

Technical Director's Report

March 21, 2012

Plant Loading and Operations Summary – February 2012

Biochemical Oxygen Demand, 5-Day (Avg. 30,100 lb./day)	44 percent of design
Total Suspended Solids (Avg. 83,000 lb./day)	75 percent of design
Average Daily Flow (28.8 million gallons/day)	70 percent of design
Maximum Daily Flow (36.5 million gallons/day)	29 percent of design

	Permit Limits (avg./max.)	Reported Values	Violations
CBOD ₅ , mg/L	20/40	2/4	0
TSS, mg/L	25/45	7/8	0
NH ₃ -N, mg/L	1.5/3.0	<0.19/0.25	0
Fecal coliform per 100 mL	400*		0
Chlorine Residual, mg/L	0.05*		0
Dissolved Oxygen, mg/L	6.0 (minimum)	7.9	0

*Effluent disinfection is required May 1 through October 31.

No violations of NPDES permit limits occurred in February.

The total amount of stabilized sludge sent to storage at the Wyckles Road Land Application Facility in February was 790 tons. Waste sludge totaling 234 tons was destroyed using the anaerobic digester stabilization process. Methane utilized to generate electricity saved the District an estimated \$6258 for the month in electrical costs.

Activities

District staff are continuing to work with Donohue and Associates on design of a receiving station for farnesene waste and other wastewater brought to the plant by truck. The design is complete, the permit application has been sent to Illinois EPA, and the bid advertisement is expected by March 16.

Personnel from ADM are working on the final portion of the petition for a nickel site-specific water quality standard, and the petition should be ready for filing with the Pollution Control Board within the next few weeks.

Other activities included a trip to Sheboygan, Wisconsin with Don Miller to observe an installation of the digester mixers we are considering, a visit to ADM to observe pilot nickel removal equipment, a tour of the farnesene manufacturing and waste handling facility at Tate & Lyle and a follow up meeting with Tate & Lyle personnel, hosting representatives from the Metropolitan Water Reclamation District of Greater Chicago for a tour of two of our CSO treatment facilities, and participation in two WEF conference calls on behalf of the Illinois Water Environment Association.

CSO Activity Summary

Location	Events	Discharge (million gallons)	Estimated Total Duration of Discharges
Oakland Avenue (Outfall 003)	1	0.08	0.9
Lincoln Park (Outfall 004)	0		
McKinley Avenue (Outfall 007)	1	4.3	2
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@sdd.dst.il.us.

SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

MEMORANDUM

TO: Tim Kluge

DATE: 03/1/12

FROM: Larry Arnold

SUBJECT: Laboratory activities for February 2012

Routine :

Monitoring of treatment plant, industrial users, and receiving stream samples for compliance purposes and process monitoring continued. Sampling and analysis of influent, effluent, and sludge for quarterly NPDES requirements was conducted. Laboratory personnel continued monitoring H₂S and other odor causing chemicals within the covered areas of the activated carbon treatment units. Laboratory personnel continued to perform additional ammonia and nitrate analysis to monitor the effect of changes made by ADM in their wastewater treatment to help prevent the floating solids problem here at the plant. Analysis was continued to confirm water quality of plant groundwater and groundwater near the 7th Ward CSO facility in conjunction with the district's dissolved solids strategy. Chloride analysis of industrial users continued in support of this strategy, as well. Safety meetings have continued and there was no first report of injury in the laboratory during this period.

Non-Routine :

- 1) The laboratory continues to investigate the potential role of amounts of incoming Total Kjeldahl Nitrogen (Ammonia plus forms of Organic Nitrogen) in affecting the plant's nitrification ability. Incoming Total Kjeldahl Nitrogen concentrations during the month of February were under our plant's loading capacity for it. We saw no significant NH₃-N levels in the plant effluent during the month.
- 2) The laboratory continued additional analyses of the supernatant returned from Wyckle's sludge lagoons. This study was at the request of Black and Veatch and is related to the reclaimed water study and potential future EPA plant performance requirements. This will also be of significance in determination of return plant loadings via sludge lagoon supernatant generated by the Tate and Lyle/Amyris project which commenced in November. The number of analytes evaluated were increased in February to include anions and metals for comparison with pre-Amyris discharge results obtained for the supernatant for these parameters last year.
- 3) Work continued on a laboratory manager position standard operating procedure. This effort is related to transition planning for the laboratory.

