

## Director of Compliance and Innovation Report

April 19, 2023

### Plant Loading, CSO Report, and Director's Notes

#### Plant Influent Report

Biochemical Oxygen Demand, 5-Day (Avg. 35082 lbs/day)	55 percent of design
Total Suspended Solids (Avg. 61650 lbs/day)	57 percent of design
Average Daily Flow (40.84 million gallons/day)	100 percent of design
Maximum Daily Flow (85.57 million gallons/day)	68 percent of design

#### Plant Effluent Report

<u>Parameter</u>	<u>Report Frequency</u>	<u>Permit Limits</u>	<u>Reported Values</u>	<u>Violations</u>
CBOD <sub>5</sub> , mg/L	Mo./Wk. Avg	20/40	2/3	0
TSS, mg/L	Mo./Wk. Avg	25/45	5/7	0
NH <sub>3</sub> -N, mg/L	Mo. Avg/Daily Max	1.5/3.0	0.12/0.12	0
DO, mg/L	Mo. Avg/Wk. Avg/Daily Min	6.0/6.25/5.0	8.41/8.31/8.15	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.81/8.20	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.019	0
CL <sub>2</sub> Residual, mg/L	Daily Max	0.05	NA	0
Fecal Coliform CFU/100mL	Daily Max	400	NA	0

#### 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)	3	21.19	10.28
Lincoln Park (Outfall 004)	0	0	0
McKinley Avenue (Outfall 007)	2	10.7	6.74
Seventh Ward (Outfall 008)	1	1.1	7.45

#### Director's Notes:

##### **2023 Chemical Bids:**

A request for bids for chemicals and fuels that are used at the Sanitary District was posted in the newspaper and the District's website on February 8, 2023. All bids were opened and read on April 5, 2023.

The purchase period offered on all chemicals this year was for one year only, therefore the period included with the bid sheet covers the period May 1, 2023 – April 30, 2024. The one-year submission reflects the unstable conditions in the chemical market still occurring, but some bids returned this

year were much better than the previous. Evergreen FS did offer a bid for the three-year period covering the period of May 1, 2023- April 30, 2026 but since they are the only bid we are only recommending accept.

A motion for the acceptance of the following bids will be presented to the Boards during this month's Board meeting.

A summary of the low bids and previous year accepted bids will be distributed before the meeting.

### **Staff Training Activities:**

Brandi Rosenberger and Raven Durbin have passed the EPA Class III certification test. Raven has the required amount of training and experience and is waiting for the State to finalize her certification. Brandi has submitted her training and experience to the State and is waiting for a determination of how much additional time or training is required. Chuck Roberts has successfully passed the Class III exam and will be waiting for certification of his training and experience also.

Keith Richards, Tim Gordon, Brent Deardorff, Austin Gruber, and Ashley Bailey attended the Illinois Association of Water Pollution Control Operations (IWAPCO) conference for Illinois wastewater professionals in Springfield from April 10-12, 2023. The conference included presentations on case studies, emerging issues of concern, wastewater technologies, and a variety of other topics.

### **Operations, Laboratory, and Pretreatment Activity Reports – March/April 2023**

#### **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 gas production has returned to normal production.
- 2) The mixer in digester #1 has been taken off-line due to a bad seal. The mixers in digesters #2 and #4 are available but currently off due to gas in the attic spaces.
- 3) Operators have been assisting Engineering with the filling and draining of #3 Digester and #5 Primary Clarifier, gearing up for disinfection season, training newer operators, and assisting Maintenance with cleaning the Contact tanks
- 4) Blower usage is back to normal (2 blowers on at all times with the 3<sup>rd</sup> starting when needed).
- 5) Operations staff continue to actively address PMs as time, workload, and staff levels allow.

#### **Laboratory Activities:**

##### **Routine:**

A total of 2,066 analyses were performed in the laboratory during the month of March 2023.

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 lab continued to send samples of raw influent twice a week throughout the month of March 2023 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public

Health. A Zoom call was held on March 3, 2023, with the study participants and the researchers to discuss the results of the study thus far. It was announced that they plan to start analyzing for Respiratory Syncytial Virus (RSV) A and B in the samples in addition to COVID and influenza.

- 2) Keith Richard and Ashley Bailey attended a meeting of pretreatment professionals from various central Illinois sanitary districts on March 8, 2023, in Normal. The group plans to meet routinely to network and help each other with any pretreatment related questions or issues.
- 3) The SDD lab/pretreatment collected and analyzed two more days of samples for the ongoing nutrient study for Black and Veatch. Samples were collected on March 15 and March 30, 2023.
- 4) The fourth round of biomonitoring, as required by our NPDES discharge permit, was completed in March 2023 using a sample of the SDD effluent collected on March 13, 2023. Just as in the previous three rounds of biomonitoring, there was no acute toxicity found in the SDD effluent. We have now completed all of the biomonitoring that was required by our current NPDES permit.
- 5) Keith Richard, Ashley Bailey, and Tim Gorden virtually attended the Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) workshop on March 23-24, 2023. INFEWS is a project funded by the National Science Foundation and the USDA. A group of researchers at the University of Illinois Urbana Champaign received an INFEWS grant to study the Lake Decatur watershed including the SDD, ADM, and Primient. The purpose of the workshop was to give updates on the various parts of the research study. Several workshop attendees came for a tour of the SDD on March 24.

