

Director of Compliance and Innovation Report

September 27, 2023

Plant Loading, CSO Report, and Director's Notes

Plant Influent Report

Biochemical Oxygen Demand, 5-Day (Avg. 31616 lbs/day)	50 percent of design
Total Suspended Solids (Avg. 80455 lbs/day)	74 percent of design
Average Daily Flow (28.29 million gallons/day)	69 percent of design
Maximum Daily Flow (55.31 million gallons/day)	44 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 ₅ , mg/L	Mo./Wk. Avg	20/40	2/3	0
TSS, mg/L	Mo./Wk. Avg	25/45	7/13	0
NH ₃ -N, mg/L	Mo. Avg/Weekly Avg/Daily Max	1.1/2.8/3.0	0.43/0.64/0.68	0
DO, mg/L	Mo. Avg/Wk. Avg/Daily Min	6.0/4.5/4.0	6.92/6.61/6.60	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.55/8.13	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.021	0
CL ₂ Residual, mg/L	Daily Max	0.05	<0.011	0
Fecal Coliform CFU/100mL	Daily Max	400	2050	1

CSO Report

Location	Events	Est. Total Duration of Discharges (hrs.)	Discharge (million gallons)
Oakland Avenue (Outfall 003)	4	12.33	5.09
Lincoln Park (Outfall 004)	2	7.94	7.5
McKinley Avenue (Outfall 007)	3	12.8	5.56
Seventh Ward (Outfall 008)	2	6.0	10.99

Director's Notes:

Land Application Program:

J. Oros Environmental Inc. (JOE) is scheduled to begin land application operations in the first week of October. The District is presenting a change order agreement with JOE for the 4th year due to lower than expected application volumes. Currently the rate unit price per gallon is \$0.029 and the calculated new rate would be \$0.038 per gallon.

In the current land application contract Special Condition 7 states the following: "If the quantity of biosolids is increased or decreased by more than 30% over the length of the contract at the Owner's request in writing, a new unit price for biosolids disposal for the increased or decreased quantity may be negotiated between the Owner and Contractor...The unit price will not be adjusted if the quantity is decreased by more than 30% for any reason other than the Owner's written request."

Due to a limit of 21 million gallons being set this year and the reduced application the year that the east lagoon was under repair, the projected application rate will be below the 30% threshold for the 4-year contract, thus warranting the current rate change. The Contract will be bid for the 2024 application season after the first of the year.

Compliance Reporting:

In accordance with the requirements of our 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.

Permit Exceedance:

As stated in the previous month's board report and meeting on August 2, 2023, the District experienced an exceedance of the NPDES Permit limit for fecal coliform of 400 CFU/100 mls with a count of 2,050 CFU/100 mls, due to high ammonia levels received from ADM. ADM was issued Warning Notice 23-002 and fines for extra chemical and blower usage. A letter was also written and attached to the monthly DMRs explaining the exceedance to the IEPA. Since the exceedance ADM has had trouble with high levels of ammonia being sent, but they have been much better at communicating in a timely manner.

Sanitary Sewer Overflow Report:

On August 1, 2023, an air release valve vault to/from Wyckles lagoons was reported to have water overflowing out of it. It appeared only 50 gallons of decant were released into the surrounding grass and soil, none making its way to the water of the state. This incident was brought to the trustees' attention in the last board meeting. The occurrence was reported to the IEPA as a Sanitary Sewer Overflow (SSO) within an hour of the incident.

Operations, Laboratory, and Pretreatment Activity Reports – August/September 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 #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 expect to start the final pump down of sludge on the 18th.
- 2) Digester #3- Digester has been put back online with the mixer in operation. We are having minor electrical problems with the heat exchanger which are being corrected. I&C staff are working on the installation of the Inclinator.
- 3) Operators drained the sludge from #1 Digester to facilitate the joint/leak repair in the wall. The Digester should be back online on 9/18.
- 4) Operations staff continue to actively address PMs as time, workload, and staff levels allow.

- 5) Blower usage has still been increased due to low flows and higher concentrations of Ammonia, BOD and Nitrates. Operations staff continue to look for opportunities to lower blower usage. # 1 Hoffman Blower was in use from 9/6 to 9/8.
- 6) Operations staff continue to monitor disinfection chemical usage and make the necessary adjustments.

Laboratory Activities:

Routine:

A total of 2,163 analyses were performed in the laboratory during the month of August 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 laboratory continued to send samples of raw influent twice a week throughout the month of August 2023 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health. A Zoom call was held on August 4, 2023, with the study participants and the researchers to discuss the results of the study thus far. An increase in COVID levels has been observed recently across the state.
- 2) The quarterly NPDES sampling of the influent, effluent, and sludge to Wyckles was conducted during the first week of August 2023.
- 3) The SDD laboratory analyzed seventeen stormwater samples during August 2023 for the Lake Decatur Watershed monitoring study. The SDD is providing in-kind laboratory analysis of samples collected at the study's three monitoring sites after significant storm events.
- 4) The SDD laboratory/pretreatment collected and analyzed samples on August 2, 2023, for the ongoing nutrient study for Black and Veatch.
- 5) The graded results of the annual USEPA mandated DMR-QA proficiency testing were received on September 1, 2023. We obtained passing results for 27 of the 29 analytes that were tested. We received not acceptable results for two analytes: oil and grease (O&G) and thallium. We are investigating the cause of the not acceptable results and we will be analyzing new proficiency test samples for those analytes.

