fact Sheet

General Information

Permit Number	WI-0032263-05-0
Permittee Name and Address	Western Lake Superior Sanitary District 2626 Courtland Street, Duluth, MN 55806-1894
Permitted Facility Name and Address	Western Lake Superior Sanitary District 2626 Courtland Street, Duluth, Minnesota
Permit Term	October 01, 2025 to September 30, 2030
Discharge Location	Various approved land application sites in Douglas County
Receiving Water	The groundwater of the Lake Superior drainage basin in Douglas County via land application
Discharge Type	Existing outfall for municipal sludge that may be land applied in both Minnesota and Wisconsin.
Annual Average Design Flow (MGD)	Wet weather 48.4 MGD - The surface water discharge is regulated by Minnesota NPDES Permit MN-0049786
Industrial or Commercial Contributors	Yes; 11 categorical users plus 3 other significant contributors.
Plant Classification	L - Laboratory
Approved Pretreatment Program?	The WLSSD has a pretreatment program approved by the State of Minnesota in 1985 and updated in 2016.

Facility Description

The Western Lake Superior Sanitary District (WLSSD) owns and operates a regional wastewater treatment facility that services the City of Duluth, Minnesota and surrounding cities, townships, and sanitary districts. This facility is permitted under Minnesota NPDES Permit MN-0049786.

The facility consists of the following systems: three mechanical bar screens, two grit removal tanks, four pure oxygen activated sludge tanks, four secondary clarifiers, four flocculation tanks, 12 mixed media filters (anthracite/silica/gravel with backwash), two chlorination tanks, one dechlorination tank with effluent discharged to the St. Louis Bay of the St. Louis River. The sludge is processed in two dissolved air floatation systems (which will be replaced with three rotary drum thickeners), two anerobic digesters (complete mixed, heated-thermophilic), two anaerobic digesters (complete mixed, heated-mesophilic), two sludge storage tanks, two centrifuges, and stored as cake in an off-site biosolids storage facility.

WLSSD generates approximately 7,000 dry tons of biosolids annually. The permittee may land apply in both Minnesota and Wisconsin on approved cropland sites. The permit issued by WDNR regulates biosolids application in Wisconsin in accordance with ch. NR 204, Wisconsin Administrative Code.

Substantial Compliance Determination

After a desk top review of all land app reports, compliance schedule items, and a site visit on August 22, 2024, by Eric de Venecia, WDNR, this facility has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
001	Estimated 7,000 tons are generated each year. Approximately 1,624 metric tons are applied annually in Wisconsin. (2020-2024 data)	Representative samples of the biosolids cake shall be collected from the centrifuge belt conveyor prior to land application in a manner and at a time appropriate for the specific test.

Permit Requirements

1 Land Application - 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)**
001	B	Cake	Anaerobic digestion Temp/Time based on % solids Temp Phased Anaerobic Digestion (TPAD)	Volatile Solids Reduction	Land application with landfill as a contingency	An average of 1,625 Dry Tons/Year (2020-2024 data)
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? Specific data for Duluth was not available, but in the adjacent City of Superior levels are below 2 pCi/liter. Also, the Minnesota Department of Health Environmental Health Division Source Water Protection Unit indicates in the publication "Distribution of Radium in Minnesota" December 2010 that the northern part of the state is not within a zone where radium is present at high levels.						
Is a priority pollutant scan required? Yes Priority pollutant scans are required once every 5 years if design flow is greater than 40 MGD.						

1.1 Sample Point Number: 001- BIOSOLIDS CAKE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	1/ 2 Months	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	1/ 2 Months	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Cadmium Dry Wt	High Quality	39 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	High Quality	300 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	1/ 2 Months	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	1/ 2 Months	Composite	
Nitrogen, Total Kjeldahl		Percent	1/ 2 Months	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	1/ 2 Months	Composite	
Phosphorus, Total		Percent	1/ 2 Months	Composite	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Months	Composite	
Potassium, Total Recoverable		Percent	1/ 2 Months	Composite	
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See the Sludge Analysis for

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					PCBs permit section.
Municipal Sludge Priority Pollutant Scan			Once	Composite	As specified in ch. NR 215.03 (1-4), Wis. Adm. Code

1.1.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

1.1.2 Explanation of Limits and Monitoring Requirements

Requirements for disposal, including 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). Radium requirements are addressed in s. NR 204.07(3)(n).

PFAS - The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" will be followed.

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department's implementation of EPA's recommendations. To quantitate this risk, PFAS sampling has been included in the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

Other Comments

This permit only covers the land spreading of biosolids in Wisconsin on approved cropland (primarily Douglas County). All other aspects of the wastewater treatment system are regulated by the State of Minnesota via NPDES Permit MN-0049786.

Justification Of Any Waivers From Permit Application Requirements

N/A – coverage is for land application only

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** May 14, 2025