

Director of Operations and Compliance Report

September 21, 2022

Plant Loading, CSO Report, and Director's Notes

Plant Influent Report

Biochemical Oxygen Demand, 5-Day (Avg. 32705 lbs/day)	51 percent of design
Total Suspended Solids (Avg. 83043 lbs/day)	77 percent of design
Average Daily Flow (34.10 million gallons/day)	83 percent of design
Maximum Daily Flow (70.06 million gallons/day)	56 percent of design

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	4/5	0
NH ₃ -N, mg/L	Mo. Avg/Wk. Avg/Daily Max	1.1/2.8/3.0	0.39/0.47/0.49	0
DO, mg/L	Mo. Avg/Wk. Avg/Daily Min	6.0/4.5/4.0	7.58/7.33/7.18	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.57/8.09	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.018	0
CL ₂ Residual, mg/L	Daily Max	0.05*	0.011	0
Fecal Coliform CFU/100mL	Daily Max	400*	29	0

*Effluent disinfection is required May 1 through October 31.

CSO Report

Location	Events	Est. Total Duration of Discharges (hrs.)	Discharge (million gallons)
Oakland Avenue (Outfall 003)	4	39.25	17.78
Lincoln Park (Outfall 004)	3	7.48	20.6
McKinley Avenue (Outfall 007)	4	19.8	13.42
Seventh Ward (Outfall 008)	4	15.3	30.25

Director's Notes:

Compliance Reporting:

In accordance with the requirements of the new NPDES permit the SDD has submitted all semi-annual and/or annual reports to the appropriate entities. These included the annual NARP Progress Report, and the semi-annual Feasibility Progress Report.

Operations, Laboratory, and Pretreatment Activity Reports – August/September 2022

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) The Evoqua technician was on site to inspect the Heat Exchangers and make the necessary repairs. Operations and maintenance staff received some valuable training that will be of great benefit for future trouble shooting and repair.
- 2) Heavy rains were experienced throughout the month of August which combined with the continued additional demand caused chemical usage to go up. September is starting out with heavy rains so chemical usage may remain higher than normal; however this is not a given and we will not know for certain until the month is complete.
- 3) Operator and maintenance staff evaluated the sludge inventory at Wyckles and reported that sludge level is nearly full in the east lagoon. This will result in less dredging time since this is the lagoon that the bio-solids are pulled from for land application.
- 4) Operators are working with maintenance staff to facilitate repair efforts on the East Primary Clarifiers. #5 primary had a bent flight (top arm), maintenance was able to get the unit straightened and repaired, however this unit will only be used on an as-needed basis until more extensive repairs can be performed. #6 was generally in good order and only needed minor attention to the scum beach. #4 is still awaiting take down and evaluation.
- 5) Operations staff are still operating the anaerobic digesters while Christy-Fultz continues installing the #3 digester cover.
- 6) Operations staff continue to actively address PMs as time, workload, and staff levels allow.

Laboratory Activities:

Routine:

A total of 3,013 analyses were performed in the laboratory during the month of August 2022.

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 quarterly NPDES sampling of the influent, effluent, and sludge to Wyckles was conducted during the first week of August 2022.
- 2) The SDD lab continued to send samples of raw influent twice a week throughout the month of August 2022 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health. A Zoom call was held on August 5, 2022, with the study participants and the researchers to discuss the results of the study thus far. Elevated levels of the COVID-19 virus continue to be detected in our influent.

- 3) The SDD lab and pretreatment conducted an intensive nutrient sampling special project from August 8 – August 21, 2022. A total of 196 samples were collected and analyzed over the two week period to fully characterize the nutrient loading from ADM and Primient, as well as the nutrient loading throughout the plant. The data from this study will be used as part of the design process as the plant is redesigned for biological nutrient removal as required by our NPDES permit. This extra sampling was in addition to the normal lab workload, so I would like to commend everyone in the lab and pretreatment for all of their hard work to complete this special project.
- 4) The graded results of the annual USEPA mandated DMR-QA proficiency testing were received on August 12, 2022. We obtained passing results for all 29 analytes that were tested. The testing this year included five more analytes than in previous years due to extra parameters being added into our NPDES permit.