Pretreatment Activities:

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored 9 commercial and industrial users (IU) during August 2023. Eight industry site inspections took place during August.
- 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) No new permits were approved in August.
- 4) No new or renewed waste hauler permits were granted in August.

5) **ADM** was charged a total of \$5,965.67 in excess treatment costs as a result of a large spike of ammonia in their discharge that caused the District to violate the Fecal Coliform limit of its receiving body. This cost includes all extra chemicals.

Pretreatment Ordinance - Verbal Notices:

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

1. 8/9/2023: **Primient** was issued a verbal notice and a \$1,000 fine for pH between 5 and 6 for more than 45 minutes.
2. 8/9/2023: **Primient** was issued a verbal notice and a \$1,000 fine for discharging 32,215 lbs of TSS, 3,715 lbs above their limit.
3. 8/22/2023: **Primient** was issued a verbal notice and a \$7,500 fine for discharging 26,538 lbs of BOD, 2,188 lbs above their limit.

Pretreatment Ordinance - Warning Notices (WN):

The SDD issued 1 Warning Notice to **ADM** in August 2023:

1. 8/1/2023: **ADM** was issued Warning Notice 23-002 and a \$5,965.67 fine for discharging ammonia that caused interference at the District which caused the plant to violate the water quality standards of its receiving body.

Pretreatment Ordinance - Notices of Violation (NOV):

No Notices of Violation were issued during August 2023.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during August 2023

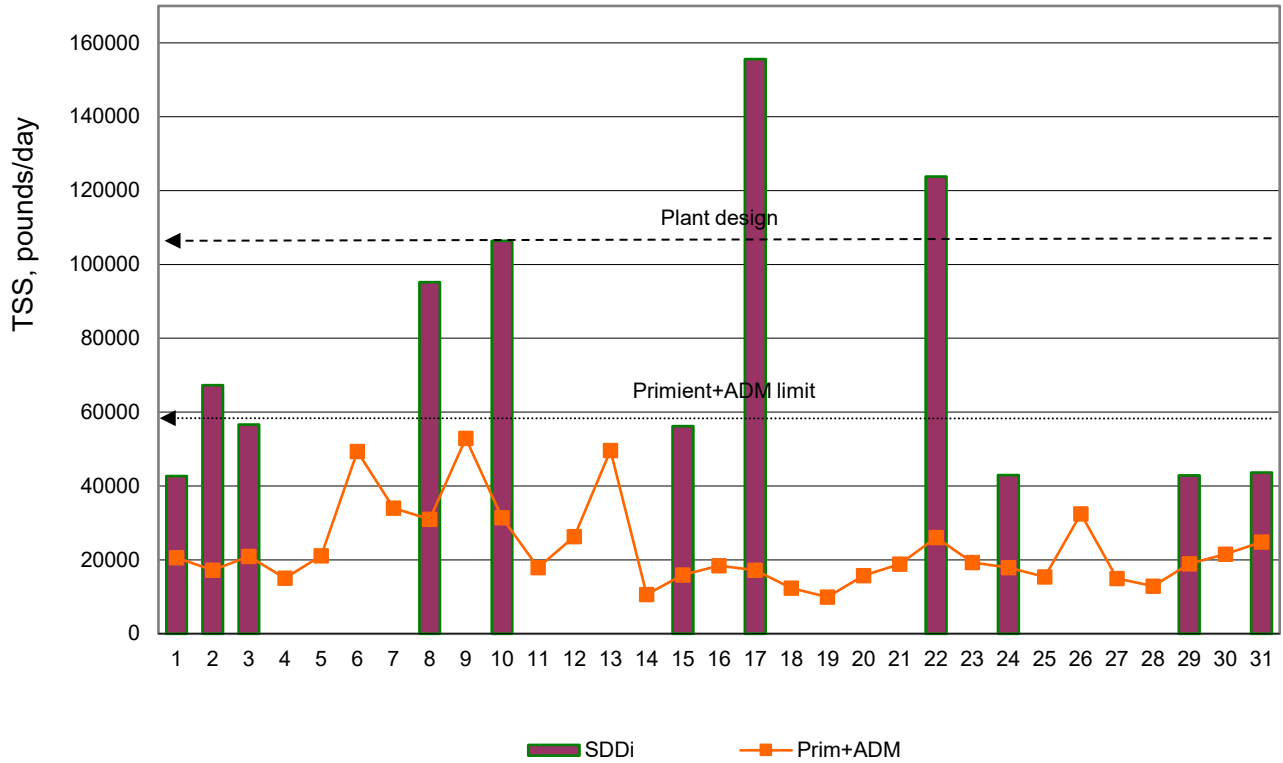
Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for August 2023:

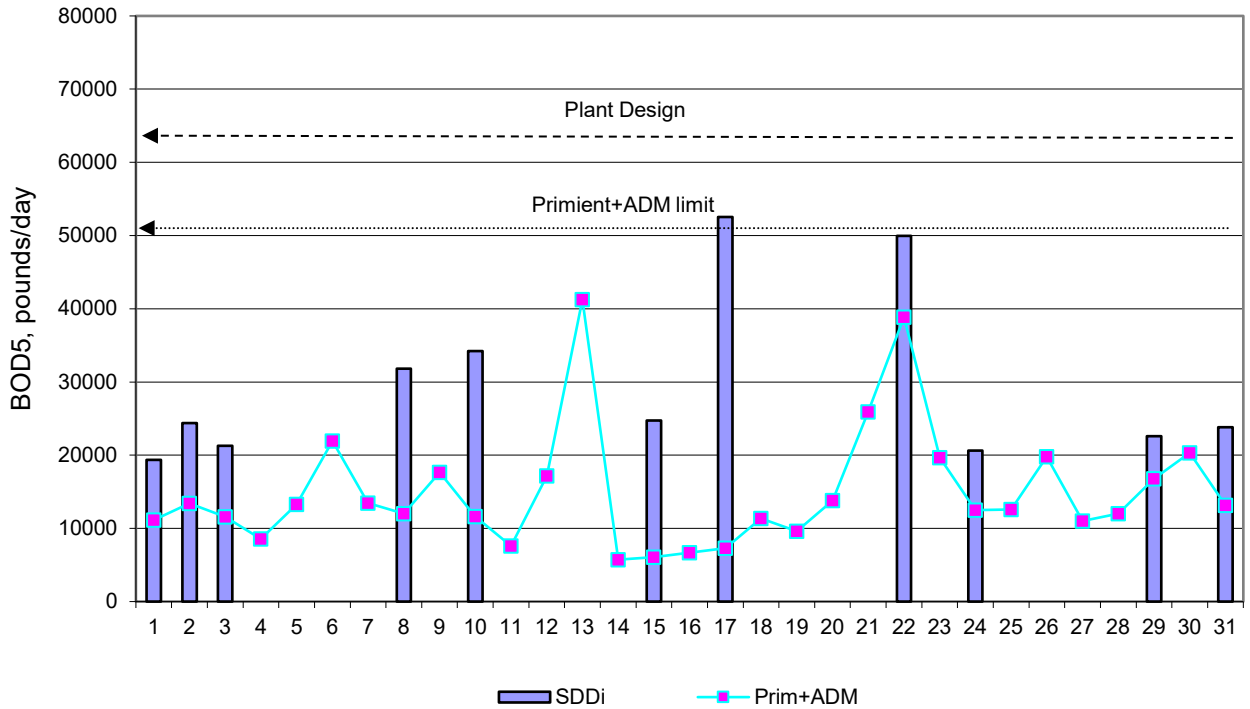
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|--------------------|-------------------|
| 1) Primient | \$9,500 |
| 2) ADM | \$5,965.67 |

Plant Operating Graphs:

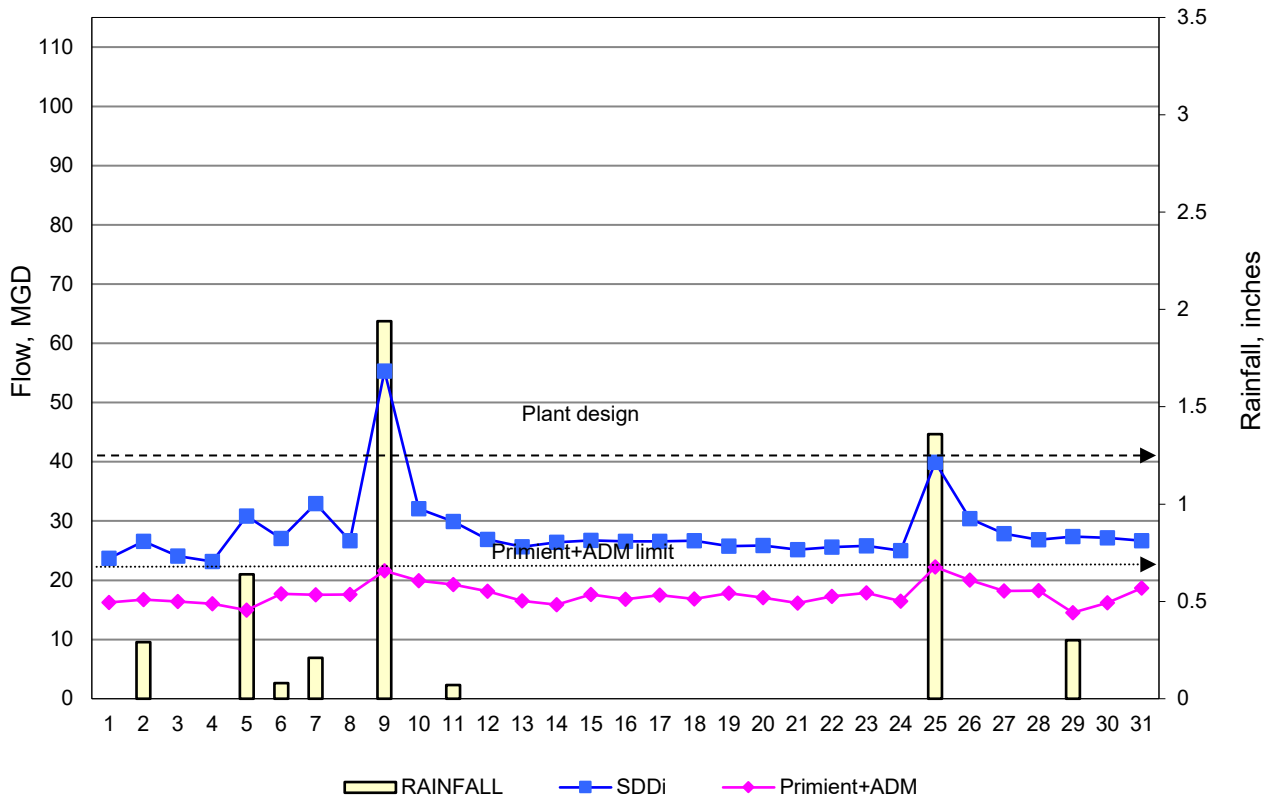
TSS Comparison: SDD Inf Primient+ADM Discharges



