

STATEMENT OF BASIS

FOR THE ISSUANCE OF A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, Permits Branch - WP-16J
77 West Jackson Boulevard
Chicago, Illinois 60604
(312) 886-6106

Public Notice No.: 24-08-02-A

Public Notice Issued On: August 23, 2024

Comment Period Ends: September 23, 2024

Permit No.: MI-0058670-1 (ISSUANCE)

Application No.: MI-0058670-1

Name and Address of Applicant:

**Name and Address of Facility
Where Discharge Occurs:**

Match-E-Be-Nash-She-Wish Band of
Pottawatomis Indians Tribal Utility Authority
Match-E-Be-Nash-She-Wish Band of
Pottawatomis Indians of Michigan
2872 Mission Drive
Shelbyville, Michigan 49344

Match-E-Be-Nash-She-Wish Band of
Pottawatomis Indians Tribal Utility Authority
Wastewater Treatment Facility
2872 Mission Drive
Shelbyville, Michigan 49344
Allegan County
NW ½ of Section 19, T3N, R11W

Receiving Water: Buskirk Creek

INTRODUCTION

The above-named applicant has applied for an NPDES Permit to discharge into the designated receiving water. The permit will be issued by the U.S. Environmental Protection Agency since the discharge is located on land held in trust for the Gun Lake Tribe. The Supreme Court has held in a variety of contexts that tribal trust lands are reservations whether or not they are part of a formally established reservation. Oklahoma Tax Comm'n v. Citizen Band Potawatomi Indian Tribe of Oklahoma, 498 U.S. 505, 511(1991); United States v. John, 437 U.S. 634, 649 (1978) "finding no apparent reason" why lands held in trust should not be considered reservations under §1151(a)). This interpretation has been upheld recently in the environmental context in Arizona Pub. Service Co. v. U.S. Environmental Protection Agency, 211 F.3d 1280 (D.C. Cir. 2000) where the court upheld EPA's regulations governing the authority of Indian tribes to carry out certain provisions of the Clean Air Act.

The MATCH-E-BE-NASH-SHE-WISH Band of Pottawatomi Indians' WWTF located in Wayland Township (Allegan County) is currently authorized by NPDES Permit Number MI0058661-3-1 to discharge up to 0.350 million gallons per day (mgd) of treated wastewater through Outfall 001 to Buskirk Creek at Latitude 42.635684, Longitude -85.652941. Buskirk Creek is not considered an Outstanding State Resource Water. Design of a new WWTF that incorporates treatments units of the existing WWTF (after improvements) are intended to increase the rated capacity of the new combined WWTF to 0.90 mgd. NPDES Permit Number MI-0058670-1 is being issued to authorize the discharge from the new combined WWTF.

DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The existing WWTF currently includes an influent pump station, 2-micron mechanical screens, aerobic tank, 2 activated sludge aeration tanks, 2 membrane filtration tanks, ultraviolet disinfection, mechanical sludge thickening, aerobic digestion for biosolids reduction and stabilization, and liquid biosolids storage. The existing WWTF routinely maintains compliance with the existing NPDES permit. The WWTF has not experienced any wet weather discharge events due to the collection system being of recent construction and in good condition.

The proposed WWTF improvements will modify the existing WWTF so that, upon completion, the facility will include conversion of the existing aeration basins to a new influent equalization tank (converted from existing treatment basins), a new 2-micron mechanical screen, and an updated raw wastewater lift station. The secondary treatment processes will be completely upgraded to include an upgraded Membrane Bioreactor (MBR) based activated sludge process, ultraviolet disinfection, and biosolids storage.

Proposed Effluent Limitations:

Outfall 001- the permittee is authorized to discharge of treated municipal wastewater from Monitoring Point 0001A through Outfall 001, which discharges to Buskirk Creek.

