



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER RESOURCES  
Johnson City Environmental Field Office  
2305 Silverdale Road  
Johnson City, Tennessee, 37601  
Phone 423-854-5400 Statewide 1-888-891-8332 Fax 423-854-5401

June 22, 2017

Certified Mail #7017 0530 0000 1986 2311  
Return Receipt Requested

The Honorable Tommy Casteel, Mayor  
Town of Baileyton  
6530 Horton Highway  
Greeneville, Tennessee 37745

RE: **Compliance Evaluation Inspection (CEI) and  
Sanitary Sewer Overflow Non-Sampling Inspection**  
Baileyton WWTP & Collection System  
NPDES Permit No. TN0063932  
Greene County

Dear Mayor Casteel:

A Compliance Evaluation Inspection and Sanitary Sewer Overflow Non-Sampling Inspection were conducted at the Baileyton WWTP & Collection System by Sandra Vance from this Division on May 25 and 30-31, 2017. During the inspection, compliance with individual NPDES Permit No. TN0063932 was evaluated. The site representative during the inspection was Mr. Danny Neely. The Division thanks Mr. Neely and other Baileyton personnel for their time and assistance during the inspection. In addition to the items below, also see the enclosed ICIS NPDES Facilities Inspection Report for further information.

**I. Permit**

Evaluation of the Baileyton WWTP indicates it is consistent with the description in the NPDES permit. The nature of the WWTP's discharge also appears consistent with the permitted parameters in Part 1.0 of the permit.

## **II. Records/Reports**

Lab records from January and April 2017, discharge monitoring reports (DMR) and monthly operation reports (MOR) from May 2016-April 2017, and pump station logs from January 2016-May 2017 were reviewed. Parts 1.1-1.3 of the NPDES permit contain monitoring, reporting, and documentation requirements. Also, records documenting laboratory analyses, including proper quality assurance and quality control (QA/QC), must be maintained to satisfy permit parts 1.2.3 and 2.1.4.

1. A review of the April 2017 lab records indicated the pH influent analysis was done after the fifteen (15) minute holding time for three days and the pH effluent analysis for two days in April 2017. Also, the calibration result for the dissolved oxygen analysis was not recorded for four days in April 2017. Finally, the effluent grab sample time was not recorded for one day in April 2017.
2. For the total suspended solids analysis in April 2017, the time was not recorded when the pads were weighed.
3. The E. coli incubator temperature was not recorded during April 2017. A new digital thermometer for the incubator is planned to be obtained.
4. A review of the January 2017 lab records indicated the composite sampler temperature was not recorded for five days. The temperature of the composite samplers needs to be recorded on all days composite samples are collected to verify the temperature is less than or equal to 6 degrees Celsius.
5. The Daily Lab Sheets for January 2017 indicated, "1 Hr. Sett. Solids are Composite Samples." A revised sheet indicating the settleable solids samples are grab samples was received during the inspection.
6. The time when the dissolved oxygen is measured and grab samples are collected needs to be recorded when the measurements/sample collections are done. Currently, the measurements/sample collections times are recorded when the grab samples are carried to the WWTP lab building.
7. The times that the pump stations are checked needs to be recorded. WWTP personnel indicated a new form will be made. WWTP personnel were advised that the physical addresses of the pump stations did not have to be included on the form.
8. Per a review of DMRs and MORs from May 2016-April 2017, the WWTP has had two (2) excursions of the total phosphorus NPDES permit limit. The excursions were properly documented as required by the NPDES permit. The WWTP has been involved in a nutrient study since January 2016 to reduce total nitrogen and total phosphorus. Much improvement in the total nitrogen reduction has occurred. The WWTP is currently using chemical addition to achieve compliance with the total phosphorus permit limit.

