

## Director of Operations and Compliance Report

November 18, 2020

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

#### Plant Loading

Biochemical Oxygen Demand, 5-Day (Avg. 39374 lbs/day)	62 percent of design
Total Suspended Solids (Avg. 46946 lbs/day)	43 percent of design
Average Daily Flow (25.94 million gallons/day)	63 percent of design
Maximum Daily Flow (37.7 million gallons/day)	30 percent of design

	Permit Limits (avg/max)	Reported Values	Violations
CBOD <sub>5</sub> , mg/L	20/40	3/3	0
TSS, mg/L	25/45	4/5	0
NH <sub>3</sub> -N, mg/L	1.5/3.0	0.31/0.51	0
Fecal coliform per 100mL	400* (max)	463	1
Chlorine Residual, mg/L	0.05* (max)	0.011	0
Dissolved Oxygen, mg/L	6.0 (min)	7.47	0
pH, S.U.	6.0/9.0 (min/max)	7.91/8.12	0
Total Nickel, mg/L	0.015 (avg.)	0.016	1
Total Zinc, mg/L	0.075/0.416	0.015/0.025	0

\*Effluent disinfection is required May 1 through October 31.

#### CSO Report

Location	Events	Discharge (million gallons)	Estimated Total Duration of Discharges (hrs)
Oakland Avenue (Outfall 003)	1	0.45	2.1
Lincoln Park (Outfall 004)	1	0.40	1.0
McKinley Avenue (Outfall 007)	0	0.0	0.0
Seventh Ward (Outfall 008)	1	1.32	2.8

#### Director's Notes:

##### **NPDES Permit:**

As of November 9, 2020, the Public Notice for comments on the District's new permit was closed. The District commented that it had no objections. The District received notice from HeplerBroom that a comment was submitted by the Sierra Club. They requested that the Permit be issued as written as quickly as possible even though they mentioned issues where they would like to see changes.

##### **Operations Staffing Levels:**

Due to the recent spikes in Positive Covid-19 cases in the area the Operations Group has shifted back to reduced manning wherever possible and when not possible the staff is trying to maintain distances and use of masks are being strictly adhered to.

The Operators are being impacted significantly as of the writing of this report though not just due to the pandemic, more due to a combination of causes which includes Covid. The District is currently running with 5-6 operators out of a normal staff level of 8 operators. We are temporarily transferring an Operator in Training into an operator position as needed to help get us through this period.

### **2020 Disinfection Season:**

The 2020 disinfection season has ended. In general, we had a productive and informational season overall. We experienced two exceedances this year both involved fecal coliform discharges. The first (410/100mls CFUs where the permit allowed 400/100ml) led to the understanding that the plant does not always have complete nitrification occur in the Mixed Liquor tanks of which we started testing protocols to monitor and makes adjustments to when the condition was present. Normally with the amount of tankage and aeration the facility has complete nitrification would be expected.

The second occurred on 10/27/20 were 463/100mls CFUs were discharged. This was likely related to an apparent slug of bacteria that passed through the plant that day. The test plates that were run by the Laboratory exhibited an excessive amount of confluent growth. Confluent growth occurs when a non-fecal bacterium grows and proliferates on the same media (m-FC w/ Rosolic acid) and incubation conditions as do the usual fecal strains. This bacterium was typed by the District Laboratory as *Klebsiella pneumoniae* (or similar species). An Idexx test ran on the same sample indicated concurrent growth as well and indicated that the bacterium was non-fecal. The Operations Management staff are currently reviewing this issue and will develop protocols and policies to reduce these occurrences during future disinfection operations.

Overall, the season was very productive District staff significantly increased testing both in analytes tracked, redundant tests, and frequency of testing to gain a more complete understanding of the processes involved in the disinfection process. While also changing procedures and operations of existing equipment to better control of and make adjustments to the processes. While it is certain that every season brings its opportunities to better understand the systems and improve methods this year was exceptionally so. I wish to commend the District staff for their efforts this year related to the disinfection season, especially those in Operations, Maintenance, I&C, and Laboratory.

### **Land Application of Biosolids:**

J. Oros Inc. continues with the biosolid applications. Their production numbers currently stand at:

- 15.7 million gallons (MG)
- 2464 dry Tons (dT) hauled
- 2732 truckloads (estimated)
- Biosolids averaged 3.72% solids concentration

The lagoon operations were changed this year from recent previous years. The intent was to improve efficiencies of the land application process for both the District and the haulers. We have seen a significant change in the time required for dredge operations this season which was by design. Operations staff do still perform lagoon operations in concert with the haulers; all hours tallied the Operators have spent approximately 60 workhours (including dredge 0hrs and crawler 60hrs) at the Wyckles facility to-date. This does not take into consideration any workhours expended by Maintenance department staff.