Pretreatment Activities:

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored eleven commercial and industrial users (IU) during August 2022 and conducted five industrial site inspections.
- 2) The SDD issued a new wastewater discharge permit to **ADM James R Randall Research Center**.
- 3) The required 30-day public comment period for the 2022 local limits evaluation was completed and no comments were received by the SDD or US EPA. A motion to adopt the local limits and new ordinance language is being presented for Board consideration this month.
- 4) Pretreatment personnel coordinated with **Primient** and **ADM** to accomplish the two-week nutrient study and assisted with quarterly plant sampling.
- 5) **Fuyao Glass Illinois** is adding a second fabrication line to their Decatur Plant. This will nearly double their current wastewater discharge. Fuyao will need to submit an application to amend their current effluent flow limits prior to start up.
- 6) Consent Order 22-001 was issued to **Primient** for flow reporting violations. In addition to the \$17,000.00 of penalties assessed for permit limit violations for August, one penalty per month was assessed for the period that flow was underreported, totaling \$115,000.00.
- 7) The SDD's Monitoring Technician, Victor Escalante, accepted the open Lab Tech position. Victor will be still be collecting some samples until we can fill the Monitoring Technician role.

Pretreatment Ordinance - Verbal Notices:

- 1) The SDD issued a Verbal Warning to **Primient** on August 3, 2022, for violating their wet weather flow limit.
- 2) The SDD issued a Verbal Warning to **Bulkmatic** on August 4, 2022, for discharging wastewater containing BOD above their permitted limit. The violation was caused by a dextrose trailer that was not properly washed. Two subsequent resamples have shown **Bulkmatic** to be in compliance.
- 3) The SDD issued a Verbal Warning to **Decatur Plating** on August 25, 2022, for discharging wastewater containing zinc above their permitted limit. **Decatur Plating** recalibrated the pH meters on their pretreatment system, and subsequent resampling has shown the facility to be in compliance.

Pretreatment Ordinance - Warning Notices (WN):

- 1) The SDD issued WN 22-005 to **Primient** on August 11, 2022, for discharging a considerable amount of dextrose through their 25th Street Discharge. The leak was attributed to a crack that developed in the railcar loadout catch pit, which allowed dextrose to leak to sewer when railcars were being loaded. The 15-day response to the warning notice has not been received at this time.
- 2) The SDD issued WN 22-006 to **ADM** on August 25, 2022, for discharging a slug of FOG from the West Plant that accumulated in our Lakeshore Drive Pump Station wet well. ADM had an initial loss of FOG on August 15th and committed to plugging the sewer line that they believed the loss originated from, however a second loss was experienced on August 24th. The required 15-day response has not been received at this time. A compliance inspection will be conducted, and an Executive Order will be issued in the coming weeks.

Pretreatment Ordinance - Notices of Violation (NOV):

No Notices of Violation were issued during August 2022.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during August 2022.

Pretreatment Ordinance - Penalty Assessments:

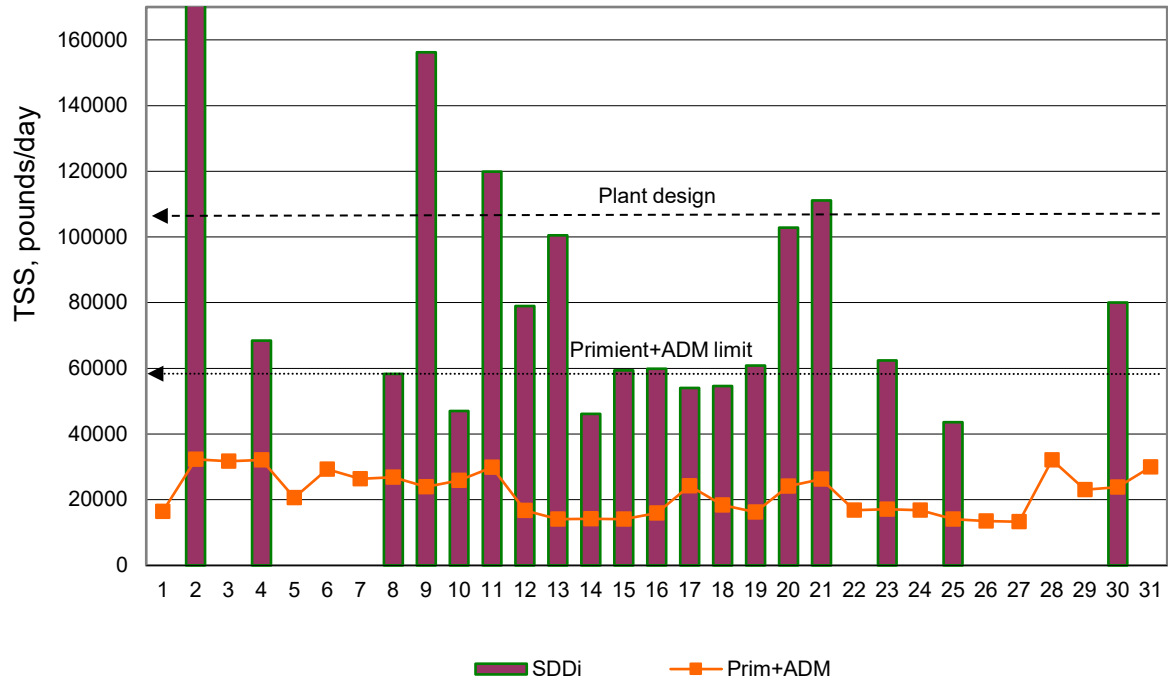
The following industrial penalties were assessed for August 2022:

- | | |
|--------------------|-----------------|
| 1) Primient | \$17,000 |
| 2) ADM | \$3,000 |

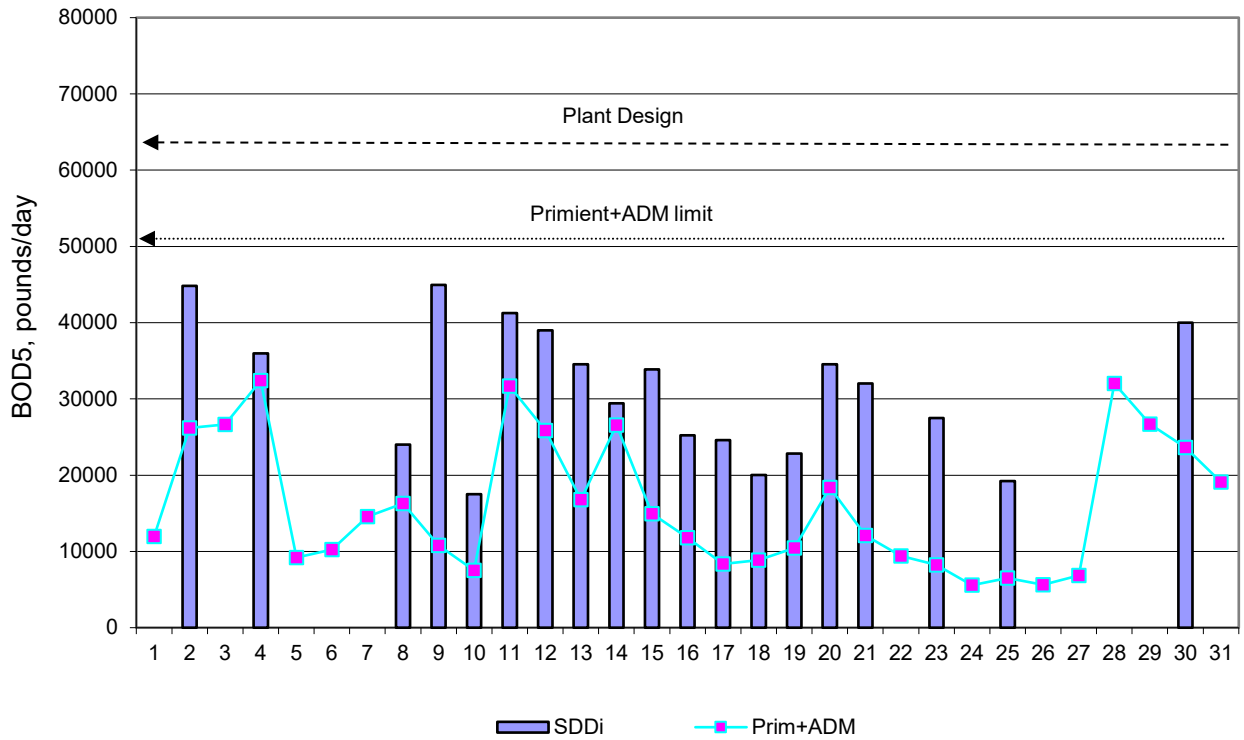
Plant Operating Graphs:

August 2022

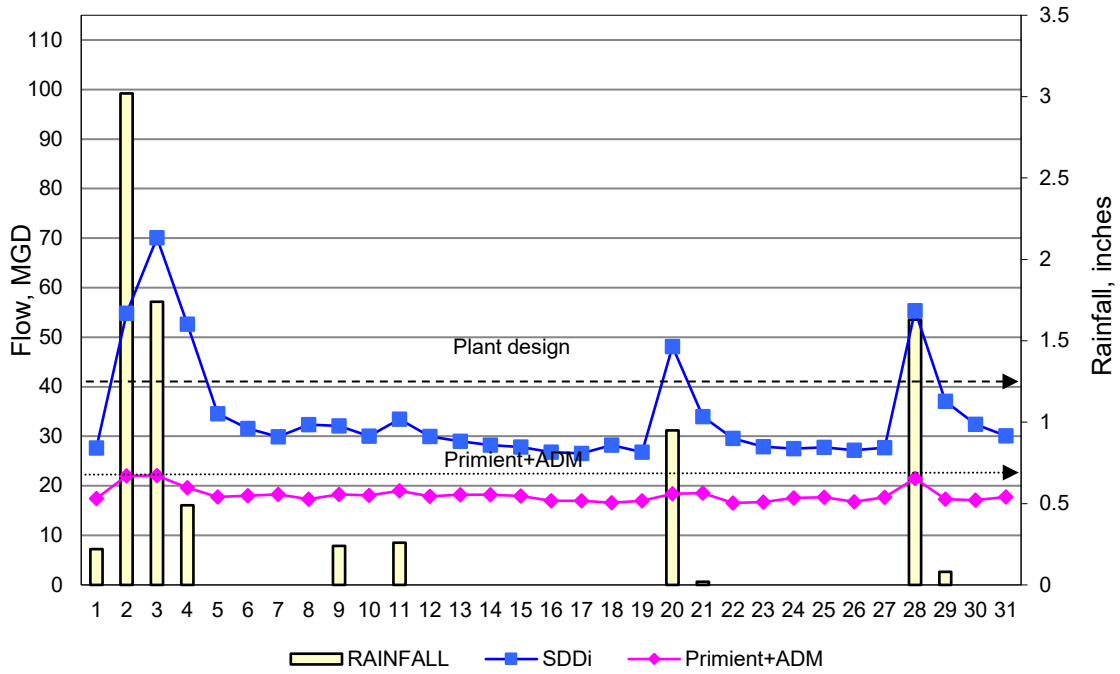
TSS Comparison: SDD Inf Primient+ADM Discharges



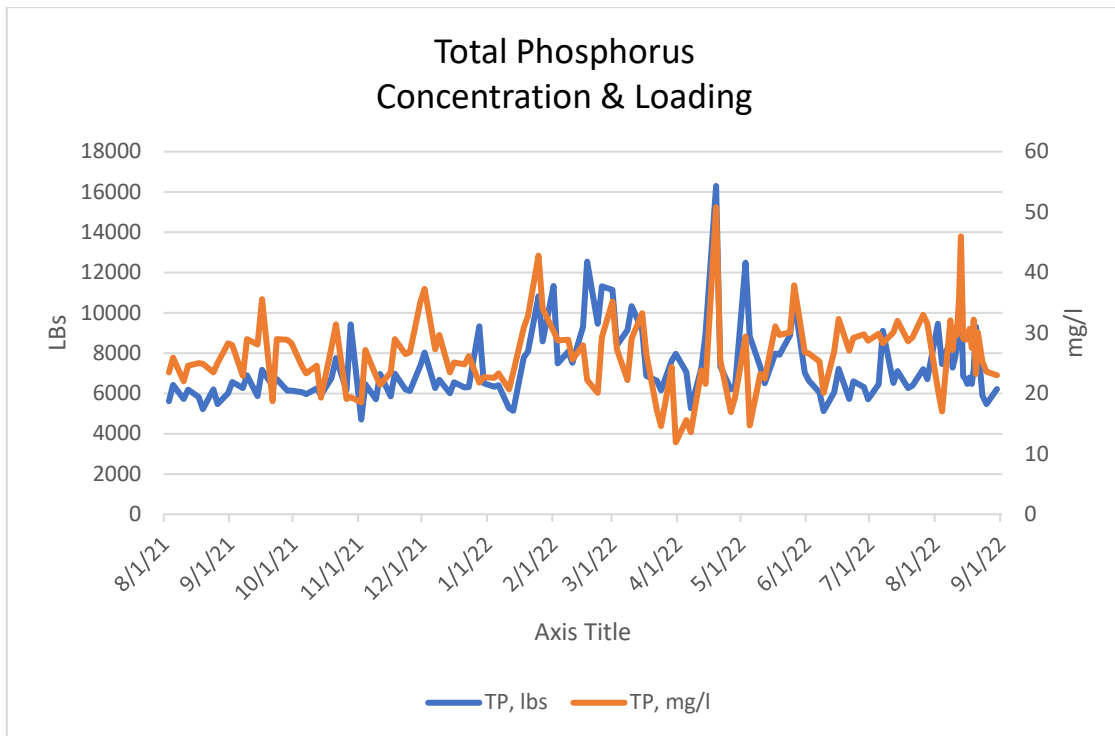
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



