



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

ELECTRONIC EMAIL
CONFIRMATION OF EMAIL RECEIPT REQUESTED

Kevin Hobbs
McKee Wastewater Treatment Plant
P.O. Box 219
McKee, Kentucky 40447
Khobbs67@yahoo.com

Re: Compliance Evaluation Inspection Report
NPDES Permit No. KY0034444
McKee WWTP

Dear Kevin Hobbs:

The U.S. Environmental Protection Agency, Region 4 and the Kentucky Department for Environmental Protection conducted a Compliance Evaluation Inspection on the McKee Wastewater Treatment Plant on July 19, 2023. The objective of the inspection was to assess the City's compliance with the Clean Water Act and the National Pollutant Discharge Elimination System permit, and to evaluate the general condition of the facility. The inspection results have been summarized in the enclosed Compliance Evaluation Inspection Report.

The EPA appreciates the Town's cooperation and courtesy. If you have specific questions about the inspection report, please contact John C. Goodwin at (404) 562-8488. Please verify receipt of this letter and report by email at Goodwin.John@epa.gov.

Sincerely,

JAIRO
CASTILLO
Jairo Castillo, P.E., Chief
Wastewater Enforcement Section
Water Enforcement Branch

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CASTILLO
Date: 2023.09.25
16:52:17 -04'00'

Enclosure

cc: Rob Miller
Kentucky Department for Environmental Protection
Robertl.miller@ky.gov

United States Environmental Protection Agency Region 4

Enforcement and Compliance Assurance Division

Water Enforcement Branch

61 Forsyth Street, SW

Atlanta, Georgia 30303



Compliance Evaluation Inspection Report

Project No. CV-KY0034444 - 07192023

McKee Wastewater Treatment Plant

Kentucky Highway 89

McKee, Kentucky 40447

NPDES Permit Number: KY0034444

Date of Inspection: July 19, 2023

Title and Approval Sheet

Title: Compliance Evaluation Inspection City of McKee, KY, McKee WWTP

Approving Official:

**JAIRO
CASTILLO**

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CASTILLO
Date: 2023.09.25
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Jairo Castillo, P.E., Chief
Wastewater Enforcement Section
Water Enforcement Branch

Inspector:

**JOHN
GOODWIN**

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GOODWIN
Date: 2023.09.25
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John C. Goodwin, Environmental Engineer
Wastewater Enforcement Section
Water Enforcement Branch

COMPLIANCE EVALUATION INSPECTION REPORT
City of McKee WWTP, Project # CV- KY0034444 - 07192023

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1. Introduction

On July 19, 2023, representatives of the United States Environmental Protection Agency, Region 4 and the Kentucky Department for Environmental Protection (KYDEP) conducted a Compliance Evaluation Inspection (CEI) on the McKee Wastewater Treatment Plant (WWTP), owned and operated by the City of McKee (City). The inspection was conducted under the authority of Section 308 of the Clean Water Act (CWA), as amended. This report provides a summary of the inspection.

2. Participants

Name	Organization	Email
John C. Goodwin	EPA Region 4	Goodwin.John@epa.gov
Charles Jackson	City of McKee, WWTP	casnally@gmail.com
Jessie Gray	City of McKee, WWTP	Lpiper8215@yahoo.com
Robert Miller	KYDEP	robertl.miller@ky.gov
Walter Brumley	KYDEP	walter.brumley@ky.gov
Kevin Hobbs	City of McKee	Khobbs67@yahoo.com

3. Facility Description

The WWTP was established prior to 1967. It is an activated sludge wastewater treatment plant that consists of a single bar screen headworks, aeration basins, primary clarifiers, secondary clarifier, sludge digesters, nitrification basin, a chlorination chamber, and drying beds. It discharges into Indian Creek less than 100 feet from the facility. Charles Jackson is the class II operator and Jessie Gray has recently been transferred from the drinking water plant to assist at the WWTP. A facility diagram provided by KYDEP showed that the new plant is the aeration basin located on the west side of the facility and the old plant was the aeration basin on the east side.

4. Inspection Procedures

The overall objective of this CEI was to evaluate the condition and operational performance of the WWTP and the City's self-monitoring program and to offer compliance assistance as needed. Specific tasks included conducting an opening conference, interviews with WWTP staff, reviewing Discharge Monitoring Reports (DMRs) and other WWTP records, conducting a site visit throughout the WWTP, and a closing conference.

