REPORT OF COMPLIANCE SAMPLING INSPECTION (CSI)

AT

Augusta Wastewater Treatment Plant
101 SW Hwy 77
Augusta, KS 67010

NPDES NO: KS0094561

February 21-24, 2023

BY

U. S. ENVIRONMENTAL PROTECTION AGENCY
Region 7
Enforcement and Compliance Assurance Division (ECAD)

INTRODUCTION

I performed a Compliance Sampling Inspection (CSI) at the Augusta Wastewater Treatment Plant (WWTP) in Augusta, Kansas from February 21 through February 24, 2023. The inspection was authorized by Section 308(a) of the Federal Water Pollution Control Act, as amended. This narrative report presents the findings of the inspection.

PARTICIPANTS

City of Augusta
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PROCEDURES

I arrived, unannounced, at the Augusta WWTP at 11:15 a.m. on February 21, 2023. I spoke with Shane Noland, Wastewater Superintendent. I introduced myself, presented my credentials, and explained the purpose of my visit. I then discussed the general procedures for the inspection. These procedures included completing the Water Compliance Inspection Report (attachment 1a) and the Biosolids Facility Inspection Form (attachment 1b); conducting a facility walk-through with photos (attachment 2); reviewing self-monitoring records; collecting influent and effluent samples; and completing an exit interview.

From February 21, 2023, through February 23, 2023, I used an ISCO model 3700 automatic composite sampler to collect 24-hour composite samples of the influent from the WWTF. I suspended a weighted length of new Tygon tubing into the headworks prior to the grit chamber and bar screen. I connected the other end to the sampler pump and programmed it to collect evenly spaced aliquots every thirty minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the bottle, agitated its contents and poured them into clean, pre-labeled polyethlene containers for the analysis of biochemical oxygen demand (BOD), non-filterable solids (NFS), ammonia (NH3), nitrate plus nitrite (N3+N2), total kjeldahl nitrogen (TKN), total phosphorus (TP) and lead (PB). At the time of sampling, I preserved the NH3, N3+N2, TKN and TP samples with 5 mL of sulfuric acid (H2SO4) and the PB sample with nitric acid (HNO3). I collected a grab sample from the same location to measure the pH and temperature using a field meter. These analyses were conducted within 15 minutes of collecting the sample. Flow numbers were determined by collecting the facility's daily flow data during my inspection.

On the same days I used an ISCO model 3700 automatic composite sampler to collect a 24-hour composite sample of the effluent from the WWTF. I suspended a weighted length of new Tygon tubing into the effluent channel prior to the ultraviolet (UV) disinfection system. I connected the other end to the sampler pump and programmed it to collect evenly spaced aliquots every thirty minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the bottle, agitated its contents and poured them into clean, pre-labeled polyethlene containers for the analysis of BOD, NFS, NH3, N3+N2, TKN, TP and PB. At the time of sampling, I preserved the NH3, N3+N2, TKN and TP samples with 5 mL of H2SO4 and the PB sample with HNO3. I also collected a grab sample from the same location to measure the pH, and temperature using a field meter. These analyses were conducted within 15 minutes of collecting the sample. Flow numbers were determined by collecting the facility's daily flow data during my inspection.

On February 22, 2023, I collected a grab-composite sample of wastewater sludge from the facility's sludge storage shed. Using a pan, I collected discrete samples from multiple areas of the facility's sludge storage area. I thoroughly mixed the discrete samples to composite them and then transferred the composite sample to a 32oz glass jar. The sample was submitted for the analysis of metals in solids, percent solids, and TP in soil.

For both days of sampling, I placed the samples I collected on ice in an insulated cooler, sealed the container, and shipped it overnight to the EPA Region 7 Science and Technology Center (STC) for analysis. Electronic field sheets and electronic chain of custody forms were emailed to the STC each day after samples were shipped. I followed Region 7 Laboratory Services and Applied Science Division (LSASD) standard operating procedures in the collection, packaging, transportation, and handling of the samples.