Parameter	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration			
	30-Day	7-Day	Daily	Units	30-Day	7-Day	Daily	Units
Flow	Report	---	Report	MGD	---	---	---	---
Outfall observation					---	Report	---	Yes/No
Carbonaceous Biochemical Oxygen Demand (CBOD₅)								
May 1- Sept 30	30	75	75	lbs/day	4	10	10	mg/L
Oct 1 – Nov 30	15	113	113	lbs/day	15	15	15	mg/L
Dec 1 – March 31	188	300	---	lbs/day	25	40	---	mg/L
April 1 - 30	218	218	218	lbs/day	29	29	29	mg/L
Total Suspended Solids (TSS)								
May 1 – Sept 30	150	225	---	lbs/day	20	30	---	mg/L
Oct 1 – April 30	225	338	---	lbs/day	30	45	---	mg/L
Ammonia Nitrogen (as N)								
May 1- Sept 30	3.8	15	15	lbs/day	0.5	2.0	2.0	mg/L
Oct 1 – Nov 30	14	26	26	lbs/day	1.9	3.5	3.5	mg/L
Dec 1 – March 31	28	90	90	lbs/day	3.7	12	12	mg/L
April 1 – 30	19	38	38	lbs/day	2.5	5	5	mg/L

Total Phosphorus (as P)								
May 1 – Sept 30	0.75	1.5	---	lbs/day	0.1	---	---	mg/L
Oct 1 – April 30	7.5	15	---	lbs/day	1.0	2.0	---	mg/L
Chloride, Total	Report	---	Report	lbs/day	Report	---	Report	ug/L
Sulfate, Total	Report	---	Report	lbs/day	Report	---	Report	ug/L
Mercury, Total	9.8 x 10 ⁻⁶	---	---	lbs/day	1.3	---	---	ng/L
E. coli					126	---	410	E.coli/100 ml
CBOD₅ Minimum % Removal					Minimum 30-Day			
Dec 1 – March 31	---	---	---	---	≥85	---	---	%
TSS Minimum % Removal								
Oct 1 – April 30	---	---	---	---	≥85	---	---	%
					Minimum Daily		Maximum Daily	
pH	---	---	---	---	6.5	---	9.0	S.U.
Dissolved Oxygen					Minimum Daily			
May 1 – Sept 30	---	---	---	---	6	---	---	mg/L
Oct 1 – April 30	---	---	---	---	5	---	---	mg/L

Loading limits in the permit were calculated using the following formula:

$$0.90 \text{ mgd} \times \text{limit (mg/L)} \times 8.34 = \text{Loading (lbs/d)}$$

Antidegradation

Since the new combined WWTF will have increased flows and pollutant loads compared to the existing WWTF, the permittee submitted a Michigan Rule 1098 Antidegradation Statement. EPA believes that Antidegradation requirements have been satisfied and that allowing lower water quality is necessary to accommodate important economic or social development. The improvements to the existing WWTP will allow for continued social and economic growth within the Tribe. This growth is expected to have an important impact on the unemployment rate within the reservation, provide significant gains to the Tribe’s economy, and provide an economic benefit to the existing businesses within the reservation who could see an increase in patronage. Planned development including a hotel which will create approximately 300 additional full-time jobs; the construction directly related to the hotel and WWTP expansion will employ an estimated 330 fulltime workers on site. The evaluation of alternatives showed the new combined WWTF was the best available option for wastewater disposal. The Michigan Rule 1098 Antidegradation Statement is included in the administrative record.

Section 401 Water Quality Certification

The Environmental Protection Agency received a request for a Clean Water Act (CWA) Section 401 water quality certification (WQC). Section 401(a)(1) of the CWA requires applicants for Federal licenses or permits that may result in any discharge into waters of the United States to obtain certification or waiver from the certifying authority where the discharge would originate. The EPA is the appropriate authority for purposes of certifying the proposed discharge under Section 401(a)(1) of the CWA within the trust land of the Gun Lake Tribe and will be unless and until the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians is approved for Treatment as a State (TAS) for CWA Sections 303 and 401. EPA is in the process of certifying pursuant to Section 401. The EPA believes the effluent limitations included in the draft permit meet Tribal and state water quality requirements where they are applicable. The draft certification is available for review. The EPA will act on this certification request prior to issuance of the

permit. We have discussed our issuance of the permit with the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and the permittee.

Basis for Permit Requirements

The limits were developed to ensure compliance with 40 C.F.R. § 122.44(d) and 40 C.F.R. Part 133, EPA's water quality criteria and protection of Michigan's water quality requirements where they are applicable.

