Permit Fact Sheet

General Information

Permit Number	WI-0029726-09-0
Permittee Name and Address	ELCHO SANITARY DISTRICT #1 P O Box 86 N11394 Lagoon Ln, Elcho, WI 54428-0086
Permitted Facility Name and Address	Elcho Sanitary District #1 N11394 LAGOON ROAD, ELCHO, WISCONSIN
Permit Term	April 01, 2026 to March 31, 2031
Discharge Location	N11394 Lagoon Ln, Elcho WI (SE ¼ NE ¼ of Section 11; T34N-R10E)
Receiving Water	The Groundwater within the Lily River Watershed in the Upper Wolf River Basin, Langlade County.
Discharge Type	Existing continuous discharger
Annual Average Design Flow (MGD)	0.125 MGD
Industrial or Commercial Contributors	No
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Elcho Sanitary District #1 wastewater treatment system consists of two aerated lagoons divided into cells, one settling lagoon, and three seepage cells. In each pond naturally occurring bacteria already present in the wastewater metabolizing and consuming organic matter. From the ponds the flow is discharged to the seepage cells. As the effluent travels through the soil the quality of the water is further improved through physical, chemical and biological processes. There are four monitoring wells located around the seepage cells to assess any groundwater impacts from the discharge.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, compliance schedule items, and a site visit on January 28, 2026, by Brooke Klingbeil, 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)**
701	INFLUENT – from the district An average of 0.041 MGD (2021-2025 data)	Representative samples shall be collected from the main lift station.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
702	INFLUENT – Septage Receiving Tank This is a new sample point.	Representative samples shall be collected from the septage receiving tank.
003	EFFLUENT An average of 0.040 MGD (2021-2025 data)	Representative samples shall be collected after lagoon #3 settling cell, prior to discharge to the seepage cells in the effluent pump station.
004	LAND APPLICATION - Sludge De-sludging did not occur during the permit term.	Representative samples shall be collected from the accumulated sludge in the cells at various locations and depths that are composited for analysis.
005	LAND APPLICATION – Seepage Cell Media This is a new sample point.	Multiple representative samples shall be collected from the media when it is removed from the seepage cells and composited for analysis.

Sample Point Designation For Groundwater Monitoring Systems		
Sample Pt Number	**Well Name**	**Comments**
802	MW-6	Side gradient non-point of standard well is located east of seepage cells 1 & 2.
803	MW-7	Side gradient non-point of standard well is located west of the lagoons.
804	MW-8	Upgradient well that is used to measure background groundwater quality and to evaluate and calculate PALs and ACLs is located north of the seepage cells.
805	MW-9	Down gradient point of standard well is located west of the lagoons.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 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	Daily	Continuous	
BOD5, Total		mg/L	Monthly	3-Hr Comp	
CBOD5		mg/L	Monthly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total		mg/L	Monthly	3-Hr Comp	
Nitrogen, Total Kjeldahl		mg/L	Monthly	3-Hr Comp	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic Nitrogen = Total Kjeldahl Nitrogen - Ammonia
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	3-Hr Comp	

Changes from Previous Permit:

Influent 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.

The parameter CBOD has been added this permit term. Paired influent and effluent monitoring is required to assess treatment.

Explanation of Limits and Monitoring Requirements

Influent monitoring is needed to assess loading to the facility and treatment performance. The required parameters and sampling frequency are appropriate for a land treatment system as outlined in ch NR 206, Wis. Adm. Code.

1.2 Sampling Point 702 - SEPTAGE RECEIVING TANK

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD_5, Total		mg/L	Monthly	Grab	
$CBOD_5$		mg/L	Monthly	Grab	
Suspended Solids, Total		mg/L	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic Nitrogen = Total Kjeldahl Nitrogen - Ammonia
Nitrogen, Ammonia (NH_3-N) Total		mg/L	Monthly	Grab	

Changes from Previous Permit:

This is a new sample point that has been added this permit term to track and monitor the septage that has been accepted by the sanitary district.

Explanation of Limits and Monitoring Requirements

Influent monitoring is needed to assess loading to the facility and treatment performance. The required parameters and sampling frequency are appropriate for a land treatment system as outlined in ch NR 206, Wis. Adm. Code.

