

Director of Compliance and Innovation Report

November 20, 2024

Plant Loading, CSO Report, and Director’s Notes

Plant Influent Report:

Biochemical Oxygen Demand, 5-Day (Avg. 39564 lbs/day)	62 percent of design
Total Suspended Solids (Avg. 64164 lbs/day)	59 percent of design
Average Daily Flow (24.58 million gallons/day)	60 percent of design
Maximum Daily Flow (27.49 million gallons/day)	22 percent of design

Plant Influent Total Monthly Flow (million gallons) for September	757.14
Estimated Unbilled Total Monthly Flow (million gallons)	102.72
Total Monthly Precipitation (inches)	1.84

Plant Effluent Report:

Parameter	Report Frequency	Permit Limits	Reported Values	Violations
CBOD ₅ , mg/L	Mo./Wk. Avg	20/40	2/2	0
TSS, mg/L	Mo./Wk. Avg	25/45	2/4	0
NH ₃ -N, mg/L	Mo. Avg/Daily Max	1.5/3.0	0.41/0.44	0
DO, mg/L	Mo. Avg/Wk. Avg/Daily Min	6.0/4.5/4.0	7.24/6.94/6.87	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.82/8.47	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.014	0
Cl ₂ Residual, mg/L	Daily Max	0.05	<0.011	0
Fecal Coliform CFU/100mL	Daily Max	400	44	0

CSO Report:

Location	Events	Est. Total Duration of Discharges (hrs.)	Discharge (million gallons)
Oakland Avenue (Outfall 003)	1	0.59	0.06
Lincoln Park (Outfall 004)	0	0	0
McKinley Avenue (Outfall 007)	0	0	0
Seventh Ward (Outfall 008)	0	0	0

Director’s Notes:

Land Application Program:

Metro-Ag completed all land application of the District’s biosolids as of 10/24/2024. They applied approximately 23.3 million gallons (MG), equaling roughly 3,961.5 dry tons (dT) of material to 11 local farm fields in just 22 days. The application went very well this year with minimal downtime due to weather or breakdowns.

Chemical Usage During the 2024 Disinfection Season:

Chemicals 2024	Influent Total	Effluent Total	Building 264 Total	Ammonia	Chlorine	Sodium Bisulfate	AVG		
	MGD	MGD	MGD	GPD	GPD	GPD	COST/d	Days/Mo	
May	33.37	33.02	34.81	182.37	888.02	422.02	\$2,811.27	\$87,149.43	
June	26.08	26.77	28.98	198.25	999.53	464.41	\$3,131.44	\$93,943.08	
July	32.94	34.23	35.47	200.74	1054.16	581.63	\$3,456.57	\$107,153.55	
Aug	28.07	29.07	30.61	205.48	1073.17	542.20	\$3,428.74	\$106,290.89	
Sep	25.21	27.22	28.49	198.72	1304.72	463.61	\$3,710.71	\$111,321.28	
Oct	24.40	25.84	26.25	180.15	1065.35	371.02	\$3,049.75	\$94,542.35	
Avg	28.35	29.36	30.77	194.29	1064.16	474.15		\$100,066.76	Avg
								\$600,400.57	Sum

Disinfection Season:

The District operations staff completed the disinfection season without a single exceedance! After last year’s exceedance, the staff had a better understanding of the challenges we can experience in the disinfection process due to our industrial users. As a group, they became very proactive with observing the signs when something maybe coming into the plant that could affect the process. With these observations, adjustment of chemicals and other refinements the staff had a successful disinfection season.

Plant of the Year Nomination:

The Sanitary District has been nominated for IAWPCO’s (Illinois Association of Water Pollution Control Operators) award for plant of the year. Members of the group will be here on November 21, 2024, for an onsite inspection of the facility.

Operations, Laboratory, and Pretreatment Activity Reports – October/November 2024

Operations Activities:

Normal operational activities were conducted as prescribed by standard procedures or in response to conditions within the plant. These include operating, monitoring, and adjusting facility equipment, performing process control testing, records keeping, and coordination with the other departments to realize optimal performance of the Plant.

