Permit Fact Sheet

General Information

Permit Number	WI-0031861-10-0
Permittee Name and Address	AMANI SANITARY DISTRICT 2372 30TH AVE, OSCEOLA, WI 54020
Permitted Facility Name and Address	Amani Sanitary District 2372 30th Avenue, Osceola, WI 54020
Permit Term	January 01, 2027 to December 31, 2031
Discharge Location	700 feet west of pond #2 (South Pond) 2372 30th Ave (NW¼, NE¼ of Section 19; T32NW-R18W)
Receiving Water	A diffuse surface water drainage way and wetlands in Polk County in Trout Brook Watershed of St. Croix River Basin in Polk County
Stream Flow ($Q_{7,10}$)	0 cfs
Stream Classification	Limited Aquatic Life (LAL) community, non-public water supply, recreational use and within the ceded territory.
Wild Rice Impacts *(no specific wild rice standards exist at this time)*	No impacts identified. No wild rice inventoried on this surface water. (Evaluation completed March 2017)
Discharge Type	Existing seasonal
Annual Average Design Flow (MGD)	0.033 MGD
Industrial or Commercial Contributors	N/A
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

Amani Sanitary District owns and operates a domestic wastewater treatment system that serves 27 private homes and several dormitory buildings at the Amani Village Retreat Center which mainly operates weekends and during the summer. This facility was formerly a military radar base designed for 400 permanent occupants. The plant designed to treat 33,000 gallons per day, currently treats an average of 10,000 gallons per day (January 1, 2022 – July 31, 2026 data). The treatment system consists of two septic tanks operated in parallel followed by two stabilization ponds operated in series. Within these ponds naturally occurring bacteria and organisms already present in the wastewater metabolize organic matter. The treated wastewater (effluent) is authorized to be discharged on a fill and draw basis (May 1 through July 31 and September 1 through November 30 annually) to a diffuse surface water drainage way and wetlands. Discharges must occur over 30 to 60 days to prevent hydraulic organic overloading of the receiving water.

Substantial Compliance Determination

There have been multiple minor violations of effluent limits, and late reporting. However, the facility has taken the necessary steps to correct their actions, and nothing further is required. After a desktop review of all discharge monitoring

reports and CMARs, and a site visit on June 24, 2026, by Michelle BalkLudwig, WDNR, this facility has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	INFLUENT An average of 0.010 MGD (Jan 2022 to July 2026)	Influent grab samples shall be collected at the manhole just before the wastewater line separates from the septic tanks. Flow monitoring shall take place prior to both settling septic tanks.
001	EFFLUENT An average of 0.033 MGD over an average of 47 days per year. (Jan 2022 to July 2026)	Effluent grab samples shall be collected from the outfall. Flow shall be measured after the V-notch weir in the effluent control building. Discharges are authorized during the months of May, June, July, September, October and November; and discharges are prohibited during the months of January, February, March, April, August and December. Monitoring is required only during periods of discharge.
990	SEPTAGE Flow is not a required parameter.	The facility has two septic tanks which collect the waste generated by the sanitary district. All septic tank solids shall be managed in compliance with chapter NR 113, Wisconsin Administrative Code, for Servicing Septic or Holding Tanks, etc.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	

Changes from Previous Permit:

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

The Flow Rate sample frequency and sample type has changed from "Continuous" to "Daily" to reflect currently acceptable practices at the facility.

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate	Daily Max	0.036 MGD	Daily	Continuous	Limit applies May - July and September - November.
Flow Rate	Daily Max	0 MGD	Daily	Continuous	Limit applies August and December - April.
BOD5, Total	Monthly Avg	20 mg/L	Weekly	Grab	
BOD5, Total	Weekly Avg	30 mg/L	Weekly	Grab	
Suspended Solids, Total	Monthly Avg	20 mg/L	Weekly	Grab	
Suspended Solids, Total	Weekly Avg	30 mg/L	Weekly	Grab	
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	
E. coli		#/100 ml	Weekly	Grab	Monitoring effective during periods of discharge May through September 2027 per the Effluent Limitations for E. coli Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective during periods of discharge May through September per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective during periods of discharge May through September per the Effluent Limitations for E. coli Schedule. See the E. coli