#### **Pretreatment Activities:**

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored eleven commercial and industrial users (IU) during March 2023. No industrial site inspections were conducted.
- 2) Bimonthly sampling for the Nutrient Study is ongoing. SDD personnel are utilizing our portable samplers to collect the extra samples from **Primient** and **ADM**.
- 3) Wastewater Hauler Permit applications were granted for **Alpha Drains** and **Smith Septic**.

#### **Pretreatment Ordinance - Verbal Notices:**

The SDD issued a total of 3 Verbal Notices to **Primient** in March 2023:

1. Notice 1 was issued on 3/3/2023 for a BOD limit violation and carried a \$1,000 penalty.
2. Notice 2 was issued on 3/13/2023 for a pH violation resulting from a cooling tower chemical leak. This notice carried a \$1,000 penalty.
3. Notice 3 was issued on 3/14/2023 for a pH violation resulting from a cooling tower chemical leak. As it was Primient's third violation of the month, this notice carried a penalty of \$7,500.

#### **Pretreatment Ordinance - Warning Notices (WN):**

No Warning Notices were issued during February 2023.

#### **Pretreatment Ordinance - Notices of Violation (NOV):**

No Notices of Violation were issued during February 2023.

#### **Pretreatment Ordinance - Executive Orders:**

No Executive Orders were issued during March 2023

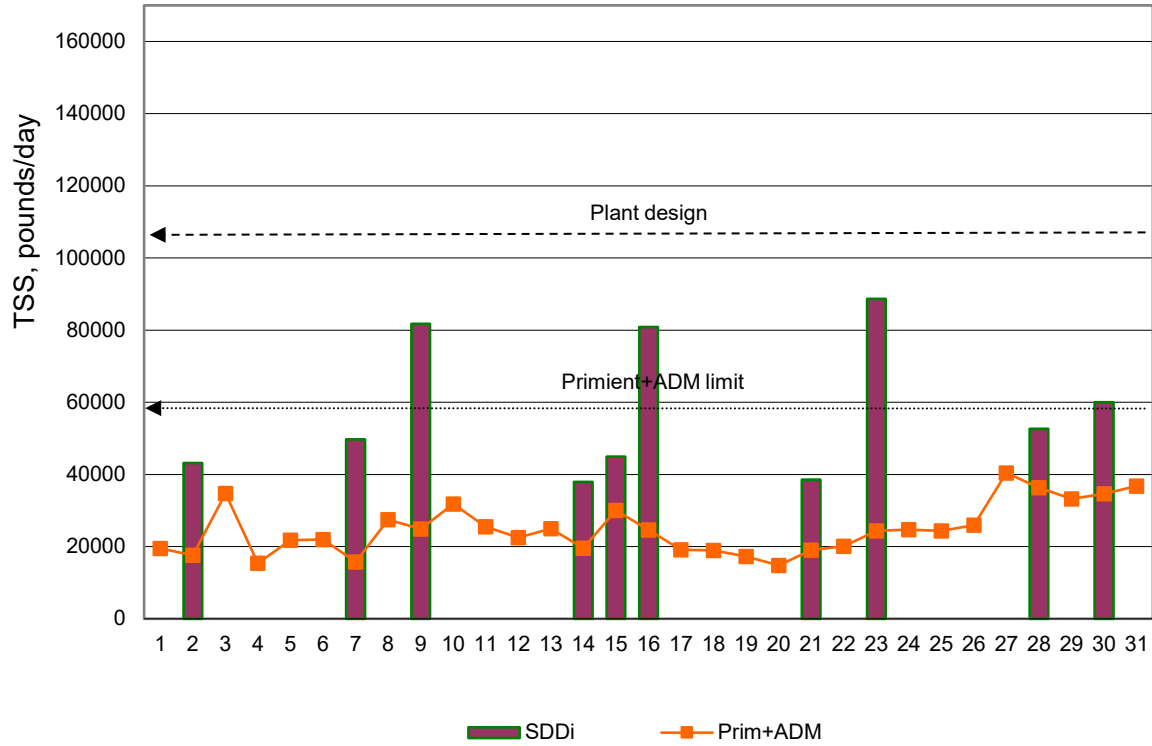
#### **Pretreatment Ordinance - Penalty Assessments:**

The following industrial penalties were assessed for March 2023:

