

# Technical Director's Report

July 15, 2015

## Plant Loading and Operations Summary – June 2015

Biochemical Oxygen Demand, 5-Day (Avg. 22,400 lb./day)	35 percent of design
Total Suspended Solids (Avg. 36,000 lb./day)	33 percent of design
Average Daily Flow (31.98 million gallons/day)	78 percent of design
Maximum Daily Flow (64.44 million gallons/day)	52 percent of design

	Permit Limits (avg./max.)	Reported Values	Violations
CBOD <sub>5</sub> , mg/L	20/40	2/2	0
TSS, mg/L	25/45	3/4	0
NH <sub>3</sub> -N, mg/L	1.3/3.0	0.20/0.27	0
Fecal coliform per 100 mL	400*	130	0
Chlorine Residual, mg/L	0.05*	<0.011	0
Dissolved Oxygen, mg/L	6.0 (minimum)	7.90	0
Total Nickel, mg/L	0.015	0.019	1

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

The District's nickel variance expired at the end of June 2014 and due to opposition from U.S. EPA, was not extended. No exceedences of NPDES permit limits other than nickel occurred during June.

### Activities

Black & Veatch has provided a draft technical memorandum summarizing the nutrient study, including budget level cost estimates for the addition of nutrient removal processes to our treatment facility. I am completing comments on the report and am scheduled to meet with personnel from Tate & Lyle to review the report on July 9. A meeting with ADM personnel will also be scheduled.

Based on the Illinois Nutrient Loss Reduction Strategy and subsequent information from Illinois EPA, I expect that when our NPDES permit is reissued, it will require SDD to prepare a phosphorus discharge optimization plan. The permit will likely require SDD to evaluate source reduction measures (from industries, for example), operational improvements, and minor facility modifications that will produce reductions in phosphorus. This general language can address phosphorus reductions at many facilities, but the Black & Veatch study has shown that because of our high phosphorus loads and corresponding need for additional organic carbon sources to make biological nutrient removal possible, a different approach will be needed for SDD. Draft permits being issued to other facilities allow two years for completion of the optimization plan; much of the information needed for SDD is contained in the Black & Veatch study.

We have been discussing the possibility of working with Greeley and Hansen engineers on a grant application to support a Sangamon River Watershed Initiative addressing nutrient

requirements. In light of uncertainty about the timing and requirements of future permit conditions, I have advised Greeley and Hansen that we will not pursue an application during the 2015 grant funding cycle.

A conference call with U.S. EPA and Illinois EPA to discuss our most recent nickel reports was completed on June 24. Prior to the call, U.S. EPA had forwarded an eight-page memorandum with comments on the reports. However, as the comments were discussed the majority were determined to be recommendations related to presentation of the material in the report rather than comments on the report contents. The discussion was productive and U.S. EPA seemed to be satisfied that technical questions with the biotic ligand model (BLM) for predicting nickel toxicity have been addressed. The U.S. EPA personnel were also helpful in determining a path forward for the toxicity testing that will be done to provide a confirming point for the BLM toxicity prediction. Currently the testing laboratory is acclimating a culture of organisms to water containing a high dissolved solids concentration similar to our discharge, and they should be ready to conduct the test within a few weeks. In addition, a call with our consultant and legal counsel is set for July 13 to begin the process of putting the technical report information into a format for submission to the Illinois Pollution Control Board.

Our nickel consultant has moved from HDR Engineers to Windward Environmental, a firm that is better aligned with his area of work. A new contract for his services will need to be negotiated and signed within the next 1-2 months.

We met with staff from the Macon County Conservation District (MCCD) and Chastain and Associates on June 22 to provide a status update and discuss MCCD's expectations for the South Sludge Lagoon closure site work. Their objective for the area remains restoration of ground contours and vegetation to the condition that existed prior to SDD's lease of the property. Dewatering the lagoons by pumping water to SDD's treatment plant continues to go well and should be completed before the end of July.

