Permit Fact Sheet

General Information

Permit Number	WI-0002160-09-0
Permittee Name and Address	SENECA FOODS CORPORATION - Clyman 640 CAUGHLIN RD, CLYMAN, WI 53016
Permitted Facility Name and Address	Seneca Foods Corporation 640 CAUGHLIN ROAD
Permit Term	May 01, 2026 to March 31, 2031
Discharge Location	Surface Water: Ditch between Lagoon 3 & 4 (Lat: 43.2954/Lon: 88.7220, SW1/4 NE1/4 Sec 33 T10N R15E) Spray Irrigation Fields: E1/2 SE1/4, Section 28, T10N R5E, W1/2 SE1/4 &SW1/4 Section 27, T10N R15E, W1/2 NW1/4 & W1/2 SW1/4 & SE1/4 SW1/4 & S1/2 SE1/4 Section 34 T10N R15E
Receiving Water	Clyman Creek and Groundwater in Sinissippi Lake Watershed of Upper Rock River Basin in Dodge County
Stream Flow ($Q_{7,10}$)	0 cfs
Stream Classification	Warm water sport fish community, non-public water supply, recreational use
Discharge Type	Existing, Intermittent (Surface Water, ~1 week/year, spring/early summer), Seasonal (Land Treatment, April – November)

Facility Description

Seneca Foods Corporation (Seneca) operates a vegetable processing plant in the Village of Clyman. Vegetables such as cabbage, beets, onions and potatoes are processed on a seasonal basis, usually late-June through mid-November. During the non-growing season, Seneca Clyman produces vegetables blends, salads, gravies, fruit cups, and tomato sauces. Wastewater from processing is collected and pumped to lagoons or holding tanks, from which it is sprayed to irrigation fields. There are currently six spray irrigation fields with approximately 265 approved acres receiving wastewater.

Initial wash water from rinsing root crops is stored in Mud Ponds 1 and 2, which are used in series. The wash water from the mud ponds is spray irrigated. Process wastewater is generated from washing and cooking vegetables and preparing other food products on a year-round basis with highest flows occurring during the peak season (late summer and fall). The wastewater flows into a sixty to twenty thousandths mesh screen system, where the vegetable solids are removed and then it flows into a lift station. Two submersible pumps with capacities of 600 gallons per minute each pump the wastewater out to the lagoons or the holding tank.

Normally process wastewater during the peak season goes first to Tank 1. From Tank 1, it can be distributed to Lagoon 4, Lagoon 5, Tank 2, or directly to spray irrigation. Wastewater can be stored in Tank 1, Tank 2, Lagoon 4, or Lagoon 5. Tank 1 is 141,000 gallons and Tank 2 is 151,000 gallons in capacity. The Lagoon 4 capacity is approximately 20 million gallons and Lagoon 5 capacity is 20.5 million gallons. From Tank 1, Tank 2, Lagoon 4, or Lagoon 5 wastewater is spray irrigated on department approved, dedicated sites.

Lagoons 1, 2, 3, 4, and 5 are located in the NEQ of Section 33, T10N, R15E. Lagoons 1, 2, 3 and 4 are earthen lined lagoons that have been located at the Seneca Clyman facility for decades. Lagoon 5 was reconstructed and upgraded with an HDPE liner in 2017. Lagoons 1, 2 and 3 store can cooling water derived from one of Seneca Clyman's groundwater supply wells. Can cooling water is discharged from Lagoon 3 to the headwaters of Clyman Creek. Lagoon 5 now serves

as the primary lagoon for storage of wastewater and Lagoon 4 acts as reserve capacity for storage of wastewater with periodic low volume discharges to the spray irrigation field. Solids from the lagoons may be land applied on department approved sites.

Groundwater monitoring wells have been installed around the spray fields and ensure groundwater limits are met. Fields are seeded with a grass mixture which is removed 2-3 times annually.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, groundwater monitoring reports, land application reports, compliance schedule items, a site visit on September 5, 2024, and a desktop review on January 21, 2026, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Zach Watson on January 21, 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)**
101	25.67 MG/yr (Annual Total, 2024)	In-Plant: 24-hr flow proportional composite samples shall be collected from the line between the wastewater screens and storage tanks prior to spray irrigation fields. Magnetic flow meter is in the same location. Process wastewater may include waters from the washing and blanching of vegetables, including can-line and other clean-up wash waters.
102	3.99 MG/yr (Annual Total, 2024)	In-Plant: Representative 3-grab composite samples shall be collected from the discharge from Mud Pond 1 to Spray Irrigation. Waters used to wash raw vegetables (outside) are directed to Mud Pond 2. Mud Pond 2 drains to the interconnected Mud Pond 1. Flow is measured using propeller inline flow meter.
103	4.88 MG/yr (Annual Total, 2024)	In-Plant: Representative 3-grab composite samples shall be collected from the discharge from Lagoon 4 to Spray Irrigation. Lagoon 4 serves as a contingency storage location for summer and winter processing waters. Flow is measured using propeller inline flow meter.
106	Outfall not in use during previous permit term	In-Plant: Representative 3-grab composite samples of can cooling water shall be collected from the discharge from Lagoon 1 to Spray Irrigation. Flow is measured using propeller inline flow meter.
107	Outfall not in use during previous permit term	In-Plant: Representative 3-grab composite samples of can cooling water shall be collected from the discharge from Lagoon 2 to Spray Irrigation. Flow is measured using propeller inline flow meter.
108	Outfall not in use during previous permit term	In-Plant: Representative 3-grab composite samples of can cooling water shall be collected from the discharge from Lagoon 3 to Spray Irrigation. Flow is measured using propeller inline flow meter.
109	48.4 MG/yr (Annual Total, 2024)	In-Plant: Representative 3-grab composite samples of process wastewater shall be collected from the discharge from Lagoon 5 to Spray Irrigation. Flow is measured using propeller inline flow

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
		meter.
001	0.345 MGD (Maximum Weekly July 14-20, 2024)	Effluent: 24-hr composite samples of can cooling water shall be collected from the manhole in the discharge pipe at the southeast corner of Lagoon 3 prior to discharge to a ditch which flows to Clyman Creek. A magnetic flow meter is in the same location.
020	16.2 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Aunt Nellie's Farm Kitchen spray irrigation site - 34 acres. Located in the E1/2 of Section 28, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
021	4.74 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Hasse Field spray irrigation site - 11.9 acres. Located in the NW1/4 of NW1/4 of Section 34, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
022	8.73 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Krueziger Field spray irrigation site - 30.7 acres. Located in the SE1/4 of Section 34, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
023	1.28 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Seneca Field #15 spray irrigation site - 8 acres. Located in the SE1/4 of NE1/4 of Section 33, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
024	27.4 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Stock Field spray irrigation site - 60.5 acres. Located in the W1/2 of Section 34, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
027	2.85 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Field 2 spray irrigation site - 13.4 acres. Located in the SW1/4 of SE1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
032	3.7 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Field 5 spray irrigation site - 16.1 acres. Located in the NE1/4 of SW1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
033	4.01 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Field 6 spray irrigation site - 16 acres. Located in the NW1/4 of SW1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
051	2.93 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Fields 1a & 1b spray irrigation site - 18.4 acres. Located in the SW1/4 of SE1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
052	2.65 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Fields 3a & 3b spray irrigation site - 19.3 acres. Located in the SW1/4 of SE1/4 & SE1/4 of SW1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
053	3.64 MG/yr (Annual Total, 2024)	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Fields 7a & 7b spray irrigation site - 18.0 acres. Located in the SW1/4 of SW1/4 of Sec 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
054	4.97 MG/yr (Annual Total, 2024) Formerly Outfalls 030 and 031	Land Treatment: Process wastewater, including boiler blowdown discharged to Vacek Field 4a & 4b spray irrigation site - 19.1 acres. Located in the NW1/4 of the SE1/4 & NE1/4 of SW1/4 of Section 27, T10N, R15E. Grab composite samples collected from Lagoon 4 & 5, Tanks, and Mud Pond. Propeller inline flow meter in the same locations.
006	36 tons (Annual Total, 2025)	Land Application: Landspreading of vegetable by-product solids to landspreading sites. Solids may include peelings, trimmings and sub-standard vegetables. Grab samples collected from the silage stack.
007	Outfall not in use during previous permit term	Land Application: Discharge of vegetable by-product leachate. Grab samples collected from the silage leachate pit.
013	Outfall not in use during previous permit term	Land Application: Discharge of vegetable wash wastewaters stored in Mud Ponds 1 and/or 2. Grab samples collected from the Mud Ponds.
015	Outfall not in use during previous permit term	Land Application: Discharge of wastewaters stored in Tanks 1 and/or 2. Grab samples collected from the Tanks.
019	Outfall not in use during previous permit term	Land Application: Discharge of process wastewater stored in Lagoons 4 or 5. Grab and composite samples collected from the

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
		Lagoons.
041	Outfall not in use during previous permit term	Land Application: Landspreading of sludge stored in Lagoons 4 or 5. Grab samples are collected from the spreading equipment.
042	Outfall not in use during previous permit term	Land Application: Landspreading of sludge stored in Tanks 1 or 2. Samples collected by the commercial hauler company.
060	Outfall not in use during previous permit term	Land Application: Discharge of can cooling water treated in Lagoons 1, 2, and 3. Grab samples collected from the lagoons.
061	Outfall not in use during previous permit term	Land Application: Landspreading of sludge stored in Lagoons 1, 2 and 3. Grab samples collected from the spreading vehicle.

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Point Number**	**Well Name**	**Comments**
ANFK Fields	806	MW-6 (806)	Upgradient, Background, Water Table
	807	MW-7 (807)	Non-Point of Standards, Water Table
	808	MW-8 (808)	Non-Point of Standards, Water Table
	810	MW-10 (810)	Non-Point of Standards, Water Table
	851	MW-46 (851)	Non-Point of Standards, Piezometer
Haase Fields	824	MW-35 (824)	Non-Point of Standards, Water Table
	825	MW-36 (825)	Upgradient, Background, Water Table
Krueziger Fields	827	MW-38 (827)	Upgradient, Background, Water Table
	828	MW-39 (828)	Upgradient, Background, Water Table
	829	MW-40 (829)	Non-Point of Standards, Water Table
	830	MW-41 (830)	Point of Standards, Water Table
	831	MW-42 (831)	Point of Standards, Water Table
	832	MW-43 (832)	Non-Point of Standards, Water Table
	833	MW-44 (833)	Point of Standards, Water Table
Lagoons 1, 2, 3	841	MW-21A (841)	Upgradient, Background, Water Table
	842	MW-21B (842)	Upgradient, Background, Piezometer
	843	MW-11 (843)	Non-Point of Standards, Water Table

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Point Number**	**Well Name**	**Comments**
	844	MW-23A (844)	Point of Standards, Water Table
	845	MW-23B (845)	Point of Standards, Piezometer
	846	MW-25A (846)	Point of Standards, Water Table
	847	MW-25B (847)	Point of Standards, Piezometer
	848	MW-27A (848)	Point of Standards, Water Table
	849	MW-27B (849)	Point of Standards, Piezometer
Lagoons 4 & 5	805	MW-5 (805)	Point of Standards, Water Table
	835	MW-28 (835)	Upgradient, Background, Piezometer
	836	MW-29A (836)	Point of Standards, Water Table
	837	MW-29B (837)	Point of Standards, Piezometer
	839	MW-30B (839)	Point of Standards, Piezometer
	840	MW-31 (840)	Point of Standards, Water Table
Seneca Field #15	801	MW-1 (801)	Upgradient, Background, Water Table
	811	MW-15A (811)	Point of Standards, Water Table
	850	MW-45 (850)	Point of Standards, Water Table
Stock Fields	813	MW-16A (813)	Non-Point of Standards, Piezometer
	815	MW-16C (815)	Point of Standards, Water Table
	816	MW-17 (816)	Point of Standards, Water Table
	817	MW-18B (817)	Point of Standards, Piezometer
	818	MW-19 (818)	Point of Standards, Water Table
	819	MW-20A (819)	Non-Point of Standards, Piezometer
	820	MW-20B (820)	Upgradient, Background, Water Table
	822	MW-33 (822)	Non-Point of Standards, Water Table
	826	MW-37 (826)	Point of Standards, Piezometer
Vacek Fields	852	MW-47 (852)	Non-Point of Standards, Water Table
	853	MW-48 (853)	Non-Point of Standards, Water Table
	854	MW-49 (854)	Non-Point of Standards, Water Table
	855	MW-50 (855)	Point of Standards, Water Table
	856	MW-51 (856)	Non-Point of Standards, Water Table

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Point Number**	**Well Name**	**Comments**
	857	MW-52 (857)	Background, Water Table
	858	MW-53 (858)	Point of Standards, Water Table
	859	MW-54 (859)	Sidegradient, Water Table
	860	MW-55 (860)	Point of Standards, Water Table

Permit Requirements

1 In-plant - Monitoring and Limitations

1.1 Sample Point Number: 101 - Process Wastewater to SI

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Continuous	
BOD5, Total		mg/L	Weekly	24-Hr Flow Prop Comp	
Chloride		mg/L	Weekly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Weekly	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	Weekly	24-Hr Flow Prop Comp	

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

Flow: Daily flow monitoring has been added. Flow monitoring at Sample Points 104 and 105 replaced by flow monitoring at Sample Point 101.

Explanation of Limits and Monitoring Requirements

Monitoring at an In-Plant sample point is a typical method for land treatment facilities that utilize multiple spray fields. Monitoring parameters are typical of a spray irrigation system and needed to provide an overall water balance of the system.

Flow: Sample Point 104 and 105 were removed from the permit. The previous permit required flow monitoring at these locations. It was determined this monitoring is not necessary, as flow monitoring is now required at Sample Point 101. Additionally, flow is monitored when it is drawn from Tank 1 to a particular spray irrigation (Land Treatment) outfall.

1.2 Sample Point Number: 102- Discharge from Mud Pond to SI; 106- Discharge from Lagoon 1 to SI; 107- Discharge from Lagoon 2 to SI; 108- Discharge from Lagoon 3 to SI

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Measure	
Chloride		mg/L	Weekly	3-Grab Comp	
Nitrogen, Total Kjeldahl		mg/L	Weekly	3-Grab Comp	

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

Sample Type: The sample type has been changed to reflect facility operations.

Explanation of Limits and Monitoring Requirements

Monitoring at an In-Plant sample point is a typical method for land treatment facilities that utilize multiple spray fields. Monitoring parameters are typical of a spray irrigation system and needed to provide an overall water balance of the system.

1.3 Sample Point Number: 103- Discharge from Lagoon 4 to SI and 109- Discharge from Lagoon 5 to SI

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Measure	
Chloride		mg/L	Weekly	3-Grab Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Weekly	3-Grab Comp	
Nitrogen, Total Kjeldahl		mg/L	Weekly	3-Grab Comp	

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and the following changes have been made from the previous permit.

Sample Type: The sample type has been changed to reflect facility operations.

Explanation of Limits and Monitoring Requirements

Monitoring at an In-Plant sample point is a typical method for land treatment facilities that utilize multiple spray fields. Monitoring parameters are typical of a spray irrigation system and needed to provide an overall water balance of the system.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- Discharge to Clyman Creek

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Daily Max	20 mg/L	Weekly	24-Hr Comp	
BOD5, Total	Monthly Avg	10 mg/L	Weekly	24-Hr Comp	
BOD5, Total	Daily Max	380 lbs/day	Weekly	Calculated	
BOD5, Total	Monthly Avg	246 lbs/day	Weekly	Calculated	
BOD5, Total	Annual Avg	184 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Daily Max	20 mg/L	Weekly	24-Hr Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	Weekly	24-Hr Comp	
Suspended Solids, Total	Daily Max	609 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Monthly Avg	451 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Annual Avg	313 lbs/day	Weekly	Calculated	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	5/Week	Grab	
Halogen, Total Residual as Cl2	Daily Max	19 ug/L	Weekly	Grab	
Halogen, Total Residual as Cl2	Weekly Avg	7.3 ug/L	Weekly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Weekly	24-Hr Comp	
Chloride		mg/L	5/Week	24-Hr Comp	Monitoring to obtain a minimum of 11 samples during the permit term.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Arsenic, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Cadmium, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Chromium, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Copper, Total Recoverable		ug/L	5/Week	24-Hr Comp	Monitoring to obtain a minimum of four samples during the permit term.
Lead, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Nickel, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Zinc, Total Recoverable		ug/L	Once	24-Hr Comp	Monitoring to obtain a minimum of one sample during the permit term.
Hardness, Total as CaCO3		mg/L	5/Week	24-Hr Comp	Monitoring to obtain a minimum of four samples during the permit term. Collect sample on the same day copper samples are collected.
Phosphorus, Total	Monthly Avg	1.6 mg/L	Weekly	24-Hr Comp	This is an interim MDV limit effective through March 31, 2028. See the MDV/Phosphorus permit sections and phosphorus schedules.
Phosphorus, Total	Monthly Avg	0.8 mg/L	Weekly	24-Hr Comp	This is an interim MDV limit effective on April 1, 2028. See the MDV/Phosphorus permit sections and phosphorus schedules.
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Temperature Maximum		deg F	Daily	Grab	Monitoring to obtain a minimum of 11 samples during the permit term.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Comp	2 tests required during the permit term. See Whole Effluent Toxicity (WET) Testing permit section.
Chronic WET	Monthly Avg	1.0 TUc	See Listed Qtr(s)	24-Hr Comp	Annual tests required during the permit term. See Whole Effluent Toxicity (WET) Testing permit section.

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.

The permittee must report on Outfall 001. If discharge does not occur, indicate no discharge on the report. If discharge occurs, monitoring is required.

Sample Type: The “24-Hr Flow Prop Comp” sample type has been changed to “24-Hr Comp to reflect the type of sampler used at the facility.

BOD5: Mass TBELs have been included.

TSS: Concentration limit and mass TBELs have been included.

pH, DO, Chloride, Copper, and Hardness: The sample frequency for these parameters is 5/Week.

Total Residual as Cl2: The monthly average limit has been removed. This parameter was incorrected listed as Chlorine, Total Residual in previous permit.

Arsenic and Copper: The previous permit limits have been removed, and monitoring frequency is reduced to once.

Cadmium, Chromium, Lead, Nickel, and Zinc: Monitoring once during the permit term has been included.

Phosphorus MDV: The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 0.8 mg/L has been added that goes into effect per a compliance schedule. The permittee is required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of $68.40 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.

Temperature: The sample frequency and sample type have changed to "Daily" and "Grab", respectively.

Acute WET: Two acute tests shall be conducted during the permit term. The acute WET limit has been removed.

Chronic WET: Chronic test shall be conducted annually during the permit term.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo and technology-based effluent limits (TBEL) memo for the Seneca Foods Corporation – Clyman dated January 20, 2026, prepared by Sarah Luck, and used for this reissuance.

BOD5 and TSS: The permit includes water quality-based effluent limits expressed as concentration limits and categorical limits that are expressed as mass limits for BOD and TSS. The categorical limits (TBELs) are applicable to pollutants or pollutant properties in discharges of process waste resulting from the production of canned fruits and vegetables. Previous permit terms did not include the TBELs, however, can cooling water is a process wastewater per s. NR 225.02, Wis. Adm. Code, and therefore TBELs are applicable.

pH: The facility has request that the grab sample point for pH be moved from the discharge point to "where the ditch flows into Clyman Creek, which is about 300 feet west of the actual discharge point to the ditch." Paired sampling at both locations should occur in order to evaluate the request at the next permit reissuance. During the permit term, every pH sample taken at Outfall 001 should have a paired sample collected from the discharge ditch, just prior to flow into Clyman Creek.

Total Residual as Cl2: Expression of limits do not apply due to the non-continuous nature of the discharge, so a monthly average limit is not needed.

Phosphorus: Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs are 0.225 mg/L as a monthly average and 0.075 mg/L and0.22 lbs/day as six-month averages and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on September 3, 2025 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The current interim effluent limit for total phosphorus is 1.6 mg/L as an average monthly limit, this limit has been continued from the previous permit term, per permittee request during the fact check comment period. The interim limit 0.8 mg/L is included, pursuant to s. 283.16(6)1, Wis. Stats., with a compliance schedule to achieve the limit within the permit term.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified target value.

The "price per pound" value is $50.00 adjusted for CPI annually as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the "price per pound" that is public noticed; however, the "price per pound" is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement nonpoint source phosphorus control strategies at the watershed level.

Monitoring Frequencies: The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure 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. The sample frequency for pH and DO is 5/Week to align Seneca Clyman with facilities of similar size and type. Metals monitoring is included to ensure data is available for the next permit application. One sample is required for arsenic, cadmium, chromium, lead, nickel, and zinc. Four samples are required for copper and hardness. Eleven samples are required for chloride. The department determined the sample frequencies for these parameters are appropriate due to the non-continuous and infrequent nature of the discharge.

3 Land Treatment – Monitoring and Limitations

3.1 Sample Point Number: 020- ANFK Field SI Site; 021- Haase Field SI Site; 022- Kruzuiger Field SI Site; 023- Seneca Field #15 SI Site; 024- Stock Field SI Site

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	5,600 gal/ac/day	Monthly	Calculated	May - October
Hydraulic Application Rate	Monthly Avg	3,800 gal/ac/day	Monthly	Calculated	April and November
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	December - March
Nitrogen, Max Applied On Any Zone	Annual Total	400 lbs/ac/yr	Annual	Calculated	
Chloride, Max Applied to Any Zone		lbs/ac/yr	Annual	Calculated	
Soil - Nitrogen, Available		mg/kg	Annual	Grab	
Soil - Phosphorus, Available		mg/kg	Annual	Grab	
Soil - Potassium, Available		mg/kg	Annual	Grab	
Soil - pH Lab		su	Annual	Grab	
Other Sources of Nitrogen		lbs/ac/yr	Annual	Measure	

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.

Nitrogen, Total: Monitoring and reporting of this parameter has been removed from the permit to reduce redundancy in reporting. This information is provided through reporting the Nitrogen, Max Applied on Any Zone.

Nitrogen, Max Applied On Any Zone: The annual total limit has changed from 600 lbs/ac/yr to 400 lbs/ac/yr.

Chloride, Max Applied to Any Zone: This parameter has been added in place of 'Chloride'.

Nitrogen and Chloride, Max: The sample type changed from 'Total Annual' to 'Calculated' for reporting purposes.

Soil: Soil testing is now required to be submitted on the eDMR.

Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All categorical limits are based on ch. NR 214 Subchapter II (14)-Spray irrigation systems, Wis. Adm. Code. More information on the limitations can be found in the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

3.2 Sample Point Number: 027- Vacek Field 2; 032- Vacek Field 5; 033- Vacek Field 6

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	5,600 gal/ac/day	Monthly	Calculated	June - October
Hydraulic Application Rate	Monthly Avg	3,800 gal/ac/day	Monthly	Calculated	May and November
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	December - April
Nitrogen, Max Applied On Any Zone	Annual Total	300 lbs/ac/yr	Annual	Calculated	
Chloride, Max Applied to Any Zone		lbs/ac/yr	Annual	Calculated	
Soil - Nitrogen, Available		mg/kg	Annual	Grab	
Soil - Phosphorus, Available		mg/kg	Annual	Grab	
Soil - Potassium, Available		mg/kg	Annual	Grab	
Soil - pH Lab		su	Annual	Grab	
Other Sources of Nitrogen		lbs/ac/yr	Annual	Measure	

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.

Nitrogen, Total: Monitoring and reporting of this parameter has been removed from the permit to reduce redundancy in reporting. This information is provided through reporting the Nitrogen, Max Applied on Any Zone.

Chloride, Max Applied to Any Zone: This parameter has been added in place of 'Chloride'.

Nitrogen and Chloride, Max: The sample type changed from 'Total Annual' to 'Calculated' for reporting purposes.

Soil: Soil testing is now required to be submitted on the eDMR.

Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All categorical limits are based on ch. NR 214 Subchapter II (14)-Spray irrigation systems, Wis. Adm. Code. More information on the limitations can be found in the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

3.3 Sample Point Number: 051- Vacek Field 1a & 1b; 052- Vacek Fields 3a & 3b; 053- Vacek Fields 7a & 7b, and 054- Vacek Fields 4a &4b

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	4,000 gal/ac/day	Monthly	Calculated	June - October
Hydraulic Application Rate	Monthly Avg	2,700 gal/ac/day	Monthly	Calculated	May and November
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	December - April
Nitrogen, Max Applied On Any Zone	Annual Total	300 lbs/ac/yr	Annual	Calculated	
Chloride, Max Applied to Any Zone		lbs/ac/yr	Annual	Calculated	
Soil - Nitrogen, Available		mg/kg	Annual	Grab	
Soil - Phosphorus, Available		mg/kg	Annual	Grab	
Soil - Potassium, Available		mg/kg	Annual	Grab	
Soil - pH Lab		su	Annual	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Other Sources of Nitrogen		lbs/ac/yr	Annual	Measure	

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.

Outfall 054: Formerly Outfalls 030 and 031.

Nitrogen, Total: Monitoring and reporting of this parameter has been removed from the permit to reduce redundancy in reporting. This information is provided through reporting the Nitrogen, Max Applied on Any Zone.

Chloride, Max Applied to Any Zone: This parameter has been added in place of 'Chloride'.

Nitrogen and Chloride, Max: The sample type changed from 'Total Annual' to 'Calculated' for reporting purposes.

Soil: Soil testing is now required to be submitted on the eDMR.

Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All categorical limits are based on ch. NR 214 Subchapter II (14)-Spray irrigation systems, Wis. Adm. Code. More information on the limitations can be found in the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4 Groundwater – Monitoring and Limitations

4.1 Groundwater Monitoring System for ANFK Fields

Location of Monitoring system: Aunt Nellie's Farm Kitchens field

Groundwater Monitoring Well(s) to be Sampled: MW-6 (806), MW-7 (807), MW-8 (808), MW-10 (810), MW-46 (851)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-6 (806)

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

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	8.5	N/A	Quarterly
Solids, Total Dissolved	mg/L	405	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

COD: Monitoring has been included.

Nitrite + Nitrate Nitrogen & Organic Nitrogen: The PALs have been updated using data from the prior permit term.

Total Dissolved Solids: The PAL has been updated using data from the prior permit term.

Iron and Manganese: The units have changed from mg/L to ug/L.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.2 Groundwater Monitoring System for Haase Fields

Location of Monitoring system: Haase Farm Fields

Groundwater Monitoring Well(s) to be Sampled: MW-35 (824), MW-36 (825)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-36 (825)

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

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	195	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	8.4	N/A	Quarterly
Solids, Total Dissolved	mg/L	600	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

COD: Monitoring has been included.

Chloride, Nitrite + Nitrate Nitrogen, Organic Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.3 Groundwater Monitoring System for Krueziger Fields

Location of Monitoring system: Krueziger Property

Groundwater Monitoring Well(s) to be Sampled: MW-38 (827), MW-39 (828), MW-40 (829), MW-41 (830), MW-42 (831), MW-43 (832), MW-44 (833)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-38 (827), MW-39 (828)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-44 (833), MW-42 (831), MW-41 (830)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	7.6	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	8.5	N/A	Quarterly
Solids, Total Dissolved	mg/L	540	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

COD: Monitoring has been included.

Nitrite + Nitrate Nitrogen, Organic Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.4 Groundwater Monitoring System for Seneca Field #15

Location of Monitoring system: Field 15 east of lagoons 3 & 4

Groundwater Monitoring Well(s) to be Sampled: MW-1 (801), MW-15A (811), MW-45 (850)

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

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-45 (850), MW-15A (811)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	8.3	N/A	Quarterly
Solids, Total Dissolved	mg/L	820	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

COD: Monitoring has been included.

Nitrite + Nitrate Nitrogen, Organic Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.5 Groundwater Monitoring System for Stock Fields

Location of Monitoring system: Stock Farm Fields NEQ of SEQ, Sec 15, T10N R6E

Groundwater Monitoring Well(s) to be Sampled: MW-16A (813), MW-16C (815), MW-17 (816), MW-18B (817), MW-19 (818), MW-20A (819), MW-20B (820), MW-33 (822), MW-37 (826)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-20B (820)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-37 (826), MW-19 (818), MW-18B (817), MW-17 (816), MW-16C (815)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	8.4	N/A	Quarterly
Solids, Total Dissolved	mg/L	700	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

COD: Monitoring has been included.

Nitrite + Nitrate Nitrogen, Organic Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.6 Groundwater Monitoring System for Vacek Fields

Location of Monitoring system: S 1/2 of Section 27, T10N, R15E, Spray Irrigation

Groundwater Monitoring Well(s) to be Sampled: MW-55 (860), MW-47 (852), MW-48 (853), MW-49 (854), MW-50 (855), MW-51 (856), MW-52 (857), MW-53 (858), MW-54 (859)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-52 (857)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-53 (858), MW-50 (855), MW-55 (860)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.3	N/A	Quarterly
pH Field	su	8.5	N/A	Quarterly
Solids, Total Dissolved	mg/L	450	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

COD: Monitoring has been included.

Nitrite + Nitrate Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from ‘mg/L’ to ‘ug/L’.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.7 Groundwater Monitoring System for Lagoons 4 & 5

Location of Monitoring system: Bordering the active wastewater storage/treatment Lagoon

Groundwater Monitoring Well(s) to be Sampled: MW-5 (805), MW-28 (835), MW-29A (836), MW-29B (837), MW-30B (839), MW-31 (840)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-28 (835)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-31 (840), MW-30B (839), MW-29B (837), MW-29A (836), MW-5 (805)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	200	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.5	N/A	Quarterly
pH Field	su	8.3	N/A	Quarterly
Solids, Total Dissolved	mg/L	900	N/A	Quarterly
Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

COD: Monitoring has been included.

Chloride, Nitrite + Nitrate Nitrogen, Organic Nitrogen, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Phosphorus: Monitoring has been included.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

4.8 Groundwater Monitoring System for Lagoons 1, 2, 3

Location of Monitoring system: Surrounding Lagoons numbered 1, 2 and 3

Groundwater Monitoring Well(s) to be Sampled: MW-21A (841), MW-21B (842), MW-11 (843), MW-23A (844), MW-23B (845), MW-25A (846), MW-25B (847), MW-27A (848), MW-27B (849)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-21A (841), MW-21B (842)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-27B (849), MW-27A (848), MW-25B (847), MW-25A (846), MW-23B (845), MW-23A (844)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Depth To Groundwater	feet	N/A	N/A	Quarterly
COD	mg/L	52	N/A	Quarterly
Chloride Dissolved	mg/L	245	250	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.3	N/A	Quarterly
pH Field	su	8.4	N/A	Quarterly
Solids, Total Dissolved	mg/L	1,095	N/A	Quarterly
Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly
Iron Dissolved	ug/L	N/A	N/A	Quarterly
Manganese Dissolved	ug/L	N/A	N/A	Quarterly

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.

Groundwater Elevation: The units have changed from 'feet' to 'feet MSL'.

BOD5: Monitoring and limit removed from the permit.

COD, Chloride, Nitrite + Nitrate Nitrogen, Organic Nitrogen, pH, Total Dissolved Solids: The PALs have been updated using data from the prior permit term.

Iron and Manganese: The units have changed from 'mg/L' to 'ug/L'.

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. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code, are established on a case-by-case basis.

For more information, please refer to the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026, prepared by Zach Watson, and used for this reissuance.

5 Land Application - Sludge/By-Product Solids (industrial only)

5.1 Sample Point Number: 006- Vegetable By-product Solids

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Monthly	Grab Comp	
Nitrogen, Total Kjeldahl		Percent	Monthly	Grab Comp	
Chloride		Percent	Monthly	Grab Comp	
Phosphorus, Total		Percent	Monthly	Grab Comp	
Phosphorus, Water Extractable		% of Tot P	Monthly	Grab Comp	
Potassium, Total Recoverable		Percent	Monthly	Grab Comp	

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.

Volume: Reporting volume on the eDMR has been removed, as it is reported on the Daily Log.

Water Extractable Phosphorus: Monitoring has been included.

Total Solids, Total Kjeldahl Nitrogen, Chloride, and Phosphorus: Parameters should be monitored monthly.

Water Extractable Phosphorus and Potassium: Parameters should be monitored quarterly.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

Monitoring requirements added for consistency with General Permit for Landspreading of By-Product Solids WI-0057665-7. Sample frequency determined appropriate based on facility operations.

5.2 Sample Point Number: 007- Vegetable Byproduct Leachate; 013- Wastewaters from Mud Pond 1&2; 015- Wastewaters from Tanks 1 & 2; 019- Wastewater from Lagoon 4 or 5; 060- Wastewaters - Lagoon 1, 2 & 3

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Potassium, Total Recoverable		mg/L	Quarterly	Grab	

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.

Parameters added to Outfall 007: Total Solids & Water Extractable Phosphorus

Parameters added to Outfalls 013, 015, 019, & 060: Total Solids, Total Phosphorus, Water Extractable Phosphorus, & Potassium

Flow Rate: Reporting flow rate on the eDMR has been removed, as it is reported on the Daily Log.

Total Kjeldahl Nitrogen and Chloride should be monitored monthly; all other parameters should be monitored quarterly.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

Monitoring requirements added for consistency with General Permit for Landspreading of Industrial Liquid Wastes WI-0055867-8.

5.3 Sample Point Number: 041- Sludge from Lagoon 4 or 5; 042- Sludge from Tanks 1 & 2; 061- Lagoon 1, 2 & 3 Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	3-Grab Comp	
Chloride		Percent	Quarterly	3-Grab Comp	
Phosphorus, Total		Percent	Quarterly	3-Grab Comp	
Phosphorus, Water Extractable		% of Tot P	Quarterly	3-Grab Comp	
Nitrogen, Ammonia (NH3-N) Total		Percent	Quarterly	3-Grab Comp	
Nitrogen, Organic Total		Percent	Quarterly	3-Grab Comp	
Nitrogen, Nitrate		Percent	Quarterly	3-Grab Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Potassium, Total Recoverable		Percent	Quarterly	3-Grab Comp	
pH Field		su	Quarterly	3-Grab Comp	
Lead Dry Wt		mg/kg	Once	3-Grab Comp	
Zinc Dry Wt		mg/kg	Once	3-Grab Comp	
Copper Dry Wt		mg/kg	Once	3-Grab Comp	
Nickel Dry Wt		mg/kg	Once	3-Grab Comp	
Cadmium Dry Wt		mg/kg	Once	3-Grab Comp	
PCB Total Dry Wt		mg/kg	Once	3-Grab Comp	
PFOA + PFOS		µg/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.

Sample Type: The sample type has been changed to reflect facility operations.

Volume: Reporting volume on the eDMR has been removed, as it is reported on the Daily Log.

Total Kjeldahl Nitrogen: Monitoring has been removed. Monitoring of other nitrogen parameters will provide sufficient data.

Total Solids, Chloride, Phosphorus, Potassium: The sample frequency is quarterly.

Water Extractable Phosphorus, Ammonia, Organic Nitrogen, Nitrate Nitrogen, pH, Lead, Zinc, Copper, Nickel, Cadmium, and PCB monitoring has been included.

PFAS: Monitoring is required once pursuant to s. NR 214.18(5)(b), Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

Monitoring requirements added for consistency with General Permit for Landspreading of Industrial Sludge WI-0057657-7.

Nitrate Nitrogen monitoring included in recommendation with the Groundwater Ammonia Contamination Remediation schedule.

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.

6 Schedules

6.1 Phosphorus Schedule - Optimization and Compliance Planning

The permittee is required to optimize performance and undertake compliance planning to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization and Compliance Alternatives: The permittee shall implement a phosphorus discharge optimization plan to control phosphorus discharges to the greatest extent practicable. Submit a progress report that summarizes the approach to phosphorus removal at the facility, the resulting concentration and mass loading for the last 12-month period, and any changes that were or are needed to optimize removal of phosphorus by the due date. The permittee shall also evaluate alternative phosphorus compliance options such as water quality trading and adaptive management. The progress report submitted on the date due shall also detail any outreach activities undertaken to evaluate these options, any communications with credit generators, brokers/clearinghouse, and any potential water quality trading or adaptive management projects that may lead to compliance with phosphorus WQBELs. Financial alternatives evaluation: If the permittee intends to seek a renewed variance at the end of this permit term, the permittee may complete a financial evaluation to support ongoing variance eligibility. The report must evaluate financial mechanisms that have the potential to make compliance with phosphorus WQBELs economically feasible.	03/31/2027
Progress Report #2: Submit a progress report per the above for the prior calendar year.	03/31/2028
Progress Report #3: Submit a progress report per the above for the prior calendar year.	03/31/2029
Progress Report #4: Submit a progress report per the above for the prior calendar year.	03/31/2030
Final MDV Optimization and Compliance Alternatives Report: Submit a progress report per the above for the prior calendar year. If water quality trading or adaptive management will be used to comply with phosphorus limitations during the next permit term, submit a draft water quality trading plan, adaptive management plan, or executed clearinghouse credit purchase agreement.	09/30/2030

The financial alternatives evaluation as described above must be submitted by the date due if the facility chooses to seek renewal of the variance.	

Explanation of Schedule

Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with applicable effluent limits. This compliance schedule requires the permittee to prepare an optimization plan with a schedule for implementation and submit it for Department approval. The schedule also includes a compliance planning element focused on economically feasible solutions to low-level phosphorus effluent limits such as water quality trading or adaptive management. The permittee shall take the steps called for in the optimization plan and submit annual progress reports on optimizing the removal of phosphorus and establishing a water quality trade or adaptive management project. Should the permittee intend to reapply for a subsequent term of variance coverage, a financial alternatives analysis will need to be completed. Report elements are listed in the schedule, and more information can be found in EPA's March 2024 Financial Capabilities Assessment Guidance, Appendix C.

