STATE OF TENNESSEE
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**
**DIVISION OF WATER RESOURCES**
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, TN 38133
Phone 901-371-3000 Statewide 1-888-891-8332 Fax 901-371-3170

May 11, 2022

Mr. Rick McClanahan
Director of Utilities and Engineering
City of Bartlett
3585 Altruria Road
Bartlett, TN 38135

Re: Compliance Evaluation Inspection
Bartlett Sewage Treatment Plant (STP) #1
NPDES Permit No. TN0066800
Shelby County

Dear Mr. McClanahan:

On Thursday, May 5, 2022, Mr. Eddy Bouzeid with the Division of Water Resources, Memphis Environmental Field Office (DWR/MEFO), conducted a Compliance Evaluation Inspection (CEI) of the City of Bartlett Sewage Treatment Plant (STP) #1. The purpose of the inspection was to determine compliance with the National Pollutant Discharge Elimination System (NPDES) Permit. This was accomplished by reviewing the facility's self-monitoring records and reports, and conducting a walkthrough of the facility. The CEI was conducted while employing social distancing and donning face masks due to the COVID-19 pandemic. Attached you will find the CEI report and corresponding photo documentation which summarize the findings of the CEI. The following are items to note regarding the inspection:

1. The Bartlett STP #1 reported no exceedances of its permit limits for the evaluation period from October 2020 through March 2022.
2. The Bartlett STP #1 conducted annual biomonitoring (IC25 on Ceriodaphnia and Pimephales) of its effluent at Outfall 001. One biomonitoring test was conducted in October 2020 and the second was conducted in May 2021. The October 2020 biomonitoring test failed the values set in the NPDES permit. A follow-up biomonitoring test was conducted in November 2020 and the results were successful. The May 2021 biomonitoring test met the values set in the NPDES permit.
3. The sign at the Loosahatchie River could not be inspected during the inspection due to falling trees and debris from a recent storm which restricted access to the Outfall. Mr. Gamblin informed Mr. Bouzeid that he would send photos of the sign and Outfall once the road to the River becomes accessible.

4. The Bartlett STP #1 has two digital flow meters for the influent and effluent. The devices were calibrated by an independent contractor on October 11, 2021. The devices appeared to be operating properly at the time of the inspection.
5. The influent and effluent composite samplers were observed during the inspection. The samplers appeared to be operating properly and the intake pipes appeared to be clear of any residuals.
6. The Nutrient/Optimization Management Annual Report was available for review at the STP however, the report was last updated and submitted on September 23, 2020. No report was submitted for 2021. Mr. Bouzeid informed Mr. Gamblin during the inspection that the permit requires the permittee to provide a brief annual update on progress toward nutrient optimization/management with the DMRs submitted by September 15th of each year. Mr. Gamblin informed Mr. Bouzeid that this requirement was overlooked and that a brief annual update for 2021 will be drafted and submitted to the Division.

The Division appreciates Mr. Gamblin's assistance and cooperation during the inspection and the facility's continued efforts to comply with its NPDES permit requirements. If you have any questions or comments with regard to the inspection, please contact me at (901) 573-1034 or eddy.bouzeid@tn.gov.

Sincerely,

Eddy Bouzeid
Environmental Protection Specialist
Division of Water Resources
Memphis Environmental Field Office

Enclosures: Compliance Inspection Report, Photographs

cc: TDEC/DWR/MEFO - File
ec: Larry Gamblin- Bartlett Sewage Treatment Plant Manager

**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION**

**Division of Water Resources**

Memphis Environmental Field Office, 8383 Wolf Lake Drive, Bartlett, TN 38133

1-888-891-8332 (TDEC)

**Compliance Inspection for Individual NPDES Permit**

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|---|---|
| **Facility Name:** Bartlett STP #1 | **NPDES Tracking Number :** TN0066800 |
| **Permit Effective Date:** February 1, 2018 | **Permit Expiration Date:** September 30, 2022 |
| | |
| **Date and Time of Inspection:** 5/5/2022 | **Inspector Name:** Eddy Bouzeid |

| | |
|---|---|
| **Official Contact Person Name:** Rick Mcclanahan, Director of Utilities and Engineering | |
| **Address:** 3585 Altruria Road, Bartlett, TN 38135 | **Phone Number:** (901) 385-6451 |
| | **Email:** rmcclanahan@cityofbartlett.org |

