

Director of Compliance and Innovation Report

March 20, 2024

Plant Loading, CSO Report, and Director’s Notes

Plant Influent Report:

Biochemical Oxygen Demand, 5-Day (Avg. 24054 lbs/day)	38 percent of design
Total Suspended Solids (Avg. 34251 lbs/day)	32 percent of design
Average Daily Flow (31.35 million gallons/day)	76 percent of design
Maximum Daily Flow (36.31 million gallons/day)	29 percent of design
Plant Influent Total Monthly Flow (million gallons) for January	1312.51
Estimated Unbilled Total Monthly Flow (million gallons)	551.14
Total Monthly Precipitation (inches)	6.23

Plant Effluent Report:

<u>Parameter</u>	<u>Report Frequency</u>	<u>Permit Limits</u>	<u>Reported Values</u>	<u>Violations</u>
CBOD ₅ , mg/L	Mo./Wk. Avg	20/40	2/2	0
TSS, mg/L	Mo./Wk. Avg	25/45	5/6	0
NH ₃ -N, mg/L	Mo. Avg/Daily Max	1.5/3.0	0.12/0.14	0
DO, mg/L	Mo. Avg/Wk. Avg/Daily Min	6.0/4.5/4.0	8.46/8.30/8.29	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.71/8.18	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.013	0
Cl ₂ Residual, mg/L	Daily Max	0.05	NA	NA
Fecal Coliform CFU/100mL	Daily Max	400	NA	NA

CSO Report:

<u>Location</u>	<u>Events</u>	<u>Est. Total Duration of Discharges (hrs.)</u>	<u>Discharge (million gallons)</u>
Oakland Avenue (Outfall 003)	0	0	0
Lincoln Park (Outfall 004)	0	0	0
McKinley Avenue (Outfall 007)	0	0	0
Seventh Ward (Outfall 008)	0	0	0

Director's Notes:

Polymer Spill:

On Sunday February 25th in the early hours of the day the plant operator observed large amounts of polymer (flocculent) coming into the plant. Not long after coming into the plant the polymer began to plug the compactor, screens and cause problems at the front of the plant. All plant staff took immediate action to unplug the compactor and clean up the spill around the compactor. Following the initial clean-up, the operators and maintenance staff spent considerable time into the next days on the cleaning up the material. The polymer not only plugged the compactor and screens but caused a large amount of bulking in the primary clarifiers and some bulking in the aeration tanks.

Once made aware of the incident Austin Gruber contacted industrial users to conclude that Primient had a polymer spill. Due to the amount, Mr. Gruber and Ashley Bailey went on site to Primient to perform an incident inspection to investigate how the spill occurred and made its way to the plant.

Polymer is extremely slick and cause one of the Distirct's operators to fall and hit his head as he climbed down from the stairs next to the compactor.

Due to the amount of polymer, lack of communication about the occurrence, the interference of plant processes and equipment and safety to employees Primient was issued a WN (Warning Notice).



Photo 1: Primary clarifier

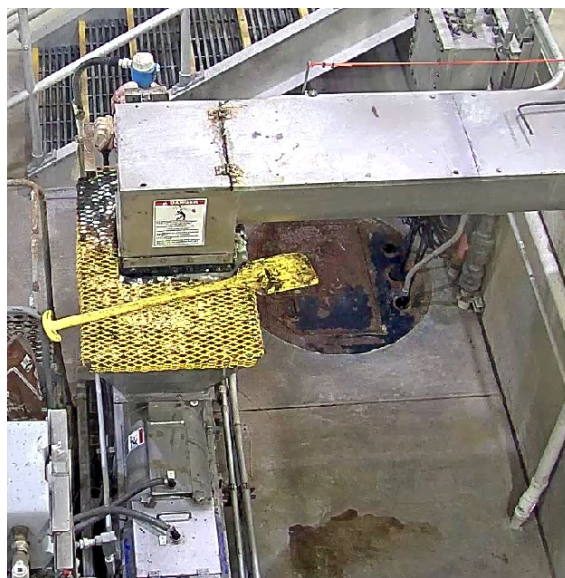


Photo 2: Start of Washer/Compactor overflow



Photo 3: Overflow reaching edge of stairs

CSO Annual Public Notification Meeting:

In accordance with the SDD's NPDES permit, the district scheduled a public notification meeting to present information and receive comments from the public regarding the operation & maintenance plan, pollution prevention plan, & public notification concerning its combined sewer overflow treatment facilities. The meeting scheduled for March 20, 2024 was announced in the paper on March 7, 2024, stating that all members of the public are encouraged to participate in the meeting.