6.2 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats, and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee's target value) times ($68.40 per pound)] or $640,000, whichever is less. See the payment calculation steps in the Surface Water section. The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date. Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is $50.00 adjusted for CPI.	03/01/2027
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2028
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2029
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2030
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2031
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

Explanation of Schedule

Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce nonpoint sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the "Payment to Counties" watershed option described in s. 283.16(8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the permittee discharged phosphorus at a target value of 0.2 mg/L. The pounds of phosphorus discharged in excess of the target value is multiplied by a per pound phosphorus charge that will equal $68.40 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s)

6.3 Phosphorus Multi-Discharger Variance Interim Limit (0.8 mg/L)

This compliance schedule requires the permittee to achieve compliance with the specified MDV interim effluent limit in accordance with s. 283.16(6), Wis. Stats., by the due date.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of phosphorus with conclusions regarding compliance.	09/30/2026
Action Plan: Submit an action plan for complying with the specified interim effluent limit. If construction is required, include plans and specifications with the submittal.	03/31/2027
Initiate Actions: Initiate actions identified in the plan.	09/30/2027
Complete Actions: Complete actions identified in the plan and achieve compliance with the specified interim effluent limit.	03/31/2028

Explanation of Schedule

Subsection 283.16(6), Wis. Stats., establishes required interim phosphorus effluent limits that must be met for multi-discharger variance (MDV) eligibility. The schedule above provides the permittee with two years to comply with that limit.

6.4 Chloride Source Reduction Measures (SRMs) for Groundwater Discharges

Required Action	Due Date
Chloride Reduction Plan: The permittee shall submit a chloride reduction plan (CRP) for Department review and approval. The CRP is an initial step toward controlling chloride and ensuring compliance with chloride groundwater standards. The CRP shall evaluate all applicable source reduction measures (SRMs) and establish appropriate implementation activities for the SRMs. The CRP shall include a schedule for implementing the selected SRMs.	06/30/2026
Annual Progress Report: Once the chloride reduction plan (CRP) is approved by the Department, the permittee shall submit an annual progress report, under the authority of s. NR 205.07(1)(h), Wis. Adm. Code. If a SRM implementation date of an approved CRP is not met, this may constitute a violation of the permit. Submittal of the first annual progress report is required by the Due Date.	03/31/2027
Second Annual Progress Report: Submit progress report in implementing the chloride reduction plan (CRP).	03/31/2028
Third Annual Progress Report: Submit progress report in implementing the chloride reduction plan (CRP).	03/31/2029

Fourth Annual Progress Report: Submit progress report in implementing the chloride reduction plan (CRP).	03/31/2030
Final Annual Progress Report: Submit progress report in implementing the chloride reduction plan (CRP).	03/31/2031

Explanation of Schedule

The permittee has been discharging elevated levels of chloride in the effluent, resulting in elevated levels of chloride in the groundwater downgradient from the land treatment system. The permittee shall develop and implement a chloride reduction plan and submit annual progress reports by the due date. Seneca Clyman should identify sustainable means of reducing the chloride load discharged to the spray fields to bring groundwater concentrations below the NR 140, Wis. Adm. Code PAL.

6.5 Groundwater Monitoring Well - Abandonment

Required Action	Due Date
Abandonment: Complete abandonment of monitoring well MW-30 (Sample Point 838). The well shall be abandoned in accordance with s. NR 141.25, Wisconsin Administrative Code. Documentation of well abandonment must be submitted to the Department within 60 days of well abandonment.	03/31/2027

Explanation of Schedule

Monitoring well MW-30 has been dry during the past few years and should be abandoned. The schedule above provides the permittee with one year to abandon well MW-30.

6.6 Groundwater Ammonia Contamination Remediation

Required Action	Due Date
Submit Report: The permittee shall remediate the groundwater ammonia contamination surrounding Lagoons 1, 2, and 3 and submit a report outlining the plans for legacy sludge removal from Lagoons 1, 2, and 3. If the permittee does not believe that removal of legacy sludge is necessary to address ammonia contamination onsite, they shall receive department concurrence on the NR 140.26 PAL exceedance response action to renovate or restore groundwater quality and, upon receiving concurrence, submit a report that identifies the cause(s) for the persistent ammonia contamination and anticipated means for remediation. As part of this investigation, the permittee shall conduct a lagoon leakage assessment and collect a comprehensive set of sludge depth measurements and samples from each lagoon for laboratory analysis of nitrogen (% Solids, Chloride, Phosphorus, Organic Nitrogen, Ammonia Nitrogen and Nitrate Nitrogen). If the Department determines, based on the information submitted in the report, that groundwater ammonia contamination is not a result of the Lagoons, the Department may waive the remaining actions in this compliance schedule.	03/31/2027
Initiate Actions: The permittee shall initiate legacy sludge removal from Lagoons 1, 2, and 3, or, if an alternative method for addressing onsite ammonia exceedances has been identified, the permittee shall initiate work to remediate the groundwater ammonia contamination.	03/31/2028
Progress Report: The permittee shall provide a status update on the progress made so far on remediating the groundwater ammonia contamination associated with Lagoons 1, 2, and 3.	03/31/2029
Complete Actions & Submit Report: The permittee shall complete actions necessary to remediate groundwater ammonia contamination from Lagoons 1, 2, and 3 and submit a documentation report	03/31/2030

outlining the work conducted.	
Submit Report: The permittee shall submit a final progress report outlining conclusions from the effectiveness of the remediation actions taken to date.	03/31/2031

Explanation of Schedule

The increase in substances in groundwater from Lagoons 1, 2, & 3 have not been minimized to the extent technically and economically feasible. Applicable groundwater standards have continued to be exceeded, and concentrations of ammonia are greater than the NR 140, Wis. Adm Code enforcement standard for ammonia at some monitoring wells. The schedule above provides time for the permittee to investigate and remediate ammonia contamination in the groundwater. See the Groundwater Evaluation for Seneca Foods Clyman, dated January 21, 2026 for more information.

6.7 Desludging Management Plan

If desludging of any storage is proposed, management plans must be approved by the Department.

Required Action	Due Date
Desludging Management Plan Submittal: The permittee shall submit a management plan for approval if removal of sludge/solids from any storage will occur during this permit term. At minimum, the plan shall address how the sludge/solids will be sampled, removed, transported, and disposed of. No desludging may occur unless approval by the Department is obtained. Daily logs shall be kept that record volume of sludge/solids removed and where the sludge/solids has been disposed. An applicable management plan must be submitted for each sample point. The plan is due sixty (60) days prior to desludging.	

Explanation of Schedule

If the lagoons are to be desludged during this permit term a management plan is needed to show compliance with ch. NR 214, Wis. Adm. Code. There are outlines available to assist in plan development.

6.8 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	03/31/2027

Explanation of Schedule

An up-to-date Land Application Management plan is a standard requirement in reissued industrial permits per s. NR 214.17(6)(c), Wis. Adm. Code.

6.9 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	03/31/2027

Explanation of Schedule

An up-to-date Land Treatment Management plan is a standard requirement in reissued industrial permits per ch. NR 214, Wis. Adm. Code.

6.10 Land Treatment Annual Report

Required Action	Due Date
Submit Annual Land Treatment Report #1: Submit the Annual Land Treatment Report by February 28th for the previous calendar year. The Annual Land Treatment Report shall include the following: Total volume per site in gallons/year Total Nitrogen per zone in pounds/acre/year Total Chloride per zone in pounds/acre/year Soil Analysis Fertilizer Used in pounds/acre/year	02/28/2027
Submit Annual Land Treatment Report #2: Submit the Annual Land Treatment Report by February 28th for the previous calendar year.	02/28/2028
Submit Annual Land Treatment Report #3: Submit the Annual Land Treatment Report by February 28th for the previous calendar year.	02/28/2029
Submit Annual Land Treatment Report #4: Submit the Annual Land Treatment Report by February 28th for the previous calendar year.	02/28/2030
Submit Annual Land Treatment Report #5: Submit the Annual Land Treatment Report by February 28th for the previous calendar year.	02/28/2031
Annual Land Treatment Report Required After Permit Expiration: In the event this permit is not reissued prior to the expiration date, the permittee shall continue to submit annual land treatment reports by February 28th of each year covering the land treatment activities during the previous calendar year.	

Explanation of Schedule

The above schedule is included for tracking of required annual report, as required in the Standard Requirements section of the permit.

Attachments

Categorical Limits (TBEL) Calculations Memo, dated January 20, 2026

Water Quality Based Effluent Limits Memo, dated January 20, 2026, revised February 5, 2026 and March 19, 2026

NR 140 Groundwater Evaluation Report, dated January 21, 2026

MDV Evaluation Checklist, dated February 23, 2026

MDV Approval Letter, dated February 23, 2026

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance.

Prepared By: BetsyJo Howe, Wastewater Specialist **Date:** 3/23/2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: January 20, 2026

TO: BetsyJo Howe – SCR/Fitchburg

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Technology-Based Effluent Limitations for Seneca Foods Corporation – Clyman
WPDES Permit No. WI-0002160-09-0

Technology-Based Effluent Limitations (TBELs) Recommended for Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Monthly Average	Annual Average
BOD_5, Total	380 lbs/day		246 lbs/day	184 lbs/day
TSS	609 lbs/day		451 lbs/day	313 lbs/day
pH	9.0 su	6.0 su		

PART 1 – BACKGROUND INFORMATION

Seneca Foods Corporation - Clyman operates a vegetable processing plant in the Village of Clyman in Dodge County. This facility cans various vegetables throughout the growing season, which generally begins in July and ends in October. During the cold season, the facility produces formulated products such as gravies, fruit and vegetable cups, three bean salads, potato salad, and special product orders such as tomato products (e.g. spaghetti sauces). This facility operates 365 days a year and 24 hours a day during their peak season.

Can cooling water is discharged to Lagoons 1, 2, and 3 before being discharged to surface water via outfall 001 during the canning season only. The surface water operation was changed in July 2020.

Can cooling water is considered process wastewater according to the definitions section in 40 CFR 401.11 that states the following:

> (q) The term *process waste water* means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, **finished product**, by-product, or waste product.

40 CFR 401.11 federal general definitions apply for sections 402-699 which includes vegetable canning (40 CFR 407).

PART 2 – INDUSTRIAL CATEGORIES

Chapter NR 225, Wis. Adm. Code, specifies effluent guidelines for discharges from canned and preserved fruits and vegetables categories of point sources and subcategories. Seneca Foods Corporation – Clyman would fall under the Canned and Preserved Vegetables subcategory as defined in s. NR 225.02, Wis. Adm. Code. These guidelines are based on federal effluent guidelines in 40 CFR Part 407 Subpart G. The permittee must meet the applicable effluent limit guidelines as described in this chapter. These effluent limit guidelines include:

- Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT) in s. NR 225.10, Wis. Adm. Code.
- Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) in s. NR 225.11, Wis. Adm. Code.
- If determined to be a new source, new source performance standards (NSPS) in s. NR 225.12, Wis. Adm. Code.

If the calculated limits are less than or equal to the limits in the current permit, then the limits would be set equal to the recalculated limits. If the recalculated limits are less restrictive than the limits from the current permit, they cannot be increased unless the antidegradation and anti-backsliding provisions of ch. NR 207, Wis. Adm. Code, are met.

Section NR 220.13, Wis. Adm. Code, includes provisions that address cases where federal and state rule differ. Section 283.11, Wis. Stats., address compliance with federal standards. In this case, the state rules are consistent with federal rules with a few exceptions. In such cases, the permit will in all cases be based on the state rule notwithstanding the federal regulations. The omissions are described below.

- The state or federal rules do not specify a date for the definition for a new source. Therefore, it is necessary to review available federal guidance. The Boornazian memo (September 28, 2006) specifies a new source date for 40 CFR Part 407 Subparts A – H of March 21, 1974. The Department relies on the Boornazian memo to establish date of applicability for NSPS.
- State rules incorrectly list best available treatment (BAT) standards for BOD, TSS, oil & grease, fecal coliform, and pH. BAT applies to priority pollutants and nonconventional pollutants and does not apply BOD, TSS, oil & grease, fecal coliform, or pH.
- The federal standard rule lists revised BCT standards requirements. All BCT limitations are set to be the same as the best practicable control technology (BPT) standards. State rules in ch. NR 225, Wis. Adm. Code, do not list standards for BCT.

PART 3 – LEVELS OF CONTROL

In addition to the industrial categories, the applicable technology-based limits are determined based on the selected level of control. For the canned and preserved vegetables subcategory, all point sources must meet the best practicable control technology (BPT) limits.

PART 4 – CURRENT PRODUCTION LEVELS

The current levels of production for each subcategory are provided by Seneca Foods Corporation – Clyman.

Canned and Preserved Vegetables

Commodity	Material Used* (lbs/day)
Green beans (all)[1]	115,026
Wax beans[1]	17,205
Kidney beans[2]	7,778
Garbanzo beans[2]	3,313
Beets (all)	574,503
Carrots (all)	91,145
Corn (all)	89,901
Dry beans – black	10,319
Dry beans – navy	8,167
Mixed veg – 4-way mix (sweet corn, sweet peas, cut green beans, and lima beans)[3]	27,313
Mixed veg – green mix[3]	9,302
Potatoes (all)	161,818
Peas (all)	151,791
Red cabbage[4]	68,895

**Average from 2021 – 2025 seasons*

Footnotes:

1. The definition for snap beans in Ch. NR 225, Wis. Adm. Code, includes green beans and wax beans.
2. Ch. NR 225, Wis. Adm. Code, does not contain limits for kidney beans and garbanzo beans; factors for dry beans were used instead.
3. Since this is a mix, factors for snap beans are used as an approximation.
4. Ch. NR 225, Wis. Adm. Code, does not contain limits for red cabbage specifically; factors for spinach canning were used instead as the definition includes "other leafy greens" since the cabbage is not fermented.

PART 5 – TBEL CALCULATIONS FOR CANNED AND PRESERVED VEGETABLES

pH

Any discharge subject to BPT, BCT, or NSPS limitations or standards in this part must remain within the pH range of 6.0 to 9.0 su for Subparts A – E and a pH range of 6.0 to 9.5 su for Subparts F – H per 40 CFR Part 407.

Best Practicable Control Technology (BPT) Limits

The daily maximum, daily average (monthly average) and annual average limits for BOD_5 and TSS for each commodity are shown in the tables below. The following factors are from Table 1 of ch. NR 225, Wis. Adm. Code.

Raw Material (lbs/day)	**BPT BOD Effluent Limitations (lbs/1000 lbs)**			**Calculated BOD Limits (lbs/day)[1]**		
	Daily Max	Monthly Average	Annual Average	Daily Max	Monthly Average	Annual Average
132,231 (green beans and wax beans)	1.51	0.87	0.58	200	115	77
11,091 (kidney beans and garbanzo beans)	2.50	1.51	1.07	28	17	12
574,503 (all beets)	1.01	0.71	0.57	580	408	327
91,145 (all carrots)	1.76	1.11	0.82	160	101	75
89,901 (all corn)	0.71	0.48	0.32	64	43	29
18,486 (dry beans)	2.50	1.51	1.07	46	28	20
36,615 (all mixed veg)	1.51	0.87	0.58	55	32	21
161,818 (potatoes)	0.90	0.66	0.55	146	107	89
151,791 (peas)	2.42	1.5	1.08	367	228	164
68,895 (red cabbage)	2.37	1.36	0.91	163	94	63

Footnote:

1. The limits (lbs/day) = total BOD input (lbs/day) / 1000 * BPT limitations

Raw Material (lbs/day)	BPT TSS Effluent Limitations (lbs/1000 lbs)			Calculated TSS Limits (lbs/day)[1]		
	Daily Max	Monthly Average	Annual Average	Daily Max	Monthly Average	Annual Average
132,231 (green beans and wax beans)	2.67	1.8	1.04	353	238	138
11,091 (kidney beans and garbanzo beans)	4.48	3.13	1.97	50	35	22
574,503 (all beets)	1.88	1.47	1.12	1080	845	643
91,145 (all carrots)	3.19	2.3	1.54	291	210	140
89,901 (all corn)	1.32	1.00	0.73	119	90	66
18,486 (dry beans)	4.48	3.13	1.97	83	58	36
36,615 (all mixed veg)	2.67	1.8	1.04	98	66	38
161,818 (potatoes)	1.64	1.23	0.87	265	199	141
151,791 (peas)	4.36	3.11	2.02	662	472	307
68,895 (red cabbage)	4.19	2.81	1.64	289	194	113

Footnote:

1. The limits (lbs/day) = total TSS input (lbs/day) / 1000 * BPT limitations

Final Calculated Limits

The total maximum annual average flow of wastewater that is either discharged to surface water or spray irrigated from Outfall 001 (discharge from Lagoon 3 to Clyman Creek), Outfall 102 (discharge from the Mud Pond to spray irrigation), Outfall 104 (discharge from Tank 1 to spray irrigation), Outfall 105 (discharge from tank 2 to spray irrigation), and Outfall 109 (discharge from Lagoon 5 to spray irrigation) is 1.1 MGD (excluding zero-flow days) based on flow data from 2021 through 2025. The flow from Outfall 001 accounts for approximately 21% of the total discharge of process wastewater. Therefore, the total TBELs are multiplied by 21%.

Commodity	Daily Max BOD (lbs/day)	Monthly Average BOD (lbs/day)	Annual Average BOD (lbs/day)	Daily Max TSS (lbs/day)	Monthly Average TSS (lbs/day)	Annual Average TSS (lbs/day)
Green beans (all) and wax beans	200	115	77	353	238	138
Kidney beans and garbanzo beans	28	17	12	50	35	22

Commodity	Daily Max BOD (lbs/day)	Monthly Average BOD (lbs/day)	Annual Average BOD (lbs/day)	Daily Max TSS (lbs/day)	Monthly Average TSS (lbs/day)	Annual Average TSS (lbs/day)
Beets (all)	580	408	327	1080	845	643
Carrots (all)	160	101	75	291	210	140
Corn (all)	64	43	29	119	90	66
Dry beans (black and navy)	46	28	20	83	58	36
Mixed veg (all)	146	107	89	265	199	141
Potatoes (all)	367	228	164	662	472	307
Peas (all)	55	32	21	98	66	38
Red cabbage	163	94	63	289	194	113
Total	1,810	1,172	876	2,902	2,146	1,493
Total (21%)	**380**	**246**	**184**	**609**	**451**	**313**

PART 6 – FINAL CALCULATED LIMITS

The total discharge limits shall be the total of the amounts calculated from all subcategories of this memo. For each production line, the most restrictive calculated set of limits are used in the calculation of the final total discharge limits.

Final Calculated Effluent Limitations

Parameter & Units	Daily Maximum	Daily Minimum	Monthly Average	Annual Average
BOD_5	380 lbs/day		246 lbs/day	184 lbs/day
TSS	609 lbs/day		451 lbs/day	313 lbs/day
pH	9.0 su	6.0 su		

The daily maximum and monthly average BOD and TSS concentration limits in the WQBEL memo are also recommended to be included in the reissued permit along with the mass limits that are recommended in this TBEL memo.

It should be noted the recommended daily maximum pH limit in Subpart G is 9.5 s.u. However, per s. NR 102.04(4)(c), Wis. Adm. Code, a daily maximum pH of 9.0 s.u. is recommended instead (and as described in the WQBEL memo recommendations).

Production Values Provided by Seneca Foods Corporation - Clyman

Commodity	2021 Days	2021 lbs	2022 Days	2022 Lbs	2023 Days	2023 Lbs	2024 days	2024 lbs	2025 days	2025 lbs	Days (Total)	Lbs (Total)	Lbs/Day 5 Yr Avg
Bean Salad - Green Beans	44	1,593,240	32	112,068	36	1,153,498	28	1,012,547	14	514,318	154	4,385,671	28,478
Bean Salad - Wax Beans	44	786,240	32	602,000	36	542,822	28	476,493	14	242,032	154	2,649,587	17,205
Bean Salad - Kidney Beans	44	342,300	32	262,400	36	244,320	28	221,700	14	127,042	154	1,197,762	7,778
Bean Salad - Garbanzo Beans	3	12,360	2	7,500	2	6,660	3	5,300	2	7,940	12	39,760	3,313
Beets	124	57,364,960	108	51,532,620	129	55,920,060	95	41,911,220	102	48,059,780	558	254,788,640	456,610
Color Beets - Red	101	5,623,240	66	3,913,740	75	3,149,820	11	533,020	60	3,020,520	313	16,240,340	51,886
Color Beets - Yellow	6	396,040	0	-	0	-	0	-	0	-	6	396,040	66,007
Carrots	15	1,113,348	19	889,253	19	1,109,491	7	442,228	15	857,236	75	4,411,556	58,821
Corn	27	2,005,921	33	1,597,757	22	1,061,216	16	934,325	30	1,587,350	128	7,186,569	56,145
Corn - Organic	1	88,775	5	142,889	5	160,800	0	-	3	80,125	14	472,589	33,756
Dry Beans - Black Beans	5	35,300	9	96,680	8	81,400	7	61,580	5	75,900	34	350,860	10,319
Dry Beans - Navy Beans	3	24,500	0	-	0	-	0	-	0	-	3	24,500	8,167
Green Beans	29	1,649,519	35	1,670,876	30	1,271,130	16	879,769	32	1,415,638	142	6,886,932	48,500
Green Beans - Organic	2	122,599	4	132,312	4	141,160	0	-	2	60,501	12	456,572	38,048
Mixed Veg - Carrots	1	32,084	1	24,200	3	40,900	1	9,669	3	25,920	9	132,773	14,753
Mixed Veg - Potatoes	1	27,916	1	19,200	3	31,900	1	7,131	3	19,080	9	105,227	11,692
Mixed Veg - Green Mix	1	19,600	1	16,800	3	33,600	1	11,200	3	2,520	9	83,720	9,302
Mixed Veg - 4 Way Mix	1	44,800	3	67,300	3	93,800	1	12,600	0	-	8	218,500	27,313
German Potato Salad - Potatoes	9	1,200,280	8	1,457,980	8	986,140	6	918,300	3	541,580	34	5,104,280	150,126
Peas	19	1,409,231	21	1,517,518	23	1,308,305	11	453,997	19	1,127,464	93	5,816,515	62,543
Peas - Organic	2	121,715	1	64,674	3	123,949	4	169,175	1	31,771	11	511,284	46,480
Peas & Carrots - Carrots	7	100,406	7	123,787	6	100,550	6	115,800	10	191,998	36	632,541	17,571
Peas & Carrots - Peas	7	349,099	7	331,984	6	260,721	6	264,000	10	333,842	36	1,539,646	42,768
Red Cabbage	33	2,099,920	46	2,841,620	32	1,814,520	15	1,217,560	30	2,774,040	156	10,747,660	68,895

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: January 20, 2026; revised February 5, 2026 to include hardness monitoring; revised March 19, 2026 to change DO daily minimum limit

TO: BetsyJo Howe – SCR/Fitchburg

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Water Quality-Based Effluent Limitations for Seneca Foods Corporation – Clyman WPDES Permit No. WI-0002160-09-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable) for the discharge from the Seneca Foods Corporation – Clyman in Dodge County. This industrial facility discharges to Clyman Creek, located in the Sinissippi Lake Watershed (UR08) in the Upper Rock River Basin. This discharge is located in the Rock River Total Maximum Daily Load (TMDL) area but was not given a TMDL allocation in the report approved by EPA on 09/28/2011. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Annual Average	Footnotes
Flow Rate							1
BOD_5 Concentration limits TBEL mass limits	 20 mg/L 380 lbs/day			 10 mg/L 246 lbs/day		 - 184 lbs/day	2
TSS Concentration limits TBEL mass limits	 20 mg/L 609 lbs/day			 10 mg/L 451 lbs/day		 - 313 lbs/day	2
pH	9.0 s.u.	6.0 s.u.					3
Dissolved Oxygen		4.0 mg/L					4
Halogens, Total Residual as Cl_2	19 µg/L		7.3 µg/L				5
Ammonia Nitrogen							6
Chloride							6
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, all as Total Recoverable							7
Hardness							7
Phosphorus LCA				 1.0 mg/L			8
HAC				0.8 mg/L			
Final limits				0.225 mg/L	0.075 mg/L 0.22 lbs/day		
Temperature							6
Acute WET							9,11

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Annual Average	Footnotes
Chronic WET				1.0 TUc			10,11

Footnotes:

1. Monitoring only.
2. TSS concentration limits have been added to be consistent with other facilities. BOD and TSS mass limits are categorical limits (technology based effluent limits or TBEL) based on ch. NR 225, Wis. Adm. Code. These limits are addressed in a separate memo, dated 01/20/2026, and are based on current production.
3. No changes from the current permit. If the facility would like to change the sampling location, paired sampling at both locations should occur in order to evaluate the request at the next permit reissuance.
4. The dissolved oxygen limit of 4.0 mg/L is being reatained until the Department can verify the receiving water classification which is currently a default warm water sport fishery. Limits may change in the future as a result of the stream assessment.
5. Total halogens WQBELs are required to control the discharge of the additives ChemTreat CL49, ChemTreat CL41, and ChemStation CHLORSAN 12.5%.
6. Monitoring during discharge events.
7. Monitoring during the permit term to ensure data is available for the next permit application since the facility is non-continuous discharger: a minimum of one sample each for arsenic, cadmium, chromium, lead, nickel, and zinc, and at least four samples each for copper and harness. Appropriately sensitive approved analytical methods are recommended such that the limit of detection is less than or equal to one-fifth of the most restrictive calculated limits, shown in the table below, to better determine the need for limits at the next permit reissuance per s. NR 200.027(1), Wis. Adm. Code.

Parameter	Limit of Detection (LOD)
Arsenic	2.66 µg/L
Cadmium	0.70 µg/L
Chromium	39.1 µg/L
Copper	3.12 µg/L
Lead	8.9 µg/L
Nickel	15.7 µg/L
Zinc	36.6 µg/L

8. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 1.0 mg/L should be effective upon permit reissuance. A compliance schedule may be included in the permit until the highest attainable condition (HAC) limit of 0.8 mg/L can be met. The final WQBELs remain at 0.225 mg/L as a monthly average and 0.075 mg/L as a six-month average, as well as a respective mass limit.
9. Two acute WET tests are recommended. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests.
10. Annual chronic WET testing is recommended when discharge occurs. The Instream Waste Concentration (IWC) to assess chronic test results is 100%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5%. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a synthetic (standard) laboratory water since no flow is available upstream of the discharge.
11. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Testing should continue after the permit expiration date (until the permit is reissued).

Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, are not required due to the non-continuous nature of the discharge.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Sarah Luck (Sarah.Luck@wisconsin.gov) or Diane Figiel (Diane.Figiel@wisconsin.gov).
Attachments (2) – Narrative and Site Maps

PREPARED BY: Sarah Luck _____ Date: February 5, 2026

Sarah Luck
Water Resources Engineer

E-cc: Zach Watson, Hydrogeologist – SCR/Dodgeville
Lisa Creegan, Regional Wastewater Supervisor – SCR/Fitchburg
Diane Figiel, Water Resources Engineer – WY/3
Kari Fleming, Environmental Toxicologist – WY/3
Nate Willis, Wastewater Section Manager – WY/3
Matt Claucherty, Phosphorus Implementation Coordinator – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Seneca Foods Corporation – Clyman

WPDES Permit No. WI-0002160-09-0

PART 1 – BACKGROUND INFORMATION

Facility Description

Seneca Foods Corporation - Clyman operates a vegetable processing plant in the Village of Clyman in Dodge County. This facility cans various vegetables throughout the growing season, which generally begins in July and ends in October. During the cold season, the facility produces formulated products such as gravies, fruit and vegetable cups, three bean salads, potato salad, and special product orders such as tomato products (e.g. spaghetti sauces). This facility operates 365 days a year and 24 hours a day during their peak season.

Process wastewater is discharged to Lagoon 4 or Mud Pond to a spray irrigation field. This evaluation considers only the can cooling water, which is discharged to Lagoons 1, 2, and 3 before being discharged to surface water via outfall 001 during the canning season only. The surface water operation was changed in July 2020. DNR approved plans and specifications in a letter dated December 7, 2018 for transferring cooling water to existing Lagoon l via a forcemain and constructing a new discharge structure from Lagoon 3 to Clyman Creek. This modified cooling water system was put in place to meet temperature limits.

Surface water samples are collected from the southeast corner of Lagoon 3, approximately 1/4 mile south of the facility. From Lagoon 3, cooling water is discharged to a ditch between Lagoon 3 and Lagoon 4 and then reaches Clyman Creek.

It should be noted that, before the changes to the surface water system, which were completed in July 2020, the facility was considered a continuous discharger. However, due to the characteristics of the lagoons, water is only discharged if the water levels in the pond dictate it, which has typically occurred on an annual basis, about one week per year, during the spring or early summer.

Attachment #2 is a map of the area showing the approximate location of Outfall 001 and a map of the lagoons.

Existing Permit Limitations

The current permit, which expired on September 30, 2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD_5	20 mg/L			10 mg/L		-
TSS						1

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
pH	9.0 s.u.	6.0 s.u.				-
Dissolved Oxygen		4.0 mg/L				-
Ammonia Nitrogen						1
Residual Chlorine	19 µg/L		7.3 µg/L	**7.3 µg/L**		2
Copper	67 µg/L 0.35 lbs/day		36 µg/L 0.12 lbs/day	**36 µg/L**		2
Arsenic	**13 µg/L**			13 µg/L 0.026 lbs/day		2
Chloride						1
Zinc						1
Hardness						1
Phosphorus Interim Final				1.6 mg/L 0.225 mg/L	0.075 mg/L 0.15 lbs/day	3
Temperature						4
Acute WET	1.0 TUa					5
Chronic WET				1.0 TUc		5

Footnotes:

1. Monitoring only. Ammonia and chloride only required monitoring in 2023.
2. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are denoted in bold text.
3. The interim limit of 1.6 mg/L reflects the 4-day P99 concentration from data from 2015-2018 and is part of the compliance schedule.
4. The following limits became effective January 1, 2020:

Month	Weekly Average Limitation (°F)	Daily Maximum Limitation (°F)
January	49	76
February	50	76
March	52	77
April	55	79
May	65	82
June	76	84
July	81	85
August	81	84
September	73	82
October	61	80
November	49	77
December	49	76

5. Annual acute WET tests and twice annual chronic WET tests were required. The IWC for chronic WET was 100%. The WET limits went into effect 09/30/2025.

Receiving Water Information

- Name: Clyman Creek
- Waterbody Identification Code (WBIC): 847700
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply and recreational use (by default).
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code:
  $7\text{-}Q_{10}$ = 0 cubic feet per second (cfs)
  $7\text{-}Q_2$ = 0 cfs
  Harmonic Mean Flow = 0 cfs
- Hardness = 161 mg/L as $CaCO_3$. Effluent hardness is used in place of receiving water because there is no receiving water flow upstream of the discharge.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: Not applicable where the receiving water low flows are zero.
- Source of background concentration data: Background concentrations are not included because they do not impact the calculated WQBEL when the receiving water low flows are equal to zero.
- Multiple dischargers: None.
- Impaired water status: The impairment status of Clyman Creek is unknown. However, Silver Creek, located approximately 3.8 miles downstream of the outfall, was listed on 04/01/2018 as impaired for total phosphorus, as is the Rock River, located approximately 7.5 miles downstream of the outfall.

Effluent Information

- Flow rate:

  Seneca Foods Corporation – Clyman discharged via Outfall 001 a total of 28 days from November 2020 through October 2025 with no discharges reported in 2022 or 2025. Water is discharged from Lagoon 3 (which is connected to Lagoon 1 and 2) typically on an annual basis, about one week per year, during the spring or early summer, if the water levels dictate a discharge event is needed. It is suspected there may be a seepage aspect to the lagoons that limits the need for more frequent discharge events. The facility discharged for one week (June) in 2021, one week (April) in 2023, and two weeks (June and July) in 2024. The weekly average flow rates during the permit term are summarized below.

Week of discharge	Weekly Average (MGD)
6/6/21-6/12/21	0.173
4/23/23-4/29/23	0.216
6/9/24-6/15/24	0.205
7/14/24-7/20/24	0.345

  It should be noted the second discharge event in July 2024 was done to start WET retests. Given the seasonal nature of the discharge, the maximum flow rate for seven continuous days, excluding zero-flow days, is used in this evaluation in accordance with s. NR 106.06(4)(d)3, Wis. Adm. Code, which states "For seasonal discharges…Qe [effluent flow rate] shall be determined on a case by case basis." **The maximum weekly flow rate occurred during 7/14/24 through 7/20/24 and was 0.345 MGD.**
- Hardness = 161 mg/L as $CaCO_3$. This value represents the geometric mean of data (n = 7) from June 2021 through July 2024 reported on the DMR.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).

- Wastewater source: Can cooling water
- Water supply: Clyman Village Well #3 and a private well.
- Additives: Seneca Foods Corporation – Clyman has included four additives in the permit application that have the potential to be present in Outfall 001 (listed below). The need for any limits or use restrictions for these additives is evaluated in Part 8 of this evaluation.
  - ChemTreat FlexPro CL5684 – Scale and corrosion inhibitor
  - ChemTreat CL49 – Biocide (bromine)
  - ChemTreat CL41 – Biocide (sodium bromide)
  - ChemStation CHLORSAN 12.5% – Biocide (sodium hypochlorite)
- Effluent characterization: This facility is categorized as a secondary industry, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus oil and grease, nitrogen series monitoring, and temperature. Cooling water is discharged from Lagoon 3 (which is connected to Lagoon 1 and 2) typically on an annual basis, about one week per year. In 2022 and 2025, it was not necessary to discharge during the year. Due to the intermittent nature of the discharge, permit application sampling was not conducted in 2025.

The following table presents the average concentrations and loadings at Outfall 001 from November 2020 through November 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	4.5 mg/L	
pH field	8.8 s.u.	
Dissolved Oxygen	8.8 mg/L	
Residual Chlorine	<100 µg/L	
Arsenic	0.70 µg/L	
Copper	0.64 µg/L	
Phosphorus	0.89 mg/L	2.3 lbs/day

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P_{99}) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds one-fifth of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q_{10}

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Adm. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q_{10} receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

WQC =Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness (mg/L) and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD. (mg/L)	ATC	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Chlorine		19.0	19.0	3.81	<100
Arsenic		340	339.8	68.0	0.70
Cadmium	161	17.9	17.9	3.6	
Chromium	161	2669	2668.8	534	
Copper	161	24.4	24.4	4.9	0.64
Lead	161	170	169.8	34.0	
Nickel	161	703	703.5	141	
Zinc	161	183	183.0	36.6	
Chloride (mg/L)		757	757.0	151	67.4

* Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Attachment #1

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD. (mg/L)	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Chlorine		7.28	7.28	1.46	<100
Arsenic		152.2	152	30.4	0.70
Cadmium	161	3.59	3.59	0.7	
Chromium	161	195.54	196	39.1	
Copper	161	15.59	15.6	3.12	0.64
Lead	161	44.48	44.5	8.9	
Nickel	161	78.26	78	15.7	
Zinc	161	182.97	183	36.6	
Chloride (mg/L)		395	395	79.0	67.4

Monthly Average Limits based on Wildlife Criteria (WC)

The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HTC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT
Cadmium	370	370	74.0
Chromium (+3)	3818000	3818000	763600
Lead	140	140	28.0
Nickel	43000	43000	8600

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HCC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	13.3	2.66	0.70

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

Conclusions and Recommendations

Based on a comparison of the effluent data and calculated effluent limitations, **effluent limitations are recommended for total halogens.** Limits and monitoring recommendations are made in the paragraphs below.

Total Halogens as Residual Chlorine – Since bromine and sodium hypochlorite are added at the facility, effluent limitations are recommended. Specifically, **a daily maximum limit of 19 µg/L is required. A weekly average effluent limitation of 7.3 µg/L should also be included in the permit** because it is more restrictive than the daily maximum limit.

The current permit has a monthly average limit of 7.3 µg/L. **Expression of limits do not apply due to the non-continuous nature of the discharge,** so a monthly average limit is not needed. The currently effective monthly average limit of 7.3 µg/L may be removed per antidegradation and antibacksliding requirements in ch. NR 207, Wis. Adm. Code, because significant and permanent changes have occurred to the discharge operations and since the weekly average WQBEL of 7.3 µg/L is more stringent.

Copper – Considering available effluent data from the current permit term, presented in the table below, the mean concentration is 0.64 µg/L, with a maximum concentration of 4.5 µg/L. Since the mean is less than one-fifth of any of the calculated limits for copper, **no concentration or mass limits are required. A minimum of four samples for copper is recommended to ensure data is available for the next permit application since the facility is non-continuous discharger. A more sensitive approved analytical method is recommended for future copper samples such that the limit of detection is less than or equal to 3.12 µg/L** (which is one-fifth of the calculated CTC limit of 15.6 µg/L) to better determine the need for arsenic limits at the next permit reissuance per s. NR 200.027(1), Wis. Adm. Code.

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
06/02/21	<3.40	06/13/24	<3.40
04/26/23	<1.90	07/17/24	<3.40
04/27/23	4.50	07/18/24	<3.40
06/12/24	<3.40		
Average = 0.64 µg/L			

"<" means that the pollutant was not detected at the indicated limit of detection. The mean concentration was calculated using zero in place of the non-detected results.

Antidegradation and Antibacksliding

Since the change in discharge operations went into effect prior to the limit becoming effective, treatment/effluent quality is expected to remain the same and removal of the limits will not increase the concentration, level, or loading of copper to Clyman Creek. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limit may be removed in accordance with s. NR 207.12(3), Wis. Adm. Code.

Arsenic – Considering available effluent data from the current permit term, presented in the table below, the mean concentration is 0.70 µg/L, with a maximum concentration of 2.5 µg/L. Since the mean is less than one-fifth of any of the calculated limits for arsenic, **no concentration or mass limits are required. A minimum of one arsenic sample is recommended to ensure data is available for the next permit application since the facility is non-continuous discharger. A more sensitive approved analytical method is recommended for future arsenic samples such that the limit of detection is less than or equal to 2.66 µg/L** (which is one-fifth of the calculated HCC limit of 13.3 µg/L) to better determine the need for arsenic limits at the next permit reissuance per s. NR 200.027(1), Wis. Adm. Code.