Under state requirements, Buskirk Creek is protected for warmwater fish species, other indigenous aquatic life and wildlife, agriculture, navigation, industrial water supply, public water supply at the point of intake, partial body contact recreation, total body contact recreation from May 1 to October 31, and fish consumption. The Rabbit River downstream receives the same protections in addition to being protected for coldwater fish species. Buskirk Creek has a lowest monthly 95 percent exceedance, harmonic mean, and 90-day 10-year flows of 0.1, 0.5, and 0.2 cubic feet per second (cfs), respectively (EGLE Low Flow Database File Number 10476). The Michigan Department of the Environment, Great Lakes and Energy (EGLE) developed limits for the new facility that would be protective of state water quality requirements. Though the State's water quality requirements are not applicable at the point of discharge, EPA believes the limits are appropriate due to the proximity of the reservation boundary and will use them to ensure compliance with the State's water quality requirements at the reservation boundary. Information from EGLE on the development of the limits can be found in the administrative record.

pH

The limits for pH are based on secondary treatment requirements pursuant to 40 C.F.R. Part 133 and Michigan's water quality standards (Part 4, Act 451 (R 323.1053)). Though EPA considers this facility a new discharger, it uses similar treatment and is expected to provide the same effluent quality and therefore, the monitoring frequency for this permit will be set at 3 x weekly.

5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅), Ammonia (NH₃-N) and Dissolved Oxygen (DO)

A multiple reach Streeter-Phelps model was used to determine the impact of the proposed discharge on Buskirk Creek and the Rabbit River at critical low flow conditions in each season. Draft effluent limits for five-day carbonaceous biochemical oxygen demand (CBOD₅), NH₃-N, and minimum effluent dissolved oxygen (DO) are calculated that are protective of the applicable DO standards downstream of the discharge. A diurnal variation of 1.0 mg/L between the daily average and daily minimum DO concentration was assumed for Buskirk Creek based on department procedure defaults. A diurnal variation of 0.65 mg/L was assumed in the Rabbit River based on default values for coldwater streams. Kinetic rates were also set based on department procedure defaults. Stream slopes were calculated using LiDAR data. The preliminary effluent limits to protect the DO standard are summarized in the effluent table above.

The proposed facility would have to produce very high-quality effluent in order to protect the DO standard downstream of the outfall in the May-September season. Based on EGLE's Procedure 80, effluent limit recommendations are set equivalent to the definition of advanced wastewater treatment (AWT) in both seasons. AWT effluent is defined in the procedure as the maximum amount of treatment that can typically be achieved by biological treatment processes. EGLE assumes that a treatment system meeting the AWT criteria will produce effluent that meets water quality standards under almost any stream flow condition. The existing permit (MI0058661-3-1) for the 0.35 MGD facility also has AWT-based effluent limits in the summer season.

Advanced secondary treatment is recommended for October-November and for April, with specific draft effluent limits presented in the effluent table above.

Effluent limits for CBOD₅ that are based on federal secondary treatment standards (STS) are predicted to be sufficient to protect the DO standard in the December-March season. It is likely that the 30-day average effluent limit for NH₃-N recommended to protect against chronic toxicity in this season is more likely to control the facility design than the much less restrictive daily maximum NH₃-N limit necessary to protect the DO standard.

Additional information can be found in the administrative record (April 25, 2022 memo). To be consistent with 40 C.F.R § 122.45(d), where water quality-based seasonal limits were set as 30-day average and daily maximum limits, the daily maximum limit is also set as the 7-day average limit. Water quality will still be protected. Though EPA considers this facility a new discharger, it uses similar treatment and is expected to provide the same effluent quality and therefore, the monitoring frequency for this permit will be set at 3 x weekly.

Total Suspended Solids (TSS)

The concentration limits in the existing permit (MI0058661-3-1) for the 0.35 MGD facility are carried over to this permit as EPA believes they are still appropriate. For the existing permit, the limits for October through April were based on 40 C.F.R. Part 133. For May through September, the limits were set more stringent than secondary treatment (Part 133). Michigan requires the more stringent limits for new dischargers and EPA agreed that the limits were appropriate. Though EPA considers this facility a new discharger, it uses similar treatment and is expected to provide the same effluent quality and therefore, the monitoring frequency for this permit will be set at 3 x weekly.