**III. Facility Site Review, Self-Compliance Program, & Operations & Maintenance**

A walk through evaluation of the WWTP and observation of sampling were conducted. Part 2.1.4 of the NPDES permit contains requirements for proper operation and maintenance of facilities and systems. The following needs to be addressed:

1. Per WWTP personnel, the UV circuit board has been replaced four times in the past year. The current UV board is operational. Power surges occur since the WWTP is located at the end of a power line. A new board is planned to be installed when the power surge issue is resolved.
2. Digester no. 1 had one diffuser not in operation since the anchor bolt holding the diffuser in place had come loose. After sludge is removed from the digester, the anchor bolt is planned to be repaired.
3. The effluent sampler hose needs to be changed. WWTP personnel indicated that more hose needs to be obtained.

**IV. Effluent/Receiving Waters**

The NPDES outfall 001 and receiving waters, Lick Creek, were observed during the inspection. The outfall 001 was accessible, and signage required by the NPDES permit was posted. A new sign will be posted at the outfall 001. The effluent from the WWTP was observed to be clear on May 25, 30, and 31, 2017. The discharge from outfall 001 into Lick Creek was observed to be clear on May 31, 2017.

**V. Flow Measurement**

The influent and effluent flow measurement devices and procedures were evaluated during the inspection. Parts 1.1 and 1.2 of the NPDES permit require continuous flow measurement and calibration/maintenance of the flow measurement devices.

1. Both the influent and effluent flow meters were calibrated on February 21, 2017, per WWTP records. A review of MORs from May 2016-April 2017 revealed that July and November 2016 had 4 days when there was a >10% exceedance between the influent and effluent flow measurements. The months of January and March 2017 had 3 days; June 2016, September 2016, October 2016, and February 2017 had 2 days; and April 2017 had 1 day with a >10% exceedance. May and December 2016 had no days with a >10% exceedance.
2. The February 21, 2017 record indicated the influent and effluent flow measurements were observed via, "Physical Measure/tabular Data." The United States Environmental Protection Agency *NPDES Compliance Inspection Manual* (EPA 305-X-04-001, July 2004) specifies effluent flow measurements must be within plus or minus 10% of actual flow, and the flow meter and totalizer calibration must be checked at sufficient intervals

to ensure accuracy. Part 2.1.4 of the NPDES permit requires proper operation and maintenance of all facilities and systems for treatment. At a minimum, flow meter and totalizer calibration must be checked at least once per year. Records of flow meter calibration and maintenance must be maintained, and all pertinent parameters, including sensor position and level indication, confirmation of indicated versus actual flow, control system programming to convert level readings to flow, and flow totalizer function must be checked.

## **VI. Laboratory**

Part 1.2.3 of the NPDES permit requires pollutant analyses be performed in accordance with methods specified in title 40 CFR Part 136, and Part 2.1.4 requires adequate laboratory controls and appropriate quality assurance procedures.

1. On May 30, 2017, both BOD blanks depleted greater than 0.2 mg/L of dissolved oxygen. The BOD incubator temperature was 25 degrees Celsius (greater than 21 degrees Celsius). The incubator was repaired and placed back into operation on May 31, 2017. Parts are difficult to obtain for the incubator since it was installed in 1988, the first year of WWTP operation.
2. Progress needs to be made on developing standard operating procedures for the lab analyses and on the demonstration of capability (DOCs) and method detection levels for the required analyses for all laboratory analysts. Demonstration of capability testing must be performed, and documentation maintained, for each laboratory analyst. Per WWTP personnel, focus has been placed on the nutrient study to prevent total phosphorus excursions.
3. No GGA check was done for the BOD analysis per the January and April 2017 lab records. All quality control/assurance procedures for the BOD analysis must be done.
4. The time and date when lab reagents are received and opened needs to be recorded.
5. Please submit to the Johnson City Environmental Field Office (EFO) a copy of the lab analyses for the results of the Baileyton WWTP's samples collected May 25 and 30-31, 2017.

## **VII. Sludge Handling/Disposal**

Part 3.3 of the NPDES permit contains requirements for sludge and/or biosolids use or disposal. Since the biosolids are presently being land applied, the WWTP has coverage under the Tennessee General SOP for the Land Application of Non-Exceptional Quality Biosolids (No. TNB063932). The May 16, 2017 sludge vector attraction reduction analysis (specific oxygen uptake rate) record was reviewed. The record indicated that the biosolids has met the vector attraction reduction requirement.

