

REPORT OF COMPLIANCE SAMPLING INSPECTION (CSI)

AT
Midwest Grain Products & Ingredients (MGPI)
1300 Main Street
Atchison, KS 66002

NPDES NO: KS-0100269

May 7 – 9, 2024

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

INTRODUCTION

I performed a Compliance Sampling Inspection (CSI) at the MGPI in Atchison, Kansas, from May 7, 2024, through May 9, 2024. 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

MGPI

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Mike Stec, Utilities Superintendent, 913-360-5246
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Kevin Daughtry, Operator

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PROCEDURES

On May 7, 2024, we arrived at the MGPI offices unannounced at approximately 9:00 a.m. and met with Mr. Compton. Mr. Compton stated that Mr. Stec was out but would soon be returning and he would accompany us throughout the inspection. We then proceeded to the WWTF

facility. Mr. Stec joined shortly after arriving at the WWTF. I introduced myself to Mr. Compton, Mr. Stec, and Mr. Daughtry, presented my credentials, and explained the purpose and procedures of the inspection. These procedures included completing a comprehensive WWTF inspection which would include a facility walk-through with photos (attachment 1), a check of the self-monitoring records, the collection of samples from the facility, and an exit interview.

On May 7, 2024, I collected grab samples from the combined discharge to White Clay Creek, identified in the NPDES permit as Outfall 001X1. The samples were collected in a clean, pre-labeled containers for the analysis of Total Kjeldahl Nitrogen (TKN), Total Phosphorus (TP), Nitrate+Nitrite as Nitrogen, Ammonia, Total Nitrogen, Chloride, Sulfate, and Total Dissolved Solids (TDS). I took a separate grab sample for the pH and Temperature.

On May 7, 2024, I collected grab samples from the WWTF clarifier prior to combining with non-contact cooling water. This sampling point is identified in the NPDES permit as Monitoring Location 003BV. The samples were collected in clean, pre-labeled containers for the analysis of Biochemical Oxygen Demand (BOD), Non-Filterable Solids (NFS), and TP. I took a separate grab sample for pH and Temperature.

From May 7, 2024, through May 9, 2024, I used an ISCO 3710 automatic composite sampler to collect a 24-hour composite sample of the combined discharge to White Clay Creek. This sampling point is identified in the NPDES permit as Outfall 001. The samples were collected in a clean Nalgene bottle that was packed in ice. Each day, I removed the bottle, agitated its contents and poured them into clean, pre-labeled containers for the analysis of TKN, TP, Nitrate+Nitrite as Nitrogen, Ammonia, Total Nitrogen, Chloride, Sulfate, and TDS. I took a separate grab sample for the pH and Temperature.

From May 7, 2024, through May 9, 2024, I used an ISCO 3710 automatic composite sampler to collect a 24-hour composite sample from the WWTF clarifier prior to combining with non-contact cooling water. This sampling point is identified in the NPDES permit as Monitoring Location 003BV. The samples were collected in clean, pre-labeled containers for the analysis of Biochemical Oxygen Demand (BOD), Non-Filterable Solids (NFS), and TP. I took a separate grab sample for pH and Temperature.

On May 8, 2024, I took a grab samples of dewatered industrial sludge from the centrifuge generated at the facility. I collected the dewatered sludge into one 32-ounce glass jar. The dewatered industrial sludge was analyzed for Metals, including Mercury, TKN, TP, Nitrate+Nitrite, and percent solids.

On May 9, 2024, I took a grab sample of the Waste Activated Sludge (WAS) from the clarifier. I collected the WAS into one 32-ounce glass jar. The dewatered industrial sludge was analyzed for Metals, including Mercury, TKN, TP, Nitrate+Nitrite, and percent solids.

On May 9, 2024, I took several grab samples of the sediment within the streambed of White Clay Creek, downstream of the facility Outfall. I composited the samples inside of a bucket then

collected a single sample from the bucket into a clean 32-oz glass jar. The streambed sediment was analyzed for Metals, including Mercury, TKN, TP, Nitrate+Nitrite, and percent solids.

Each day, I placed the samples I collected on ice in an ice chest, sealed the container and hand delivered the container to the EPA Region 7 Science and Technology Center (STC) for analysis. I followed Region 7's LSASD standard operating procedures in the collection, packaging, transportation, and handling of the samples. Field Sheets and Chain of Custody forms were electronically submitted each day following Region 7 procedures.

