

Permit Fact Sheet

General Information

Permit Number	WI-0063011-05-0
Permittee Name and Address	Pukall Lumber Company Inc 10894 Hwy 70E, Arbor Vitae, WI 54568-9705
Permitted Facility Name and Address	Pukall Lumber Company Inc 10894 Highway 70E, Arbor Vitae, Wisconsin
Permit Term	October 01, 2026 to September 30, 2031
Discharge Location	Culvert under Highway 70 at 10894 Hwy 70E Arbor Vitae, WI (N ½ of Section 25; T40N-R6E)
Receiving Water	Groundwater of the Upper Tomahawk River Watershed in the Upper Wisconsin River Basin in Vilas County
Discharge Type	Existing seasonal discharger

Facility Description

Pukall Lumber Company Inc. has a lumber sawmill and retail store in Arbor Vitae. Unprocessed logs are stockpiled on the company property adjacent to County Highway 70. To prevent the logs from drying out before they can be milled, they are sprayed with water from groundwater wells 801 (BE955 Lumber Yard West) and 802 (BE956 Lumber Yard East) when the temperatures are warm in the spring, summer, and fall. Wood debris from the logs and solids from the log yard are washed into a holding pond located behind the sawmill stacker building next to the log yard. The wastewater in this holding pond can either drain into the soil or go through the culverts that lead to a second holding pond. The second holding pond is located on the north side of Highway 70 E, directly in front of the log yard. All of the culverts contain screening to prevent bark and wood debris from passing through. The holding pond located on the north side of Highway 70 E has an additional concrete wall that includes more screening to contain and control bark and wood debris from passing through the culvert under Highway 70 E. From here the discharge flows under the highway and into a wetland created by the discharge on Pukall Lumber company Inc. property to the south of the highway.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, compliance schedule items, and a site visit on April 8, 2026, by Brooke Klingbeil, WDNR, this facility has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	EFLUENT – PROCESS WATER Flow is not a required parameter.	Grab samples shall be collected from the process water during log spraying events on the far side of the effluent gate. Process water is the log spraying drainage and any water that comingles with the spray water, including storm water from rain events.
101	SOURCE WATER – PREVIOUSLY IDENTIFIED AS 701 An average of 107,423 gpd over	Monitoring consists of flow data collected from the flow meter on the log spraying well and daily maximum ambient air temperature taken from a reliable, agreed upon source.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
	approximately 86 days per year. (2021 – 2025 data)	

Sample Point Designation For Groundwater Monitoring Systems		
Sample Pt Number	Well Name	Comments
801	BE955/64001	High capacity well used to water logs in the west lumber yard.
802	BE956/64002	High capacity well used to water logs in the east lumber yard.
803	8NG998/72428	High capacity well used for the boiler
804	EF681/93420	High capacity well used for the lumber retail store
805	108971	Residential well located south of County Hwy 70

Permit Requirements

1 Inplant - Monitoring and Limitations

1.1 Sample Point Number: 101- LOG SPRAYING SOURCE WATER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	Daily	Total Daily	Monitoring is only required during log spraying events.
Temperature Air		deg F	Daily	Measure	Monitor the maximum air temperature only when log spraying occurs on that day.

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.

The nomenclature of sample point numbers identifies what will be monitored. The sample point number 701 used during previous permit terms denotes an influent monitoring location. Influent, seen mainly in municipal facilities, is utilized for untreated waste prior to treatment. For industries such as Pukall Lumber, it is more appropriate to use an in-plant number, 101, as a measurement of resources used or information needed to maintain the industrial processes. Sample point 701 will now be identified as Sample Point 101, the parameters and sample locations remain the same.

2 Land Treatment – Monitoring and Limitations

2.1 Sample Point Number: 001- PROCESS WATER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Oil & Grease (Hexane)		mg/L	Annual	3-Grab Comp	Refer to "Oil and Grease Monitoring" subsection of the permit for more sample frequency information.
pH Field	Daily Max	9.0 su	Annual	Grab	
pH Field	Daily Min	6.0 su	Annual	Grab	
Nitrogen, Total		mg/L	Annual	Grab	
BOD5, Total		mg/L	Annual	Grab	

Changes from Previous Permit:

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

Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Facility Monitoring System

Location of Monitoring system: Existing High Capacity and Residential Wells located on-site

Groundwater Monitoring Well(s) to be Sampled: 801 (BE955/64001), 802 (BE956/64002), 803 (8NG998/72428), 804 (EF681/93420), 805 (108971)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: None at this time. All PAL and ES limits in the table below are based on s. NR 140 Wis. Adm. Code, Table 1.