5. Findings & Conclusions

The City has been in Significant Non-Compliance (SNC) for effluent limit exceedances in multiple quarters of the last three years due to effluent violations of biochemical oxygen demand (BOD₅), nitrogen ammonia, and total suspended solids (TSS). The WWTP did not appear to be well managed.

A. Permit Review

The City's National Pollutant Discharge Elimination System (NPDES) permit has an effective date of August 1, 2021, and an expiration date of July 31, 2026. The WWTP is classified as a minor (less than 1.0 MGD discharger) and there are no permitted flow limits.

The facility could not locate a copy of the permit during the inspection. KYDEP and site representatives contended that a copy may be located at McKee City Hall instead of the WWTP's office. KYDEP submitted a copy to EPA for review following the inspection.

B. Records and Reports

EPA's Enforcement and Compliance History Online (ECHO) database shows the City has been in Significant Noncompliance for exceeding NPDES effluent limits for BOD₅, nitrogen ammonia and TSS. The WWTP has also failed to meet the permit limits for E. coli, dissolved oxygen, total suspended solids, and solids removal. Attachment A identifies over 122 violations within the 3 years prior to the inspection.

The review of records during the inspection included the timeframe back to the state's last inspection on April 25, 2023. The facility did not have an updated Operations & Maintenance Manual, operator logs, and was missing the DMR submittal for May 2023.

C. Flow Measurement

The WWTP maintains an ultrasonic flowmeter at the chlorination chamber. There is no permit limit on the flow and the facility officials could not provide the design limit.

D. Sampling

The composite samplers used for influent and effluent samples were not in operation. Operator Charles Jackson only pulls grab samples that he sends off as composite samples for analysis by Mineral Lab. Charles did not know how to operate the influent or effluent sampling units and eventually admitted that the effluent sampler had been down for about 6 months and the influent sampling unit had been inoperable for about 2 years. KYDEP performed a total residual chlorine (TRC) test at the effluent outfall to Indian Creek. The TRC sample analysis resulted in a .33 mg/L result. The permit effluent limitation for TRC is 0.011 mg/L. Charles Jackson stated that the pump at the chlorination chamber had locked up the day before the inspection and that he had not yet tuned the proper dosage on the dechlorination agent. The amount of sodium sulfite was increased during the inspection and a second TRC test yielded a .02 mg/L result.



Figure 1: Photo of the effluent composite sampling unit that appeared to have not been used recently.

E. Site Visit (Operation and Maintenance)

The new plant aeration basin and old plant aeration basin have blower supplied air. Some of the diffusers on the new plant appeared to be clogged. Specks of black were observed in the aeration chamber which may signify the unit is going septic. The facility operators manually clean the bar screen and the final clarifier's skimmer box. Floating solids that bypass the bar screen are collected daily in the aeration basins. No backup power supply is located at the WWTP.

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Figure 2: Photo of WWTP headworks

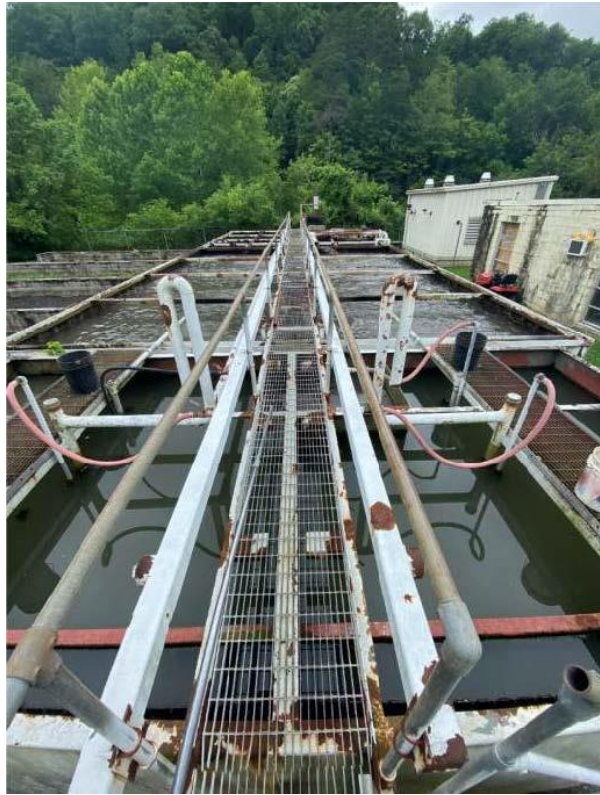


Figure 3: Photo of New Plant



Figure 4: Photo of Old Plant.