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

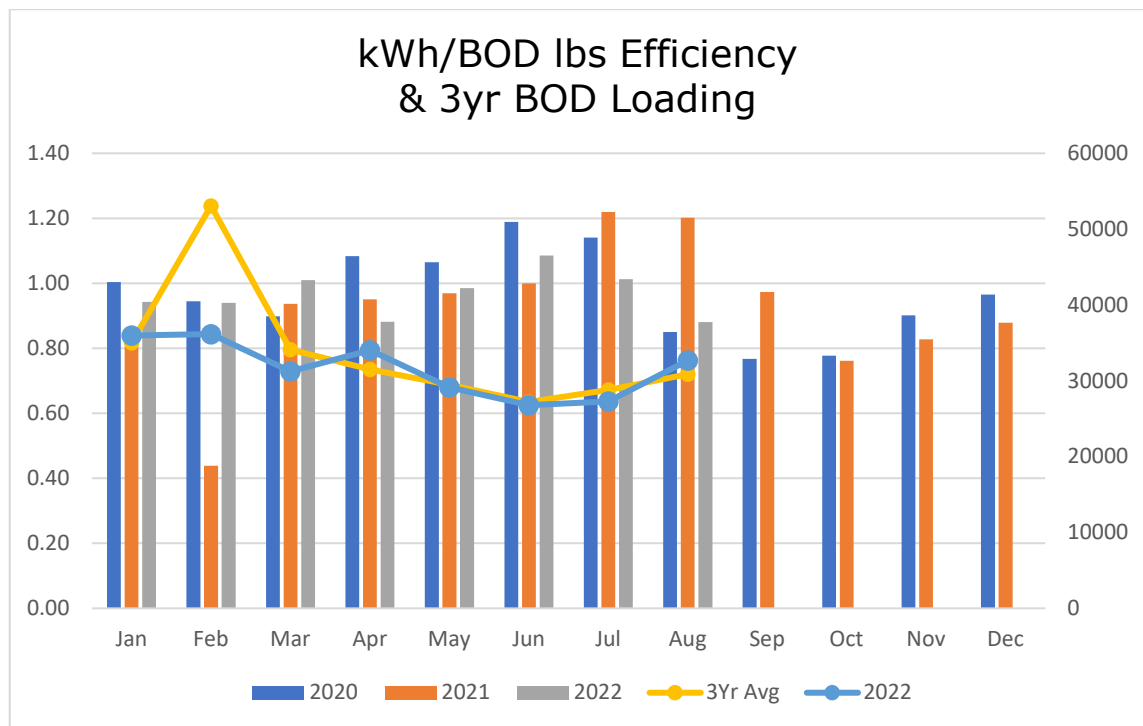
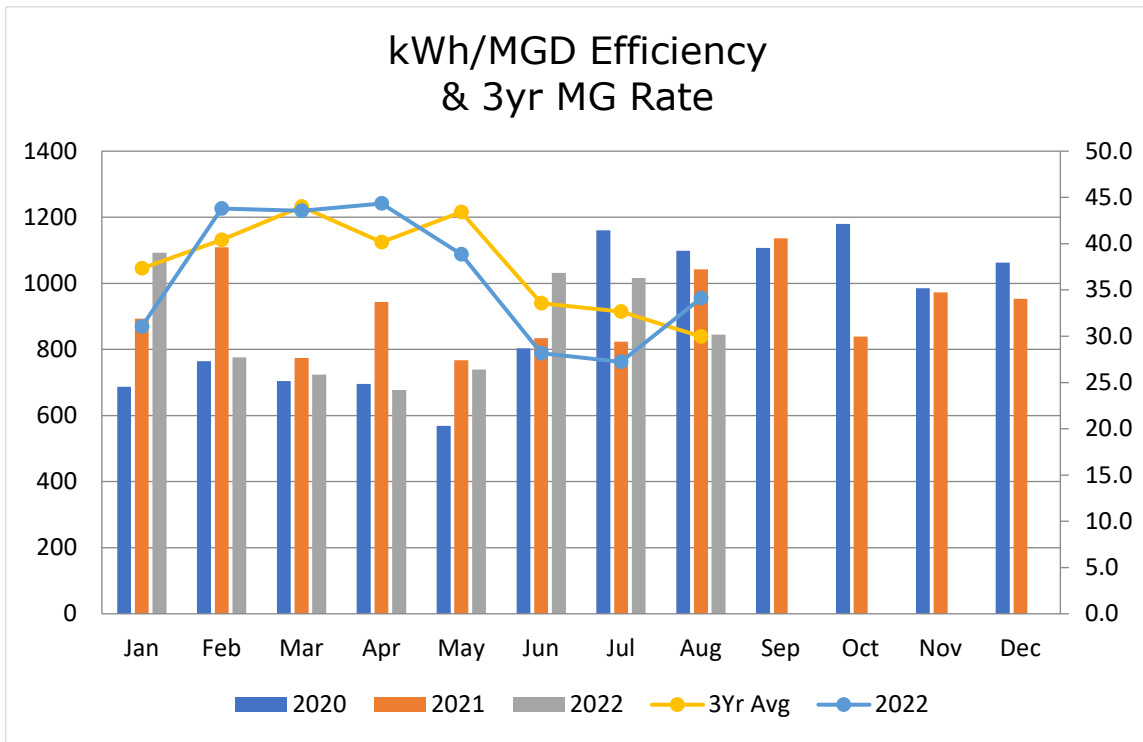