Attachment #1

Arsenic Effluent Data

Sample Date	Arsenic (µg/L)	Sample Date	Arsenic (µg/L)
06/02/21	<8.3	06/13/24	<8.3
04/26/23	2.5	07/17/24	<8.3
04/27/23	2.4	07/18/24	<8.3
06/12/24	<8.3		
Average = 0.70 µg/L			

"<" means that the pollutant was not detected at the indicated limit of detection. The mean concentration was calculated using zero in place of the non-detected results.

Antidegradation and Antibacksliding

Since the change in discharge operations went into effect prior to the limit becoming effective, treatment/effluent quality is expected to remain the same and removal of the limits will not increase the concentration, level, or loading of arsenic to Clyman Creek. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limit may be removed in accordance with s. NR 207.12(3), Wis. Adm. Code.

Chloride – A single chloride sample was collected on 04/26/2023 and was 67.4 mg/L. Since this concentration is less than one-fifth of the calculated WQBELs for chloride, **no effluent limits are needed. Chloride monitoring is recommended during discharge events**.

Cadmium, chromium, lead, nickel, and zinc – Due to the intermittent nature of the discharge, monitoring for the permit application was not collected in the previous term. Therefore, **a minimum of one sample for each parameter is recommended during the permit term** to ensure data is available for the next permit application. **Appropriately sensitive approved analytical methods are recommended such that the limit of detection is less than or equal to one-fifth of the most restrictive calculated limits** to better determine the need for limits at the next permit reissuance per s. NR 200.027(1), Wis. Adm. Code.

Parameter	Limit of Detection (LOD)
Cadmium	0.70 µg/L
Chromium	39.1 µg/L
Lead	8.9 µg/L
Nickel	15.7 µg/L
Zinc	36.6 µg/L

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge and known levels of PFOS/PFOA in the source water (all municipal water supply samples were non-detect), **PFOS and PFOA monitoring is not recommended during the reissued permit term.** The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge at levels of concern.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR CONVENTIONAL POLLUTANTS

BOD

Concentration Limits

The current permit contains biological oxygen demand (BOD) concentration limits of 20 mg/L as a daily maximum and 10 mg/L as a monthly average. **No changes are recommended for the BOD**

concentration limits.

Mass Limits
Chapter NR 225, Wis. Adm. Code, specifies effluent guidelines that are applicable to pollutants or pollutant properties in discharges of process wastewater resulting from the production of canned fruits and vegetables. These limits are addressed in a separate memo, dated 01/20/2026, and are based on current production information provided by the facility.

TSS
Concentration Limits
The current permit only includes monitoring for total suspended solids (TSS) and no numeric limits. TSS concentration limits are generally established as the same concentrations as BOD_5 limitations. Therefore, **TSS concentration limits of 20 mg/L as a daily maximum and 10 mg/L as a monthly average are recommended in the reissued permit.**

TMDL Mass Limits
The Rock River Total Daily Maximum Load specifies percent reductions for TSS. The total suspended solids (TSS) load reduction target from wastewater discharges for Reach #29 is 0% (from Appendix I: Required Percent Reduction of TSS from Annual Baseline Load). Given this reduction goal and the seasonal discharge of can cooling water from Lagoon 3, **TMDL TSS mass limits are not recommended at this time.**

TBEL Mass Limits
Chapter NR 225, Wis. Adm. Code, specifies effluent guidelines that are applicable to pollutants or pollutant properties in discharges of process waste resulting from the production of canned fruits and vegetables. These limits are addressed in a separate memo, dated 01/20/2026, and are based on current production information provided by the facility.

Effluent Data
For informational purposes, the following table summarizes effluent TSS monitoring data from June 2021 through July 2024.

TSS Effluent Data

	Concentration (mg/L)	Mass* (lbs/day)
06/02/21	32.7	*No flow rate reported*
04/26/23	3.9	7.6
04/27/23	1.2	2.4
06/12/24	3.2	6.6
06/13/24	1.5	3.4
07/17/24	1.6	5.0
07/18/24	2.0	5.9
Average	6.5	5.1

*TSS mass was not required to be reported. The values presented here were calculated based on the TSS concentration and reported effluent flow rate on that day using the following equation:
TSS (lbs/day) = TSS concentration (mg/L) × daily flow (MGD) × 8.34 (lbs/gallon)

Dissolved Oxygen

A dissolved oxygen (DO) daily minimum limit of 4.0 mg/L was originally implemented in the permit due to the use of a magnesium bisulfite solution which was a known oxygen scavenger. However, a daily minimum DO limit of 4.0 mg/L is typically reserved for those waters listed as limited aquatic life or limited forage fish in ch. NR 104, Wis. Adm. Code, which Clyman Creek is not. Since the additive magnesium bisulfate is no longer being used and since Clyman Creek is a default warm water sport fish community, a daily minimum DO limit 7.0 mg/L is warranted. However, given the absence of flow in the receiving water and a study in 2004 which recommended the first mile of Clyman Creek be classified as a limited forage fish community (see discussion in the WQBEL memo dated October 10, 2014), **it is recommended that the current DO limit of 4.0 mg/L as a daily minimum be continued** until the Department can conduct a stream assessment to verify the classification. **It should be noted that limits may change in the future as a result of the stream study.**

Effluent Data

For informational purposes, the following table summarizes effluent DO monitoring data from June 2021 through July 2024.

Dissolved Oxygen Effluent Data

Sample Date	DO (mg/L)	Sample Date	DO (mg/L)	Sample Date	DO (mg/L)
06/06/21	8.88	06/10/21	8.40	04/24/23	10.6
06/07/21	8.84	06/11/21	8.40	06/09/24	9.50
06/08/21	8.80	06/12/21	8.20	07/14/24	5.70
06/09/21	8.65	04/23/23	11.2		
1-day P_{99} = 12.6 mg/L					
Mean = 8.83 mg/L					

pH

In accordance with s. NR 102.04(4)(c), Wis. Adm. Code, **pH shall be within the range of 6.0 s.u. to 9.0 s.u.** for fish and aquatic life. It should be noted there were several exceedances of the 9.0 s.u. daily maximum limit. The facility noted in the permit application that currently pH is monitored via a grab sample from the discharge and that pH can be elevated on sunny days due to "photosynthesis and algae." The facility has requested that sampling be moved to "where the ditch flows into Clyman Creek, which is about 300 feet west of the actual discharge point to the ditch." **Paired sampling at both locations should occur in order to evaluate the request at the next permit reissuance.**

Effluent pH data is summarized in the table below.

pH Effluent Data

Sample Date	pH (s.u.)	Sample Date	pH (s.u.)	Sample Date	pH (s.u.)	Sample Date	pH (s.u.)
6/6/2021	8.5	6/10/2021	8.4	4/24/2023	9.8	6/9/2024	10.4
6/7/2021	8.5	6/11/2021	8.4	4/25/2023	9.8	6/10/2024	9.95
6/8/2021	8.3	6/12/2021	8.2	4/26/2023	8.8	6/11/2024	6.94
6/9/2021	8.2	4/23/2023	10.07	4/27/2023	8.35	7/14/2024	8.46

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for this substance effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life.

Seneca Foods Corporation – Clyman was required to sample for ammonia nitrogen in 2023. A single sample result of <0.14 mg/L was reported on 04/26/2023. During the previous permit term, 18 sample results below the level of detection of 0.25 mg/L from July 2018 through November 2018 were reported. All the samples came back below the level of detection of 0.25 mg/L. All of the effluent data are lower than any ammonia limits which would be calculated. Therefore, **no ammonia limits are required in the reissued permit. Monitoring during discharge events is recommended.**

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires industrial facilities that discharge greater than 60 pounds of total phosphorus per month to comply with a 12-month rolling average limit of 1.0 mg/L, or an approved alternative concentration limit.

Since Seneca Foods Corporation – Clyman does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 60 lbs/month, which is the threshold for industrial facilities in accordance with s. NR 217.04(1)(a)2, Wis. Adm. Code, and therefore **no technology-based limit is required.**

Annual Average Mass Total Phosphorus Loading

Month	Average Phosphorus Concentration (mg/L)	Total Effluent Flow (Million Gallons)	Calculated Mass (lbs/month)
April 2023	0.40	1.51	5
June 2024	1.0	1.44	12
July 2024	1.6	2.42	32
Average			**16**

Total P (lbs/month) = Monthly average (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)
Where total flow is the sum of the actual flow (MG) for that month

In addition, the need for a WQBEL for phosphorus must be considered.

Water Quality-Based Effluent Limits (WQBEL)

Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L.

The phosphorus criterion of 0.075 mg/L applies for Clyman Creek.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided on the next page.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 0.075 mg/L for Clyman Creek
Qs = 100% of the 7-Q_2 of 0 cfs
Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code
Qe = effluent flow rate = 0.345 MGD = 0.534 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

The effluent limit is set equal to criteria because the receiving water flow is equal to zero.

Effluent Data
The following table summarizes effluent total phosphorus monitoring data from June 2021 through July 2024.

Total Phosphorus Effluent Data

	Phosphorus (mg/L)
6/2/2021	0.44
4/26/2023	0.40
6/12/2024	0.49
6/13/2024	1.5
7/17/2024	1.6
Mean	0.89

Reasonable Potential Determination
The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the mean of reported effluent total phosphorus data is greater than one-fifth of the calculated WQBEL in accordance with s. NR 217.15(1)(c)2**.** Therefore, **a WQBEL is required.**

Limit Expression
According to s. NR 217.14 (2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.075 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.225 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code, shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits
A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is upstream of a phosphorus-impaired water (Silver Creek, located approximately 3.8 miles downstream of the outfall and the Rock River, located approximately 7.5 miles downstream of the outfall). **This final mass limit shall be 0.075 mg/L × 8.34 × 0.345 MGD = 0.22 lbs/day expressed as a six-month average.**

Antidegradation and Antibacksliding
The calculated mass limit of 0.22 lbs/day is higher than the previously calculated mass limit of 0.15 lbs/day since the effluent flow rate has increased. Since the final phosphorus limits have a compliance schedule to become effective in 2029, the increase in the mass limit is not subject to the antidegradation and antibacksliding provisions in ch. NR 207, Wis. Adm. Code.

TMDL Limits
Seneca Foods Corporation – Clyman is located in Reach 29 of the Rock River TMDL. Although a phosphorus wasteload allocation was not specifically listed in the TMDL, the total reduction of phosphorus for wastewater discharges for this reach is 64% (from Appendix H: Required Percent Reduction of Total Phosphorus from Annual Baseline Load). Section 4.2 of the TMDL document (https://dnr.wisconsin.gov/topic/TMDLs/RockRiver/index.html) states that baseline concentrations were capped at 1.0 mg/L. Since Seneca Foods Corporation – Clyman was not listed as an industry even though it was an active discharge, the baseline is assumed to be 1.0 mg/L. Applying a 64% reduction yields a concentration of 0.36 mg/L. Since the WQBEL calculated under s. NR 217.13, Wis. Adm. Code, is less than 0.36 mg/L, the mass limit calculated above is consistent with the reduction goals specified in the Rock River TMDL for Reach 29.

Multi-Discharge Variance Interim Limit
Seneca Foods Corporation – Clyman has applied for the phosphorus multi-discharger variance (MDV). Conditions of the phosphorus MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBEL for this permit term. **The recommended interim limit, pursuant to s. 283.16 (6) 1, Wis. Stats., is 0.8 mg/L as a monthly average.** A compliance schedule may be appropriate to meet this interim limit, but compliance with 0.8 mg/L shall be no later than the end of the reissued permit. **A limit current achievable (LCA) of 1.0 mg/L should not be exceeded during the compliance schedule.**

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from June 2021 through July 2024.

The table on the next page summarizes the maximum temperatures reported during monitoring from June 2021 through July 2024 (n=23).

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	-	-	49	76
FEB	-	-	50	76
MARCH	-	-	52	77
APR	47	51	55	79
MAY	-	-	65	82
JUN	75	77	76	84
JUL	77	81	81	85
AUG	-	-	81	84
SEPT	-	-	73	82
OCT	-	-	61	80
NOV	-	-	49	77
DEC	-	-	49	76

Reasonable Potential

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  (a) The highest recorded representative daily maximum effluent temperature
  (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub−lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
  (a) The highest weekly average effluent temperature for the month.
  (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Based on the available effluent data, **no effluent limits are recommended for temperature**. **Monitoring is recommended to continue during periods of discharge.** It should be noted that temperature limits are equal to criteria since there is no flow in the receiving water. The need for thermal limits will be evaluated at each permit reissuance.

Antidegradation and Antibacksliding

Since the change in discharge operations went into effect prior to the temperature limits becoming effective, treatment/effluent quality is expected to remain the same and removal of the limits will not increase the temperature in Clyman Creek due to the extended detention times of the three lagoons, which is expected to cause effluent to be near ambient conditions at the outfall. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limit may be removed in accordance with s. NR 207.12(3), Wis. Adm. Code. If there is reasonable potential for the discharge to exceed the thermal limits in the future, thermal limits will be reinstated in the permit.

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document* (2022).

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 100%**, shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$\text{IWC (as \%)} = Q_e \div \{(1 - f)\, Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 0.345 MGD = 0.534 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 0 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. Since there is no flow upstream of the discharge, the dilution water used in WET tests conducted on Outfall 001 shall be lab water.

- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %				Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Pass or Fail?	Use in RP?	
09/29/2015	26.1	66.1	Fail	No	28.2	>100	Fail	No	1
10/13/2015	>100	75.5	Fail	No	>100	3.5	Fail	No	Retest; 1
11/03/2015	>100	>100	Pass	No	81.2	>100	Fail	No	Retest; 1
11/10/2015	>100	>100	Pass	No	38.9	4.1	Fail	No	Retest; 1
12/01/2015	>100	>100	Pass	No	>100	>100	Pass	No	Retest; 1
08/30/2016	>100	>100	Pass	No	16.8	>100	Fail	No	1
09/08/2016	-	-	-	-	61.8	>100	Fail	No	1
07/25/2017	-	-	-	-	39.6	46.1	Fail	No	1
10/03/2017	>100	>100	Pass	No	4.7	9.3	Fail	No	1
11/14/2017	>100	>100	Pass	No	>100	>100	Pass	No	1
07/24/2018	>100	>100	Pass	No	>100	>100	Pass	No	1
08/07/2018	-	-	-	-	>100	>100	Pass	No	1
09/25/2018	-	-	-	-	35.2	>100	Fail	No	1
10/23/2018	-	-	-	-	>100	>100	Pass	No	Retest; 1
11/06/2018	-	-	-	-	>100	>100	Pass	No	Retest; 1
07/30/2019	>100	>100	Pass	No	>100	>100	Pass	No	1
10/22/2019	-	-	-	-	65.9	>100	Fail	No	1
11/19/2019	-	-	-	-	>100	>100	Pass	No	Retest; 1
06/06/2021	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
04/23/2023	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
06/09/2024	>100	>100	Pass	Yes	>100	24.4	Fail	Yes	
07/16/2024	-	-	-	-	>100	>100	Pass	Yes	Retest

Footnote:

1. *Data Not Representative.* Significant changes have occurred which renders data unrepresentative. The facility changed the surface water operation in July 2020 to transfer cooling water to existing Lagoon l via a forcemain and constructed a new discharge structure from Lagoon 3 to Clyman Creek. Surface water samples are now collected from the southeast corner of Lagoon 3, approximately 1/4 mile south of the facility, typically one week per year in the spring or early summer (otherwise there is no discharge from the lagoons). Furthermore, Seneca Foods Corporation – Clyman cited the following reasons why previous WET tests are no longer representative (excerpted from Whole Effluent Toxicity-Progress Report dated 12/30/2024 submitted by the facility):
    - Extended detention time in the cooling water lagoon system.
    - Equalization in the cooling water lagoon system, since many of previous WET tests showed a concern with only one of the three effluent samples collected for the test.
    - Elimination of chemical dechlorination with bisulfite, instead allowing natural degradation of halogen residual with time and sunlight.
    - Previous dilution water was from Clyman Creek downstream of the outfall (since there is typically no water in the stormwater sewer upstream of the outfall). Current WET tests use lab water for dilution.

- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

  According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUc effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC_{50}, IC_{25} or $IC_{50} \geq 100\%$).

  Acute Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

  Chronic Reasonable Potential = [(TU_c effluent) (B)(IWC)]

Chronic WET Limit Parameters

TUc (maximum) $100/IC_{25}$	**B** (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/24.4 = 4.1	6.2 Based on 1 detect	100%

[(TUc effluent) (B)(IWC)] = 25 > 1.0

Therefore, reasonable potential is shown a chronic WET limit using the procedures in s. NR 106.08(6), Wis. Adm. Code, and representative data from June 2021 through July 2024.

Expression of WET Limits
Chronic WET limit = [100/IWC] TU_c = 100/100 = **1.0 TU_c expressed as a monthly average**

Antidegradation and Antibacksliding
It should be noted that the previous permit also included an acute WET limit. However, that limit was calculated based on data that is no longer considered representative of current operating conditions, and the new data does not trigger an acute WET limit. WET limits normally should not be removed unless the source of toxicity has been identified and removed. In this case, we do not know what the source was. However, it is unlikely that there will be an increased discharge of acute toxicity since the changes to the discharge results in more wastewater treatment (detention time) and dilution (more volume in the ponds). Therefore, removal of this limit meets the antidegradation/antibacksliding requirements of ch. NR 207, Wis. Adm. Code, because the change in operations is permanent and sampling data under the new operation shows no toxicity. It should be noted the acute WET limit did not go into effect until after the change in operations (limit became effective 09/30/2025). If an acute WET failure occurs in the future, reinstatement of the acute WET limit is likely.

WET Checklist
The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps

the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: https://dnr.wisconsin.gov/topic/Wastewater/WET.html.

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 100% **15 Points**
Historical Data	3 tests used to calculate RP. No tests failed. **0 Points**	4 tests used to calculate RP. One test failed. **0 Points**
Effluent Variability	Little variability, no violations or upsets, consistent operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWSF **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC. Chlorine limit carried over from the current permit. Arsenic, chloride, copper, and zinc detected. Additional Compounds of Concern: None. **3 Points**	No reasonable potential for limits based on CTC. Chlorine limit carried over from the current permit. Arsenic, chloride, copper, and zinc detected. Additional Compounds of Concern: None. **3 Points**
Additives	3 Biocides and 1 Water Quality Conditioner added. **10 Points**	All additives used more than once per 4 days. **10 Points**
Discharge Category	Can cooling water. **5 Points**	Same as acute. **5 Points**
Wastewater Treatment	No treatment. **10 Points**	Same as Acute. **10 Points**
Downstream Impacts	No impacts known. **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**33 Points**	**48 Points**
Recommended Monitoring Frequency (from Checklist):	3 tests during permit term.	2x yearly.
Limit Required?	No	Limit = 1.0 TU_c
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, **two acute and annual chronic WET tests are recommended in the reissued permit**.
  Deviations from the WET checklist recommendations were made for the following reasons:
  1. 10 points were assessed for the lack of wastewater treatment. Can cooling water is not considered complex or high strength so traditional wastewater treatment

technology is not necessarily needed. Therefore, five points are deducted for wastewater treatment which reduces the chronic WET testing frequency to one time annually (acute testing frequency is unchanged due to this).

2. The WET checklist assumes the discharge is occurring year-round on a continuous basis. However, since Seneca Foods Corporation – Clyman only discharges typically one week per year, if that, it is reasonable to assume fewer tests are needed to assess the toxicity potential. Chronic testing cannot be reduced due to the federal requirement when a WET limit is needed, but acute WET testing can be reduced to twice during the permit term which is the minimum if acute WET testing is recommended.

- Sampling WET concurrently with any chemical-specific toxic substances is recommended. Testing should continue after the permit expiration date (until the permit is reissued).

- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, **a chronic WET limit is required. The chronic WET limit shall be expressed as 1.0 TUc as a monthly average** in the effluent limits table of the permit. Federal regulations in 40 CFR Part 122.44(i) require that **monitoring occur at least once per year when a limit is present**.

- It is Department policy not to require non-continuous dischargers to discharge solely for the purpose of conducting WET testing. Therefore, **annual chronic WET testing is required when a discharge occurs**. Seneca Foods Corporation – Clyman will need to plan ahead with WET scheduling well before discharge is expected to occur.

Attachment #1

PART 8 – ADDITIVE REVIEW

Unlike the metals and toxic substances evaluated in Part 2, most additives have not undergone the amount of toxicity testing needed to calculate water quality criteria. Instead, in cases where the minimum data requirements necessary to calculate a WQC are not met, a secondary value can be used to regulate the substance, according to s. NR 105.05, Wis. Adm. Code. Whenever an additive is discharged directly into a surface water without receiving treatment or an additive is used in the treatment process and is not expected to be removed before discharge, a review of the additive is needed. Secondary values should be derived according to s. NR 105.05, Wis. Adm. Code. More information about additives, including guidance related to conducting an additive review, can be found at https://dnr.wisconsin.gov/topic/Wastewater/Additives.html.

Additive Parameters

Additive Name (Manufacturer)	Purpose of Additive	Intermittent or Continuous Feed	Frequency of Use (months per year /days per week	Maximum Quantity Used (lbs/day)	Average Quantity Used (lbs/day)	Estimated Max Concentration at the Outfall	Potential Use Restriction (mg/L)	Footnotes
ChemTreat CL5684	Scale & corrosion inhibitor	Continuous	6/7	30	17.3	50 mg/L	359 mg/L (acute) 31 mg/L (chronic)	1
ChemTreat CL49	Biocide (bromine)	Continuous	6/7	4.4	16	<100 µg/L	Halogen WQBELs	2
ChemTreat CL41	Biocide (sodium bromide)	Continuous	6/7	24.9	35	<100 µg/L	Halogen WQBELs	2
ChemStation CHLORSAN 12.5%	Biocide (sodium hypochlorite)	Continuous	6/7	40	30	<100 µg/L	Halogen WQBELs	2

Footnotes:

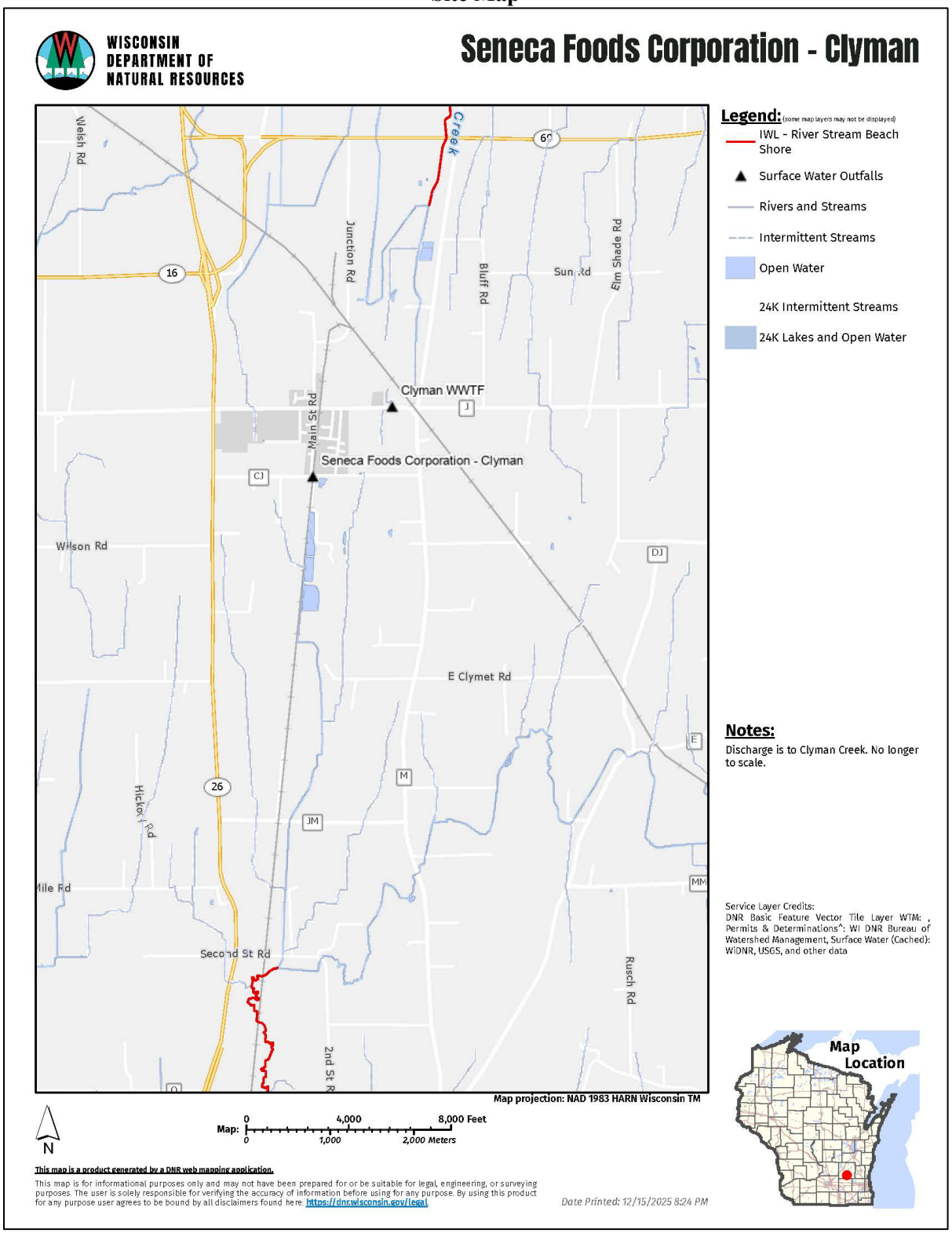
1. Secondary acute and chronic values are determined based on acute toxicity test data provided in the Safety Data Sheet. The secondary acute value is 359 mg/L (rounded) and the secondary chronic value is 31 mg/L (rounded). This additive was approved for use in the previous permit term. In email correspondence with the facility on 1/16/2026, the 50 mg/L concentration listed at the outfall is a measurement taken prior to the lagoon system and "does not account for any dilution or breakdown/treatment in the cooling water lagoon system." Given this information, the Department has determined that the available dilution and detention times in Lagoons 1-3, as well as the infrequent discharge events that typically last for one week at a time, likely yields a concentration that is less than the secondary chronic value when discharge occurs to Clyman Creek via Outfall 001. **The facility should work to provide an accurate expected**

concentration at Outfall 001 to be provided no later than the next permit reissuance. WET testing should be conducted when additives are used.

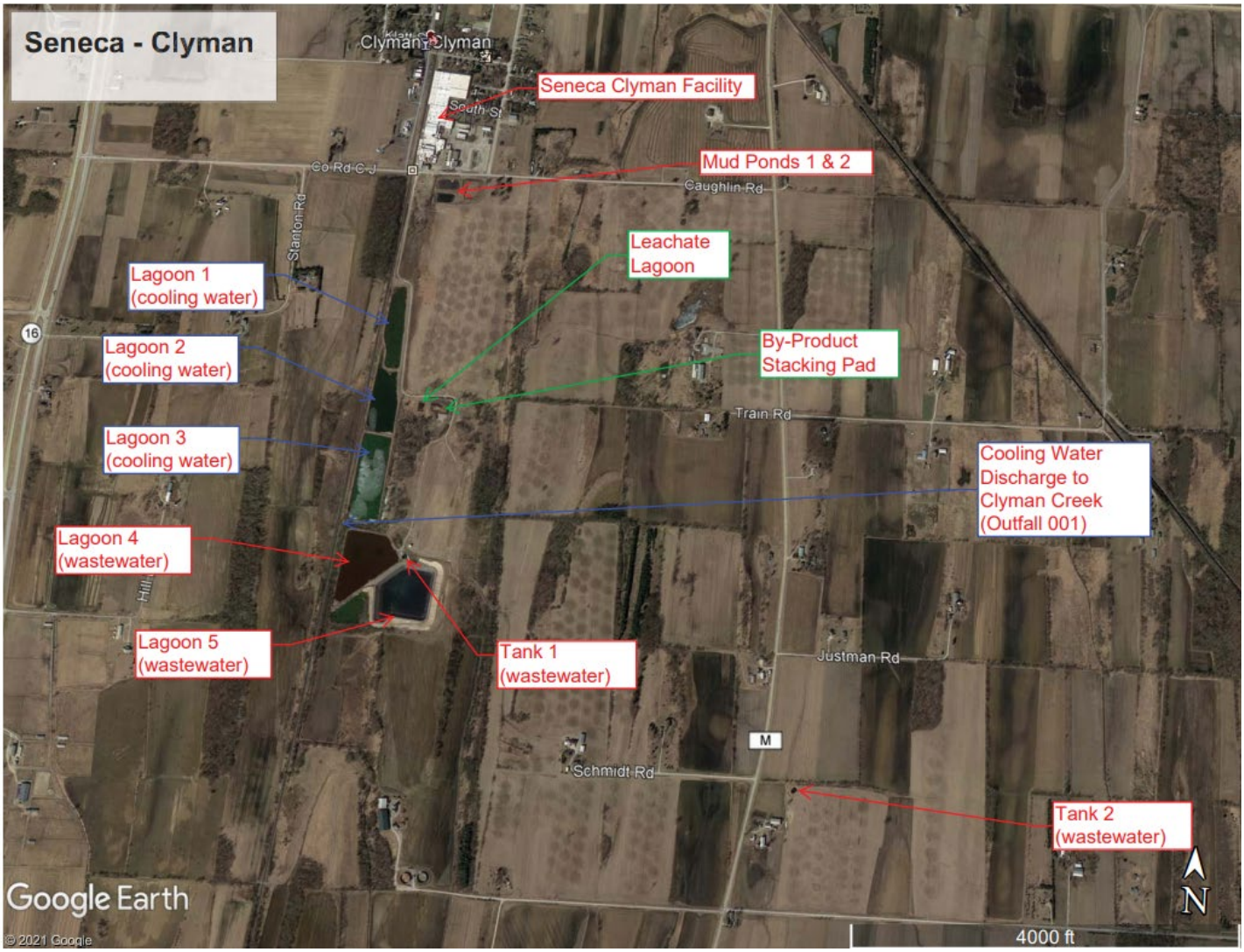
2. Evaluation is not necessary for additives that have active ingredients consisting only of chlorine, caustic soda (sodium hydroxide), hypochlorite, sulfuric acid, hydrochloric acid. CHLORSAN, CL49, and CL41 will be controlled by the total halogen limits.

The Department should be notified if the facility wishes to use any new additive, any approved additive at a greater dosage rate(s) or use frequency(ies) than currently approved, or if updated toxicity information for an additive is available from the chemical manufacturer. An additional additive review evaluation will be needed in any case.

Attachment #2
Site Map



Attachment #2
Lagoon Detail



CORRESPONDENCE/MEMORANDUM

DATE: January 21, 2026 FILE REF: FIN 5676

TO: File

FROM: Zach Watson Hydrogeologist - SCR

SUBJECT: Groundwater Evaluation for Seneca Foods Clyman WI-0002160-08

General Information and Treatment System Description

Seneca Foods Corporation (Seneca) operates a vegetable processing plant in the Village of Clyman. Vegetables such as cabbage, beets, onions and potatoes are processed on a seasonal basis, usually late-June through mid-November. During the non-growing season, Seneca Clyman processes vegetable blends, salads, gravies, fruit cups, and tomato sauces. Wastewater from processing is collected and pumped to lagoons or holding tanks, from which it is sprayed to irrigation fields.

Initial wash water from rinsing root crops is stored in Mud Ponds 1 and 2. Mud Ponds 1 and 2 are used in series. The wash water from the mud ponds is spray irrigated. Process wastewater is generated from washing and cooking vegetables and preparing other food products on a year-round basis with highest flows occurring during the peak season (late summer and fall). The wastewater flows into a sixty to twenty thousandths mesh screen system, where the vegetable solids are removed and then it flows into a lift station. Two submersible pumps with capacities of 600 gallons per minute each pump the wastewater out to the lagoons or the holding tank.

Normally process wastewater during the peak season goes first to Tank 1. From Tank 1, it can be distributed to Lagoon 4, Lagoon 5, Tank 2, or directly to spray irrigation. Wastewater can be stored in Tank 1, Tank 2, Lagoon 4, or Lagoon 5. Tank 1 is 141,000 gallons and Tank 2 is 151,000 gallons in capacity. The Lagoon 4 capacity is approximately 20 million gallons and Lagoon 5 capacity is 20.5 million gallons. From Tank 1, Tank 2, Lagoon 4, or Lagoon 5 wastewater is spray irrigated on approved, dedicated sites.

Lagoons 1, 2, 3 and 4 are earthen lined lagoons that have been located at the Seneca Clyman facility for decades. Lagoon 5 was reconstructed and upgraded with an HDPE liner in 2017. Lagoons 1, 2 and 3 store can-cooling water derived from one of Seneca Clyman's groundwater supply wells. Lagoon 5 now serves as the primary lagoon for storage of wastewater and Lagoon 4 acts as reserve capacity for storage of wastewater with periodic low volume discharges to the spray irrigation field.