Groundwater Monitoring Well(s) Used for Point of Standards Application: None of the wells meet the requirements point of standard criteria.

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Groundwater Elevation	feet MSL	N/A	N/A	Annual
COD	mg/L	N/A	N/A	Annual
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Annual

pH Field	su	N/A	N/A	Annual
Manganese Dissolved	mg/L	0.06	0.3	Annual
Iron Dissolved	mg/L	0.15	0.3	Annual

Changes from Previous Permit:

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

Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code.

For more information, please refer to the Pukall Lumber Company, Inc. – Groundwater Evaluation Report, WPDES Permit # WI-0063011 memo dated February 28, 2022.

4 Schedules

4.1 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 NR 214, Wisconsin Administrative Code.	09/30/2027

Explanation of Schedule

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

Attachments

Facility diagram submitted by the permittee March 2026

Pukall Lumber Company, Inc. – Groundwater Evaluation Report, WPDES Permit # WI-0063011 memo dated February 28, 2022.

An email dated May 15, 2026 from Woody Myers, DNR hydrogeologist, indicating that there are no changes required and the February 28, 2022 memo should be used.

Justification Of Any Waivers From Permit Application Requirements

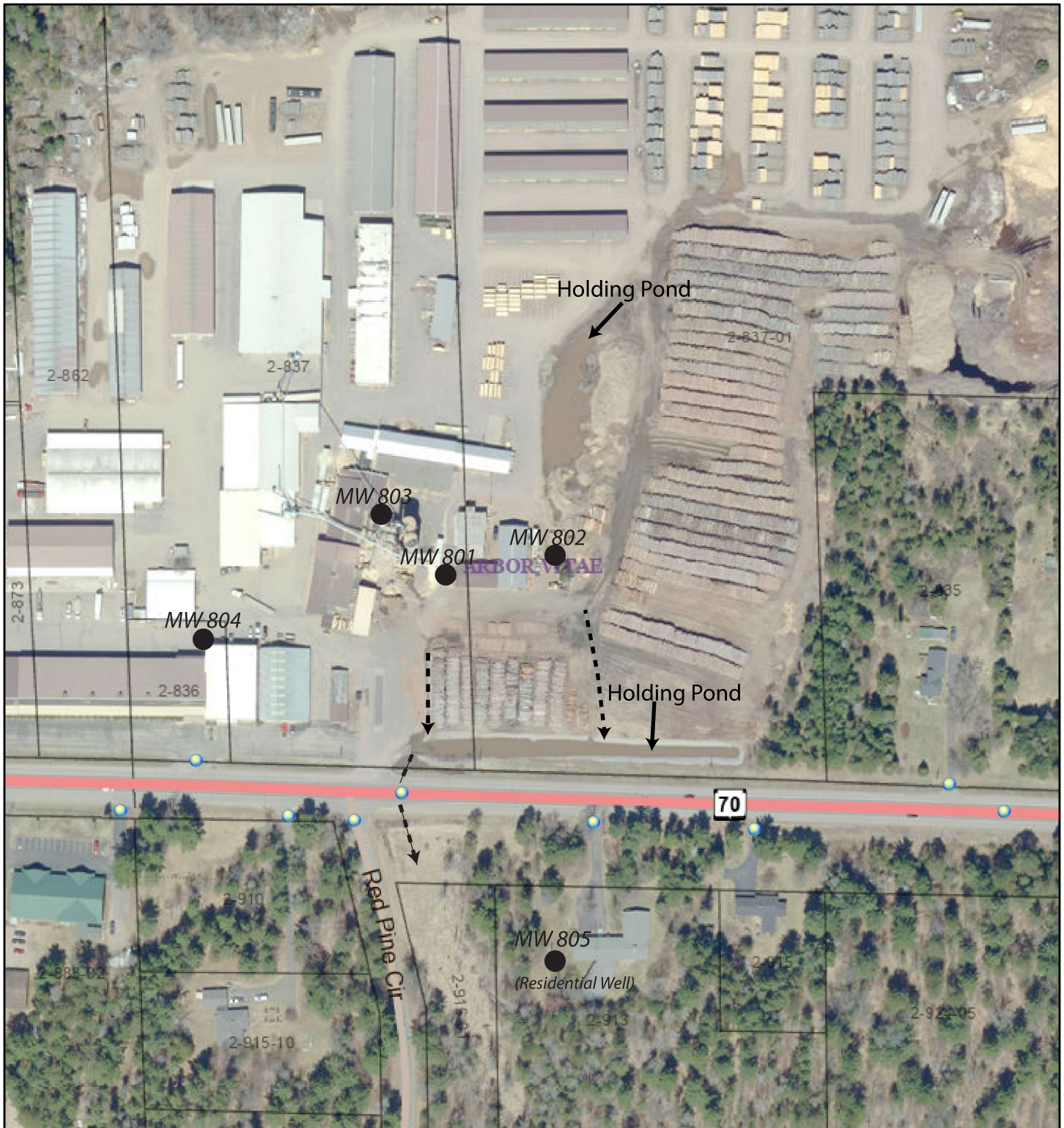
No waivers requested or granted as part of this permit reissuance