E. coli

The limits for E. coli are based on the EPA's 2012 Recreational Water Quality Criteria. The geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml). The statistical threshold value of 410 E. coli per 100 ml is set as the daily maximum. The limits are applicable year-round. Though EPA considers this facility a new discharger, it uses similar treatment and is expected to provide the same effluent quality and therefore, the monitoring frequency for this permit will be set at 3 x weekly.

Disinfection

According to the permit application, the facility utilizes an ultraviolet disinfection system. If the permittee wishes to change from ultraviolet disinfection to some other type of disinfection (e.g., chlorine), the permittee must notify EPA and receive approval from EPA prior to changing methods.

Total Chloride and Total Sulfate

To ensure protection of Michigan’s water quality requirements at the reservation boundary for total chloride and total sulfate, the draft permit will include monthly monitoring of the effluent for these parameters. If after the first 12 months of monitoring the data indicates a reasonable potential to exceed limits that would be required based on water quality values (WQV) developed by EGLE in August 2019, the permittee will be required to develop a Pollutant Minimization Plan (PMP) for either or both, chloride, and sulfate, as appropriate. The PMP will be required to be submitted to EPA within 90 days after receiving the first 12 monthly effluent results. Implementation of the PMP is to begin upon submission. If the reasonable potential for either chloride or sulfate to exceed the proposed limits (below) exists, effluent monitoring will be increased bi-monthly.

	Monthly average		Daily Maximum	
Chloride, Total	150,000	---	640,000	ug/L
Sulfate, Total	380,000	---	1,200,000	ug/L

Mercury

EPA has concerns related to mercury discharges within the Great Lakes Basin. Since the proposed facility is a new discharger and there is a need to protect Michigan’s water quality requirements at the reservation boundary, a 30-day average water quality-based effluent limit for mercury of 1.3 ng/L and corresponding load limit is being included in the permit. Compliance with these limitations shall be quarterly with samples collected as grab samples using USEPA method 1669 and analyzed using USEPA method 1631 with a quantification level of 0.5 ng/l. Quarterly monitoring is included in the draft permit.

Phosphorus

The existing permit (MI0058661-3-1) for the 0.35 MGD facility includes a 30-day average total phosphorus limit of 0.1 (mg/L) and a corresponding load limitation from May 1 through September 30 and a 30-day average total phosphorus limit of 1.0 mg/L and a 7-day average limit of 2.0 mg/L and corresponding load limits from October 1 through April 30. The permit limits were developed to be protective of Michigan’s water quality standards (Part 4, Act 451 (R 323.1060)).

The current discharge from the existing facility to Buskirk Creek already creates a surface water that is considered effluent dominated. In addition, Buskirk Creek drains into the Rabbit River, which is a designated coldwater trout stream. The proposed increase in effluent flow would create even greater effluent dominated conditions and potentially impact the Rabbit River.

Therefore, to protect the designated uses in Buskirk Creek at the reservation boundary and downstream surface waters, the concentration limits for total phosphorus will remain the same as those in the existing permit (MI0058661-3-1) with corresponding load limits based on the new flow. To be consistent with 40 C.F.R. § 122.45, a new 7-day average load limit has been included from May 1 through September 30. Though EPA considers this facility to be a new discharger, it uses similar treatment and is expected to provide the same effluent quality and therefore, the monitoring frequency for this permit will be set at 3 x weekly.

Additional Monitoring

In accordance with 40 C.F.R. § 122.21(j)(4)(iv)(C), EPA is requiring the permittee to monitor for the parameters found in Table 2 of Appendix J to 40 C.F.R. Part 122 during the permit term with the data to be submitted with the next permit renewal application. The data will be used to determine if additional limits may be needed in the next permit.

Also, additional monitoring for Total Kjeldahl Nitrogen (TKN), Oil and Grease, Nitrate plus Nitrite Nitrogen and Total Dissolved Solids (TDS) is required for discharges with a design flow greater than 0.1 MGD. This monitoring is an application requirement of 40 C.F.R. § 122.21(j).

