Village of Nelson Public Noticed Permit Fact Sheet

General Information

Permit Number	WI-0029459-11-0
Permittee	Village of Nelson, PO Box 131, Nelson, WI 54756
Permitted Facility	Nelson Wastewater Treatment Facility, State Hwy 35 South, Nelson, WI
Permit Term	January 01, 2027 to December 31, 2031
Discharge Location	NE ¼ of the SE ¼ of Section 6, T22N, R13W, Town of Nelson, Buffalo County, WI
Receiving Water	groundwaters of the Lower Buffalo River Watershed in Lower Buffalo River Watershed of Buffalo - Trempealeau River Basin in Buffalo County
Annual Average Design Flow	0.042 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Nelson Wastewater Treatment Facility consists of a primary stabilization pond, a secondary stabilization pond and three seepage cells. The system treats domestic wastewater and there are no contributing industrial dischargers. Discharge is solely to groundwater and monitoring wells are on site to monitor for groundwater impacts. The annual average design flow is 0.042 million gallons per day (MGD) and the actual annual average flow in 2025 was 0.0132 MGD. No major operational changes are proposed for this permit reissuance.

Substantial Compliance Determination

Enforcement During Last Permit: None.

After a desk top review of all discharge monitoring reports, and a site visit on 6/2/2026, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Mike Chang on 06/09/2026.

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	Daily average flow 0.0195 MGD in 2025	Representative influent samples and measurements for flow shall be collected from the final lift station.
001	Daily average flow 0.0163 MGD in 2025	Representative effluent samples shall be collected, and flow monitored, at the monitoring manhole prior to discharge to the seepage cells.
003	No sludge had been removed and land applied from the lagoons since 11/06/2006	Representative composite sludge samples shall be collected between 01/01/2027 and 06/30/2027 from stabilization pond 1 and monitored for the parameters as listed in the table below and described in Section 4.2.1.1. If the permittee plans to remove sludge, they shall also monitor sludge for Lists 1, 2, 3 & 4 and PFOA + PFOS prior to land application. The Department shall be notified at least 30 days in advance of sludge removal so that appropriate monitoring forms can be provided. Approval of land application sites must be completed prior to sludge removal.

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Seepage Cells	801	MW-1	Background. Non-point of standard. Up-gradient
Seepage Cells	802	MW-2	Non-point of standard. Down-gradient
Seepage Cells	803	MW-3	Observation well nested with piezometer PZ-1. Non-point of standard. Down-gradient
Seepage Cells	804	PZ-1	Piezometer located with water table well MW-3. Non-point of standard. Down-gradient

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT AT FINAL LIFT STATION

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	2/Month	24-Hr Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total		mg/L	2/Month	24-Hr Comp	
Nitrogen, Total Kjeldahl		mg/L	Monthly	24-Hr Comp	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	24-Hr Comp	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	24-Hr Comp	

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

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: 001- MANHOLE PRIOR SEEPAGE CELLS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Monthly Avg	50 mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	
pH Field		su	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Organic Total		mg/L	Monthly	Calculated	
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	
Nitrogen, Total		mg/L	Monthly	Calculated	
Chloride		mg/L	Monthly	Grab	
Solids, Total Dissolved		mg/L	Monthly	Grab	

Changes from Previous Permit:

Effluent limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

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 September 4, 2026 "Groundwater Evaluation for Village of Nelson, WI-0029459" by Woody Myers.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Seepage Cells

Location of Monitoring system: Nelson WWTF, NE ¼ of the SE ¼ of Section 6, T22N, R13W, Town of Nelson, Buffalo County, WI

Groundwater Monitoring Well(s) to be Sampled: MW-1 (801), MW-2 (802), MW-3 (803), PZ-1 (804)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-1 (801)

Groundwater Monitoring Well(s) Used for Point of Standards Application: None

Parameter	**Units**	**Preventative Action Limit**	**Enforcement Standard**	**Frequency**
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
pH Field	su	8.0	N/A	Quarterly
Solids, Total Dissolved	mg/L	550	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly

Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.5	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly

3.1.1 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: The alternate concentration limits (ACL) for ammonia, chloride and nitrite + nitrate nitrogen have been rescinded based on background groundwater quality. ACLs were calculated, and the product of the variables were less than the s. NR 140.10, Wis. Adm. Code Table 1 PALs, so the Table 1 PALs of 0.97 mg/L, 125 mg/L and 2.0 mg/L, respectively, have been applied.

3.1.2 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 September 4, 2026 "Groundwater Evaluation for Village of Nelson, WI-0029459" by Woody Myers.