Table 1 – Monitoring Requirements and Limitations – Sampling Point 101 (Process WW to Tank 1)

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09		
	Limit Type	Limits and Units	Sample Frequency
***Flow Rate**		**gpd**	**Daily**
BOD5		mg/l	Weekly
Chloride		mg/l	Weekly
Nitrite+Nitrate		mg/l	Weekly
Total Kjeldahl Nitrogen		mg/l	Weekly

***Recommended changes for upcoming permit**

Table 2 – Monitoring Requirements and Limitations – Sampling Point 102 (Mud Pond to SI)

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09		
	Limit Type	Limits and Units	Sample Frequency
Flow Rate		gpd	Daily
Chloride		mg/l	Weekly
Total Kjeldahl Nitrogen		mg/l	Weekly

Table 3 – Monitoring Requirements and Limitations – Sampling Point 103 (Lagoon 4 and Lagoon 5 to SI)

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09		
	Limit Type	Limits and Units	Sample Frequency
Flow Rate		gpd	Daily
Chloride		mg/l	Weekly
Nitrite+Nitrate		mg/l	Weekly
Total Kjeldahl Nitrogen		mg/l	Weekly

Table 4 – Monitoring Requirements and Limitations – Sampling Point 108 (Lagoon 3 to SI)

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09		
	Limit Type	Limits and Units	Sample Frequency
Flow Rate		gpd	Daily
Chloride		mg/l	Weekly
Total Kjeldahl Nitrogen		mg/l	Weekly

Table 5 – Monitoring Requirements and Limitations – Outfall 020, *021, 022, 023, *024

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09			
	Limit Type	Limits and Units	Sample Frequency	Notes
Flow Rate		gpd	Daily	
Hydraulic Application Rate	Monthly Average	5,600 gal/ac/day	Monthly	May through October
Hydraulic Application Rate	Monthly Average	3,800 gal/ac/day	Monthly	April and November
Hydraulic Application Rate	Monthly Average	0 gal/ac/day	Monthly	December through March
Nitrogen, Max Applied on any Zone		***400**~~600~~ lbs/ac/yr	Annual	
~~***Total Nitrogen**~~		~~**lbs/ac/yr**~~	~~**Annual**~~	
Chloride		lbs/ac/yr	Annual	

***Recommended changes for upcoming permit**

Table 6 – Monitoring Requirements and Limitations – Outfall 027, *~~030,~~ 032, 033

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09			
	Limit Type	Limits and Units	Sample Frequency	Notes
Flow Rate		gpd	Daily	
Hydraulic Application Rate	Monthly Average	5,600 gal/ac/day	Monthly	June through October
Hydraulic Application Rate	Monthly Average	3,800 gal/ac/day	Monthly	May and November
Hydraulic Application Rate	Monthly Average	0 gal/ac/day	Monthly	December through April
Nitrogen, Max Applied on any Zone		300 lbs/ac/yr	Annual	
~~*Total Nitrogen~~		~~lbs/ac/yr~~	~~Annual~~	
Chloride		lbs/ac/yr	Annual	

***Recommended changes for upcoming permit**

Table 7 – Monitoring Requirements and Limitations – Outfall *~~031~~, 051, 052, 053, *054

Parameter	Current and Proposed Permit WI-0002160-08 and WI-0002160-09			
	Limit Type	Limits and Units	Sample Frequency	Notes
Flow Rate		gpd	Daily	
Hydraulic Application Rate	Monthly Average	4,000 gal/ac/day	Monthly	June through October
Hydraulic Application Rate	Monthly Average	2,700 gal/ac/day	Monthly	May and November
Hydraulic Application Rate	Monthly Average	0 gal/ac/day	Monthly	December through April
Nitrogen, Max Applied on any Zone		300 lbs/ac/yr	Annual	
~~*Total Nitrogen~~		~~lbs/ac/yr~~	~~Annual~~	
Chloride		lbs/ac/yr	Annual	

***Recommended changes for upcoming permit**

Table 8 – ANFK Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
801	MW-1		Non-Point of Standards	Water Table
806	MW-6	Upgradient	Background	Water Table
807	MW-7		Non-Point of Standards	Water Table
808	MW-8		Non-Point of Standards	Water Table
810	MW-10		Non-Point of Standards	Water Table
851	MW-46		Non-Point of Standards	Piezometer

Table 9 – Haase Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
824	MW-35		Non-Point of Standards	Water Table
825	MW-36	Upgradient	Background	Water Table

Table 10 – Krueziger Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
827	MW-38	Upgradient	Background	Water Table
828	MW-39	Upgradient	***Background**	Water Table
829	MW-40		Non-Point of Standards	Water Table
830	MW-41		Point of Standards	Water Table
831	MW-42		Point of Standards	Water Table
832	MW-43		Non-Point of Standards	Water Table
833	MW-44		Point of Standards	Water Table

***Recommended changes for upcoming permit**

Table 11 – Field 15 Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
801	MW-1	Upgradient	Background	Water Table
811	MW-15A		Point of Standards	Water Table
850	MW-45		Point of Standards	Water Table

Table 12 – Stock Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
813	MW-16A		Non-Point of Standards	Piezometer
815	MW-16C		Point of Standards	Water Table
816	MW-17		Point of Standards	Water Table
817	MW-18B		Point of Standards	Piezometer
818	MW-19		Point of Standards	Water Table
819	MW-20A		Non-Point of Standards	Piezometer
820	MW-20B	Upgradient	Background	Water Table
822	MW-33		Non-Point of Standards	Water Table
826	MW-37		Point of Standards	Piezometer

Table 13 – Vacek Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type

852	MW-47		Non-Point of Standards	Water Table
853	MW-48		Non-Point of Standards	Water Table
854	MW-49		Non-Point of Standards	Water Table
855	MW-50		Point of Standards	Water Table
856	MW-51		Non-Point of Standards	Water Table
857	MW-52		***Background**	Water Table
858	MW-53		Point of Standards	Water Table
859	MW-54		***Sidegradient**	Water Table
860	MW-55		Point of Standards	Water Table

***Recommended changes for upcoming permit**

Table 14 – Lagoon 4 and Lagoon 5 Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
835	MW-28	Upgradient	Background	Piezometer
836	MW-29A		Point of Standards	Water Table
837	MW-29B		Point of Standards	Piezometer
~~**838**~~	~~**MW-30**~~		~~**Point of Standards**~~	~~**Water Table**~~
839	MW-30B		Point of Standards	Piezometer
840	MW-31		Point of Standards	Water Table
805	MW-5		Point of Standards	Water Table

***Schedule included to abandon MW-30**

Table 15 – Lagoons 1, 2 and 3 Groundwater Monitoring System

Sample Point	Well Name	Current Permit and Proposed WI-0002160-08 and WI-0002160-09		
		Well Location	Well Designation	Well Type
843	MW-11		Non-Point of Standards	Water Table
841	MW-21A	Upgradient	Background	Water Table
842	MW-21B	Upgradient	Background	Piezometer
844	MW-23A		Point of Standards	Water Table
845	MW-23B		Point of Standards	Piezometer
846	MW-25A		Point of Standards	Water Table
847	MW-25B		Point of Standards	Piezometer
848	MW-27A		Point of Standards	Water Table
849	MW-27B		Point of Standards	Piezometer

Table 16 – Spray Irrigation ANFK Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l

Nitrite+Nitrate Dissolved	2.5 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.2 mg/l	N/A	***2.4 mg/l**	N/A
pH Field	8.5 su	N/A	***6.5 – 8.5 su**	N/A
Total Dissolved Solids	630 mg/l	N/A	***405 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 17 – Spray Irrigation Haase Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	***195 mg/l**	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	4.8 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.2 mg/l	N/A	***2.4 mg/l**	N/A
pH Field	8.2 su	N/A	***6.4 – 8.4 su**	N/A
Total Dissolved Solids	990 mg/l	N/A	***600 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 18 – Spray Irrigation Krueziger Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	7.4 mg/l	10 mg/l	***7.6 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.3 mg/l	N/A	***2.4 mg/l**	N/A
pH Field	8.4 su	N/A	***6.5 – 8.5 su**	N/A
Total Dissolved Solids	760 mg/l	N/A	***540 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 19 – Spray Irrigation Field 15 Groundwater Standards

Parameter	Current Permit WI-0002160-08	Proposed Permit WI-0002160-09

	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	2.3 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.2 mg/l	N/A	***2.4 mg/l**	N/A
pH Field	8.4 su	N/A	***6.3 – 8.3 su**	N/A
Total Dissolved Solids	770 mg/l	N/A	***820 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 20 – Spray Irrigation Stock Fields Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	3.2 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.2 mg/l	N/A	***2.4 mg/l**	N/A
pH Field	8.5 su	N/A	***6.4 – 8.4 su**	N/A
Total Dissolved Solids	860 mg/l	N/A	***700 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 21 – Spray Irrigation Vacek Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	5.3 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.3 mg/l	N/A	***2.3 mg/l**	N/A
pH Field	8.4 su	N/A	***6.5 – 8.5 su**	N/A
Total Dissolved Solids	640 mg/l	N/A	***450 mg/l**	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 22 – Spray Irrigation Lagoon 4 and Lagoon 5 Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
Chloride Dissolved	125 mg/l	250 mg/l	***200 mg/l**	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	2.1 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.8 mg/l	N/A	***2.5 mg/l**	N/A
pH Field	8.3 su	N/A	***6.3 – 8.3 su**	N/A
Total Dissolved Solids	1,420 mg/l	N/A	***900 mg/l**	N/A
***Phosphorus Dissolved**	N/A	N/A	***N/A**	***N/A**
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Table 23 – Spray Irrigation Lagoons 1, 2 and 3 Groundwater Standards

Parameter	Current Permit WI-0002160-08		Proposed Permit WI-0002160-09	
	PAL	ES	PAL	ES
Groundwater Elevation	N/A	N/A	N/A	N/A
Depth to Groundwater	N/A	N/A	N/A	N/A
~~***BOD5 Dissolved**~~	~~**26 mg/l**~~	~~**N/A**~~	~~**N/A**~~	~~**N/A**~~
COD	20.2 mg/l	N/A	***52 mg/l**	N/A
Chloride Dissolved	125 mg/l	250 mg/l	***245 mg/l**	250 mg/l
Ammonia Dissolved	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrite+Nitrate Dissolved	2.1 mg/l	10 mg/l	***2.0 mg/l**	10 mg/l
Organic Nitrogen Dissolved	2.2 mg/l	N/A	***2.3 mg/l**	N/A
pH Field	8.3 su	N/A	***6.4 – 8.4 su**	N/A
Total Dissolved Solids	940 mg/l	N/A	***1,095 mg/l**	N/A
Phosphorus Dissolved	N/A	N/A	N/A	N/A
***COD Dissolved**	**N/A**	**N/A**	**N/A**	**N/A**
Iron Dissolved	N/A	N/A	N/A	N/A
Manganese Dissolved	N/A	N/A	N/A	N/A

***Recommended changes for upcoming permit**

Geology

The bedrock underlying the treatment facility is the Ordovician-aged Sinnippee Group consisting of the Galena, Decorah and Platteville formations. The Galena and Platteville formations are primarily dolostones separated by the Decorah shale. Depth to bedrock is approximately 50 – 100 feet below ground surface. The overlying sediment is the Holy Hill formation comprised of sandy till from the Late Wisconsin glaciation. The area consists of drumlins oriented north to south.

Hydrogeology

Depth to groundwater is shallow and most often on the order of 2 – 15 feet below ground surface.

Groundwater elevations range from 860 – 950 feet above mean sea level. Groundwater flow directions are variable throughout the multiple sprayfields. A site map and groundwater flow maps are provided in **Appendix A**. Groundwater flow at the Krueziger fields appears to move southward from MW-38 and MW-39 and then both to the west and to the east throughout the length of the fields. Groundwater flow at the Stock fields moves primarily from the east to the west. Horizontal groundwater flow gradients are steeper at the north end of the field between MW-18B and MW-15B relative to the south of the field between MW-33 and MW-17. Groundwater flow surrounding the Lagoons is variable moving primarily to the southwest at Lagoons 1 and 2, to the west northwest at Lagoon 3, and from the west to the southeast at Lagoons 4 and 5. Groundwater Flow at Field 15 is primarily to the southwest. Groundwater flow at the ANFK field is primarily to the south and west. Groundwater flow at the Vacek fields is primarily to the west. The groundwater at MW-54 represents an isolated high where groundwater appears to flow outwards in all directions.

Land Treatment Effluent Quality and Loading Rates

Wastewater sent to the spray irrigation fields comes from Lagoon 4, Lagoon 5, Mud Pond, and Tank 1. Total Kjeldahl Nitrogen is the primary form of nitrogen in the discharge to the sprayfields and was most often highest from Tank 1, lowest from the Mud Pond, and in between at Lagoons 4 and 5 (**Table 25**). Nitrite+nitrate is monitored at the discharge from Tank 1, Lagoon 4 and Lagoon 5. Nitrite+nitrate is variable and averaged 3 – 5.8 mg/l in the discharge from Tank 1. Nitrite+nitrate is most often non-detect at Lagoons 4 and 5. The loading of nitrogen to the land treatment outfalls have averaged 112 – 213 lbs/ac/yr during the past five years (**Appendix B**). The maximum nitrogen loading rates ranged up to 307 lbs/ac/yr during the past five years. The concentration of chloride is lowest and mostly stable in concentration from the Mud Pond. The concentration of chloride at Lagoon 4, Lagoon 5 and Tank 1 are more variable (**Table 24**). The annual average concentration of BOD typically falls between 4,000 – 6,000 mg/l. The loading of chloride ranged up to 2,398 lbs/ac/yr during the past five years and an averaged loading across all fields ranged between 898 – 1,337 lbs/ac/yr (**Appendix B**). The concentration of chloride is variable depending upon the source of the discharge. Effluent chemistry plots are provided in **Appendix C**.

Table 24 – Annual Average Chloride Concentration (mg/l)

Year	WW to Tank 1	Lagoon 4 to SI	Lagoon 5 to SI	Mud Pond to SI
2020	595	497	536	174
2021	625	423	586	199
2022	318	389	469	142
2023	393	251	461	243
2024	671	227	611	135
***2025**	770	205	777	266

*Through July 2025

Table 25 – Annual Average Nitrogen Concentration (mg/l)

Year	Nitrite+nitrate	Total Kjeldahl Nitrogen			
	WW to Tank 1	WW to Tank 1	Lagoon 4 to SI	Lagoon 5 to SI	Mud Pond to SI
2020	5.7	79.3	28.0	43.0	9.4
2021	3.7	95.0	23.0	62.9	12.3
2022	3.8	81.7	15.9	44.8	12.0
2023	5.3	75.5	10.5	56.5	12.1
2024	5.8	65.4	12.2	56.6	17.9
***2025**	3.0	40.0	11.7	37.8	15.2

*Through July 2025

Background Groundwater Quality

Groundwater chemistry plots for parameters with groundwater exceedances are provided in **Appendix D**.

ANFK Fields

Background groundwater quality at the ANFK fields are defined by the results from samples collected at MW-6. The results for chloride at MW-6 are very low, most often below 10 mg/l. The results for nitrite+nitrate are also low, typically around 0.3 mg/l. The results for organic nitrogen are low at approximately 0.4 mg/l and the results for ammonia are consistently non-detect. The results for dissolved manganese and dissolved iron are non-detect.

Haase Fields

Background groundwater quality at the Haase fields is defined by the results from samples collected at MW-36. The concentration of chloride is variable and fell between 50 – 200 mg/l during the past ten years. The results for nitrite+nitrate are stable and most often around 1 mg/l. The results for organic nitrogen and ammonia are consistently non-detect. The results for dissolved manganese are mostly non-detect and the results for dissolved iron are non-detect.

Krueziger Fields

Background groundwater quality at the Krueziger fields is defined by the results from samples collected at MW-38. The results for chloride at this monitoring well are low and most often fall between 30 – 60 mg/l. The results for nitrite+nitrate are elevated and have shown an increasing trend over the past ten years. The concentration of nitrite+nitrate ranged up to 16.9 mg/l during the current permit term. Ammonia is consistently non-detect in samples collected at MW-38.

Stock Fields

Background groundwater quality at the Stock fields is defined by the results from samples collected at MW-20B. The results for chloride are low and most often below 40 mg/l. The results for nitrite+nitrate are also low and typically less than 0.5 mg/l. The results for ammonia, dissolved manganese, dissolved iron and organic nitrogen are non-detect.

Vacek Fields

Background groundwater quality at the Vacek fields is defined by the results from samples collected at MW-54. MW-54 is located at a point where groundwater flows radially outwards. The results for chloride have exhibited a significantly increasing trend over the past five to ten years. Concentrations were below 50 mg/l prior to 2020 but have reached as high as 341 mg/l during the most recent sampling event. The results for nitrite+nitrate have declined during the current permit term and are most often between non-detect to 2 mg/l. Ammonia is consistently non-detect and the results for organic nitrogen are mostly non-detect with periodic low-level detections. The results for dissolved iron are consistently non-detect and there are periodic low-level detections of dissolved manganese. Total dissolved solids were between 400 – 500 mg/l prior to the recent increase in chloride and are now in the range of 700 – 800 mg/l.

Lagoons 4 and 5/Sprayfield 15

Background groundwater quality at Lagoons 4 and 5 are defined by the results from samples collected at MW-28. Background groundwater quality at Sprayfield 15 is defined by the results from samples collected at MW-1. MW-1 appears to be positioned such that it could serve as the background monitoring well for both Lagoons 4 and 5 and Sprayfield 15. MW-28 is positioned such that it could be considered downgradient of Sprayfield 15 and is, therefore, not necessarily a reliable indicator of unimpacted background groundwater quality.

The results from samples collected at MW-1 are very low for chloride, ranging from 6 – 12 mg/l. The results for nitrite+nitrate are also where most results are non-detect with periodic low detections up to 1 mg/l. The results for ammonia are non-detect with one anomalous reported detection at 2.4 mg/l. The results for organic nitrogen are mostly non-detect with periodic low-level detections. The results for dissolved manganese are approximately 15 – 70 µg/l. The results for dissolved iron are non-detect except for one anomalous result.

Lagoons 1, 2 and 3

Background groundwater quality at Lagoons 1, 2 and 3 is defined by the results from samples collected at the MW-21 monitoring well nest (i.e., MW-21A and MW-21B). Groundwater flow in the vicinity of the MW-21 nest is to the west southwest and the MW-21 nest is down/sidegradient of the ANFK fields. The MW-21 nest is approximately 275 feet west of the ANFK field and 900 feet north of Lagoon 1. Therefore, this monitoring well nest is not adequately characterizing groundwater quality upgradient of Lagoons 1, 2 and 3.

The results for chloride are more variable at MW-21A compared to MW-21B. Chloride exhibited a slightly increasing trend at MW-21A during the current permit term from approximately 100 mg/l to 300 mg/l. The results for chloride at MW-21B are stable at 150 – 200 mg/l. The results for ammonia are routinely non-detect. The results for nitrite+nitrate and organic nitrogen are mostly non-detect with periodic low detections. The results for dissolved manganese at MW-21A are elevated compared to MW-21B and range up to approximately 250 µg/l. Dissolved iron is non-detect at both MW-21A and MW-21B.

Downgradient Groundwater Quality

ANFK Fields

The results for chloride are elevated at monitoring wells MW-7, MW-8 and MW-10. The results for chloride have increased over the current permit term and typically fall between 300 – 500 mg/l. The results for chloride at MW-1 and MW-46 are low and stable. The results for ammonia are non-detect at all downgradient monitoring wells except for one anomalous result of 2.4 mg/l at MW-1 in 2021. The results for nitrite+nitrate were below the PAL at the downgradient monitoring wells during the current permit term except for an anomalous result at MW-46 in 2020. The concentration of nitrite+nitrate has exhibited a generally steady decline at MW-8 over the past ten years. The results for organic nitrogen are low to non-detect at the downgradient monitoring wells. The results for dissolved iron are low to non-detect at the downgradient monitoring wells. There were anomalous results for dissolved iron at MW-1 and MW-46 in 2024. The results for dissolved manganese are low and typically between 10 – 80 µg/l. The results for dissolved manganese at MW-8 are sporadic and ranged up to 169 µg/l during the current permit term. The results for total dissolved solids ranged between 400 – 1,500 mg/l during the current permit term. The monitoring wells with higher chloride results exhibited higher total dissolved solids results.

Haase Fields

The results for chloride at MW-35 have remained elevated over the past decade. The concentration of chloride most often fell between 200 – 400 mg/l during the current permit term. The concentration of nitrite+nitrate exhibited a general decrease in concentration over the current permit term from approximately 2 mg/l to below 0.5 mg/l. The results for organic nitrogen are low and the results for ammonia are consistently non-detect.

Krueziger Fields

Groundwater flow at the Krueziger fields appears to be bifurcated between MW-42 and MW-44 where flow moves either westerly or easterly. Monitoring well MW-43 is the most likely downgradient receptor of the west Krueziger field and monitoring well MW-42 is the most likely downgradient receptor of the east Krueziger field. The results for chloride at both monitoring wells are the highest in the groundwater

monitoring system for the Krueziger fields. The results for chloride at MW-43 remained relatively consistent during the past five years at approximately 350 – 425 mg/l. The results for chloride at MW-42 are more variable and ranged between 5.3 – 436 mg/l during the current permit term. The results for nitrite+nitrate are generally low at the downgradient monitoring wells except for MW-40 where the concentration is variable, reaching a maximum concentration of 11.3 mg/l and exhibiting a declining trend during the current permit term. Nitrite+nitrate is periodically reported in samples collected at MW-43 and the highest concentration observed at MW-43 during the current permit term was 2 mg/l. Ammonia was non-detect in all samples at all downgradient monitoring wells. Dissolved manganese was monitored quarterly in 2024 and the highest results were observed at MW-43 where the maximum concentration was 714 µg/L. Samples were analyzed for dissolved iron in 2024 and all results were non-detect. The results for total dissolves solids are highest at monitoring wells MW-42 and MW-43. The difference between chloride and total dissolved solids concentrations are largest at MW-42 and MW-43 which also corroborates these wells being the most likely downgradient receptors of the sprayfields.

Stock Fields

The results for nitrite+nitrate are below the NR 140 PAL at all monitoring wells during the current permit term except for at MW-18B and MW-19. The results for nitrite+nitrate are variable at both wells and as high as 14.8 mg/l at MW-19 during the current permit term. The results for ammonia were non-detect at all monitoring wells surrounding the Stock fields except for at MW-16C and MW-33 where a few low anomalous results were reported during the current permit term. The results for organic nitrogen are most often below 1 mg/l at all monitoring wells. One anomalous result of 21 mg/l was reported at MW-17 during the current permit term. Dissolved manganese is non-detect at all monitoring wells except for MW-33 where dissolved manganese is periodically reported at concentrations around 300 – 400 µg/L and as high as 3,750 µg/L. The results for dissolved iron are similar in that dissolved iron is only reported in samples collected at MW-33 where the concentration of dissolved iron was as high as 5,820 µg/L during the current permit term. MW-33 groundwater chemistry similar to MW-43.

Vacek Fields

The results for chloride have been increasing at MW-47, MW-49, MW-50, MW-53 and MW-54 over the past five to seven years. The results for chloride are highest at MW-47, MW-53 and MW-54 where they've recently exceeded 300 mg/l. The results for nitrite+nitrate at the downgradient monitoring wells for the Vacek field are below the NR 140 PAL except for at MW-50 and MW-47 during the current permit term. The results for nitrite+nitrate have generally declined at MW-47 over the past decade and the results for nitrite+nitrate at MW-50 began to increase in concentration and variability starting in 2021. The concentration of nitrite+nitrate at MW-50 is most often between 2 – 6 mg/l. The results for ammonia are non-detect except for at MW-50 where the concentration is variable and ranges up to 3.5 mg/l. The results for organic nitrogen are generally low and near the detection limit. The results for total dissolved solids are between 400 – 1,000 mg/l where the elevated concentrations of total dissolved solids are driven up by recently increasing concentrations of chloride. The results for dissolved manganese are low or near the detection limit at most wells except for MW-48 and MW-50. The results for dissolved manganese at MW-50 are between 300 – 600 µg/l. Similarly, the results for dissolved iron are low or non-detect at all wells except MW-48 and MW-50. The highest results for dissolved iron are reported at MW-48 where they are variable and range between 100 – 1,400 µg/l.

Lagoon 4 and 5/Sprayfield 15

The results for chloride are highest at the MW-29 nest. The results for chloride at MW-29A ranged between 326 – 764 mg/l during the current permit term. The results for chloride at MW-29B are more stable and ranged between 339 – 487 mg/l during the current permit term. Chloride at MW-28 was stable and ranged between 150 – 200 mg/l during most of the current permit term. The results for chloride at the other

downgradient monitoring wells are below 100 mg/l and lowest at MW-15A and MW-45 where they are often below 10 mg/l. The results for nitrite+nitrate at MW-5 are significantly elevated and variable relative to the other downgradient monitoring wells. The results for nitrite+nitrate at MW-5 ranged between 15.9 – 60.9 mg/l during the current permit term. These elevated concentrations of nitrite+nitrate have been observed at this well for at least the past decade. The results for nitrite+nitrate at the other monitoring wells surrounding Lagoons 4 and 5 and Sprayfield 15 are low and most often below 1 mg/l. Ammonia is significantly elevated at a few monitoring wells surrounding the Lagoon 4. The results for ammonia at MW-29A have ranged between 34.1 – 107 mg/l during the current permit term. The results for ammonia at MW-30B are much more stable and ranged between 16 – 19.4 mg/l during the current permit term. The results for ammonia at MW-28 have exhibited a general decline over the past decade and become more stable. The results for ammonia at MW-28 were most often between 3 – 6 mg/l during the current permit term. Ammonia also routinely exceeds the NR 140 PAL at MW-29A and MW-31 varying between non-detect to 3 mg/l. Ammonia is non-detect at the other downgradient monitoring wells. Organic nitrogen is mostly low to non-detect at the downgradient monitoring wells. The results for dissolved iron are elevated at MW-28, MW-29B, MW-30B and MW-31. The results for dissolved iron reached as high as 20 mg/l at MW-31 during the current permit term. Similarly, there are elevated results for dissolved manganese at MW-29A, MW-29B and MW-31 where concentrations reached as high as 2.4 mg/l at MW-29A.

Lagoons 1, 2 and 3

Prior to 2021, the results for chloride at most monitoring wells surrounding Lagoons 1, 2 and 3 were effectively stable and ranged between 10 – 150 mg/l. Since 2021, there has been increased variability in the results for chloride and increasing concentrations at MW-23A, MW-23B and MW-25A. The results for ammonia are elevated at most of the wells surrounding Lagoons 1, 2, and 3. Ammonia is most elevated at the MW-23 and MW-25 monitoring well nests. Ammonia is highest at MW-23A where it ranged between approximately 70 – 90 mg/l during the current permit term. Ammonia at MW-23B ranged between non-detect up to 60 mg/l during the current permit term. The results for ammonia at MW-25A ranged between approximately 20 – 75 mg/l during the current permit term and approximately 10 – 30 mg/l at MW-25B. The results for ammonia at MW-27A are stable and most often less than 10 mg/l. Nitrite+nitrate is mostly non-detect except for at MW-23A where periodic detections range up to almost 2 mg/l. Organic nitrogen ranges between non-detect to 3 mg/l at the downgradient monitoring wells. The results for chemical oxygen demand are elevated at all downgradient monitoring wells and range up to 110 mg/l. The results for total dissolved solids are wide ranging from approximately 400 mg/l at MW-11 to 1,000 mg/l at MW-25B.

Treatment System Impact to Groundwater Quality

ANFK Field

Chloride loading at the ANFK field ranged between 1,786 – 2,285 lbs/ac/yr during the past five years. These chloride loading rates have resulted in consistently elevated chloride results at monitoring wells MW-7, MW-8 and MW-10. The concentration of chloride at these groundwater monitoring wells has begun to increase over the past few years. The concentration of nitrite+nitrate is low and there does not appear to be a clear impact from the discharge on dissolved nitrite+nitrate concentrations in groundwater.

Haase Field

The results for chloride at monitoring well MW-35 show a clear impact from the sprayfield discharge. The results for nitrite+nitrate have come down to consistently below the PAL during the past few years. There are no other observable impacts on groundwater quality at MW-35.

Kruezinger Field

Elevated nitrate results appear to be related to the farming that occurs adjacent to the sprayfields as the highest concentrations are observed at MW-38 (upgradient/background well) and MW-40. The chloride

observed at MW-42 and MW-43 is likely due to the amount discharged to the sprayfields (650 - 1,600 lbs/ac/yr). Elevated concentrations of dissolved manganese also appear to be related to the discharge to the sprayfields.

Field 15
All of the results from the samples collected at the groundwater monitoring system for Field 15 are low relative to the NR 140 groundwater standards and there are no clear observable impacts at wells MW-15A or MW-45. Monitoring well MW-28 is not considered part of the Field 15 groundwater monitoring system but does appear to be downgradient of Field 15 and the concentration of chloride is most often between 150 – 175 mg/l.

Stock Fields
Nitrate is present at concentrations above the NR 140 ES (i.e., 10 mg/l) but at wells (MW-18B and MW-19) that are located upgradient of the Stock fields. Nitrates are not observed or are low (<2 mg/l) at the downgradient monitoring wells (i.e., MW-16A, MW-16C, and MW-37). Chloride is elevated at downgradient monitoring wells MW-16A, MW-16C, and MW-37 and is likely due to the sprayfield activities as the Stock field received approximately 1,600 – 2,400 lbs/ac/yr of chloride during the current permit term. The source of elevated chloride concentrations at MW-19 is unknown as this monitoring well appears to be upgradient-sidegradient of the sprayfield.

Vacek Fields
Chloride loading at the Vacek fields averaged a range of 640 – 1,100 lbs/ac/yr during the current permit term and the elevated results in groundwater appear to correlate with the sprayfield activities. The elevated results for nitrate and dissolved manganese at MW-50 might be related to the sprayfield activities.

While MW-54 is the highest groundwater elevation associated with the Vacek fields it also appears to be impacted by the spray irrigation discharge based upon the results for chloride. The proximity of MW-54 to the sprayfields and the uncertainty in overall groundwater flow directions in this area make uncertain whether MW-54 can be considered a reliable background monitoring well. Monitoring well MW-52 appears to the be least impacted by the sprayfield discharge or other potential background sources of contamination as the results for chloride, TDS and nitrogen species are low. MW-52 may be a better receptor of unimpacted background groundwater quality.

Lagoons 4 and 5
Nitrate has remained at significantly elevated concentrations at MW-5 over the past ten years. Given that nitrate is low (i.e., <0.5 mg/l) adjacent to Lagoon 4 at MW-30B and MW-31, the nitrate contamination is assumed to be unrelated to the Lagoon 4 wastewater storage. Lagoon 5 was reconstructed with an HDPE liner and the results for nitrate are low in the Lagoon relative to what is observed at MW-5. The results for chloride in Lagoon 4, which is earthen lined, has decreased from approximately 500 mg/l to 200 mg/l over the past five years. The persistent elevated concentrations of chloride at MW-29A and MW-29B (300 – 800 mg/l) are unlikely to be related to a leaking Lagoon 4. The elevated concentrations of ammonia at MW-28, MW-29B, and MW-30B are presumed to be related to the legacy ammonia contamination from prior wastewater and sludge storage at the lagoons.

Lagoons 1, 2 and 3
The results for ammonia surrounding Lagoons 1, 2 and 3 have remained elevated for decades with little change over time. The persistent elevated ammonia results are most likely related to the residual sludge that has been left in the bottoms of Lagoons 1, 2 and 3. Approximately 15 MG/yr of cooling water is sent to Lagoons 1, 2 and 3 which have a total capacity of 30 MG. Given the infrequent discharge to surface water, the

bulk of the 15 MG/yr sent to Lagoons 1, 2 and 3 is seeping into groundwater. The use as cooling water lagoons could potentially be exacerbating the ammonia persistence. The 2011 groundwater evaluation suggested that a compliance schedule be included in the WI-0002160-07 permit where the "permittee shall evaluate the cause and determine if any corrective action necessary to resolve the persistent groundwater standards exceedances near Lagoons 1, 2 and 3". As part of that compliance schedule, an evaluation report for Lagoons 1, 2 and 3 was submitted in 2016 that made the case that the Lagoons could be repurposed for use in storing can cooling water to meet temperature limits in surface water and that the Lagoons did not necessarily pose a long-term threat to local groundwater or surface water quality. That report did not provide any sludge data. Ultimately, the WDNR approved the reuse of those Lagoons for can cooling water and did not require removal of sludge. Sludge samples collected in 2014 and provided in a report from Seneca in 2019 indicate elevated concentrations of ammonia (1,450 – 4,580 mg/kg) in the sludge. It is proposed here that more work needs to be done by Seneca Clyman to remediate the elevated concentrations of dissolved ammonia that are associated with the legacy uses of the Lagoons. Below is timeline providing some of the key points addressing ammonia contamination associated with Lagoons 1, 2 and 3 over the past fifteen years.

April 20, 2011 WDNR Groundwater Evaluation

- "Lagoons 1, 2 and 3 have not been used for some time yet continue to show significant ammonia nitrogen discharge to the environment particularly in MW-23A and MW-25A. The proximity of the lagoons to Clyman Creek raises concerns relative to the potential impact of the lagoon on aquatic organisms in the creek."
- "Insert a compliance schedule requiring an update of the earlier lagoon evaluation per NR 213. Evaluate potential impact on Clyman Creek, downstream water and recommend actions to mitigate impacts. Include cost estimates."

April 1, 2015 WPDES Permit 0002160-07

- Compliance schedule included in WI-0002160-07 Permit stating that the "permittee shall evaluate the cause and determine if any corrective action necessary to resolve the persistent groundwater standards exceedances near Lagoons 1, 2 and 3"

May 2016 Bolton and Menk Evaluation Report for Lagoons 1, 2 and 3

- Proposes that Lagoons 1, 2 and 3 be repurposed for use in storing can cooling water.
- "Elevated groundwater ammonia concentrations adjacent to Lagoons 1, 2 and 3 have persisted for several years despite low nitrogen concentrations in both Clyman Creek and Lagoon 1, 2 and 3. Unlike other forms of nitrogen such as nitrates, chemical and microbiological processes limit ammonia transport in the groundwater as is evident by the steady, but slow, rate of decreasing groundwater ammonia concentrations. Continued use of Lagoons 1, 2 and 3 with low nitrogen water does not pose a risk of accumulating and adding to existing groundwater ammonia concentrations."
- "As summarized in Table ES-1, both current lagoon contents and the cooling water characteristics are below both the surface water discharge limits, existing groundwater concentrations and the associated preventive action limits (PAL) and enforcement standards (ES) for groundwater. Therefore, use of Lagoons 1, 2 and 3 for cooling water storage will not pose a risk of increasing or perpetuating the existing groundwater standard exceedances relative to ammonia."
- "Unlike chloride and other dissolved parameters that are mobile in the groundwater, ammonia concentrations tend to show a significantly lower rate of transport. Therefore, any "flushing" action associated with improved water quality in Lagoon 1, 2 and 3 may not be sufficient to reduce the persistent ammonia concentrations. Mitigation of elevated groundwater ammonia concentrations is challenging as the in-situ conditions do not promote natural nitrification and denitrification."
- No sludge data is presented in this report.

May 2016 Foth Groundwater Report

- "For Lagoons 1, 2 and 3, MW-23A, MW-23B, MW-25A, MW-25B, MW-27A, and MW-27B which show some current (and decreasing) levels of ammonia, it is probable the ammonia is from the co-located wetlands. The lagoons were seeded to use as cropland prior to their natural recharge with surface and groundwater."
- "It is probable that ammonia in the wells associated with Lagoons 1, 2 and 3 is naturally occurring from the co-located wetlands."

December 7, 2018 WDNR Conditional Approval Letter (excerpts in italics)
The Department sent a conditional approval letter to Seneca Foods Corporation – Clyman on December 7, 2018, regarding the reuse of Lagoons 1, 2, and 3 to store canned cooling water for compliance with thermal limits in their surface water outfall. While Lagoons 1, 2, and 3 have provided an economical means for meeting surface water quality standards and/or avoiding discharge to surface water altogether, the ammonia groundwater contamination has remained persistent. Many of the assumptions made in the December 7, 2018, approval letter have proved incorrect.

To justify an exemption to the design standards and material requirements of ch. NR 213, Wis. Adm. Code, the owner must demonstrate that:

- *Pollution, dilution, dispersion will occur within the DMZ*
- *Increases in substances in groundwater from lagoons are minimized to the extent technically and economically feasible.*
- *Applicable groundwater and surface water standards will not be exceeded.*

There has been no meaningful dilution and dispersion of ammonia at the monitoring wells within the DMZ surrounding Lagoons 1, 2, and 3. The degree to which dilution and dispersion of ammonia occurs beyond the DMZ is difficult to determine due to the position of Lagoons 1, 2 and 3 relative to the property boundaries. The increases in substances in groundwater from lagoons have not been minimized to the extent technically and economically feasible. Applicable groundwater standards have continued to be exceeded and concentrations of ammonia are an order of magnitude higher than the NR 140 Wis. Adm. Code enforcement standard for ammonia at some monitoring wells.

The current groundwater pollution at the site is largely attributed to the historic practice of storing process wastewater (high in TKN) in Lagoons 1, 2 and 3. As noted in the Bolton and Menk report, ammonia is difficult to attenuate due to the anoxic conditions in the saturated subsurface environment that limit microbial conversions of ammonia to other, more mobile forms of nitrogen. While the proposed canned cooling water waste is not expected to exacerbate ammonia pollution in groundwater, the proposed plan (i.e., reuse of the lagoons for canned cooling water storage) does not address the current ammonia contamination. The Department maintains authority in ch. NR 140, Wis. Adm. Code for responding to groundwater standard exceedances.

While there are inherent difficulties with the remediation of a parameter like ammonia it is believed that the remaining sludge, which has significantly elevated concentrations of ammonia, is the cause for the persistent ammonia contamination observed at the groundwater monitoring wells.

The lagoons are not lined. The proposed lagoon design and operation is a hybrid between an absorption pond (NR 214.12) and a lagoon (NR 213). For this particular situation, it's most ideal if the lagoons did not leak/discharge to groundwater. Due to the unlined nature of these lagoons, it's suspected that there may be leakage. However, it's suspected that leakage has been reduced due to accumulated sediments that have likely provided some resistance to infiltration. The lagoons are operated more similarly to lagoons than

absorption ponds as there are no load rest cycles and the system is not designed to maintain and infiltrative surface.

The lagoons have behaved as leaking lagoons since they were repurposed. Seneca estimates that is sends approximately 15 MG/yr of canned cooling water to Lagoons 1, 2, and 3 without needing to discharge to surface water. Given that Lagoons 1, 2, and 3 cannot reliably retain canned cooling water without discharge to groundwater, the legacy sludge must be removed from the bottom of each lagoon.

Data presented in the 2016 reports indicates Lagoons 1, 2, and 3 do not demonstrate cause for contributing to groundwater exceedances. The canned cooling water is below groundwater PALs … Legacy ammonia contamination will continue to be addressed through natural attenuation until circumstances change.

The 2016 Lagoon Evaluation report did not include any analytical or physical sludge data. Given the omission of this data, the conclusions in that report failed to consider the potential impact that the remaining sludge would have over time on groundwater ammonia concentrations. Over the seven years since the approval letter was sent, the legacy ammonia contamination has not improved. While the canned cooling water is low in the parameters of concern, it may be exacerbating the ammonia contamination. Given the time elapsed since this approval letter, the Department believes that the circumstances have changed and that natural attenuation is not a reliable means for remediating the ammonia contamination. The remaining sludge should be removed from the lagoons to expedite the timeline for remediation of ammonia.

6. That prior to implementation of this project, the depth of sludge in each Lagoon (1, 2, and 3) be measured and reported to the Department.
7. That prior to implementation of this project, the sludge in each Lagoons (1, 2, and 3) be sampled and reported in accordance with the requirements for Outfalls 043, 044 and 045 of the WPDES Permit.
8. That prior to implementation of this project, the lagoon sludge be removed from each Lagoon (1, 2, and 3) in accordance with the requirements for Outfalls 043, 044, 045 and the Lagoon(s) Evaluation action of compliance schedule 6.15 of the WPDES Permit. Sludge shall be removed from the lagoons unless the facility is able to submit a demonstration to the Department for approval that the lagoon sludge does not have potential to negatively impact groundwater.

Seneca Foods provided sludge depth and analytical data collected in 2014 in response to the December 2018 Approval Letter. The sludge was shown to be of limited thickness (i.e., a few inches) and of elevated ammonia concentrations (i.e., ~1,000 – 4,000 mg/kg). Since the repurposing of Lagoons 1, 2, and 3, the lagoon sludge has shown it has the potential to negatively impact groundwater. Given that natural attenuation has proved ineffective at remediating the ammonia contamination, Seneca Foods Clyman should remove the remaining sludge from Lagoons 1, 2, and 3.
The remediation of the ammonia contamination is likely dependent upon the removal of the legacy sludge and not necessarily the cessation of the can cooling water discharge to Lagoons 1, 2, and 3. It is proposed here that the continued use of Lagoons 1, 2, and 3 for canned cooling water storage/disposal via slow infiltration would be acceptable if the ammonia contamination is remediated.

February 22, 2019 Seneca Letter to WDNR Requested Sludge Information

- Sludge samples collected in 2014 in Lagoons 1, 2 and 3 range from in thickness from 0.5 – 3.0” and 1,450 – 4,580 mg/kg in ammonia.
- “In closing, Seneca believes that the sludge sampling and measurement that was conducted in 2014 meets the requirements in conditions 6 and 7 in the approval letter. Further, given the depth of the sludge (under 2.5 inches) and the challenges to effectively dredge such limited sludge depths, Seneca

proposes that the sludge removal in condition 8. Be deferred until such time it is determined to be necessary (if at all) for phosphorus in the cooling water discharge."

February 20, 2020 WDNR Groundwater Evaluation

- "Lagoons 1, 2 and 3 have not been used for some time yet continue to show significant ammonia nitrogen discharge to the environment particularly in MW-23A and MW-25A."
- "Based on the lagoon evaluation report provided to the department in 2017, it was proposed that the volume of remaining organic material in lagoons 1, 2 and 3 was very minimal and the removal of this organic material would likely not help with improving ammonia nitrogen groundwater quality. However, since ammonia nitrogen concentrations remain above standards surrounding and lagoons 1, 2 & 3 are being drained and modified for the purpose of storage and treatment of the can cooling water. The department will require the facility to continue to monitor the wells surrounding these lagoons on a semi-annual basis to see if there are improvements to groundwater quality. If groundwater quality shows declining trends after 2 years of additional monitoring the facility is welcome to request a reduction in monitoring frequency as part of a permit modification. If the groundwater quality doesn't improve the department may require additional investigation or evaluation per NR 213 and/or evaluate the potential impairments to Clyman Creek or adjacent wetlands and/or the need for corrective actions."