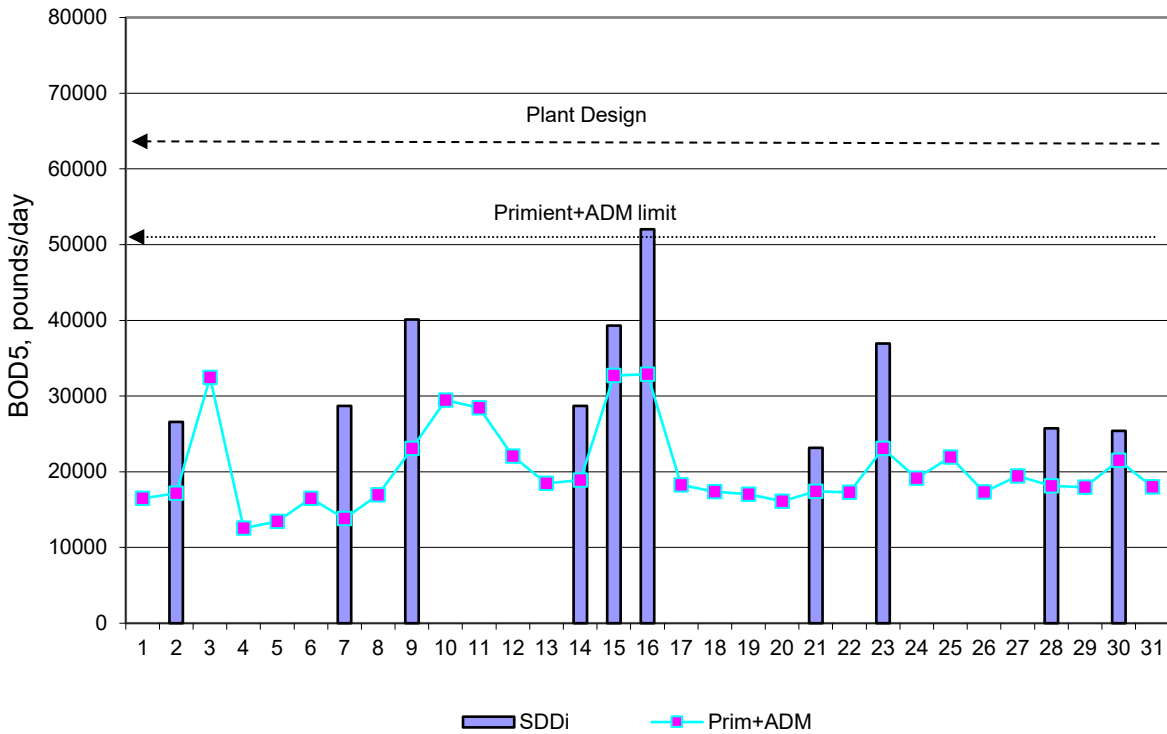
- 1) **Primient** **\$9,500**

**Plant Operating Graphs:**

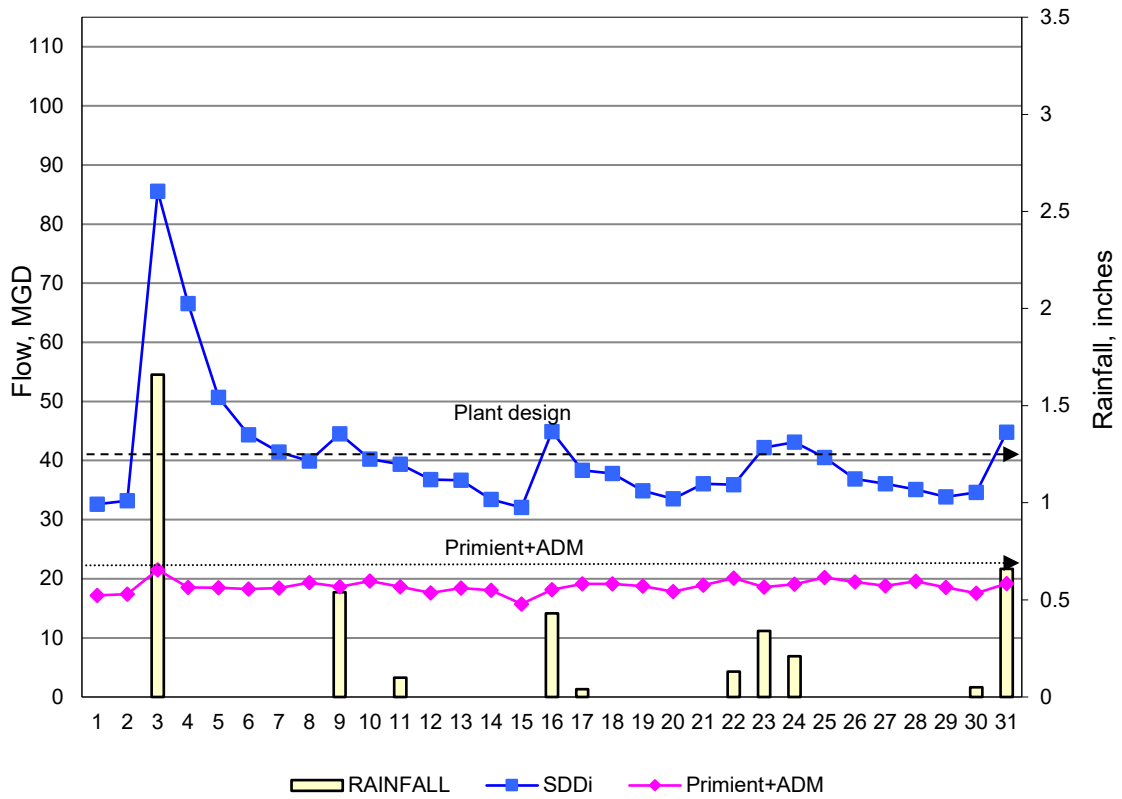
**TSS Comparison: SDDi Inf Primient+ADM Discharges**