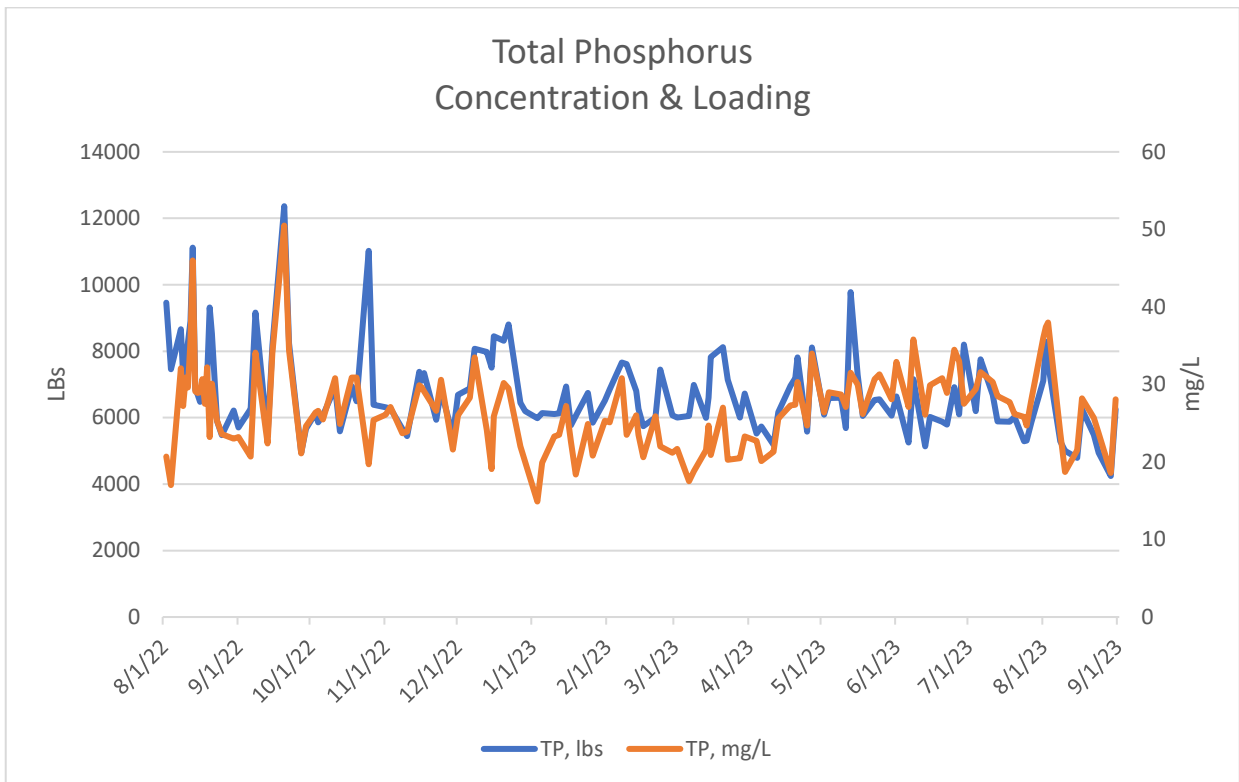
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