FACILITY DESCRIPTION

The Augusta WWTP is owned and operated by the City of Augusta, Kansas. The WWTP is

located approximately one-half mile south Augusta on US Highway 71. The latitude and longitude of the plant are 37.66416° N and -96.98232° W, respectively, in Butler County, Kansas. The WWTP consists of an influent headworks, a mechanical bar screen, grit removal, an oxidation ditch, two clarifiers and ultraviolet (UV) disinfection (attachment 3). Sludge from the clarifiers flows to sludge control structure then to a sludge day tank and then to a sludge dewatering belt press. From the beltpress, dewatered sludge is stored in a sludge storage building. As described in the permit, effluent from the WWTP discharges through outfall 001 (photos 18-19) to the Walnut River in the Walnut River basin. The WWTP treats domestic wastewater from the City of Augusta and local industrial users.

The WWTP's National Pollutant Discharge Elimination System (NPDES) Permit KS0094561 was issued on October 1, 2022 (attachment 4). The permit expires on September 30, 2027. The permit includes concentration effluent limits at outfall 001 for BOD, total suspended solids (TSS), NH3, E. coli, and pH. The permit requires that the facility also monitor their effluent for TKN, N3+N2, TN, TP. sulfates and flow. The permit requires that the facility monitor their influent for BOD, TSS, TKN and TP. The permit requires a minimum 85% removal of BOD and TSS. The permit has effluent goals set for TN and TP. The permit also requires that the facility maintain compliance with the sludge regulations in 40 CFR Part 503.

The facility was last inspected by KDHE on March 11, 2021 (attachment 5). The inspection found that the facility's gas detection system in their headworks building was not working. It also found that the system's effluent re-use system was also not working.

FINDINGS AND OBSERVATIONS

The following findings were noted during the plant walk-through and records review. A summary is provided in the Water Compliance Inspection Report (attachment 1a) and the Biosolids Facility Inspection Form (attachment 1b). These findings were discussed with Mr. Noland during the exit meeting.

Self-Monitoring Data Review:

Prior to the inspection, I obtained a spreadsheet of the discharge monitoring report (DMR) data for the Augusta WWTP from the EPA Region 7 data team. The spreadsheet containing the DMR reports included data from February 2018 through December 2022. Facility personnel provided me with copies of the facility's DMRs and analytical reports that were used to submit the DMR values. All DMR data obtained for this report can be found on ECAD's electronic file management system.

My review of the WWTP's self-monitoring data found that the facility exceeded their E. coli limits nine times, and their pH limits one time in the time frame listed above. These exceedances can be found in Tables 1 & 2. This is noted as part of item #1 on the Notice of Preliminary Findings (NOPF) that was left on-site.

Table 1: Reported Effluent Limit Exceedances for E. coli (number per 100 milliliters)

Date	Limit	Reported Value
5-31-18	727	717.921
10-31-18	427	717.921
6-30-20	427	1018.74
5-31-21	427	2496.79
8-31-21	427	2496.79
8-31-21	9032	19863
9-30-21	427	541.041
5-31-22	427	7288.27
7-31-22	427	893.142

Table 2: Reported Effluent Exceedances of pH (standard units)

Date	Limit	Reported Value
5-31-20	9	10.5

Sample Results

The analytical results from the inspection were received on March 24, 2023, from the R7 STC laboratory. This data was not discussed during the exit interview. The analytical results from influent sampling conducted during the inspection at the Augusta WWTP for BOD, TSS (identified as NFS, non-filterable solids, in EPA's laboratory sheets), NH3, TKN, NO3+NO2, TN, TP, PB, temperature, pH and flow are presented in Table 3 below. The analytical results from effluent sampling conducted during the inspection at the Spring Hill WWTP for BOD, TSS, NH3, TKN, NO3+NO2, TN, TP, PB, temperature, pH, and flow are presented in Table 4 below. The removal rates for BOD and TSS are also included in Table 4. See attachment 6 for the complete analytical data packet including the analytical results from samples collected during the inspection. Analytical results for the sludge sample that was taken on February 23, 2023, can also be found in attachment 6.