November 1, 2020 WPDES Permit 0002160-08

- Permit reissued without any compliance schedules related to the persistent ammonia contamination.

Indicator Parameter PALs

Indicator Parameter Preventive Action Limits (PALs) are developed following the procedures described in s. NR 140.20(2), Wis. Adm. Code and "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers". 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 indicator PALs for this facility were calculated using whichever of the two following methods provides a greater PAL.

- ∑ [Background groundwater quality + (Standard Deviation of results x 3)]
- ∑ [Background groundwater quality + Minimum Increase (NR 140.20 Table 3)]

Indicator parameter PALs for the current permit term were calculated using monitoring data during the prior permit term (October 1, 2020 - June 30, 2025). The indicator parameter PALs for use in the upcoming permit WI-0002160-09 are presented in **Tables 16 – 23** and were calculated using results from MW-6 (ANFK), MW-36 (Haase), MW-38 and MW-39 (Krueziger), MW-1 (Field 15), MW-20B (Stock), MW-52 (Vacek), MW-28 (Lagoon 4 and 5), MW-21A and MW-21B (Lagoons 1, 2 and 3) using data from October 1, 2020 – June 30, 2025.

Alternative Concentration Limits

Alternative concentration Limits (ACLs) can be developed and provided for a groundwater monitoring system to replace the PAL or ES (s. NR 140.28, Wis. Adm. Code). ACLs are provided if the conditions at the background monitoring well(s) indicate that it is appropriate. The methodology and considerations for developing and providing ACLs are outlined in the guidance document "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers". Individual ACLs for chloride and/or nitrite+nitrate were calculated using results from MW-36 (Haase), MW-38 and MW-39 (Krueziger),

MW-28 (Lagoon 4 and 5), and MW-21A and MW-21B (Lagoons 1, 2 and 3) using data from October 1, 2020 – June 30, 2025.

Conclusions, Recommendations and Schedule Requirements

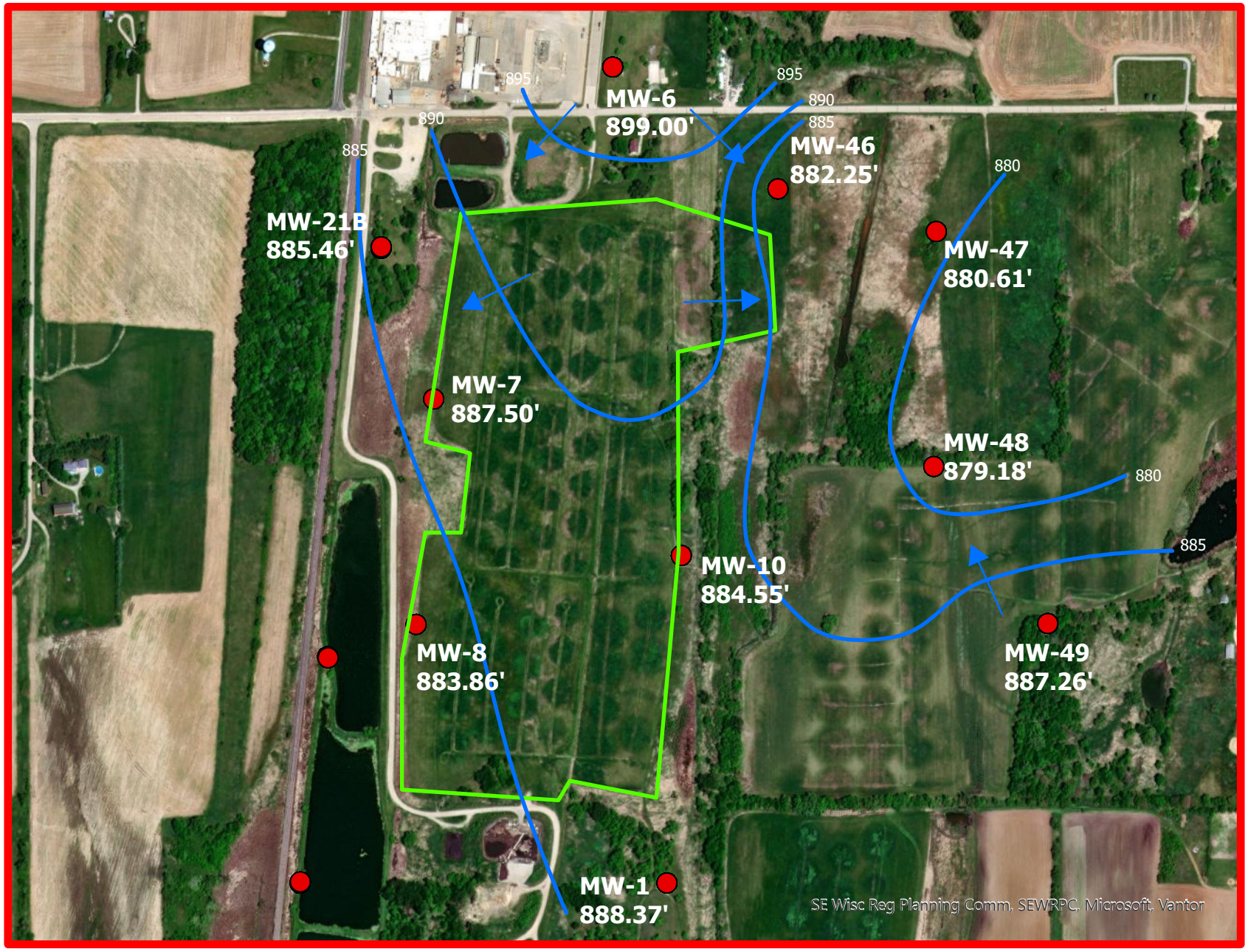
- Add COD dissolved to the monitoring requirements for all groundwater monitoring systems.
- Add phosphorus dissolved monitoring for the groundwater monitoring system for Lagoons 4 and 5.
- Add MW-39 as a background groundwater monitoring well in addition to MW-38 at the Krueziger field (Outfall 022) due to its location upgradient of the sprayfields.
- Make MW-52 the new background monitoring well and MW-54 a sidegradient monitoring well due to MW-54 being impacted directly by the spray irrigation activities and MW-52 being located mostly upgradient of most Vacek fields.
- Monitoring well MW-30 has been dry during the past few years and should be abandoned. Add a compliance schedule for the abandonment of MW-30 within one year of permit reissuance. Replacement of this well is dependent upon the results from the Ammonia Remediation Compliance Schedule.
- At the request of Seneca Foods Clyman, combine Outfalls 030 and 031 in the Vacek Fields into one Outfall 054.
- The differentiation in the permit between Tank 1 to Spray Irrigation (Sample Point 104) and Tank 2 to Spray Irrigation (Sample Point 105) does not provide any value. Remove Sample Points 104 and 105 from the permit and add Flow Rate to Sample Point 101 (Process Wastewater to Tank 1).
- Overall, the discharge to the sprayfields and loading rates below 300 lbs/ac/yr do not appear to be causing exceedances of NR 140 groundwater standards for nitrite+nitrate or ammonia. Reduce the nitrogen loading limit from 600 lbs/ac/yr to 400 lbs/ac/yr at Outfalls 020 – 024.
- The high loading rates of chloride have resulted in exceedances of the NR 140 groundwater standards at most downgradient monitoring wells. Seneca Clyman should identify sustainable means of reducing the chloride load discharged to the sprayfields to bring groundwater concentrations below the NR 140 PAL. Include a compliance schedule for annual chloride reduction reports.
- Include an Ammonia Remediation Compliance Schedule in the upcoming permit. The compliance schedule should include an investigative report regarding the source and cause of persistent ammonia contamination, sludge depth and laboratory analysis, lagoon leakage study, identification of remedial actions that can be taken and the initiation of a selected remedial measure.

Appendices

- **Appendix A** – Site Map and Groundwater Flow Maps
- **Appendix B** – Nitrogen and Chloride Loading Rates (2015 – 2025)
- **Appendix C** – Effluent Chemistry Plots
- **Appendix D** – Groundwater Chemistry Plots

Water Table Flow Map May 5 - 8, 2025 - Seneca Foods Clyman ANFK Fields

WISCONSIN DEPT. OF NATURAL RESOURCES



Site Location

640 Caughlin Road
Clyman, WI 53016

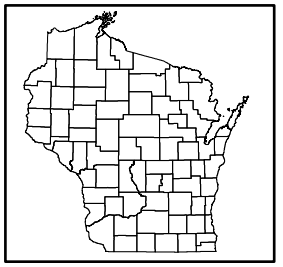
Legend

- Water Table Contour (5/5-8/2025 - 5' FAMSL)
- Groundwater Flow Direction
- Sprayfield Boundary

Notes

Water table contours are hand drawn using the reported elevations in feet above mean sea level collected on May 5th and 8th, 2025. MW-21B, MW-47, MW-48 and MW-49 are not part of the ANFK Field groundwater monitoring system but were utilized here for interpretation of overall groundwater flow paths.

Created By: watsoz
Date: 11/6/2025



0 180 360 540 720 900 1,080 Feet

1:6,500

Water Table Flow Map May 29, 2025 - Seneca Foods Clyman Krueziger Fields

WISCONSIN DEPT. OF NATURAL RESOURCES

Site Location

640 Caughlin Road
Clyman, WI 53016

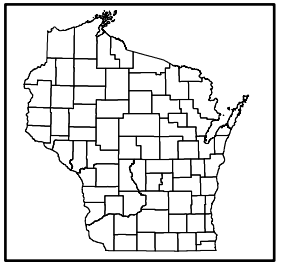
Legend

- Water Table Contour (5/29/2025 - 5' FAMSL)
- Groundwater Flow Direction
- Sprayfield Boundary

Notes

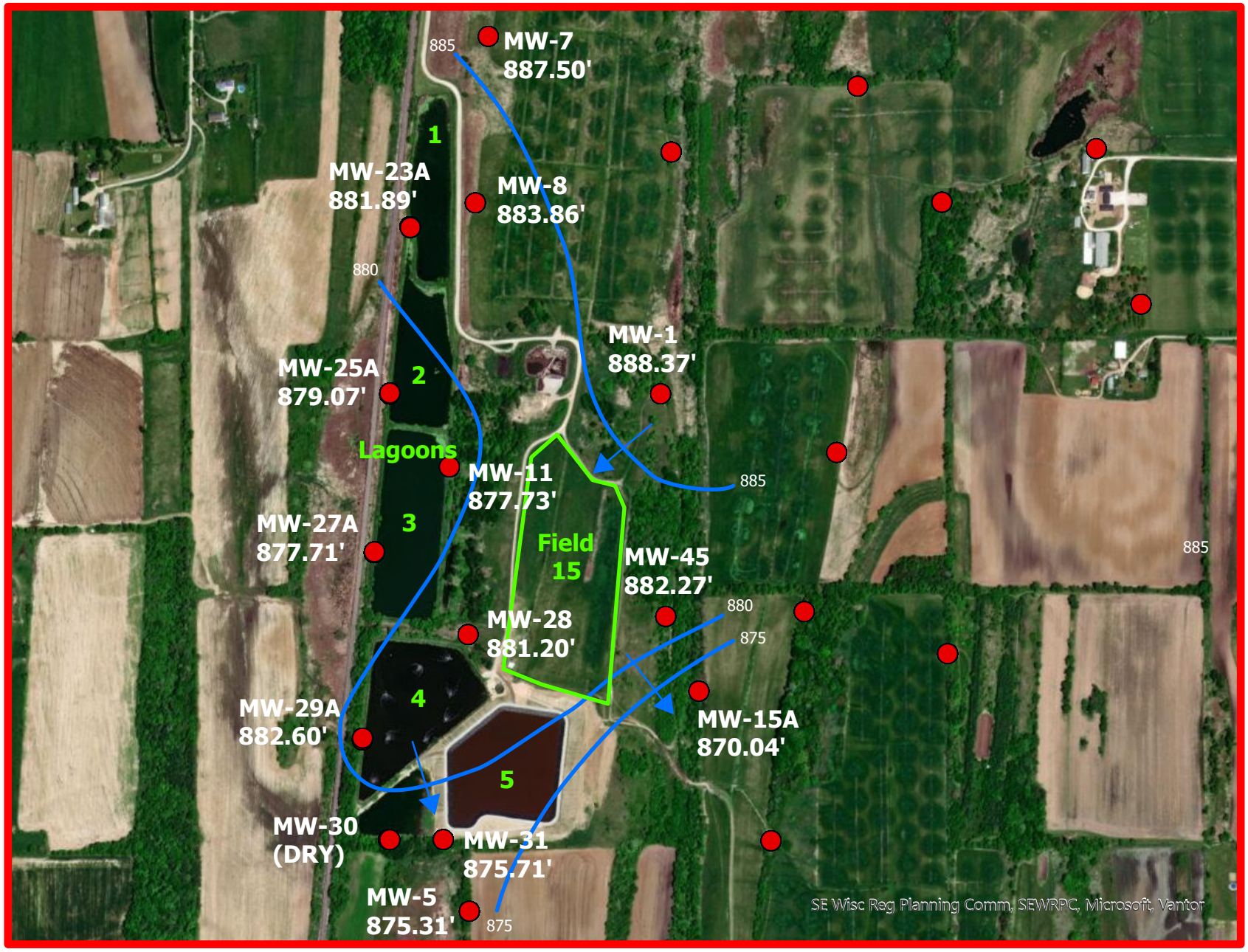
Water table contours are hand drawn using the reported elevations in feet above mean sea level collected on May 29, 2025.

Created By: watsoz
Date: 9/23/2025



0 140 280 420 560 700 840
Feet
1:5,000

Water Table Flow Map May 5 - 8, 2025 - Seneca Foods Clyman
Lagoons 1, 2, 3, 4 and 5



Site Location

640 Caughlin Road
Clyman, WI 53016

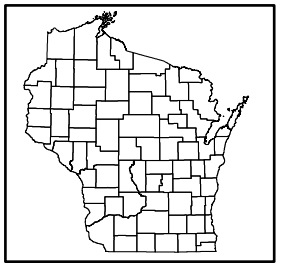
Legend

- Water Table Contour (5/5-8/2025 - 5' FAMSL)
- Groundwater Flow Direction
- Sprayfield Boundary

Notes

Water table contours are hand drawn using the reported elevations in feet above mean sea level collected on May 5th and 8th, 2025. MW-1, MW-7, MW-8, MW-15A, MW-45, are not part of the ANFK Field groundwater monitoring system but were utilized here for interpretation of overall groundwater flow paths.

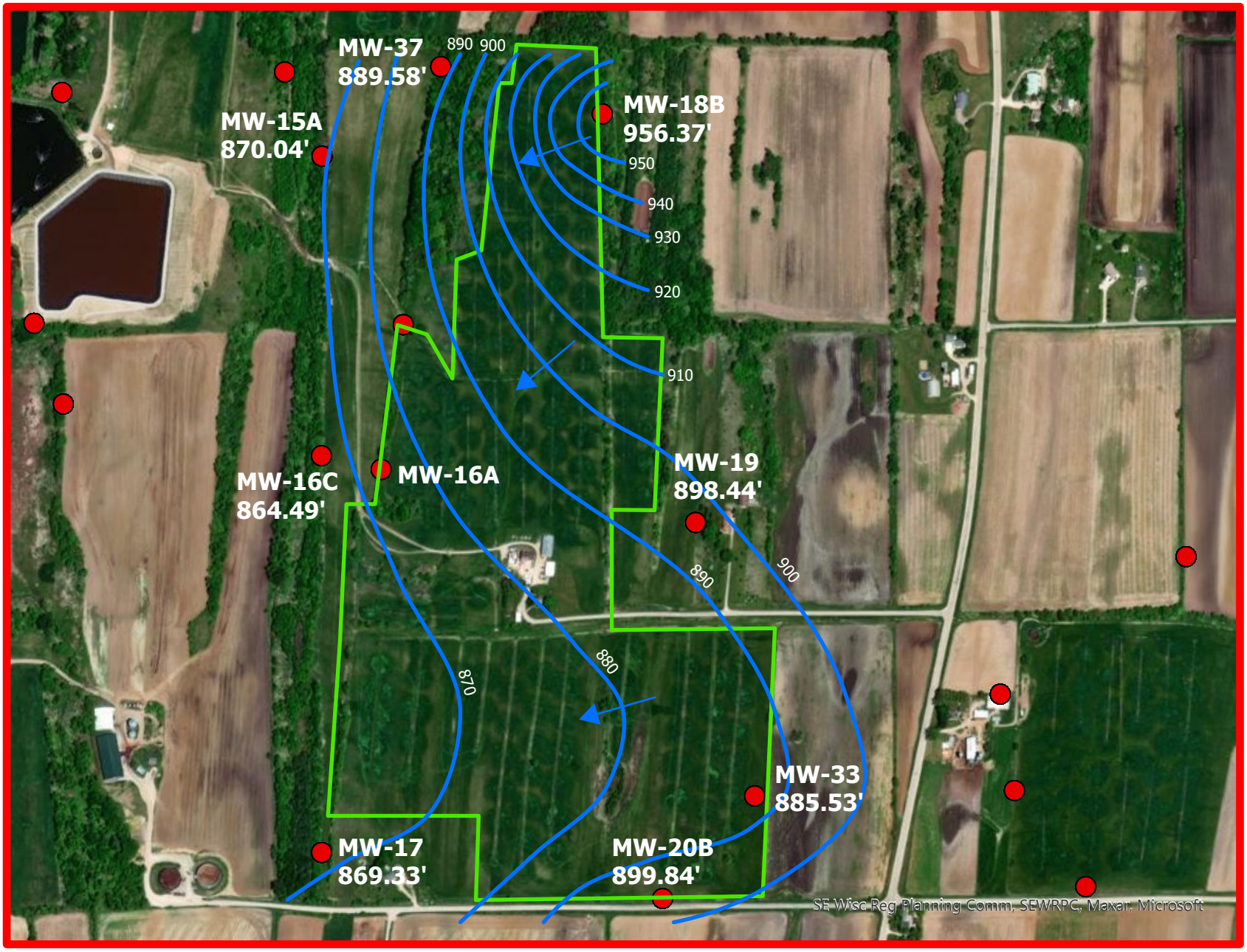
Created By: watsoz
Date: 11/10/2025



0 250 500 750 1,000 1,250 1,500 Feet

1:8,800

Water Table Flow Map May 7, 2025 - Seneca Foods Clyman Stock Fields



Site Location

640 Caughlin Road
Clyman, WI 53016

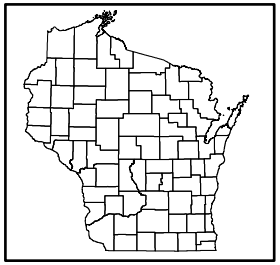
Legend

- Water Table Contour (5/7/2025 - 10' FAMSL)
- Groundwater Flow Direction
- Sprayfield Boundary

Notes

Water table contours are hand drawn using the reported elevations in feet above mean sea level collected on May 7th, 2025. The elevations reported at the piezometers were not used for water table contours. MW-15A is not part of the Stock Field groundwater monitoring system but was utilized here for interpretation of overall groundwater flow paths.

Created By: watsoz
Date: 9/29/2025

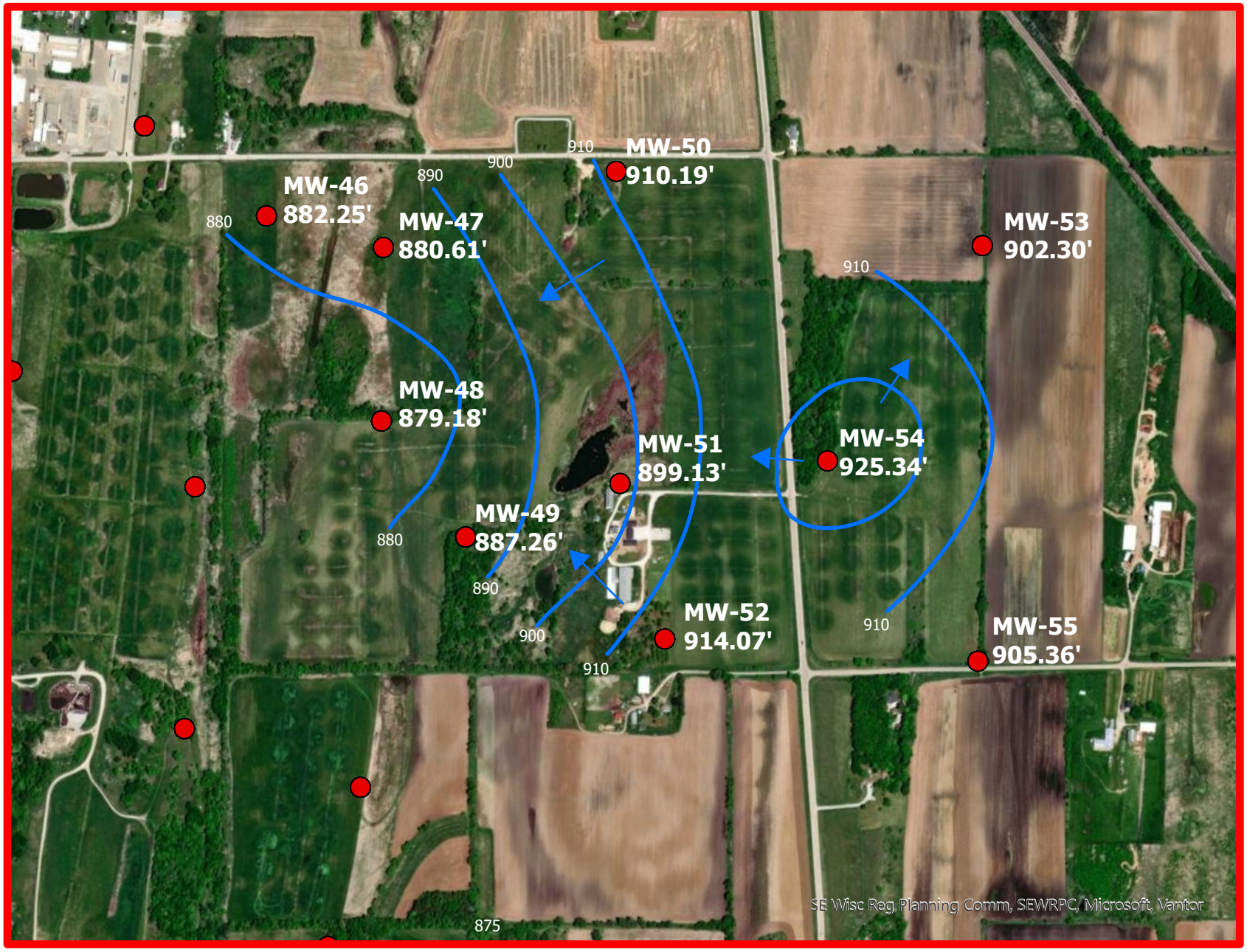


0 220 440 660 880 1,100 1,320 Feet

1:7,813

Water Table Flow Map May 5 - 8, 2025 - Seneca Foods Clyman Vacek Field

WISCONSIN DEPT. OF NATURAL RESOURCES



Site Location

640 Caughlin Road
Clyman, WI 53016

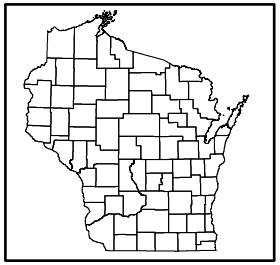
Legend

- Water Table Contour (5/5-8/2025 - 5' FAMSL)
- Groundwater Flow Direction
- Sprayfield Boundary

Notes

Water table contours are hand drawn using the reported elevations in feet above mean sea level collected on May 5th and 8th, 2025.

Created By: watsoz
Date: 11/12/2025



0 250 500 750 1,000 1,250 1,500 Feet

1:8,800

Seneca Clyman WI-0002160-08 Sprayfield Loading Rates

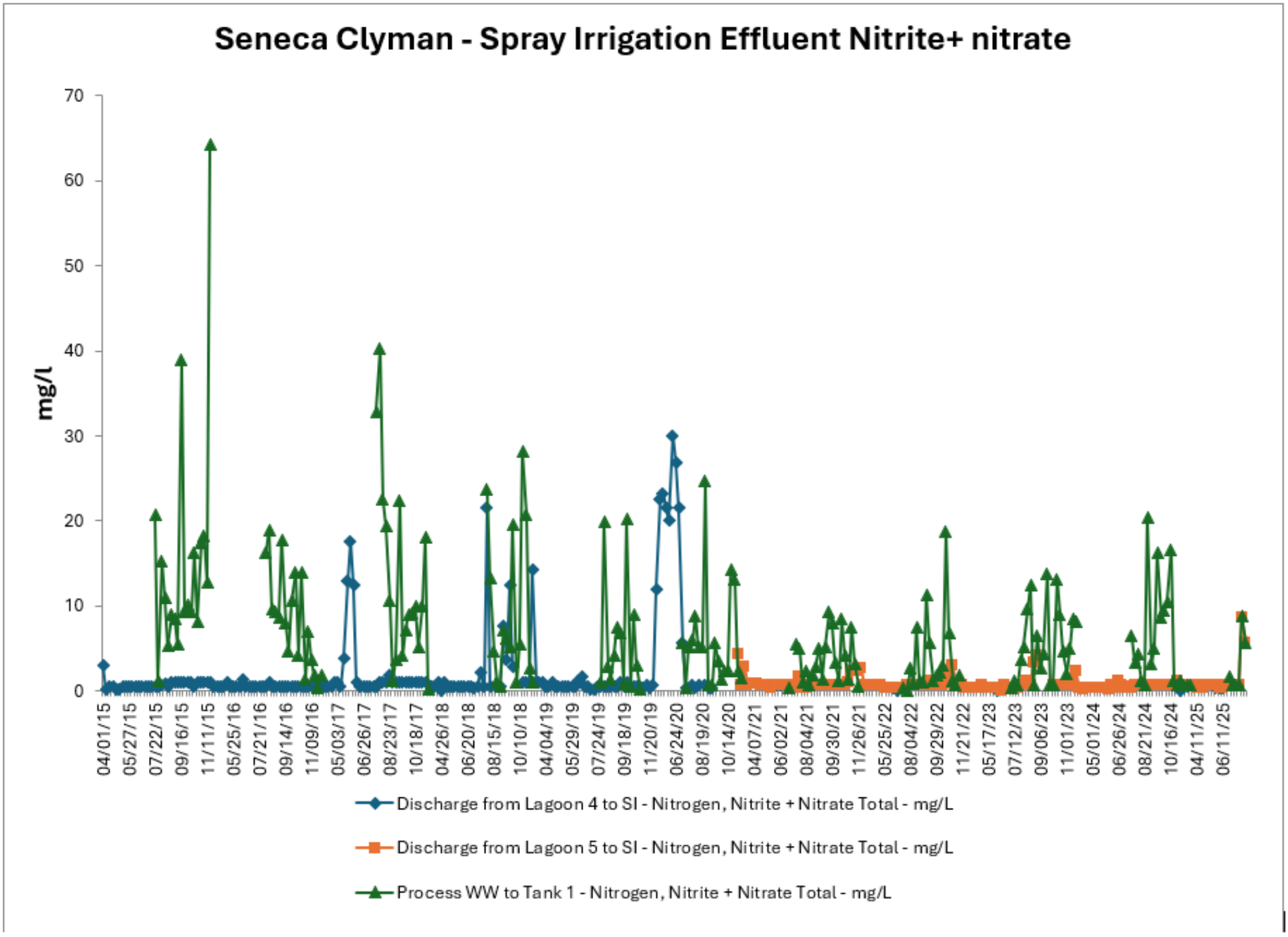
Annual Chloride Loading Rates (lbs/ac/yr)

						051 Vacek			052 Vacek						053 Vacek	
Year	**020 ANFK**	**024 Stock**	**021 Haase**	**022 Krueziger**	**023 Seneca**	**025 Vacek**	**026 Vacek**	**027 Vacek**	**028 Vacek**	**029 Vacek**	**030 Vacek**	**031 Vacek**	**032 Vacek**	**033 Vacek**	**034 Vacek**	**035 Vacek**
2015	1540	1809	1942	1413	580	136	164	166	0	108	0	69	228	295	396	0
2016	1252	1664	1466	1540	446	0	247	413	218	330	716	214	448	481	640	194
2017	1042	957	915	882	382	0	343	332	237	284	454	248	295	306	486	336
2018	767	1196	951	754	126	276	524	549	456	398	782	431	631	656	820	748
2019	2125	2116	1901	1784	233	1282	667	1020	789	286	1334	697	804	919	1278	1090
2020	2275	2378	1827	1592	379	1150	680	868	337	32	1202	614	700	826	1013	802
2021	2061	2398	2212	1615	230	1601		919	854		1128	692	1179	1343	1154	
2022	1873	1437	1580	654	170	813		624	697		1201	558	670	699	1177	
2023	1786	1600	1373	1437	348	5		523	0		1411	662	885	841	799	
2024	2269	2255	1942	1503	717	780		1021	694		1923	1044	1073	1167	946	

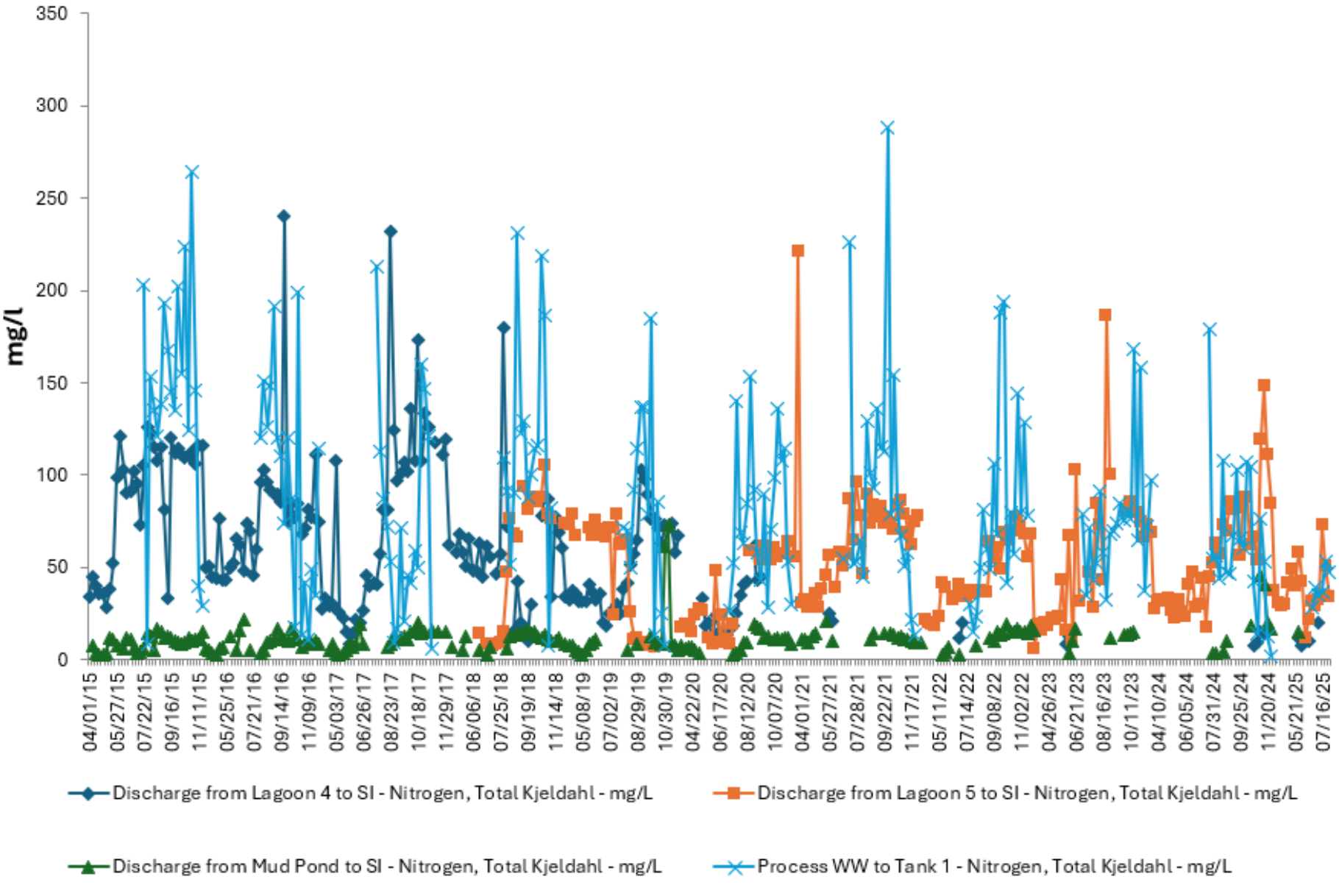
Annual Nitrogen Loading Rates (lbs/ac/yr)

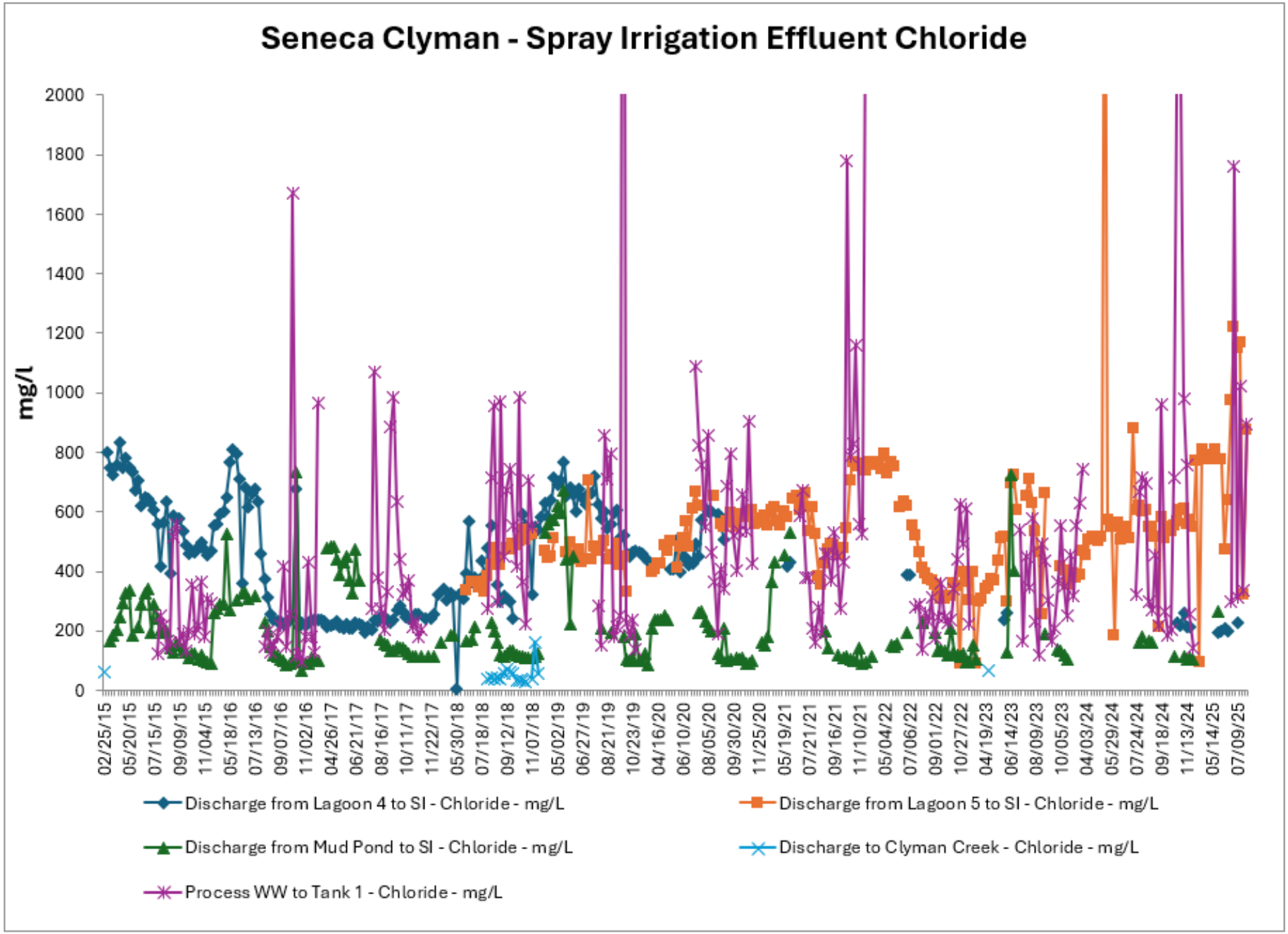
						051 Vacek			052 Vacek						053 Vacek	
Year	**020 ANFK**	**024 Stock**	**021 Haase**	**022 Krueziger**	**023 Seneca**	**025 Vacek**	**026 Vacek**	**027 Vacek**	**028 Vacek**	**029 Vacek**	**030 Vacek**	**031 Vacek**	**032 Vacek**	**033 Vacek**	**034 Vacek**	**035 Vacek**
2015	239	334	415	445	135	32	39	39	0	28	0	19	0	0	102	0
2016	195	223	257	295	70	0	87	135	63	80	219	55	130	138	161	49
2017	220	211	184	173	53	0	93	83	62	72	110	62	79	97	156	102
2018	91	191	153	146	19	72	106	109	94	80	155	90	131	137	160	143
2019	192	183	166	154	22	153	79	122	92	32	160	91	105	119	161	136
2020	236	230	178	159	36	129	78	94	30	3	137	74	85	98	124	97
2021	242	275	272	221	26	248		130	219		301	114	197	218	307	
2022	225	160	165	118	38	168		119	121		214	113	143	150	228	
2023	265	237	201	221	73	1		113	0		282	132	176	165	156	
2024	220	223	198	149	82	82		107	69		195	108	118	126	104	

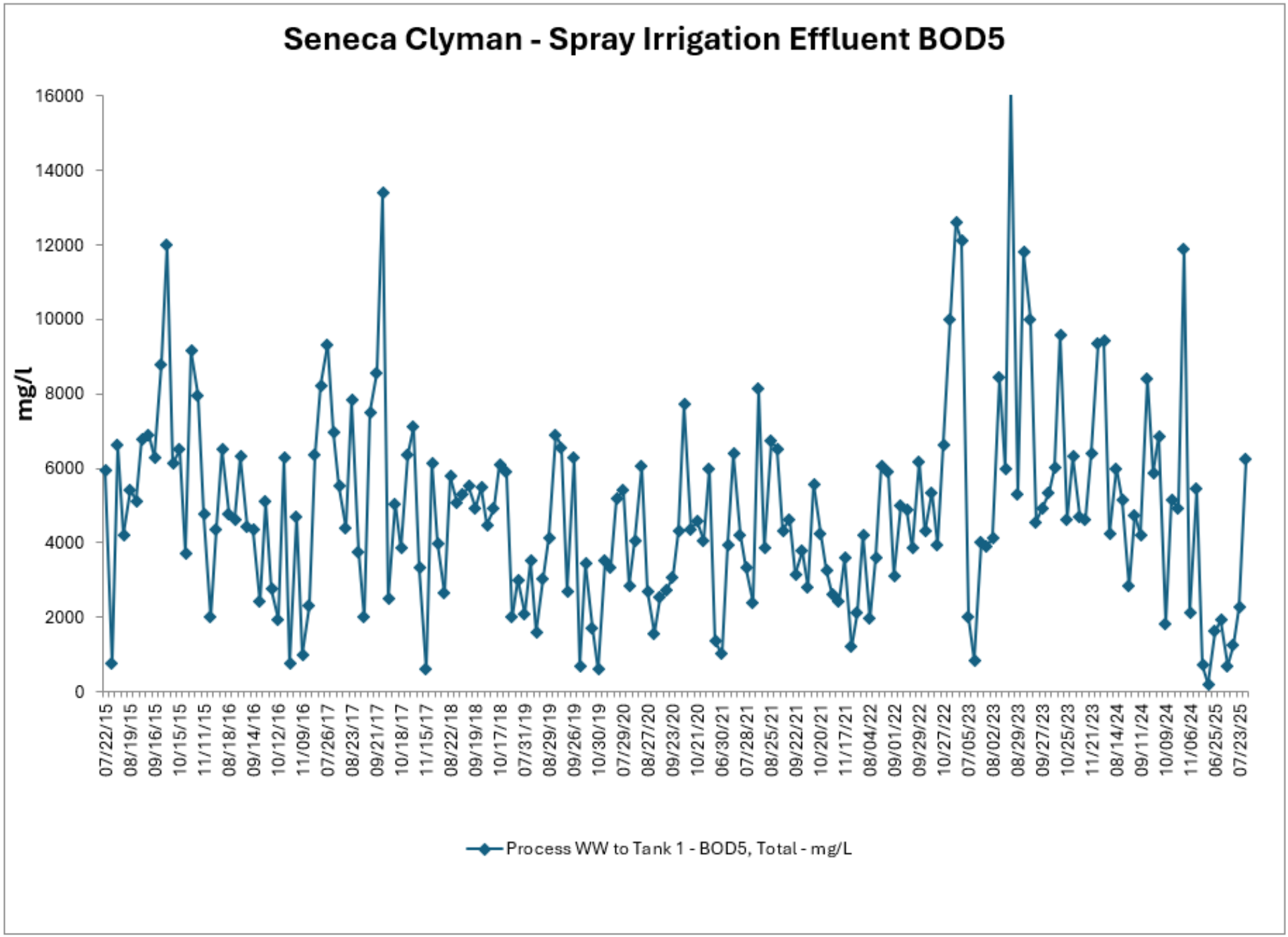
Note: 025/026 Vacek fields merged into 051 Vacek, 028/029 Vacek fields merged into 052 Vacek and 034/035 Vacek fields merged into 053 Vacek starting with WI-0002160-08 permit issued in 2020.