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are widely used, long lasting chemicals, components of which break down very slowly over time. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. PFAS are found in water, air, fish, and soil at locations across the nation and the globe. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.

At this time, EPA has not developed water quality criteria or effluent guidelines for any PFAS chemicals. We looked at the need for PFAS sampling at this facility. Wastewater is from domestic sources with no industrial users. We also shared the draft permit with EGLE to evaluate whether monitoring was needed to protect their narrative standard. EGLE's monitoring requirements are based on present industrial users and describes action plans for major facilities with probable industrial dischargers and major facilities without probable industrial discharges. The WWTF is not considered a major facility and EGLE's requirements do not identify action plans for minor facilities without probable dischargers. Therefore, no sampling is required in this permit. We did not receive any comments from EGLE related to PFAS. A reopener clause has been added if additional information becomes available indicating sampling or limits are needed.

Asset Management – Operation & Maintenance Plan

Regulations regarding proper operation and maintenance are found at 40 C.F.R. § 122.41(e). These regulations require, "that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit." The

treatment plant and the collection system are included in the definition of “facilities and systems of treatment and control” and are therefore subject to the proper operation and maintenance requirements of 40 C.F.R. § 122.41(e).

Similarly, a permittee has a “duty to mitigate” pursuant to 40 C.F.R. § 122.41(d), which requires the permittee to “take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment.”

The draft permit requirements are the first steps of an asset management program which contains goals of effective performance, adequate funding, adequate operator staffing and training. Asset management is a planning process that ensures that you get the most value from each of your assets and have the financial resources to rehabilitate and replace them when necessary, and typically includes five core elements which identify: 1) the current state of the asset; 2) the desired level of service (e.g., per the permit, or for the customer); 3) the most critical asset(s) to sustain performance; 4) the best life cycle cost; and 5) the long term funding strategy to sustain service and performance.

EPA believes that requiring a certified wastewater operator and adequate staffing is also essential to ensure that the treatment facilities will be properly operated and maintained. Mapping the collection system with the service area will help the operator better identify the assets that he/she is responsible for and consider the resources needed to properly operate and maintain them. This will help in the development of a budget and a user rate structure that is necessary to sustain the operation. The development and implementation of a proactive preventive maintenance program is one reasonable step that the permittee can take to demonstrate that it is at all times, operating and maintaining all the equipment necessary to meet the effluent limitations of the permit.

Special Conditions

- The permit requires electronic reporting.
- The permit requires the implementation of an Operation & Maintenance Plan. The plan covers the use of a certified operator to oversee the facility, having adequate staff to help ensure compliance with the permit, mapping the treatment system, developing a preventive maintenance program and other items.
- Additional monitoring as required for discharges with a design flow greater than 0.1 MGD. This monitoring is an application requirement of 40 C.F.R. § 122.21(j). A one-time priority pollutant scan and whole effluent toxicity testing are also required.
- Reopener Clause for PFAS.
- The permit contains Industrial Waste Pretreatment Program requirements in accordance with 40 C.F.R. Parts 122 and 403.
- Compliance with 40 C.F.R. Part 503 (sludge use and disposal regulations). These requirements were developed using the Part 503 Implementation Guidance for sludge and 40 C.F.R. Parts 122, 501, and 503.
- Compliance with the Native American Graves Protection and Repatriation Act

- implementing regulations (43 C.F.R. Part 10)
- In addition to Part III of the permit, the permittee is required to comply with the following:

The following land application sites have been identified as potential sites to receive sewage sludge during the permit term. It is not expected additional sites will be needed, however, the permit requires notification both to EPA and locally if additional sites will be used. As new sites are identified, information on those sites will be available for inspection at the Regional Office.

Site ID#	Latitude	Longitude
02N11W13-WL01	N42° 38.895'	W85° 33.693'
02N11W11-GW01	N42° 34' 39"	W85° 35' 4"

The permit is based on an application dated May 26, 2023 (considered complete December 7, 2023) and Antidegradation Statement dated December 7, 2023, and additional supporting documents found in the administrative record.

The permit will be effective for approximately five years from the date of reissuance as allowed by 40 C.F.R. § 122.46.

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