- 4) Laboratory management continued evaluation of replacement equipment available for digester gas analysis for methane, carbon dioxide, and hydrogen sulfide. The new system will feature computer software control and automated sample introduction. Available technologies are gas chromatography (as we currently use), infrared analyzers, or laser ablation. Efficiency of operation, operational costs, and initial capital investment will all figure into the determination. We are currently leaning towards the infrared unit due to lower initial and ongoing capital costs and speed of analysis as compared to other techniques. Requests for quotations will be delayed until early next fiscal year due to the upcoming availability of an improved model in June.
- 5) Laboratory purchased a new muffle furnace and it is in service as of February 27.
- 6) Brandi Benson joined the laboratory staff as a technician to fill an existing opening.

Pretreatment Activity during February 2012

Verbal Notices

We issued a Verbal Notice to **Mason Manufacturing, Norfolk Southern Railway Corp., Akorn, Inc., Decatur Conference Center and Hotel, and Decatur Correctional Center** on February 3, 2012 because they had not yet submitted annual reports, which were due by January 31, 2012.

We issued a Verbal Notice to **Bulkmatic Transport** on February 7, 2012, because they discharged wastewater that exceeded their daily maximum BOD limit on February 2, 2012.

We issued a Verbal Notice to **Tate and Lyle (T&L)** on February 21, 2012 because they exceeded their daily maximum TSS limit on February 19, 2012.

We notified **Prairie Farms Dairy** of three more discharge excursions during February on February 29, 2012. Representatives of **Prairie Farms Dairy** are already due to visit us for a compliance meeting on March 6, 2012 because they have had a number of discharge violations and late reports in 2012.

Warning Notices

We issued a Warning Notice to **Mason Manufacturing and Akorn, Inc.** on February 9, 2012 because they had not yet submitted their annual reports.

We issued a Warning Notice to **Prairie Farms Dairy** on February 21, 2012 because they had not yet submitted a follow-up report following the TSS and FOG violations that were discovered in their self-monitoring as done on December 15, 2011.

We issued a Warning Notice to **T&L** on February 22, 2012 because they exceeded their daily maximum limit for TSS on February 19 and February 20, 2012.

Violation Notices

We issued a Notice of Violation to **Prairie Farms Dairy** on February 8, 2012 because they were in significant non-compliance for exceeding their total fats, oils, and grease limit on October 6 and December 15, 2011, and they have had some other violations since then.

Executive Orders

We did not issue any Executive Orders during February 2012.

Penalty Assessment

We assessed the following industrial penalties for February 2012:

Tate and Lyle:	\$2,000
Prairie Farms Dairy:	Pending

General Activity

1. We monitored twelve commercial and industrial users (IU) and we performed eight industrial user inspections during February 2012.
2. We continued monitoring the H₂S level under the SDD headworks and PE channel covers during early February, but we sent the meters in for repairs and recalibration late in the month.
3. We went to **ADM** on February 2 to see the pilot-scale test equipment they had set up there to remove metals from their wastewater. **ADM** is experimenting with several different methods of nickel removal.
4. We sent permit application materials to **Bulkmatic Transport** and **Canadian National/Illinois Central Railroad** during February because their existing permits are due to expire soon. We send a wastewater haulers permit application to **Raff's, Inc.** because **Raff's** wants a permit to discharge hauled power washing wastewater at the SDD.
5. We issued new wastewater hauler discharge permits to **Parks Sewer Service** and **Portable Sanitation Systems** during January 2011. **Parks'** permit was a renewal because their old one was due to expire soon and **Portable Sanitation Systems** has portable toilets at ADM that they want to dump the wastewater here.
6. We issued a new permit to **Mason Manufacturing** in February because their existing permit would have expired in March 2012.
7. We issued a zero process wastewater permit to **Graham Welding** in February because they decided to have all of their process wastewater hauled away by Safety Kleen instead of discharging it into the sewer system. Wastewater from the chemical etching process at **Graham Welding** is categorically defined metal finishing wastewater, which makes **Graham Welding** a categorical and therefore significant industrial user.
8. We issued a new industrial wastewater discharge permit to **Stripmasters Services, Inc.** during February because they are discharging metal finishing wastewater from their powder coating operation into the sewer system.
9. We sent a notification of industries that were in significant non-compliance during 2011 to the Herald and Review during February as required of the pretreatment program. Industries that we published included **Prairie Farms Dairy, Decatur Plating, Decatur Memorial Hospital,** and **PPG industries.** All except **Prairie Farms** quickly returned to full time compliance.