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	19 ug/L	5/Week	Grab	Monitoring and limit effective only when chlorine is used.
Chlorine, Total Residual	Weekly Avg	7.3 ug/L	5/Week	Grab	Monitoring and limit effective only when chlorine is used.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Week	Grab	Enter the daily ammonia result on the eDMR and compare it to the Nitrogen, Ammonia Variable Limit column to determine compliance.
Nitrogen, Ammonia Variable Limit		mg/L	2/Week	See Table	Using the daily pH result look up the applicable ammonia limit using the table in the Ammonia Limitation permit section and report the variable limit on the eDMR.
Phosphorus, Total		mg/L	Monthly	Grab	
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See the Total Maximum Daily Load (TMDL) Limitations permit section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See the Total Maximum Daily Load (TMDL) Limitations permit section.
Nitrogen, Total		mg/L	See Listed	Grab	See the permit Total

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Kjeldahl			Qtr(s)		Nitrogen Testing subsection for testing schedule.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	Grab	See the permit Total Nitrogen Testing subsection for testing schedule.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Total Nitrogen = Total Nitrogen Kjeldahl (mg/L) + Nitrate+ Nitrogen (mg/L). See the permit Total Nitrogen Testing subsection for testing schedule.

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.

- **Flow-** The sample frequency for flow has been changed from "continuous" to "daily" for eDMR reporting purposes.
- **Flow Limit** – During the previous permit term the flow limit was coded so that the parameter and limit appeared only on the electronic Discharge Monitoring Reports (eDMRs) during authorized months. This permit term the parameter "flow" will appear on all eDMRs, the limit of 0.036 MGD will be included during the authorized months of May – July and September – November. A limit of zero (0) will be included during the non-discharge season of August and December – April. Monitoring is only required during periods of discharge; sample point activity is noted on the eDMR start page accessed through the DNR Switchboard.
- **Parameter Limits** – Similar to flow this permit term effluent parameters will appear on all eDMRs, limits will only be present during the authorize months of May – July and September – November. Monitoring is only required during periods of discharge; sample point activity is noted on the eDMR start page accessed through the DNR Switchboard.
- **Monitoring frequency –** The frequency for pH and dissolved oxygen (DO) has changed from weekly to 5 times a week and ammonia nitrogen has changed from weekly to 2 times a week. The frequency change was implemented to meet minimum monitoring frequencies which is based on the size and type of the facility.
- **E. coli –** Seasonable monitoring and limits for Escherichia coli (E. coli) will begin at the end of the "Disinfection and Effluent Limitations for E. coli" schedule.
- **Chlorine** - There is a "Disinfection and Effluent Limitations for E. coli" schedule in the permit to install and meet E. coli limits. One disinfection option is the use of a chlorine contact system. If this is the option used the parameter has been included in the permit. Monitoring is required only if chlorine is used.

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 dated August 28, 2026.

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.

3 Septage Management - Monitoring and Limitations

Septage management is required in accordance ch. NR 113, Wisconsin Administrative Code. Records must be kept and made available to the Department on request. Required record keeping includes volumes of septage pumped, dates when the septage was removed, land application site DNR number and method used to satisfy pathogen and vector control, and/or the treatment plant where septage is disposed. Annual reporting is required when the permittee land applies the septage. Annual reporting is also required when the permittee disposes of septage at a designated treatment facility.

3.1 Sample Point Number: 990- Septic Tank

Changes from Previous Permit:

Septage requirements were evaluated for this permit term, and no changes were made from the previous permit.

Explanation of Limits and Monitoring Requirements

Requirements for septage management are determined in accordance with ch. NR 113, Wis. Adm. Code.

4 Schedules

4.1 Disinfection and Effluent Limitations for E. coli

The permittee shall install disinfection treatment and comply with surface water limitations for E. coli as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance.

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	02/21/2027
Report on Effluent Discharge: The permittee shall prepare and submit a report on effluent discharge. The report shall include an evaluation of collected effluent data and the facility's ability to comply with final E. coli limitations. The report shall state whether current treatment results in compliance with the final E. coli limitations. The permittee shall also submit a request to the department to evaluate the need for disinfection pursuant s. NR 210.06(3), Wis. Adm. Code. MODIFICATION - If the department determines, based on the information submitted in the Report on Effluent Discharges, that disinfection is not required pursuant s. NR 210.06(3), Wis. Adm. Code, the department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to remove monitoring, the final E. coli limitation, and the remaining actions in this schedule of compliance. FACILITY PLAN - If the Report on Effluent Discharge concludes that current treatment does not results in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in	11/30/2027

this schedule of compliance.	
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for meeting disinfection requirements and complying with E. coli surface water limitations. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	04/30/2028
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to meet disinfection requirements per s. NR 210.06(1), Wis. Adm Code, achieve compliance with final E. coli limitations, and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2029
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2029
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2030
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2031
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2031