Prepared By: Sheri A. Snowbank

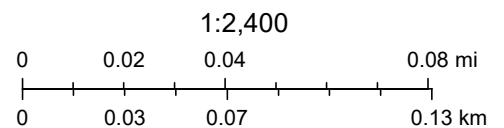
Wastewater Specialist

Date: July 9, 2026

Pukall Lumber Company



- Direction of wastewater flow
- Culvert Locations
- Approximate monitoring well locations
- Local Road
- US/State Highway
- Parcel Boundary



Created by Vilas County Mapping Department, Vilas County Land Information Department, Vilas County Land Information

From: [Myers, Will M - DNR \(Woody\)](#)
To: [Snowbank, Sheri A - DNR](#); [Klingbeil, Brooke N - DNR](#)
Cc: [BalkLudwig, Michelle M - DNR](#)
Subject: Pukall Lumber
Date: Friday, May 15, 2026 6:35:31 AM
Attachments: [2022 GW Eval Final.pdf](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Brooke and Sheri:

I have reviewed the well sampling data for the hi-cap and other private wells at Pukall Lumber.

There are no significant changes that cannot be explained and with only a few exceptions, there are no results significantly above the assumed background.

This said, a new GW eval would be very close to the February 28, 2022 GW eval.

Please use this information for the 2026 reissuance.

Thank you.

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Will (Woody) Myers

Geologist – Water Quality /Wastewater Section
Wisconsin Department of Natural Resources
1300 W Clairemont, Eau Claire WI 54701
Phone: (715) 839-3726

will.myers@wisconsin.gov



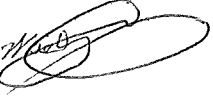
dnr.wi.gov



DATE: July 9, 2021

FILE REF: 3400

TO: File

FROM: Woody Myers - WCR SUBJECT: Pukall Lumber Company, Inc. - Groundwater Evaluation Report,
WPDES Permit # WI-0063011

Site Information

The Pukall Lumber Company, Inc. (Pukall) facility is located at 10894 STH 70, Arbor Vitae, Vilas County. Pukall is permitted as an industrial facility. Wastewater is generated from run off from log wetting on site. The water and wood debris are discharged through ditches to a modified seepage cell with overflow that's eventual fate is a wetland. Pukall is located in the S ½ of the NE ¼ of Section 25, T40N, R6E, Town of Arbor Vitae.

Geology

The bedrock under this facility is gneiss of a quartzofeldspathic, migmatitic composition with amphibolite and gneissic granite (*Bedrock Geology of Wisconsin, Regional Map Series Northeast Sheet*, Wisconsin Geological and Natural History Survey (WGNHS), 1984). Pukall lies just north of the Niagara Fault. Bedrock is anticipated to be between 100 and 200 feet below ground surface (bgs) (*Depth to Bedrock in Wisconsin*, WGNHS, 1973). The regolith is assumed to consist of sandy material. Surface soil consists of the Rubicon sand (USDA Web Soil Survey).

Hydrogeology

Regional groundwater flow is to the south-southwest in this area of Vilas County (Plate 1, Altitude and Configuration of the Water Table, Vilas County Wisconsin, WGNHS Miscellaneous Paper 89-1). Due to the fault discussed earlier the groundwater flow and water storage could be impacted near the facility. Pukall is approximately 3,200 feet east of Little Muskie Lake and directly adjacent to the north of a wetland complex. There are at least twenty wells for water use within 1,500-foot radius of the ponds, including two on-site wells.

Land Treatment Loading Rates

There are two active outfalls at the Pukall facility. Outfall 001 is the discharge that will be associated with the groundwater monitoring network.

