



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

Memphis Environmental Field Office
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February 2, 2024

Mrs. Molly Mehner
Town Administrator
500 Keough Road
Collierville, TN 38107

Re: Compliance Evaluation Inspection
Collierville-Shelton Road STP
NPDES Permit No. TN0057461
Shelby County

Dear Mrs. Mehner:

On Tuesday, December 12, 2023, Ms. Brittany Gibson, Mr. Kyle Mabry, and Mr. Brandon Stuart with the Division of Water Resources (DWR), along with Mr. John Goodwin, Environmental Protection Agency - Region 4 (EPA), conducted a Compliance Evaluation Inspection (CEI) of the Collierville-Shelton Road Sewage Treatment Plant (STP). Upon arrival at the facility, Ms. Gibson met with Mr. Don Davis, the STP Manager, and stated that the purpose of the inspection was to evaluate the plant's compliance with its National Pollutant Discharge Elimination System (NPDES) permit. This was accomplished by reviewing the facility's self-monitoring records, reports, sampling practices, analytical procedures, and subsequently conducting an inspection of the plant. Attached you will find the Compliance Evaluation Inspection Report and corresponding photo documentation which summarize the findings of the CEI. The Division appreciates Mr. Davis's cooperation and assistance during the inspection and the Town of Collierville's continued efforts to comply with its NPDES permit requirements. If you have any questions or comments regarding the inspection, please contact Brittany Gibson at (901) 633-6931 or Brittany.Gibson@tn.gov.

Sincerely,

Brittany Gibson
Environmental Scientist II
Division of Water Resources
Memphis Environmental Field Office

cc: TDEC/DWR/MEFO – File

ec: Don Davis – Collierville STP Manager
Adam Hamric – Assistant Town Administrator
John T. Fox – Director of Public Utilities
David Harrison – Assistant Director of Public Utilities

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 Evaluation Inspection for Individual NPDES Permit

Facility Name: Collierville-Shelton Road STP	NPDES Tracking Number: TN0057461
Permit Effective Date: April 1, 2019	Permit Expiration Date: December 31, 2023
Date and Time of Inspection: December 12, 2023	Inspector Name: Brittany Gibson

Official Contact Person Name: Don Davis, STP Manager	
Address: 136 East Shelton Road, Collierville, TN	Phone Number: (901) 853-3219
	Email: ddavis@colliervilletn.gov

Summary of Findings and Comments

On Tuesday, December 12, 2023, Ms. Brittany Gibson, Mr. Kyle Mabry, and Mr. Brandon Stuart with the Division of Water Resources (DWR), along with Mr. John Goodwin, Environmental Protection Agency – Region 4 (EPA), conducted a Compliance Evaluation Inspection (CEI) at the Collierville-Shelton Road Sewage Treatment Plant (STP) located in Collierville, Tennessee. Ms. Gibson met with Mr. Don Davis, the STP Manager, and reviewed the treatment system’s monitoring records and discussed its self-monitoring program. Afterwards, Ms. Gibson and Mr. Davis inspected the treatment plant and the discharge outfall. The following is a summary of the findings and observations:

I. Permit

The active permit during the time of our inspection for the Collierville-Shelton Road STP, with permit number TN0057461, expired on December 31, 2023. A copy of the NPDES permit was in a binder at Collierville STP laboratory.

A new permit for this facility had already been approved and issued on November 10, 2023. The new permit became effective on January 1, 2024, and expires on December 31, 2028.

This inspection covered the previous NPDES permit requirements and not the newly issued one. The NPDES permit authorizes the discharge of treated wastewater effluent into the Wolf River at mile 30.9.

The design capacity of the treatment system is 3.5 Million Gallons per Day (MGD). From January 2021 through October 2023, the average monthly effluent flow from the treatment system was 1.69 MGD, and the maximum daily flow was 4.12 MGD which was recorded in April 2023.

The Collierville-Shelton Road STP discharge effluent characteristics and monitoring requirements are as follows:

- BOD – Three Per Week Composite
- Total Suspended Solids (TSS) – Three Per Week Composite
- E. Coli – Three Per Week Grab
- Settleable Solids – Quarterly Grab
- Dissolved Oxygen – Three Per Week Grab

- pH – Three Per Week Grab
- Total Nitrogen – Quarterly Composite
- Total Phosphorous – Quarterly Composite
- Flow – Daily Continuous

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 during January 2021 through October 2023 were reviewed and appeared to be complete. As of the date of the inspection, the Collierville-Shelton Road STP was reporting their DMRs via NetDMR successfully.

III. Facility Site Review

The Collierville-Shelton Road STP consists of centrifugal influent pumps, three screw pumps at the head of the plant (photo 1), followed by a bar screen (photo 2) and two grit chambers (photo 3). From the headworks, the wastewater is pumped to two oxidation ditches (photo 4) for intensive aeration. From the oxidation ditches, the wastewater is clarified using two clarifiers (photo 5), then disinfected using ultraviolet lights (UV) (photo 6) before being discharged to the Wolf River. Ultraviolet lights are the primary effluent disinfection process; however, a bleach disinfection process is available as a backup. UV light replacement units were stored on site. Wastewater can enter the plant through two ways. It can either flow into the plant by gravity or via screw pump mechanism.

