# NPDES Performance Audit Inspection (PAI) Report

**Albany County Water Purification District**
**North WWTP**
**Menands, New York**

**NY0026875**

**August 18, 2021**

**Report Prepared by:**

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# PAI Report for Albany County Water Purification District - North WWTP

## OBJECTIVE

On August 18, 2021, at the request of the Water Compliance Branch, a NPDES Performance Audit Inspection (PAI) was conducted at the Albany County Water Purification District – North WWTP in Menands, New York. The objective of the PAI was to evaluate the permittee's self-monitoring program and to gather information necessary to determine compliance with the requirements and limitations of SPDES Permit No. NY0026875.

## KEY PARTICIPANTS

**U.S. Environmental Protection Agency**
Robert Morrell, Geologist, (732)906-6804, morrell.robert@epa.gov
Kathleen M. Foley, Environmental Scientist, (732)321-6790, savino.kathleen@epa.gov

**Albany County Water Purification District – North WWTP**
Tyler Masick, Superintendent of Operations, (518)447-1611, tyler.masick@albanycountyny.gov
Jake O'Conor, Permit Compliance Technician

## FACILITY DESCRIPTION

Albany County Water Purification District – North WWTP is located at 1 Canal Road in Menands, New York. The plant, which began operating in 1973, has a design capacity of 35 million gallons per day (mgd) and an average flow of 18 mgd. Influent wastewater enters the plant at the Preliminary Treatment Building. Approximately 20 percent of the influent wastewater is industrial wastewater, with Bimbo Bakeries being the largest significant industrial user. The influent wastewater flows through the mechanical bar screens (3) and is conveyed to 4 grit channels for grit removal (2 grit channels are on-line). Grit and solids are collected in a container and sent to the Albany County Landfill. After grit removal, the wastewater is pumped to the primary settling tanks (3 of 4 are on-line). Grease is collected manually and transferred to the sludge collection tank. A sump pump in the bypass channel pumps excess grease to the head of the plant. Wastewater from the primary settling tanks flows into two distribution boxes before entering three aeration tanks with fine bubble diffusers. After aeration, the wastewater enters a distribution channel and is directed to one of six final clarifiers (one is out of service). The clarified wastewater flows into a distribution box, where sodium hypochlorite is injected for disinfection. The chlorinated wastewater flows through two chlorine contact tanks. Sodium bisulfite is added after the chlorine contact tanks for dechlorination. The final treated effluent flows through a Parshall flume and is discharged to the Hudson River through Outfall 001.

Primary and secondary sludge is pumped to one of four sludge holding tanks. The sludge, containing approximately 3 percent solids, is conveyed to the Solids Handling Building, where a polymer is added, and it is dewatered using a belt filter press. Supernatant is pumped to the head of the plant. Dewatered sludge, containing approximately 25 percent solids, is conveyed to one of two multiple-

hearth incinerators. Ash from the incinerators is mixed with water and pumped as a slurry to two lagoons. Finally, the ash from the lagoons is transported to the Albany County Landfill for disposal.

**Facility Self-Monitoring**

The permittee collects samples for its influent wastewater immediately after the mechanical bar screens. 24-hour automatic composite samples are collected daily for 5-day carbonaceous biochemical oxygen demand ($CBOD_5$) and total suspended solids (TSS).

Effluent wastewater samples are collected immediately upstream of the Parshall flume. 24-hour automatic composite samples are collected daily for $CBOD_5$, TSS, and total Kjeldahl nitrogen (TKN). Grab samples are collected six times per day for settleable solids, pH, temperature, and total residual chlorine. Grab samples for fecal coliforms are collected once per day. 24-hour automatic composite samples are collected monthly for copper and zinc. Every five years, whole effluent toxicity testing is conducted quarterly. Flow is recorded continuously at the effluent location.