## Summary of Findings and Comments

On Thursday, May 5, 2022, Mr. Eddy Bouzeid with the Division of Water Resources, Memphis Environmental Field Office (DWR/MEFO), conducted a Compliance Evaluation Inspection (CEI) of the Bartlett Sewage Treatment plant (STP) #1 located in Shelby County. Mr. Bouzeid met with Mr. Larry Gamblin, the certified wastewater treatment operator, reviewed the facility's records and discussed the self-monitoring program, and conduct an inspection of the treatment plant. The following is a summary of Mr. Bouzeid's findings and observations during and after the inspection:

### I. Permit

The NPDES permit for the Bartlett STP #1 with tracking number TN0066800 expires on September 30, 2022. A copy of the NPDES permit was in a binder at the plant's laboratory. The renewal application was received in the Nashville Central Office on March 28, 2022. The application was deemed complete on April 12, 2022.

The NPDES permit authorizes the discharge of treated wastewater effluent to the Loosahatchie River at mile 18.4.

The design capacity of the treatment system is 2.2 Million Gallons per Day (MGD). From October 2020 through March 2022, the average effluent flow from the treatment system was 1.41 MGD and the maximum flow was 2.79 MGD, recorded in February 2022.

The Bartlett STP #1 discharge effluent characteristic and monitoring requirements are as follows:

- CBOD - three per week composite

- Total Suspended Solids (TSS) - three per week composite
- Ammonia Nitrogen - three per week composite
- E. Coli - three per week grab
- Settleable Solids - three per week composite
- Dissolved Oxygen - five per week grab
- Total Phosphorous - monthly composite
- Total Nitrogen - monthly composite
- pH - five per week grab
- Flow - daily continuous
- IC25 - biomonitoring annually composite

## II. Records/Reports

Site records and reports for the treatment system were observed and appeared to be maintained as required by the NPDES permit. Sampling and analytical data, including flow records, Discharge Monitoring Reports (DMRs) and Monthly Operation Reports (MORs) for the period from October 2020 through March 2022, were reviewed and appeared to be complete. As of the date of the inspection, Bartlett STP #1 was reporting their DMRs via NetDMR successfully.

The Nutrient/Optimization Management Annual Report was available for review at the STP however, the report was last updated and submitted on September 23, 2020. No report was submitted for 2021. Mr. Bouzeid informed Mr. Gamblin during the inspection that the permit requires the permittee to provide a brief annual update on progress toward nutrient optimization/management with the DMRs submitted by September 15th of each year. Mr. Gamblin informed Mr. Bouzeid that this requirement was overlooked and that a brief annual update for 2021 will be drafted and submitted to the Division. .

## III. Facility Site Review

The Bartlett STP consists of two main lift stations at the head of the plant, followed by a headwork building that houses the bar screen (photo 1). From the headwork, the wastewater is pumped to two oxidation ditches for intensive aeration (photo 2). From the oxidation ditches the treated wastewater is clarified via two secondary clarifiers (photo 3), then disinfected using ultraviolet (UV) lights (photo 5) before being discharged to the Loosahatchie River.

The overflow weirs from the clarifiers were clean at the time of the inspection (photo 4). According to Mr. Gamblin, the weirs are cleaned once a week to prevent algae and solids accumulation.

The Bartlett STP #1 reported no exceedances of its permit limits for the period from October 2020 through March 2022.

Bartlett STP also conducts annual biomonitoring (IC 25 Static Renewal 7-Day Chronic Ceriodaphnia and Pimephales) of its effluent as required by the permit. Two biomonitoring tests were conducted for the evaluation from October 2020 through March 2022. One biomonitoring test was conducted in October 2020 and the second was conducted in May 2021. The October 2020 biomonitoring test failed the values set in the NPDES permit. A follow-up biomonitoring test was conducted in November 2020 and the results were

successful. The May 2021 biomonitoring test met the values set in the NPDES permit.