FACILITY DESCRIPTION

The MGPI facility is owned and operated MGPI. The physical address for the facility is 1300 Main Street, Atchison, Kansas. The legal description is the NW ¼, Section 1, Township 06 South, Range 20 East within Atchison County, Kansas (attachment 2). The office is also located at 1300 Main Street while the facility is located south of Main Street between 11th and 14th Streets. The facility has one discharge outfall to White Clay Creek. A description of the industrial processes and discharge for the facility is below:

The facility consisted of two separate operations, a distillery and a protein and starch facility. The distillery operation was shut down at the end of 2023, and according to Mr. Stec, there are no plans to restart distillery operations.

The facility currently receives wheat flour from area mills which is used in the production of wheat starch, gluten, modified starch, and modified gluten in the protein and starch plant. Wastewater is directed into the anaerobic Biothane System where the water flows into a conditioning tank which is used to introduce the nutrients Ammonia Nitrogen (32% Urea) and Phosphoric Acid (Phosphorus). At the Conditioning Tank pH adjustment occurs with the addition of Sodium Hydroxide or other highly alkaline chemicals as needed. The wastewater is then treated in a high rate Anaerobic Digester. Iron (ferric chloride) is fed to the Anaerobic Digester as a nutrient. Micro-nutrients (copper, cobalt chloride, nickel chloride, and aluminum chloride) are also fed to the digester.

The anaerobic digester effluent is then pumped to the Aeration Basin of the Activated Sludge WWTP Process. Effluent from the Aeration Basin is settled in a Final Clarifier prior to discharge.

The treated process wastewater flows to a common collection pit where it combines with flow of non-contact cooling tower blowdown and boiler blowdown before discharging to White Clay Creek.

Waste activated sludge (WAS) is pumped from the clarifier and was previously dewatered on a gravity belt press. MGPI recently changed from a gravity belt press to a centrifuge. Process wastewater from the centrifuge is pumped back to the aeration basin. The industrial sludge cake is dried and mixed with solids produced in the protein manufacturing process to produce animal

feed.

City potable water is used in all production processes and for cooling tower make-up water. All domestic wastewater is connected to the City Sanitary Sewer System.

The design flow from the WWTF is 0.995 MGD and 0.201 MGD from the non-contact cooling and boiler blow down for a combined design flow of 1.196 MGD. The average flow from the WWTF was 0.968 MGD, 0.070 MGD from the non-contact cooling and boiler blow down for an average of 1.037 MGD, during the inspection.

The WWTF's National Pollutant Discharge Elimination System (NPDES) Permit KS-0100269 was issued on May 1, 2018 (attachment 3). The permit expired on April 30, 2023. The Kansas Department of Health and Environment (KDHE) administratively extended the permit, while they are working on the renewal.

REGULATED HISTORY

MGPI and KDHE entered into a Consent Order (No. 18-E-3 BOW) to address Whole Effluent Toxicity (WET) and Phosphorus Reduction requirements. The consent order has been amended with the latest amendment occurring on February 26, 2024 (attachment 4). As part of the consent order, MGPI is to drill two underground injection wells (UIC) for the purpose of injecting high strength phosphorous effluent. During the inspection, Mr. Stec stated that both wells have been drilled but were not in operation. He stated that MGPI was waiting for KDHE to approve the use of the drilled wells.

On February 14, 2024, KDHE performed an inspection at MGPI (attachment 5). KDHE found that the facility was out of compliance with the parameters of the NPDES permit due to a WET violation and several occurrences of bypassing solids from the clarifier into White Clay Creek.

FINDINGS AND OBSERVATIONS

The following findings were noted during the plant and record review. These findings were discussed with Mr. Compton and Mr. Stec during the exit meeting.

Self-Monitoring Data Review:

I reviewed a spreadsheet of the NetDMR data for the MGPI from January 2021, through April 2024.

The table below represents the effluent violations noted at Outfall 001 during the review.

Table 1: Effluent violations reported for Outfall 002 from January 2021 – April 2022

	BOD	Limits*	TSS	Limits*
Jul-21	115	45/90		
Aug-21	106	45/90		
Sep-21	145.2/225	45/90		
Oct-21	66/119	45/90		
Nov-21	62.96/140	45/90		
Feb-22			66.625/101	45/90
Sep-22			88.3/296	45/90
Dec-22			45.85	45
Jan-23			84.675/214	45/90
Mar-23			66.675/141	45/90
Apr-23			51.85/118	45/90
May-23			92	90
Aug-23			124.175/394	45/90
Sep-23	81.6/271	45/90		
Dec-23	73.325/176	45/90		
Jan-24	73.5/223	45/90		
Feb-24	73.825/129			
Mar-24			102	90

*Effluent limits are monthly average followed by weekly average

Based on the review of the DMRs submitted, the facility has violated the effluent limits for both monthly and weekly limits for both BOD and TSS in years 2021 – 2024. At the conclusion of the inspection, I issued a Notice of Preliminary Findings (NOPF) for the effluent violations noted during 2021 through 2024 (attachment 6).