$CBOD_5$, TSS, settleable solids, pH, temperature, fecal coliform, and total residual chlorine are analyzed on site at the facility's ELAP-certified laboratory. Samples for copper, zinc, TKN, and whole effluent toxicity are sent to Phoenix Environmental Laboratories in Manchester, Connecticut.

## EPA INSPECTION ACTIVITIES

On the morning of August 18, 2021, EPA personnel conducted an opening conference with Tyler Masick, Superintendent of Operations. After presenting credentials, the scope and objectives of the inspection were discussed and the permit parameters were confirmed. EPA personnel were then accompanied by the superintendent on an extensive tour of the wastewater treatment plant. The tour began at the influent location and continued downstream at each treatment unit until the final effluent location at Outfall 001. The sludge treatment process units were also inspected during the tour.

In the afternoon of August 18, 2021, EPA personnel conducted an audit of the on-site laboratory with Jake O'Conor, Permit Compliance Technician. Sampling and analytical techniques were reviewed for total residual chlorine, pH, temperature, settleable solids, fecal coliform, $CBOD_5$, and TSS.

At the conclusion of the inspection, a closing conference was held and preliminary findings were discussed with the plant superintendent.

## EPA INSPECTION FINDINGS

During the inspection, the following observations were noted:

1. The temperature of the automatic composite samplers at the influent and effluent sampling locations is currently not being monitored. The thermometer for the influent sampler was laying on its side outside of the temperature water container. There was no thermometer inside the effluent sampler. Temperatures of the automatic composite samples should be measured and recorded daily to ensure proper temperatures during sample collection.

2. Some of the flights on the primary settling tanks are submerged because the mounting brackets were installed too low. This is preventing some floating solids from being collected efficiently. The height of the brackets should be adjusted to the proper elevation.

3. The final clarifiers are in need of cleaning and maintenance. Some of the overflow weirs are uneven on one of the clarifiers. Floating solids and pin floc were observed in the overflow. There is extensive algae growth just below the overflow weirs. Some plants are growing in the side of one of the clarifiers due to excessive buildup of solids and algae. Since only 5 of the 6 final clarifiers are in operation, it is recommended that each clarifier be scheduled for cleaning and maintenance while the other 5 remain in service.

4. The chlorine contact tanks need cleaning. Solids and algae are accumulating at the exit gates.

5. The primary flow measuring device is located at the midpoint of the converging section of the Parshall flume. To ensure accurate flow readings, the primary flow measuring device should be located exactly two-thirds upstream of the converging section of the flume.

6. At the effluent sampling location, there were no sampler initials on the pH calibration log sheet. The pH meter should be checked and calibrated with buffers daily, and the information recorded on the log sheet, including the date, time, and initials of the sampler.

7. At the effluent sampling location, the chlorine meter is not checked with standards. The chlorine meter should be checked with standards daily and the information recorded on a log sheet.

8. In the on-site laboratory, there were several pH buffer containers on the bench with no expiration date labels. It is recommended that only one container for each standard buffer be stored on the bench with clear expiration date labels. Expired buffers should be discarded.

9. Fecal coliform samples are analyzed using Standard Method 9222D-2006 (MF). The sample dilutions are measure using a graduated cylinder instead of a sterile glass pipet, which is a more precise instrument. The laboratory is currently running only two dilutions. At least three dilutions should be run to achieve results yielding 20-60 counts per membrane. Also, a microscope should be used for counting colonies.

10. The $CBOD_5$ samples are analyzed using Standard Method 5210B-2011. The samples are not checked for chlorine and then dechlorinated if chlorine is present. Also, a nitrification inhibitor should be added to the bottle after it is filled 2/3 with dilution water.