Explanation of Schedule

E. coli- A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent E. coli water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

Attachments

Water Flow Schematic created April 2010

"Water Quality-Based Effluent Limitations for the Amani Sanitary District WPDES Permit No. WI-0031861-10-0" memo dated August 28, 2026

Justification Of Any Waivers From Permit Application Requirements

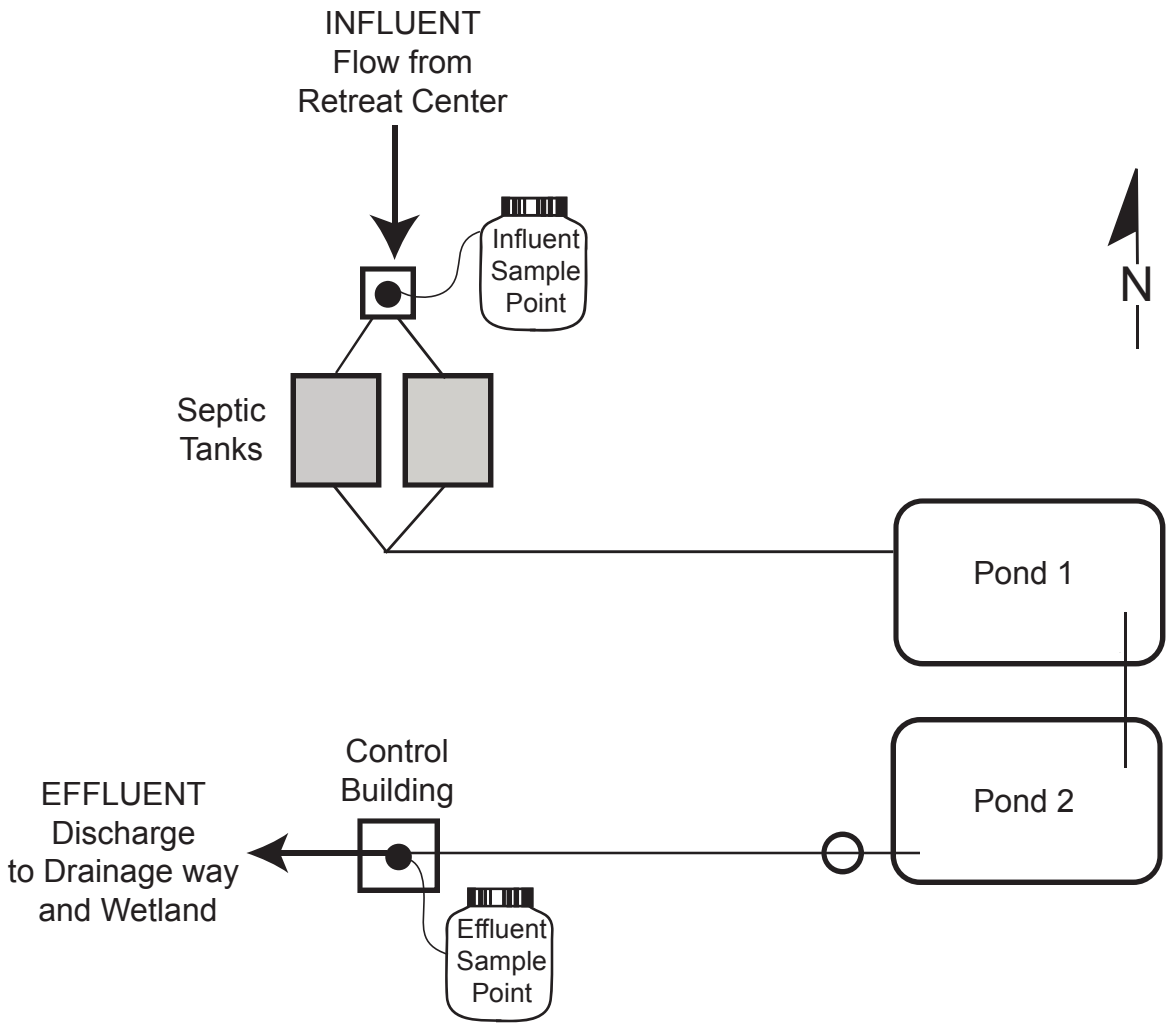
A decision has been made not to require effluent monitoring for metals in the application because:

1. The low design flow (0.033 MGD) and low actual flows (an average of 0.010 MGD) from this facility.
2. The wastewater is all domestic with no industrial contributors to the collection system.
3. Based on the total points accumulated on the WET checklist and Chapter 1.3 of the WET Guidance Document there is no evidence of combined toxicity in the effluent.