Pretreatment USEPA Inspection:

USEPA from the Chicago Office was on site Monday March 11th – Wednesday March 13th for a pretreatment program compliance inspection. The first two days were file review and they wrapped up the inspection by accompanying The District with a pretreatment inspection of the industrial user Archer Daniels Midland (ADM).

Operations, Laboratory, and Pretreatment Activity Reports – February/March 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- Operators have removed all the sludge that they can. Maintenance will finish pumping sludge but have experienced high methane levels in the attic space creating a safety concern. We will pump the remaining sludge out as soon as possible.
- 2) Digester #3- Repairs for the Heat Exchanger and Mixer have been made and is back on line.
- 3) Operations staff have been monitoring the operation of the Frac Tank.
- 4) Operations staff continue to actively address PMs as time, workload, and staff levels allow.

- 5) Operators Brandi Rosenberger has passed the class 2 EPA exam and Charles Roberts has passed the class 3 EPA exam.
- 6) February 25th third shift reported polymer coming into the plant which in turn plugged screens and covering of the Primary tanks with flocculated sludge. Operations and Maintenance staff concentrated their efforts in keeping the screens clear to avoid flow backing up.

Laboratory Activities:

Routine:

A total of 1,862 analyses were performed in the laboratory during the month of February 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 February 2024 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health. A Zoom call was held on February 2, 2024, with the study participants and the researchers to discuss the results of the study thus far.
- 2) The quarterly NPDES sampling of the influent, final effluent, and sludge to Wyckles was conducted during the second week of February 2024.
- 3) Keith Richard hosted a Zoom meeting of the IWEA Laboratory Committee on February 8, 2024. The purpose of the meeting was to finalize planning for the lab-related events at the upcoming IWPC conference in East Peoria on March 18-20. Keith continues to serve as the chair of the committee.
- 4) Keith Richard led a plant tour for an Environmental Biology class from Millikin University on February 26, 2024.
- 5) The SDD laboratory hosted visitors from the laboratories at the Bloomington Normal Water Reclamation District and the Danville Sanitary District in late February 2024. Both laboratories are planning equipment and facility upgrades in the near future, so they came to see our laboratory to get ideas on what new equipment to purchase.
- 6) Sampling and laboratory analysis started for the frac tank pilot study on February 20, 2024. Each loading scenario will require two weeks of sampling and laboratory analysis. The first week is "Startup Week" which requires three days of sampling and analysis along with a three-day benchtop study. The second week is "Steady State Week" which requires three days of sampling and analysis with an expanded list of testing required. The laboratory will have a significantly increased workload over the course of the frac tank pilot study.

Pretreatment Activities:

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored eleven commercial and industrial users (IU) during February 2024. There were no industry site inspections that took place in February.
- 2) There was one waste hauler permit issued to **Alpha Drains** in the month of February.

3) **Primient** continued to operate under their revised penalty structure. They had 1 violation in the month of February, a carry-over of their issues from January regarding BOD. This is the first month of the three required months with 3 or fewer required to get out of their current penalty structure. Following successful completion of the consecutive 3-month period, their penalty structure will revert back to the structure set in EO 18-003.

Pretreatment Ordinance - Verbal Notices:

The SDD issued a total of 1 Verbal Notice to **St. Mary's** in February 2024:

- 2/22/2024 – **St. Mary's** violated its Total FOG daily limit of 200 mg/L by discharging 301 mg/L from point B.

Pretreatment Ordinance - Warning Notices (WN):

There was one WN issued to **Primient** during February 2024:

- 2/29/2024 – **Primient** was issued WN 24-001 for discharging polymer to the SDD that caused interference at the POTW. This spill did not result in the POTW violating any of the limits of the receiving stream, therefore they are not in SNC for this discharge. The response for this spill is due on 3/21/2024, however the initial investigation suggests that a contractor who cleaned up the spill was improperly unloading their sucker truck in a storm drain outside of their pretreatment area.

Pretreatment Ordinance - Notices of Violation (NOV):

There were two NOV's issued to **ADM** and **Primient** during February 2024:

- 2/12/2024 – **ADM** was issued NOV 24-001 for continued discharges of oil to the Lakeshore Lift Station. A meeting was held on 2/13/2024 at the West Plant to present the NOV and discuss next steps. **ADM** is required to meet with SDD personnel on 3/21/2024 at 1pm in the Board Room to present countermeasures to prevent further discharges.
- 2/26/2024 – **Primient** was issued NOV 24-002 for BOD, TSS, and Flow violations in January of 2024. A meeting will be held with **Primient** personnel on 3/28/2024 at 1pm in the Board Room to present countermeasures to prevent plant sustainability issues resulting in BOD, TSS, and Flow violations.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during February 2024.

