

Permit Fact Sheet

General Information

Permit Number	WI-0060313-12-0
Permittee Name and Address	Lake Wapogasset Bear Trap Lake S. D. 1236 72nd Ave, Amery, WI 54001
Permitted Facility Name and Address	Lake Wapogasset Bear Trap Lake S D 1236 72nd Ave, Amery, WI 54001
Permit Term	October 01, 2025 to September 30, 2030
Discharge Location	1236 72nd Ave, Amery, WI 54001 NE¼ NW¼ of Section 36; T33N-R17W, Town of Lincoln, Polk County
Receiving Water	The groundwater of the Balsam Branch Watershed in the St. Croix River Drainage Basin in Polk County
Discharge Type	Existing continuous discharge
Annual Average Design Flow (MGD)	0.15 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Lake Wapogasset Bear Trap Lake Sanitary District owns and operates a domestic wastewater treatment system. The plant designed to treat 150,000 gallons per day currently treats an average of 47,000 gallons per day (2020-2024 data). The treatment system consists of two primary aerated cells operated in series (cells #1 and #2), a secondary polishing cell (cell #3), and two seepage cells. Historically there has never been a discharge to the seepage cells. The leaking of the three bentonite lined treatment lagoons has worked as an equivalent to absorption ponds, negating the need to transfer the waste to the two seepage cells. The lagoons cover approximately seven acres and if evenly distributed the loading rate is approximately 2,500 gallons/acre/day. There are 6 groundwater monitoring wells around the perimeter of the facility to assess any groundwater impacts of the discharge.

Substantial Compliance Determination

There have been a few violations of groundwater limits in non-point of standard wells, some missed samples, and some late reporting. However, in response to this inspection report, the department is working with the facility to take the necessary steps to correct the violations. The facility has already taken steps to correct their leakage issue, which should improve operation of the facility significantly.

After a review of all Discharge Monitoring Reports, Groundwater Monitoring Reports, CMARs, and a site visit on 8/27/2024, by Carson Johnson, WDNR, Lake Wapogasset Bear Trap Lake Sanitary District has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	INFLUENT An average of 0.047 MGD (2020-2024 data)	Representative samples of the influent wastewater shall be taken at lift station number one.
001	TO SEEPAGE There has been no discharge to the seepage cells.	Representative samples of the effluent wastewater shall be taken at the point of discharge from the secondary cell to the seepage cells.
002	SLUDGE The facility has not removed sludge	Representative samples of the aerated lagoon sludge shall be taken by compositing several samples across the bottom of each lagoon.

Permit Requirements

Sample Point Designation For Groundwater Monitoring Systems	
Sample Pt Number (Well Name)	Comments
801	Upgradient well used to measure background quality and to evaluate and calculate PALs located east of seepage cell 2.
802	Down gradient non-point of standard well located west of the seepage cells.
803	Side gradient non-point of standard well located south of lagoon 1.
804	Down gradient non-point of standard well located near the southwest corner of lagoon 3.
805	Down gradient non-point of standard well located west of lagoon 3.
806	Upgradient well used to measure background quality and to evaluate and calculate PALs located east of lagoon 1.

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
BOD ₅ , Total		mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic Nitrogen = Total Kjeldahl Nitrogen (mg/L) - Ammonia Nitrogen (mg/L)
Nitrogen, Ammonia (NH ₃ -N) Total		mg/L	Monthly	Grab	
Chloride		mg/L	Quarterly	Grab	

1.1.1 Changes from Previous Permit:

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

1.1.2 Explanation of Limits and Monitoring Requirements

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

2 Land Treatment – Monitoring and Limitations

2.1 Sample Point Number: 001- Effluent to Seepage Cell

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
BOD ₅ , Total	Monthly Avg	50 mg/L	Weekly	Grab	
Suspended Solids, Total		mg/L	Weekly	Grab	
pH Field		su	Weekly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH ₃ -N) Total		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic Nitrogen = Total Kjeldahl Nitrogen (mg/L) - Ammonia Nitrogen (mg/L)
Solids, Total	Monthly Avg	500 mg/L	Monthly	Grab	Limits become effective October 1, 2028. See the

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Dissolved					Facility Upgrade schedule for more information.
Chloride	Monthly Avg	250 mg/L	Monthly	Grab	Limits become effective October 1, 2028. See the Facility Upgrade schedule for more information.
Nitrogen, Total	Monthly Avg	10 mg/L	Monthly	Calculated	Limits become effective October 1, 2028. See the Facility Upgrade schedule for more information. Total Nitrogen - Total Kjeldahl Nitrogen (mg/L) + (Nitrite + Nitrate) Nitrogen (mg/L)
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	

2.1.1 Changes from Previous Permit:

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

- Limits will be added to **total dissolved solids**, **chloride** and **total nitrogen** at the end of the “Facility Upgrade” schedule.
- The parameter **total nitrite + nitrate nitrogen** has been added this permit term.

2.1.2 Explanation of Limits and Monitoring Requirements

All requirements for land treatment of municipal wastewater are determined in accordance with ch. NR 206, Wis. Adm. Code. All categorical limits are based on s. NR 206.08(1) Wis. Adm. Code. More information on the limitations can be found in the “Groundwater Evaluation for Lake Wapogasset Bear Lake S.D., WI-0060313” memo dated April 7, 2025.

Due to significant leakage in the treatment lagoons the seepage cells have not been used. In previous permit issuances the department, in agreement with the facility, did not require action to correct the leakage because down-gradient groundwater quality standards were met. During the past permit term, there were groundwater enforcement standard (ES) exceedances for nitrite + nitrate, chloride and TDS in the downgradient non-point of standard wells. According to s. NR 140.27 Wis. Adm. Code the department can require a response action. The department is requiring the facility to address the leakage in the treatment lagoons through a “Facility Upgrade” schedule herein.

At the end of the schedule limits for **total dissolved solids**, **chloride** and **total nitrogen** will become effective which is consistent with facilities approved or modified post January 1, 1990, per NR 206.05 Wis. Adm. Code.

Total nitrite + nitrate nitrogen has been added this permit term to determine compliance and aid in optimization of the absorption ponds.

Sampling Frequency - The “[Monitoring Frequencies for Individual Wastewater Permits](#)” guidance document (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure

fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Monitoring Well System

Location of Monitoring system: Perimeter of the treatment system

Groundwater Monitoring Well(s) to be Sampled: 801, 802, 803, 804, 805, 806

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: 801, 806

Groundwater Monitoring Well(s) Used for Point of Standards Application: None, but 802, 804 and 805 are considered downgradient and may be used to assess general trends beyond the design management zone/ property boundary.

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Lab	su	7.5	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.3	N/A	Quarterly
Solids, Total Dissolved	mg/L	350	N/A	Quarterly

3.1.1 Changes from Previous Permit:

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

3.1.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code. 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 Lake Wapogasset Bear Lake S.D., WI-0060313” memo dated April 7, 2025.

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
002	B	Liquid	Sludge has not been removed and removal is not anticipated this permit term. If removal is needed see the land application and schedule sections of the permit for more information.			
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? The community water supply is provided by private wells. Radium-226 levels are unknown since private water wells are not required to be tested for radium.						
Is a priority pollutant scan required? No						

4.1 Sample Point Number: 002- Lagoon Sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	
Nitrogen, Ammonia (NH ₃ -N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.1.1 Changes from Previous Permit:

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

- **List 1** (Metals) and **PCB** monitoring is required during the 2027 calendar year.
- Because it’s recommended that **List 2** (Nutrients) are monitored with the List 1 monitoring, they have been added to the table.
- Monitoring the sludge for **PFAS** is required once pursuant to NR 204.06(2)(b)9., Wis. Adm. Code.
- Due to changes within the **land application forms**, the 3400-049 (“Characteristics Report”), 3400-052 (“Other Methods of Disposal”) and 3400-055 (Annual Land Application”) will need to be submitted each year.