As described in attachment 6, for results followed by a J, the analyte is acceptable; the reported value is an estimate. For results followed by a U, the analyte was not detected at or above the reporting limit. The number that is shown is the reporting limit. For results followed by an O, the parameter was not analyzed.

Table 3: Analytical Results for Influent Samples Collected During Inspection

Parameter	(February 22) Sample #1	(February 23) Sample #2
BOD5 (mg/L)	186	161
TSS (mg/L)	380	69.1
NH3 (mg/L)	49.1	32.5
TKN (mg/L)	55.2	55.4
NO3+NO2 (mg/L)	ND	ND

TN (mg/L)	55.2	44
TP (mg/L)	7.52	4.92
PB (mg/L)	1.38J	1.07
Temperature (°C)[2]	ND	ND
pH[2]	ND	ND
Flow (MGD)	0.732	ND

[1]mg/L = milligrams per liter.
[2]°C = degrees Celsius, pH is not to be averaged, pH and temperature were measured in the field.

Table 4: Analytical Results for Effluent Samples Collected During Inspection

Parameter	(February 22) Sample #1	(February 23) Sample #2	Permit Limits[3]
BOD5 (mg/L)	2.8	ND	30/45
TSS (mg/L)	26	17.3	30/45
NH3 (mg/L)	ND	ND	4.7/10.3
TKN (mg/L)	1.25	0.963	Monitor
NO3+NO2 (mg/L)	4.3	4.18	Monitor
TN (mg/L)	5.55	5.14	10.0 (goal)
TP (mg/L)	0.102	ND	1.0 (goal)
PB (mg/L)	NDUJ	ND	NA
Temperature (°C)[2]	ND	ND	N/A
pH[2]	ND	ND	6.0-9.0
Flow (MGD)	0.653	0.168	Monitor
TSS Removal (%)	93.16	74.96	>85
BOD Removal (%)	98.5	100	>85

[1]mg/L = milligrams per liter.
[2]°C = degrees Celsius, pH is not to be averaged, pH and temperature were measured in the field.
[3]Permit limits for CBOD and TSS are Monthly followed by Weekly Averages. Permit limits for NH3 are monthly average followed by daily maximum.

Effluent samples collected on both days did not exceed any permit limits or permit goals. On the second day of sampling, samples taken showed the facility did not meet the 85% removal requirement for TSS. The sludge sample collected did not exceed any ceiling limits for 503 metals. Due to equipment failure during the inspection, pH and temperature analyses were not conducted.

Laboratory

The facility uses Pace Analytical in Frontenac, Kansas to collect all samples and conduct all analyses. The facility only conducts process control analyses on-site. The facility is certified by KDHE for the analysis of pH and DO, certification #E-92663. During the inspection, I reviewed laboratory records to ensure that all analyses complied with requirements of 40 CFR part 136. These records can be found on ECAD's electronic file management system. I noted that all holding times were met and all methods appeared to meet requirements of 40 CFR part 136.

Collection System

The collection system was observed and discussed with Mr. Noland. The city has eight lift stations in the collection system. I inspected all of the lift stations during my inspection. Mr. Noland explained that one of the lift stations was built for an expansion that has not been completed and is not in use.

I observed the Butler County lift station and the Simmons lift station both had large amounts of fats, oils and greases (FOGs) in them (photos 26 & 29) Mr. Noland stated that the city does not have an established FOG program to help prevent grease in the system. This was noted as item #2 on the NOPF.

While at the lakeside lift station, Mr. Noland explained that due to inflow and infiltration (I&I), the Lakeside and Simmons lift stations were schedule to be replace starting in February 2023.

Operation and Maintenance

During the inspection, I observed the treatment system, the facility outfall, and the sludge management system (attachment 3). The treatment plant consists of an influent wet well and pump station, a mechanical bar screen (photo 12), a grit removal system, an oxidation ditch (photos 13-14), two clarifiers (photo 15), and a UV disinfection system (photo 16). From the UV disinfection system, water flows to and is discharged from outfall 001 (photos 18-19).