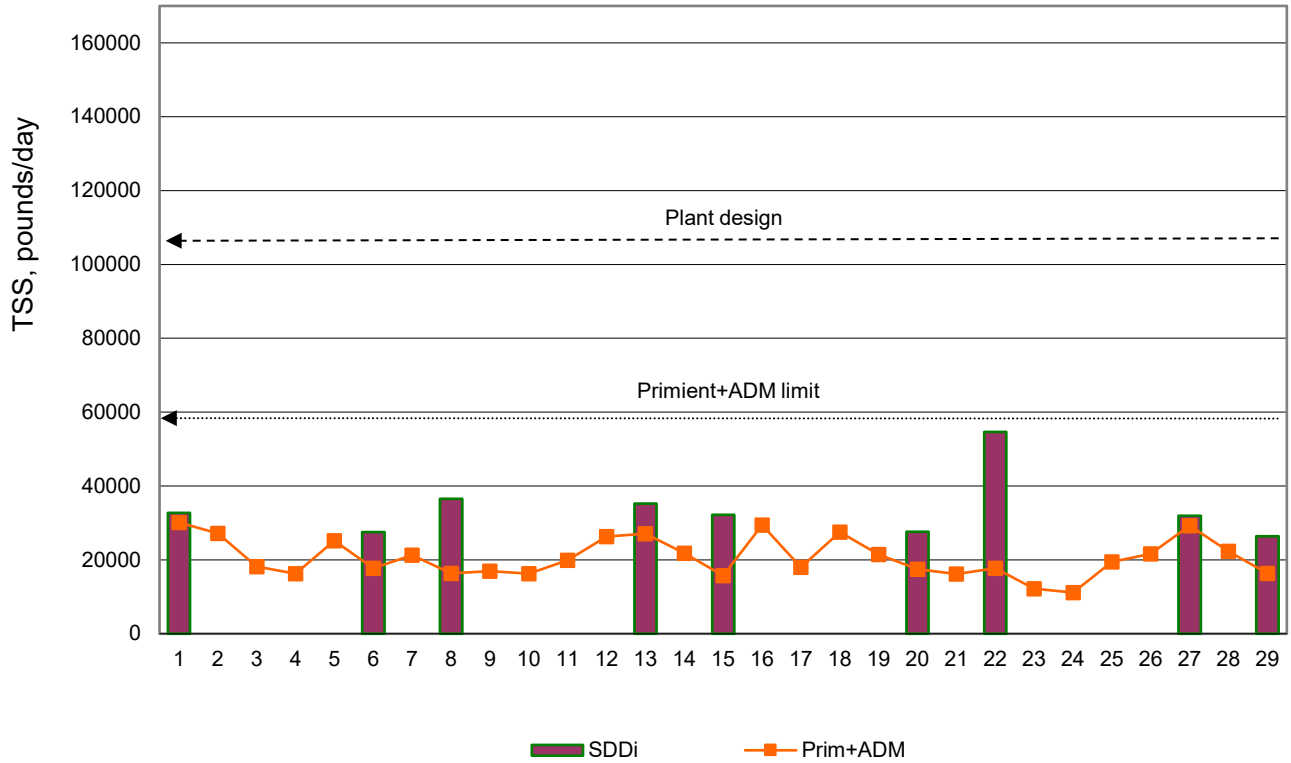
Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for February 2024:

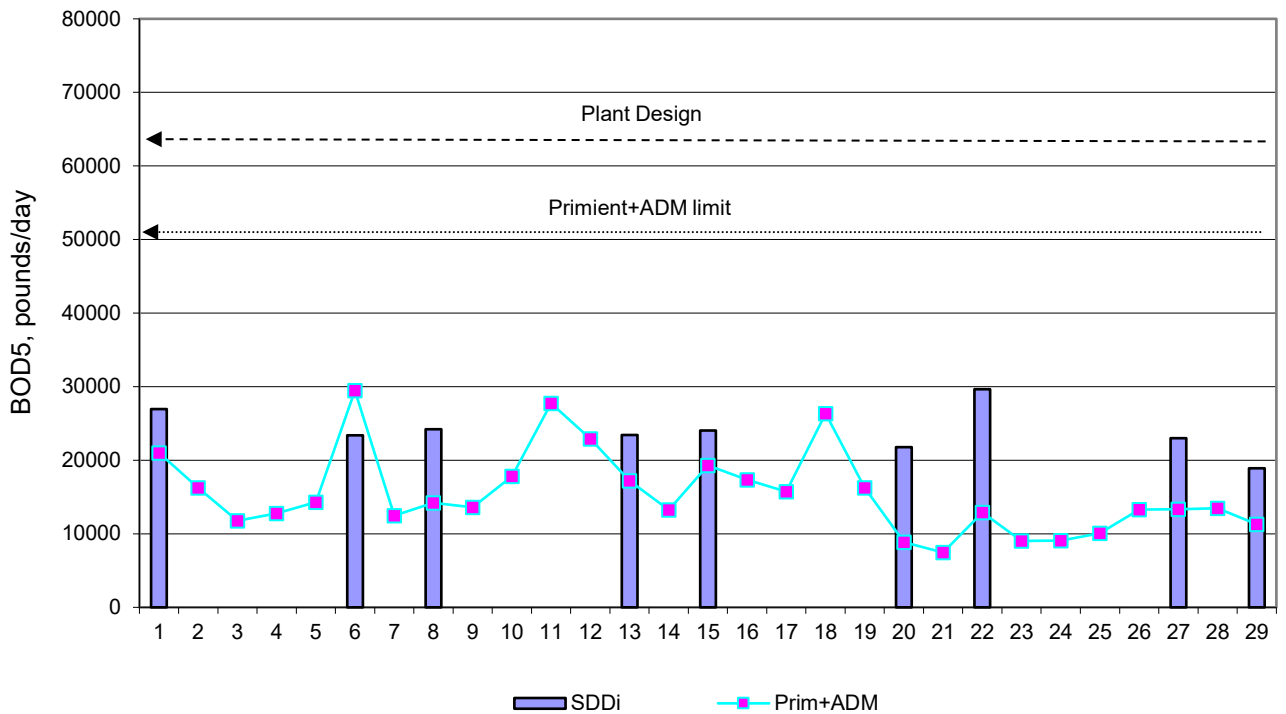
- | | |
|--------------------|----------------|
| 1) Primient | \$1,000 |
|--------------------|----------------|

Plant Operating Graphs:

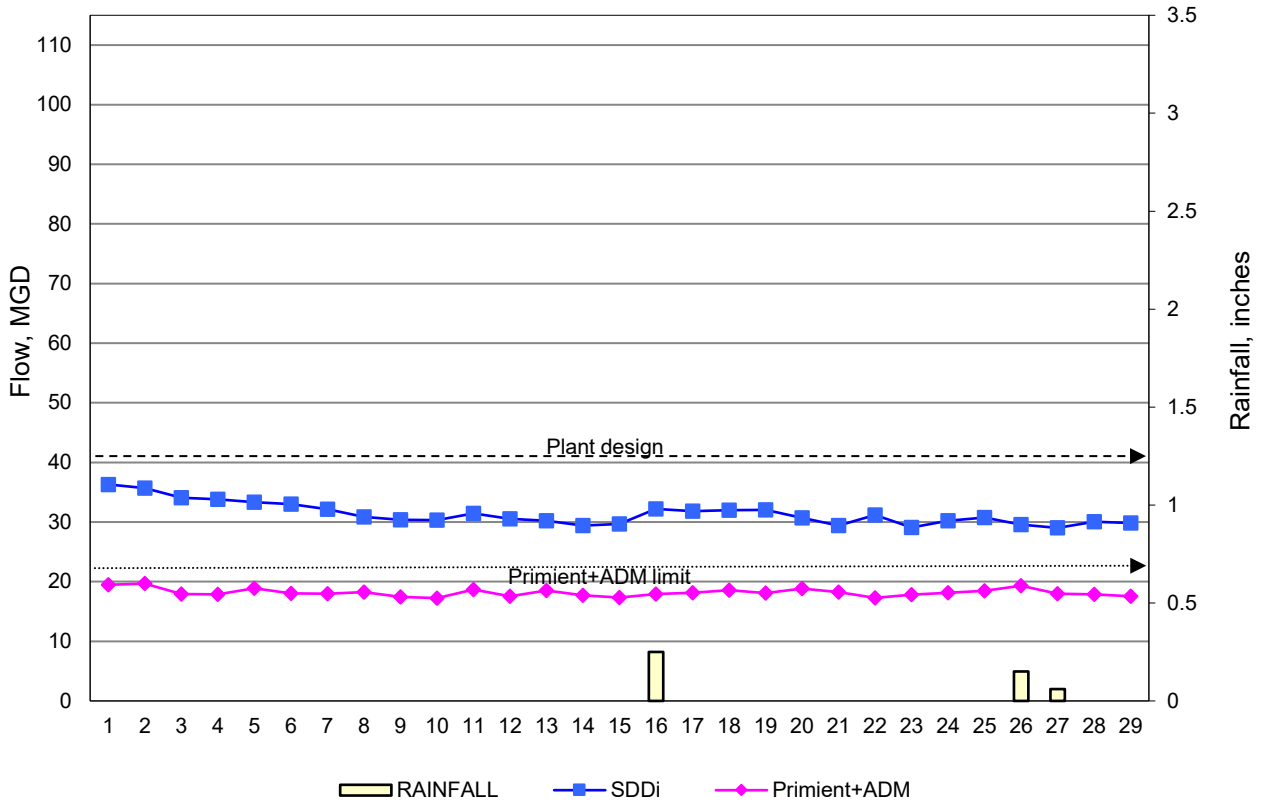
TSS Comparison: SDD Inf Primient+ADM Discharges