The final clarifier had some algae growth. The facility cleans the unit regularly. Some water was not going over sections of the weirs and there were leaks beneath the top as well. The weirs need to be repaired or modified so that the outflow distributes evenly across top of the weirs.



Figure 5: Photo of the final clarifier.

The chlorination chamber appeared to be a slightly small for the size of the operation and the Captor dechlorination agent drip was placed in an area very close to the discharge point of the chamber.



Figure 6: Photo of the chlorination chamber.

During the inspection, questions concerning the operations and process of the WWTP could not be directly answered by the operators. Kevin Hobbs was present during the end of the inspection to assist. Though he is not employed at the WWTP, he serves as a representative of the City and demonstrated a greater understanding of the process and permit requirements.

F. Sludge Handling

The waste activated sludge is pumped to the Digester Tank once per week. The sludge is transferred from the digester to one of the five drying beds as needed and eventually land applied. The digested sludge was last transferred to a drying bed approximately a month prior to inspection according to Charles Jackson. Two of the drying beds had vegetative growth.

G. Effluent and Receiving Water

The City is permitted to discharge effluent from Outfall D-001 to Indian Creek. The discharge point was inspected, and no apparent signs of distress were observed.

6. Discussion

The EPA recommends the following:

- Ensure proper dosing of chlorine and sulfur sulfite in the chlorination chamber to meet permit requirements.
- Clean or repair diffusers for the aeration basins.
- Obtain a permit copy to be kept onsite.
- Perform proper composite sampling as required by the facility's NPDES permit.
- Maintain Operator Logs for better management of the WWTP's process and proper documentation.
- Update the O&M manual for continuous, safe, and efficient operation of the WWTP.
- Retain copy of DMR submittals for a minimum of 3 years.
- Perform repair on the clarifier weirs for proper water distribution.

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Attachment A: DMR Violations July 20, 2020 to July 20, 2023

Parameter Desc	Limit Unit Desc	Statistical Base Short Desc	Limit Value	Monitoring Period End Date	DMR Value
Oxygen, dissolved [DO]	Mg/L	INST MIN	7.	09/30/2021	6.7
Oxygen, dissolved [DO]	Mg/L	INST MIN	7.	05/31/2023	6.95
Oxygen, dissolved [DO]	Mg/L	INST MIN	7.	06/30/2023	6.44
Solids, total suspended	Mg/L	MX WK AV	45.	07/31/2022	47.
Solids, total suspended	Lbs/Day	MO AVG	42.5	01/31/2022	94.21
Solids, total suspended	Lbs/Day	MO AVG	42.5	12/31/2022	202.4
Solids, total suspended	Lbs/Day	MO AVG	42.5	02/28/2023	50.6
Solids, total suspended	Lbs/Day	MO AVG	42.5	03/31/2023	43.
Solids, total suspended	Lbs/Day	MX WK AV	63.8	01/31/2022	150.9
Solids, total suspended	Lbs/Day	MX WK AV	63.8	03/31/2022	69.31
Solids, total suspended	Lbs/Day	MX WK AV	63.8	12/31/2022	759.1
Solids, total suspended	Lbs/Day	MX WK AV	63.8	02/28/2023	124.7
Nitrogen, total [as N]	Mg/L	MO AVG		08/31/2021	
Nitrogen, total [as N]	Mg/L	MO AVG		09/30/2021	
Nitrogen, total [as N]	Mg/L	DAILY MX		08/31/2021	
Nitrogen, total [as N]	Mg/L	DAILY MX		09/30/2021	
Nitrogen, ammonia total [as N]	Mg/L	MO AVG	4.	06/30/2022	6.9
Nitrogen, ammonia total [as N]	Mg/L	MO AVG	4.	07/31/2022	12.71
Nitrogen, ammonia total [as N]	Mg/L	DAILY MX	6.	06/30/2022	19.6
Nitrogen, ammonia total [as N]	Mg/L	DAILY MX	6.	07/31/2022	24.66
Nitrogen, ammonia total [as N]	Lbs/Day	MO AVG	5.7	06/30/2022	7.13
Nitrogen, ammonia total [as N]	Lbs/Day	MO AVG	5.7	07/31/2022	7.4
Nitrogen, ammonia total [as N]	Lbs/Day	MX WK AV	8.5	06/30/2022	16.84
Nitrogen, ammonia total [as N]	Lbs/Day	MX WK AV	8.5	07/31/2022	14.6