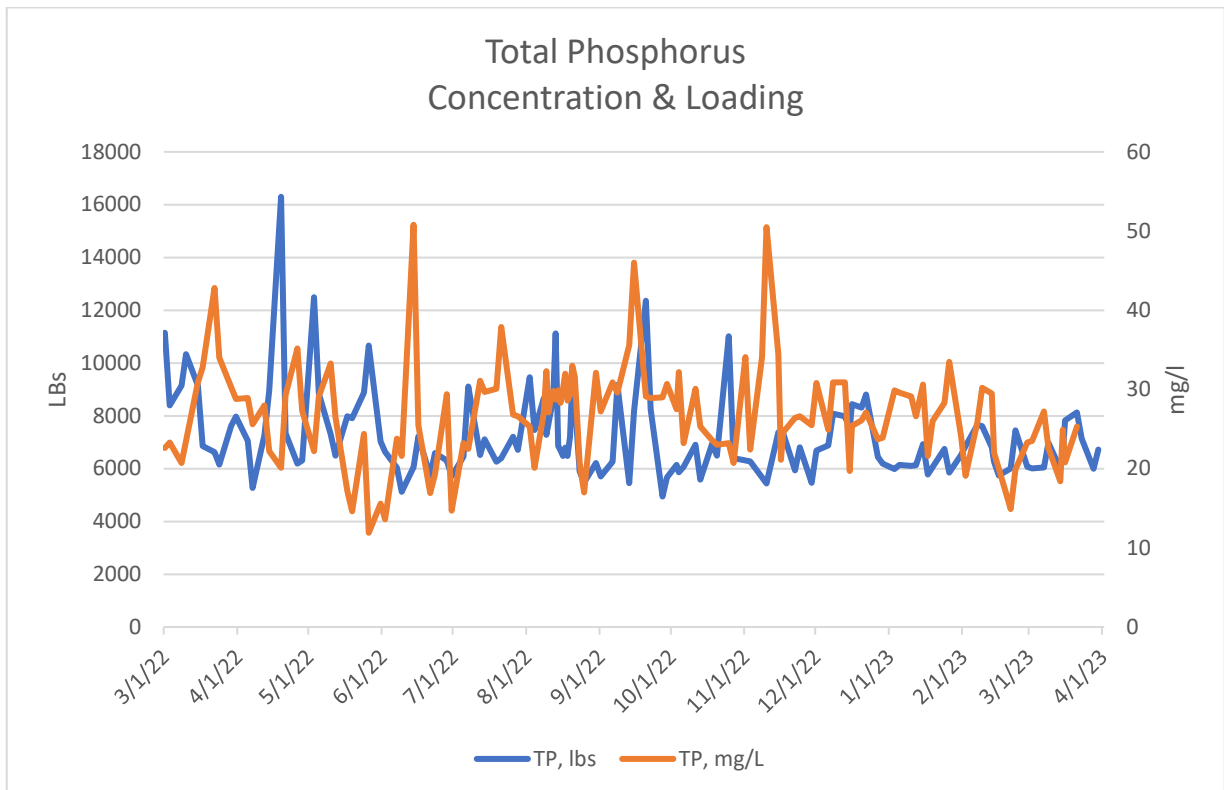
**BOD Comparison: BOD Inf vs. Primient + ADM Discharges**