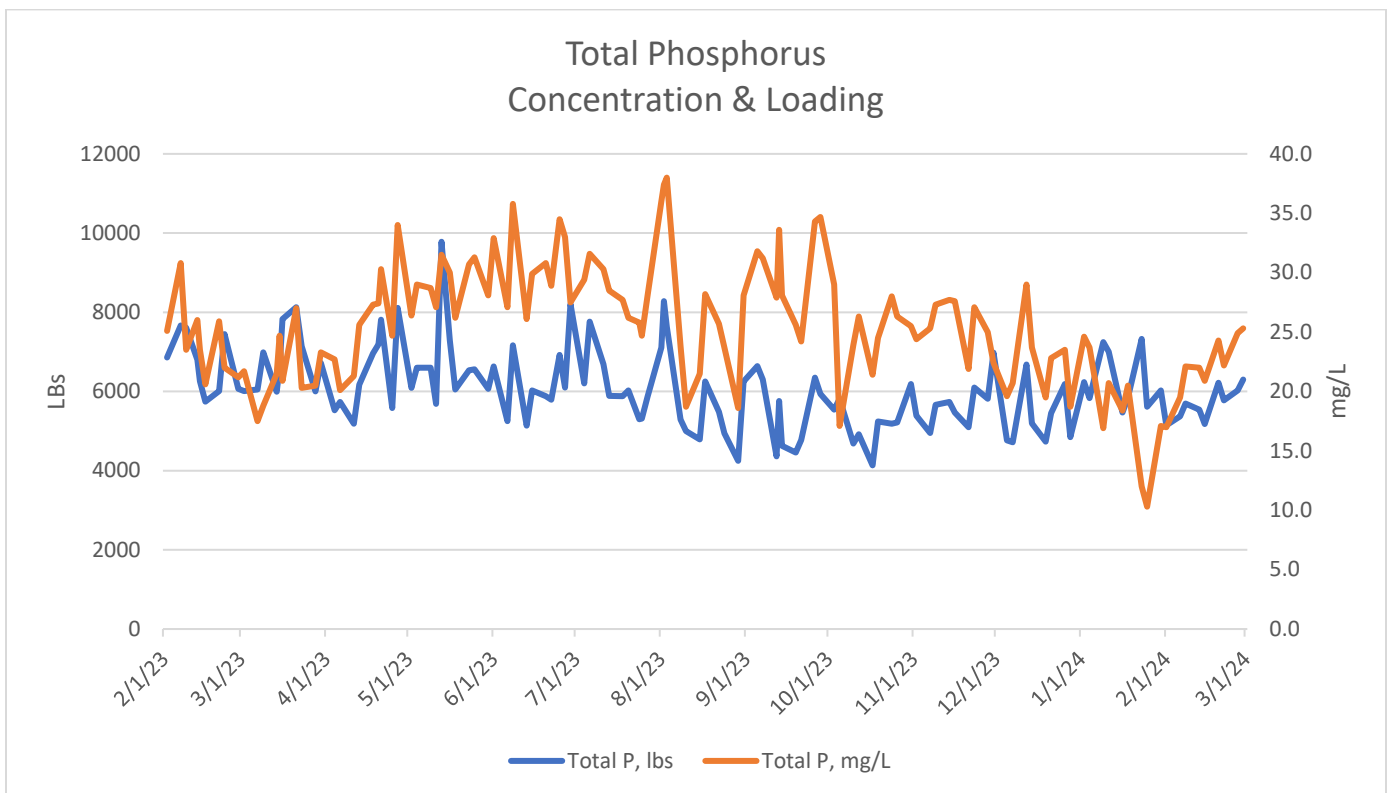
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