Seneca Clyman - Spray Irrigation Effluent Nitrite+ nitrate
mg/l
70
60
50
40
30
20
10
0
04/01/15
05/27/15
07/22/15
09/16/15
11/11/15
05/25/16
07/21/16
09/14/16
11/09/16
05/03/17
06/26/17
08/23/17
10/18/17
04/26/18
06/20/18
08/15/18
10/10/18
04/04/19
05/29/19
07/24/19
09/18/19
11/20/19
06/24/20
08/19/20
10/14/20
04/07/21
06/02/21
08/04/21
09/30/21
11/26/21
05/25/22
08/04/22
09/29/22
11/21/22
05/17/23
07/12/23
09/06/23
11/01/23
05/01/24
06/26/24
08/21/24
10/16/24
04/11/25
06/11/25
Discharge from Lagoon 4 to SI - Nitrogen, Nitrite + Nitrate Total - mg/L
Discharge from Lagoon 5 to SI - Nitrogen, Nitrite + Nitrate Total - mg/L
Process WW to Tank 1 - Nitrogen, Nitrite + Nitrate Total - mg/L

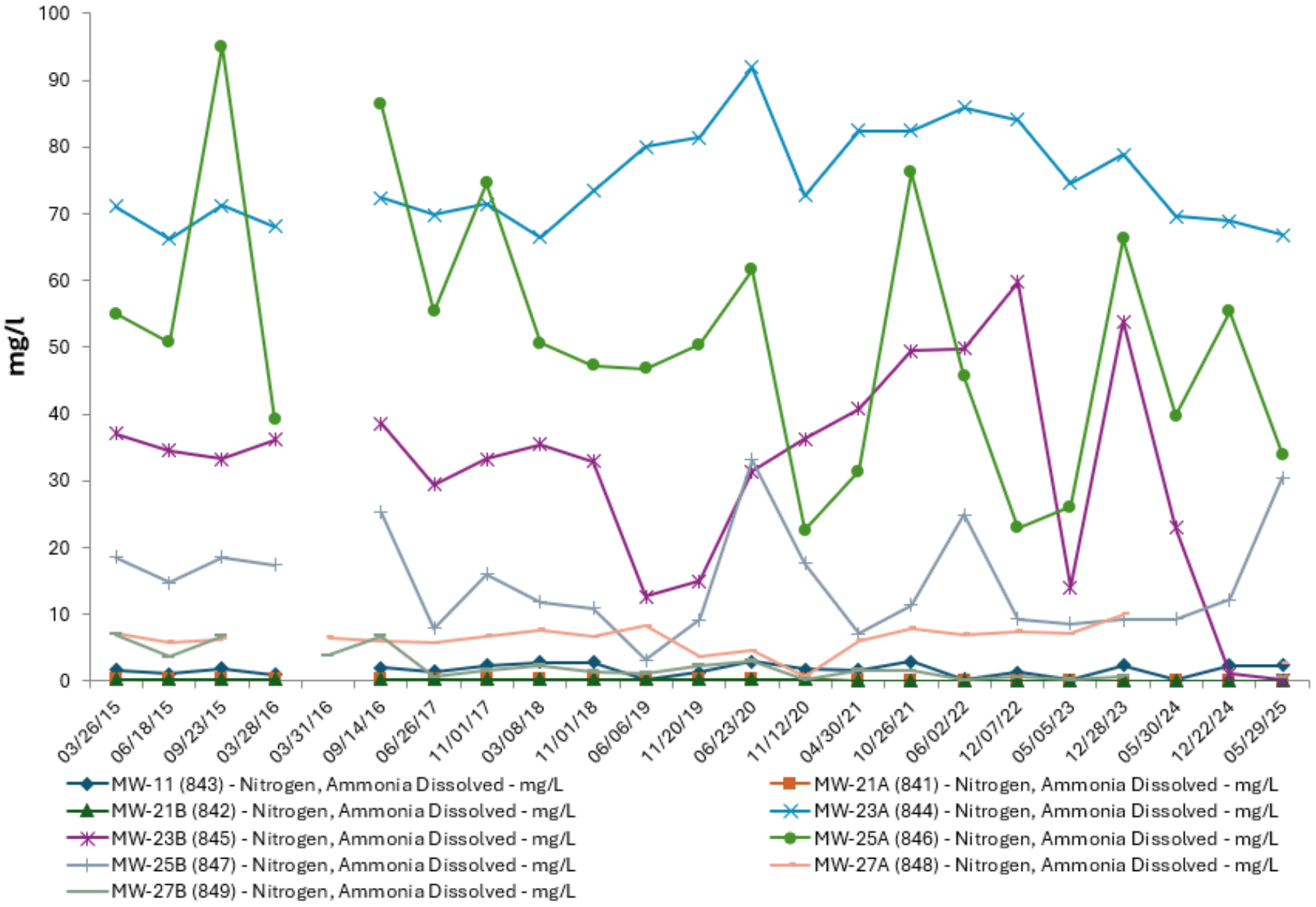
Seneca Clyman - Spray Irrigation Effluent Total Kjeldahl Nitrogen



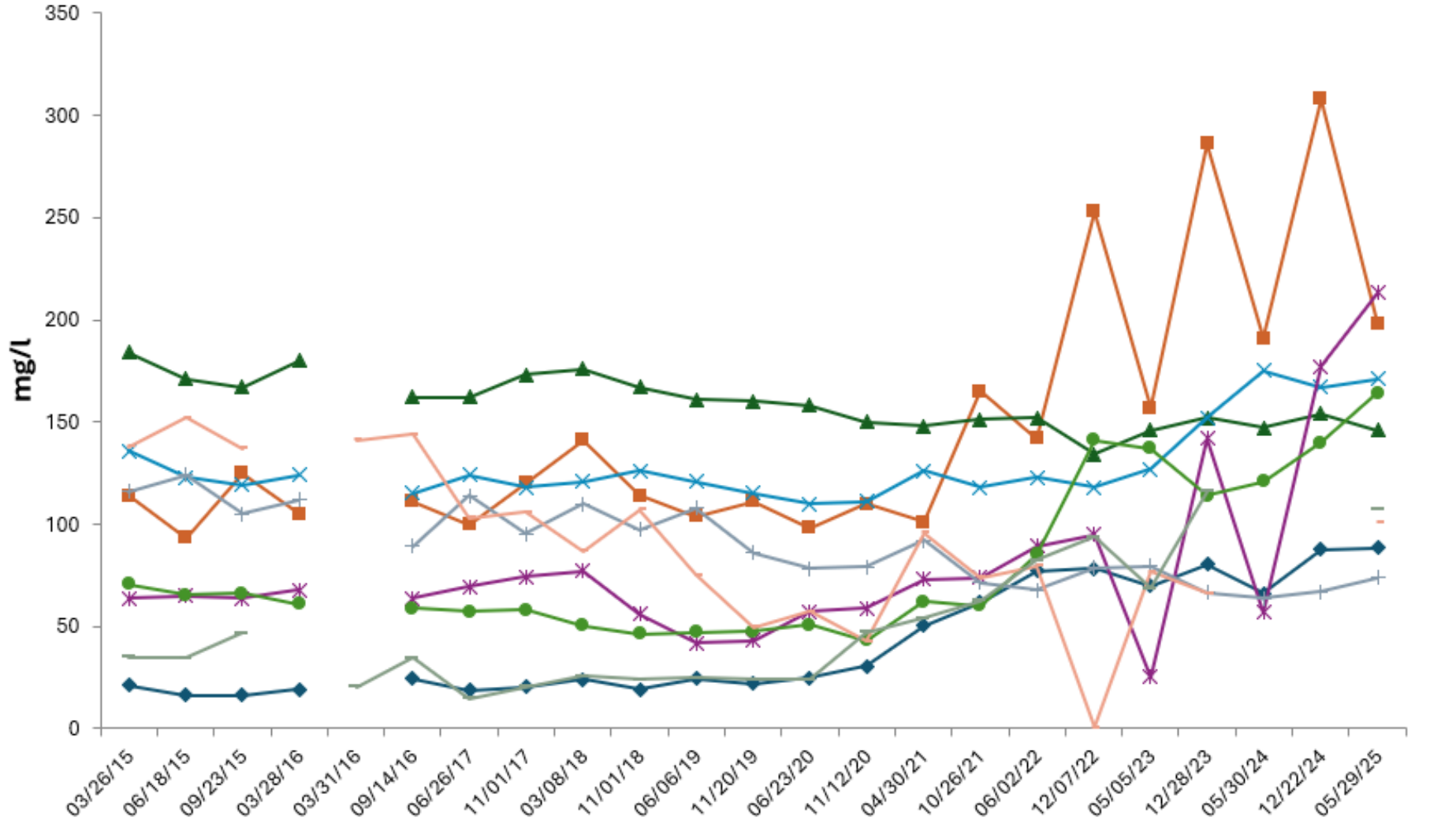

Seneca Clyman - Spray Irrigation Effluent Chloride
mg/l
2000
1800
1600
1400
1200
1000
800
600
400
200
0
02/25/15
05/20/15
07/15/15
09/09/15
11/04/15
05/18/16
07/13/16
09/07/16
11/02/16
04/26/17
06/21/17
08/16/17
10/11/17
11/22/17
05/30/18
07/18/18
09/12/18
11/07/18
05/02/19
06/27/19
08/21/19
10/23/19
04/16/20
06/10/20
08/05/20
09/30/20
11/25/20
05/19/21
07/21/21
09/16/21
11/10/21
05/04/22
07/06/22
09/01/22
10/27/22
04/19/23
06/14/23
08/09/23
10/05/23
04/03/24
05/29/24
07/24/24
09/18/24
11/13/24
05/14/25
07/09/25
Discharge from Lagoon 4 to SI - Chloride - mg/L
Discharge from Lagoon 5 to SI - Chloride - mg/L
Discharge from Mud Pond to SI - Chloride - mg/L
Discharge to Clyman Creek - Chloride - mg/L
Process WW to Tank 1 - Chloride - mg/L

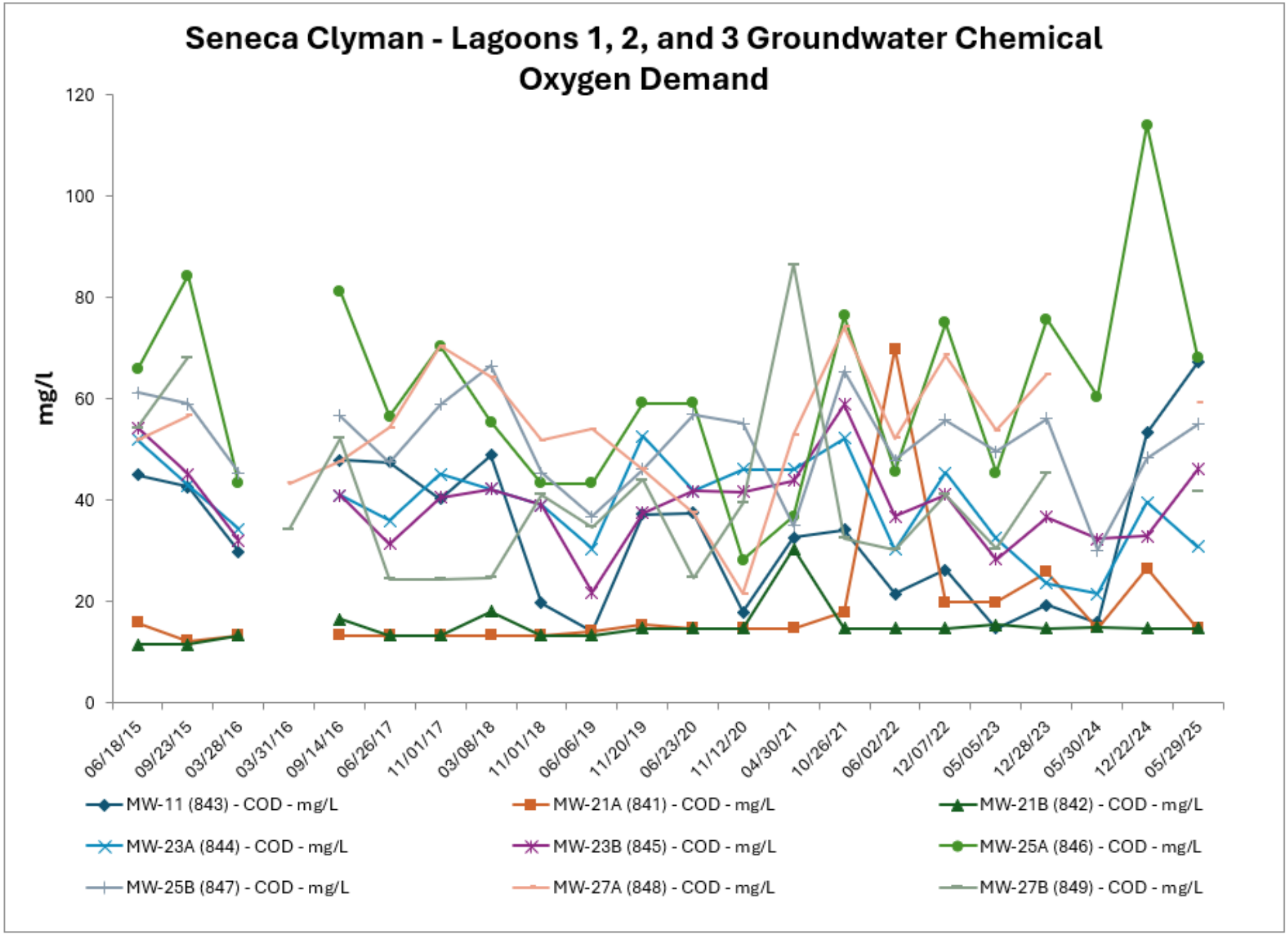

Seneca Clyman - Spray Irrigation Effluent BOD5
mg/l
16000
14000
12000
10000
8000
6000
4000
2000
0
07/22/15
08/19/15
09/16/15
10/15/15
11/11/15
08/18/16
09/14/16
10/12/16
11/09/16
07/26/17
08/23/17
09/21/17
10/18/17
11/15/17
08/22/18
09/19/18
10/17/18
07/31/19
08/29/19
09/26/19
10/30/19
07/29/20
08/27/20
09/23/20
10/21/20
06/30/21
07/28/21
08/25/21
09/22/21
10/20/21
11/17/21
08/04/22
09/01/22
09/29/22
10/27/22
07/05/23
08/02/23
08/29/23
09/27/23
10/25/23
11/21/23
08/14/24
09/11/24
10/09/24
11/06/24
06/25/25
07/23/25
Process WW to Tank 1 - BOD5, Total - mg/L

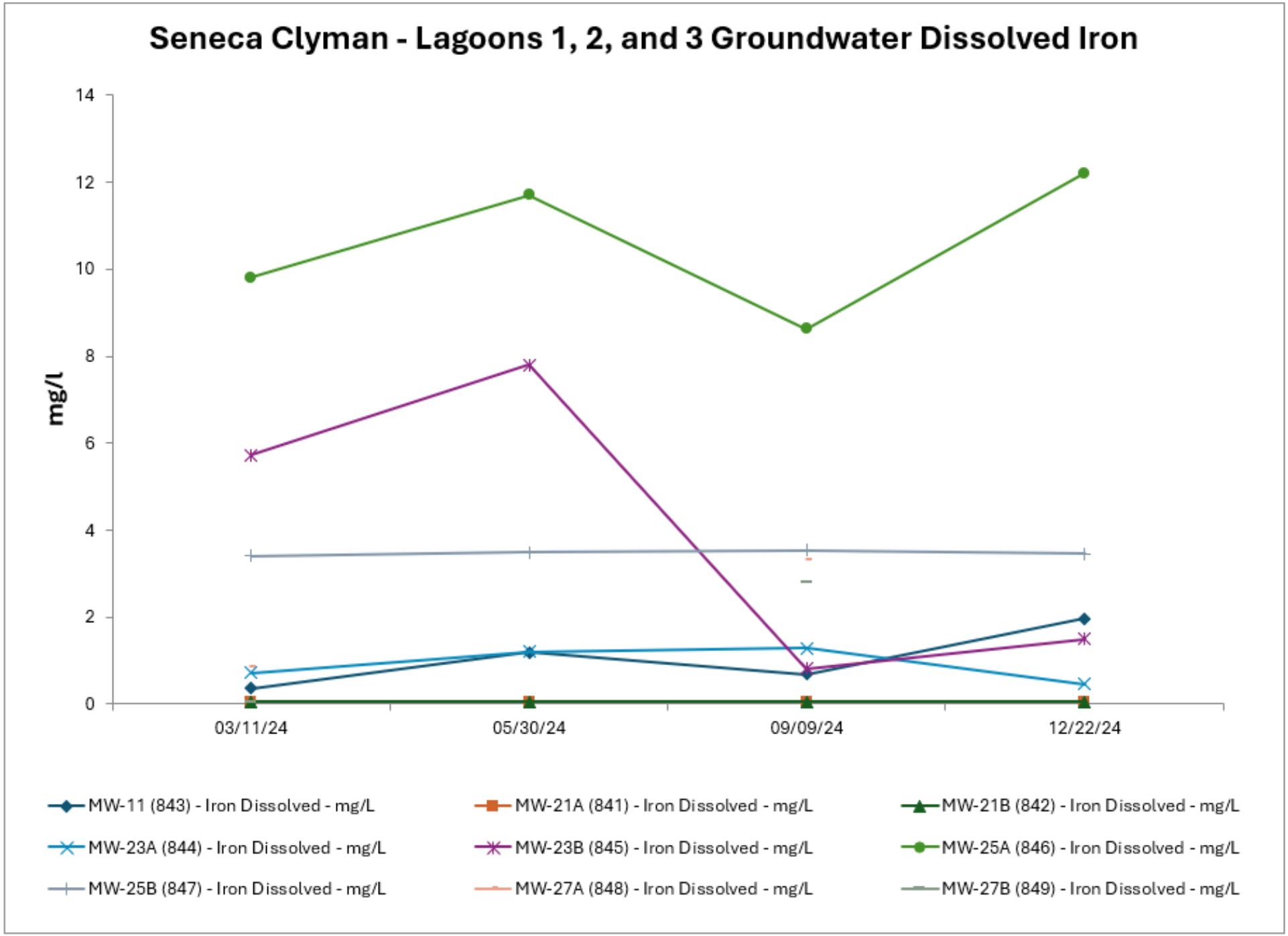
Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Ammonia



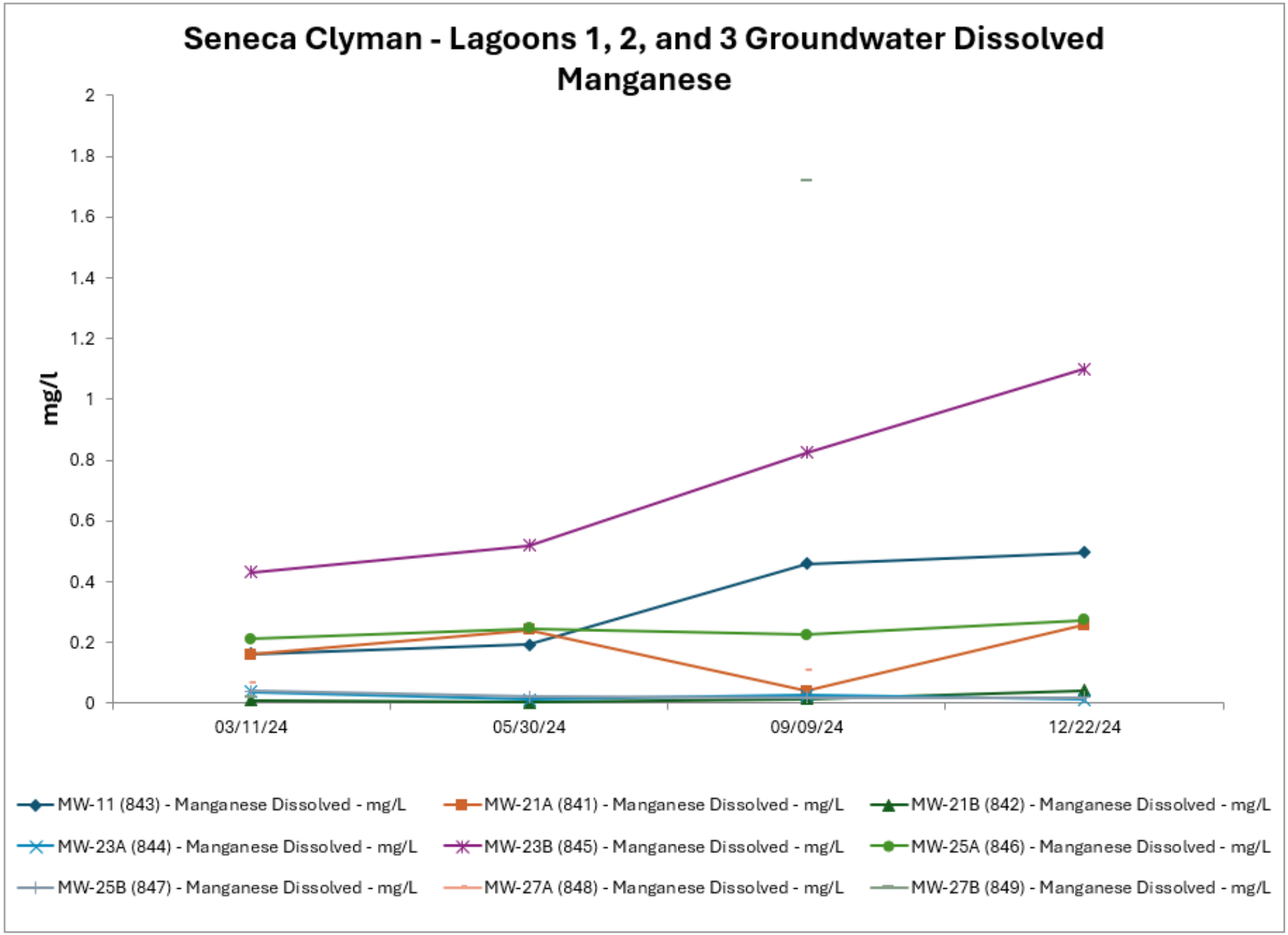
Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Chloride

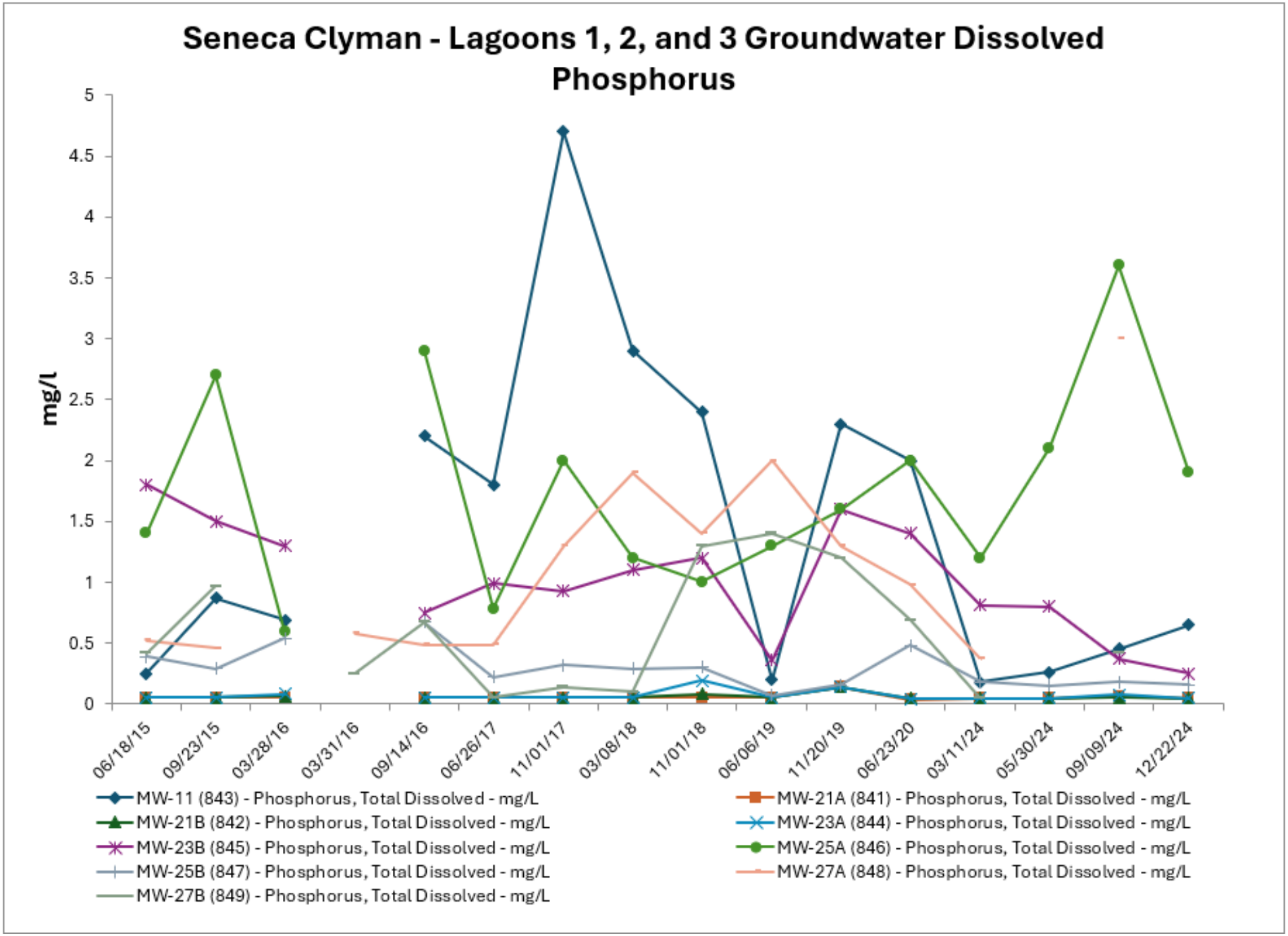


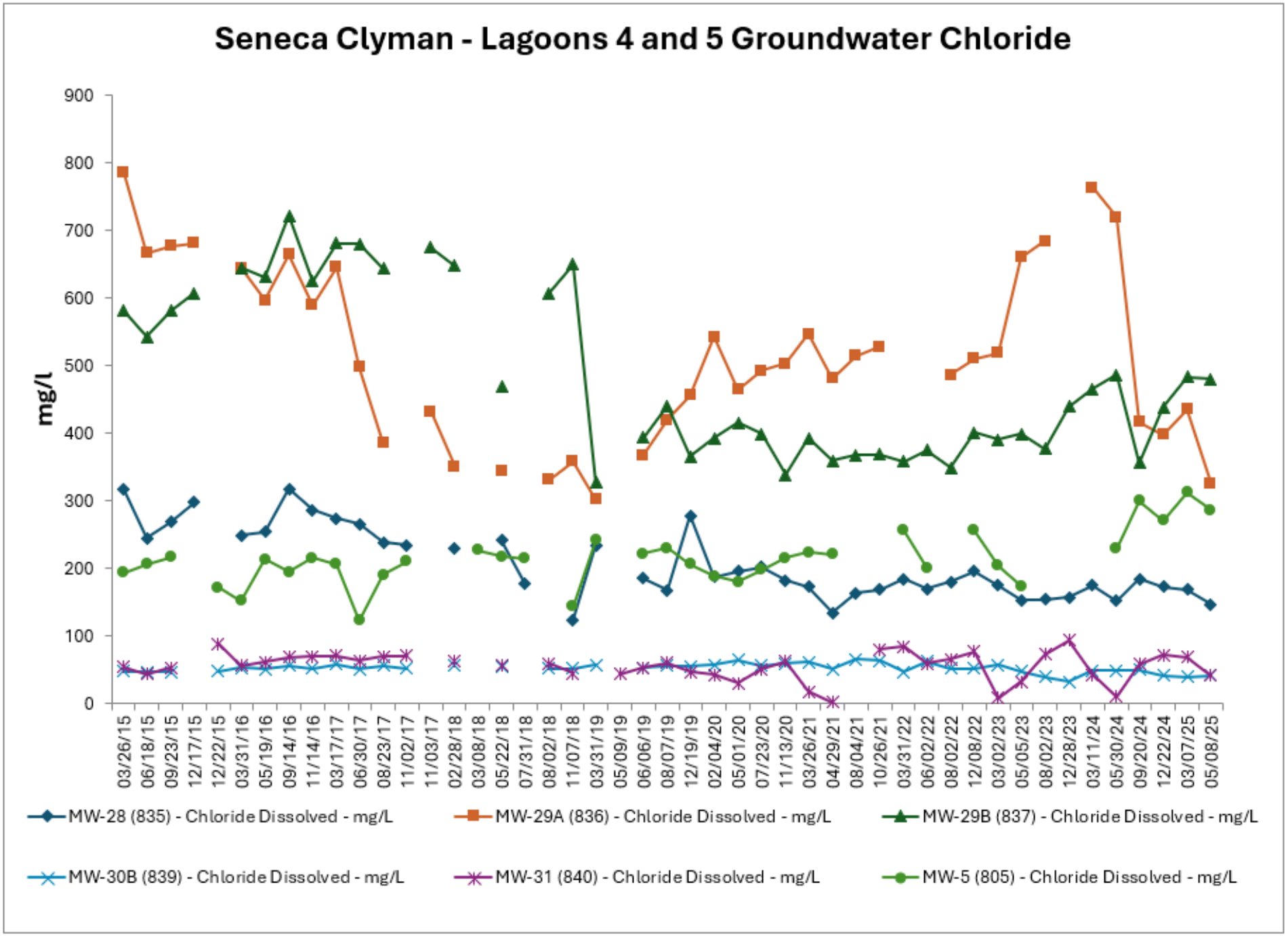

Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Chemical Oxygen Demand
mg/l
120
100
80
60
40
20
0
06/18/15
09/23/15
03/28/16
03/31/16
09/14/16
06/26/17
11/01/17
03/08/18
11/01/18
06/06/19
11/20/19
06/23/20
11/12/20
04/30/21
10/26/21
06/02/22
12/07/22
05/05/23
12/28/23
05/30/24
12/22/24
05/29/25
MW-11 (843) - COD - mg/L
MW-21A (841) - COD - mg/L
MW-21B (842) - COD - mg/L
MW-23A (844) - COD - mg/L
MW-23B (845) - COD - mg/L
MW-25A (846) - COD - mg/L
MW-25B (847) - COD - mg/L
MW-27A (848) - COD - mg/L
MW-27B (849) - COD - mg/L

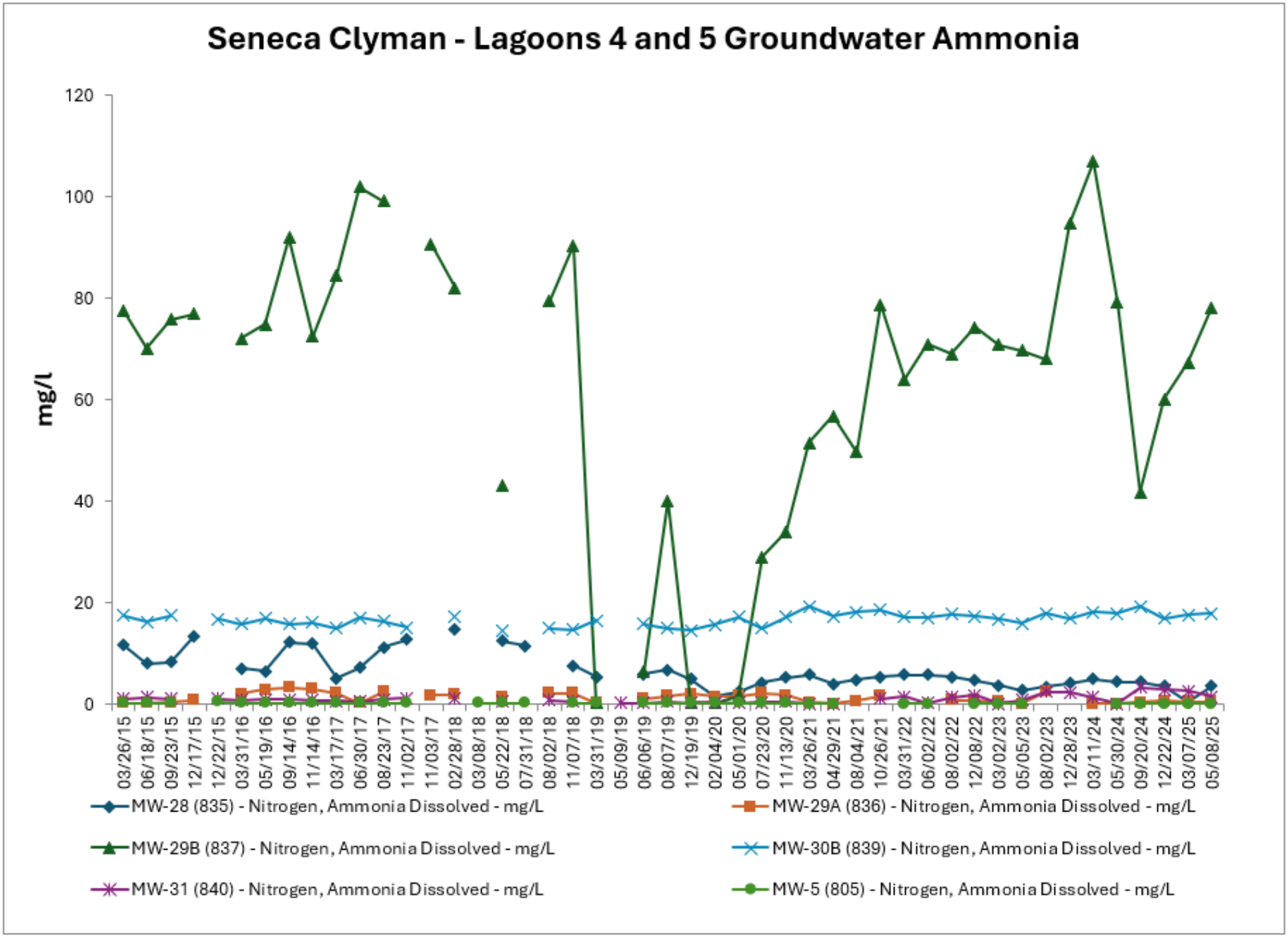

Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Dissolved Iron
mg/l
14
12
10
8
6
4
2
0
03/11/24
05/30/24
09/09/24
12/22/24
MW-11 (843) - Iron Dissolved - mg/L
MW-21A (841) - Iron Dissolved - mg/L
MW-21B (842) - Iron Dissolved - mg/L
MW-23A (844) - Iron Dissolved - mg/L
MW-23B (845) - Iron Dissolved - mg/L
MW-25A (846) - Iron Dissolved - mg/L
MW-25B (847) - Iron Dissolved - mg/L
MW-27A (848) - Iron Dissolved - mg/L
MW-27B (849) - Iron Dissolved - mg/L