All overflow weirs in the clarifiers are covered to control algae growth (photo 7). According to Mr. Davis, they are cleaned once a month or as needed to prevent algae and solids growth.

Bleach is added as needed to the return sludge as a process control to limit filamentous organisms.

The Collierville-Shelton STP had no exceedances of its permit limits during the period from January 2021 through October 2023.

IV. Effluent/Receiving Waters

At the time of the inspection, the effluent from the STP to the Wolf River was clear (photo 8). The odor at the plant was minimal, and the sign was in place at the point of discharge at the Wolf River (photo 9). All the information on the sign was consistent with the requirements in the NPDES permit. The STP is currently involved in a soil erosion mitigation plan. This plan will help to rebuild the banks along the Wolf River that have washed away due to erosion near the outfall (photo 13).

V. Flow Measurement

Digital flow meters are installed at the influent and effluent flumes. The flow meters were operating during the time of the inspection. A review of the certification records of the flow meters indicated that the devices were being calibrated annually by Labtronix located in Nashville, TN. The influent flow meter was calibrated in September 2023 and the effluent flow meter (photo 11) was calibrated in November 2023. The facility keeps the calibration records on site. The current calibration year is kept in the main office while subsequent years are stored in the lab.

VI. Self-Compliance Program

The Collierville-Shelton Road STP has automatic, flow-proportional samplers for the influent (photo 10) and effluent (photo 12), and they appear to be maintained properly. They are activated and paced by a flow meter placed in the flume. The automatic samplers can provide adequate refrigeration during the sampling period. Each automatic sampler is equipped with a temperature control bottle and a thermometer. The readings on the thermometers were below 6°C as required by the permit. The composite sampler tubing for both the influent and effluent were clear of any residuals. According to Mr. Davis the composite sampler tubing is replaced the first week of every month.

According to Mr. Davis, Bobby Galabiz - Collierville STP lab technician, collects the influent and effluent samples for analysis. All analytical work is conducted at the plant's laboratory except for BOD, total nitrogen (TN) and total phosphorous (TP). The BOD, TN, and TP samples are delivered to Waypoint Analytical Laboratory in Memphis for analysis. A review of the chain-of-custodies revealed that the samples shipped to Waypoint Laboratory in a cooler were maintained below the 6°C as required by 40 CFR, Part 136.

Dissolved oxygen (DO), temperature, and pH are field parameters routinely measured by the lab technician at the time of sample collection as required by Section 1.2 of the NPDES permit.

VII. Compliance Schedule

Except for the current permit requirements, the treatment system is not under any compliance schedule at this time.

VIII. Laboratory

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

Calibration of the pH and DO meters was observed. The calibration logs were also inspected, and the calibrations were properly documented. Three buffer solutions with a pH of 4, 7, and 10 are utilized in the calibration of the pH meter. All buffer solutions were within their expiration dates.

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

IX. Operations and Maintenance

The STP appeared to be operating properly at the time of the inspection.

X. Sludge Handling

The wasted sludge is pumped into a gravity thickener then dewatered by the addition of polymers and the use of a screw press (photo 14). The sludge cake is transported to Quad County Landfill in Mississippi. A scrubber system has been installed to control the odor from the filter press building. Additional chemicals are stored in the filter press building which is secured by a lock and key. However, it is recommended that the facility invests in secondary containment for their stored chemicals in the event of a spill.

XI. Sanitary Sewer Overflow

Should sanitary sewer overflows (SSOs) or sanitary sewer releases (SSRs) occur, they are to be reported monthly with the DMRs as required by the permit. Two (2) SSO Dry events were reported during the evaluation period from January 2021 through October 2023. The information that accompanied the SSO events was consistent with the permit requirements and was reported through MyTDEC Form.

Photographic Log



Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 1	Date 12-12-2023	DIRECTION 356 deg(T) 35.07835°N 089.66496°W ACCURACY 5 m DATUM WGS84	
Description View of the three screw pumps at the headworks.		 <p style="text-align: right; font-size: small;">2023-12-12 13:15:02-06:00</p>	

Photo No. 2	Date 12-12-2023	DIRECTION 334 deg(T) 35.07848°N 089.66490°W ACCURACY 5 m DATUM WGS84	
Description View of the bar screen.		 <p style="text-align: right; font-size: small;">2023-12-12 13:15:48-06:00</p>	

Photographic Log




Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 3	Date 12-12-2023		
Description View of one of the grit chambers.			

Photo No. 4	Date 12-12-2023		
Description View of the one of the oxidation ditches.			