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

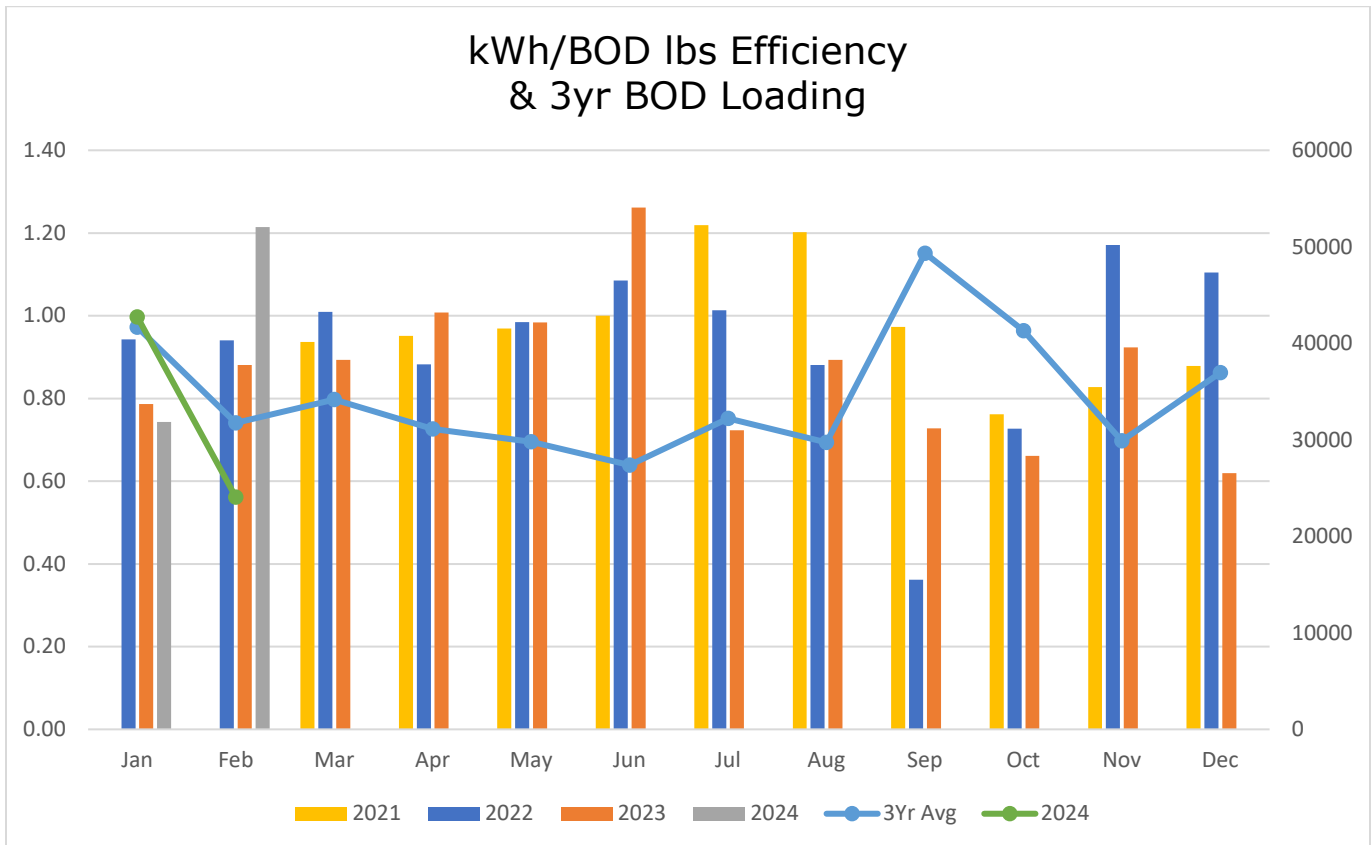
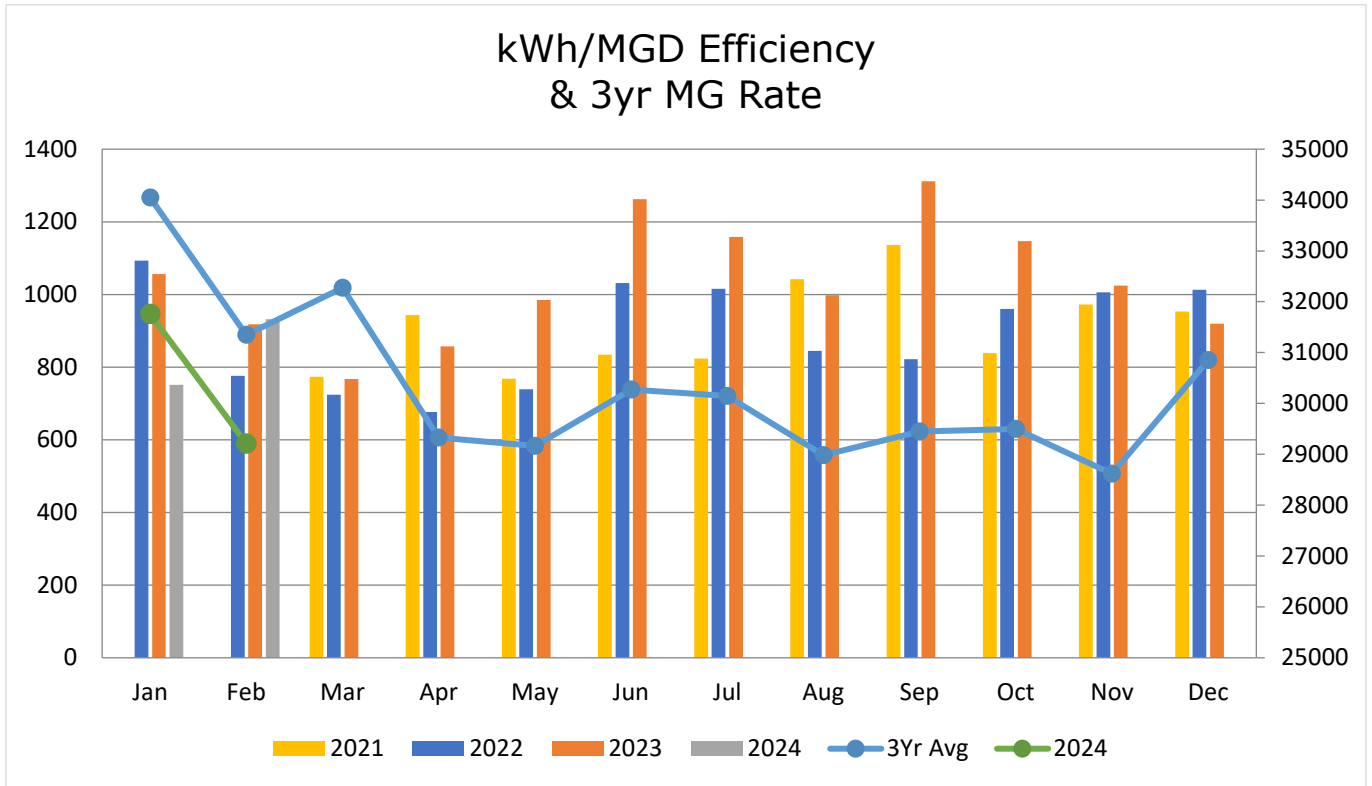