### **Board of Certification Meeting:**

David Collard attended the Board of Certification meeting as the representative for the Central Illinois Region on November 4, 2020. During the meeting the representatives for the IL EPA

informed the members of the Board that they were in the process of joining the operator certifications sections for the Water and Wastewater sides into one overall division under the lead of Tatum DeMay, and that they were already adding staff to that division to enable them to better accommodate the needs of the Agency and Operators in that respect. Additionally, they informed the Board that Cathy Siders was assigned the position of Compliance Manager for the State.

### **2020 Nutrient Loss Reduction Strategy Conference (NLRS):**

David Collard, Keith Richard, Matt Nihiser, Trustee Megan Baskerville attended the NLRS Virtual Conference on November 6, 2020. This conference lasted approximately 5 hours and covered information and updates as related to nutrient reduction in watersheds within Illinois and also included reports from the midwestern states of Ohio, Iowa, and Minnesota.

### **Operations, Laboratory, and Pretreatment Activity Reports – October/November 2020**

#### **Operations Activities:**

Normal operational activities were conducted as proscribed by standard procedures or in response to conditions within the plant related to the new measures being employed due to Covid-19.

- 1) Operations staff has the West Headworks in continual operations currently. This is the first opportunity they have had to run the system during the fall leaf season. The leaves received by the treatment plant during this time of year is always high and can cause significant problems at the headworks systems. This year has not been much different from the previous years but the operator's performed the tasks needed to keep the system up and running without much trouble; they are well versed in these operating conditions. This year did differ from previous years in that we now have an effective backup/supplemental system (two reliable headworks) if needed to help in handling any excessive material that comes into the plant. This is a game changer.
- 2) All Operations staff are currently monitoring plant conditions that exhibit less than optimal performance at the final clarifiers. It appears this is related to denitrification going on in the blankets also likely because of continued low flows. There currently is little risk at this time of exceeding any permit limits but it is just bothersome to operators when their facilities are not performing as well as might be preferred.
- 3) Operations staff have managed facility operations during this low workforce period with little discernable loss of effectiveness or impact to the plant discharges. There are many inherent changes required to accomplish this while staff levels are affected by the pandemic and/or while assisting in lagoon operations, etc. in addition to this they continue to perform as many PMs as possible throughout the month.
- 4) Operators are still awaiting response from the IEPA as to when they might be able to sit for a certification exam.

#### **Laboratory Activities:**

##### **Routine:**

A total of 1,975 analyses were performed in the laboratory during the month of October 2020.

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 sampling of the groundwater monitoring wells was conducted at the South Sludge Lagoons and Wyckles Lagoons during the second week of October 2020.
- 2) Keith Richard served as a judge for the lab event at the WEFTEC 2020 Operations Challenge on October 7, 2020. The WEFTEC conference and the Operations Challenge were both held virtually this year due to COVID-19. The teams competed remotely from their own locations while the judges watched on two live stream cameras. Keith judged along with a judge in Nevada while the teams competed remotely in South Carolina, Ontario, and Colorado.
- 3) Keith Richard attended the virtual quarterly meeting of the Heart of the Sangamon River Ecosystem Partnership on October 8, 2020. The partnership is a consortium of local government agencies and non-government organizations that are working together to ensure the continued well-being of the Upper Sangamon River watershed
- 4) The investigation into the suspected false-positive IDEXX fecal coliform results is ongoing. Samples of suspected interfering bacteria were isolated from IDEXX fecal coliform testing plates and mFC fecal coliform testing plates, then cultured on MacConkey agar plates. The isolated bacteria appeared to be *Klebsiella pneumoniae*, or a similar species, based on the morphology of the colonies. Further investigation will be conducted to positively identify the suspected interfering bacteria and to determine its source.
- 5) The graded results of our annual USEPA required DMR-QA proficiency testing were received on October 16, 2020. We obtained "acceptable" results (the highest score) for all twenty-four analytes that were tested. This marks our 27<sup>th</sup> year in a row with acceptable DMR-QA results for all analytes, which is a testament to the quality of the work performed by the SDD lab staff.
- 6) A new oil and grease extraction system was installed in the lab on October 19, 2020. This system is used to analyze for fats, oils, and grease (FOG) in wastewater samples. This unit replaced the previous unit that had been in service in the lab for nearly twenty years.