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

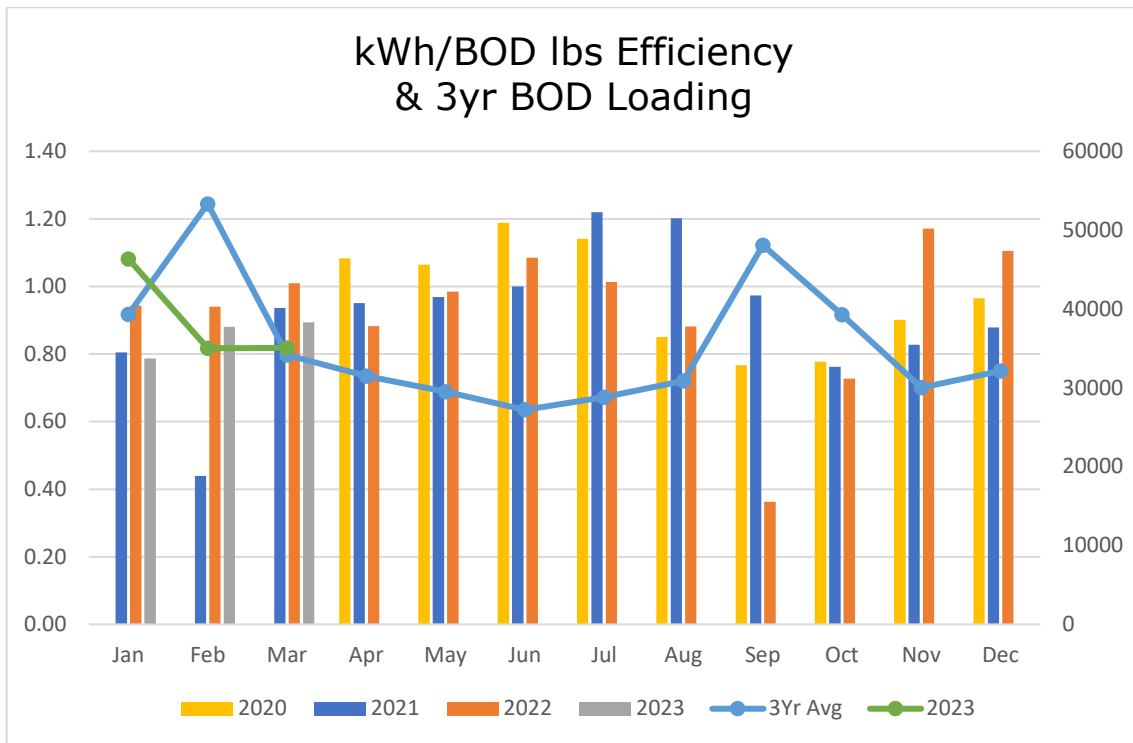
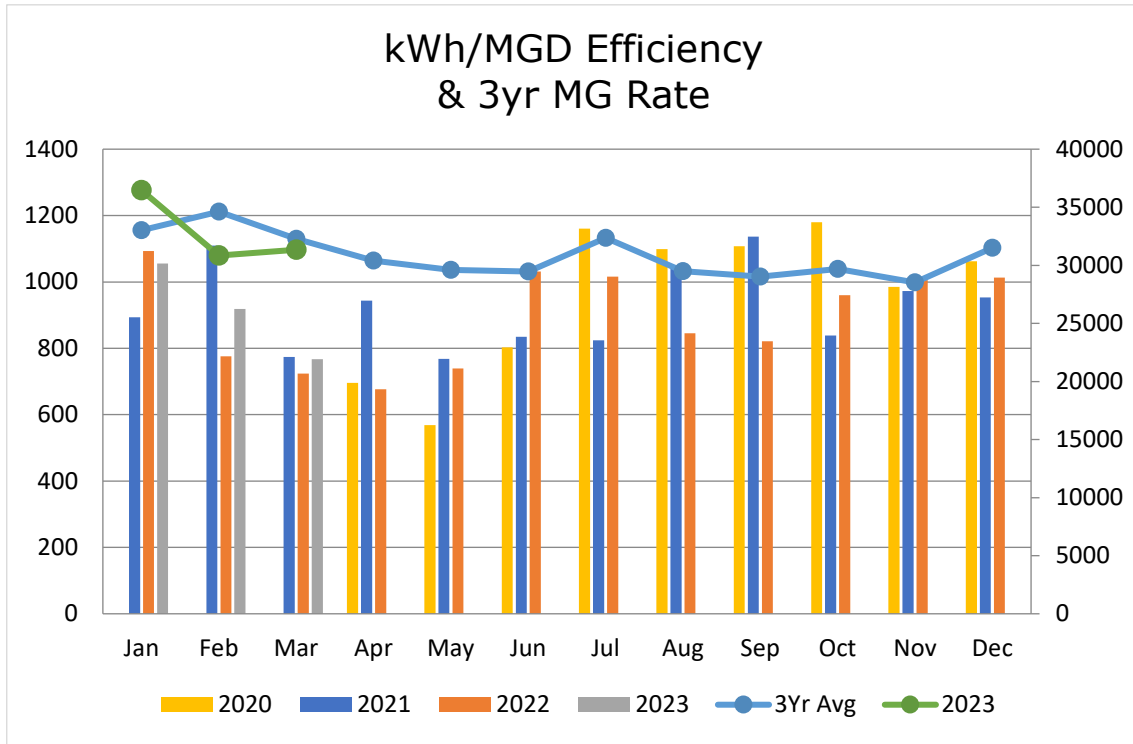


**Phosphorus Tracking Graph:**



**Plant Efficiency Graphs:**

**March 2023**



**Sanitary District of Decatur  
Bid Tabulation Results from  
04/05/2023  
(Pending Approval)**

Attached (see below) are the bid tabulations from 04/05/23, please note that no submitted bids are accepted until the District's Board of Trustees have voted to approve them. These are just the results of the bids opened that day. Please feel free to check the District's website for additional information. [www.sddcleanwater.org](http://www.sddcleanwater.org)

**28% Liquid Urea-Ammonium Nitrate (UAN) Bid Tabulation**

**Bid Opening Date** 04/05/23

Bidder	Price per ton, Base
Brandt	\$317/ton-1 year
Wilson Chemicals	\$395/ton-1 year
NOTE: "No Bid" submissions are not included on this tabulation sheet.	