4.1.2 Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k).

- **List 2 Nutrient monitoring** – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in 2027. Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Sludge Management Schedule (see schedules for more information).
- **PFAS** - The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” will be followed.

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

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

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

5 Schedules

5.1 Facility Upgrade

Required Action	Due Date
Preliminary Facility Plan: The permittee shall prepare and submit to the Department for approval a facility plan that addresses the leakage in the treatment lagoons by evaluating feasible alternatives to meet the down-gradient groundwater quality standards.	03/31/2026

Plans for the installation of a down-gradient point of standards well should be included as part of any proposed land disposal system. If it is determined that absorption cells are the best option, the plan should include an evaluation of the size, infiltration rate and other factors to ensure the system is adequate to treat anticipated wastewater volumes.	
Plans and Specifications: The permittee shall submit final plans and specification to the Department for approval pursuant to s. 281.41, Stats.	09/30/2026
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2027
Achieve Compliance: Complete construction of wastewater treatment system upgrades and comply with down-gradient groundwater quality standards.	09/30/2028

5.1.1 Explanation of Schedule

Facility Upgrade – Due to significant leakage in the treatment lagoons the seepage cells have were not used. In previous permit issuances the department, in agreement with the facility, did not require action to correct the leakage because down-gradient groundwater quality standards were met. During the past permit term, there were groundwater enforcement standard (ES) exceedances for nitrite + nitrate, chloride and TDS in the downgradient non-point of standard wells. According to s. NR 140.27 Wis. Adm. Code the department can require a response action. The department is requiring the facility to address the leakage in the treatment lagoons.

5.2 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan Submittal: In conjunction with the facility upgrade. Submit a management plan that will optimize the upgraded land treatment system performance and demonstrate compliance with ch. NR 206, Wis. Adm. Code. The land treatment system shall be operated in accordance with the approved management plan once the upgrade is complete.	06/30/2026

5.2.1 Explanation of Schedule

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

5.3 Sludge Management Plan

Required Action	Due Date
Submit a Sludge Management Plan: The permittee shall submit a management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204 Wis. Adm. Code and at minimum address 1) How and where is sludge sampled; 2) Available sludge storage details and location(s); 3)How will the sludge be removed with details on volume, characterization and how will the treatment plant continue to function during the drawdown; 4) Describe the type of transportation and spreading vehicles and loading and unloading practices; 5) Identify approved land application sites, apply for needed sites, site limitations, total acres needed and vegetative cover management; 6) Specify record keeping procedures including site loading; 7) Address contingency plans for adverse weather and odor/nuisance abatement; and 8) Include any	

other pertinent information such as other disposal options that may be used or specifications of any pretreatment processes Once approved, all sludge management activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due at least 60 days prior to desludging.	
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5.3.1 Explanation of Schedule

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

Attachments

Water Flow Schematic created September 2019

“Groundwater Evaluation for Lake Wapogasset Bear Lake S.D., WI-0060313” memo dated April 7, 2025.

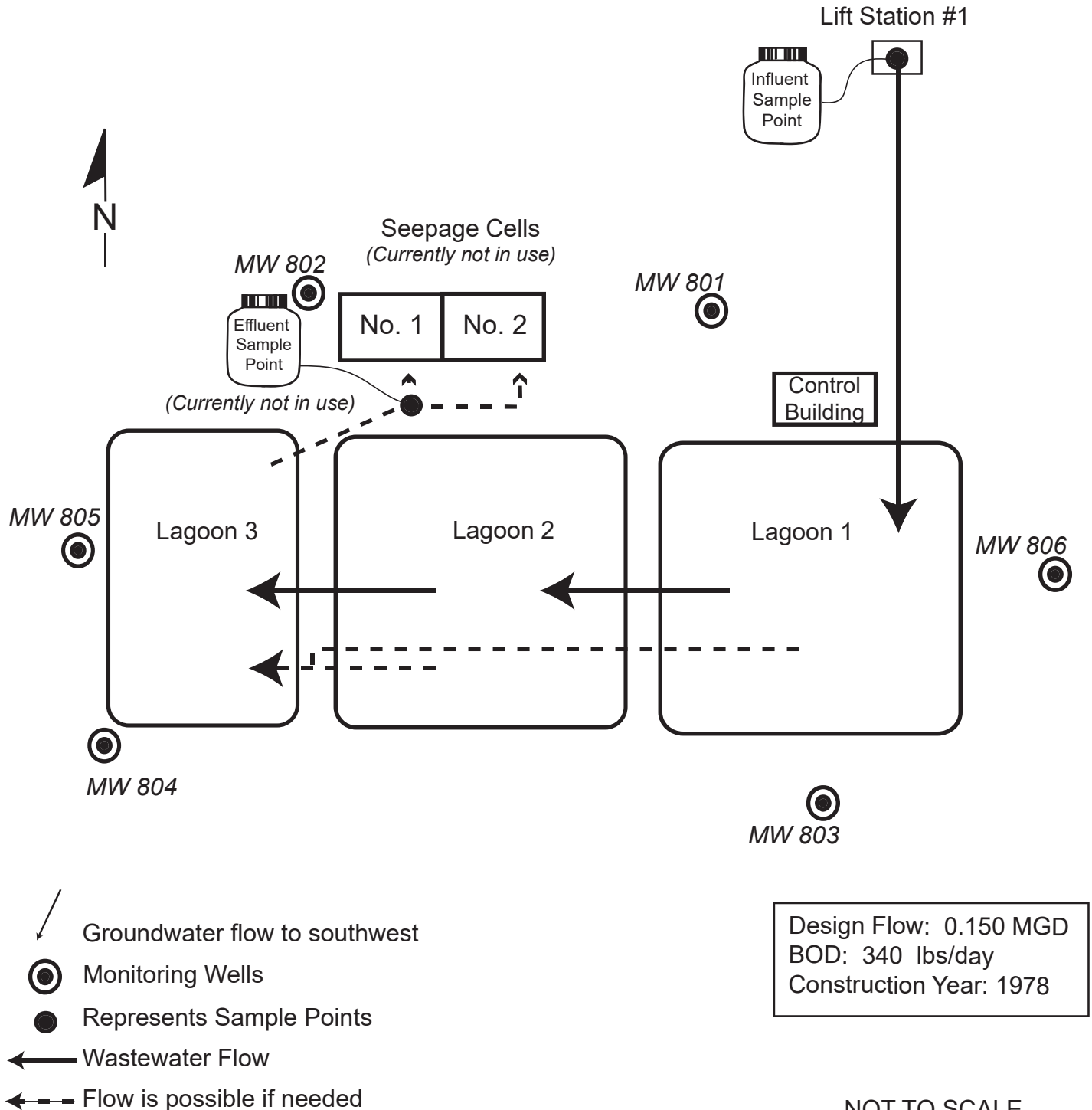
Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** May 1, 2025

LAKE WAPOGASSET - BEAR TRAP LAKE SANITARY DISTRICT Wastewater Treatment Facility

The Lake Wapogasset - Bear Trap Lake wastewater treatment plant consists of three aerated lagoons. The system functions as an absorption pond where all effluent seeps into the groundwater. There are two unused seepage cells. Six monitoring wells are located around the system. A flow diagram below shows the treatment units and sampling locations.