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** October 7, 2026

Amani Sanitary District
Wastewater Treatment Plant

The Amani wastewater treatment facility consists of two large septic tanks operated in parallel followed by two stabilization ponds operated in series. Effluent is discharged to a diffuse surface water drainage way and wetland in Polk County. The diagram below shows the treatment units and sampling locations.



● Represents sampling point

NOT TO SCALE

Flow: 0.032 MGD
BOD: 48 pounds/day
Construction Year: 1957

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: August 28, 2026

TO: Sheri Snowbank – NOR/Spooner Service Center

FROM: Michael Polkinghorn – NOR/Rhinelander Service Center Michael Polkinghorn

SUBJECT: Water Quality-Based Effluent Limitations for the Amani Sanitary District
WPDES Permit No. WI-0031861-10-0

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 Amani Sanitary District in Polk County. This municipal wastewater treatment facility (WWTF) discharges to a diffuse surface water drainageway, located in the Trout Brook Watershed in the St. Croix Basin. This discharge is included in the Lake St. Croix Basin (LSCB) Total Maximum Daily Load (TMDL) as approved by EPA on 08/08/2012. 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	Footnotes
Flow Rate	0.036 MGD				1, 2
BOD_5			30 mg/L	20 mg/L	1, 3
TSS			30 mg/L	20 mg/L	1, 3
pH	9.0 s.u.	6.0 s.u.			1, 3
Dissolved Oxygen		4.0 mg/L			1, 3
E. coli May – September				126 #/100 mL geometric mean	4
Chlorine (Total Residual)	19 µg/L		7.3 µg/L		5
Ammonia Nitrogen	Variable				1, 6
Phosphorus					1, 7
TKN, Nitrate+Nitrite, and Total Nitrogen					1, 8

Footnotes:

1. No changes from the current permit.
2. Discharge is authorized from Outfall 001 from May through July and September through November of each year. Discharges must take place over 30 to 60 days to prevent hydraulic organic overloading of the receiving water. The maximum daily flow limit is equal to six times the average influent flow (6,000 gpd) and is based on discharging 180 days of stored wastewater over a 30-day period.
3. These limits are based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
4. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL. A compliance schedule will be included in the reissued permit to mee the final limits. The facility can conduct effluent *E. coli* monitoring which shows that the discharge can meet bacteria limits during the recreation season without

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disinfection during the compliance schedule. *E. coli* effluent monitoring should be included in the permit in order to ensure that the recreational use is being protected (criteria are being met) without disinfection. Monitoring should be conducted at a minimum of 1x/wk for one disinfection season during the permit term and the need for disinfection revisited at permit reissuance or permit modification or if factors such as dilution or detention times change.

5. These limits would be recommended to assure proper operation of the de-chlorination system if the facility decides to upgrade to use chlorination for disinfection.
6. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. These limits apply year-round.

Daily Maximum Ammonia Nitrogen Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
$6.0 \leq pH \leq 6.1$	83	$7.0 < pH \leq 7.1$	51	$8.0 < pH \leq 8.1$	11
$6.1 < pH \leq 6.2$	82	$7.1 < pH \leq 7.2$	46	$8.1 < pH \leq 8.2$	8.8
$6.2 < pH \leq 6.3$	80	$7.2 < pH \leq 7.3$	40	$8.2 < pH \leq 8.3$	7.3
$6.3 < pH \leq 6.4$	78	$7.3 < pH \leq 7.4$	35	$8.3 < pH \leq 8.4$	6.0
$6.4 < pH \leq 6.5$	75	$7.4 < pH \leq 7.5$	31	$8.4 < pH \leq 8.5$	5.0
$6.5 < pH \leq 6.6$	72	$7.5 < pH \leq 7.6$	26	$8.5 < pH \leq 8.6$	4.1
$6.6 < pH \leq 6.7$	69	$7.6 < pH \leq 7.7$	22	$8.6 < pH \leq 8.7$	3.4
$6.7 < pH \leq 6.8$	65	$7.7 < pH \leq 7.8$	19	$8.7 < pH \leq 8.8$	2.8
$6.8 < pH \leq 6.9$	60	$7.8 < pH \leq 7.9$	16	$8.8 < pH \leq 8.9$	2.4
$6.9 < pH \leq 7.0$	56	$7.9 < pH \leq 8.0$	13	$8.9 < pH \leq 9.0$	2.0