## 2023 Liquid Ferrous Chloride Bid Tabulation

Bid Opening Date 04/05/23

Bidder	Price per pound
PVS Technologies	\$1.65/lb- 1 year
Kemira	\$0.876/lb- 1 year
NOTE: "No Bid" submissions are not included in the bid tabulation sheet.	





**2023 Sodium Bisulfite Bid Tabulation**

**Bid Opening Date** 04/05/23

Bidder	Price per 100lbs Bulk	Price per 325gal tote
Alexander Chemical	\$23.90 \$0.239/lb	\$0.349/lb- 1 year delivery included
Brenntag Mid South	-No bid-	\$6.14/gal, \$0.55/lb, 305 gallon tote= \$1870 delivery included
Southern Ionics	\$25.00	-No Bid-
NOTE: "No Bid" submissions are not included in the tabulation sheet.		

April 3, 2023

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  
February Monthly Progress Update (March 1, 2023 – March 31, 2023)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from March 1, 2023, through March 31, 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.
  - Continued to coordinate Power BI development including project data integration and dashboard development.
    - i. BV received data from SDD Historian software and modified the data set to reconcile duplicate data.
    - ii. BV prepared for and completed an initial review of the Power BI dashboards incorporating data provided by SDD.
    - iii. BV began to complete the Power BI dashboards as outlined in the initial meeting ahead of a follow up workshop.
2. Pretreatment Program Update
  - Continued to evaluate special sampling data
  - Continued to work with Jacobs and coordinate their review of pre-treatment programs for municipalities with similar influent as SDD due to industrial users.
  - Prepared for and met with SDD to provide summary of current pretreatment and special monitoring data and to present options for structuring the industrial pretreatment program.
3. Phosphorus Discharge and Optimization Plan (PDOP)
  - Completed the final report for IEPA submittal.
  - Completed annual PDOP summary report.

4. Watershed Support Services

- Conducted bi-weekly progress update meeting.
- Geosyntec continued next steps with modeling associated to the NARP Study
- Continued initial planning efforts and outline for the Watershed Group formation development providing comments from the review of the draft Bylaws developed by SDD.

5. WRRF Upgrade Plan

- Continued to incorporate review comments and District feedback into TM#1: Current Conditions, Industrial Influent, Emerging Concerns for final submittal.
- Continued to incorporate review comments and District feedback on the alternatives analysis into TM#2: BNR Liquid Stream Evaluations for final submittal.
- Solutions Development Solids Stream
  - i. Updated B&V model to include phosphorus release and recovery (Calprex process) prior to digestion.
  - ii. Began investigating the agronomic rate of biosolids based on phosphorus loading
  - iii. Began preparing for BNR Solids Handling Evaluation – Workshop 3 which will provide:
    - 1. Results of the process model of solids handling alternatives
    - 2. Updated solids handling alternatives to incorporate phosphorus management.
    - 3. Initial sizing for biosolids handling alternatives.
- Aged Infrastructure Evaluation
  - i. Continued to develop the overall condition assessment approach including evaluation criteria and associated forms for documentation.
- Plant Facility Evaluation
  - i. Continued detailed modeling efforts to evaluate and provide whole plant process model simulations related to the alternatives identified for nutrient removal.

6. Pilot and Demonstration Testing

- Preparation of addenda to Procurement Documents for Progressing Cavity Pump and Air Mix System.
- Completed bid set review meeting for the Frac Tank Pilot, and incorporated comments into the final design bid set for advertisement.

FRAC TANK PILOT PROJECT SCHEDULE	
MILESTONE/ACTIVITES	DATE
Receive comments from Vendors	January 27, 2023

Issue draft procurement packages for primary sludge pumps, bubble mixing and Frac Tank to SDD	January 31, 2023
Issue 50% Design Documents to SDD	February 24, 2023
SDD to Issue Procurement Documents to Vendors for Primary Sludge Pump, Bubble Mixing System and Frac Tank (rental agreement)	Week of February 27, 2023
Receive Quotes from Vendors for Direct Procurement	March 10, 2023
Issue Final Bid Documents for SDD Review / Approval	March 17, 2023
Issue Purchase Orders / Rental Agreements with Vendors	March 23, 2023
Advertise for Bids (16 days)	March 20, 2023
Bid Opening	April 25, 2023
Issue Notice to Proceed	May 18, 2023
Early Receipt of Pre-purchased Equipment  Primary Sludge Pumps (20-week delivery) Big Bubble Mixing (20-week delivery) Frac Tank (6 weeks delivery)	Five Months from Issuance of Purchase Order  August 2023
Substantial Completion (pending equipment delivery times)	September 2023
Final Completion	September 2023