Phosphorus Tracking Graph:



Plant Efficiency Graphs:

February 2024



**Sanitary District of Decatur
Nutrient Program Management Report**

March 14, 2024

During the period January 20, 2024 through March 2, 2024 District personnel attended meetings with members of the Black & Veatch (B&V) team to affect progress in nutrient reduction planning and activities.

The District has provided plant performance data to B&V for inclusion in the Power BI dashboards. Additionally, the District has continued to support the Fermentation Pilot to gather performance data on the proposed biological phosphorus removal process.

B&V has continued the development of their full facility model, continued to develop aged infrastructure evaluation, and evaluation of alternatives for upgrades to the Water Resource Recovery Facility. In addition, B&V continued its' assistance with operation of the Fermentation Pilot.

Below you will find a list of meetings conducted. The information 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 during January 20, 2024 through March 2, 2024

Subject	Date	Agenda Items
Nutrient Program Management Bi-weekly Meetings	01/31/24, 2/14/24, 2/21/24, and 2/28/24	<i>Objective:</i> Provided Status Update on Program Tasks Frac Tank Pilot Power BI Pretreatment Program Update PDOP/Annual Progress Report Watershed Services Aging Infrastructure WRRF Upgrade Plan
Fermentation Reactor Pilot Operations Training	01/24/2024	<i>Objective:</i> Review purpose and operation of frac tank pilot with operations staff Pilot Project Objectives Pilot Fermenter: Set Up Pilot Fermenter: Operation Pilot Fermenter: Sampling and Testing Bench Scale Testing
Fermentation Reactor Pilot Operations Review meetings	02/17/2024, 03/01/2024	<i>Objective:</i> Review operation of Frac Tank pilot Review previous two weeks <ul style="list-style-type: none"> ○ Alarms/issues ○ Missed/rescheduled samples ○ Odor and scum observations ○ Bench scale results Review upcoming scenario <ul style="list-style-type: none"> ○ Set points ○ Sampling schedule ○ Odor sampling, if applicable Summarize results from previous weeks

**Sanitary District of Decatur
Watershed Management Report**

March 14, 2024

During the period January 20, 2024 through March 2, 2024 District personnel attended meetings with members of the Black & Veatch and Geosyntec Teams to affect progress in meeting the NARP requirements as listed in the NPDES permit as well as moving forward on the formation of a future watershed workgroup for the Middle Sangamon River.

Recent activities pertained to items necessary to complete the NARP Study. Foremost in these efforts included Geosyntec applying the calibrated instream model to evaluation management scenarios to address impairments in the Sangamon River. This period focused on the review of the results of the alternative scenarios while receiving District feedback.