- 1) Digester #2- We are making some piping changes that will allow sludge to be pumped directly to the secondary digesters then to Wyckles. Parts to be installed this week and pumping will start next week.
- 2) Operations staff continue to actively address PMs as time, workload, and staff levels allow.
- 3) Operations staff are currently pumping the remaining Sodium Hypochlorite from the storage tanks in preparation for winterization.
- 4) Blower usage is up due to the low flows and industrial loads. Operation staff continue to take Nitrite readings every shift and make the necessary blower adjustments to be more proactive in regard to the industrial loadings. Since starting this approach, we have not had to use the Hoffman blowers.
- 5) Blower #6 is now available. Repairs have been made.
- 6) Land Ap went very well this year. The crawler mixing for the year totaled 306.5 hours. The operators did a great job keeping both lagoons mixed. The average solids were 4.09% during the land application process. Maintenance pumped approximately 3-4 million gallons from the west lagoon to the east lagoon with 141.1 hours involved with transfer.
- 7) Operators are being assigned different tasks to write SOP’s.
- 8) SOPs have resumed now that land ap is complete.

Laboratory Activities:

Routine:

A total of 1,974 analyses were performed in the laboratory during the month of October 2024.

Monitoring of treatment plant, industrial users, and receiving stream samples for compliance purposes and process monitoring continued. Laboratory personnel continued to perform additional background nutrient monitoring to help fully characterize the nutrient loading on the plant.

Non-Routine:

- 1) The SDD laboratory continued to send samples of raw influent twice a week throughout the month of October 2024 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health.
- 2) Keith Richard attended the quarterly meeting of the Heart of the Sangamon River Ecosystem Partnership (HOTSREP) in Decatur on October 10, 2024. The partnership is a consortium of local governmental agencies and non-governmental organizations that are working together to ensure the continued well-being of the Upper Sangamon River watershed. During the meeting, Keith was elected Vice Chair of the organization.
- 3) The quarterly sampling of the groundwater monitoring wells was conducted at the South Sludge Lagoons and Wyckles Lagoons during the third week of October 2024.
- 4) Keith Richard attended the Central Region conference of the Illinois Association of Water Pollution Control Operators (IAWPCO) at the Urbana-Champaign Sanitary District on October 16, 2024. Keith moved up to the position of Vice Chair of the IAWPCO Central Region after serving as Secretary during the previous year.
- 5) Keith Richard provided a plant tour and laboratory tour for a Chemistry class from Millikin University on October 17, 2024. Millikin was recently awarded a large grant from the National Science Foundation to create the Big Blue STEM Scholars program to provide STEM educational opportunities for students pursuing STEM degrees. One ambition of the program is to provide real-world laboratory site visits for students. This SDD lab tour was the first such site visit under the program.
- 6) Emma Antonelli started as the new Laboratory Technician on October 23, 2024.
- 7) Laboratory and Outside Maintenance staff collected sludge samples from the East Wyckles Lagoon on October 29, 2024, for Dr. Wei Zheng at the University of Illinois. Dr. Zheng is researching the use of biochar to mitigate the uptake of PFAS chemicals by field crops in fields that have had municipal biosolids land applied to them.

Pretreatment Activities:

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored 6 commercial and industrial users (IU) during October 2024. There were 13 industrial site inspections.
- 2) There were no wastehauler permits issued in October 2024.

Pretreatment Ordinance - Verbal Notices:

The SDD issued a total of 3 Verbal Notices to **Primient** in October 2024:

- 10/3/2024 – **Primient** was issued a verbal warning and a \$1,000 fine for a daily maximum sulfide violation.
- 10/4/2024 - **Primient** was issued a verbal warning and a \$1,000 fine for a daily maximum sulfide violation.

- 10/8/2024 – **Primient** was issued a verbal warning and a \$5,000 fine for a daily maximum BOD violation.

Pretreatment Ordinance - Warning Notices (WN):

There were no Warning Notices issued during October 2024.

Pretreatment Ordinance - Notices of Violation (NOV):

There were no NOV's issued during October 2024.

Pretreatment Ordinance - Executive Orders:

There were no Executive Orders issued during October 2024.

Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for October 2024:

- | | |
|--------------------|----------------|
| 1) Primient | \$7,000 |
|--------------------|----------------|

Nutrient Program Report:

NARP:

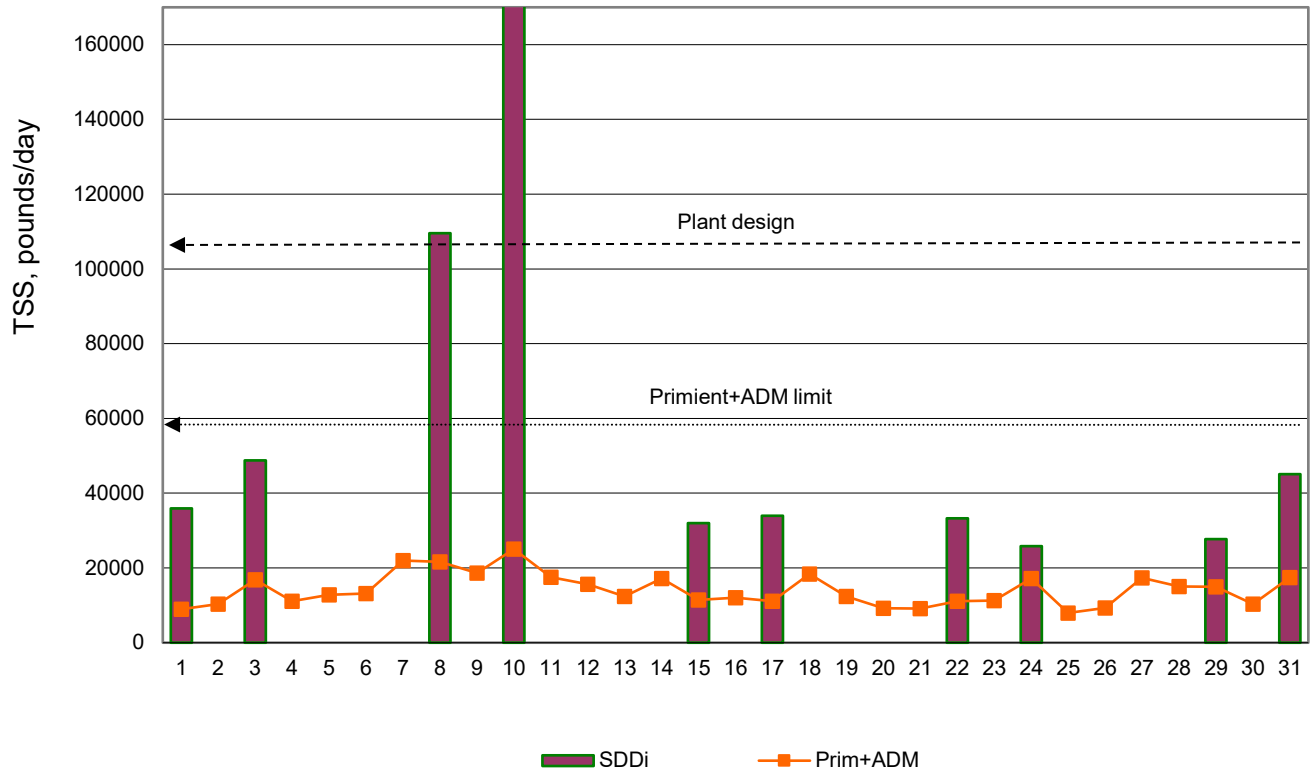
The District, with the help of Black and Veatch and Geosyntec, continues to work on the first drafts of the Nutrient Assessment Reduction Plan (NARP) which is due at the end of December. A copy of the final draft report, for transparency, will be sent out to stakeholders for public comment.

Watershed:

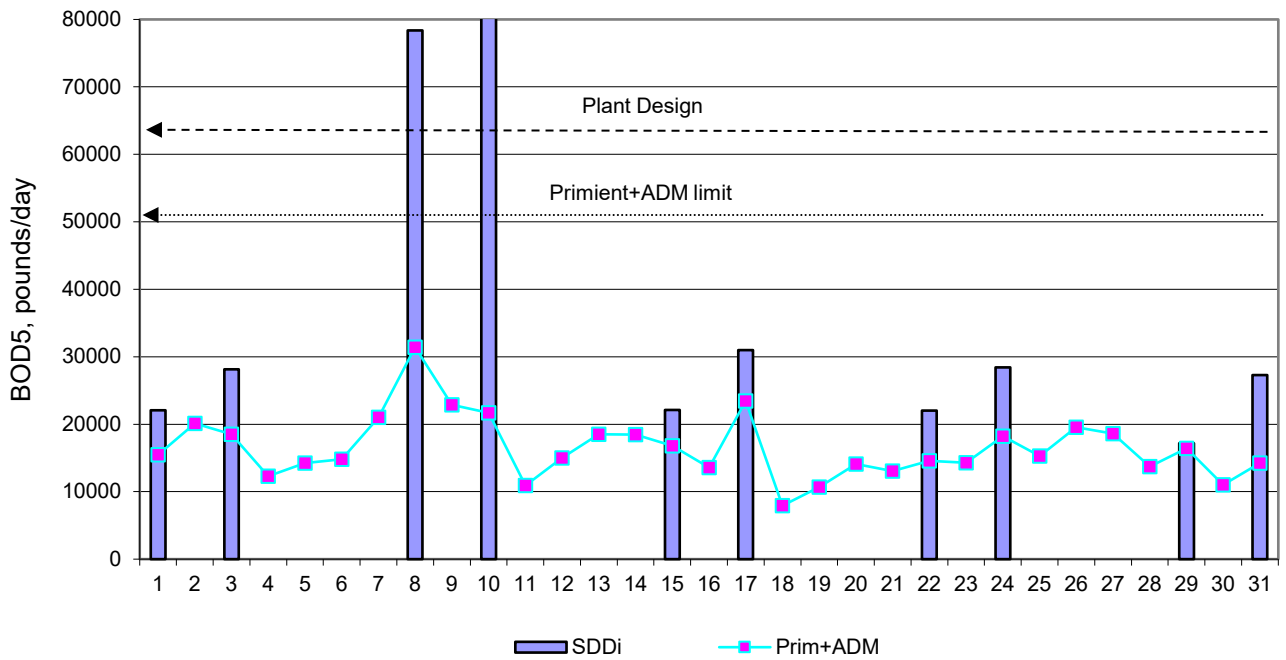
Due to the establishment of the Middle Sangamon Watershed Group not occurring, the District held a hybrid public meeting on October 17, 2024, at 1 pm CDT to provide an update on the NARP process and results of our work so far. Although there was only a small attendance, the meeting presentation and summary were emailed out to a large number of stakeholders, with no feedback thus far.

Plant Operating Graphs:

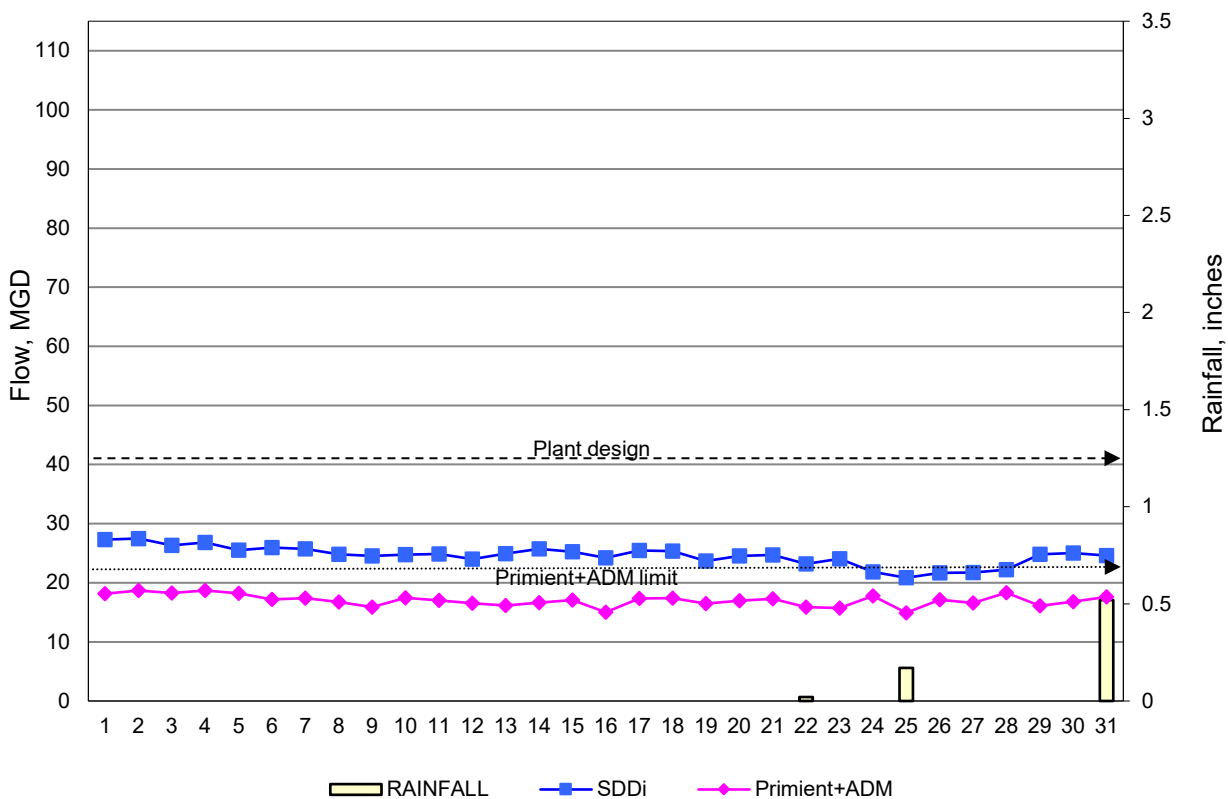
TSS Comparison: SDD Inf Primient+ADM Discharges