2 Land Treatment – Monitoring and Limitations

2.1 Sample Point Number: 003- PRIOR TO SEEPAGE CELLS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
Suspended Solids, Total		mg/L	Monthly	Grab	
CBOD5	Monthly Avg	45 mg/L	Monthly	Grab	
pH Field		su	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic Nitrogen = Total Kjeldahl Nitrogen - Ammonia
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	
Nitrogen, Total		mg/L	Monthly	Calculated	Total Nitrogen = Total Kjeldahl Nitrogen + (Nitrite + Nitrate)
Chloride		mg/L	Monthly	Grab	

Changes from Previous Permit:

Effluent 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.

The Flow Rate sample frequency was changed from "Continuous" to "Daily" to represent practices of the facility.

Explanation of Limits and Monitoring Requirements

All requirements for land treatment of municipal wastewater are determined in accordance with ch. NR 206, Wis. Adm. Code. All categorical limits are based on s. NR 206.08(1) Wis. Adm. Code. More information on the limitations can be found in the Groundwater Evaluation for Elcho Sanitary District #1 memo dated December 11, 2025.

Sampling Frequency - The "Monitoring Frequencies for Individual Wastewater Permits" guidance document (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

Permitted monitoring frequencies for $CBOD_5$fall below the standard monitoring frequencies outlined in the guidance document. Section NR 205.066(1) Wis. Adm. Code allows sampling frequencies to be set on a case-by-case basis. The permittee demonstrates a history of consistent compliance with existing permit limits. Data submitted during the previous permit term continues to show consistent compliance with permit limitations, and the set monitoring frequencies are consistent with requirements of state code. The current monitoring frequencies shall continue this permit term. If performance levels begin to vary during the permitted term, the department may re-evaluate current sampling frequencies and implement more frequent monitoring via permit modification or at permit reissuance.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Groundwater Monitoring System

Location of Monitoring system: Adjacent to Seepage Cells

Groundwater Monitoring Well(s) to be Sampled: 802 (MW-6), 803 (MW-7), 804 (MW-8) - Upgradient, 805 (MW-9)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: 804 (MW-8) - Upgradient

Groundwater Monitoring Well(s) Used for Point of Standards Application: 805 (MW-9)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	1/ 6 Months
Groundwater Elevation	feet MSL	N/A	N/A	1/ 6 Months
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	1/ 6 Months
Chloride Dissolved	mg/L	125	250	1/ 6 Months
pH Field	su	7.0	N/A	1/ 6 Months
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	1/ 6 Months
Nitrogen, Organic Dissolved	mg/L	2.1	N/A	1/ 6 Months
Solids, Total Dissolved	mg/L	320	N/A	1/ 6 Months

Changes from Previous Permit:

Groundwater 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.

Monitoring the groundwater for dissolved phosphorus is not needed this permit term and has been removed.

Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code.

For more information, please refer to the Groundwater Evaluation for Elcho Sanitary District #1 memo dated December 11, 2025

4 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)**
004	B	Liquid	Sludge is not anticipated to be removed during the permit term. If removal is needed see the land application and schedule sections of the permit for more information.			
005	B	Solids	Seepage Cell Media may be removed during the permit term. If removal is need see the land application and schedule sections of the permit for more information.			
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? No, the most recent set of samples taken in 2017 were 0.675 pCi/liter.						
Is a priority pollutant scan required? No						

4.1 Sample Point Number: 004- LAGOON SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
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 PCBs permit section.
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

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.

- **List 1** (metals) and **PCB** monitoring is required in 2027.
- Because it's recommended that **List 2** (Nutrients) are monitored with the List 1 monitoring, they have been added to the table
- **PFAS** monitoring is required once pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

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).

List 2 Nutrient monitoring – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in 2027. Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Sludge Management Schedule (see schedules for more information).