Mr. Stec stated during the inspection, that the facility has changed processes within the past year and that they are hoping with the increased solids handling capacity, solids will be able to be controlled on a more consistent basis and sludge bulking from the clarifier will not occur on a regular basis in the future.

Sample Results

The analytical results from the inspection were received on May 31, 2024, from the Region 7 STC laboratory (attachment 7). This data was not discussed during the exit interview. The analytical results for the combined discharge (Outfall 001) and the WWTF (Monitoring location 003BV) are presented in Tables 1 and 2. The analytical results for the solids samples taken are presented in Table 3.

Table 1: Analytical Results for Effluent Samples Collected from Outfall 001

Parameter	(May 7) Sample # 2400202-01**	(May8) Sample# 2400203-01***	(May 9) Sample # 2400204-01***	Concentration Permit Limits
Total Dissolved Solids (mg/L)	4920	4760	4950	Monitoring Only
Ammonia (mg/L)	ND	ND	ND	NA
TKN (mg/L)	3.57	3.84	4.52	Monitoring Only
Nitrate & Nitrite (mg/L)	0.603	0.874	0.523	Monitoring Only
Total Phosphorus (mg/L)	476	423	552	Monitoring Only
Total Nitrogen (mg/L)	4.17	4.72	5.04	Monitoring Only
Chloride (mg/L)	240	233	231	Monitoring Only
Sulfate (mg/L)	1490	1480	1530	Monitoring Only
Temperature (°C) ²	27	25.9	23	N/A
pH ²	6.71	7.73	7.74	6.0-9.0
Flow in MGD	0.915	1.195	1.00	N/A

**Grab Sample

***Composite Sample

¹mg/L = milligrams per liter.

²°C = degrees Celsius, pH is not to be averaged, pH and Temperature were measured in the field.

Table 2: Analytical Results for Effluent Samples Collected from Monitoring Point 003BV

Parameter	(May 7) Sample # 2400202-02**	(May8) Sample# 2400203-02***	(May 9) Sample # 2400204-02***	Concentration Permit Limits³
BOD (mg/L)	9.62	12.7	15.1	45/90
NFS (mg/L)	19.9	85.2	92.0	45/90
Total Phosphorus (mg/L)	640	557	486	Monitoring Only
Temperature (°C)²	26.4	25.4	23	N/A
pH²	7.59	7.67	7.63	Monitoring Only
Flow in MGD	0.858	1.108	0.936	N/A

**Grab Sample

***Composite Sample

¹mg/L = milligrams per liter.

²°C = degrees Celsius, pH is not to be averaged, pH and Temperature were measured in the field.

³Permit limits for BOD and NFS are Monthly followed by Weekly Average.

Table 1C: Analytical Results for Industrial Solids and White Clay Creek Streambed Samples Collected During Inspection reported as Milligrams per Kilograms (mg/kg)

Parameter	Sample # 240203-03 Industrial Solids collected from centrifuge	Sample # 2400204-03 Industrial Solids collected from the WAS	Sample # 2400204-04 Streambed Solids collected from White Clay Creek downstream of MGPI outfall
Aluminum	50.3	42.9	1620
Antimony	ND	ND	ND
Arsenic	ND	ND	ND
Barium	39.2	27.6	29.9
Beryllium	ND	ND	ND
Cadmium	ND	ND	ND
Calcium	11600	11400	39100
Chromium	ND	ND	3.64
Cobalt	2.40	3.18	1.59
Copper	54.2	60.4	5.46
Iron	845	876	5410
Lead	ND	ND	10.5
Magnesium	1760	1950	1540
Manganese	27.3	21.1	168
Molybdenum	ND	ND	ND
Nickel	4.53	5.82	3.11
Potassium	2250	2790	266
Selenium	ND	ND	18.5
Silver	ND	ND	ND
Sodium	9530	44900	201
Thallium	ND	ND	ND
Vanadium	ND	ND	5.73
Zinc	58.1	53.9	35.4
Mercury	0.0275	0.0335	0.00372
% Solids	18.6	3.47	75.1
TKN	1750	647	10.4
TP	8560	19800	390
Nitrate + Nitrite	ND	ND	ND

Based on the sampling data, the facility did not violate the effluent limits set forth in the NPDES permit during the inspection.

Industrial Sludge

As stated above, industrial sludge and solids produced by the facility is pumped from the clarifier to the solids processing building. Solids are dewatered by centrifuge then sent to a tumble dryer, where is dried, then is either stored or trucked from the facility as animal feed.