On July 1, I participated in a stakeholder meeting arranged by Illinois EPA to discuss revised federal water quality criteria for ammonia nitrogen. The new criteria address ammonia toxicity only, and this process is not related to nitrogen loss reductions in the nutrient strategy. The toxicity of ammonia is dependent on water pH and temperature, with higher toxicity (and thus a lower permit limit) at the higher pH values and temperatures typically seen in SDD's discharge. A lower permit limit would greatly reduce the margin of safety from that of our current limit. Illinois EPA expects to file a proposal for a new ammonia standard with the Pollution Control Board in about December 2017, and the approval process would take 1-2 years after that. Following adoption of a new standard, SDD's permit would reflect the new standard the next time it is modified or reissued.

Illinois EPA is also working with a separate stakeholder group to replace the current fecal coliform standard with a standard based on a subset of fecal coliform bacteria, *E. coli*. This rulemaking process will probably occur in about the same time frame as the ammonia revision. A number of Illinois Association of Wastewater Agencies (IAWA) representatives participate in both of these stakeholder groups and SDD staff receive regular updates at IAWA meetings.

## CSO Summary

Location	Events	Discharge (million gallons)	Estimated Total Duration of Discharges
Oakland Avenue (Outfall 003)	4	3.6	13.0
Lincoln Park (Outfall 004)	2	10.8	18.2
McKinley Avenue (Outfall 007)	4	11.4	23.7
Seventh Ward (Outfall 008)	0		

If there are any questions or comments concerning this report, please contact me at 217/422-6931 x214 or by email at [timk@sddcleanwater.org](mailto:timk@sddcleanwater.org).

# SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

## MEMORANDUM

**TO:** Tim Kluge

**DATE:** 07/07/2015

**FROM:** Keith Richard

**SUBJECT:** Laboratory activities for June 2015

### **Routine:**

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 in preparation for anticipated permit limits to assist with process design.

### **Non-Routine:**

Larry Arnold's last day on the job was June 19, 2015. Keith Richard has taken over all Laboratory Supervisor functions.

Laboratory staff successfully set up a method for E. coli analysis using the modified m-Tec procedure (EPA Method 1603). This procedure is nearly identical to the modified m-FC procedure currently used for fecal coliform analysis. We will be analyzing for E. coli concurrently with the normal fecal coliform analysis during the months of July and August to obtain comparison data for the two methods. The EPA is considering revising the bacteria standard from fecal coliform to E. coli since E. coli is a more specific indicator of human health risk. The comparison data will help us to better understand the E. coli levels in our plant and effluent waters.

The four-year river study with Eastern Illinois University started in June. The laboratory will be analyzing water samples from all six field sites for nickel content once a month for the duration of the study. The first six samples were analyzed at the end of June.

### **Pretreatment Activity during June 2015**

#### **Verbal Notices**

We issued a Verbal Notice to **Prairie Farms Dairy** on June 2, 2015 because their self-monitoring showed that they exceeded their daily maximum limit for ammonia-nitrogen on May 14, 2015.

We issued a Verbal Notice to **Tate and Lyle Ingredients Americas, LLC (T&L)** on June 15, 2015, because **T&L** exceeded their daily maximum BOD limit on June 5, 2015 and they have not yet submitted their self-monitoring report for the first semester of 2015.

We issued a Verbal Notice to **Decatur Correctional Center** on June 15, 2015 because they had not yet submitted their required flow report for May 2015.

We issued another Verbal Notice to **T&L** on June 23, 2015, because they exceeded their ten day moving average BOD limit on June 14, 2015.

We issued a Verbal Notice to **Kopetz Manufacturing, LLC** on June 25, 2015, because they discharged wastewater with a pH above the maximum limit on June 19, 2015.

### **Warning Notice**

We issued a Warning Notice to **T&L** on June 8, 2015 because they exceeded their wet weather discharge flow limit on May 11 and 30, 2015.

### **Notice of Violation**

We issued a Notice of Violation to **T&L** on June 15, 2015 because they exceeded their wet weather discharge flow limit twice and their dry weather discharge flow limit three times in May and June 2015.

### **Executive Orders**

We did not issue any new Executive Orders during June 2015.