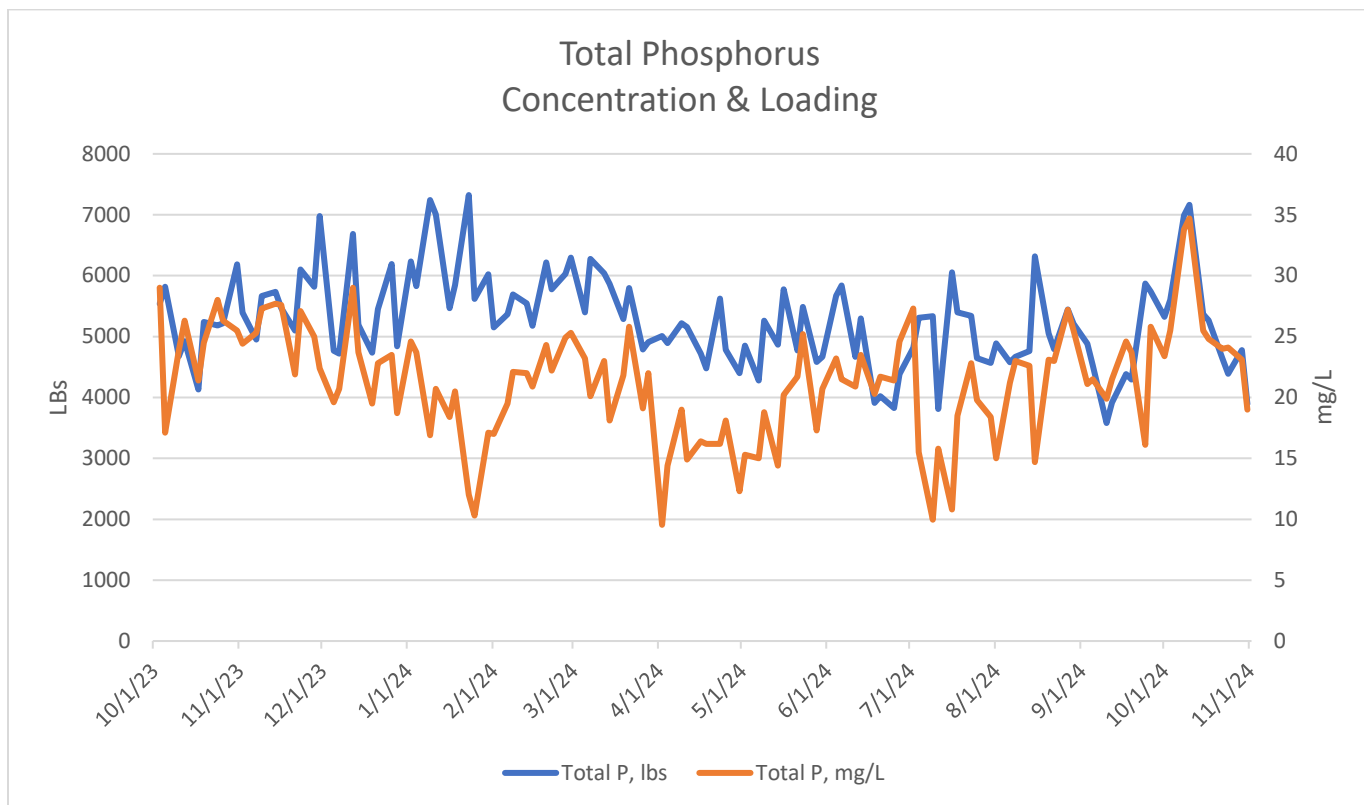
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