### **Pretreatment Activities:**

#### **General Activities:**

- 1) Pretreatment personnel monitored twelve commercial and industrial users (IU) during October 2020 and performed four industrial user inspections.
- 2) There are no updates to the AOC. Matt Nihiser contacted Ray Cullen of USEPA because a pretreatment reporting violation is listed in USEPA's ECHO database for the District. Since we submitted all the required reports on time and are now waiting on USEPA approval, the violation is most likely an error. Ray is looking into the violation for us.
- 3) The SDD issued a new discharge permit to **Akorn**. This permit is for the maximum allowable duration of 5 years.
- 4) Matt Nihiser calculated significant non-compliance (SNC) for the 3<sup>rd</sup> quarter. **Prairie Farms Dairy** is in SNC with their discharge permit and the District's Ordinance because they failed to submit a required self-monitoring report in August.
- 5) All one-time compliance reports from our Dental Users were due to the District by October 12, 2020. All currently open dental offices submitted their reports on time.
- 6) Matt Nihiser attended a USEPA webinar about proper regulation of high strength industrial wastewater.

**Pretreatment Ordinance - Verbal Notices:**

- 1) The SDD issued a Verbal Notice to **Prairie Farms Dairy** on October 7, 2020 for a high pH. **Prairie Farms** representatives investigated the violation and found that it was related to an improperly washed tank. Resampling has shown that **Prairie Farms** is back into compliance.
- 2) The SDD issued a Verbal Notice to **DMH** on October 26, 2020 for a low pH at their "point C" discharge, which is mostly cafeteria waste. **DMH** is reviewing proper procedures for waste disposal and pH neutralization with staff. Resamples taken the day after the violation showed that **DMH** is back into compliance.

**Pretreatment Ordinance - Warning Notices:**

No Warning Notices were issued during October 2020.

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

No Notices of Violation were issued during October 2020.

**Pretreatment Ordinance - Executive Orders:**

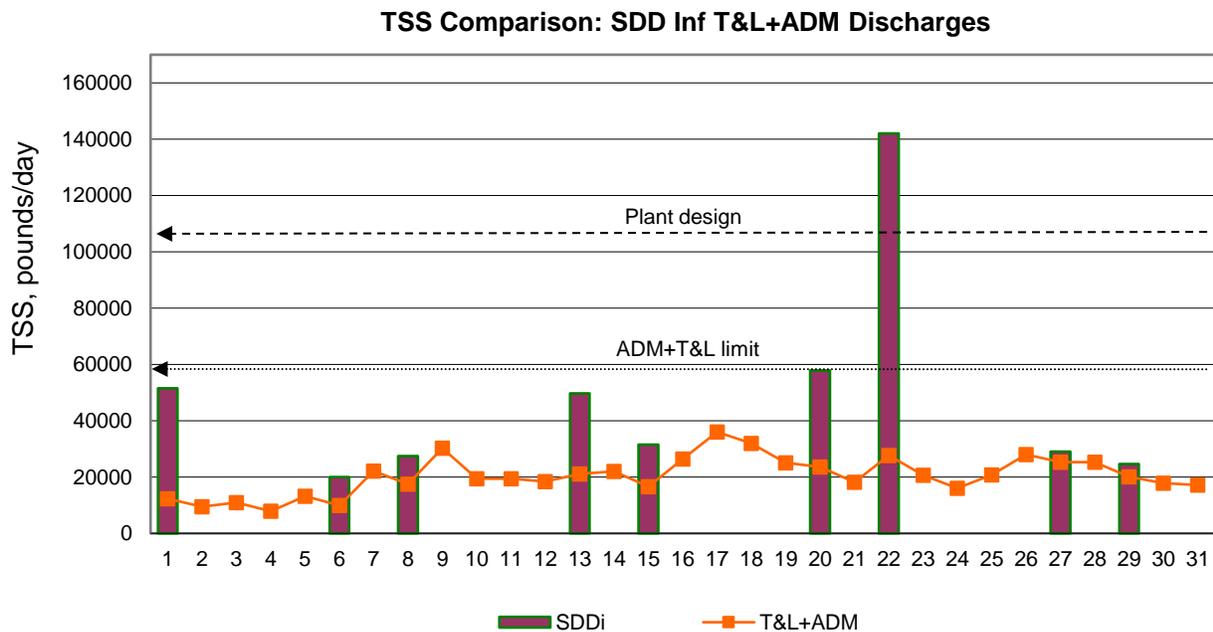
No Executive Orders were issued during October 2020.