Change in form submittal – In prior permit reissuances when it has been noted in the application that sludge would not be removed during the permit term, the department required sampling during the second year of the permit term and the sludge characteristic report (3400-049) would be generated only during that year. Due to moving to electronic submittal of forms via Switchboard, forms 3400-049 ("Characteristics Report"), 3400-052 ("Other Methods of Disposal") and 3400-055 ("Annual Land Application") will now be generated by the department and the permittee will be required to submit all three reports each year of the permit term. This change was adopted to provide the permittee flexibility because many lagoon desludging projects can be unexpected, are delayed or staggered over multiple years. Additionally, it is used to officially report that no land application of sludge has occurred, and annual submittal of the forms is required per the standard requirements section.

- Sludge analysis during 2027 has been included. There are check boxes available on the electronic forms to identify if desludging didn't occur.
- Sludge characteristics report (3400-049) – at the top of the form check "yes" or "no" in the box identifying if any land application occurred that year. Complete the form if required or identify the year samples will be or have been taken in the comments section.
- 3400-052 ("Other Methods of Disposal") and 3400-055 ("Annual Land Application") - The reports are technically 2 separate forms that are now combined in one location but separated onto two different tabs. If you answer "No" to both listed questions the forms are complete. If you need to answer "Yes" to either question the corresponding form tabs will go from gray to blue indicting information can be entered on the report.

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" should 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 this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

4.2 Sampling Point (Outfall) 005 - SEEPAGE CELL MEDIA

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	

Changes from Previous Permit:

This is a new sample point this permit term. Media from the seepage cells may need to be removed during the permit term. Sampling is needed only prior to disposal.

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).

5 Schedules

5.1 Infiltration Rate Study

Required Action	Due Date
Final Report: Submit a final report summarizing results and recommendations from the infiltration rate study that was performed in the spring of 2026.	09/30/2026

Explanation of Schedule

Infiltration Rate Study – The permittee is planning an infiltration study of the seepage cells spring 2026, which will occur prior to the issuance of this permit. A summary is required to inform the department what the study found and what actions are planned.

5.2 Facility Plan

The facility plan shall address the seepage cells and influent sample points 701 and 702.

Required Action	Due Date
Intent to Apply: Provide confirmation that a notice of Intent to Apply (ITA) with Priority Evaluation and Ranking Formula (PERF), as authorized by s. 281.58, Wis. Stats., and Ch. NR 162, Wis. Adm. Code, was submitted online to the Department's Clean Water Fund Program by October 31, 2026.	11/01/2026
Submit Facility Plan: The permittee shall submit a facility plan, pursuant to s. NR 110.09, Wis. Adm. Code, to the Department addressing seepage cell rehabilitation, if applicable. The plan shall also address influent control manhole for domestic and septage influent waste, pursuant to s. NR 110.09, Wis. Adm. Code.	03/31/2027
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades and a schedule for completing construction of the upgrades by the complete construction date specified below.	09/30/2027
Desludging Management Plan: Submit a management plan to optimize the seepage cell media removal during this permit term. At a minimum, the plan shall address how the media will be sampled, removed, transported, and disposed of. No removal may occur without plan approval. This plan is due ninety days prior to removal.	
Land Spreading Management Plan: Submit a management plan to optimize land spreading system performance and demonstrate compliance with Ch. NR 204, Wis. Adm. Code. At minimum, the plan	

shall describe how the application rate has been calculated as well as how the sludge will be land applied and incorporated. This plan is due ninety days prior to land spreading.	
Financial Assistance Application: Provide confirmation that a Financial Assistance Application and Principal Forgiveness (PF) request, as authorized by s. 281.58, Wis. Stats., and Ch. NR 162, Wis. Adm. Code, was submitted online to the Department's Clean Water Fund Program by September 30, 2027.	10/01/2027
Treatment Plant Upgrade to Meet WQBELs: Provide confirmation that the permittee has awarded construction contracts and initiated construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Wis. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Wis. Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	03/31/2028
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades and shall inform the Department of the substantial completion.	09/30/2028

Explanation of Schedule

Facility Plan –The permittee will implement a solution which will combine, measure and sample the influent currently identified as sample points 701 and 702. The plan will also include any actions identified in the infiltration study.