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Parameter Desc	Limit Unit Desc	Statistical Base Short Desc	Limit Value	Monitoring Period End Date	DMR Value
Nitrogen, ammonia total [as N]	Lbs/Day	MO AVG	14.2	12/31/2022	14.7
Nitrogen, ammonia total [as N]	Lbs/Day	MX WK AV	21.3	12/31/2022	54.2
Phosphorus, total [as P]	Mg/L	MO AVG		08/31/2021	
Phosphorus, total [as P]	Mg/L	MO AVG		09/30/2021	
Phosphorus, total [as P]	Mg/L	DAILY MX		08/31/2021	
Phosphorus, total [as P]	Mg/L	DAILY MX		09/30/2021	
E. coli	#/100mL	30DA GEO	130.	09/30/2021	6811.
E. coli	#/100mL	30DA GEO	130.	10/31/2021	618.
E. coli	#/100mL	30DA GEO	130.	11/30/2021	3304.
E. coli	#/100mL	30DA GEO	130.	12/31/2021	9917.
E. coli	#/100mL	30DA GEO	130.	01/31/2022	1057.
E. coli	#/100mL	30DA GEO	130.	02/28/2022	2574.
E. coli	#/100mL	30DA GEO	130.	03/31/2022	1327.
E. coli	#/100mL	30DA GEO	130.	07/31/2022	650.
E. coli	#/100mL	30DA GEO	130.	09/30/2022	232.
E. coli	#/100mL	30DA GEO	130.	03/31/2023	1272.
E. coli	#/100mL	7 DA GEO	240.	08/31/2021	921.
E. coli	#/100mL	7 DA GEO	240.	09/30/2021	60000.
E. coli	#/100mL	7 DA GEO	240.	10/31/2021	60000.
E. coli	#/100mL	7 DA GEO	240.	11/30/2021	60000.
E. coli	#/100mL	7 DA GEO	240.	12/31/2021	60000.
E. coli	#/100mL	7 DA GEO	240.	01/31/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	02/28/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	03/31/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	04/30/2022	304.
E. coli	#/100mL	7 DA GEO	240.	07/31/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	08/31/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	09/30/2022	346.
E. coli	#/100mL	7 DA GEO	240.	10/31/2022	60000.
E. coli	#/100mL	7 DA GEO	240.	12/31/2022	1749.

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Parameter Desc	Limit Unit Desc	Statistical Base Short Desc	Limit Value	Monitoring Period End Date	DMR Value
E. coli	#/100mL	7 DA GEO	240.	03/31/2023	60000.
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	01/31/2022	25.38
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	02/28/2022	18.17
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	04/30/2022	14.67
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	08/31/2022	14.29
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	12/31/2022	154.7
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	02/28/2023	18.5
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	03/31/2023	18.1
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	09/30/2021	27.69
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	01/31/2022	53.24
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	02/28/2022	35.88
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	04/30/2022	22.53
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	07/31/2022	24.35
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	08/31/2022	36.88
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	12/31/2022	596.4
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	02/28/2023	39.4
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	03/31/2023	24.4
BOD, carb-5 day, 20 deg C, percent removal	%	MO AV MN	85.	08/31/2021	84.
BOD, carb-5 day, 20 deg C, percent removal	%	MO AV MN	85.	01/31/2022	71.
BOD, carb-5 day, 20 deg C, percent removal	%	MO AV MN	85.	02/28/2022	77.
Solids, suspended percent removal	%	MO AV MN	85.	08/31/2021	41.
Solids, suspended percent removal	%	MO AV MN	85.	09/30/2021	58.
Solids, suspended percent removal	%	MO AV MN	85.	10/31/2021	37.
Solids, suspended percent removal	%	MO AV MN	85.	11/30/2021	66.