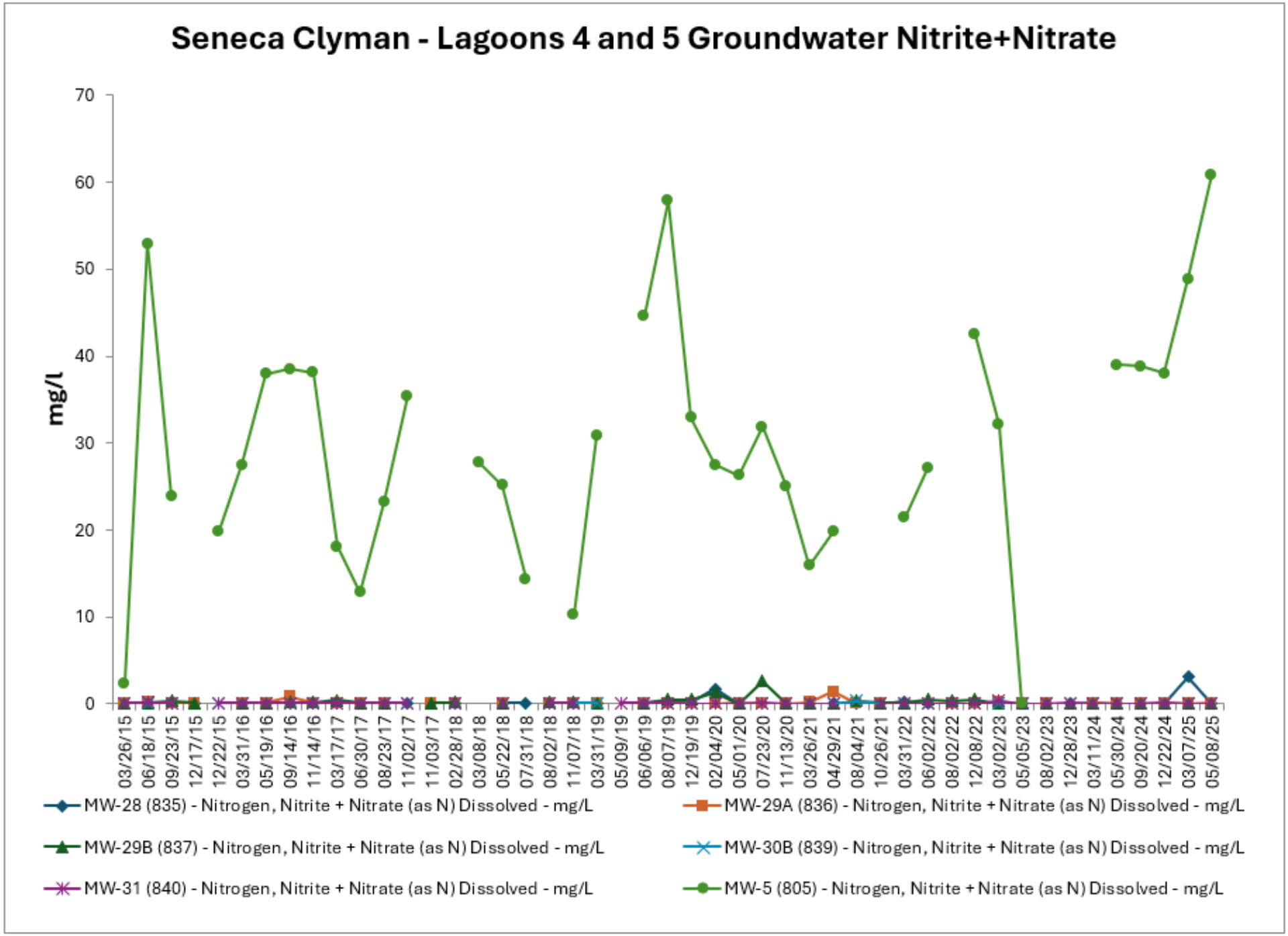
Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Dissolved Manganese

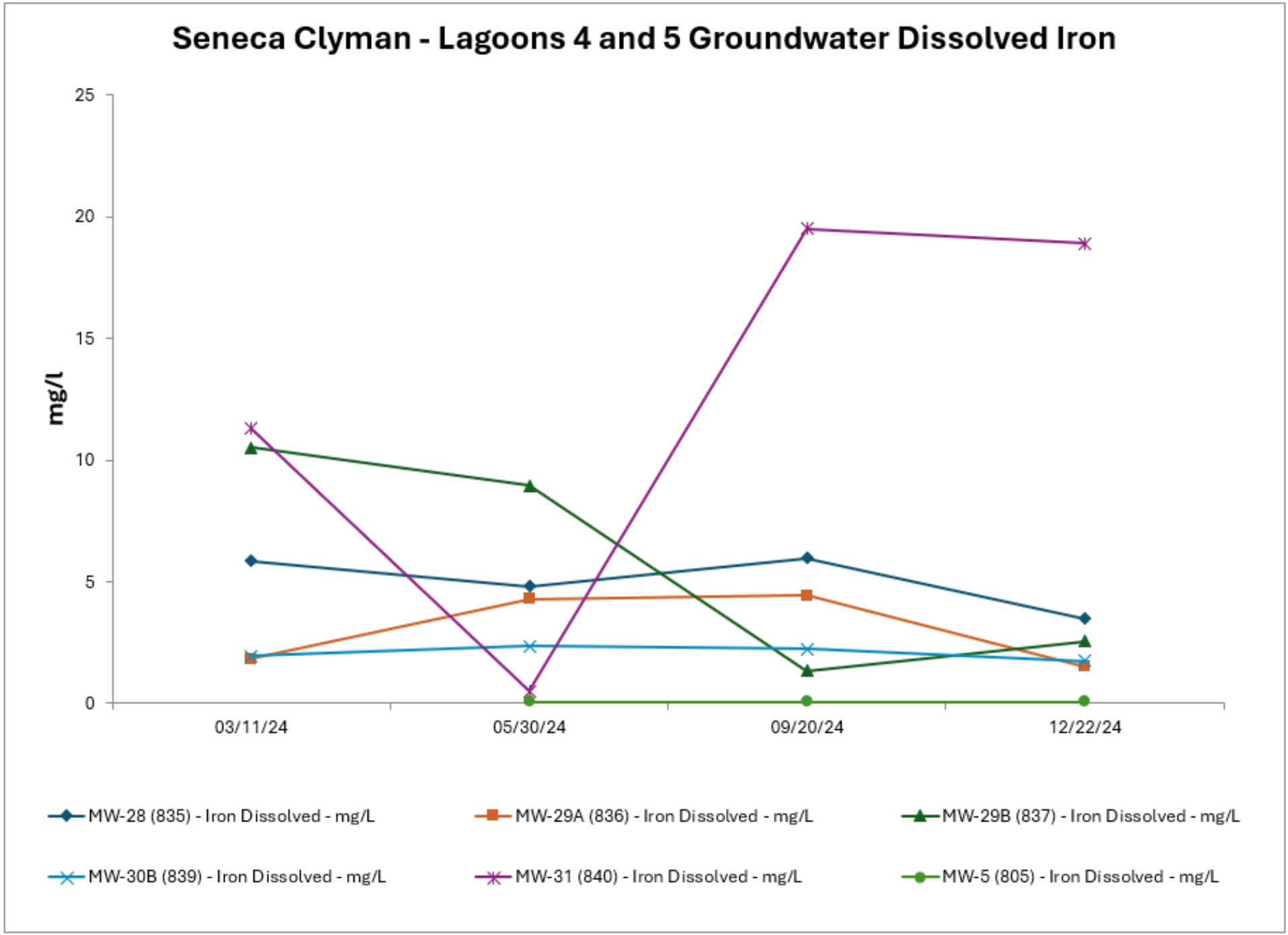


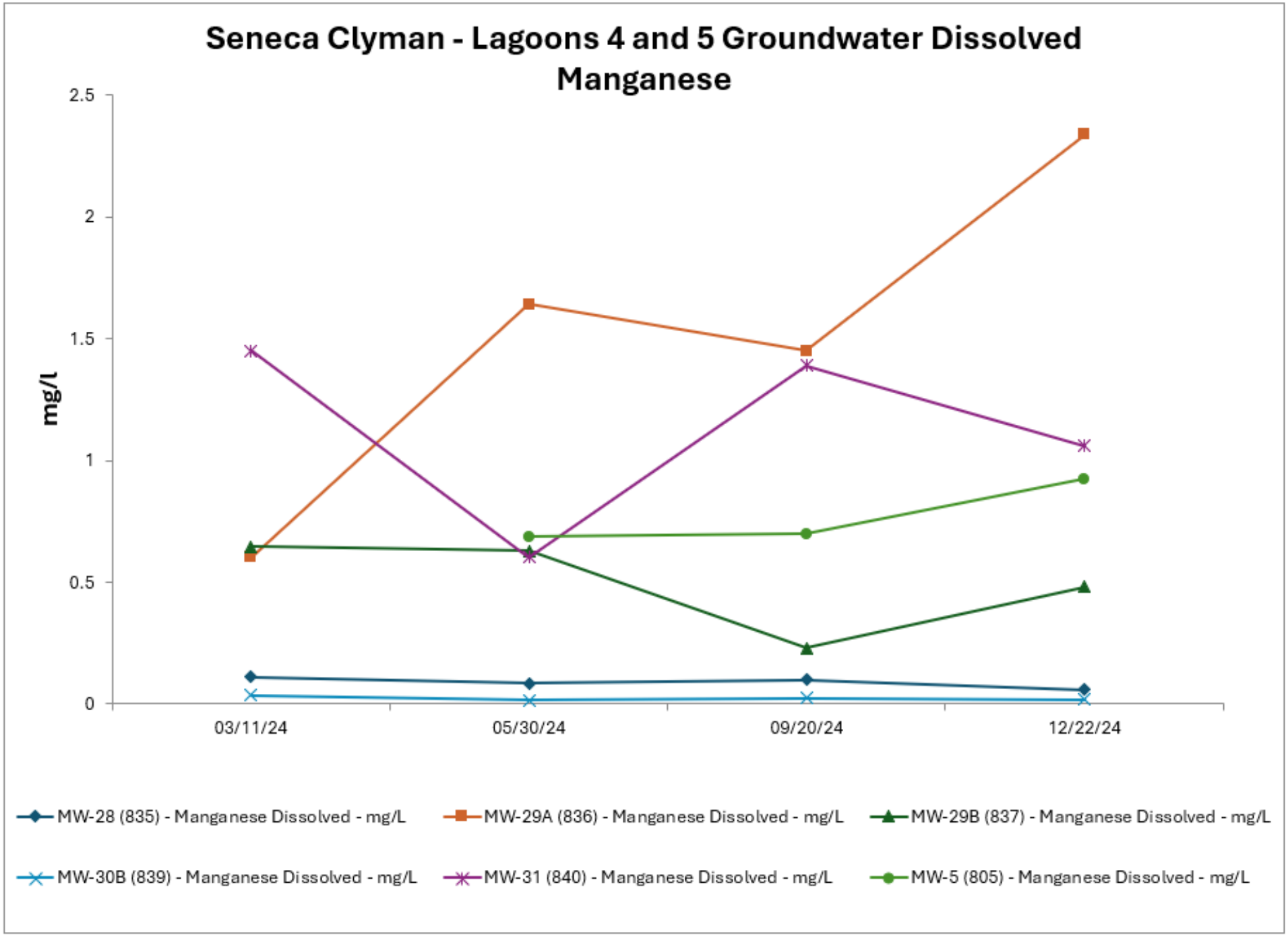

Seneca Clyman - Lagoons 1, 2, and 3 Groundwater Dissolved Phosphorus
mg/l
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
06/18/15
09/23/15
03/28/16
03/31/16
09/14/16
06/26/17
11/01/17
03/08/18
11/01/18
06/06/19
11/20/19
06/23/20
03/11/24
05/30/24
09/09/24
12/22/24
MW-11 (843) - Phosphorus, Total Dissolved - mg/L
MW-21A (841) - Phosphorus, Total Dissolved - mg/L
MW-21B (842) - Phosphorus, Total Dissolved - mg/L
MW-23A (844) - Phosphorus, Total Dissolved - mg/L
MW-23B (845) - Phosphorus, Total Dissolved - mg/L
MW-25A (846) - Phosphorus, Total Dissolved - mg/L
MW-25B (847) - Phosphorus, Total Dissolved - mg/L
MW-27A (848) - Phosphorus, Total Dissolved - mg/L
MW-27B (849) - Phosphorus, Total Dissolved - mg/L


Seneca Clyman - Lagoons 4 and 5 Groundwater Chloride
mg/l
900
800
700
600
500
400
300
200
100
0
03/26/15
06/18/15
09/23/15
12/17/15
12/22/15
03/31/16
05/19/16
09/14/16
11/14/16
03/17/17
06/30/17
08/23/17
11/02/17
11/03/17
02/28/18
03/08/18
05/22/18
07/31/18
08/02/18
11/07/18
03/31/19
05/09/19
06/06/19
08/07/19
12/19/19
02/04/20
05/01/20
07/23/20
11/13/20
03/26/21
04/29/21
08/04/21
10/26/21
03/31/22
06/02/22
08/02/22
12/08/22
03/02/23
05/05/23
08/02/23
12/28/23
03/11/24
05/30/24
09/20/24
12/22/24
03/07/25
05/08/25
MW-28 (835) - Chloride Dissolved - mg/L
MW-29A (836) - Chloride Dissolved - mg/L
MW-29B (837) - Chloride Dissolved - mg/L
MW-30B (839) - Chloride Dissolved - mg/L
MW-31 (840) - Chloride Dissolved - mg/L
MW-5 (805) - Chloride Dissolved - mg/L

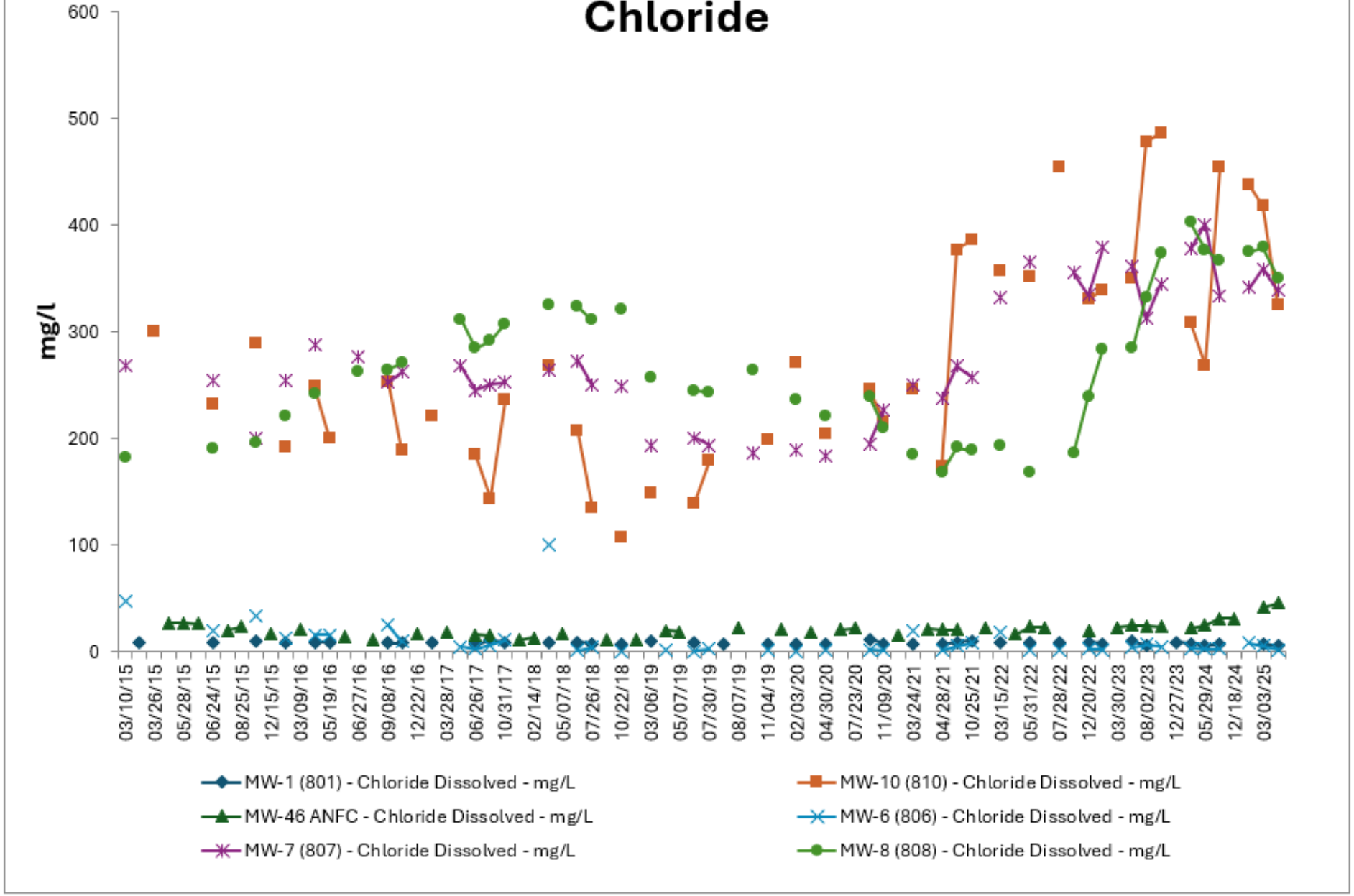

Seneca Clyman - Lagoons 4 and 5 Groundwater Ammonia
mg/l
120
100
80
60
40
20
0
03/26/15
06/18/15
09/23/15
12/17/15
12/22/15
03/31/16
05/19/16
09/14/16
11/14/16
03/17/17
06/30/17
08/23/17
11/02/17
11/03/17
02/28/18
03/08/18
05/22/18
07/31/18
08/02/18
11/07/18
03/31/19
05/09/19
06/06/19
08/07/19
12/19/19
02/04/20
05/01/20
07/23/20
11/13/20
03/26/21
04/29/21
08/04/21
10/26/21
03/31/22
06/02/22
08/02/22
12/08/22
03/02/23
05/05/23
08/02/23
12/28/23
03/11/24
05/30/24
09/20/24
12/22/24
03/07/25
05/08/25
MW-28 (835) - Nitrogen, Ammonia Dissolved - mg/L
MW-29A (836) - Nitrogen, Ammonia Dissolved - mg/L
MW-29B (837) - Nitrogen, Ammonia Dissolved - mg/L
MW-30B (839) - Nitrogen, Ammonia Dissolved - mg/L
MW-31 (840) - Nitrogen, Ammonia Dissolved - mg/L
MW-5 (805) - Nitrogen, Ammonia Dissolved - mg/L


Seneca Clyman - Lagoons 4 and 5 Groundwater Nitrite+Nitrate
mg/l
70
60
50
40
30
20
10
0
03/26/15
06/18/15
09/23/15
12/17/15
12/22/15
03/31/16
05/19/16
09/14/16
11/14/16
03/17/17
06/30/17
08/23/17
11/02/17
11/03/17
02/28/18
03/08/18
05/22/18
07/31/18
08/02/18
11/07/18
03/31/19
05/09/19
06/06/19
08/07/19
12/19/19
02/04/20
05/01/20
07/23/20
11/13/20
03/26/21
04/29/21
08/04/21
10/26/21
03/31/22
06/02/22
08/02/22
12/08/22
03/02/23
05/05/23
08/02/23
12/28/23
03/11/24
05/30/24
09/20/24
12/22/24
03/07/25
05/08/25
MW-28 (835) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L
MW-29A (836) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L
MW-29B (837) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L
MW-30B (839) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L
MW-31 (840) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L
MW-5 (805) - Nitrogen, Nitrite + Nitrate (as N) Dissolved - mg/L

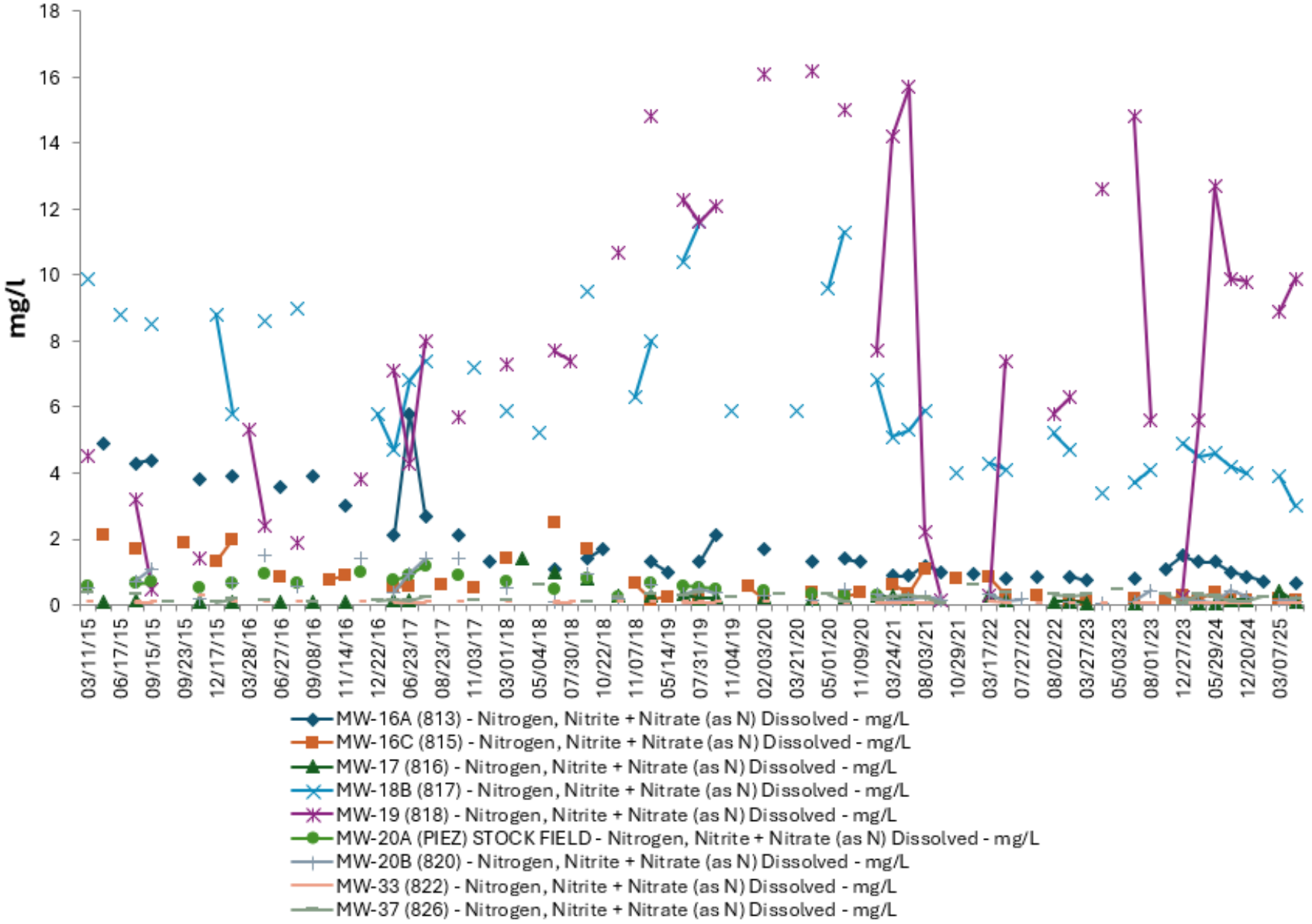

Seneca Clyman - Lagoons 4 and 5 Groundwater Dissolved Iron
mg/l
25
20
15
10
5
0
03/11/24
05/30/24
09/20/24
12/22/24
MW-28 (835) - Iron Dissolved - mg/L
MW-29A (836) - Iron Dissolved - mg/L
MW-29B (837) - Iron Dissolved - mg/L
MW-30B (839) - Iron Dissolved - mg/L
MW-31 (840) - Iron Dissolved - mg/L
MW-5 (805) - Iron Dissolved - mg/L


Seneca Clyman - Lagoons 4 and 5 Groundwater Dissolved Manganese
mg/l
2.5
2
1.5
1
0.5
0
03/11/24
05/30/24
09/20/24
12/22/24
MW-28 (835) - Manganese Dissolved - mg/L
MW-29A (836) - Manganese Dissolved - mg/L
MW-29B (837) - Manganese Dissolved - mg/L
MW-30B (839) - Manganese Dissolved - mg/L
MW-31 (840) - Manganese Dissolved - mg/L
MW-5 (805) - Manganese Dissolved - mg/L

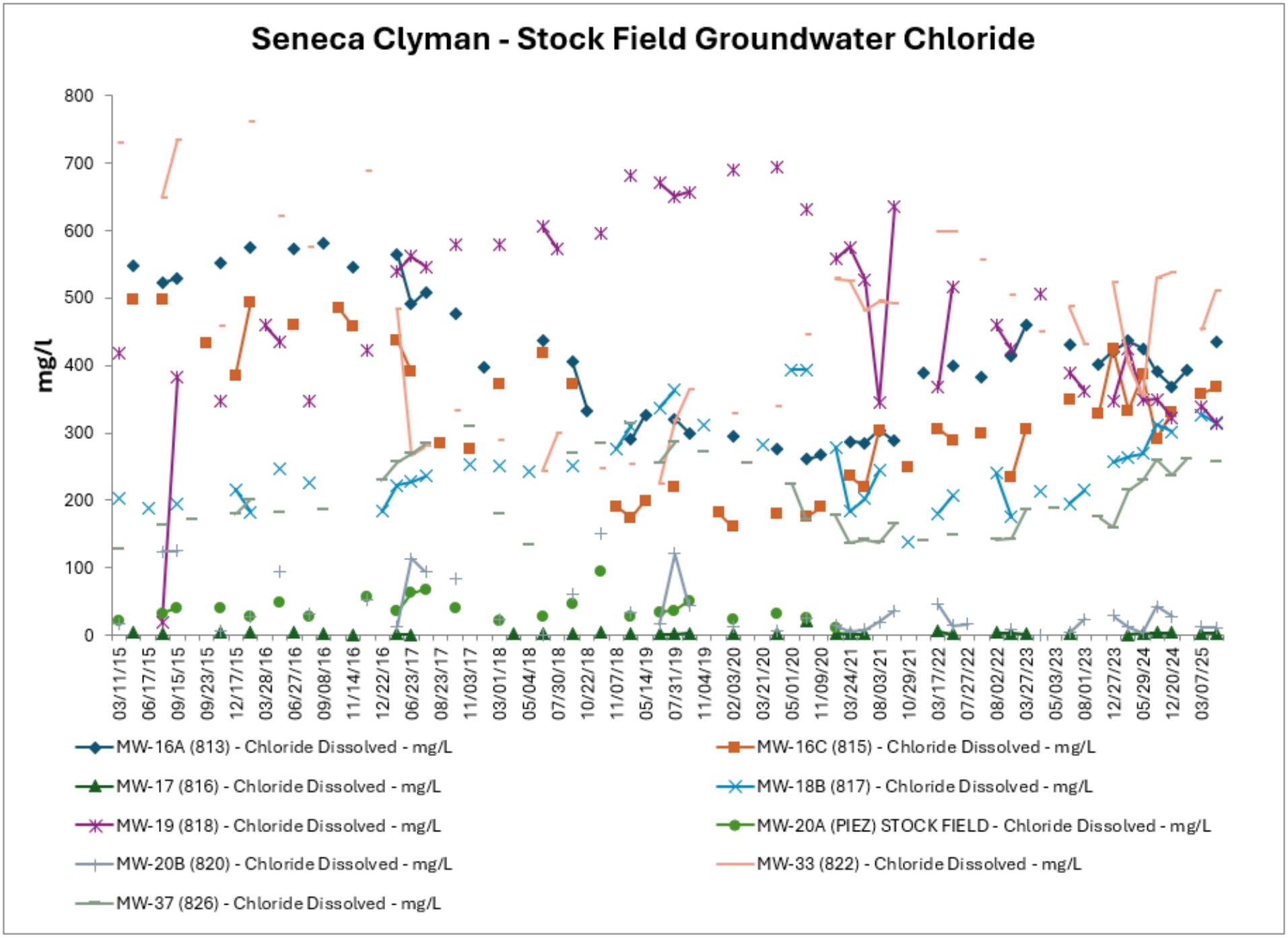
Seneca Clyman - ANFK Field Groundwater Chloride



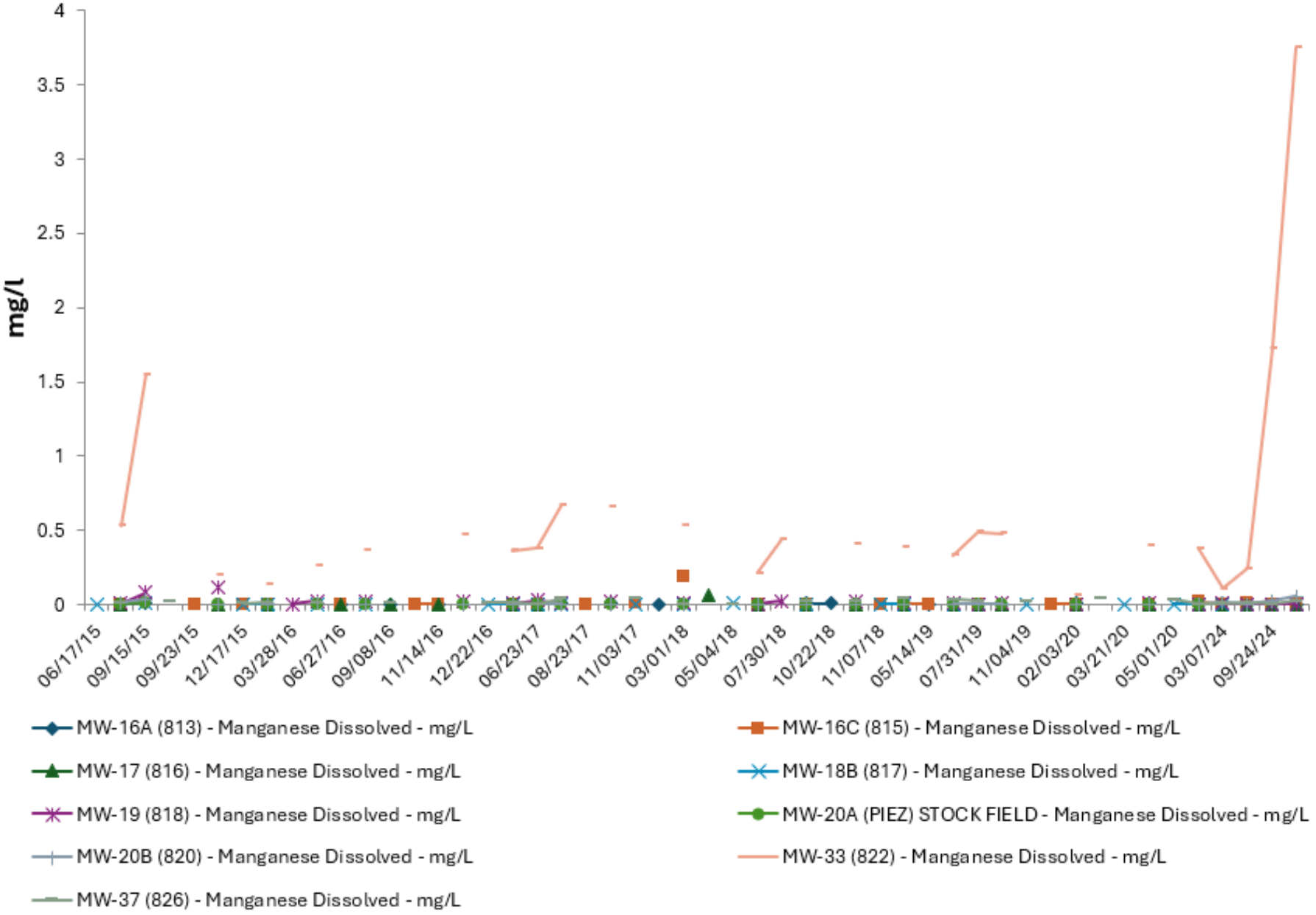
Seneca Clyman - Stock Field Groundwater Nitrite+nitrate



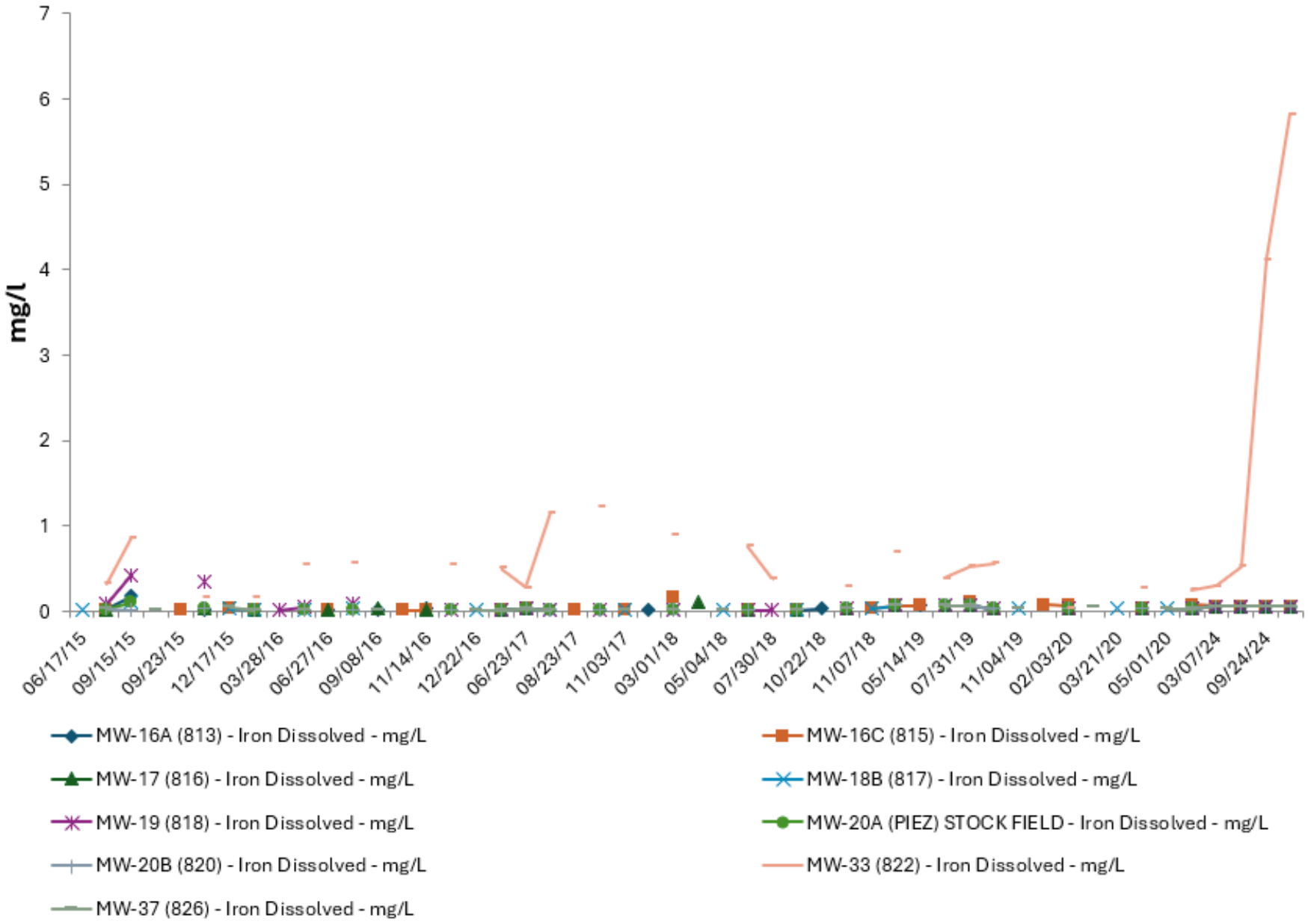
Seneca Clyman - Stock Field Groundwater Chloride