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)**
003	B	Liquid	Sludge was not removed from the lagoon last permit term and is not anticipated this permit term.			
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						
Is a priority pollutant scan required? No						

4.1 Sample Point Number: 003- STABILIZATION POND 1

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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	
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 (NH4-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	
PFOA + PFOS		ug/kg	Once	Calculated	Monitor for PFOA + PFOS between 01/01/2027 - 06/30/2027 to meet the requirements of PFAS General Permit (WI-0012345-01). Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PFAS Dry Wt			Once	Grab	Monitor for PFOA + PFOS between 01/01/2027 - 06/30/2027 to meet the requirements of PFAS General Permit (WI-0012345-01). Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.1.1 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:

- PCBs - Monitoring for PCBs has been removed this permit term but will be required again next permit term.
- **List 2 Nutrient monitoring** – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit. Results will assist in the determination of the acres needed for land application of sludge should it be necessary.
- **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.
- **PFAS** - Monitoring has been added pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

  To maintain compliance with General Permit, WI-0012345-01, "PFAS Monitoring for Sewage Sludge (Biosolids) Generators" language has been added to the permit to restate that monitoring for PFOA+PFOS is required by June 30, 2027.

  If the PFOA+PFOS result is under 20 ug/kg General Permit, WI-0012345-01, "PFAS Monitoring for Sewage Sludge (Biosolids) Generators" will be discontinued. If the results are over 20 ug/kg, General Permit section 5.4 must be followed (See link https://dnr.wisconsin.gov/sites/default/files/topic/Wastewater/PFASMonitoringforSewageSludgeGenerators-GeneralPermit.pdf). Based on the requirements of this section the Individual Permit WI-0029459-11-0 for the Village of Nelson may be modified to include additional sludge PFAS conditions.

4.1.2 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.

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.

5 Schedules

5.1 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.	03/31/2027

Explanation of schedule: The permittee is required to have an updated and approved management plan per NR 206.07(2)(h)1 Wis. Adm. Code.

5.2 Lagoon Sludge Management Plan

Required Action	Due Date
Submit a Lagoon Sludge Management Plan (SMP): 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 volume, characterization and how will the treatment plant continue to function during the drawdown; 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.	

Explanation of Schedule: 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 that clearly explains how the sludge will be safely removed, what contingencies are in place, the type of equipment that will be used and how the sludge will be land applied to ensure the proper precautions are in place to prevent any negative impacts to surface water or groundwater.

Other Comments

None

Attachments

NR 140 Groundwater Evaluation Report: September 4, 2026 “Groundwater Evaluation for Village of Nelson, WI-0029459” by Woody Myers.

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Holly Heldstab, Wastewater Specialist **Date:** 10/22/2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: September 4, 2026

TO: File

FROM: Woody Myers - WCR

SUBJECT: Groundwater Evaluation for Village of Nelson, WI-0029459

Site Information

The Nelson Wastewater Treatment Facility is a municipal facility and is located on State Highway 35, Nelson, Buffalo County. Wastewater is currently treated via stabilization ponds and discharged to groundwater via absorption ponds (seepage cells) located in the NE ¼ of the SE ¼ of Section 6, T22N, R13W, Town of Nelson.

Land Disposal Effluent & Groundwater Evaluation Summary

Table 1 Land Disposal Outfall Sampling Point Parameters and Limits
Outfall 001 Absorption Ponds

Parameter	Current Permit WI-0029459-10		Proposed Permit WI-0029459-11	
	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	- MGD		- MGD	
BOD_5	50 mg/l	Monthly Avg	50 mg/l	Monthly Avg
Total Suspended Solids	- mg/l		- mg/l	
pH, Field	- su		- su	
Nitrogen, Total Kjeldahl	- mg/l		- mg/l	
Nitrogen. Ammonia	- mg/l		- mg/l	
Nitrogen, Organic	- mg/l		- mg/l	
Nitrogen, Nitrite + Nitrate	- mg/l		- mg/l	
Nitrogen, Total	- mg/l		- mg/l	
Chloride	- mg/l		- mg/l	
Total Dissolved Solids	- mg/l		- mg/l	

No proposed permit changes

Table 2 Monitoring Wells

Well	Current Permit WI-0029459-10		Proposed Permit WI-0029459-11	
	Well Location	Well Designation	Well Location	Well Designation
801 (MW-1)	Up-gradient	Background	Up-gradient	Background
802 (MW-2)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard
803 (MW-3)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard
804 (PZ-1)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard

No proposed permit changes

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Table 3 Groundwater Quality Standards

Parameter	Current Permit WI-0029459-10		Proposed WI-0029459-11	
	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
pH, Field	6.0-8.0 su	N/A	6.0-8.0 su	N/A
Total Dissolved Solids	550 mg/l	N/A	550 mg/l	N/A
Chloride	145 mg/l (ACL)	250 mg/l	***125 mg/l**	250 mg/l
Nitrogen, Ammonia	1.2 mg/l (ACL)	9.7 mg/l	***0.97 mg/l**	9.7 mg/l
Nitrogen, Organic	2.5 mg/l	N/A	2.5 mg/l	N/A
Nitrogen, Nitrite + Nitrate	2.4 mg/l (ACL)	10.0 mg/l	***2.0 mg/l**	10.0 mg/l

* Proposed permit changes

Geology

The bedrock under this facility is the Eau Claire Formation which is comprised of a subangular poorly sorted fine-grained sandstone. Glauconite deposits are common with flaggy beds separated by green shale (*Bedrock Geology of Wisconsin, Regional Map Series West-Central Sheet*, Wisconsin Geological and Natural History Survey (WGNHS), 1988). Bedrock is anticipated to be between 100 and 150 feet below ground surface (bgs) (*Depth to Bedrock Map of Buffalo County, Wisconsin,* WGNHS, 2001). The regolith consists of medium to fine sand. Surface soil primarily consists of the Forkhorn sandy loam and the Dakota silt loam (USDA Web Soil Survey).