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Parameter Desc	Limit Unit Desc	Statistical Base Short Desc	Limit Value	Monitoring Period End Date	DMR Value
Solids, suspended percent removal	%	MO AV MN	85.	12/31/2021	65.
Solids, suspended percent removal	%	MO AV MN	85.	01/31/2022	.
Solids, suspended percent removal	%	MO AV MN	85.	03/31/2022	65.
Solids, suspended percent removal	%	MO AV MN	85.	05/31/2022	56.
Solids, suspended percent removal	%	MO AV MN	85.	06/30/2022	83.
Solids, suspended percent removal	%	MO AV MN	85.	07/31/2022	53.
Solids, suspended percent removal	%	MO AV MN	85.	08/31/2022	63.
Solids, suspended percent removal	%	MO AV MN	85.	09/30/2022	33.
Solids, suspended percent removal	%	MO AV MN	85.	10/31/2022	84.
Solids, suspended percent removal	%	MO AV MN	85.	11/30/2022	84.
Solids, suspended percent removal	%	MO AV MN	85.	12/31/2022	49.
Solids, suspended percent removal	%	MO AV MN	85.	01/31/2023	70.
Solids, suspended percent removal	%	MO AV MN	85.	02/28/2023	41.
Solids, suspended percent removal	%	MO AV MN	85.	03/31/2023	40.
Solids, suspended percent removal	%	MO AV MN	85.	04/30/2023	76.
Solids, suspended percent removal	%	MO AV MN	85.	05/31/2023	59.
Solids, suspended percent removal	%	MO AV MN	85.	06/30/2023	58.
Solids, total suspended	Lbs/Day	MX WK AV	63.8	03/31/2021	65.45
Nitrogen, ammonia total [as N]	Lbs/Day	MO AVG	5.7	05/31/2021	8.21
Nitrogen, ammonia total [as N]	Lbs/Day	MX WK AV	8.5	05/31/2021	15.81
Nitrogen, ammonia total [as N]	Lbs/Day	MX WK AV	8.5	07/31/2021	8.63
E. coli	#/100mL	30DA GEO	130.	11/30/2020	1736.
E. coli	#/100mL	7 DA GEO	240.	11/30/2020	60000.
E. coli	#/100mL	7 DA GEO	240.	07/31/2021	278.
BOD, carbonaceous [5 day, 20 C]	Mg/L	MX WK AV	15.	07/31/2021	26.
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	12/31/2020	14.99

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City of McKee WWTP, Project # CV- KY0034444 - 07192023

Parameter Desc	Limit Unit Desc	Statistical Base Short Desc	Limit Value	Monitoring Period End Date	DMR Value
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	01/31/2021	14.76
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	02/28/2021	14.71
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MO AVG	14.2	03/31/2021	16.12
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	01/31/2021	25.1
BOD, carbonaceous [5 day, 20 C]	Lbs/Day	MX WK AV	21.3	03/31/2021	25.69
BOD, carb-5 day, 20 deg C, percent removal	%	MO AV MN	85.	09/30/2020	82.
BOD, carb-5 day, 20 deg C, percent removal	%	MO AV MN	85.	07/31/2021	82.
Solids, suspended percent removal	%	MO AV MN	85.	07/31/2020	80.
Solids, suspended percent removal	%	MO AV MN	85.	08/31/2020	80.
Solids, suspended percent removal	%	MO AV MN	85.	09/30/2020	81.
Solids, suspended percent removal	%	MO AV MN	85.	10/31/2020	83.
Solids, suspended percent removal	%	MO AV MN	85.	12/31/2020	55.
Solids, suspended percent removal	%	MO AV MN	85.	01/31/2021	67.
Solids, suspended percent removal	%	MO AV MN	85.	02/28/2021	63.
Solids, suspended percent removal	%	MO AV MN	85.	03/31/2021	59.
Solids, suspended percent removal	%	MO AV MN	85.	04/30/2021	65.
Solids, suspended percent removal	%	MO AV MN	85.	06/30/2021	59.
Solids, suspended percent removal	%	MO AV MN	85.	07/31/2021	73.

END OF REPORT