7. The reissued permit should contain requirements for monitoring effluent phosphorus to calculate and report monthly phosphorus loads and 12-month rolling sums of monthly phosphorus loads.
8. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).

No WET testing is required because information related to the discharge indicates the potential for effluent toxicity is believed to be low. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, 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 Michael Polkinghorn at (715) 360-3379 or Michael.Polkinghorn@wisconsin.gov and Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (2) – Narrative & discharge area map

PREPARED BY: Michael A. Polkinghorn – Water Resources Engineer

E-cc: Edwin Bruntvedt, Regional Wastewater Specialist – NOR/Spooner Service Center
Michelle BalkLudwig, Regional Wastewater Supervisor – NOR/Spooner Service Center
Diane Figiel, Water Resources Engineer – WY/3

Nate Willis, Wastewater Engineer – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Amani Sanitary District

WPDES Permit No. WI-0031861-10-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

Amani Sanitary District owns and operates a domestic wastewater treatment system that serves 27 private homes and several dormitory buildings at the Amani Village Retreat Center which mainly operates weekends and during the summer. This facility was formerly a military radar base designed for 400 permanent occupants. The treatment system consists of wastewater (influent) collecting in two septic tanks operated in parallel. The water is partially treated by naturally occurring bacteria and organisms already present in the wastewater and solids can settle within the tanks. Effluent then flows to two stabilization ponds operated in series. Within these ponds naturally occurring bacteria and organisms already present in the wastewater break down the organic matter until the wastewater can meet discharge standards. Effluent is discharged via Outfall 001 on a noncontinuous basis during May – July and September – November to a diffuse surface water drainageway to a wetland, approx. 700 ft west of the south lagoon.

Attachment #2 is a discharge area map of Outfall 001.

Existing Permit Limitations

The current permit, expiring on 12/31/2026, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate	0.036 MGD				1, 2
BOD_5			30 mg/L	20 mg/L	1, 3
TSS			30 mg/L	20 mg/L	1, 3
pH	9.0 s.u.	6.0 s.u.			1, 3
Dissolved Oxygen		4.0 mg/L			1, 3
Ammonia Nitrogen	Variable				4
Phosphorus					5
TKN, Nitrate+Nitrite, and Total Nitrogen					6

Footnotes:

1. **These limitations are not being evaluated as part of this review.** Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not

changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.

2. Discharge is authorized from Outfall 001 from May through July and September through November of each year. Discharges must take place over 30 to 60 days to prevent hydraulic organic overloading of the receiving water. The maximum daily flow limit is equal to six times the average influent flow (6,000 gpd) and is based on discharging 180 days of stored wastewater over a 30-day period. **Therefore, the need of this limit will not be reevaluated at this time and it is recommended to continue during the reissued permit term.**
3. These limits are based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
4. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. These limits apply year-round.

Daily Maximum Ammonia Nitrogen Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
$6.0 \leq pH \leq 6.1$	83	$7.0 < pH \leq 7.1$	51	$8.0 < pH \leq 8.1$	11
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$6.9 < pH \leq 7.0$	56	$7.9 < pH \leq 8.0$	13	$8.9 < pH \leq 9.0$	2.0

5. Monitoring only.
6. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).

Receiving Water Information

- Name: Diffuse surface water drainageway
- Waterbody Identification Code (WBIC): NA
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
  - Diffuse surface water drainageway: Limited Aquatic Life (LAL) community, non-public water supply and recreational use. This classification applies from Outfall 001 in the NW ¼ NE ¼ T32N R18W S19 for 0.75 miles to ¼ mile east of S19 and S20 town road.
  - Wetland: LAL community, non-public water supply and recreational use. Wetland located in SW ¼ T32N R18W S20 tributary to unnamed lakes in SE ¼ SW ¼ T32N R18W S20.
  - Information about the site visit for determining the biological potential of the diffuse surface water drainageway and wetland is discussed in greater detail in the Receiving Water Classification Memorandum (May 2026) and is available in the permit file for Amani SD. These

classifications are consistent with what was historically used for these surface waters. The site visit also found the effluent does not flow beyond the wetland area. Therefore, only water quality standards for the diffuse surface water drainageway will be considered in this evaluation.

- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The receiving water low flows are zero.
- % 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.
- Multiple dischargers: None.
- Impaired water status: No known impairments for the diffuse surface water drainageway. This discharge is included in the Lake St. Croix Basin (LSCB) Total Maximum Daily Load (TMDL) which address phosphorus water quality impairments within the TMDL area.

Effluent Information

- Flow rate(s):

  Annual average = 0.033 million gallons per day (MGD)
  Flow rate limit = 0.036 MGD

  For reference, the actual average flow is during January 2022 – July 2026 excluding days discharge did not occur. The flow rate limit of 0.036 MGD is used to account for the noncontinuous nature of the discharge.
- 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: Domestic wastewater with no industrial contributors.
- Water supply: Municipality waterworks.
- Additives: None.
- Effluent characterization: This facility is categorized as a minor municipality and received instructions in the application notification letter that exempt it from standard monitoring requirements. The permit required phosphorus monitoring during the current permit term.

The following table presents the average concentrations and loadings at Outfall 001 from January 2022 – July 2026 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*
Flow Rate	0.033 MGD
BOD_5	10 mg/L
TSS	13 mg/L
pH field	6.9 s.u.
Dissolved Oxygen	5.5 mg/L
Ammonia Nitrogen	2.0 mg/L

*Any results below the limit of detection (LOD) were included as zeroes in calculation of average.

Attachment #1

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 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Available monitoring sample data from the Amani Village Sanitary District (PWS ID: 64903421) produced a PFOA result of 0.83 ng/L and a nondetectable PFOS result. These results are less than one fifth of the respective criteria for each substance. Based on the type of discharge, the effluent flow rate, the lack of indirect dischargers contributing to the collection system and known levels of PFOS/PFOA in the source water, **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.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum limits year round. These limits are re-evaluated at this time due to determine the need of weekly and monthly average limits.

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
The weekly and monthly average ammonia nitrogen limits calculation from the previous limit evaluation (August 2021) do not change because there have been no changes in the effluent, receiving water flow rates, or the receiving water classification. The calculations from the previous limit evaluation are included in the table below:

Weekly & Monthly Ammonia Nitrogen Limits – LAL Community

Diffuse Surface Water Drainageway		Summer	Fall
		May – July	Sept. – Nov.
Effluent Flow	Qe (MGD)	0.036	0.036
Background Information	7-Q_{10} (cfs)	0	0
	7-Q_2 (cfs)	0	0
	Ammonia (mg/L)	NA	NA
	Average Temperature (°C)	NA	NA
	Maximum Temperature (°C)	21	17
	pH (s.u.)	7.4	7.4
	% of Flow used	NA	NA
	Reference Weekly Flow (cfs)	0	0

Attachment #1

Diffuse Surface Water Drainageway		Summer May – July	Fall Sept. – Nov.
	Reference Monthly Flow (cfs)	0	0
Criteria mg/L	4-day Chronic	51.43	63.76
	30-day Chronic	20.57	25.50
Effluent Limits mg/L	Weekly Average	51	64
	Monthly Average	21	26

Effluent Data
The following table evaluates the statistics based upon ammonia data reported from [insert dates].

Ammonia Nitrogen Effluent Data

Statistics (mg/L)	May – July	Sept. – Nov.
1-day P_{99}	1.3	
4-day P_{99}	0.7	
30-day P_{99}	0.4	
Mean	0.3	3.5
Std	0.3	2.4
Sample size	12	8
Range	0.1 - 0.9	0.6 - 6.7

Reasonable Potential
The need to include ammonia limits in the Amani SD permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia during the month ranges and comparing those to the calculated limits. If less than 11 detectable samples are available, then the mean effluent concentration is compared to 1/5th of the calculated limit. Based on this comparison, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. However, since the permit currently has daily maximum limits year-round, **the daily maximum limits must be retained regardless of reasonable potential**, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

> (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

Section NR 102.04(5), Wis. Adm. Code, states that all surface waters shall be suitable for supporting recreational use and shall meet *E. coli* criteria during the recreation season. Section NR 102.04(5)(b), Wis. Adm. Code, allows the Department to make exceptions when it determines, in accordance with s. NR 210.06(3), Wis. Adm. Code, that wastewater disinfection is not required to meet E. coli limits and protect the recreational use. Section NR 210.06(3), Wis. Adm. Code, tasks the Department with determining the need for disinfection using a site-specific analysis based on potential risk to human or animal health. It sets out the factors that must be considered in determining the necessity to disinfect municipal wastewater or to change the length of the disinfection season.