Table 1 Sampling Point (Outfall) Listed in SWAMP

Number	Outfall Type	Description
Outfall 701	Surface Water	Log Spraying Source Water
Outfall 001	Land Treatment	Process Water

The following table is the average flow (hydraulic loading) and pH loading summations for the Land Treatment System.

Table 2 Loading Rates

Averages		
Year	Flow (gpd)	pH (su)
2020	55,564	6.67
2019	81,175	6.39
2018	104,801	6.88
2017	66,249	No Data
2016	70,214	5.51

Site Visit/Inspection Observations

On April 19, 2021 department staff visited the facility for a site visit and inspection. Of the observations the one that is most pressing is the volume of wood debris, in the form of bark, splinters and saw dust in the water. It was clear that Pukall has made efforts to reduce the larger debris, however a better system is recommended. The rational is to reduce potential impacts specifically to groundwater. The wastewater flows to one of two areas where it infiltrated into the ground. This water eventually mixes with groundwater (the aquifer). It is this aquifer that residents of the are draw their drinking water.

The groundwater is potentially impacted when the wood debris decays causing the dissolved oxygen to be consumed in the process. The demand for oxygen negatively impacts groundwater through the chemical reduction of native metals including iron and manganese. In a reduced state these metals are soluble in water and therefore become mobile. Both of these metals, along with others adversely impact groundwater quality and, depending on concentration, could be a health hazard for people who drink the water. It is because of this along with the flow volume that the groundwater monitoring system is being required.

Proposed Groundwater Monitoring Requirements

A groundwater monitoring system is required for industrial wastewater discharges if the daily volume of discharge is equal to or greater to 15,000 gallons per day ch. NR214.21 (1) (b) Wis. Adm. Code. Pukall exceeded the 15,000 gallons per day on multiple individual days and the average of the discharge volumes exceeded the 15,000-gallon threshold. The concentration of the effluent (other than oil & grease and pH) are unknown. However, it is assumed that the biomass (wood debris) could potentially impact groundwater therefore the facility will be required to install a groundwater monitoring system. A minimum of three groundwater monitoring wells screened to intersect the piezometric surface are required. One of these wells should be placed up-gradient of the ponds/wetland and at least one needs to be down-gradient. These wells should be sampled quarterly for the parameters in the table 3 (below).

Table 3 Proposed Groundwater Standards –Permit WI-0063011-04

Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
COD	N/A	N/A	Measured
Chloride	125 mg/l	250 mg/l	Table 2, NR 140
Nitrogen, Nitrite + Nitrate	2.0 mg/l	10.0 mg/l	Table 1, NR140
pH	N/A	N/A	Measured
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	Table 1, NR 140
Total Dissolved Solids	N/A	N/A	Measured
Manganese, Dissolved	0.06 mg/l	0.3 mg/l	Table 1, NR 140
Iron, Dissolved	0.15 mg/l	0.3 mg/l	Table 2, NR 140

Conclusions

Due to the flow volume and content of the wastewater discharged a simple groundwater monitoring system is required per ch. NR 214.21 (1) (b) Wis. Adm. Code. Once the wells are installed quarterly sampling of the wells will be required for the parameters in Table 3.

The locations at Pukall where the wastewater is discharged do not comply to the construction specifications in ch. NR 214.12 Wis. Adm. Code. It is recommended that Pukall designs a filtering system to reduce the wood debris within the wastewater flow to include finer particulate. If a problem is identified in groundwater through the groundwater monitoring wells a redesign of the seepage cell structures maybe required.

Compliance Schedule Recommendations

A groundwater monitoring system should be installed and sampled to determine compliance with groundwater quality associated with the discharge of log wetting spray water.

The installation of a groundwater sampling well is a reviewable activity. A plan should be submitted to the DNR wastewater plan review section.

Once the monitoring wells are installed a survey map must be developed with the well locations plotted on it. A map is required of the Land Treatment System per ch. NR141.065 Wis. Adm. Code.

“All monitoring well locations shall be reported to the department on a plan map drawn to a specific scale. The map shall indicate structure boundaries, property boundaries, any nearby surface waters and a north arrow. The plan shall show the wells in relation to each other, to property and structure boundaries and to a common reference point on a horizontal grid system. The origin of the grid system shall be located according to latitude and longitude or according to the state plane coordinate system. The exact vertical location of the top of the well casing shall be referenced to the nearest benchmark for the national geodetic survey datum to an accuracy of 0.01 feet. This plan map shall show the exact location of the installed well on a horizontal grid system which is accurate to within 1 foot.”