Please be advised that if the biosolids handling practice changes, this EFO must be notified.

**VIII. Sanitary Sewer Overflow/Bypasses**

Parts 1.3.5 and 2.3.2, 2.3.3, and 2.3.6 of the NPDES permit contain requirements for the reporting of overflows and bypasses. The DMR/MORs for the period of May 2016-April 2017 were reviewed.

1. One (1) overflow occurred from May 2016-April 2017. The overflow was properly documented as required by the WWTP's NPDES permit. Per WWTP documentation, the overflow occurred due to the facility served by this pump station not maintaining its trash tank and grease traps before the pump station.
2. Pump no. 1 at the North Greene High School pump station needed a "reset control."
3. Pump station no. 1 needs a better lid for quicker access to the pump station tank. Currently, all of the lid's screws have to be removed to take the lid off of the tank, and the lid has to be repositioned when placing the lid back on the tank. This increases the amount of time to respond to a potential overflow at this station.
4. Pump stations no. 2 and 4 had grease in the tanks and on the level float switches.
5. The pump stations have been well maintained to prevent overflows.

**IX. Additional Comments and Recommendations**

Additional comments and recommendation are noted below:

1. During the nutrient study since January 2016, the WWTP has had success with total nitrogen removal. Total phosphorus (TP) removal has been difficult to achieve biologically since the WWTP is not designed for TP removal per WWTP personnel. The Town of Baileyton and WWTP personnel are congratulated on the success with the nutrient study. The Division thanks the Town and WWTP personnel for the continued hard work on the nutrient study.
2. It is recommended to develop a standard operating procedure for E. coli. analysis.
3. Plant growth was observed on the inside walls of the aeration basins. The plant growth was not currently affecting the operation of the WWTP, but it should be removed.
4. Original resident pump stations are being replaced with new E-1 pump stations on a continual annual basis. The continued replacement of the original resident pump stations will help to prevent future overflows.
5. Several businesses currently do not have grease traps. The installation of grease traps at these businesses would help to prevent future overflows and keep the collection system in good operating condition.

6. It is recommended to ensure the Town does have emergency access to the outfall 001 from the current land owner.

**X. Conclusion**

Compliance with the NPDES permit helps ensure discharges that are protective of downstream fish and aquatic life and water quality. The Division requests that you develop and submit by **July 21, 2017** a written plan and proposed implementation schedule addressing the numbered points discussed in sections II. (No. 1-7), III., V.-VI. and VIII. (No. 1-4), above. Thank you for your efforts to ensure permit compliance and to protect state water quality. If you have any questions concerning this correspondence, please contact me at 423/854-5452 or by e-mail at [Sandra.Vance@tn.gov](mailto:Sandra.Vance@tn.gov).

Sincerely,



Sandra K. Vance  
Johnson City Environmental Field Office  
Division of Water Resources

SKV/150117171

Enclosures

Cc: Mr. Danny Neely, Operator, Baileyton WWTP, (via [e-mail-dannyneely550@yahoo.com](mailto:e-mail-dannyneely550@yahoo.com))  
Ms. Maybelle Sparks, Water-Based Systems, DWR, Nashville (via [e-mail-Maybelle.Sparks@tn.gov](mailto:Maybelle.Sparks@tn.gov))  
Ms. Jessica Murphy, DWR, Compliance and Enforcement Unit, Nashville (via email-[Jessica.Murphy@tn.gov](mailto:Jessica.Murphy@tn.gov))  
File Copy, DWR, Johnson City EFO  
DWR Waterlog Database



TDEC - Division of Water Resources  
Johnson City Field Office

ICIS NPDES Facilities Inspection Report

Facility Data

NPDES ID:  Facility Site Name:   
 Address:   
 Permit Eff. Date:  Permit Exp Date:  SIC Code:

Compliance Monitoring Information

Compliance Monitoring Activity Name:   
 \* If Bio Monitoring is selected above, select the method used:   
 Compliance Monitoring Activity:

Compliance Monitoring Dates/Times

Entry Date/Time (mm/dd/yyyy hh:mm):  Exit Date/Time (mm/dd/yyyy hh:mm):

Facility Representatives

On-Site Representative(s) Title, Phone Number  
 Responsible Official(s), Title, Phone Number

Statute and Section Information

Federal Statute:  State Statute:   
 Programs:   
 Compliance Monitoring Reason:   
 Compliance Monitoring Agency Type:  Agency Name:   
 Did EPA assist/ Inspection?  Time Physically conducting activity: Days:  Hours:   
 Inspection Type:  Compliance Monitoring Action Outcome:   
 Lead Agency:  Compliance Monitoring Rating Code:   
 If Joint Inspection, what was the purpose of the other party?

Areas Evaluated During Inspection (Check only those areas evaluated)

<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Self - Compliance Program	<input type="checkbox"/> Pretreatment
<input checked="" type="checkbox"/> Records / Records	<input type="checkbox"/> Compliance Schedule	<input type="checkbox"/> Pollution Prevention
<input checked="" type="checkbox"/> Facility Site Review	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water
<input checked="" type="checkbox"/> Effluent / Receiving Waters	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> Combined Sewer Overflow
<input checked="" type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Sludge Handling / Disposal	<input checked="" type="checkbox"/> Sanitary Sewer Overflow

Compliance Monitoring Summary

Comments noted in Records/Reports, Flow Measurement, Self-Compliance Program, Laboratory, and Operations & Maintenance.

EPA and State Representatives

Sandra Vance-  TDEC-DWR/JCEFO/423-854-5452   
 Inspector's Signature Agency / Office / Phone Date  
 Kevin Rice-  TDEC-DWR/JCEFO/423-854-5456   
 Manager's Signature Agency / Office / Phone Date

(Note: This form can only be printed to an XPS document, then saved for later use.)





TDEC - Division of Water Resources  
 Johnson City Field Office  
 ICIS NPDES Facilities Inspection Report

Facility Data

NPDES ID:  Facility Site Name:   
 Address:   
 Permit Eff. Date:  Permit Exp Date:  SIC Code:

Compliance Monitoring Information

Compliance Monitoring Activity Name:   
 \* If Bio Monitoring is selected above, select the method used:   
 Compliance Monitoring Activity:

Compliance Monitoring Dates/Times

Entry Date/Time (mm/dd/yyyy hh:mm):  Exit Date/Time (mm/dd/yyyy hh:mm):

Facility Representatives

On-Site Representative(s) Title, Phone Number  
 Responsible Official(s), Title, Phone Number

Statute and Section Information

Federal Statute:  State Statute:   
 Programs:

Compliance Monitoring Reason:

Compliance Monitoring Agency Type:  Agency Name:

Did EPA assist/ Inspection?  Time Physically conducting activity: Days:  Hours:

Inspection Type:  Compliance Monitoring Action Outcome:

Lead Agency:  Compliance Monitoring Rating Code:

If Joint Inspection, what was the purpose of the other party?

Areas Evaluated During Inspection (Check only those areas evaluated)

<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Self - Compliance Program	<input type="checkbox"/> Pretreatment
<input checked="" type="checkbox"/> Records / Records	<input type="checkbox"/> Compliance Schedule	<input type="checkbox"/> Pollution Prevention
<input checked="" type="checkbox"/> Facility Site Review	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water
<input checked="" type="checkbox"/> Effluent / Receiving Waters	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> Combined Sewer Overflow
<input checked="" type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Sludge Handling / Disposal	<input checked="" type="checkbox"/> Sanitary Sewer Overflow

Compliance Monitoring Summary

Comments noted in Records/Reports and Operations & Maintenance.

EPA and State Representatives

Sandra Vance-  TDEC-DWR/JCEFO/423-854-5452   
 Inspector's Signature Agency / Office / Phone Date  
 Kevin Rice-  TDEC-DWR/JCEFO/423-854-5456   
 Manager's Signature Agency / Office / Phone Date

(Note: This form can only be printed to an XPS document, then saved for later use.)