Hydrogeology

Calculated groundwater elevation ranges between 667 and 676 feet above mean sea level (msl). Depth to groundwater was reported to be between 5 and 20 feet bgs. Groundwater flow direction was calculated to be to the west. Regional groundwater is to the west in this area of Buffalo County (*Generalized Water-Table Elevation Map of Buffalo County, Wisconsin,* WGNHS, 2000). The site is bound on the south and west by the Mississippi River. Given the close proximity of the absorption ponds to the Mississippi River the groundwater under this facility is influenced by the surface water. There is one well (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 BOD_5 loading summations for the Land Disposal System.

Table 4 Land Treatment Disposal Loading Averages

Year	Flow (MGD)	Nitrogen (mg/l)	Chloride (mg/l)	BOD5 (mg/l)
2026[#]	0.022	7.5	242	24.9
2025	0.013	8.7	253	30.1
2024	0.021	11.7	249	29.7
2023	0.023	9.0	281	30.9
2022	0.017	9.0	299	29.3
2021	0.019	11.7	276	27.8

[#] 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 5 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	
801	MW-1	696.61	694.6	676.6	666.6	10.0	30.0	WT
802	MW-2	973.88	671.9	669.9	659.9	10.0	14.0	WT
803	MW-3	678.61	676.6	674.6	664.6	10.0	14.0	WT
804	PZ-1	672.47	670.5	658.0	655.5	2.5	17.0	P

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 February 24, 2021 – March 13, 2026.

Background Groundwater Quality

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

Down-Gradient Groundwater Quality

The PAL (ACL) for nitrite + nitrate was consistently exceeded in well 802, there were no ES exceedances. There was some variation in the magnitude in the nitrite + nitrate results, but the trend is overall stable. See Figure 1. There were PAL exceedances for chloride in wells 803 and 804. The trends are stable with slight variation in magnitude. There were no chloride ESs exceedances in wells 803 and 804. The exceedances in well 804 were more frequent than in well 803.

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 and the groundwater monitoring results.

Proposed Groundwater Monitoring Requirements

Table 6 Groundwater Quality Sampling Frequency and Limits Permit WI-0029459-11 Outfall 001 (Absorption Ponds)

Sample Point	Well Name	Sample Frequency	Well Designation
801	MW-1	Quarterly	Background
802	MW-2	Quarterly	Non-Point of Standard
803	MW-3	Quarterly	Non-Point of Standard
804	PZ-1	Quarterly	Non-Point of Standard
Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
pH, Field	6.0-8.0 su	N/A	Calculated
Total Dissolved Solids	550 mg/l	N/A	Calculated
Chloride	***125 mg/l**	250 mg/l	NR 140 Table 2
Nitrogen, Ammonia	***0.97 mg/l**	9.7 mg/l	NR 140 Table 1
Nitrogen, Organic	2.5 mg/l	N/A	Calculated
Nitrogen, Nitrite + Nitrate	***2.0 mg/l**	10.0 mg/l	NR 140 Table 1

* 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:

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

And for pH:

$\sum$ [Mean of the background groundwater quality $\pm$ 1 su] = 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:

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

Conclusions

There are no recommended changes to the sampling point Outfall 001 parameters or associated limits.

The ACLs for nitrite + nitrate, ammonia and chloride have been rescinded based on the concentration of the background groundwater sampling results. ACLs were calculated, but the results were below the ss. NR140.10 and NR140.12, Wis Adm. Code PALs, therefore the Administrative Code PALs will be used. There were no other changes to the groundwater quality limits recommended.

Groundwater monitoring well sample results for nitrite + nitrate from well 802 have been consistently above the s. NR 140.10, Wis. Adm. Code PAL. This well (802) is a non-point of standard well, therefore the exceedances are not violations. In addition, the sample results for chloride in well 804 (a piezometer) have been consistently above the s. NR 140.12, Wis. Adm. Code PAL. There were also exceedances of the chloride PAL in well 803 but not at the same frequency as in 804. Wells 803 and 804 (both non-point of standard wells) are in close proximity to each other. All three of these wells are down-gradient of the absorption ponds, with well 802 being north of 803 and 804. The reason the locations of the wells and their parameters of exceedances are important is one or both of the parameter's source is not the absorption ponds. Given the proximity it is expected that either all three wells have exceedances or the exceedances for chloride and nitrite + nitrate are in the same well(s). This is not the case. There is no scientific rational that could explain why nitrite + nitrate goes north and chloride goes south.

To re-state the exceedances are not violations, and no response action is required at this time.

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