Photographic Log

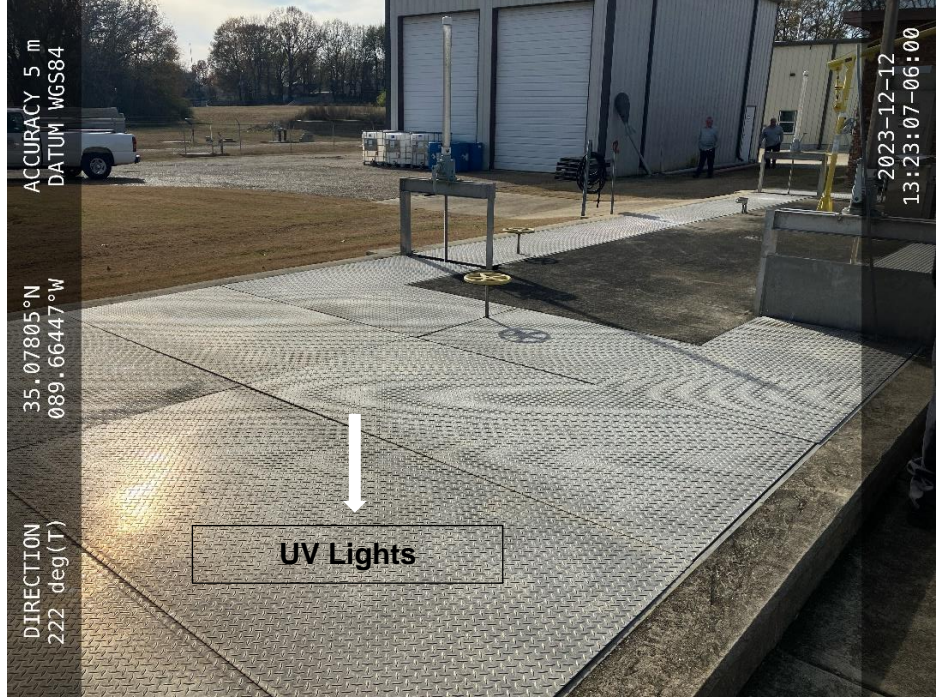
Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 5	Date 12-12-2023		
Description View of one of the clarifiers.			

ACCURACY 5 m
DATUM WGS84

35.07844°N
089.66450°W

DIRECTION
122 deg(T)

2023-12-12
13:20:32-06:00

Photo No. 6	Date 12-12-2023		
Description View of the covered Ultraviolet lights.			

ACCURACY 5 m
DATUM WGS84

35.07805°N
089.66447°W

DIRECTION
222 deg(T)

2023-12-12
13:23:07-06:00

UV Lights

Photographic Log



Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 7	Date 12-12-2023		
<p>Description View of the covered overflow weirs in one of the clarifiers. One lid was open to assess the weirs. There was some algae present.</p>			

Photo No. 8	Date 12-12-2023		
<p>Description View of the effluent leaving the plant to the Wolf River. The effluent was clear at the time of the inspection.</p>			

Photographic Log



Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 9	Date 12-12-2023	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> ACCURACY 5 m DATUM WGS84 35.08429°N 089.66193°W DIRECTION 187 deg(T) </div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> 2023-12-12 13:56:59-06:00 </div> </div>	
Description View of the sign at the outfall by the Wolf River. The information on the sign was consistent with the permit requirements.			

Photo No. 10	Date 12-12-2023	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> DIRECTION 349 deg(T) </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> 35.07818°N 089.66495°W </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> ACCURACY 4 m DATUM WGS84 </div> </div>	
Description View of the influent composite sampler.			
		2023-12-12 13:13:42-06:00	

Photographic Log



Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 11	Date 12-12-2023	DIRECTION 35.07812°N 204 deg(T) ACCURACY 5 m 089.66439°W DATUM WGS84	
Description View of the effluent digital flow meter.		 <p>2023-12-12 13:26:12-06:00</p>	

Photo No. 12	Date 12-12-2023	DIRECTION 35.07802°N 307 deg(T) ACCURACY 5 m 089.66435°W DATUM WGS84	
Description View of the effluent composite sampler.		 <p>2023-12-12 13:25:35-06:00</p>	

Photographic Log




Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 13	Date 12-12-2023	DIRECTION 35.07539°N ACCURACY 1.59 km 41 deg(T) 089.67178°W DATUM WGS84	
Description View of the outfall bank that discharges into the Wolf River.			
		2023-12-12 13:55:31-06:00	

Photo No. 14	Date 12-12-2023	DIRECTION 35.07809°N ACCURACY 5 m 225 deg(T) 089.66499°W DATUM WGS84	
Description View of the filter press building for dewatering the sludge.			
		2023-12-12 13:29:40-06:00	

Photographic Log

Facility Name: Collierville-Shelton Road STP		Site Location: Shelby County	Tracking No.: TN0057461
Photo No. 15	Date 12-12-2023		
Description Aerial view of the Shelton Road STP.			