Flow Comparison: SDD vs. Primient + ADM Discharges and Rainfall

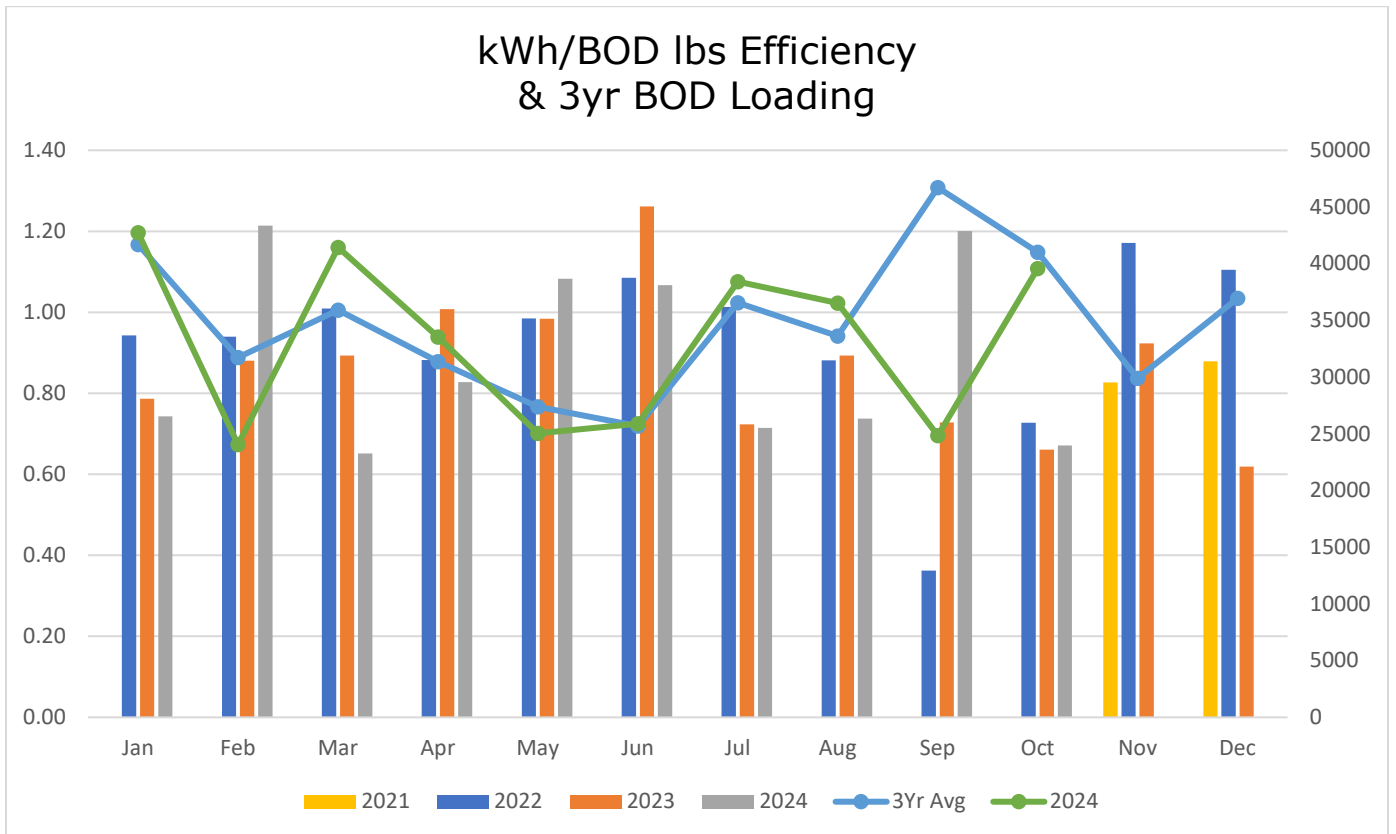
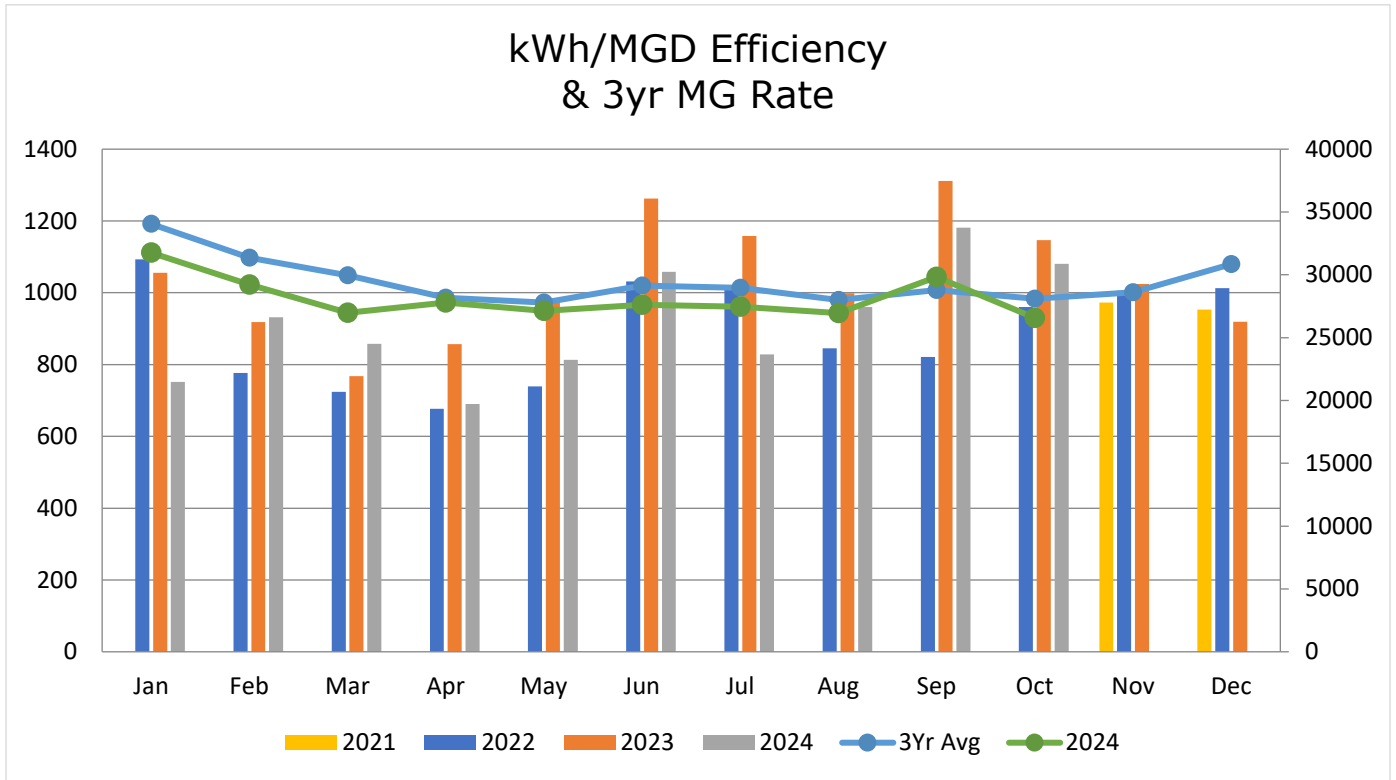