5.3 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan Submittal: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with ch. NR 206, Wis. Adm. Code. The land treatment system shall be operated in accordance with the approved management plan.	09/30/2026

Explanation of Schedule

Land Treatment Management Plan - An up-to-date Land Treatment Management plan is a standard requirement in reissued industrial permits per ch. NR 204, Wis. Adm. Code.

5.4 Groundwater Monitoring Well Site Map Submittal

Required Action	Due Date
Monitoring Well Site Map: Submit a site map in accordance with s. NR 141.065, Wis. Adm. Code. This site map must include a scale bar and directional arrow and accurately show site structures (including septage receiving tank), property boundaries, nearby surface water and water supply wells and all site groundwater monitoring wells. The Groundwater well survey should include the elevation of the top of casing (TOC) for the wells and a calculated ground surface elevation.	09/30/2026

Explanation of Schedule

Groundwater Monitoring Well Site Map Submittal - Accurate well information is needed to ensure the require-ments of NR 140 Wis. Adm. Code are met.

5.5 Sludge Management Plan

Required Action	Due Date
Submit a Sludge Management Plan: The permittee shall submit an update to the management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204 Wis. Adm. Code and at minimum address 1) How and where is sludge sampled; 2) Available sludge storage details and location(s); 3)How will the sludge be removed with details on vol-ume, characterization and how will the treatment plant continue to function during the draw-down; 4) Describe the type of transportation and spreading vehicles and loading and unloading practices; 5) Identify approved land application sites, apply for needed sites, site limitations, total acres needed and vegetative cover management; 6) Specify record keeping procedures including site loading; 7) Address contingency plans for adverse weather and odor/nuisance abatement; and 8) Include any other pertinent information such as other disposal options that may be used or specifications of any pretreatment processes Once approved, all sludge management activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due at least 60 days prior to desludging.	

5.5.1 Explanation of Schedule

Sludge Management Plan- If the lagoons are to be de-sludged during this permit term a management plan is needed to show compliance with ch. NR 204, Wis. Adm. Code. There are outlines available to assist in plan development.

Attachments

Water Flow Schematic created October 2014

Groundwater Evaluation for Elcho Sanitary District #1 memo dated December 11, 2025

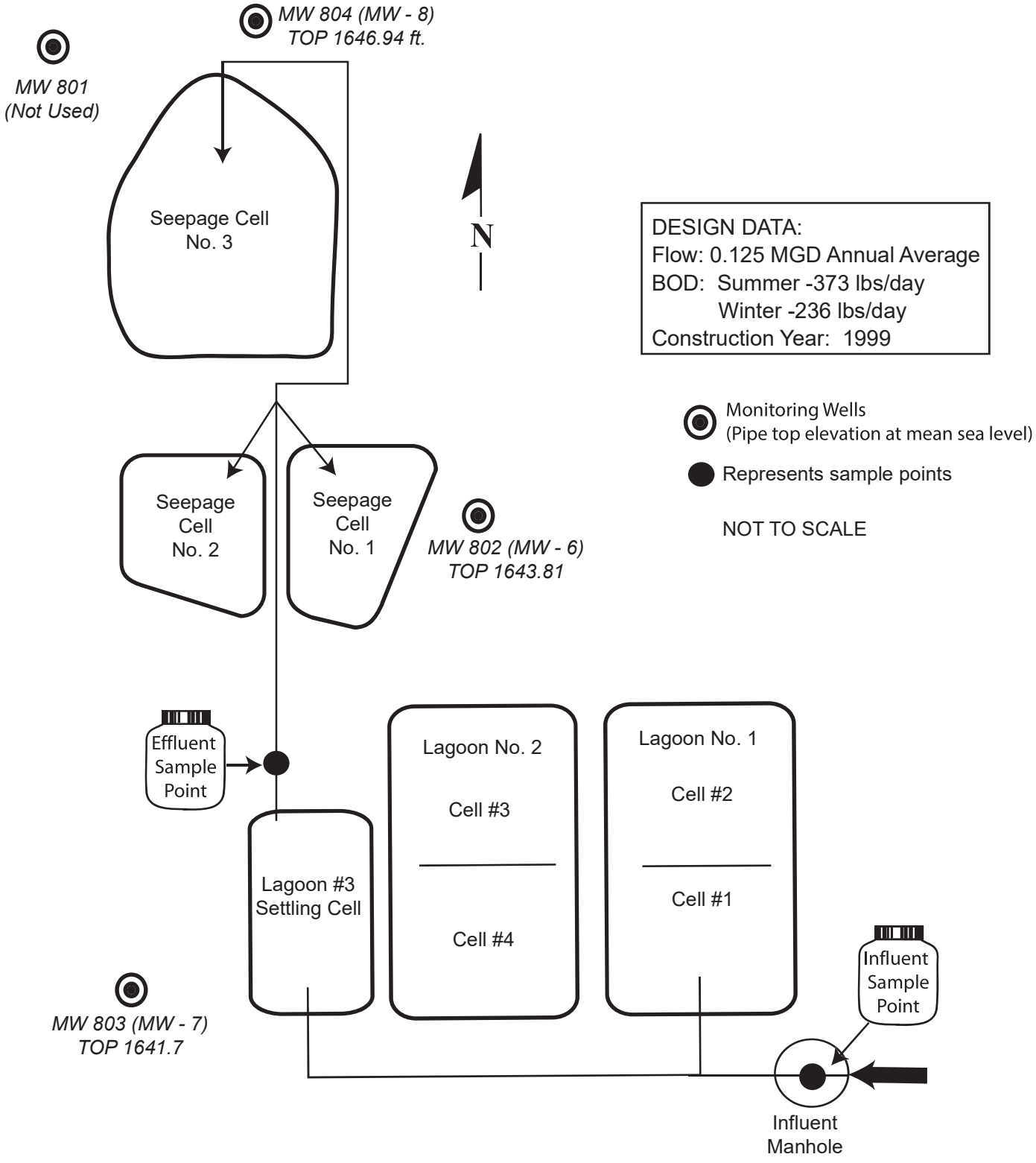
Justification Of Any Waivers From Permit Application Requirements