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

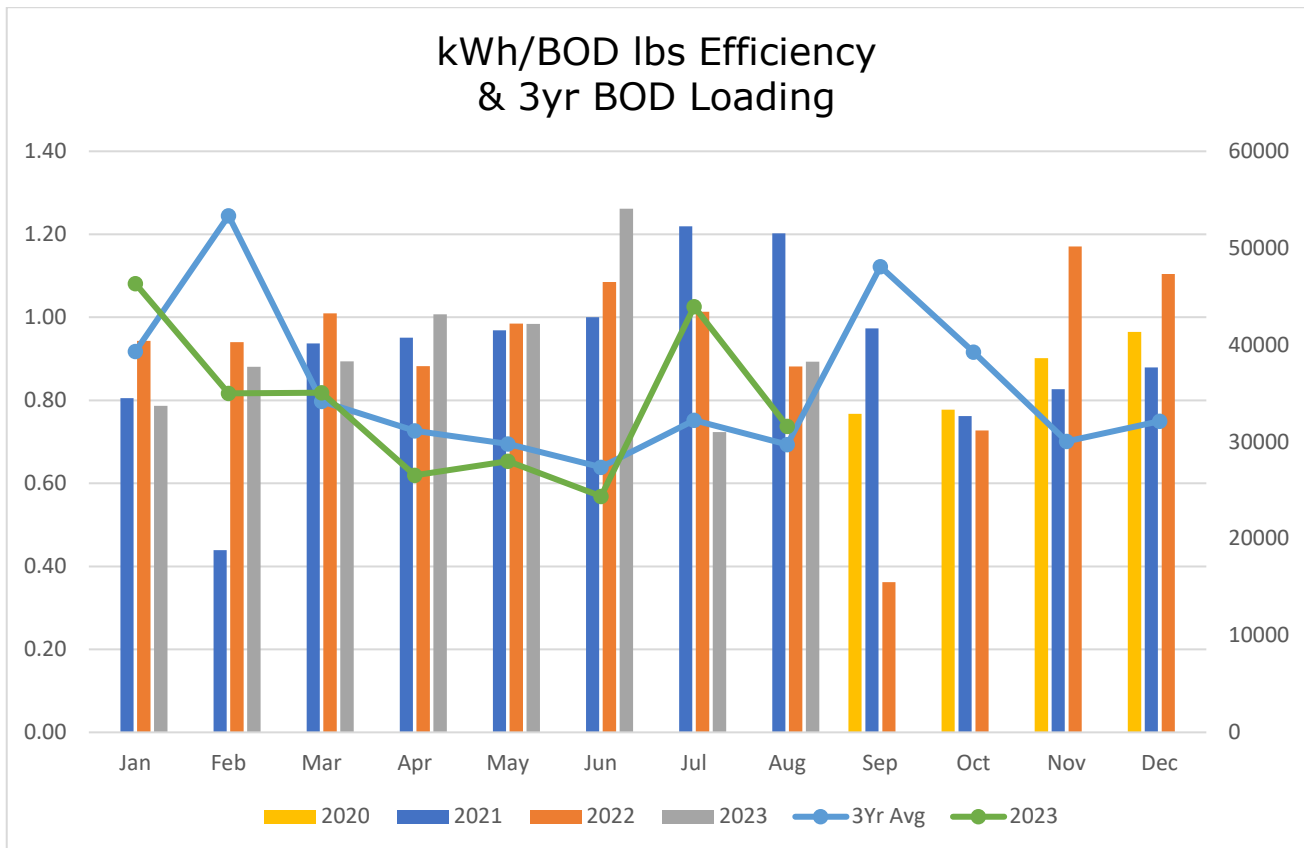
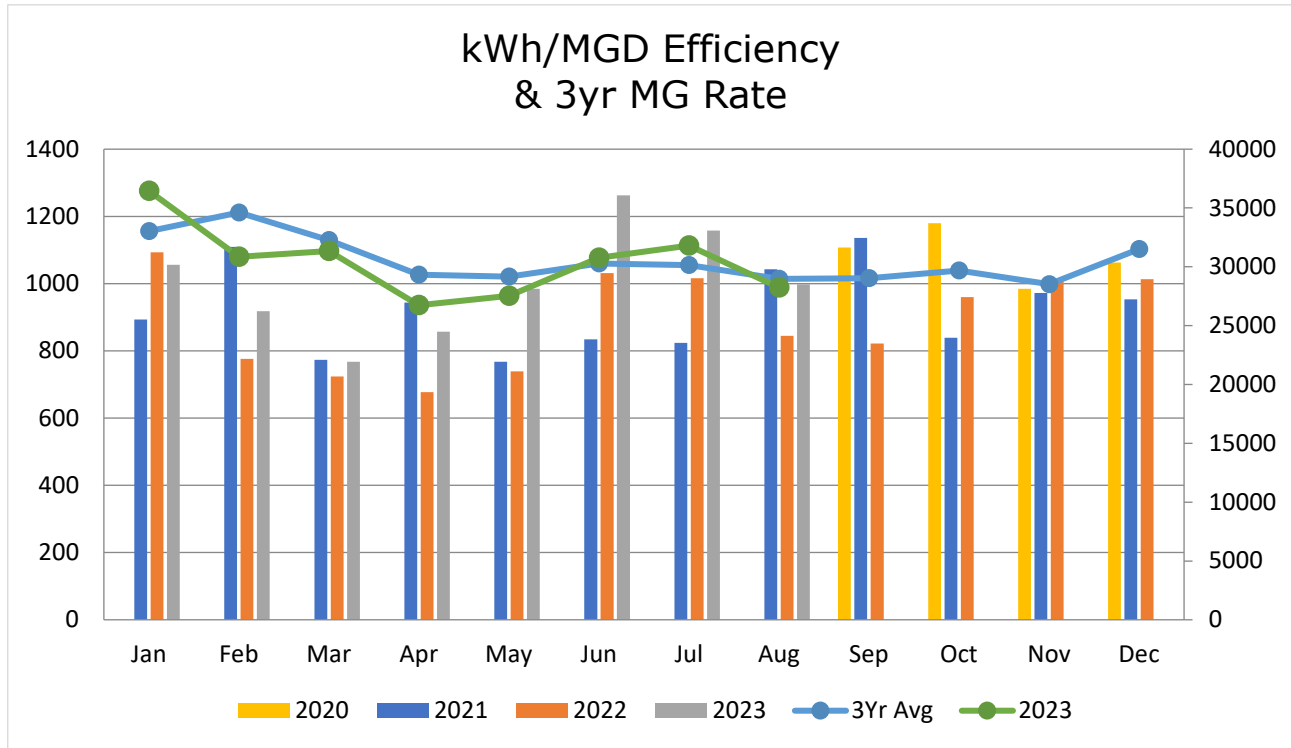