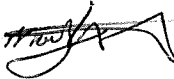
CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 7, 2025

TO: File

FROM: Woody Myers - WCR



SUBJECT: Groundwater Evaluation for Lake Wapogasset Bear Lake S.D., WI-0060313

Site Information

The Lake Wapogasset Bear Trap Lake SD facility is located at 1236 72nd Avenue, Amery, Polk County. This is a municipal wastewater treatment facility. Wastewater is currently treated and should be discharged to groundwater via absorption ponds (seepage cells) a land disposal system. Due to leaking lagoons, the discharge to the seepage cells has not been needed. The system is located in the NE ¼ of the NW ¼ of Section 36, T33N, R17E, Town of Lincoln.

Land Disposal Effluent & Groundwater Evaluation Summary

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

Parameter	Current Permit WI-0060313-11		Proposed Permit WI-0060313-12	
	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	- MGD		- MGD	
BOD ₅	50 mg/l	Monthly Avg	50 mg/l	Monthly Avg
Total Suspended Solids	- mg/l		- mg/l	
pH, Field	- su		- su	
Nitrogen, Total Kjeldahl	- mg/l		- mg/l	
Nitrogen, Ammonia	- mg/l		- mg/l	
Nitrogen, Organic	- mg/l		- mg/l	
Total Dissolved Solids	- mg/l		*500 mg/l	Monthly Avg
Chloride	- mg/l		*250 mg/l	Monthly Avg
Nitrogen, Total	- mg/l		*10 mg/l	Monthly Avg
*Nitrogen, Nitrite + nitrate	- mg/l		- mg/l	

* Proposed permit changes

Table 2 Monitoring Wells

Well	Current Permit WI-0060313-11		Proposed Permit WI-0060313-12	
	Well Location	Well Designation	Well Location	Well Designation
801 (MW801)	Up-gradient	Background	Up-gradient	Background
802 (MW802)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard
803 (MW803)	Side-gradient	Non-Point of Standard	Side-gradient	Non-Point of Standard
804 (MW804)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard
805 (MW805)	Down-gradient	Non-Point of Standard	Down-gradient	Non-Point of Standard
806 (MW806)	Up-gradient	Background	Up-gradient	Background

No proposed permit changes

Table 3 Groundwater Quality Standards

Parameter	Current Permit WI-0060313-11		Proposed WI-0060313-12	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrogen, Nitrite + Nitrate	2.0 mg/l	10.0 mg/l	2.0 mg/l	10.0 mg/l
Chloride	125 mg/l	250 mg/l	125 mg/l	250 mg/l
pH, lab	5.5-7.5 su	N/A	5.5-7.5 su	N/A
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrogen, Organic	2.3 mg/l	N/A	2.3 mg/l	N/A
Total Dissolved Solids	350 mg/l	N/A	350 mg/l	N/A

No proposed permit changes

Geology

The bedrock under this facility is the Trempealeau Group, which is comprised of the Jordan and St. Lawrence Formations. The Jordan Formation is comprised of the Coon Valley, Van Oser and Norwalk Members and the St. Lawrence is comprised of the Lodi Member. The St. Lawrence formation is comprised of dolomite and the Jordan is comprised of sandstone (*Bedrock Geology of Wisconsin, Regional Map Series Northwest Sheet*, Wisconsin Geological and Natural History Survey (WGNHS), 1987). Bedrock was not encountered during installation of the groundwater monitoring wells but is anticipated to be between 50 and 100 feet below ground surface (bgs) (*Depth to Bedrock in Wisconsin*, WGNHS, 1973). The regolith consists of clay near the surface (~0-6 feet bgs) over sand ranging medium to fine sand. Surface soil primarily consists of the Antigo silt loam and the Rosholt sandy loam (USDA NRCS Web Soil Survey).

Hydrogeology

Calculated groundwater elevation ranges between 1020 and 1026 feet above mean sea level (msl). Depth to groundwater was reported to be between 37 and 47 feet bgs. Groundwater flow direction was calculated to be predominantly to the west southwest. The gradient is very shallow; typically, less than 2 feet of difference between high and low groundwater elevation. The groundwater flow direction was developed using the piezometers. The regional groundwater flow direction is to the southwest in this area of Polk County (*Generalized Water-Table Elevation Map of Polk County, Wisconsin*, WGNHS, 2000). The site is south (1,750 feet) and west (1,800 feet) of Wapogasset and bear trap Lakes. There are 6 wells (municipal, other than municipal, private and high-capacity) within a 1,500-foot range of this facility's groundwater discharge.

Land Disposal Effluent Quality and Loading Rates

This facility has not discharged to the absorption ponds during the current permit term. This is due to leakage in the treatment lagoons. Wastewater is not discharged at any other location. As a result, there are no volumes or effluent sample results for treated wastewater sent to the absorption ponds. It is assumed that the influent volume is close to the volume of leakage, less the volume lost through evaporation. It is impossible to determine the magnitude of treatment provided to the raw wastewater (influent) prior to the loss through leakage. The following table is the average flow, Kjeldahl nitrogen as nitrogen, chloride and BOD₅ loading summations of the influent for reference only.

Table 5 Land Treatment Disposal Loading Averages

Year	Flow (MGD)	Total Kjeldahl Nitrogen (mg/l)	Chloride (mg/l)	BOD5 (mg/l)
2024	0.046	40.7	355	113
2023	0.049	33.9	597	101
2022	0.047	49.6	499	145
2021	0.046	47.6	237	155
2020	0.048	47.4	368	135

Groundwater Monitoring System and Sampling Frequency

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

Table 6 Groundwater Monitoring Well Data

Sample Point	Well Name	Elevation (feet above msl)				Length (feet)		Well Type
		Casing Top	Ground Surface	Screen Top	Screen Bottom	Screen Length	Well Depth	
801	801	1062.96	1068.00	1021.0	1017.0	4.0	43.0	P
802	802	1051.56	1048.77	1016.8	1012.8	4.0	36.0	P
803	803	1070.94	1068.94	1023.9	1019.9	4.0	51.0	P
804	804	1066.54	1063.37	1011.4	1007.4	4.0	56.0	P
805	805	1063.61	1061.79	1023.8	1008.8	15.0	53.0	P
806	806	1061.28	1059.63	1024.6	1009.6	15.0	50.0	P

All measurements in feet

WT-Water table Observation P-Piezometer O-Other

Groundwater sampling results from this facility have been analyzed for each well to evaluate trends of the regulated compounds in groundwater and to calculate PALs for s. NR 140.22 Wis. Adm. Code Indicator Parameters and to evaluate potential exemptions under s. NR 140.28 Wis. Adm. Code. The groundwater was evaluated by looking at the groundwater data from February 26, 2020 – November 6, 2024.

Background Groundwater Quality

The groundwater quality samples for wells 801 and 806 did not exceed the PALs for any of the sampled parameters. The results were moderate to low in magnitude and were stable without significant variation over time.

Down-Gradient Groundwater Quality

There were groundwater quality standard exceedances of three parameters in the down-gradient groundwater monitoring wells: nitrite + nitrate, chloride and TDS. The exceedances were frequent and over-all stable with some fluctuation in magnitude. The ES for chloride was consistently exceeded. The PAL for nitrite + nitrate was consistently exceeded and the ES frequently exceeded. The PAL for TDS was consistently exceeded. The overall magnitude of the results is stable with minor fluctuations.

Land Disposal System Impact to Groundwater Quality

Concentrations and trends in the groundwater monitoring data are typically compared to the loading data for the land disposal system. In this case there was no discharge to the absorption ponds and therefore no data to compare with the groundwater monitoring results.