N/A – Groundwater facility

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** February 26, 2026

VILLAGE OF ELCHO
Wastewater Treatment Facility

The Elcho Sanitary District #1 wastewater treatment facility consists of two aerated lagoons, one settling pond, and three seepage cells. Three monitoring wells located adjacent to the seepage cells are in use. A flow diagram below shows the treatment units and sampling locations.



CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 11, 2025

TO: File

FROM: Woody Myers - WCR

SUBJECT: Groundwater Evaluation for Elcho Sanitary District #1, WI-0029726

Site Information

The Elcho Sanitary District # 1 facility is located at N11394 Lagoon Road, Elcho, Langlade County. This is a municipal wastewater treatment facility. Wastewater is currently treated and discharged to groundwater via one of three absorption ponds (seepage cells). They are located in the SE ¼ of the NE ¼ of Section 11, T34N, R10E, Town of Elcho.

Land Disposal Effluent & Groundwater Evaluation Summary

Table 1 Land Disposal Outfall Sampling Point Parameters and Limits
Outfall 003 Absorption Ponds

Parameter	Current Permit WI-0029726-08		Proposed Permit WI-0029726-09	
	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	- MGD		- MGD	
Total Suspended Solids	- mg/l		- mg/L	
$CBOD_5$	45 mg/l	Monthly Avg	45 mg/l	Monthly Avg
pH, Field	- su		- su	
Nitrogen, Total Kjeldahl	- mg/l		- mg/l	
Nitrogen, Organic	- mg/l		- mg/L	
Nitrogen. Ammonia	- mg/l		- mg/l	
Nitrogen, Nitrite + Nitrate	- mg/l		- mg/l	
Nitrogen, Total	- mg/l		- mg/l	
Chloride	- mg/l		- mg/l	

* Proposed permit changes

Table 2 Monitoring Wells

Well	Current Permit WI-0029726-08		Proposed Permit WI-0029726-09	
	Well Location	Well Designation	Well Location	Well Designation
802 (MW-6)	Side-gradient	Non-Point of Standard	Side-gradient	Non-Point of Standard
803 (MW-7)	Side-gradient	Non-Point of Standard	Side-gradient	Non-Point of Standard
804 (MW-8)	Up-gradient	Background	Up-gradient	Background
805 (MW-9)	Down-gradient	Non-Point of Standard	Down-gradient	***Point of Standard**