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

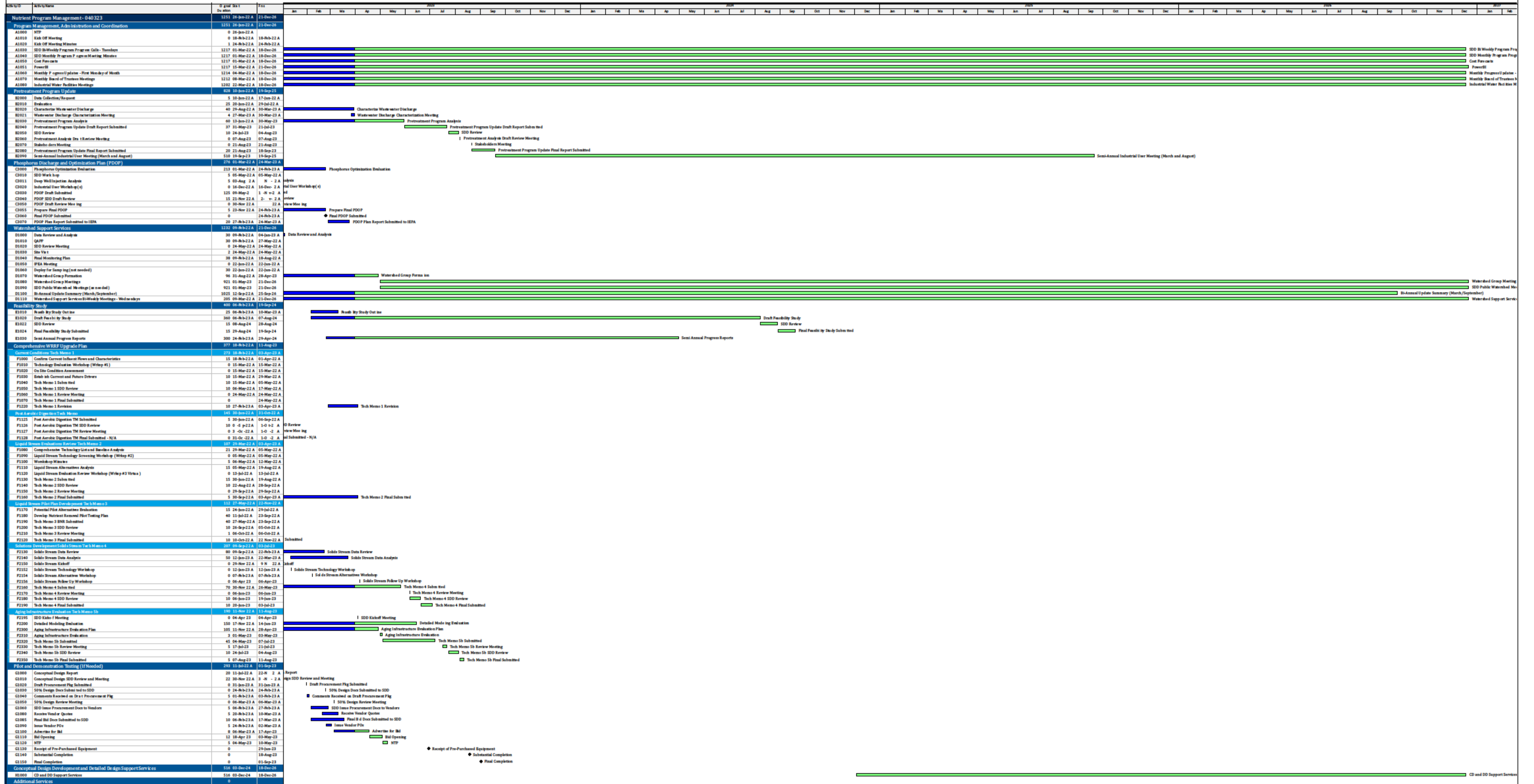
Sincerely,

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

Enclosure(s):