Phosphorus Tracking Graph:



Plant Efficiency Graphs:

October 2024



Sanitary District of Decatur
Nutrient Program Management Report

November 6, 2024

During the period of September 28, 2024 through November 1, 2024, District personnel attended meetings with members of the Black & Veatch team to affect progress in nutrient reduction planning and activities.

The District has provided plant performance data to Black & Veatch for inclusion in the Power BI dashboards. Additionally, the District provided review comments on the permit required Feasibility Study. Black & Veatch incorporated the District's comments and the District submitted the Feasibility Study to the Illinois EPA on September 30, 2024, as required by the permit.

Black & Veatch has continued the evolution of their full facility process model to evaluate continued enhancements to lower the overall cost of nutrient upgrades at the Water Resource Recovery Facility (WRRF), coordinate with industries regarding WRRF process improvements, revise aged infrastructure recommendations, and develop a capital improvement plan for the District to use for years to come.

The following is a list of meetings conducted. The information provided covers the subject, date, and agenda items of each meeting. Additional information related to any of these meetings or specific agenda items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Nutrient Reduction Program Meetings conducted from September 28, 2024 through November 1, 2024

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Nutrient Program Management Bi-weekly Meetings	Meetings held on 10/9/2024, and 10/23/2024	<i>Objective:</i> Provided Status Update on Program Tasks <ul style="list-style-type: none">● Frac Tank Pilot● Power BI● Pretreatment Program Update● PDOP/Annual Progress Report● Watershed Services● Aging Infrastructure● WRRF Upgrade Plan
Primient – Nutrient Reduction Update Meeting	10/7/2024	Review latest updates on WRRF Improvements, including local limits for industries.