* Proposed permit changes

Table 3 Groundwater Quality Standards

Parameter	Current Permit WI-0029726-08		Proposed WI-0029726-09	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrogen, Nitrite + Nitrate	2.0 mg/l	10.0 mg/l	2.0 mg/l	10.0 mg/l
Chloride, Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
pH, Field	5.0-7.0 su	N/A	5.0-7.0 su	N/A
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrogen, Organic	2.1 mg/l	N/A	2.1 mg/l	N/A
Total Dissolved Solids	320 mg/l	N/A	320 mg/l	N/A
Phosphorus, Total Dissolved	N/A	N/A	***Discontinue**	

* Proposed permit changes

Geology

The bedrock under this facility is granite, a post tectonic biotite granite pluton (*Bedrock Geologic Map of Wisconsin*, Wisconsin Geological and Natural History Survey (WGNHS), 1982). Depth to bedrock is anticipated to be between 100 and 200 feet below ground surface (bgs)(*Depth to Bedrock in Wisconsin,* WGNHS, 1973). The regolith consists of material ranging from sand with cobbles and boulders. Surface soils primarily consist of the Kenna sandy loam (boulder), Pence sandy loam and Lupton and Cathro soils (USDA NRCS Web Soil Survey).

Hydrogeology

Calculated groundwater elevation ranges between 1630 and 1636 feet above mean sea level (msl). Depth to groundwater was reported to be between 9 and 13 feet bgs. Groundwater flow direction was calculated to be predominantly to the south. Regional groundwater flow direction is to the southeast of this area in Langlade County (*Mean Elevation of Water Table*, Map, United States Department of Interior, 1968). The site is approximately 600 feet southeast of an unnamed pond, approximately 3,000 feet west of Otter Lake and 2,500 feet north of Hunting River. There are two wells (municipal, other than municipal, private and high-capacity) within a 1,500-foot range of this facility's groundwater discharge.

Land Disposal Effluent Quality and Loading Rates

The following table is the average flow (hydraulic loading), total nitrogen, chloride and $CBOD_5$ loading summations for the land disposal system.

Table 5 Land Treatment Disposal Loading Averages

Year	Flow (MGD)	Nitrogen (mg/l)	Chloride (mg/l)	$CBOD_5$ (mg/l)
2025#	0.039	23.2	202	11.2
2024	0.038	20.6	192	9.0
2023	0.040	24.2	200	5.9
2022	0.040	23.4	172	6.2
2021	0.041	24.7	146	6.1
2020	0.046	25.0	131	8.1

# Indicates partial year

Groundwater Monitoring System and Sampling Frequency

All parameters are analyzed for the dissolved phase in groundwater. Established groundwater quality standards are found in Table 1 Public Health Groundwater Quality Standards s. NR 140.10 Wis. Adm. Code, and Table 2 Public Welfare Groundwater Standards s. NR 140.12 Wis. Adm. Code. The thresholds of these standards are the Enforcement Standard (ES) and the Preventative Action Limit (PAL).

Table 6 Groundwater Monitoring Well Data

Sample Point	Well Name	Elevation (feet above msl)				Length (feet)		Well Type
		Casing Top	Ground Surface	Screen Top	Screen Bottom	Screen Length	Well Depth	
802	MW-6	1643.81		1634.1	1624.1	10.0		WT
803	MW-7	1641.73		1633.6	1623.6	10.0		WT
804	MW-8	1646.94		1639.0	1629.0	10.0		WT
805	MW-9					10.0		WT

All measurements in feet
WT-Water table Observation P-Piezometer O-Other

Groundwater sampling results from this facility have been analyzed for each well to evaluate trends of the regulated compounds in groundwater and to calculate PALs for s. NR 140.22 Wis. Adm. Code Indicator Parameters and to evaluate potential exemptions under s. NR 140.28 Wis. Adm. Code. The groundwater was evaluated by looking at the groundwater data from April 14, 2020 – April 25, 2025.