The Amani SD had previously been exempted from disinfection based on the LAL or Limited Forage Fish (LFF) community classification of the receiving water. Section NR 210.06(3)(g), Wis. Adm. Code, states that disinfection decisions may be made based on the hydrologic classifications listed in s. NR 104.02(1), Wis. Adm. Code (**not** on the water quality classifications - i.e., LAL, LFF - that are defined in s. NR 104.02(3), Wis. Adm. Code). Discharges to diffuse surface waters that have very little to no flow most often result in effluent-dominated situations. The risk of illness is related to the concentration of *E. coli* and therefore dilution is an important consideration when considering risk to human health. Since little to no dilution is present in these situations, disinfection should not be exempted based solely on this hydrological classification.

It is recognized that Amani SD potentially has a detention time of at least 180 days, in which the resulting discharged effluent is thought to not pose a risk to human and animal health, as described in s. NR 210.06(3)(h), Wis. Adm. Code. The maximum 180-day rolling average flowrate for the facility is 0.0080 MGD (January 2022 – July 2026) including days discharge did not occur. The volumetric capacity of the lagoons is approx. 1.3 MG, provided by the facility in the permit application. Therefore, the estimated shortest detention time for the facility is approximately 1.3 MG / 0.0080 MGD = 163 days and is less than the 180-day minimum. Therefore, the demonstrated detention time alone is not believed to provide disinfection where additional disinfection treatment is not expected to be needed.

Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. **The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.**
2. **No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.**

These limits are required during May through September. A compliance schedule will be included in the reissued permit to mee the final limits.

The facility can conduct effluent *E. coli* monitoring which shows that the discharge can meet bacteria limits during the recreation season without disinfection during the compliance schedule. *E. coli* effluent monitoring should be included in the permit in order to ensure that the recreational use is being protected (criteria are being met) without disinfection. Monitoring should be conducted at a minimum of 1x/wk for one disinfection season during the permit term and the need for disinfection revisited at permit reissuance or permit modification or if factors such as dilution or detention times change.

Total Residual Chlorine – **If Amani SD decides to upgrade to use chlorination for disinfection, effluent limitations would be recommended to assure proper operation of the de-chlorination system.** Section NR 210.06(2)(b), Wis. Adm. Code, states, "When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L." Because the WQBELs are more restrictive, they are recommended instead. Specifically, **a daily maximum limit of 19 µg/L would be required if the facility decides to use chlorination for disinfection.** Due to revisions to s. NR 106.07(2), Wis. Adm. Code, mass limitations are no longer required. **The calculated weekly average effluent limitation of 7.3 µg/L would also be included in the permit because it is more restrictive than the daily maximum limit.**

Attachment #1

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because the Amani SD does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The daily maximum effluent phosphorus and flow samples taken during the current permit term (January 2022 – July 2026) are 1.17 mg/L and 0.17 MGD respectively. The equivalent mass loading based on these values is 1.6 lbs/day, which equates to 49 lbs/month conservatively assuming these maximum values occur every day over a calendar month. **Therefore, a state technology-based limit is not recommended during the reissued permit term.** 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.

The LSCB TMDL report was written to ensure that phosphorus water quality criteria are attained in Lake St. Croix and are not necessarily protective of phosphorus water quality criteria of other surface waterbodies in the TMDL area. Therefore, the need for a phosphorus WQBEL as described in s. NR 217.13, Wis. Adm. Code, must be considered in addition to any limits required by the TMDL report.