## IV. Effluent/Receiving Waters

The effluent from the STP was clear at the time of the inspection (photo 6). The sign at the Loosahatchie River could not be inspected during the inspection due to falling trees and debris from a recent storm which restricted access to the Outfall. Mr. Gamblin informed Mr. Bouzeid that he would send photos of the sign and Outfall once the road to the River becomes accessible.

## V. Flow Measurement

The treatment system has a digital flow meter for the influent and the effluent (photos 7 & 8). The flow meters were operating during the time of the inspection. The devices are calibrated annually by LabtronX from Nashville, an independent contractor. The certifications by LabtronX were available at the plant. The devices were last calibrated on October 11, 2021.

## VI. Self-Compliance Program

The Bartlett STP has automatic flow proportional samplers for the influent and effluent as required by the permit (photos 9 and 10). At the time of the inspection, both samplers appeared to be operating properly. The samplers were equipped with temperature control bottles and thermometers. The readings on the thermometers in both samplers were below 6 degrees Celsius as required by the permit.

The plant's electrical outlets are used to operate the samplers for the time required to complete the sampling. The Bartlett STP has a back-up generator for use during power outages.

According to Mr. Gamblin, a Bartlett lab technician collects composite samples of the influent and the effluent for analysis. The analyses for CBOD, total suspended solids, ammonia nitrogen and E. coli, total nitrogen and total phosphorous are conducted at Waypoint Analytical Laboratory (WAL) in Memphis.

Dissolved oxygen (DO), temperature and pH are effluent parameters routinely measured by the Bartlett lab technician at the time of sample collection. Settleable solids are analyzed at the plant's laboratory.

A review of the chain-of custodies revealed that the samples shipped to WAL in a cooler were maintained below 6 degrees Celsius as required by 40 CFR, Part 136.

## VII. Compliance Schedule

The treatment system is not under any compliance schedule at this time, with the exception of the permit requirements.

## VIII. Laboratory

All analytical work is being conducted at the WAL in Memphis.

A Standard Operating Procedure (SOP) for field parameter measurement was available for review at the STP. The SOP encompasses: sampling procedures; instructions on proper calibration of field equipment; and QC procedures for equipment calibration.

Calibration of the pH and DO meters was observed. The calibration logs were also inspected, and the calibrations were properly documented. Three buffers (4, 7 and 1O) were being utilized in the calibration of the pH meter. All buffer solutions had valid expiration dates.

The DO meter was calibrated according to the instructions noted in the manufacturer's manual.

## IX. Operations and Maintenance

The wastewater treatment system appeared to be operating properly at the time of the inspection.

## X. Sludge Handling

At the time of the inspection, the wasted sludge from the STP was being pumped into in a storage lagoon for slow aerobic digestion (photo 11). The digested sludge from the aerobic lagoon is dewatered by the addition of polymers and the use of filter press (photo 12). The sludge cake is hauled to Republic Service Landfill in North Shelby County.

## XI. Sanitary Sewer Overflow

Should sanitary sewer releases, discharges and bypasses occur, they are reported on a monthly basis with the MORs as required by the permit. For the reporting period from October 2020 through March 2022, four sanitary sewer releases and one sanitary sewer overflow were reported. No bypasses were reported. The information that accompanied the sanitary sewer releases and overflow was consistent with the permit requirements and was reported through MyTDEC Form successfully.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 1 | 5-5-2022 |