Proposed Groundwater Monitoring Requirements

**Table 7 Groundwater Quality Sampling Frequency and Limits
Outfall 001 Permit WI-0060003-11**

Sample Point	Well Name	Sample Frequency	Well Designation
801	MW801	Quarterly	Background
802	MW802	Quarterly	Non-Point of Standard
803	MW803	Quarterly	Non-Point of Standard
804	MW804	Quarterly	Non-Point of Standard
805	MW805	Quarterly	Non-Point of Standard
806	MW806	Quarterly	Background
Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
Nitrogen, Nitrite + Nitrate	2.0 mg/l	10.0 mg/l	NR 140 Table 1
Chloride	125 mg/l	250 mg/l	NR 140 Table 2
pH, Field	5.5-7.5 su	N/A	Calculated
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	NR 140 Table 1
Nitrogen, Organic	2.3 mg/l	N/A	Calculated
Total Dissolved Solids	350 mg/l	N/A	Calculated

No proposed permit changes

Conclusions

Nitrite + nitrate is recommended to be added to the sampling point 001 outfall (effluent). This will be used to determine compliance and aid in optimization of the absorption ponds.

Per s. NR 206.05 Wis. Adm. Code Table 1 requires the effluent limits for total nitrogen, TDS, chloride and BOD₅. The new limits of total nitrogen, TDS and chloride will go into effect once the plant upgrade is completed.

This facility has not discharged to the absorption ponds in some time. The cause of this is due to leakage in the treatment lagoons. The department, in agreement with the facility, decided to not take action with regard to the leakage until the facility needed to perform a system up-grade given the down-gradient groundwater quality standards were being met. During the past permit term, there were significant groundwater quality exceedances for nitrite + nitrate, chloride and TDS. These exceedances are in non-point of standards wells, but according to s. NR 140.27 Wis. Adm. Code the department can require a response action for ES exceedances within these wells. The down-gradient results for chloride are frequently twice the ES, with the recent result being close to three times the ES. As a result of the current groundwater monitoring results, the department is requiring the facility to address the leakage in the treatment lagoons.

The facility has multiple options. The first is to identify the source of the leaking lagoons and repair them. The facility also has the option to design/implement another method of wastewater treatment to include changing from a land disposal discharge to a surface water discharge. Absorption ponds are not tied to the current treatment system, other options for secondary treatment are possible, to include spray irrigation or a ridge & furrow system. If the facility determines absorption ponds are the best option, they should evaluate the size, infiltration rate and other factors to ensure the system is adequate to treat the anticipated volume of wastewater within their facility plan report.

Given the consistent exceedances of ESs in groundwater sample results a down-gradient point of standards well should be a part of any land disposal system.

Land disposal system requirements can be found in chs. NR 110 and NR 206 Wis. Adm. Code.

Compliance Schedule Recommendations

Lake Wapogasset will need to prepare and submit a Municipal Wastewater Facility Plan Report and then submit the Construction Final Plans and Specifications for a facility upgrade. Additional information can be found at:

<https://dnr.wisconsin.gov/topic/Wastewater/MunicipalPlanning.html>

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

Appendix

The preceding results were provided by the facility or their agent. The mean and standard deviation were calculated electronically.

well	parameter	unit_type	sample_date	result
801	Chloride Dissolved	mg/L	02/26/2020	16
801	Chloride Dissolved	mg/L	06/04/2020	14
801	Chloride Dissolved	mg/L	08/19/2020	14
801	Chloride Dissolved	mg/L	11/03/2020	7
801	Chloride Dissolved	mg/L	03/02/2021	18
801	Chloride Dissolved	mg/L	06/02/2021	19
801	Chloride Dissolved	mg/L	09/01/2021	3
801	Chloride Dissolved	mg/L	11/10/2021	20
801	Chloride Dissolved	mg/L	03/29/2022	12
801	Chloride Dissolved	mg/L	06/07/2022	10
801	Chloride Dissolved	mg/L	08/10/2022	9
801	Chloride Dissolved	mg/L	11/08/2022	9
801	Chloride Dissolved	mg/L	03/28/2023	12
801	Chloride Dissolved	mg/L	06/06/2023	11
801	Chloride Dissolved	mg/L	08/16/2023	13
801	Chloride Dissolved	mg/L	10/18/2023	17
801	Chloride Dissolved	mg/L	01/03/2024	10
801	Chloride Dissolved	mg/L	06/05/2024	12
801	Chloride Dissolved	mg/L	09/26/2024	51
801	Chloride Dissolved	mg/L	11/06/2024	12
801	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023 <	0.1
801	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
801	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
801	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
801	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
801	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
801	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	0.5
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	0.7
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	0.8
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	0.7
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	0.9
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	0.7
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	1.1
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	0.9
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	1
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	0.8
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	0.8
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	0.8
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	0.8
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	0.73
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	0.83
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	0.96
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	1.62
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	1.3
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	1.32
801	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	1.29

801	Nitrogen, Organic Dissolved	mg/L	02/26/2020 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	06/04/2020 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	08/19/2020 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.5
801	Nitrogen, Organic Dissolved	mg/L	03/02/2021 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	06/02/2021 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	09/01/2021 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	11/10/2021 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	03/29/2022 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	06/07/2022 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	08/10/2022 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	11/08/2022 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	03/28/2023 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	06/06/2023 <	0.5
801	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.707
801	Nitrogen, Organic Dissolved	mg/L	10/18/2023 <	0.431
801	Nitrogen, Organic Dissolved	mg/L	01/03/2024	0.57
801	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
801	Nitrogen, Organic Dissolved	mg/L	09/26/2024	6.748
801	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
801	pH Lab	su	02/26/2020	6.3
801	pH Lab	su	06/04/2020	6.5
801	pH Lab	su	08/19/2020	6.3
801	pH Lab	su	11/03/2020	6.2
801	pH Lab	su	03/02/2021	6.3
801	pH Lab	su	06/02/2021	6.1
801	pH Lab	su	09/01/2021	6
801	pH Lab	su	11/10/2021	6.1
801	pH Lab	su	03/29/2022	6.2
801	pH Lab	su	06/07/2022	6.1
801	pH Lab	su	08/10/2022	6.6
801	pH Lab	su	11/08/2022	6.2
801	pH Lab	su	03/28/2023	6
801	pH Lab	su	06/06/2023	5.9
801	pH Lab	su	10/18/2023	7.7
801	pH Lab	su	01/03/2024	6.8
801	pH Lab	su	06/05/2024	7.4
801	pH Lab	su	09/26/2024	7.1
801	pH Lab	su	11/06/2024	7.2

801	Solids, Total Dissolved	mg/L	02/26/2020	138
801	Solids, Total Dissolved	mg/L	06/04/2020	137
801	Solids, Total Dissolved	mg/L	08/19/2020	173
801	Solids, Total Dissolved	mg/L	11/03/2020	138
801	Solids, Total Dissolved	mg/L	03/02/2021	143
801	Solids, Total Dissolved	mg/L	06/02/2021	172
801	Solids, Total Dissolved	mg/L	09/01/2021	101
801	Solids, Total Dissolved	mg/L	11/10/2021	126
801	Solids, Total Dissolved	mg/L	03/29/2022	137
801	Solids, Total Dissolved	mg/L	06/07/2022	139
801	Solids, Total Dissolved	mg/L	08/10/2022	147
801	Solids, Total Dissolved	mg/L	11/08/2022	132
801	Solids, Total Dissolved	mg/L	03/28/2023	169
801	Solids, Total Dissolved	mg/L	06/06/2023	160
801	Solids, Total Dissolved	mg/L	08/16/2023	140
801	Solids, Total Dissolved	mg/L	10/18/2023	190
801	Solids, Total Dissolved	mg/L	01/03/2024	300
801	Solids, Total Dissolved	mg/L	06/05/2024	167
801	Solids, Total Dissolved	mg/L	09/26/2024	113
801	Solids, Total Dissolved	mg/L	11/06/2024	346

well	parameter	unit_type	sample_date	result
802	Chloride Dissolved	mg/L	02/26/2020	96
802	Chloride Dissolved	mg/L	06/04/2020	127
802	Chloride Dissolved	mg/L	08/19/2020	174
802	Chloride Dissolved	mg/L	11/03/2020	141
802	Chloride Dissolved	mg/L	03/02/2021	140
802	Chloride Dissolved	mg/L	06/02/2021	122
802	Chloride Dissolved	mg/L	09/01/2021	203
802	Chloride Dissolved	mg/L	11/10/2021	235
802	Chloride Dissolved	mg/L	03/29/2022	183
802	Chloride Dissolved	mg/L	06/07/2022	180
802	Chloride Dissolved	mg/L	08/10/2022	222
802	Chloride Dissolved	mg/L	11/08/2022	272
802	Chloride Dissolved	mg/L	03/28/2023	200
802	Chloride Dissolved	mg/L	06/06/2023	242
802	Chloride Dissolved	mg/L	08/16/2023	277
802	Chloride Dissolved	mg/L	10/18/2023	226
802	Chloride Dissolved	mg/L	01/03/2024	197
802	Chloride Dissolved	mg/L	06/05/2024	199
802	Chloride Dissolved	mg/L	09/26/2024	245
802	Chloride Dissolved	mg/L	11/06/2024	225