- SDD Nutrient Program Manager Schedule
- Anticipated Cost Forecast

# Project: Nutrient Program Management - 040323





**SANITARY DISTRICT OF DECATUR - NUTRIENT PROGRAM MANAGEMENT**  
**2022 - 2023 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	2023.01	2023.02	2023.03	2023.04	2023.05	2023.06	2023.07	2023.08	2023.09	2023.10	2023.11	2023.12	2022 Total	2023 Total		
	Planned	13,683	108,359	237,519	168,336	497,476	284,217	100,648	86,219	109,725	91,822	91,820	204,625	175,033	184,839	230,195	181,219	171,412	188,595	126,472	126,461	158,090	126,472	126,465	1,789,824	1,999,878		
	Actuals	16,724	60,831	77,995	54,608	61,865	125,355	145,679	112,979	118,381	94,677	105,543	155,812	179,053	150,901											974,636	485,766	
	Forecast	16,724	60,831	77,995	54,608	61,865	125,355	145,679	112,979	118,381	94,677	105,543	155,812	179,053	150,901	164,763	173,968	158,861	143,899	133,883	125,267	136,583	100,391	100,389	974,636	1,723,770		
Task 1 Program Mgmt	Planned	4,631	18,589	25,171	20,169	20,164	25,213	20,168	20,170	25,211	20,169	20,167	20,050	17,010	17,014	21,263	17,010	17,012	21,267	17,010	17,012	21,263	17,012	17,012	21,262	199,885		
	Actuals	7,905	2,198	2,585	3,303	2,115	3,760	4,348	5,103	3,173	9,068	4,320	9,295	8,708	21,585												47,875	
	Forecast	7,905	2,198	2,585	3,303	2,115	3,760	4,348	5,103	3,173	9,068	4,320	9,295	8,708	21,585	21,263	17,010	17,012	21,267	17,010	17,012	21,263	17,012	17,012	21,262	205,449		
Task 2 Pretreatment Program Update	Planned	1,726	15,177	42,250	17,294	10,680	30,576	19,616	5,192	6,491	5,192	5,192	-	-	-	-	-	-	-	-	-	-	-	-	-	-	159,386	
	Actuals			705	470	470	235	-	353	430	430	1,450	4,250	4,715	8,238												17,203	
	Forecast			705	470	470	235	-	353	430	430	1,450	4,250	4,715	8,238	35,000	30,576	30,576	5,192	6,491	5,192	5,192					4,543	
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	6,748	5,656	5,213	5,665	4,536	4,531	5,665	4,533	4,531	5,668	4,533	4,531	5,668	4,533	74,369	
	Actuals		1,290	3,755	3,508	1,613	235	4,645	8,731	8,100	10,948	3,898	4,760	6,665	1,045													46,721
	Forecast		1,290	3,755	3,508	1,613	235	4,645	8,731	8,100	10,948	3,898	4,760	6,665	1,045	1,000	1,000	-	-	-	-	-	-	-	-	-		46,721
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	5,383	4,569	4,567	10,910	29,712	29,705	30,850	29,712	29,705	30,850	29,709	29,707	397,102	265,379		
	Actuals	940	14,809	17,206	28,841	21,065	45,297	54,170	36,587	44,435	12,003	34,319	16,395	4,931	31,212												309,674	
	Forecast	940	14,809	17,206	28,841	21,065	45,297	54,170	36,587	44,435	12,003	34,319	16,395	4,931	31,212	10,910	29,712	29,705	30,850	29,712	29,705	30,850	29,709	29,707	309,674	303,398		
Task 5 Comprehensive WRRF Upgrade Plan	Planned	-	9,206	122,984	89,447	32,035	35,466	-	-	-	-	-	62,344	52,898	52,900	66,121	52,900	52,898	66,124	52,898	52,898	66,124	52,898	52,898	66,124	52,898	289,138	
	Actuals	7,879	42,534	53,745	16,778	36,223	74,878	81,756	59,461	42,065	47,294	28,643	60,035	67,250	63,999													491,254
	Forecast	7,879	42,534	53,745	16,778	36,223	74,878	81,756	59,461	42,065	47,294	28,643	60,035	67,250	63,999	67,000	67,000	52,898	52,000	52,000	44,688	44,688	25,000	25,000	491,254	621,557		
Task 6 Feasibility Study	Planned	-	-	-	-	-	-	-	-	-	-	-	-	3,670	3,670	4,590	3,670	3,670	4,590	3,670	3,670	4,590	3,670	3,670	4,590	3,670	43,130	
	Actuals													775	1,128												1,903	
	Forecast													775	1,128	4,590	3,670	3,670	4,590	3,670	3,670	4,590	3,670	3,670	4,590	3,670	37,693	
Task 7 Pilot and Demonstration Testing	Planned	-	-	-	-	213,988	164,168	37,728	37,728	49,107	43,331	43,331	105,773	91,229	101,474	54,736	43,787	43,787	54,736	43,789	43,785	54,736	43,789	43,787	589,381	725,408		
	Actuals				1,710	380	950	760	2,745	20,178	14,935	32,914	61,078	86,010	23,695												74,572	
	Forecast				1,710	380	950	760	2,745	20,178	14,935	32,914	61,078	86,010	23,695	25,000	25,000	25,000	30,000	25,000	25,000	30,000	25,000	25,000	74,572	405,783		
Cumulative	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	1,994,449	2,169,482	2,354,321	2,584,516	2,765,735	2,937,147	3,125,742	3,252,214	3,378,675	3,536,765	3,663,237	3,789,702	1,789,824	3,789,702	
	Actuals	-	16,724	77,554	155,549	210,157	272,023	397,378	543,057	656,036	774,417	869,094	974,636	1,130,448	1,309,502	1,460,402	1,625,165	1,799,133	1,957,994	2,101,893	2,235,776	2,361,043	2,497,626	2,598,017	2,698,406	974,636	485,766	
	Forecast	-	16,724	77,554	155,549	210,157	272,023	397,378	543,057	656,036	774,417	869,094	974,636	1,130,448	1,309,502	1,460,402	1,625,165	1,799,133	1,957,994	2,101,893	2,235,776	2,361,043	2,497,626	2,598,017	2,698,406	974,636	2,698,406	