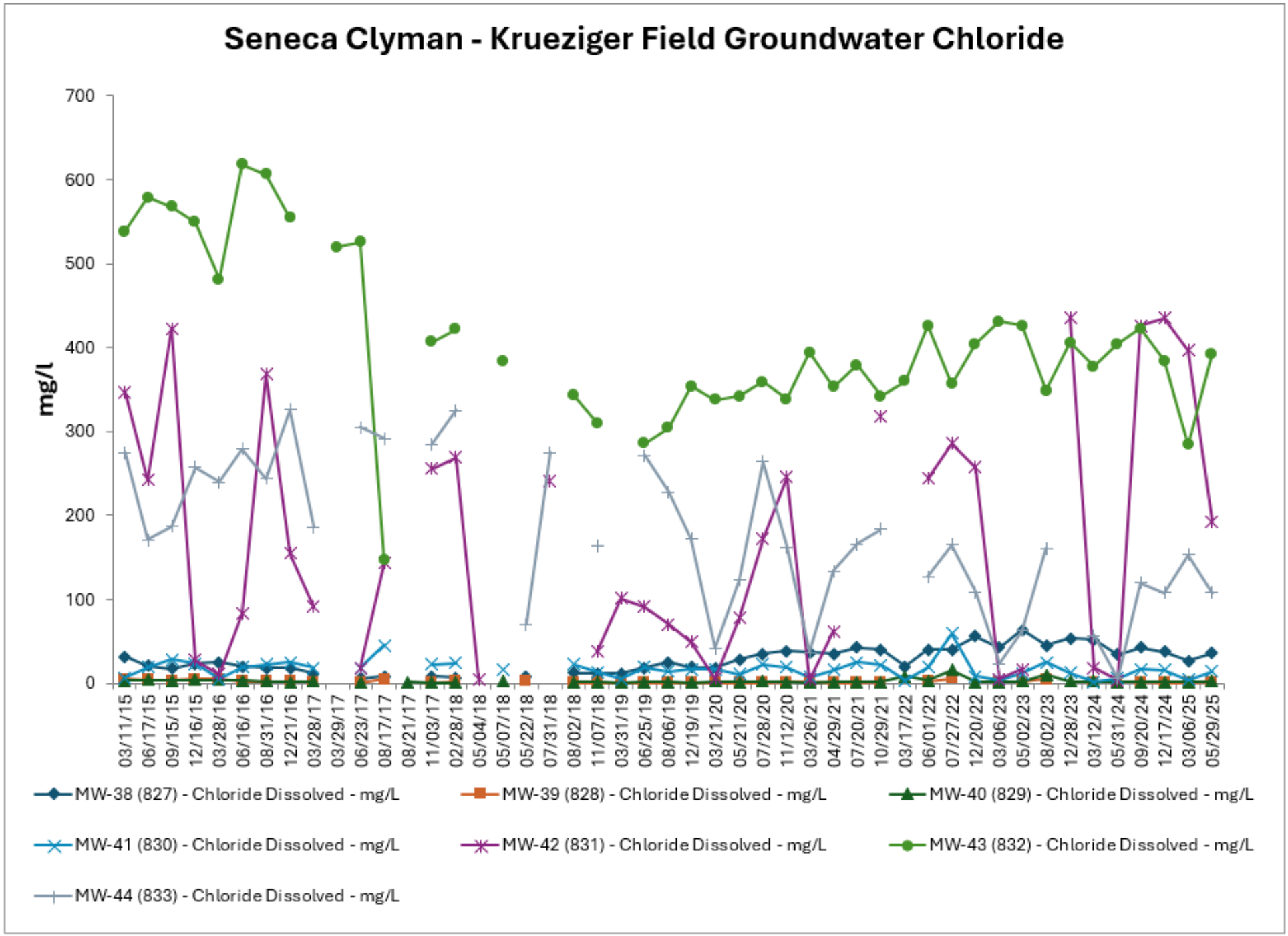
Seneca Clyman - Stock Field Groundwater Dissolved Manganese



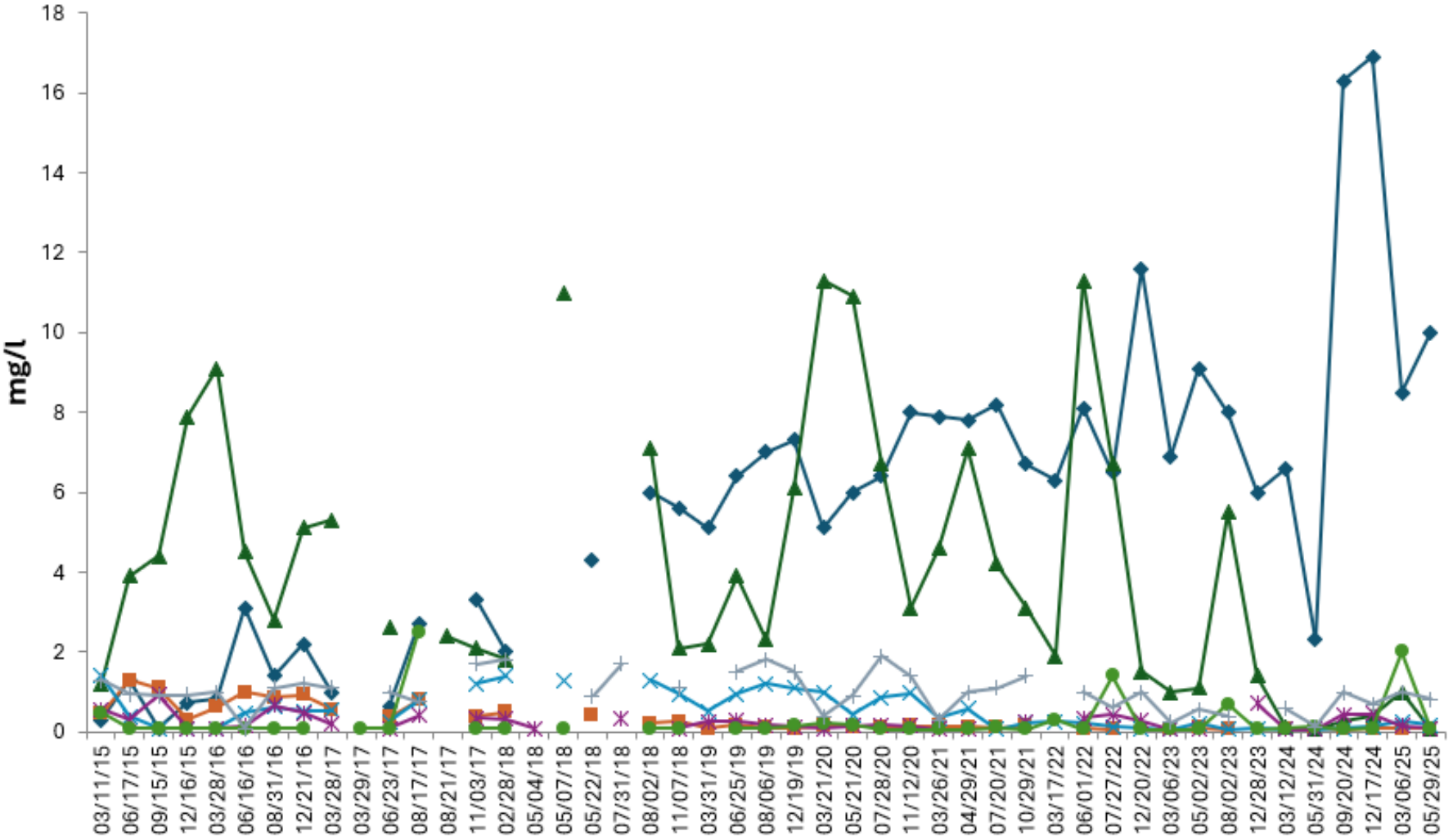
Seneca Clyman - Stock Field Groundwater Dissolved Iron



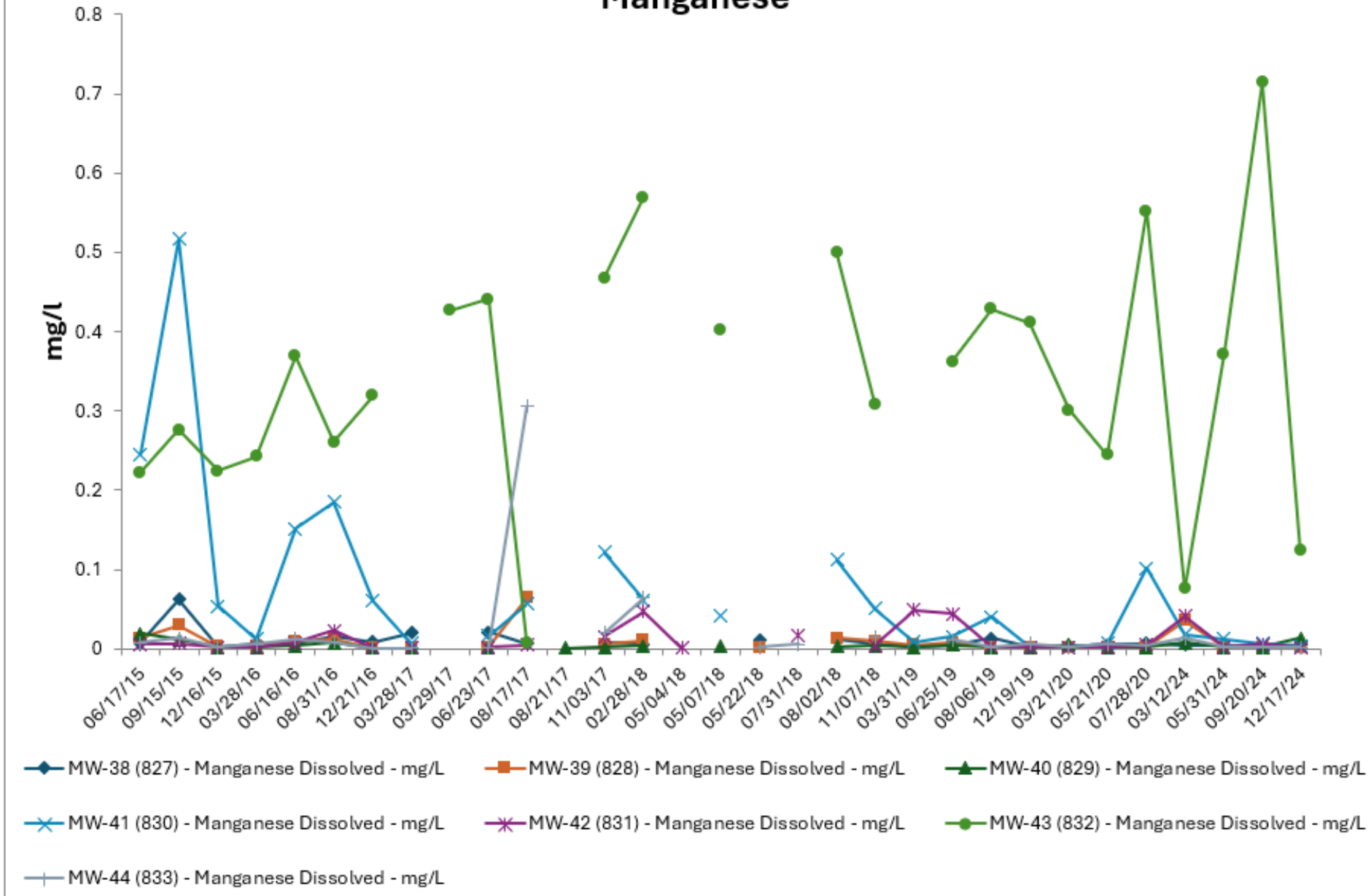
Seneca Clyman - Krueziger Field Groundwater Chloride

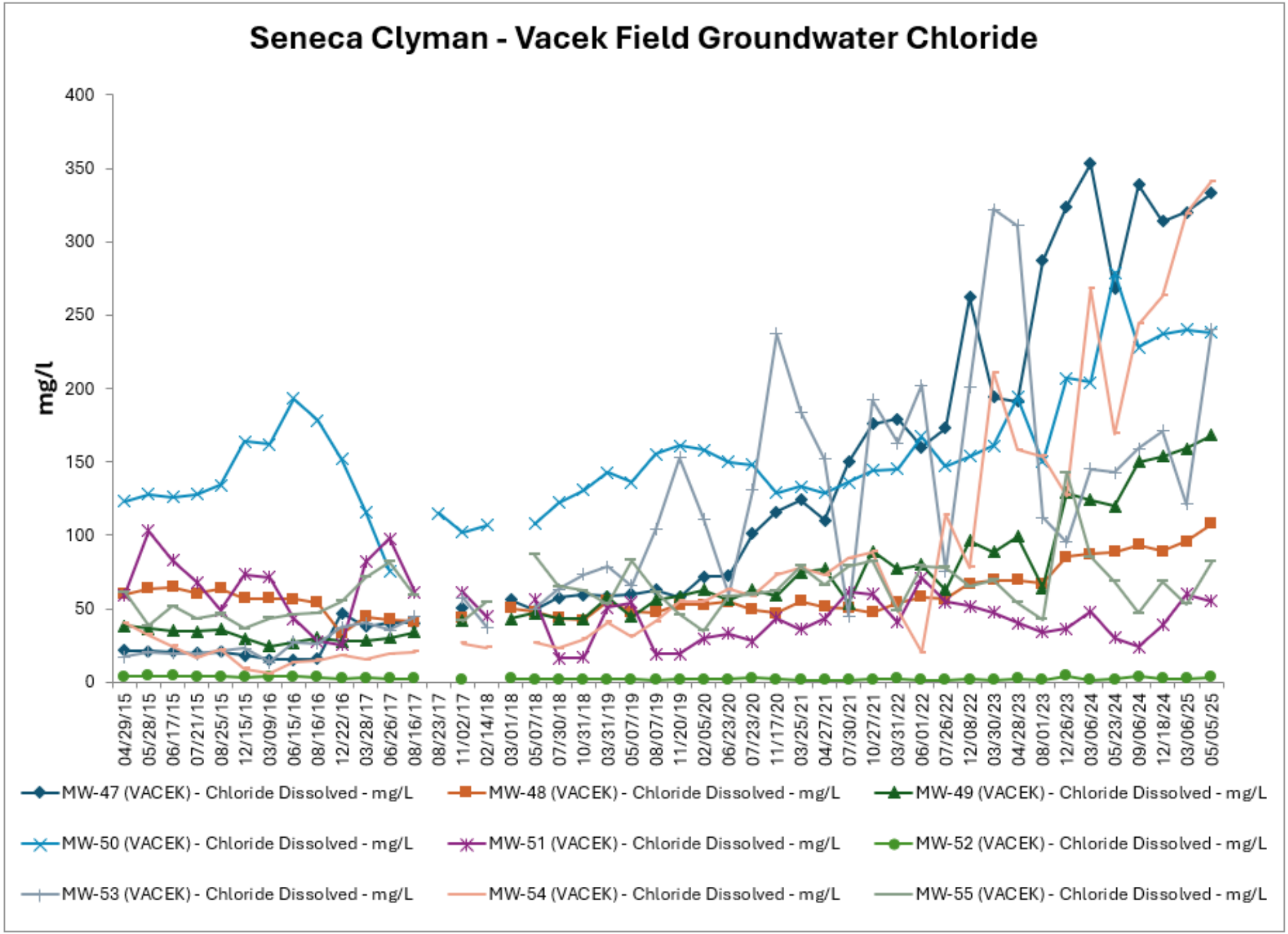


Seneca Clyman - Krueziger Field Groundwater Nitrite+nitrate

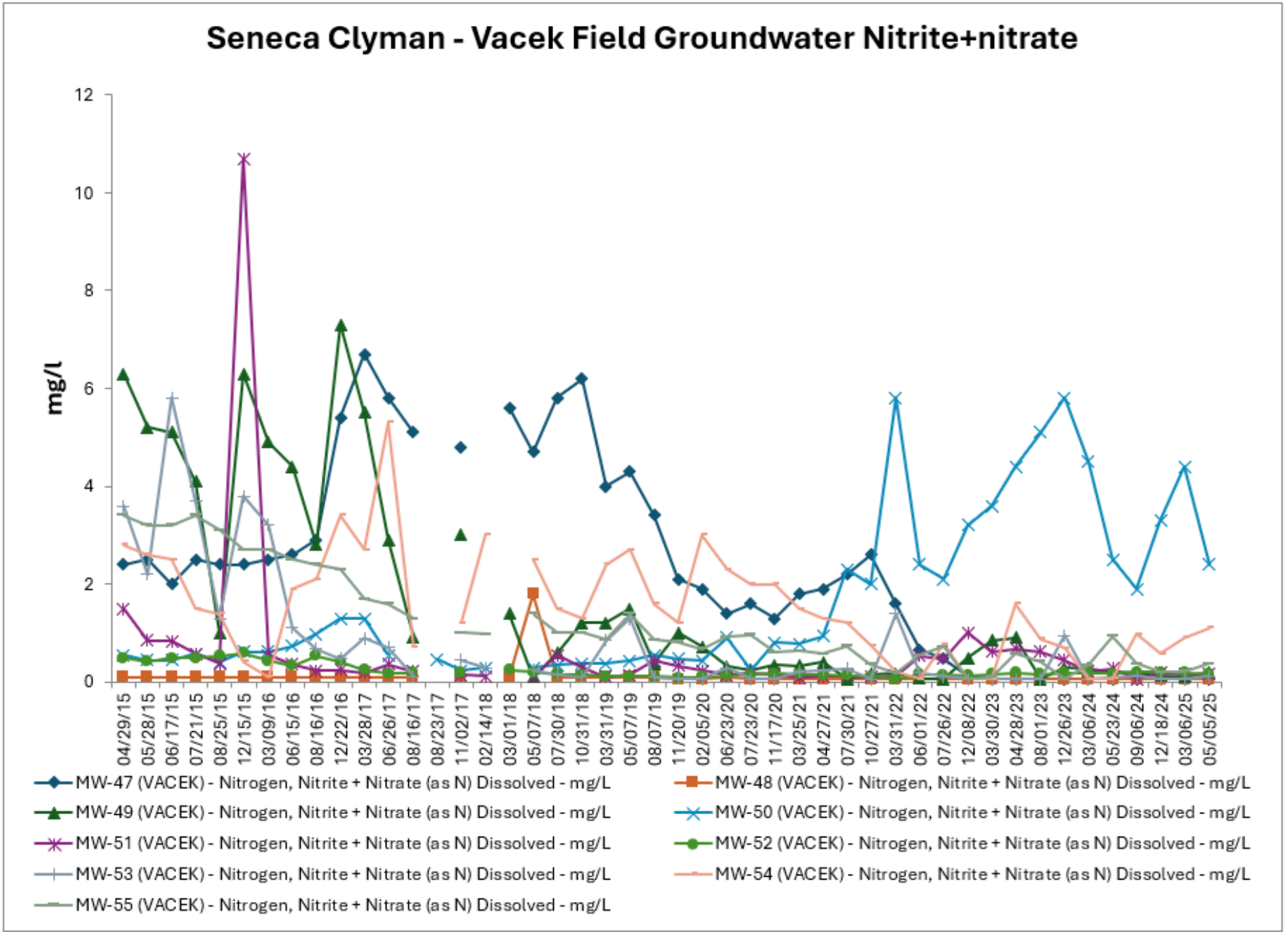


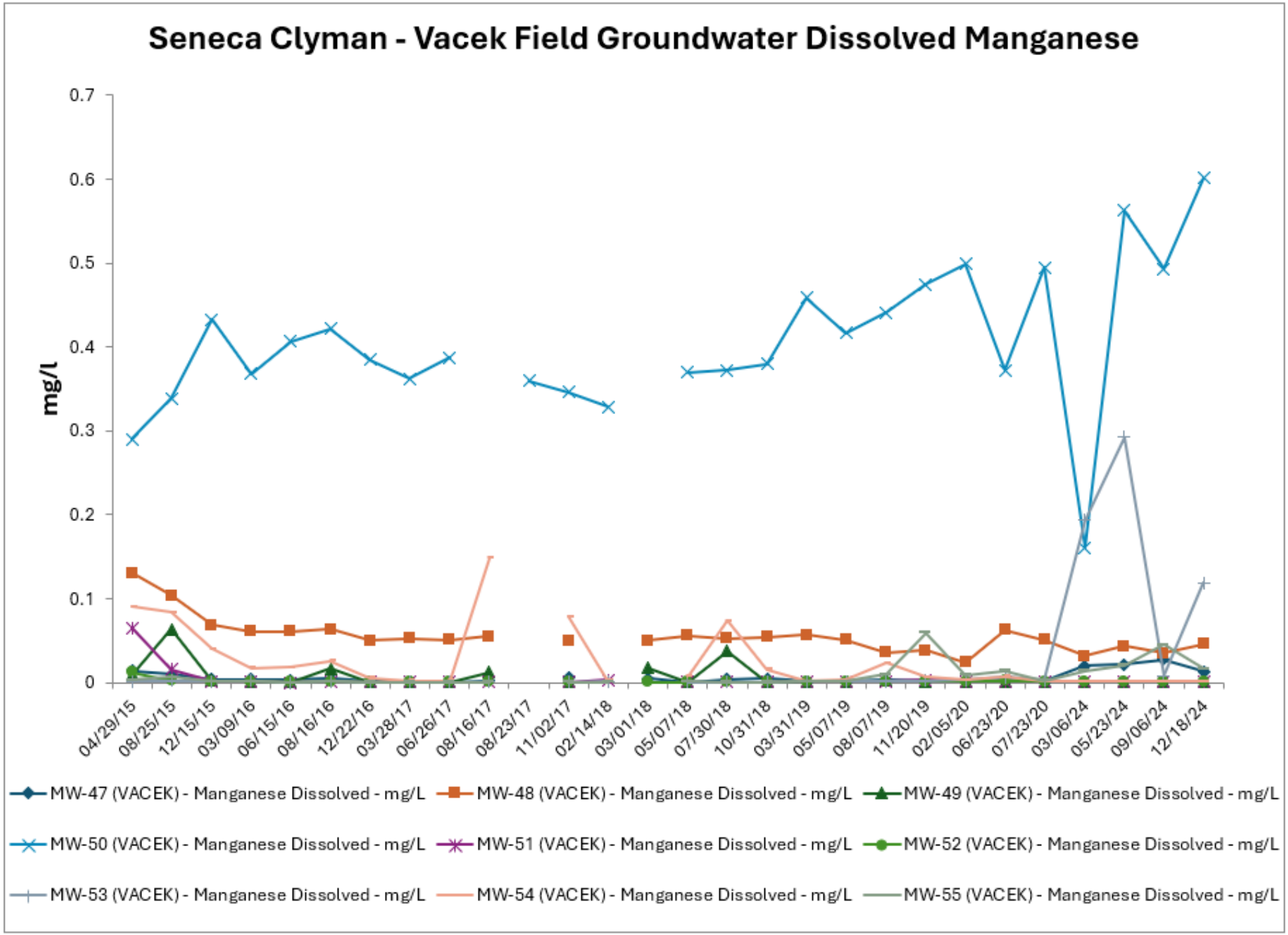
Seneca Clyman - Krueziger Field Groundwater Dissolved Manganese



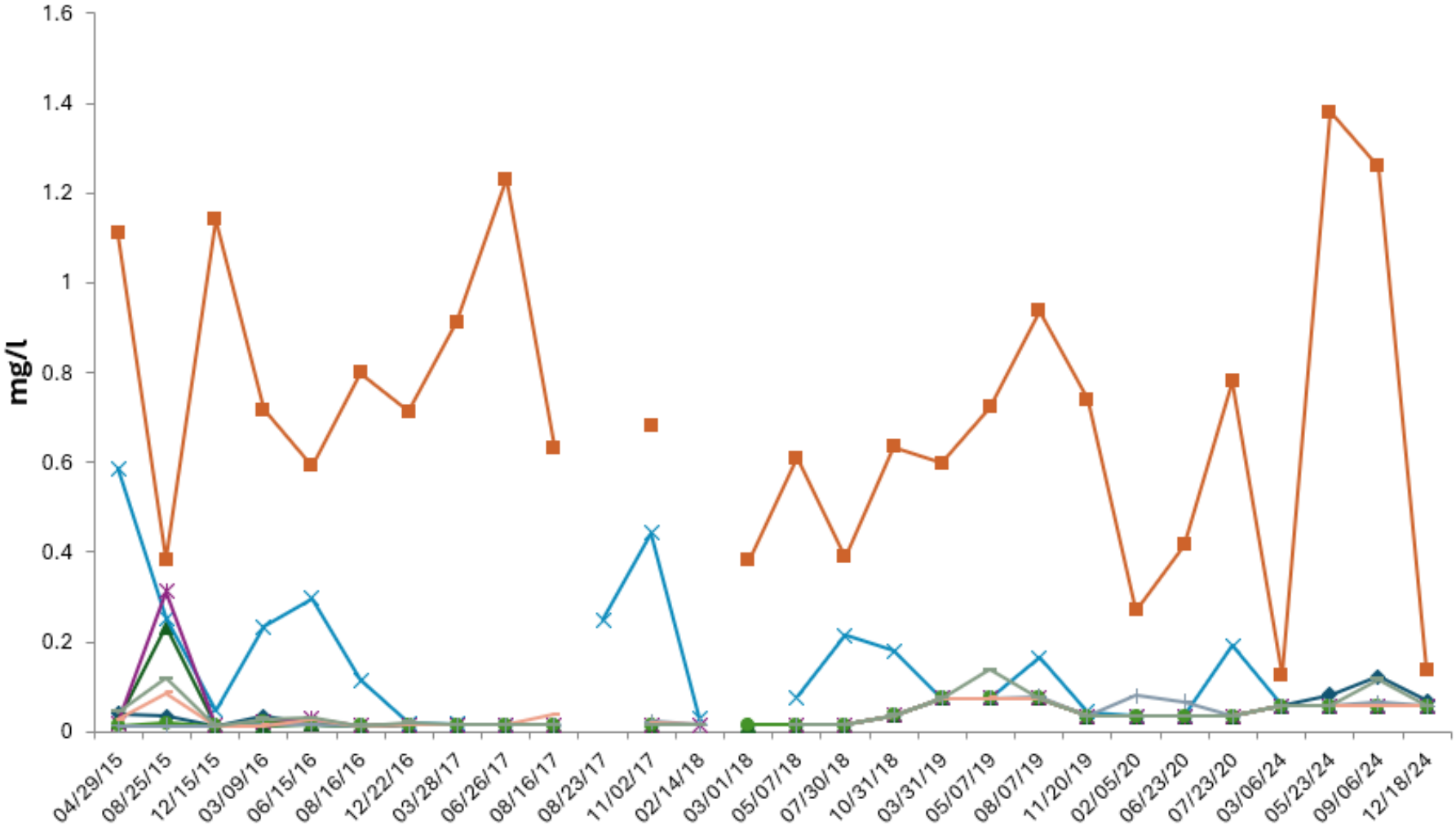

Seneca Clyman - Vacek Field Groundwater Chloride
mg/l
400
350
300
250
200
150
100
50
0
04/29/15
05/28/15
06/17/15
07/21/15
08/25/15
12/15/15
03/09/16
06/15/16
08/16/16
12/22/16
03/28/17
06/26/17
08/16/17
08/23/17
11/02/17
02/14/18
03/01/18
05/07/18
07/30/18
10/31/18
03/31/19
05/07/19
08/07/19
11/20/19
02/05/20
06/23/20
07/23/20
11/17/20
03/25/21
04/27/21
07/30/21
10/27/21
03/31/22
06/01/22
07/26/22
12/08/22
03/30/23
04/28/23
08/01/23
12/26/23
03/06/24
05/23/24
09/06/24
12/18/24
03/06/25
05/05/25
MW-47 (VACEK) - Chloride Dissolved - mg/L
MW-48 (VACEK) - Chloride Dissolved - mg/L
MW-49 (VACEK) - Chloride Dissolved - mg/L
MW-50 (VACEK) - Chloride Dissolved - mg/L
MW-51 (VACEK) - Chloride Dissolved - mg/L
MW-52 (VACEK) - Chloride Dissolved - mg/L
MW-53 (VACEK) - Chloride Dissolved - mg/L
MW-54 (VACEK) - Chloride Dissolved - mg/L
MW-55 (VACEK) - Chloride Dissolved - mg/L

Seneca Clyman - Vacek Field Groundwater Nitrite+nitrate




Seneca Clyman - Vacek Field Groundwater Dissolved Manganese
mg/l
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
04/29/15
08/25/15
12/15/15
03/09/16
06/15/16
08/16/16
12/22/16
03/28/17
06/26/17
08/16/17
08/23/17
11/02/17
02/14/18
03/01/18
05/07/18
07/30/18
10/31/18
03/31/19
05/07/19
08/07/19
11/20/19
02/05/20
06/23/20
07/23/20
03/06/24
05/23/24
09/06/24
12/18/24
MW-47 (VACEK) - Manganese Dissolved - mg/L
MW-48 (VACEK) - Manganese Dissolved - mg/L
MW-49 (VACEK) - Manganese Dissolved - mg/L
MW-50 (VACEK) - Manganese Dissolved - mg/L
MW-51 (VACEK) - Manganese Dissolved - mg/L
MW-52 (VACEK) - Manganese Dissolved - mg/L
MW-53 (VACEK) - Manganese Dissolved - mg/L
MW-54 (VACEK) - Manganese Dissolved - mg/L
MW-55 (VACEK) - Manganese Dissolved - mg/L

Seneca Clyman - Vacek Field Groundwater Dissolved Iron



State of Wisconsin
Department of Natural Resources
Bureau of Water Quality
Permits Section - WQ/3

Multi-Discharger Variance Application Evaluation Checklist

Form 3200-145 (R 5/16)

Notice: This checklist is meant to be a tool to help Department of Natural Resources (DNR) staff review municipal and industrial multi-discharger variance (MDV) applications (Forms 3200-149 and 3200-150). Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.).

Permittee Name

Seneca Foods Corporation - Clyman

WPDES Permit Number	County
WI- 0 | 0 | 0 | 2 | 1 | 6 | 0	Dodge

1. Did the point source apply for the MDV at the appropriate time?	(•) Yes ( ) No. *STOP- facility not eligible at this time.*	*See Questions 1-3.*
2. This operation is (check one):	( ) New or relocated outfall. *STOP- facility not eligible.* (•) Existing outfall	*See Questions 5-6.*
3. Is the point source is located in an MDV eligible area?	(•) Yes ( ) No. *STOP- facility not eligible.*	*Apply County information to Appendix H. Additional information provided in Q7 on municipal form & Q7-8 on industrial form.*
4. The secondary indicator score for the county (counties) the discharge is located is:	7	*See Appendices A-F. If the score is less than 2, stop; the facility is not eligible. See Q23 on municipal form & Q28 on industrial form.*
5. Is a major facility upgrade required to comply with phosphorus limits?	(•) Yes ( ) No. *STOP- facility not eligible.*	*See Q8 on municipal form/Q9 on industrial form.*
6. List the months where phosphorus limits cannot be achieved during the permit term:	☒ All ☒ Jan ☒ Apr ☒ Jul ☒ Oct ☒ Feb ☒ May ☒ Aug ☒ Nov ☒ Mar ☒ Jun ☒ Sep ☒ Dec	*Consider checking with limit calculator. If this does not match information in application, the application should be updated prior to approval.*

7. What is the current effluent level achievable?

Outfall Number(s)	Conc. (mg/L)	Method for calculation:	Does this concur with application?	
001	0.99	( ) 30-day P99 (•) Other, specify: Mean from 2023 - 2025 data	( ) Yes (•) No, why not: Application used larger data range	*DNR staff should verify the effluent concentration value(s) provided. See Q11 on municipal form & Q12 on industrial form.*

8. What is the appropriate interim limitation(s) for the permit term?

0.8 mg/L as a monthly average pursuant to s. 283.16(6)(a), Wis. Stats.
Target value = 0.2 mg/L

Provide Rationale:

The facility has taken steps to reduce phosphorus concentrations in effluent. The level currently achievable is 1.0 mg/L. The permittee may need to install chemical treatment to achieve the 0.8 mg/L interim limit.

Note: See description in Section 2.02 of the MDV implementation guidance. Interim limitations should reflect the "highest attainable condition" for the permittee in question pursuant to s. 283.16(7), Wis. Stat.

9. *For Industries Only*- Where does the phosphorus in the effluent come from? (check all that apply)	☐ Process ☐ Additive Usage ☒ Water supply *Can intake credits be given or can the facility use an alternative water supply?* ◉ Not feasible ○ Possibly, but further analysis needed ○ Not evaluated at this time	*See Q14-15 & 19 on industrial form. If the answer is "possibly" or "not evaluated", the schedule section of the MDV permit should contain a requirement to perform this analysis.*
10. Has this facility optimized?	◉ Yes ○ In progress ○ No	*See Q14 on municipal form & Q16 & 20 on industrial form. Facility must optimize and operate at an optimize treatment level (s. 283.16(6)(a), Wis. Stat.)If no will need compliance schedule.*
11. Has a facility plan/compliance alternative plan been completed for the facility?	◉ Yes ○ In progress ○ No	*See Q15 on municipal form & Q17 on industrial form.*
12. What is the projected cost for complying with phosphorus? Source:	$ 2,119,000.00 Table 2-4 Summarized Processes Required for Phosphorus Removal in Lagoon Systems	*Facility must submit site-specific compliance costs. If cost projections are used from EIA, the permittee must certify that these costs are reasonable for the facility in question. See "projected compliance costs" in Section 2.02 of the MDV Implementation Guidance for details.*

Comments on planning efforts:

Seneca evaluated compliance options under a schedule in the current permit. They filed a final compliance alternatives plan dated 9/30/24. The plan ultimately arrived at the need for tertiary filtration if no water quality trade could be established. Following review of the MDV application, DNR filed a request for more information dated 5/2/2025. Seneca provided a response containing additional information on 6/18/2025. Seneca sought a water quality trade via the statewide clearinghouse during the latter half of 2025. As of early 2026, no water quality trades have been located.

13. Are adaptive management and water quality trading viable?	○ Yes ◉ Perhaps. Additional analysis required. ○ No	*See Q18-21 on municipal form & Q22-25 on industrial form. If additional analyses required, the applicant may need to complete this analysis during the MDV permit term.*
14. Has the point source met the appropriate primary screener?	◉ Yes ○ No. *STOP- facility not eligible.*	*See Q4 of this form in addition to the "eligibility" guidance in Section 2.01 of the MDV Implementation Guidance.*

Comments on economic demonstration:

The facility is applying for MDV coverage under the non contact cooling water category. Dodge County has a secondary indicator score of 7 for the NCCW category. Dodge County is not within the top 75% of counties incurring costs within the NCCW category. The other primary screener is 75th percentile compliance costs. The estimate of $2,119,000 places Seneca within the top 75% of dischargers incurring costs. Therefore, one primary screener is met. In Dodge County with a secondary score of 7, only one primary screener needs to be met for MDV eligibility.

15. What watershed option was selected?

- (•) County project option. *Complete Section 5.*
- ( ) Binding, written agreement with the DNR to construct a project or implement a watershed plan. *Complete Section 4.*
- ( ) Binding, written agreement with another person that is approved by the DNR to construct a project or implement a watershed plan. *Complete Section 4.*

Section 4. Watershed Plan Review

16. MDV Plan Number: *Note: This is for tracking purposes. Contact Statewide Phosphorus Implementation Coordinator for the plan number.*	_____
17. Did the point source complete Form 3200-148?	( ) Yes ( ) No
18. Is the project area in the same HUC 8 watershed as the point of discharge?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*
19. What is the annual offset required? *See Section 2.03 of the MDV implementation guidance. If this value is different from the offset target provided in form 3200-148, the watershed plan should be amended.*	_____
20. Does the plan ensure that the annual load is offset annually?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*

21. Are projects occurring on land owned/operated by a CAFO or within a permitted MS4 boundary?

- ( ) Yes. *Work with appropriate DNR staff to ensure projects are not working towards other permit compliance.*
- ( ) No.

22. Are other funding sources being used as part of the MDV watershed project?

- ( ) Yes. *Work with appropriate DNR staff to ensure that funding sources can be appropriately used in the plan area.*
- ( ) No.

23. Do you have any concerns about the watershed project? *Note: Coordinate with other DNR staff as appropriate.*	( ) Yes. *STOP- Watershed plan must be updated.* ( ) No.

Comments:

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is: $ 68.40

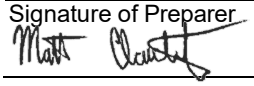
See "Payment Calculator" document at \\central\water\WQWT_PROJECTS\WY_CW_Phosphorus\MDV.

Section 6. Determination

Based on the available information, the MDV application is:

- (•) Approved
- ( ) Request for more information
- ( ) Denied

Additional Justification (if needed):

Certification		
Preparer Name	Title	
Matt Claucherty	Water Resources Management Specialist	
Signature of Preparer 		Date 02/23/2026

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

2/23/2026

Juan Muniz
640 Caughlin Rd
Clyman, WI 53016

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: Clyman Creek in Dodge County
Permittee: Seneca Foods Corporation - Clyman, WPDES WI-0002160

Dear Mr. Muniz:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for Seneca Foods Clyman in an application dated 3/28/2025. Wisconsin's multi-discharger phosphorus variance was approved by EPA on September 3, 2025. Coverage under the multi-discharger phosphorus variance may only be granted to an existing source that demonstrates a major facility upgrade is necessary to achieve phosphorus compliance and the upgrade will result in economic hardship as defined in the federally approved variance. The water quality criterion for which you are seeking a variance is contained in s. NR 102.06, Wis. Adm. Code.

After review of the application materials, the Department is tentatively approving coverage under the phosphorus multi discharger variance because the applicant has demonstrated that a major facility upgrade would be required to comply with the phosphorus water quality based effluent limitation, and the applicant meets the economic hardship eligibility criteria delineated in the federally approved variance. In addition, the permitted facility has agreed to comply with the interim limitations that will be included in the WPDES permit, and has agreed to reduce the amount of phosphorus entering surface waters by making payments to the counties pursuant to s. 283.16(6)(b)1., Wis. Stats.

Public comment on this decision will be solicited at the time of permit reissuance after which a final decision will be made. The Department appreciates your attention and interest in Wisconsin's multi-discharger phosphorus variance. Should you have further questions regarding this matter, please contact me at (608) 400 – 5596 or by email at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Claucherty, MDV Point Source Coordinator
Bureau of Water Quality

e-cc Laura Mushinski, Seneca Foods
BetsyJo Howe, WDNR
Jen Jerich, WDNR
Zach Watson, WDNR
Michelle Woods, EPA Region 5
Tim Elkins, EPA Region 5