The facility has an extraneous flow pond and basin that are used during high flow events (photos 20-23). The pond and basin hold almost six million gallons. Water flows through to the basin, through an upflow divider, across a weir and then to the extraneous flow pond. The basin and pond can both flow back to the treatment plan for further treatment.

At the time of my inspection, the plant's effluent reuse system was not working. This was noted as part of KDHE's last inspection. Mr. Noland showed us the new re-use system (photo 17). Mr. Noland explained that the system was supposed to be installed already but had been damaged in shipping and they were waiting for new parts to install it.

Sludge

Sludge from the clarifiers goes to a sludge storage structure (photo 10) where it is thickened. Sludge can then be returned to the treatment process, or it is pumped to a sludge day tank (photo 10) prior to flowing to a belt press (photo 9). From the belt press, sludge is stored in the sludge storage building (photos 6-8)

At the time of inspection, the facility was actively spreading sludge on farm fields. Mr. Noland explained the facility had approximately 4-6 months of sludge storage at the facility, and stores sludge in farm fields as needed. The facility submits annual sludge reports to EPA. Their sludge reports and sampling records show that they have not exceeded metals concentrations. The

facility meets pathogen reduction requirements by sampling for fecal coliform and vector attraction reduction requirements by incorporating sludge into the soil. In 2022, the facility land applied 162.32 dry tons of sludge. The system's sludge records are available on ECAD's electronic file management system.

Stormwater

During my inspection, I asked facility personnel for a copy of their Stormwater Pollution Prevention Plan (SWPPP). Mr. Noland stated the facility does not have a SWPPP. I explained to Mr. Noland that because the facility was designed to treat more than one million gallons per day, the facility was required to submit a Notice of Intent (NOI) to KDHE for coverage under the industrial stormwater general permit, as required by 40 CFR 122.26(b)(14)(xi). This was noted as item #3 on the NOPF. After the inspection, Mr. Noland submitted a copy of the NOI that he sent to KDHE after the inspection (attachment 7).

When we first arrived at the facility, I observed a dark material at the entrance gate (photo 3). I followed the material and found that it came from the sludge storage building (photos 1-2) and appeared to be the same sludge material that was stored in the building. Mr. Noland explained that the storage building was very full when they started spreading sludge, so the spreader had more sludge on it than normal. I also observed sludge material that that had washed off and collected along the sides of the facility drives (photos 4 & 11). I explained that the material had to be cleaned up and that the facility needed to pay closer attention to track out from sludge management. This was noted as item #4 on the NOPF that was left on-site.

Summary

On February 23, 2023, I conducted an exit briefing with Mr. Noland. In the exit briefing, I explained the preliminary findings that I observed during the inspection. A NOPF was left on site with the following findings (Attachment 8):

1. Failure to meet effluent limits.

2. Ensure fats, oils and greases are managed at lift stations.

3. Failure to obtain stormwater coverage from KDHE.

4. Ensure track out from sludge management is cleaned.

On March 8, 2023, I received a written response to the original NOPF from Mr. Noland (attachment 9).

BRIAN D'ALFONSO
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Date: 2023.06.01 15:52:32 -05'00'
Brian D'Alfonso

Moran, Nicole
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Nicole Moran

Biologist Section Chief, ECAD/WB/DWIS

Attachments:

1. Inspection Forms:
    a. Water Compliance Inspection Report 3560-3 (4 pages)
    b. Biosolids Facility Inspection Form (3 pages)
2. Digital Photographs with Photo Log (17 pages)
3. Site Aerial Map and Layout (1 page)
4. NPDES Permit KS0094561 issued on August 1, 2019 (12 pages)
5. March 11, 2021, KDHE Inspection (49 pages)
6. Laboratory Analytical Report for BPD2302 (24 pages)
7. March 22, 2023 Notice of Intent (5 pages)
8. February 23, 2023, Notice of Preliminary Findings (1 pages)
9. March 8, 2023 facility response to NOPF (5 pages)