**Pretreatment Ordinance - Penalty Assessments:**

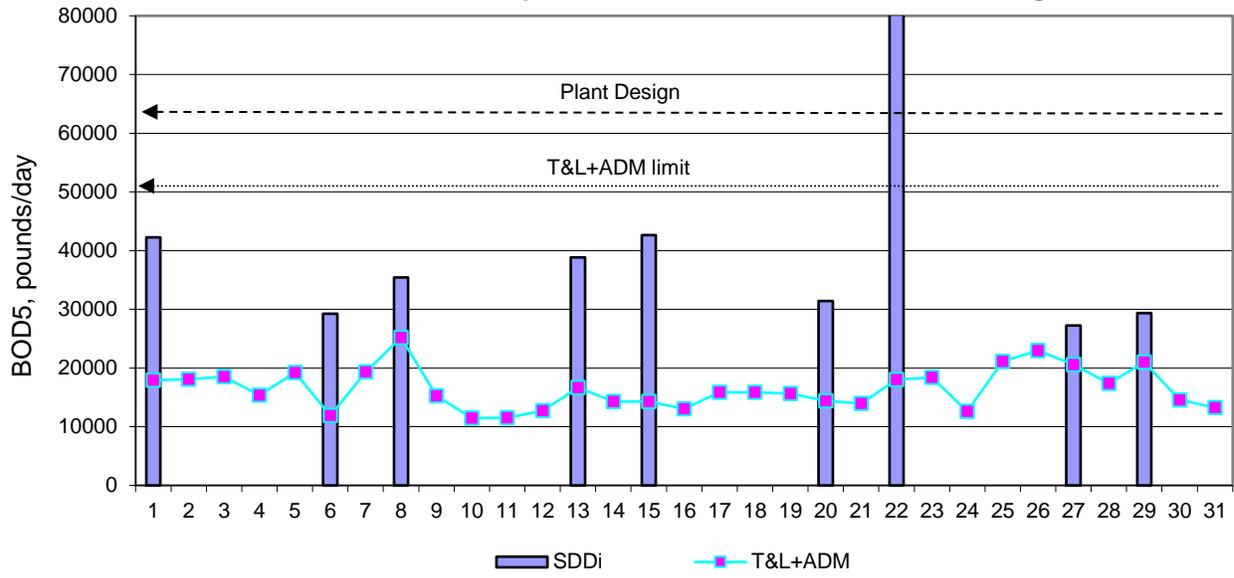
The following industrial penalties were assessed for October 2020:

- 1) **Prairie Farms** **\$1,000**

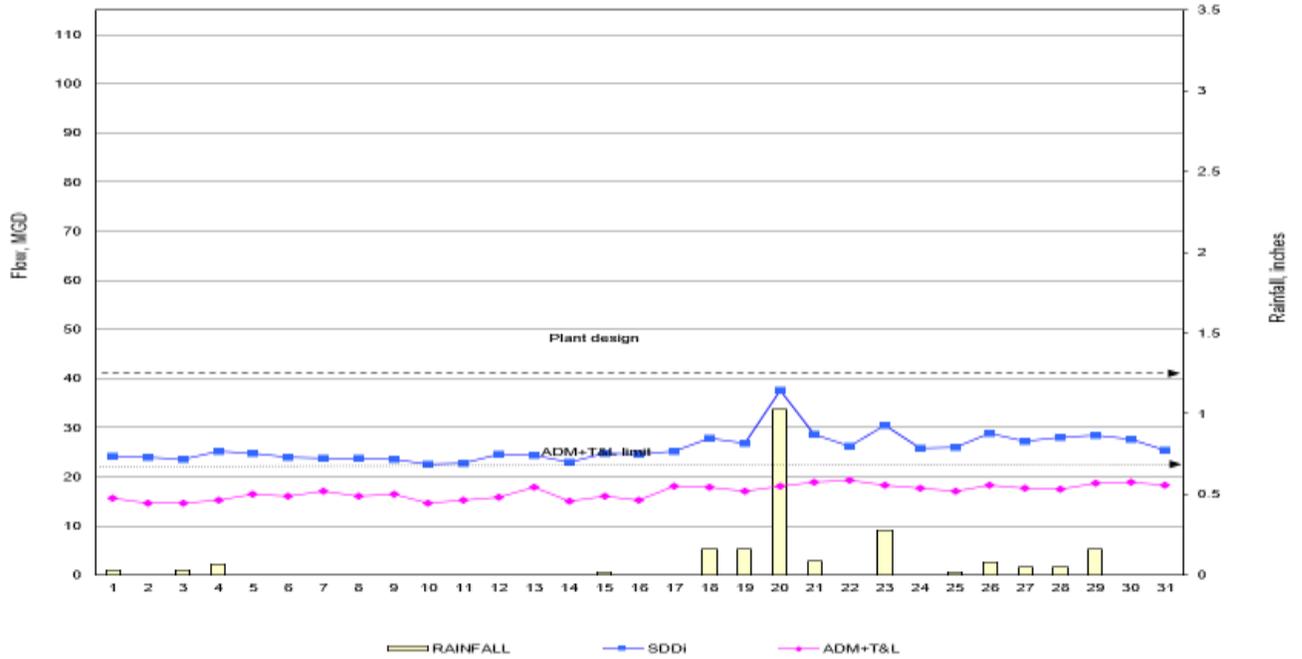
**Plant Operating Graphs:**



**BOD Comparison: BOD Inf vs. T&L + ADM Discharges**



**Flow Comparison: SDD vs. ADM + T&L Discharges and Rainfall**



**Plant Efficiency Graphs:**