802	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023 <	0.1
802	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
802	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
802	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
802	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
802	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
802	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	3
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	3.9
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	2.8
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	2.8
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	4.8
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	3.4
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	2.6
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	2.5
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	2.8
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	5.3
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	5.9
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	5
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	3.9
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	4.55
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	5.24
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	5.38
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	6.04
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	4.01
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	8.36
802	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	8.11
802	Nitrogen, Organic Dissolved	mg/L	02/26/2020	0.7
802	Nitrogen, Organic Dissolved	mg/L	06/04/2020	1
802	Nitrogen, Organic Dissolved	mg/L	08/19/2020	2.8
802	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.6
802	Nitrogen, Organic Dissolved	mg/L	03/02/2021	0.8
802	Nitrogen, Organic Dissolved	mg/L	06/02/2021	0.8
802	Nitrogen, Organic Dissolved	mg/L	09/01/2021	0.7
802	Nitrogen, Organic Dissolved	mg/L	11/10/2021	0.8
802	Nitrogen, Organic Dissolved	mg/L	03/29/2022 <	0.5
802	Nitrogen, Organic Dissolved	mg/L	06/07/2022	0.8
802	Nitrogen, Organic Dissolved	mg/L	08/10/2022 <	0.5
802	Nitrogen, Organic Dissolved	mg/L	11/08/2022	0.5
802	Nitrogen, Organic Dissolved	mg/L	03/28/2023	0.7
802	Nitrogen, Organic Dissolved	mg/L	06/06/2023	0.6
802	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.554
802	Nitrogen, Organic Dissolved	mg/L	10/18/2023	0.756
802	Nitrogen, Organic Dissolved	mg/L	01/03/2024	0.433
802	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
802	Nitrogen, Organic Dissolved	mg/L	09/26/2024 <	0.431
802	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
802	pH Lab	su	02/26/2020	6.2
802	pH Lab	su	06/04/2020	6.4
802	pH Lab	su	08/19/2020	6.1
802	pH Lab	su	11/03/2020	6.3
802	pH Lab	su	03/02/2021	6.2
802	pH Lab	su	06/02/2021	6.1
802	pH Lab	su	09/01/2021	6.2
802	pH Lab	su	11/10/2021	6.3
802	pH Lab	su	03/29/2022	6.2
802	pH Lab	su	06/07/2022	6.3
802	pH Lab	su	08/10/2022	6.5
802	pH Lab	su	11/08/2022	6.2
802	pH Lab	su	03/28/2023	6.2
802	pH Lab	su	06/06/2023	6.2
802	pH Lab	su	10/18/2023	7.3
802	pH Lab	su	01/03/2024	6.7
802	pH Lab	su	06/05/2024	7.5
802	pH Lab	su	09/26/2024	7
802	pH Lab	su	11/06/2024	7.1

802	Solids, Total Dissolved	mg/L	02/26/2020	261
802	Solids, Total Dissolved	mg/L	06/04/2020	318
802	Solids, Total Dissolved	mg/L	08/19/2020	391
802	Solids, Total Dissolved	mg/L	11/03/2020	4
802	Solids, Total Dissolved	mg/L	03/02/2021	292
802	Solids, Total Dissolved	mg/L	06/02/2021	302
802	Solids, Total Dissolved	mg/L	09/01/2021	454
802	Solids, Total Dissolved	mg/L	11/10/2021	432
802	Solids, Total Dissolved	mg/L	03/29/2022	376
802	Solids, Total Dissolved	mg/L	06/07/2022	380
802	Solids, Total Dissolved	mg/L	08/10/2022	479
802	Solids, Total Dissolved	mg/L	11/08/2022	574
802	Solids, Total Dissolved	mg/L	03/28/2023	446
802	Solids, Total Dissolved	mg/L	06/06/2023	561
802	Solids, Total Dissolved	mg/L	08/16/2023	627
802	Solids, Total Dissolved	mg/L	10/18/2023	683
802	Solids, Total Dissolved	mg/L	01/03/2024	633
802	Solids, Total Dissolved	mg/L	06/05/2024	500
802	Solids, Total Dissolved	mg/L	09/26/2024	710
802	Solids, Total Dissolved	mg/L	11/06/2024	834

well	parameter	unit_type	sample_date	result
803	Chloride Dissolved	mg/L	02/26/2020	5
803	Chloride Dissolved	mg/L	06/04/2020	6
803	Chloride Dissolved	mg/L	08/19/2020	6
803	Chloride Dissolved	mg/L	11/03/2020	5
803	Chloride Dissolved	mg/L	03/02/2021	6
803	Chloride Dissolved	mg/L	06/02/2021	5
803	Chloride Dissolved	mg/L	09/01/2021	4
803	Chloride Dissolved	mg/L	11/10/2021	7
803	Chloride Dissolved	mg/L	03/29/2022	4
803	Chloride Dissolved	mg/L	06/07/2022	4
803	Chloride Dissolved	mg/L	08/10/2022	4
803	Chloride Dissolved	mg/L	11/08/2022	3
803	Chloride Dissolved	mg/L	03/28/2023	3
803	Chloride Dissolved	mg/L	06/06/2023	3
803	Chloride Dissolved	mg/L	08/16/2023	2.7
803	Chloride Dissolved	mg/L	10/18/2023	2.41
803	Chloride Dissolved	mg/L	01/03/2024	1.66
803	Chloride Dissolved	mg/L	06/05/2024	3.3
803	Chloride Dissolved	mg/L	09/26/2024	36
803	Chloride Dissolved	mg/L	11/06/2024	3.11
803	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020	0.4
803	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020	0.2
803	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020	0.3
803	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.5
803	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021	0.5
803	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021	0.4
803	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021	0.2
803	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021	0.2
803	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022 <	0.1
803	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022	0.1
803	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022 <	0.1
803	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022	0.1
803	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023	0.1
803	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023	0.2
803	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
803	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
803	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
803	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
803	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
803	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	2.7
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	3.9
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	7.2
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	8.6
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	4
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	2.6
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	3.4
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	4.3
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	2.9
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	2.3
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	2
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	0.8
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	1
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	1.21
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	1.19
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	1.22
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	1.14
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	1.66
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	1.2
803	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	1.35