Background Groundwater Quality

Groundwater sampling results from this facility have been analyzed for each well to evaluate trends of the regulated compounds in groundwater and to calculate PALs and Alternative Concentration Limits (ACL) where appropriate. The groundwater was evaluated by looking at approximately five years of monitoring results. PALs and ACLs are calculated from this time range.

There was no PAL exceedances observed in the background groundwater quality and the trends for the results were stable.

Down-Gradient Groundwater Quality

The only compound that exceeded its PAL and ES was nitrite + nitrate. These exceedances were observed in groundwater monitoring well 802 (designated as a side-gradient well). The exceedances were sporadic in magnitude and without a clear trend. See Figure 1.

Land Disposal System Impact to Groundwater Quality

Concentrations and trends in the groundwater monitoring data were compared to the loading data for the land disposal system. There is not a clear correlation between the effluent loading levels of nitrite + nitrate and the groundwater monitoring results.

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Table 7 Groundwater Quality Sampling Frequency and Limits
Outfall 003 Absorption Ponds

Sample Point	Well Name	Sample Frequency	Well Designation
802	MW-6	Semi-annually	Non-Point of Standard
803	MW-7	Semi-annually	Non-Point of Standard
804	MW-8	Semi-annually	Background
805	MW-9	Semi-annually	*** Point of Standard**
Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
Nitrogen, Nitrite + Nitrate	2.0 mg/l	10.0 mg/l	NR 140 Table 1
Chloride	125 mg/l	250 mg/l	NR 140 Table 2
pH, Field	5.0-7.0 su	N/A	Calculated
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	NR 140 Table 1
Nitrogen, Organic	2.1 mg/l	N/A	Calculated
Total Dissolved Solids	320 mg/l	N/A	Calculated
Phosphorus, Total dissolved	***Discontinue**		

* Proposed permit changes

Indicator Parameter PALs

Indicator Parameter PALs are developed following the procedures described in s. NR 140.20(2), Wis. Adm. Code. Indicator parameters do not have Enforcement Standards. The PAL for an indicator parameter is a benchmark for evaluating site specific trends. When significant increases in the trends are observed, the facility and the department's response action under s. NR 140.24 Wis. Adm. Code should be to investigate the source of the compound. The following equations were used to calculate the indicator parameter PALs:

$$\sum [\text{Mean of the background groundwater quality} + \text{Minimum Increase (NR 140.20 Table 3)}] = \text{PAL}$$

And for pH:

$$\sum [\text{Mean of the background groundwater quality} \pm 1 \text{ su}] = \text{upper and lower PAL}$$

Alternative Concentration Limits

Alternative concentration Limits (ACLs) can be developed and provided for a groundwater monitoring system utilizing the procedures described in s. NR 140.28, Wis. Adm. Code. ACLs were calculated using the following equation:

$$\sum [\text{Mean of the background groundwater quality} + (2) \times \text{Standard Deviation of Results}] = \text{ACL}$$

Conclusions

There are no recommended changes in the sampling point outfall 003 effluent parameters or their limits.

The facility can discontinue the sampling of phosphorus in the groundwater. There are no other recommended changes in the groundwater sampling parameters or their limits. The indicator parameter PALs were calculated with the most recent background groundwater quality sampling data, but the PALs did not change from the previous permit limits.

The side-gradient well 802 had two significant exceedances for nitrite + nitrate of 30 and 70 mg/l. These results were verified as accurate by the laboratory analysis result reports. These values are three and seven time the s. NR 140.10, Wis. Adm. Code Enforcement Standard. This groundwater monitoring well is and non-point of standards application well and it is up-gradient of the treatment lagoons, so the high concentrations observed are not likely a result of leaking lagoons. It is possible that the high concentrations are the result of cross contamination with the sample collection or sample storage and transport. The recommended s. NR 140.27 response action is to review the groundwater sampling protocol and look for sources of cross contamination.

Compliance Schedule Recommendations

The s. NR 206.07 (2)(h) 1. Wis. Adm. Code requires a land disposal management plan for facilities with land disposal systems. The facility should review their plan within 90 days of permit reissuance and any revisions should be submitted to the department for approval.

Figure 1
Nitrite + Nitrate