Phosphorus Tracking Graph:



Plant Efficiency Graphs:

August 2023



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

September 20, 2023

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

Currently, activities continue to surround 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 continued to gather and forward all requested industrial special sampling lab results and plant performance data as requested by the B&V.

B&V concentrated on continuing their efforts associated to the analysis and evaluations of solid stream alternatives by completing their draft Technical Memorandum incorporating district input from a series of workshops. B&V incorporated SDD’s review comments and integrated updates into the Power BI dashboard for the Program. In addition, B&V has continued the development of their full facility model, completed on-site structural evaluations for the aging infrastructure task, as well as continued to assistance with construction phase services of the Frac Tank Pilot Study including leading the construction progress meetings.

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 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 August 2023

Subject	Date	Agenda Items
Nutrient Program Management Bi-weekly Meeting	08/2/2023	<i>Objective:</i> Provided Status Update on Program Tasks 1. Frac Tank Pilot 2. Power BI 3. Pretreatment Program Update 4. PDOP/Annual Progress Report 5. Watershed Services 6. Aging Infrastructure 7. WRRF Upgrade Plan
Nutrient Program Management Bi-weekly Meeting	08/16/2023	<i>Objective:</i> Provided Status Update on Program Tasks 1. Frac Tank Pilot 2. Power BI 3. Pretreatment Program Update 4. PDOP/Annual Progress Report 5. Watershed Services 6. Aging Infrastructure 7. WRRF Upgrade Plan
Fermentation Reactor Pilot Construction Progress Meeting	08/31/2023	1. Submittal Status 2. Request for Information 3. Work Change Directive / Change Orders 4. Pay Applications 5. Additional Questions / Discussion 6. Next Meeting

**Sanitary District of Decatur
Watershed Management Report**

September 20, 2023

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 items necessary to complete the NARP Study. Foremost in these efforts included Geosyntec completed their initial watershed modeling efforts and associated report for the NARP Study. This month focused on the review of this model and the draft report where SDD provided review comments for incorporation. Geosyntec has also begun the instream model which is the next step in the NARP development.

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 August 2023

Subject	Date	Agenda Items
Watershed Services Bi-weekly Meeting	08/09/2023	1. Discussed the Watershed Model Report and review comments
Watershed Services Bi-weekly Meeting	08/23/2023	1. Provided summary of potential watershed management scenarios

September 11, 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
August Monthly Progress Update (August 1, 2023 – August 31, 2023)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from August 1, 2023, through August 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.
 - Attended August Board meeting to provide program support and updates to the Board of Trustees.
 - Provided ongoing management of the project including program management, preparation/monitoring of the program schedule and budget as well as program administrative duties.
 - Completed incorporation of SDD review comments into the Power BI dashboard.
2. Pretreatment Program Update
 - Continued to evaluate special sampling data
 - Completed the Pre-treatment Program Update report in conjunction with Jacobs
 - Continued to update the full facility process model with the industrial special sampling results.
3. Phosphorus Discharge and Optimization Plan (PDOP)
 - No Services were completed this period.
4. Watershed Support Services
 - Conducted bi-weekly progress update meeting.
 - Geosyntec completed and submitted the Sangamon River Watershed Model Report for SDD's review and comment.
 - Geosyntec continued their next steps associated with their Instream model for the NARP Study.
 - Geosyntec completed the NARP report outline and summary of the NARP approach.
 - Continued initial planning efforts for the Watershed Group formation development.
 - Continued to provide support with the development of the Bylaws.