803	Nitrogen, Organic Dissolved	mg/L	02/26/2020 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	06/04/2020	0.7
803	Nitrogen, Organic Dissolved	mg/L	08/19/2020	0.6
803	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.9
803	Nitrogen, Organic Dissolved	mg/L	03/02/2021 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	06/02/2021 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	09/01/2021 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	11/10/2021	0.6
803	Nitrogen, Organic Dissolved	mg/L	03/29/2022 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	06/07/2022 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	08/10/2022 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	11/08/2022 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	03/28/2023 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	06/06/2023 <	0.5
803	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.504
803	Nitrogen, Organic Dissolved	mg/L	10/18/2023	0.748
803	Nitrogen, Organic Dissolved	mg/L	01/03/2024	0.661
803	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
803	Nitrogen, Organic Dissolved	mg/L	09/26/2024	0.522
803	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
803	pH Lab	su	02/26/2020	5.8
803	pH Lab	su	06/04/2020	5.7
803	pH Lab	su	08/19/2020	5.5
803	pH Lab	su	11/03/2020	5.5
803	pH Lab	su	03/02/2021	5.5
803	pH Lab	su	06/02/2021	5.4
803	pH Lab	su	09/01/2021	6.1
803	pH Lab	su	11/10/2021	6.1
803	pH Lab	su	03/29/2022	5.9
803	pH Lab	su	06/07/2022	5.8
803	pH Lab	su	08/10/2022	6.1
803	pH Lab	su	11/08/2022	5.8
803	pH Lab	su	03/28/2023	5.8
803	pH Lab	su	06/06/2023	5.9
803	pH Lab	su	10/18/2023	7.2
803	pH Lab	su	01/03/2024	6.7
803	pH Lab	su	06/05/2024	6.9
803	pH Lab	su	09/26/2024	6.8
803	pH Lab	su	11/06/2024	6.8

803	Solids, Total Dissolved	mg/L	02/26/2020	72
803	Solids, Total Dissolved	mg/L	06/04/2020	105
803	Solids, Total Dissolved	mg/L	08/19/2020	142
803	Solids, Total Dissolved	mg/L	11/03/2020	117
803	Solids, Total Dissolved	mg/L	03/02/2021	68
803	Solids, Total Dissolved	mg/L	06/02/2021	67
803	Solids, Total Dissolved	mg/L	09/01/2021	135
803	Solids, Total Dissolved	mg/L	11/10/2021	82
803	Solids, Total Dissolved	mg/L	03/29/2022	72
803	Solids, Total Dissolved	mg/L	06/07/2022	86
803	Solids, Total Dissolved	mg/L	08/10/2022	84
803	Solids, Total Dissolved	mg/L	11/08/2022	56
803	Solids, Total Dissolved	mg/L	03/28/2023	97
803	Solids, Total Dissolved	mg/L	06/06/2023	93
803	Solids, Total Dissolved	mg/L	08/16/2023	103
803	Solids, Total Dissolved	mg/L	10/18/2023	130
803	Solids, Total Dissolved	mg/L	01/03/2024	290
803	Solids, Total Dissolved	mg/L	06/05/2024	167
803	Solids, Total Dissolved	mg/L	09/26/2024	68
803	Solids, Total Dissolved	mg/L	11/06/2024	260

well	parameter	unit_type	sample_date	result
804	Chloride Dissolved	mg/L	02/26/2020	146
804	Chloride Dissolved	mg/L	06/04/2020	166
804	Chloride Dissolved	mg/L	08/19/2020	179
804	Chloride Dissolved	mg/L	11/03/2020	182
804	Chloride Dissolved	mg/L	03/02/2021	189
804	Chloride Dissolved	mg/L	06/02/2021	187
804	Chloride Dissolved	mg/L	09/01/2021	208
804	Chloride Dissolved	mg/L	11/10/2021	196
804	Chloride Dissolved	mg/L	03/29/2022	204
804	Chloride Dissolved	mg/L	06/07/2022	216
804	Chloride Dissolved	mg/L	08/10/2022	218
804	Chloride Dissolved	mg/L	11/08/2022	225
804	Chloride Dissolved	mg/L	03/28/2023	266
804	Chloride Dissolved	mg/L	06/06/2023	234
804	Chloride Dissolved	mg/L	08/16/2023	230
804	Chloride Dissolved	mg/L	10/18/2023	206
804	Chloride Dissolved	mg/L	01/03/2024	210
804	Chloride Dissolved	mg/L	06/05/2024	261
804	Chloride Dissolved	mg/L	09/26/2024	221
804	Chloride Dissolved	mg/L	11/06/2024	245
804	00166014 Depth To Groundwater	feet	02/26/2020	43.2
804	00166014 Depth To Groundwater	feet	06/04/2020	43.3
804	00166014 Depth To Groundwater	feet	08/19/2020	43.1
804	00166014 Depth To Groundwater	feet	11/03/2020	43.3
804	00166014 Depth To Groundwater	feet	03/02/2021	44.17
804	00166014 Depth To Groundwater	feet	06/02/2021	44.08
804	00166014 Depth To Groundwater	feet	09/01/2021	44.5
804	00166014 Depth To Groundwater	feet	11/10/2021	44.58
804	00166014 Depth To Groundwater	feet	03/29/2022	44.5
804	00166014 Depth To Groundwater	feet	06/07/2022	47.58
804	00166014 Depth To Groundwater	feet	08/10/2022	45
804	00166014 Depth To Groundwater	feet	11/08/2022	44.67
804	00166014 Depth To Groundwater	feet	03/28/2023	45.08
804	00166014 Depth To Groundwater	feet	06/06/2023	44.33
804	00166014 Depth To Groundwater	feet	08/16/2023	44.08
804	00166014 Depth To Groundwater	feet	10/18/2023	44.5
804	00166014 Depth To Groundwater	feet	01/03/2024	44.67
804	00166014 Depth To Groundwater	feet	06/05/2024	44.92
804	00166014 Depth To Groundwater	feet	09/26/2024	43.75
804	00166014 Depth To Groundwater	feet	11/06/2024	43.83

well	parameter	unit_type	sample_date	result
804	00227014 Groundwater Elevation	feet	02/26/2020	1023.34
804	00227014 Groundwater Elevation	feet	06/04/2020	1023.24
804	00227014 Groundwater Elevation	feet	08/19/2020	1023.44
804	00227014 Groundwater Elevation	feet	11/03/2020	1023.24
804	00227014 Groundwater Elevation	feet	03/02/2021	1022.37
804	00227014 Groundwater Elevation	feet	06/02/2021	1022.46
804	00227014 Groundwater Elevation	feet	09/01/2021	1022.04
804	00227014 Groundwater Elevation	feet	11/10/2021	1021.96
804	00227014 Groundwater Elevation	feet	03/29/2022	1022.04
804	00227014 Groundwater Elevation	feet	06/07/2022	1018.96
804	00227014 Groundwater Elevation	feet	08/10/2022	1021.54
804	00227014 Groundwater Elevation	feet	11/08/2022	1021.87
804	00227014 Groundwater Elevation	feet	03/28/2023	1021.46
804	00227014 Groundwater Elevation	feet	06/06/2023	1022.21
804	00227014 Groundwater Elevation	feet	08/16/2023	1022.46
804	00227014 Groundwater Elevation	feet	10/18/2023	1022.04
804	00227014 Groundwater Elevation	feet	01/03/2024	1021.87
804	00227014 Groundwater Elevation	feet	06/05/2024	1021.62
804	00227014 Groundwater Elevation	feet	09/26/2024	1022.79
804	00227014 Groundwater Elevation	feet	11/06/2024	1022.71