Sanitary District of Decatur

Watershed Management Report

November 6, 2024

During the period of September 28, 2024 through November 1, 2024, District personnel attended meetings with members of the Black & Veatch and Geosyntec team to coordinate and discuss elements essential to meet the Nutrient Assessment Reduction Plan (NARP) requirements as listed in the NPDES permit. Additional coordination and discussion meetings were held regarding the formation of a future watershed workgroup for the Middle Sangamon River.

Activities completed this month pertained to items necessary to complete the NARP report, and this period focused on developing and writing of the NARP report. Additional support was provided by providing a presentation at the public watershed meeting. An overview of the NARP process and current approach for NARP implementation was shared with the meeting attendees.

The following is a list of the meetings conducted. The information provided covers the subject, date, and agenda items of each meeting. Black & Veatch provided a written summary. Additional information related to any of these items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Watershed Management Meetings Conducted from September 28, 2024 through November 1, 2024.

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Watershed Services Bi-weekly Discussions	10/2/2024, 10/16/2024, and 10/30/2024	<i>Objective:</i> Geosyntec discussed elements of the Nutrient Assessment Reduction Plan, specifically related to the report development. Also discussed steps for public watershed stakeholder meeting.

November 6, 2024

Sanitary District of Decatur (SDD)
501 Dipper Lane
Decatur, IL 62522

Nutrient Program Manager
BV Project No. 411502

Attention: Don Miller, P.E., Director of Engineering

Subject: SDD Nutrient Program Management
Progress Update (September 28, 2024 – November 1, 2024)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from September 28, 2024, through November 1, 2024.

1. Program Management, Administration, and Coordination
 - Conducted bi-weekly program conference calls to update progress and discuss key issues.
 - Provided Monthly Project Update.
 - Provided ongoing management of the project including program management, preparation/monitoring of the program schedule and budget as well as program administrative duties.
 - Updated Power BI dashboard with most recent plant monitoring data.
2. Pretreatment Program Update
 - Provided an overall update on the status of the Nutrient Management Program to Primient. Prepared a meeting summary.
 - Coordinated with SDD and ADM regarding possible supplemental carbon sources, i.e. glycol and truck wash water, proposed by ADM.
 - Researched the use of glycol as a carbon source for enhanced biological removal (EBR).
 - Prepared a draft lab protocol to evaluate the effectiveness of glycol as a carbon source. Protocol will be used at a EBR facility that operates with a similar liquids process as proposed for SDD WRRF.
3. Phosphorus Discharge and Optimization Plan (PDOP)
 - No services were completed this period.
4. Watershed Support Services
 - Conducted bi-weekly progress update meeting.
 - Presented at a public meeting to the stakeholders within the SDD WRRF watershed on the status of the Nutrient Assessment Reduction Plan (NARP). Developed meeting summary for the meeting.
 - Drafted, reviewed, and discussed draft NARP with SDD.
 - Initiated a new section for the NARP report on the WRRF Improvements.

- Continued drafting the NARP, including implementation plans related to Integrated Planning.
5. WRRF Upgrade Plan
- Aged Infrastructure Evaluation
 - i. Provided an update on next steps to further quantify improvements to Building 210.
 - ii. Continued to review, update, and refine the list of aged infrastructure projects.
 - Plant Facility Evaluation
 - i. Evaluated process optimization for the proposed liquids process, specifically evaluating adding external supplemental carbon.
 - Feasibility Study
 - i. Coordinated with SDD to draft, review, edit, and submit the final Feasibility Study report to IEPA by the mandated permit compliance date of September 30, 2024.
6. Capital Improvement Plan Development
- Met with SDD to discuss the CIP deliverable and objectives.
 - Reviewed the proposed projects for the CIP, which included aged infrastructure and compliance driven improvements. Both project types were combined into a common overall database.
 - Performed initial project groups based on associated work. Reviewed groupings with SDD.
7. Pilot and Demonstration Testing
- Completed analysis of final data from fermenter pilot.
 - Performed internal review of the draft memorandum on the pilot results.

Please feel free to contact me with any questions, comments or if you need additional information.

Sincerely,

Todd Archer, P.E.
Engineering Manager, Black & Veatch