Laboratory

MGPI utilizes Pace Analytical of Lenexa, Kansas, for all of its regulatory analysis. All sampling conducted by the contract laboratory appears to be in accordance with the conditions of the permit. All sample analysis performed by the Pace Analytical appears to conform with the NPDES permit and Chapter 40 Part 136 of the Federal Code of Regulations.

Stormwater

The NPDES Permit requires that the facility have an SWPPP. Mr. Compton provided a copy of the SWPPP (attachment 8). I reviewed the SWPPP during the inspection and determined that it met the requirements of the conditions in the NPDES permit.

The SWPPP and permit require routine inspections of the stormwater structures. Mr. Compton provided 2022, 2023, and 1st quarter inspection reports electronically after the conclusion of the inspection (attachment 9). I reviewed the reports and noted that the facility noted areas that failed the inspection. In many cases corrective action was taken immediately and noted on the inspection reports.

The SWPPP also requires that an annual comprehensive inspection be conducted. Mr. Compton provided electronic copies of the 2022 and 2023 annual comprehensive inspection reports (attachment 10). The SWPPP also requires that an annual visual observation of stormwater discharges occur. Mr. Compton provided the annual discharge observations for 2022 and 2023 after the conclusion of the inspection (attachment 11).

The SWPPP also requires that the facility maintain records of all SWPPP trainings that the facility has performed. After the conclusion of the inspection, Mr. Compton provided an electronic copy of all the stormwater training records for 2024 and a copy of the stormwater training that is conducted. I reviewed the records then placed the records in ECAD's electronic file database.

Operational Issues and Observations

I observed all areas of the WWTF during the inspection (photos 1-3 & 6-10). I noted that all the units were operating at the time of the inspection. I noted that the temporary gravity belt thickener was no longer in operation. Mr. Stec stated that they had recently put the new centrifuge into operation and the belt thickener was no longer necessary.

During the inspection, I observed the solids storage area(photo 21). I noted that the area had processed solids outside and uncovered, exposing it to stormwater. I explained to the facility that the solids should be completely contained and not exposed to stormwater. I noted that during precipitation events, stormwater in the storage area would sheetflow across the concrete drives and into the railyard directly south of the facility.

During the inspection, I observed the receiving stream, White Clay Creek. White Clay Creek was flowing at the time of the inspection. White Clay Creek is classified by the KDHE as a general purpose waterbody. White Clay Creek flows along the south side of the WWTF for approximately ½ mile before entering an underground conveyance near the intersection of Main Street and 7th Street. White Clay Creek flows through the underground conveyance and discharges into the Missouri River north of the railroad bridge. During the observations of the stream, I noted that the stream had a cloudy color (photos 11, 13-17). I also observed on multiple days during the inspection that the effluent discharging from MGPI's outfall into White Clay Creek was clear (photos 5, 12, and 18). I also noted that two Combined Sewer Overflows (CSOs) discharge into White Clay Creek. The 14th Street CSO discharges into White Clay Creek upstream of the MGPI outfall while the 11th Street CSO discharges into White Clay Creek downstream of the outfall. During the inspection, Mr. Stec also stated that there is a domestic sewer line owned and operated by the city of Atchison that crosses under White Clay Creek downstream of MGPI's outfall. After the completion of the inspection, Mr. Draper contacted the city of Atchison and requested information about the domestic sewer line. Mr. Clinton McNemee with the city of Atchison stated that the city would conduct a sewer line investigation; however, it would take some time. He stated that he would let EPA know of the investigation once completed. As of the date of the release of this report, the city of Atchison has not provided an investigation report.

Summary

The facility has violated effluent limits for BOD and TSS in 2021 through 2024.

The facility has changed solids processing from a gravity belt thickener to a centrifuge. The main reason was to create efficiencies in the solids handling process.

The facility has drilled two deep injection wells that have not been placed in operation at the time of the inspection. The injection wells will be used to inject effluent that contains high concentrations of phosphorous.

Further investigations of White Clay Creek will need to be performed to determine the cause of the turbidity issues surrounding White Clay Creek.

JOSEPH HEAFNER
Joe Heafner
Life Scientist

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Attachments:

1. Digital Photographs with Photo Log (31 pages)
2. Facility Satellite Photos/Maps (3 pages)
3. NPDES permit issued on May 1, 2018 (13 pages)
4. KDHE AOC Amendment, February 26, 2024 (4 pages)
5. KDHE Inspection report from February 14, 2024 (16 pages)
6. NOPF (1 page)
7. Laboratory Analytical Report for Activity JAH2419 (32 pages)
8. SWPPP (25 pages)
9. Quarterly Stormwater Inspections (9 pages)
10. Annual Comprehensive Stormwater Inspections (2 pages)
11. Visual Discharge of Stormwater Inspections (20 pages)