5. WRRF Upgrade Plan

- Solutions Development Solids Stream
 - i. Completed the development of TM 4 – BNR Solids Handling Evaluation which identified and documented the comprehensive list of technologies evaluated in prior workshops.
 - 1. The technologies addressed solids handling upgrades required by the recommended liquid stream technology.
 - 2. TM included the high-level costs estimates developed as part of the evaluation process for anticipated solids handling process changes.
- Aged Infrastructure Evaluation
 - i. Completed summarizing the initial onsite assessments.
 - ii. Continued to developed rehabilitation and replacement costs.
 - iii. Completed site visits on August 15 -17, 2023. The visits included:
 - 1. A meeting with SDD staff to review structural concerns with major assets.
 - 2. Performed detailed structural assessments throughout the facility
 - iv. Began to summarize structural assessments and incorporate into overall aging infrastructure evaluation.
- 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

- Continued to review for contractor submittals
- Prepared for and conducted the Construction Progress Meeting with Burdick (Contractor).

FRAC TANK PILOT PROJECT SCHEDULE	
MILESTONE/ACTIVITES	DATE
Bi-weekly Construction Progress Meetings	August – December 2023
Early Receipt of Pre-purchased Equipment Primary Sludge Pumps Big Bubble Mixing Frac Tank	November 2023
Substantial Completion (pending equipment delivery times)	December 2023
Final Completion	January 2023