Phosphorus Tracking Graph:



Plant Efficiency Graphs:

August 2022



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

September 21, 2022

During the month of August District personnel attended several meetings with members of the Black & Veatch Team to affect progress in nutrient reduction planning and activities.

Currently, activities are surrounding the gathering and sharing of data and information so that all parties can assist in how to move the projects forward as efficiently as possible. In the month of August, the District concentrated in continuing to gather and forward all requested lab results and plant performance data as requested by the B&V.

B&V concentrated on their analysis and evaluations of liquid stream alternatives and completed the Technical Memorandum associated to those efforts. They have continued to receive and assimilate data provided by SDD. BV also continued the development of the Post Aerobic Design (PAD) technical memorandum as well as progressed in the development of the basis of design for a Frack Tank Pilot study. Other items included initial efforts pertaining to a PowerBI dashboard for the Program

Below you will find a list of the actual meetings conducted in chronological order. The information covers the subject, date, and agenda items of each meeting. Additional information related to if 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.

Nutrient Reduction Program Meetings Conducted during August 2022

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Bi-weekly Program Status Update	8/3/2022	<ol style="list-style-type: none"> 1. PowerBI Presentation 2. Deep Well Injection 3. Post Aerobic Digestion TM 4. Tasks Updates including: <ul style="list-style-type: none"> • PDOP • Watershed Support Services • WWRF Upgrade Plan • Pilot Study
	8/17/2022	<ol style="list-style-type: none"> 1. Tasks Updates including: <ul style="list-style-type: none"> • PDOP • Pretreatment Program Update • Watershed Support Services • WWRF Upgrade Plan
		<ol style="list-style-type: none"> 2. Post Aerobic Digestion Discussion: <ul style="list-style-type: none"> • Provided summary for PAD sizing
8/31/2022	<ol style="list-style-type: none"> 1. PowerBI Parameter Summary 2. Tasks Updates including: <ul style="list-style-type: none"> • PDOP • Pretreatment Program Update • Watershed Support Services • WWRF Upgrade Plan • Pilot Study 3. PAD and Next Steps 	

**Sanitary District of Decatur
Watershed Management Report**

September 21, 2022

During the month of August 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 planning the program in order to complete the NARP Study. Foremost in these efforts included Geosyntec continuing to sample/monitor on a bi-weekly basis after equipment deployment was completed in June. In addition, IEPA provided comments on the submitted QAPP and Geosyntec finalized the document.

Below you will find a list of the actual meetings conducted in chronological order. 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 August 2022

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Watershed Services Bi-weekly Meeting	8/10/2022	1. Data Collection 2. Installation Photolog 3. QAPP Comments 4. Bylaws'
	8/24/2022	1. Data Collection
		2. Installation Photolog Submittal
		3. Final QAPP Submittal
		4. Bylaws'
	5. Initial Data Analysis Request	

September 11, 2022

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
August Monthly Progress Update (August 1, 2022 – September 2, 2022)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from August 1, 2022, through September 2, 2022.