Phosphorus criteria in s. NR 102.06, Wis. Adm. Code, do not apply to LAL community waters as described in s. NR 102.06(6)(d), Wis. Adm. Code. These waters were not included in the USGS/WDNR stream and river studies and, therefore, the Department lacked the technical basis to determine and propose applicable criteria. At some time in the future, the Department may adopt phosphorus criteria based on new studies focusing on LAL community waters. *The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (2020)* suggests that during the interim, WQBELs should be based on the criteria and flow conditions for the next stream segment downstream (or downstream lake or reservoir, if appropriate), because ss. 217.12 and 217.13, Wis. Adm. Code, state that the Department must set WQBELs to protect downstream waters. The receiving waters under the influence of Outfall 001 are the diffuse surface water drainageway and the wetland, which are both LAL community waters. Because the discharge does not flow further downstream to another surface water with a different fish and aquatic life classification, **the phosphorus WQBEL based on s. NR 217.13, Wis. Adm. Code, is not recommended during the reissued permit term.**

TMDL Limits

The phosphorus mass limit is based on the TMDL study for Lake St. Croix to address phosphorus water quality impairments for Lake St. Croix. The TMDL report was approved by EPA on August 8, 2012. The Amani SD is included in a group of permitted facilities subject to an aggregate phosphorus wasteload allocation of 6,932 lbs/yr (3,151 kg/yr) under the Lake St. Croix TMDL report. The facility will be considered in compliance with its Lake St. Croix TMDL allocation if the phosphorus discharged from the facility is less than the permittee's individual allocation of 88 kg/yr (194 lbs/yr) or the total annual loading from all permittees in the aggregate category is less than the aggregate allocation.

The TMDL report states that point sources covered by the aggregate loading cap will be deemed as meeting the aggregate WLA as long as the sum of effluent loads from all 13 point sources remains under the aggregate load cap. According to the TMDL report's implementation recommendations, when the total loading from all 13 point sources equals or exceeds 85% of the aggregate loading cap, permittees exceeding their individual share of the aggregate loading cap should receive individual WLAs.

A review of the calculated 12-month rolling sums of monthly phosphorus loads (n = 44, January 2022 – July 2026) shows Amani SD was always below its annual WLA. The maximum value was 11 lbs/yr during the January 2025 – December 2025 12-month rolling period. **Therefore, a TMDL-based phosphorus WQBEL is not recommended during the reissued permit term. The reissued permit should contain requirements for monitoring effluent phosphorus to calculate and report monthly phosphorus loads and 12-month rolling sums of monthly phosphorus loads.** Monthly loads are calculated using the monthly average phosphorus concentration and the total effluent flow for the month.

The following table summarizes effluent total phosphorus monitoring data from May 2022 – July 2026 for informational purposes.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)
1-day P_{99}	1.8
4-day P_{99}	1.1
30-day P_{99}	0.75
Mean	0.59
Std	0.34
Sample size	15
Range	0.21 - 1.17

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 Chapters NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120 °F. The 86 °F limit applies because the hydrologic classification of the diffuse surface water drainageway is not listed as a wetland or wastewater effluent channel in ch. NR 104, Wis. Adm. Code.

Since this facility provides hydraulic detention times of approx. 163 days elevated effluent temperatures are unlikely and discharge temperatures are expected to be similar to ambient conditions. The facility uses a fill and draw method of operation with effluent discharges occurring only during the cool weather periods in spring and fall when ambient temperatures are less than 86 deg. F. **Therefore, temperature limits and monitoring are not recommended during the reissued permit term.**

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 testing is usually not recommended where the distance between the outfall and the point where the receiving water becomes a non-variance waterbody (i.e., one that supports a cold water, warm water sport fish, or warm water forage fish community) is greater than four miles. In this case, the discharge terminates in the wetland and does not flow further downstream to another surface water with a natural community beyond solely macroinvertebrates. **Therefore, the need for chronic WET testing will not be considered further.**

- 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.

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
AMZ/IWC	Not applicable. **0 Points**
Historical Data	No acute tests performed in last 5 years. **5 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations.

Attachment #1

	Acute
	0 Points
Receiving Water Classification	LAL community. **0 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC. Ammonia nitrogen limit carried over from the current permit. No other toxic substances sampled. **1 Point**
Additives	None. **0 Points**
Discharge Category	No industrial contributors. **0 Points**
Wastewater Treatment	Secondary or better. **0 Points**
Downstream Impacts	No impacts known. **0 Points**
Total Checklist Points:	**6 Points**
Recommended Monitoring Frequency (from Checklist):	No acute tests recommended.
Limit Required?	No.
TRE Recommended? (from Checklist)	No.

- **No WET testing is required because information related to the discharge indicates the potential for effluent toxicity is believed to be low.**

Attachment #2

Amani SD Outfall 001 Discharge Area

