# Briefing Memorandum

**STATEMENT OF BASIS FOR THE REISSUANCE**
**OF A**
**NPDES PERMIT**

| Name and Address of Applicant: | Name and Address of Facility Where Discharge Occurs: |
|---|---|
| Bad River Utilities<br>Bad River Band of the Lake Superior<br>Tribe of Chippewa Indians<br>P.O. Box 39<br>Odanah, Wisconsin 54861 | Birch Hill Stabilization Lagoon<br>Bad River Indian Reservation<br>Birch Hill, Wisconsin<br>Ashland County<br>(NW ¼ of NE ¼ Sec. 36, T47N, R2W) |

Permit No.: WI-0036579-4

Receiving Water: Birch Hill Swamp

## DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The above named applicant has applied for an NPDES Permit to discharge into the designated receiving water. The discharge is located within the exterior boundaries of the Bad River Indian Reservation. The permit will be issued by the U.S. Environmental Protection Agency.

The existing treatment facility consists of 2-cell stabilization lagoon, the primary cell being 2.31 acres in area and the secondary cell being 2.30 acres in area measured at the mean operating level. It has an average design flow of 22,000 gallons per day.

The discharge is controlled, usually occurring during the spring and fall to Birch Hill Swamp.

### Receiving Water

Birch Hill Swamp is protected under Bad River Band's Water Quality Standards (WQS) within the exterior boundaries of the Bad River Indian Reservation.

**Proposed Effluent Limitations:**

**Monitoring Point 001 -** the permittee is authorized to discharge of treated municipal wastewater from Monitoring Point 001 through Outfall 001. Outfall 001 discharges to the Birch Hill Swamp.

| Effluent Characteristics | Discharge Limitations | | | | | | |
|---|---|---|---|---|---|---|---|
| | Concentration (Specified Units) | | | | Quantity/Loading (lbs/day) | | |
| Parameter | Minimum | Monthly | Weekly | Maximum | Monthly | Weekly | Maximum |
| Flow (MGD) | - | - | - | - | Report | Report | - |
| Dissolved Oxygen (mg/L) | 4.0 | - | - | - | - | - | - |
| pH (SU) | 6.0 | - | - | 9.0 | - | - | - |
| Total Suspended Solids (TSS) (mg/L) | - | 60 | 90 | - | 186 | 278 | - |
| Biochemical Oxygen Demand ($BOD_5$) (mg/L) | - | 30 | 45 | - | 93 | 139 | - |
| Phosphorus, Total (mg/L) | - | Report | - | Report | - | - | - |
| Ammonia Nitrogen (mg/L) | - | Report | - | Report | | | |
| Sulfates (mg/L) | - | Report | - | Report | | | |
| E. coli (#/100ml) | - | 126* | - | 235 | - | - | - |
| Mercury, Total (ng/L) | | - | - | Report | - | - | - |
| $BOD_5$ percent removal (%) | 85 | - | - | - | - | - | - |
| TSS percent removal (%) | 65 | - | - | - | - | - | - |
| Outfall observation (yes/no) | - | - | - | - | Report | - | - |

* Geometric Mean

Loading limits in the permit were calculated using the following formula:
0.37 mgd x limit (mg/L) x 8.34 = Loading (lbs/d).

**Section 401 Water Quality Certification**

Where states or tribes have federally approved water quality standards that are applicable at the point of discharge, federal NPDES permits cannot be issued unless water quality certification for the discharge is granted or waived pursuant to Section 401 of the Clean Water Act. The tribal Section 401 authority within the Bad River Band is the Tribal Council. The permittee has provided a copy of its NPDES permit application and requested Section 401 certification from the Bad River Band. EPA has provided a copy of the draft NPDES permit to the Council. If the Council needs

any additional information in order for the Section 401 application to be considered complete, the Council will request such information from the permittee. It is the permittee's responsibility to ensure that the Council has received a valid, complete application for tribal Section 401 certification and to obtain a final Section 401 action from the Council.

The Bad River Environmental Department (BRED) has public noticed the application for Section 401 water quality certification under Tribal Rules. The BRED indicated that the Council intends to provide Section 401 certification or conditions for certification to EPA prior to or during the public notice period for this NPDES permit action. It should be noted that this permit may be republic noticed based on the conditions for Section 401 certification provided by Council.

**Basis for Permit Requirements**
The limits were developed to ensure compliance with 40 CFR Parts 131 and 133, Bad River's water quality standards, and protection of Wisconsin's water quality standards where they are applicable.

**pH**
The limits for pH are based on secondary treatment requirements pursuant to 40 CFR Part 133.

**Biochemical Oxygen Demand(BOD)**
The limits for BOD are based on secondary treatment requirements pursuant to 40 CFR Part 133. A 7-day average limit of 45 mg/L and a 30-day average limit of 30 mg/L are carried from the previous permit; these are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

**Total Suspended Solids (TSS)**
The limits for TSS are based on secondary treatment requirements pursuant to 40 CFR Part 133. A 7-day average limit of 90 mg/L and a 30-day average limit of 60 mg/L are carried from the previous permit; these are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

**E. coli**
The limits for E. coli are based on Bad River's water quality criteria. The geometric mean of not less than 5 samples equally spaced over a 30-day period shall not exceed an E. coli count of 126 Colony Forming Units (CFU) per 100 milliliters (ml). Any single sample shall not exceed an E. coli count of 235 CFU per 100 ml.