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

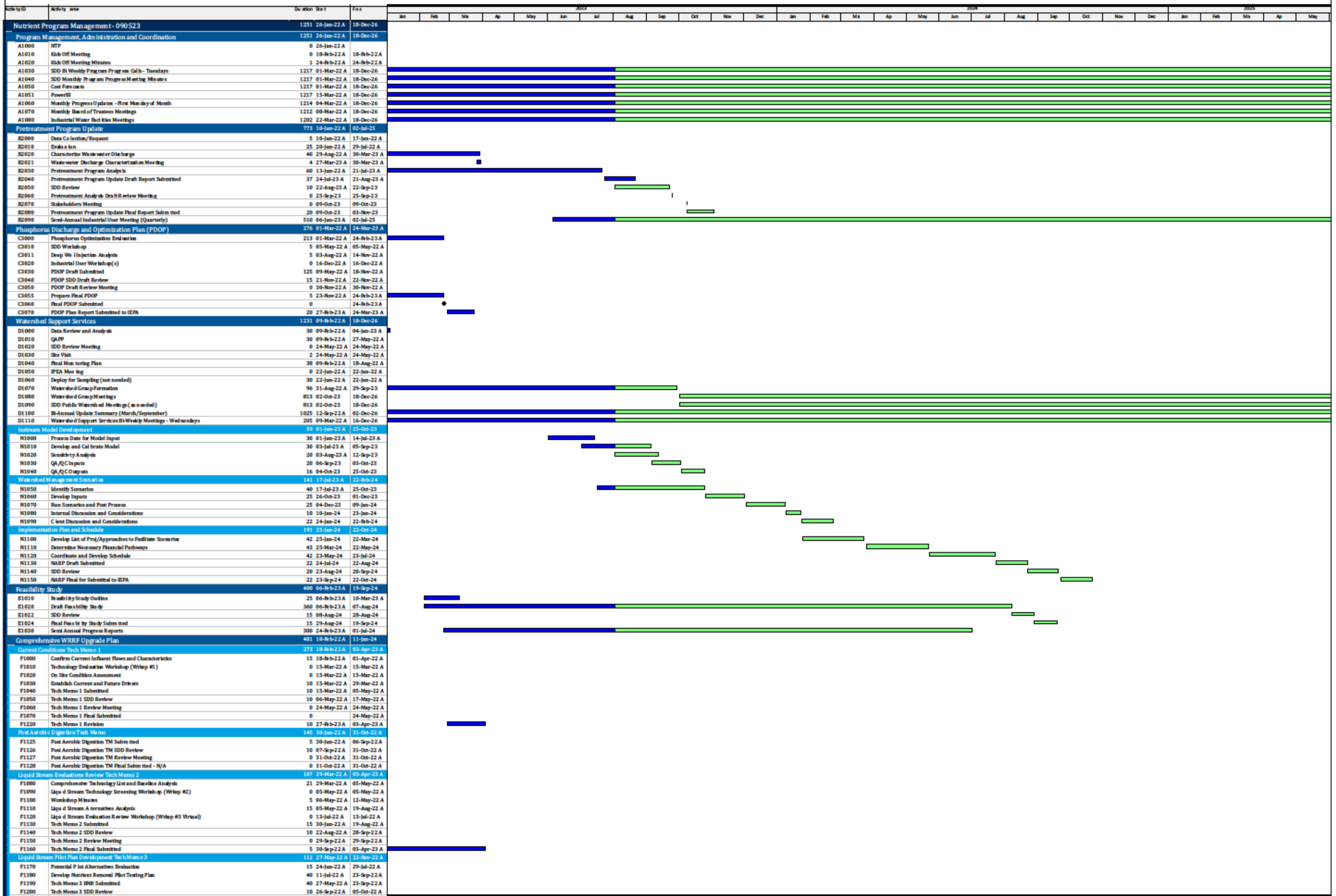
Sincerely,

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

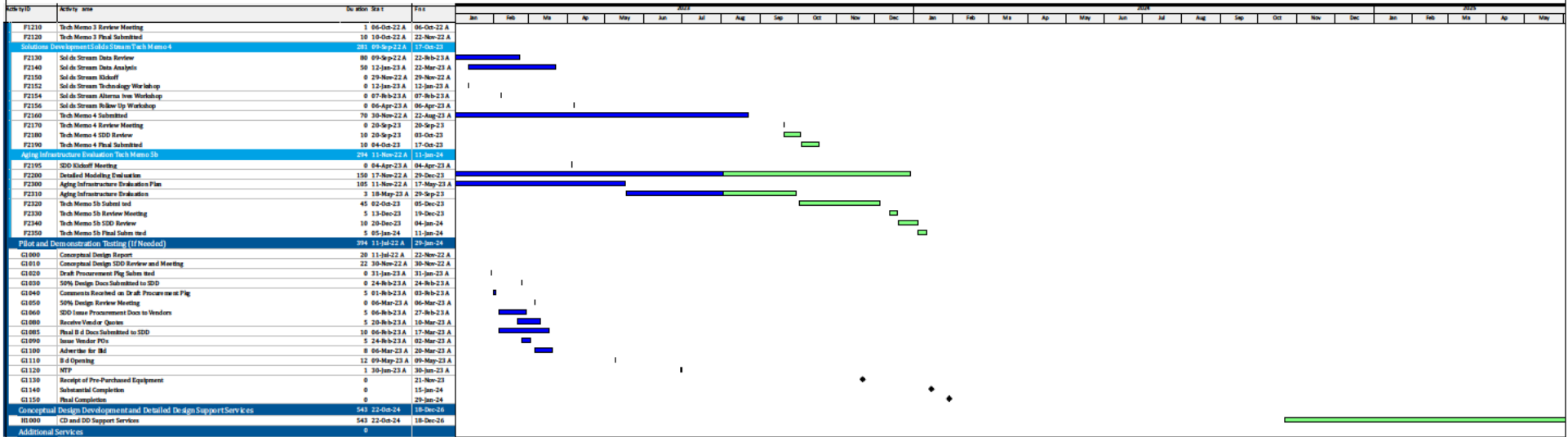
Enclosure(s):

- SDD Nutrient Program Manager Schedule
- Anticipated Cost Forecast

Project: Nutrient Program Management - 090523



Project: Nutrient Program Management - 090523



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	152,247	155,630	138,917	142,510	137,166	116,874						974,636	1,178,209	
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	152,247	155,630	138,917	142,510	137,166	116,874	120,267	136,583	100,391	100,389	974,636	1,635,839		
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	21,267	17,012	21,263	17,012	219,622	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	22,475	18,400	15,276	19,376	5,868						47,875	120,962
	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	22,475	18,400	15,276	19,376	5,868	17,012	21,263	17,012	17,012	17,012	47,875	193,261
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	7,625	2,330	40,696	9,115	16,840						4,543	17,203
	Forecast			705	470	470	235	-	353	430	430	1,450	4,250	4,715	8,238	7,625	2,330	40,696	9,115	16,840	5,192	5,192				4,543	104,192
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	74,369	55,062	
	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	12,470
	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	-	-	-	-	-	-	-	-	-	-	46,721	12,470
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	3,760	29,712	29,705	30,850	29,712	29,705	30,850	29,709	29,707	397,102	258,229	
	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	1,260	42,718	29,505	13,980	21,228					309,674	161,230	
	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	1,260	42,718	29,505	13,980	21,228	29,705	30,850	29,709	29,707	309,674	261,201	
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	66,124	52,898	66,124	52,898	52,898	289,138	621,557
	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	65,345	116,523	71,274	49,148	67,288	59,559					491,254	556,419	
	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	65,345	116,523	71,274	49,148	67,288	59,559	44,688	44,688	25,000	25,000	491,254	695,795	
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	-	43,130	-
	Actuals													775	1,128	-	-	-	-	1,120						3,023	-
	Forecast													775	1,128	-	-	-	-	1,120	3,670	4,590	3,670	3,670	-	18,623	-
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	7,748	4,195	7,885	27,408	12,260					74,572	230,278	
	Forecast				380	950	760	2,745	20,178	14,935	32,914	61,078	86,010	23,695	7,748	4,195	7,885	27,408	12,260		20,000	30,000	25,000	25,000	74,572	330,278	
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	1,461,748	1,617,378	1,756,295	1,898,804	2,035,971	2,152,845				974,636	1,178,209	
	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	1,461,748	1,617,378	1,756,295	1,898,804	2,035,971	2,152,845	2,273,112	2,409,695	2,510,066	2,610,475	974,636	2,610,475