**Description**
View of the bar screen at the headwork.


| Photo No. | Date |
|---|---|
| 2 | 5-5-2022 |

**Description**
View of the oxidation ditches.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 3 | 5-5-2022 |

**Description**
View of one of the secondary clarifiers.


| Photo No. | Date |
|---|---|
| 4 | 5-5-2022 |

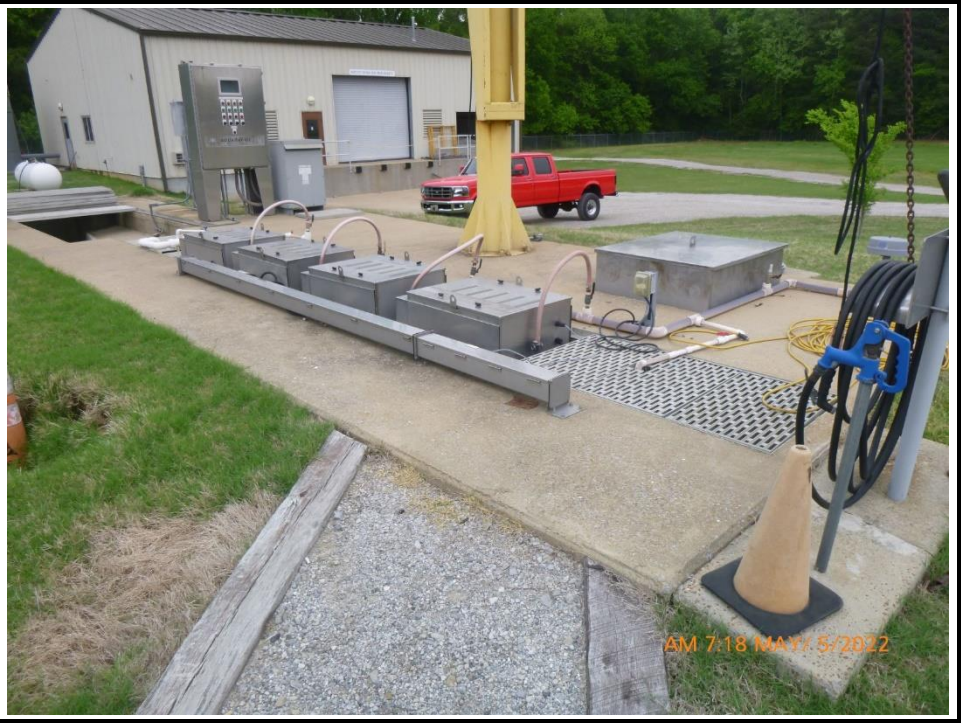
**Description**
Close-up view of the clarifier overflow weir. The weir is cleaned once a week.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 5 | 5-5-2022 |

**Description**
View of the Ultraviolet lights.




| Photo No. | Date |
|---|---|
| 6 | 5-5-2022 |

**Description**
View of the effluent leaving the plant to the Loosahatchie River. The effluent was clear at the time of the inspection.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 7 | 5-5-2022 |

**Description**
View of the effluent flow meter. The meter appeared to be operating properly at the time of the inspection. The meter was last calibrated by an independent contractor on October 11, 2021.

| Photo No. | Date |
|---|---|
| 8 | 5-5-2022 |

**Description**
View of the influent flow meter. The meter appeared to be operating properly at the time of the inspection. The meter was last calibrated by an independent contractor on October 11, 2021.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 9 | 5-5-2022 |

**Description**
View of the influent composite sampler. The 24-hour composite jug is replaced daily. The temperature in the control bottle was below 6 degrees Celsius.


| Photo No. | Date |
|---|---|
| 10 | 5-5-2022 |

**Description**
View of the effluent composite sampler. The 24-hour composite jug is replaced daily. The temperature in the control bottle was below 6 degrees Celsius.

# Photographic Log

| Facility Name: | Site Location: | Tracking No.: |
|---|---|---|
| Bartlett STP #1 | Bartlett, Shelby County | TN0066800 |

| Photo No. | Date |
|---|---|
| 11 | 5-5-2022 |

**Description**
The waste sludge from the plant is pumped into a storage lagoon for slow aerobic digestion.


| Photo No. | Date |
|---|---|
| 12 | 5-5-2022 |

**Description**
View of the filter press building. The digested sludge from the aerobic lagoon is dewatered by the addition of polymers and the use of filter press. The sludge cake is hauled to Republic Service Landfill in North Shelby County.