**Mercury**
To help determine whether the permittee can meet Bad River's Acute Aquatic Life water quality standard of 1440 ng/l, the permit will require monitoring for mercury for this permit term. A Pollution Minimization Program for mercury is also included in the draft permit to help identify possible sources of mercury in the system.

**Phosphorus**
According to the Bad River Band's Environmental staff, the receiving waters are not impaired for

phosphorus at the point of discharge. In addition, the Bad River Band's water quality regulations and Wisconsin's water quality standards for phosphorus are not applicable in wetlands. However, there is still concern related to excessive phosphorus loads being discharged to waters of the U.S. and its effects in downstream waters. The permit requires monitoring to determine levels being discharged. This information will be used to determine if limits are needed in future permits.

**Dissolve Oxygen**
A minimum dissolved oxygen discharge limit of 4.0 mg/L, is included in the permit based on the Bad River Band's WQS.

**Sulfates**
The WQS for the Bad River Band do not have numeric standards for sulfates. Monitoring is required to provide information related to sulfate levels being discharged from wastewater treatment ponds and the possible impacts to wild rice waters. The data will be used to help the Bad River Band develop numeric standards if determined necessary to protect wild rice waters. A reopener clause is included in the permit to possibly modify the permit if numeric standards are developed.

**Ammonia Nitrogen**
The WQS for the Bad River Band do not have numeric standards for ammonia nitrogen that are effective at this time. Monitoring is required to provide information related to ammonia nitrogen levels being discharged from the wastewater treatment pond. The data will be used to determine if there is a reasonable potential to cause or contribute to a violation of the Band's WQS when they become effective. A reopener clause is included in the permit to possibly modify the permit if the numeric standards become effective.

**Asset Management**
On December 20, 2011 Region invited the Chairman of the Bad River Band of Lake Superior Chippewa to consult on proposed new permit requirements regarding asset management. The agreed upon language is found in the draft permit and the basis for the language is below.

Regulations regarding proper operation and maintenance are found at 40 CFR § 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 CFR § 122.41(e).

Similarly, a permittee has a "duty to mitigate" pursuant to 40 CFR §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 will help to ensure that the facilities and systems of treatment and control will be properly operated and maintained. Mapping the system service area will help the operator get a better handle on the assets that he/she is responsible for and 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, maintenance and repair of the system. Requiring the development and implementation of a preventive maintenance program is one reasonable step that the permittee can take to minimize or prevent a discharge in violation of the permit.

**Special Conditions**

- The permit requires the development and 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.
- The permit contains Industrial Waste Pretreatment Program requirements in accordance with 40 CFR Parts 122 and 403.
- Compliance with 40 CFR Part 503 (sludge use and disposal regulations). These requirements were developed using the Part 503 Implementation Guidance for sludge and 40 CFR Parts 122, 501, and 503. It is not expected that any sludge will be used or disposed of during this permit term. EPA is to be contacted if sewage sludge is to be removed from the pond system.
- Dikes must be maintained and vegetation cut.
- The permit requires the development and implementation of a Pollutant Minimization Program for Mercury.

**Significant Changes**

Following are the significant changes in the draft permit:

- A daily maximum limit for E. coli have been added to be consistent with 40 CFR § 122.45(d).
- Revised language for stabilization ponds.
- A daily minimum limit for dissolved oxygen has been included in the permit.
- During discharge, the permit requires one time per week observations of the outfall to look for unusual characteristics of the discharge.
- The permit requires monitoring of the effluent for mercury and sulfates.

- Development and implementation of a Pollutant Minimization Plan for mercury.
- Requirements related to Asset Management have been added.
- The Industrial Waste Pretreatment Program language has been updated.
- The Sludge Disposal Requirements language has been updated.
- The "Standard Conditions" have been revised.
- A reopener clause for ammonia nitrogen and sulfates is included in the permit.

**ESA and NHPA Compliance**

EPA believes it has satisfied its requirements under the Endangered Species Act and is in the process of satisfying the National Historical Preservation Act. As this is an existing discharge, with no planned construction during the permit term, EPA believes that the issuance of the permit and the continued operation of the facility will have no effect on endangered or threatened species or their critical habitat and will have no impact to historical, archeological, or cultural resources.

The permit is based on a application dated February 23, 2011, and additional supporting documents found in the administrative record.

The permit can be effective for five years from the date of reissuance as allowed by 40 CFR 122.46.

Written By: Sreedevi Yedavalli/John Colletti March 2013
USEPA Region 5, WN-16J
77 West Jackson Blvd.
Chicago, IL 60604
Phone No. (312) 353-7314