## ATTACHMENTS

**Photo #1:** View of chlorine contact tank with solids and algae accumulating at exit gate.

**Photo #2:** View of a final clarifier with a plant growing in the side.

**Photo #3:** View of a plant growing on a clarifier weir.

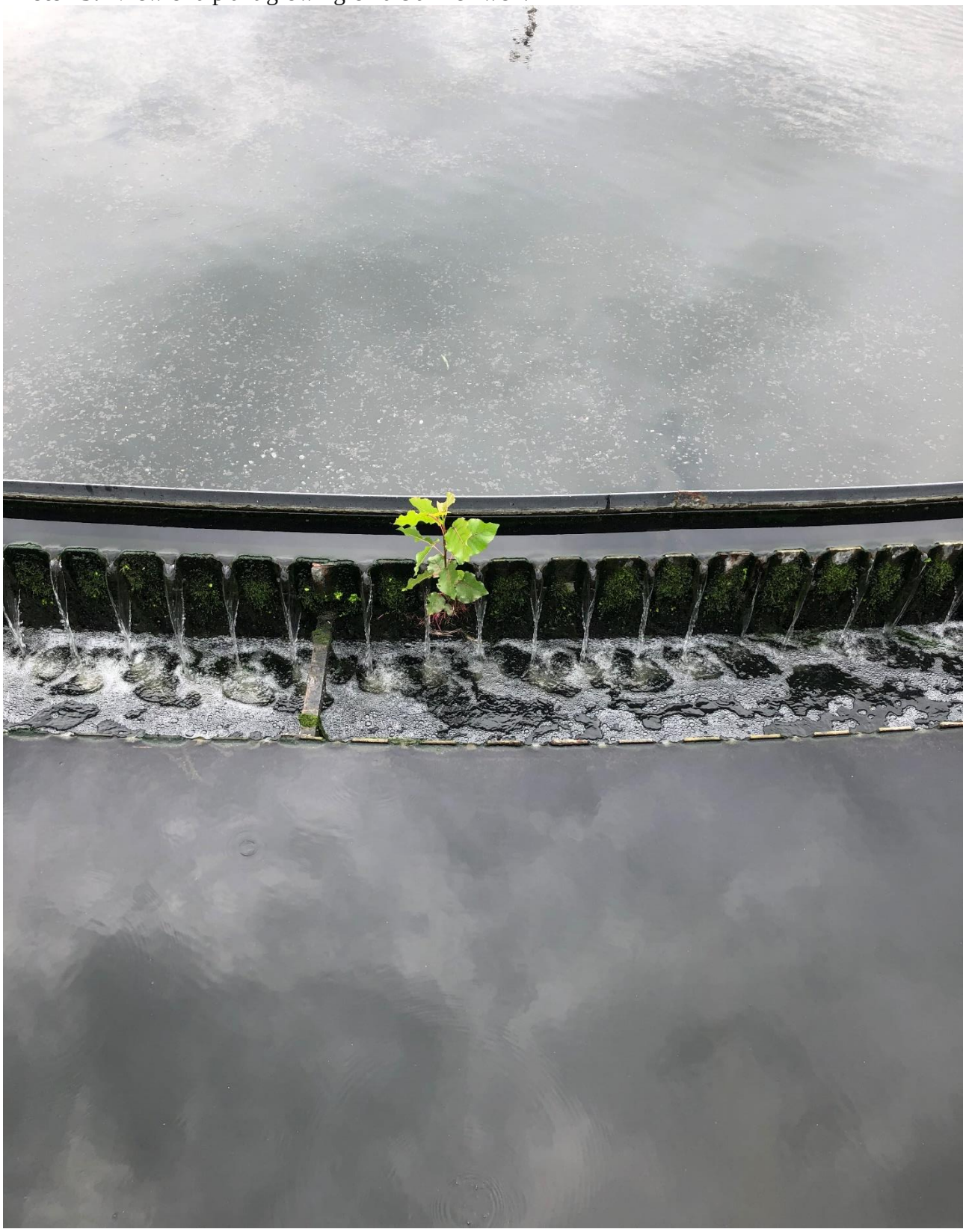

**Photo #4:** Another view of a final clarifier.

**Photo #5:** View of the primary flow measuring device, located at the midpoint of the converging section of the Parshall flume.

*** End of Report ***