804	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023 <	0.1
804	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
804	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
804	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
804	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
804	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
804	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	4.8
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	4.4
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	4
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	3.4
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	3.3
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	2.6
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	3.5
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	3.6
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	2.6
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	3.2
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	3
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	3.8
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	4.1
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	5
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	5.1
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	4.13
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	5.38
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	4.41
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	4980
804	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	4.9
804	Nitrogen, Organic Dissolved	mg/L	02/26/2020	0.6
804	Nitrogen, Organic Dissolved	mg/L	06/04/2020	0.8
804	Nitrogen, Organic Dissolved	mg/L	08/19/2020	0.6
804	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.6
804	Nitrogen, Organic Dissolved	mg/L	03/02/2021 <	0.5
804	Nitrogen, Organic Dissolved	mg/L	06/02/2021	0.5
804	Nitrogen, Organic Dissolved	mg/L	09/01/2021	0.6
804	Nitrogen, Organic Dissolved	mg/L	11/10/2021	1.4
804	Nitrogen, Organic Dissolved	mg/L	03/29/2022 <	0.5
804	Nitrogen, Organic Dissolved	mg/L	06/07/2022 <	0.5
804	Nitrogen, Organic Dissolved	mg/L	08/10/2022 <	0.5
804	Nitrogen, Organic Dissolved	mg/L	11/08/2022 <	0.5
804	Nitrogen, Organic Dissolved	mg/L	03/28/2023	0.7
804	Nitrogen, Organic Dissolved	mg/L	06/06/2023	0.5
804	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.471
804	Nitrogen, Organic Dissolved	mg/L	10/18/2023 <	0.431
804	Nitrogen, Organic Dissolved	mg/L	01/03/2024	0.551
804	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
804	Nitrogen, Organic Dissolved	mg/L	09/26/2024 <	0.431
804	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
804	pH Lab	su	02/26/2020	7.3
804	pH Lab	su	06/04/2020	7.3
804	pH Lab	su	08/19/2020	7.4
804	pH Lab	su	11/03/2020	7.5
804	pH Lab	su	03/02/2021	7.1
804	pH Lab	su	06/02/2021	7.5
804	pH Lab	su	09/01/2021	7.6
804	pH Lab	su	11/10/2021	7.5
804	pH Lab	su	03/29/2022	7.3
804	pH Lab	su	06/07/2022	7.4
804	pH Lab	su	08/10/2022	7.4
804	pH Lab	su	11/08/2022	7.4
804	pH Lab	su	03/28/2023	7.3
804	pH Lab	su	06/06/2023	7.2
804	pH Lab	su	10/18/2023	8.1
804	pH Lab	su	01/03/2024	7.6
804	pH Lab	su	06/05/2024	8.1
804	pH Lab	su	09/26/2024	7.8
804	pH Lab	su	11/06/2024	8

804	Solids, Total Dissolved	mg/L	02/26/2020	431
804	Solids, Total Dissolved	mg/L	06/04/2020	478
804	Solids, Total Dissolved	mg/L	08/19/2020	541
804	Solids, Total Dissolved	mg/L	11/03/2020	548
804	Solids, Total Dissolved	mg/L	03/02/2021	490
804	Solids, Total Dissolved	mg/L	06/02/2021	537
804	Solids, Total Dissolved	mg/L	09/01/2021	590
804	Solids, Total Dissolved	mg/L	11/10/2021	509
804	Solids, Total Dissolved	mg/L	03/29/2022	492
804	Solids, Total Dissolved	mg/L	06/07/2022	533
804	Solids, Total Dissolved	mg/L	08/10/2022	534
804	Solids, Total Dissolved	mg/L	11/08/2022	566
804	Solids, Total Dissolved	mg/L	03/28/2023	638
804	Solids, Total Dissolved	mg/L	06/06/2023	7.2
804	Solids, Total Dissolved	mg/L	08/16/2023	733
804	Solids, Total Dissolved	mg/L	10/18/2023	697
804	Solids, Total Dissolved	mg/L	01/03/2024	913
804	Solids, Total Dissolved	mg/L	06/05/2024	740
804	Solids, Total Dissolved	mg/L	09/26/2024	675
804	Solids, Total Dissolved	mg/L	11/06/2024	860

well	parameter	unit_type	sample_date	result
805	Chloride Dissolved	mg/L	02/26/2020	235
805	Chloride Dissolved	mg/L	06/04/2020	255
805	Chloride Dissolved	mg/L	08/19/2020	233
805	Chloride Dissolved	mg/L	11/03/2020	264
805	Chloride Dissolved	mg/L	03/02/2021	307
805	Chloride Dissolved	mg/L	06/02/2021	287
805	Chloride Dissolved	mg/L	09/01/2021	251
805	Chloride Dissolved	mg/L	11/10/2021	300
805	Chloride Dissolved	mg/L	03/29/2022	335
805	Chloride Dissolved	mg/L	06/07/2022	302
805	Chloride Dissolved	mg/L	08/10/2022	310
805	Chloride Dissolved	mg/L	11/08/2022	355
805	Chloride Dissolved	mg/L	03/28/2023	356
805	Chloride Dissolved	mg/L	06/06/2023	313
805	Chloride Dissolved	mg/L	08/16/2023	260
805	Chloride Dissolved	mg/L	10/18/2023	230
805	Chloride Dissolved	mg/L	01/03/2024	294
805	Chloride Dissolved	mg/L	06/05/2024	316
805	Chloride Dissolved	mg/L	09/26/2024	236
805	Chloride Dissolved	mg/L	11/06/2024	665

805	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023 <	0.1
805	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
805	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
805	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
805	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
805	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
805	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	6.2
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	12.2
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	5.6
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	3.9
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	8.4
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	2.3
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	8
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	6.3
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	6.5
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	4.9
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	12.2
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	7.2
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	7.5
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	5.94
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	8.79
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	8.01
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	6.78
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	11
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	7.85
805	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	6.08
805	Nitrogen, Organic Dissolved	mg/L	02/26/2020	0.8
805	Nitrogen, Organic Dissolved	mg/L	06/04/2020	0.9
805	Nitrogen, Organic Dissolved	mg/L	08/19/2020	1
805	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.7
805	Nitrogen, Organic Dissolved	mg/L	03/02/2021	0.7
805	Nitrogen, Organic Dissolved	mg/L	06/02/2021	1
805	Nitrogen, Organic Dissolved	mg/L	09/01/2021	1.1
805	Nitrogen, Organic Dissolved	mg/L	11/10/2021	1.1
805	Nitrogen, Organic Dissolved	mg/L	03/29/2022	1
805	Nitrogen, Organic Dissolved	mg/L	06/07/2022	0.7
805	Nitrogen, Organic Dissolved	mg/L	08/10/2022	0.6
805	Nitrogen, Organic Dissolved	mg/L	11/08/2022	1.1
805	Nitrogen, Organic Dissolved	mg/L	03/28/2023	1
805	Nitrogen, Organic Dissolved	mg/L	06/06/2023	0.7
805	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.454
805	Nitrogen, Organic Dissolved	mg/L	10/18/2023 <	0.431
805	Nitrogen, Organic Dissolved	mg/L	01/03/2024	1.999
805	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
805	Nitrogen, Organic Dissolved	mg/L	09/26/2024 <	0.431
805	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
805	pH Lab	su	02/26/2020	6.3
805	pH Lab	su	06/04/2020	6.3
805	pH Lab	su	08/19/2020	6.4
805	pH Lab	su	11/03/2020	6.5
805	pH Lab	su	03/02/2021	5.9
805	pH Lab	su	06/02/2021	6.3
805	pH Lab	su	09/01/2021	6.3
805	pH Lab	su	11/10/2021	6.3
805	pH Lab	su	03/29/2022	6.1
805	pH Lab	su	06/07/2022	6.4
805	pH Lab	su	08/10/2022	6.4
805	pH Lab	su	11/08/2022	6.3
805	pH Lab	su	03/28/2023	6.2
805	pH Lab	su	06/06/2023	6.2
805	pH Lab	su	10/18/2023	7.5
805	pH Lab	su	01/03/2024	6.7
805	pH Lab	su	06/05/2024	7.1
805	pH Lab	su	09/26/2024	7
805	pH Lab	su	11/06/2024	7.1