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 BI duties.
 - Began to integrate project data into PowerBI.
2. Pretreatment Program Update
 - Continued data evaluation in parallel with the WWRF Upgrade Plan; however, no task specific items
3. Phosphorus Discharge and Optimization Plan (PDOP)
 - Continued the development of the draft report
 - Began to analyze feasibility of deep well injection as a potential discharge option.
4. Watershed Support Services
 - Conducted bi-weekly progress update meetings
 - Geosyntec continued river monitoring efforts and bi-weekly data collection
 - Geosyntec addressed IEPA comments and submitted the Final QAPP.
 - Continued initial planning efforts and outline for the Watershed Group formation development
 - Began data initial data analysis of river monitoring
5. WRRF Upgrade Plan
 - Completed TM #2: BNR Liquid Stream Evaluation This memorandum's objectives were to conduct technology screening to broadly evaluate shortlisted liquid-stream process

technologies/configurations from the perspective of overall treatment performance, process efficiency, and process complexity; Select and further-refine the preferred process configuration; develop conceptual Capital and O&M costs for the refined configuration

- Completed the Post Aerobic Digestion (PAD) Basis of Design report. The Technical Memorandum focused on establishing design criteria and an associated planning level capital cost estimate for construction of a PAD treatment system at the SSD WRRF.
- Continued the development of TM3 – BNR Pilot Study Plan for the Frac Tank Pilot

6. Pilot and Demonstration Testing

- Continued initial conceptual layout and overall operation of pilot study in conjunction with the development of TM3 – BNR Pilot Study Plan.

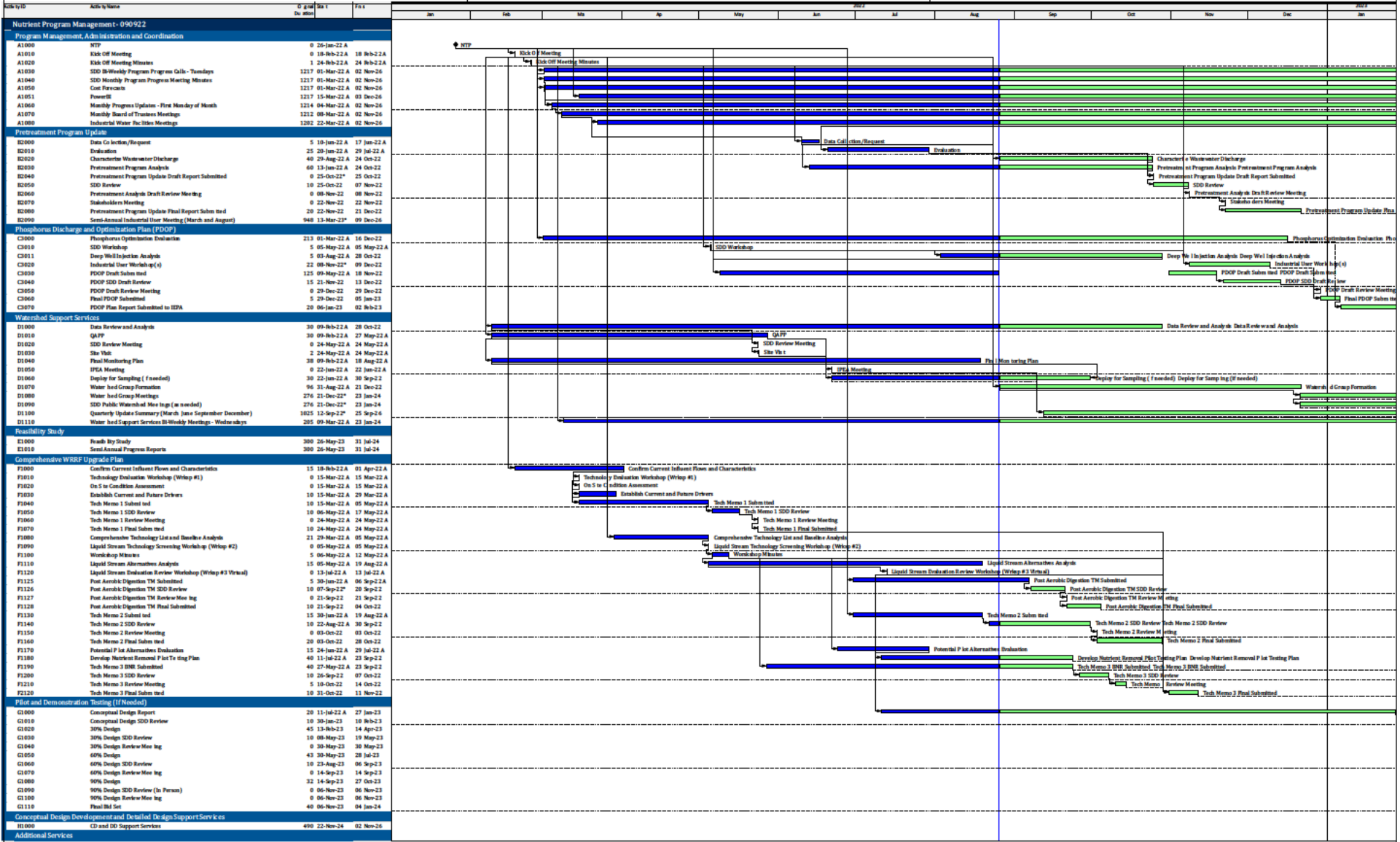
Please feel free to contact me with any questions, comments or if you need additional information.