Below you will find a list of the meetings conducted. The information 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 during January 20, 2024 through March 2, 2024

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Instream Model Scenario Discussions	1/24/24 and 2/7/24	<i>Objective:</i> Geosyntec presented/reviewed the initial results of the baseline and alternative scenarios of the Instream Model and discussed baseline scenarios. Also discussed elements of the Nutrient Assessment Reduction Plan.

March 14, 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 (January 20, 2024 – March 2, 2023)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from January 20, 2024, through March 2, 2023.

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
 - Met twice with ADM to discuss SDD treatment costs and opportunities to minimize overall costs for managing phosphorus
3. Phosphorus Discharge and Optimization Plan (PDOP)
 - No Services were completed this period.
4. Watershed Support Services
 - Conducted bi-weekly progress update meeting.
 - Continued initial planning efforts for the Watershed Group formation development.
 - Discussed elements of the Nutrient Reduction Assessment Plan
5. WRRF Upgrade Plan
 - Aged Infrastructure Evaluation
 - i. Completed draft of TM-5b Aged Infrastructure Evaluation.
 - ii. Presented a summary of draft TM-5b findings to SDD.
 - Plant Facility Evaluation
 - i. Completed draft of TM 5a WRRF Model results
 - ii. Presented a summary of draft TM 5a to SDD.

6. Capital Improvement Plan Development

- Alternative Funding
 - i. Provided follow-up on requirements for alternative funding, specifically on WIFIA.

7. Pilot and Demonstration Testing

- Continued to support startup and commissioning of Frac Tank.
- Developed and shared schedule for pilot and demonstration test.

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

Enclosure(s): SDD Nutrient Program Manager Schedule and Anticipated Cost Forecast

SANITARY DISTRICT OF DECATUR - NUTRIENT PROGRAM MANAGEMENT
 2022 - 2024 COST FORECAST
 DV Project Number: 411622

Incremental	2022.01	2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12	2023.01	2023.02	2023.03	2023.04	2023.05	2023.06	2023.07	2023.08	2023.09	2023.10	2023.11	2023.12	2024.01	2024.02	2024.03	2024.04	2024.05	2024.06	2024.07	2024.08	2024.09	2024.10	2024.11	2024.12	2025.01	2025.02	2025.03	2025.04	2025.05	2025.06	2025 Total	2024 Total	2024 Total						
Planned	13,800	108,569	202,674	188,300	462,478	384,217	100,648	88,749	108,226	81,802	81,800	304,800	175,000	164,800	200,180	181,238	171,413	188,685	199,429	198,480	198,000	198,429	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480	198,480						
Actual	18,124	58,861	77,864	54,800	112,885	151,956	148,620	113,820	118,361	89,877	108,650	168,812	128,951	158,401	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631				
Forecast	18,124	58,861	77,864	54,800	112,885	151,956	148,620	113,820	118,361	89,877	108,650	168,812	128,951	158,401	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631	168,631			
Task 1 Program Mgmt	4,801	18,389	34,121	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186	30,186				
Task 2 Prevalent Program Update	1,708	15,177	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363				
Task 3 Phosphorus Discharge and Optimization	508	3,780	4,684	7,070	38,718	5,877	4,681	4,679	5,068	4,877	4,879	6,743	5,080	5,113	5,880	4,528	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880	4,521	5,880			
Task 4 Wastewater Support Services	6,790	61,801	12,107	4,040	193,881	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285	18,285	22,817	18,285		
Task 5 Comprehensive WRRF Upgrade Plan	7,879	43,824	53,745	18,770	38,223	74,878	81,799	86,481	42,085	47,284	38,843	80,025	87,280	85,545	118,522	71,274	48,148	87,388	86,959	44,179	78,958	87,783	-	124,858	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835	28,835	33,541	28,835		
Task 6 Feasibility Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Task 7 Pilot and Demonstration Testing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Task 8 Conceptual Design Dev./GD Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cumulative	13,800	122,369	242,043	430,343	893,221	1,278,106	1,426,726	1,540,545	1,658,811	1,767,613	1,866,413	2,171,213	2,346,213	2,514,813	2,714,813	2,914,813	3,114,813	3,314,813	3,514,813	3,714,813	3,914,813	4,114,813	4,314,813	4,514,813	4,714,813	4,914,813	5,114,813	5,314,813	5,514,813	5,714,813	5,914,813	6,114,813	6,314,813	6,514,813	6,714,813	6,914,813	7,114,813	7,314,813	7,514,813	7,714,813	7,914,813	8,114,813	8,314,813	8,514,813	8,714,813	8,914,813	9,114,813	9,314,813	9,514,813	9,714,813	9,914,813