### **Penalty Assessment**

We assessed the following industrial penalties during June 2015:

Tate and Lyle Ingredients Americas, LLC    \$4,000.00

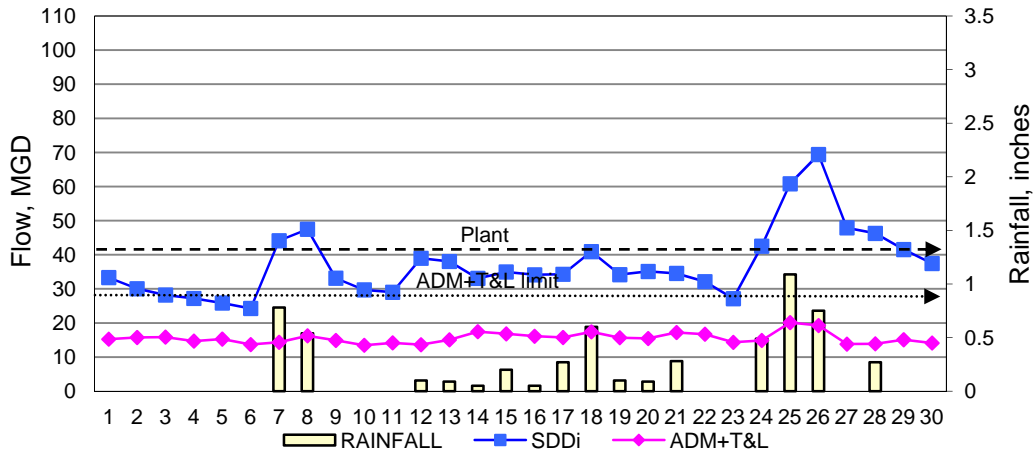
### **General Activity**

We monitored thirteen commercial and industrial users (IU) and we performed eight industrial user inspections during June 2015.

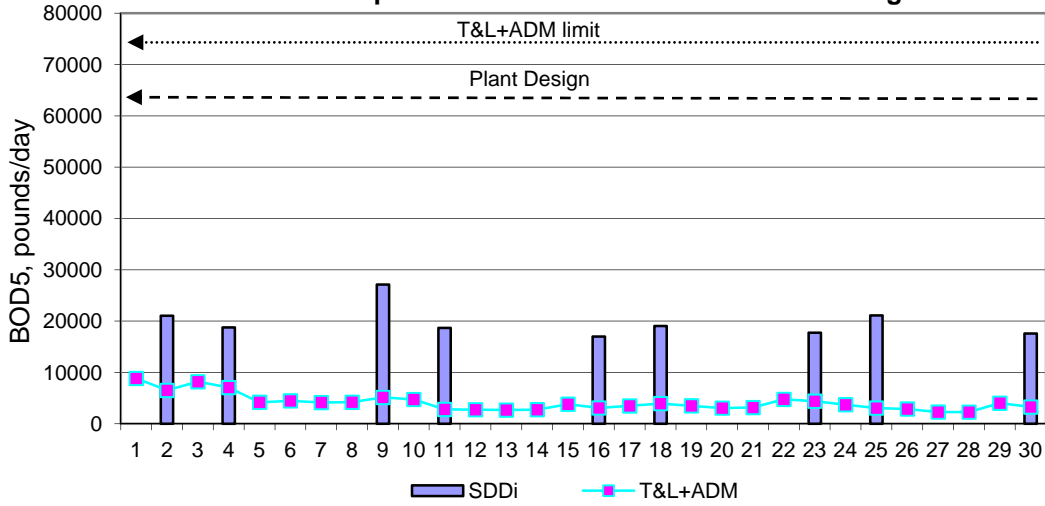
We sent new wastewater hauler discharge permits to **Gulliford's Septic Service, St. Claire Services**, and **Zeschke Septic Cleaning, LLC** during June 2015 because their current discharge permits were due to expire in July.

I attended a Learn Linko Webinar on June 24, 2015 concerning setting up system administrations in the latest version of Linko Compliance Tracking System software.