Sincerely,

Diane Grossenheider, P.E.
Project Manager, Black & Veatch

Enclosure(s):

- SDD Nutrient Program Manager Schedule (Year 1)
- Anticipated Cost Forecast



█ Actual Work █ Critical Remaining ...
█ Remaining Work ◆ Milestone

SANITARY DISTRICT OF DECATUR- NUTRIENT PROGRAM MANAGEMENT
2022 COST FORECAST
BV Project Number: 411502

Incremental		2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12	2022 Total
	Planned	13,683	108,359	237,519	168,336	467,476	284,217	100,648	86,219	109,725	91,822	91,820	1,789,824
	Actuals	16,724	60,831	77,995	54,608	61,865	125,355	143,789					541,168
	Forecast	16,724	60,831	77,995	54,608	61,865	125,355	143,789	193,668	93,017	104,295	86,535	1,018,684
Task 1 Program Mgmt	Planned	4,631	18,569	25,171	20,169	20,164	25,213	20,168	20,170	25,211	20,169	20,167	219,822
	Actuals	7,905	2,198	2,585	3,303	2,115	3,760	4,348					26,213
	Forecast	7,905	2,198	2,585	3,303	2,115	3,760	4,348	8,000	8,000	8,000	8,000	58,213
Task 2 Pretreatment Program Update	Planned	1,726	15,177	42,250	17,294	10,880	30,576	19,616	5,192	6,491	5,192	5,192	159,386
	Actuals			705	470	470	235	-					1,880
	Forecast			705	470	470	235	-	37,481	25,595	29,248	19,192	113,397
Task 3 Phosphorus Discharge and Optimization	Planned	536	3,756	4,694	7,073	26,718	5,977	4,881	4,879	6,099	4,877	4,879	74,369
	Actuals		1,290	3,755	3,508	1,613	235	4,645					15,045
	Forecast		1,290	3,755	3,508	1,613	235	4,645	8,386	9,565	8,386	4,719	46,100
Task 4 Watershed Support Services	Planned	6,790	61,631	12,107	4,040	193,891	22,817	18,255	18,250	22,817	18,253	18,251	397,102
	Actuals	940	14,809	17,206	28,841	21,065	45,297	51,638					179,795
	Forecast	940	14,809	17,206	28,841	21,065	45,297	51,638	77,912	33,014	28,412	28,412	347,544
Task 5 Comprehensive WRRF Upgrade Plan	Planned	-	9,206	122,984	89,447	32,035	35,466	-	-	-	-	-	289,138
	Actuals	7,879	42,534	53,745	16,778	36,223	74,878	82,401					314,437
	Forecast	7,879	42,534	53,745	16,778	36,223	74,878	82,401	59,890	14,842	10,250	6,213	405,632
Task 7 Pilot and Demonstration Testing	Planned	-	-	-	-	213,988	164,168	37,728	37,728	49,107	43,331	43,331	589,381
	Actuals				1,710	380	950	760					
	Forecast				1,710	380	950	760	2,000	2,000	20,000	20,000	47,800
Cumulative		2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12	2022 Total
Planned	-	13,683	122,042	359,561	527,897	1,025,373	1,309,590	1,410,238	1,496,457	1,606,182	1,698,004	1,789,824	1,789,824
Actuals	-	16,724	77,554	155,549	210,157	272,023	397,378	541,168					
Forecast		16,724	77,554	155,549	210,157	272,023	397,378	541,168	734,836	827,853	932,148	1,018,684	1,018,684