805	Solids, Total Dissolved	mg/L	02/26/2020	542
805	Solids, Total Dissolved	mg/L	06/04/2020	600
805	Solids, Total Dissolved	mg/L	08/19/2020	549
805	Solids, Total Dissolved	mg/L	11/03/2020	572
805	Solids, Total Dissolved	mg/L	03/02/2021	633
805	Solids, Total Dissolved	mg/L	06/02/2021	771
805	Solids, Total Dissolved	mg/L	09/01/2021	675
805	Solids, Total Dissolved	mg/L	11/10/2021	598
805	Solids, Total Dissolved	mg/L	03/29/2022	651
805	Solids, Total Dissolved	mg/L	06/07/2022	641
805	Solids, Total Dissolved	mg/L	08/10/2022	678
805	Solids, Total Dissolved	mg/L	11/08/2022	719
805	Solids, Total Dissolved	mg/L	03/28/2023	782
805	Solids, Total Dissolved	mg/L	06/06/2023	734
805	Solids, Total Dissolved	mg/L	08/16/2023	700
805	Solids, Total Dissolved	mg/L	10/18/2023	693
805	Solids, Total Dissolved	mg/L	01/03/2024	1257
805	Solids, Total Dissolved	mg/L	06/05/2024	777
805	Solids, Total Dissolved	mg/L	09/26/2024	638
805	Solids, Total Dissolved	mg/L	11/06/2024	843

well	parameter	unit_type	sample_date	result
806	Chloride Dissolved	mg/L	02/26/2020	3
806	Chloride Dissolved	mg/L	06/04/2020	4
806	Chloride Dissolved	mg/L	08/19/2020	4
806	Chloride Dissolved	mg/L	11/03/2020	4
806	Chloride Dissolved	mg/L	03/02/2021	4
806	Chloride Dissolved	mg/L	06/02/2021	10
806	Chloride Dissolved	mg/L	09/01/2021	3
806	Chloride Dissolved	mg/L	11/10/2021	5
806	Chloride Dissolved	mg/L	03/29/2022	3
806	Chloride Dissolved	mg/L	06/07/2022	5
806	Chloride Dissolved	mg/L	08/10/2022	4
806	Chloride Dissolved	mg/L	11/08/2022	3
806	Chloride Dissolved	mg/L	03/28/2023	3
806	Chloride Dissolved	mg/L	06/06/2023	3
806	Chloride Dissolved	mg/L	08/16/2023	3.06
806	Chloride Dissolved	mg/L	10/18/2023	2.38
806	Chloride Dissolved	mg/L	01/03/2024	2.29
806	Chloride Dissolved	mg/L	06/05/2024	3.25
806	Chloride Dissolved	mg/L	09/26/2024	30
806	Chloride Dissolved	mg/L	11/06/2024	3.66

806	Nitrogen, Ammonia Dissolved	mg/L	02/26/2020 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	06/04/2020 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	08/19/2020 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	11/03/2020	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	03/02/2021 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	06/02/2021 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	09/01/2021 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	11/10/2021 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	03/29/2022	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	06/07/2022 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	08/10/2022 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	11/08/2022 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	03/28/2023 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	06/06/2023 <	0.1
806	Nitrogen, Ammonia Dissolved	mg/L	08/16/2023 <	0.127
806	Nitrogen, Ammonia Dissolved	mg/L	10/18/2023 <	0.13
806	Nitrogen, Ammonia Dissolved	mg/L	01/03/2024 <	0.13
806	Nitrogen, Ammonia Dissolved	mg/L	06/05/2024 <	0.13
806	Nitrogen, Ammonia Dissolved	mg/L	09/26/2024 <	0.13
806	Nitrogen, Ammonia Dissolved	mg/L	11/06/2024 <	0.13

well	parameter	unit_type	sample_date	result
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/26/2020	0.9
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/04/2020	1.3
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/19/2020	1
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/03/2020	1
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/02/2021	1
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/02/2021	1.2
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/01/2021	1.1
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/10/2021	1.4
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/29/2022	1.5
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/07/2022	1.4
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/10/2022	1.3
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/08/2022	1.6
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/28/2023	1.3
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/06/2023	1.47
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	08/16/2023	1.37
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/18/2023	1.32
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/03/2024	1.13
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/05/2024	1.32
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/26/2024	1.13
806	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/06/2024	1.14
806	Nitrogen, Organic Dissolved	mg/L	02/26/2020 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	06/04/2020 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	08/19/2020 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	11/03/2020	0.5
806	Nitrogen, Organic Dissolved	mg/L	03/02/2021 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	06/02/2021 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	09/01/2021 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	11/10/2021 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	03/29/2022 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	06/07/2022 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	08/10/2022 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	11/08/2022 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	03/28/2023 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	06/06/2023 <	0.5
806	Nitrogen, Organic Dissolved	mg/L	08/16/2023	0.437
806	Nitrogen, Organic Dissolved	mg/L	10/18/2023 <	0.431
806	Nitrogen, Organic Dissolved	mg/L	01/03/2024	0.785
806	Nitrogen, Organic Dissolved	mg/L	06/05/2024 <	0.431
806	Nitrogen, Organic Dissolved	mg/L	09/26/2024 <	0.431
806	Nitrogen, Organic Dissolved	mg/L	11/06/2024 <	0.431

well	parameter	unit_type	sample_date	result
806	pH Lab	su	02/26/2020	6.1
806	pH Lab	su	06/04/2020	5.8
806	pH Lab	su	08/19/2020	6.2
806	pH Lab	su	11/03/2020	6.1
806	pH Lab	su	03/02/2021	5.9
806	pH Lab	su	06/02/2021	6.1
806	pH Lab	su	09/01/2021	6
806	pH Lab	su	11/10/2021	6
806	pH Lab	su	03/29/2022	5.9
806	pH Lab	su	06/07/2022	6.2
806	pH Lab	su	08/10/2022	6.2
806	pH Lab	su	11/08/2022	6
806	pH Lab	su	03/28/2023	5.6
806	pH Lab	su	06/06/2023	5.6
806	pH Lab	su	10/18/2023	7.4
806	pH Lab	su	01/03/2024	6.7
806	pH Lab	su	06/05/2024	7
806	pH Lab	su	09/26/2024	6.9
806	pH Lab	su	11/06/2024	6.9

806	Solids, Total Dissolved	mg/L	02/26/2020	68
806	Solids, Total Dissolved	mg/L	06/04/2020	76
806	Solids, Total Dissolved	mg/L	08/19/2020	87
806	Solids, Total Dissolved	mg/L	11/03/2020	82
806	Solids, Total Dissolved	mg/L	03/02/2021	40
806	Solids, Total Dissolved	mg/L	06/02/2021	82
806	Solids, Total Dissolved	mg/L	09/01/2021	101
806	Solids, Total Dissolved	mg/L	11/10/2021	53
806	Solids, Total Dissolved	mg/L	03/29/2022	60
806	Solids, Total Dissolved	mg/L	06/07/2022	74
806	Solids, Total Dissolved	mg/L	08/10/2022	73
806	Solids, Total Dissolved	mg/L	11/08/2022	55
806	Solids, Total Dissolved	mg/L	03/28/2023	88
806	Solids, Total Dissolved	mg/L	06/06/2023	92
806	Solids, Total Dissolved	mg/L	08/16/2023	80
806	Solids, Total Dissolved	mg/L	10/18/2023	100
806	Solids, Total Dissolved	mg/L	01/03/2024	223
806	Solids, Total Dissolved	mg/L	06/05/2024	177
806	Solids, Total Dissolved	mg/L	09/26/2024	58
806	Solids, Total Dissolved	mg/L	11/06/2024	877