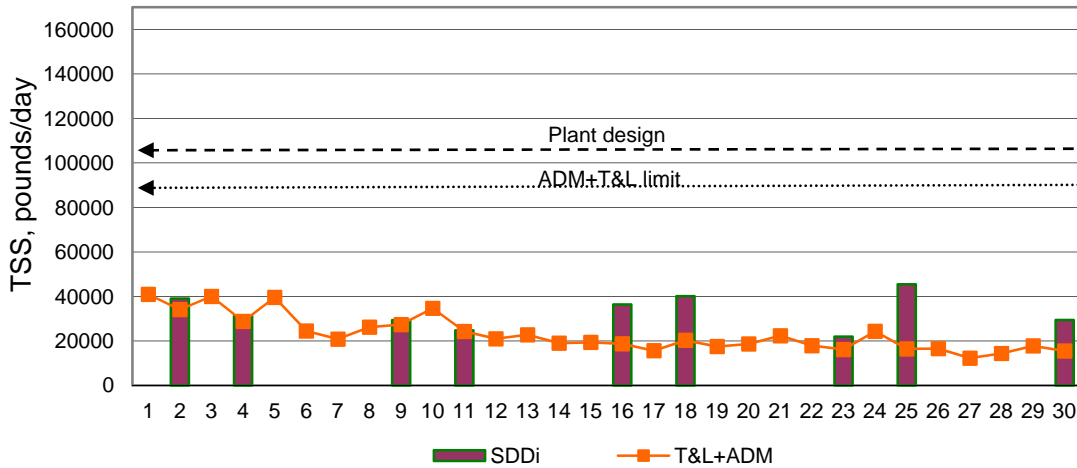
**Flow Comparison: SDD vs. ADM + T&L Discharges and Rainfall**



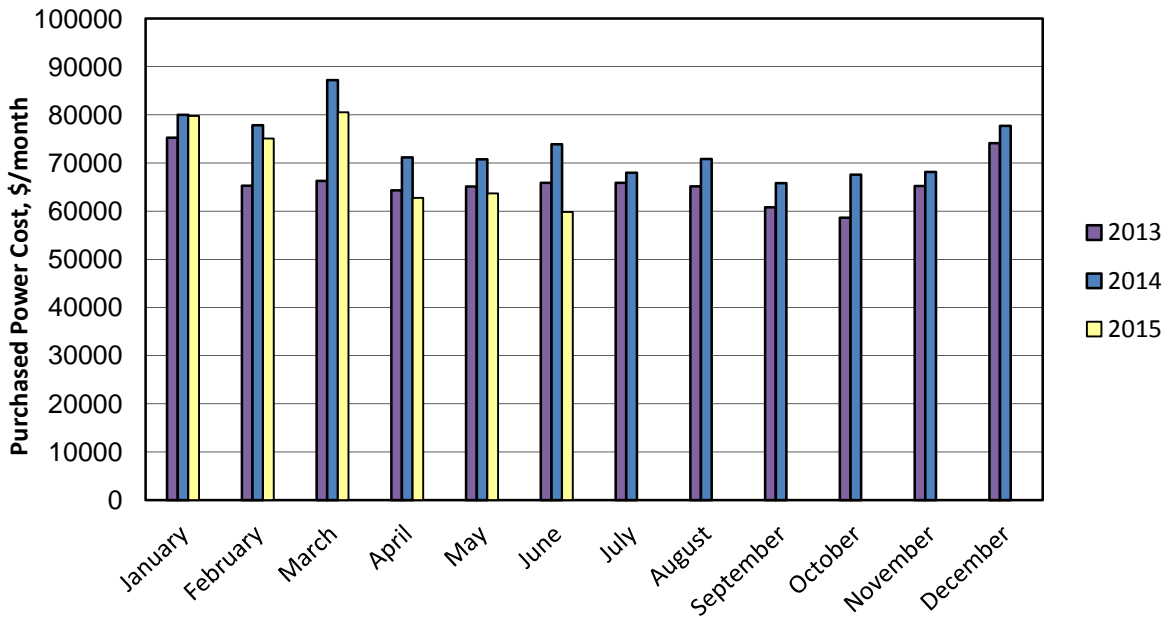
**BOD Comparison: BOD Inf vs. T&L + ADM Discharges**



**TSS Comparison: SDD Inf T&L+ADM Discharges**



**ELECTRIC POWER COST: 2013, 2014, 2015**



**ELECTRIC POWER USE: 2013, 2014, 2015**