SANITARY DISTRICT OF DECATUR
501 Dipper Lane Decatur, Illinois (217) 422-6931

I&C Shop Monthly Activity Report For February 2012

Work Order Activity

- Completed 50 Corrective Work Orders
- Completed 122 PM Work Orders
- Completed 4 Safety Work Orders
- Completed 11 Project Work Orders
- Completed 4 Process Work Orders

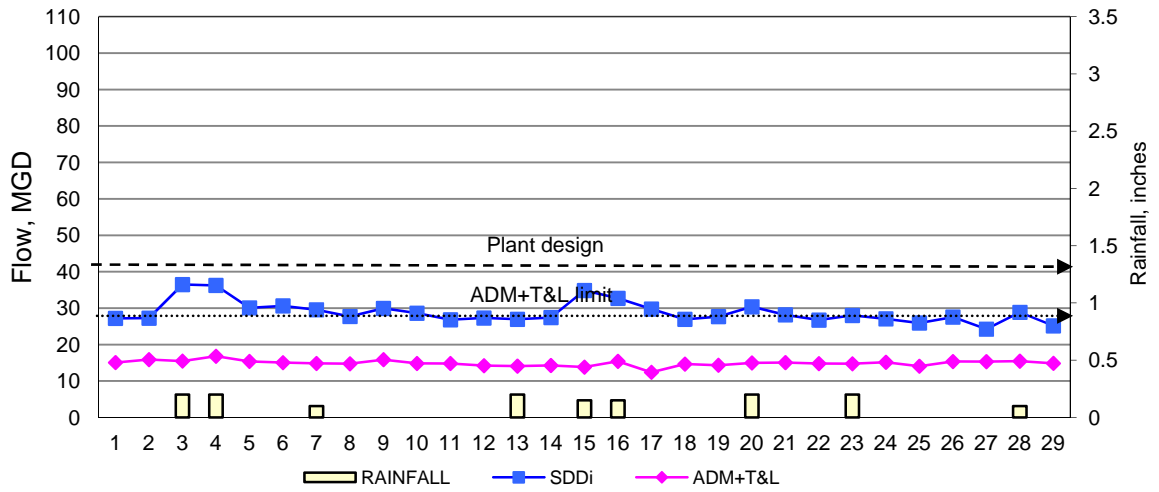
I&C Shop Projects

James Oliver and Doug Gist completed OSHA 29 CFR 1926 Construction Industry Regulations Training.

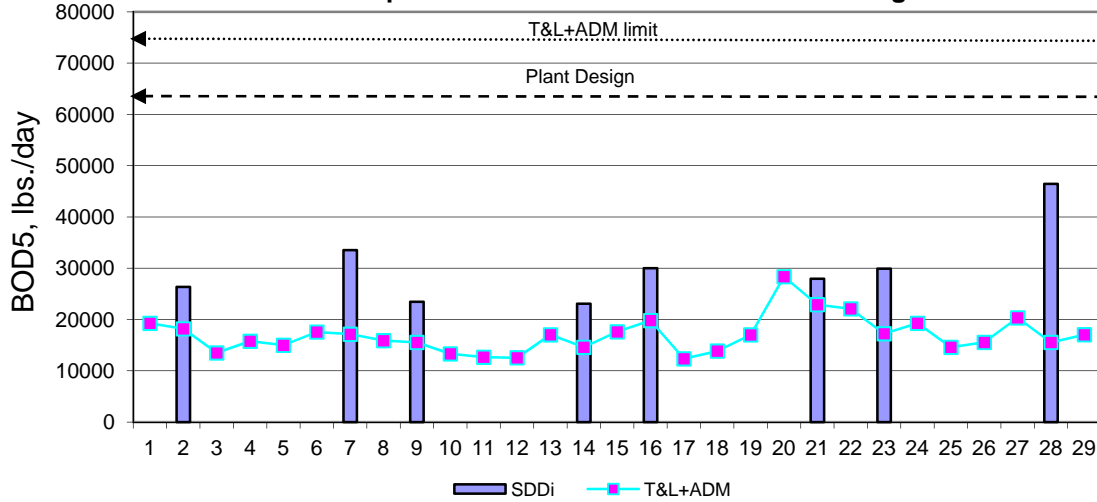
James Oliver attended the 2 day NFPA 70 E Electrical Safety in the Workplace Seminar in Cincinnati with Greg Pyles.

I&C conducted an internal audit of the Outside Pump Station cellular service. The audit showed a 99.8% up time, with the 0.2% being corrected within 30 minutes. I&C continued to assist outside contractors with the installation of the new blowers and with the ground fault study going on at the 259 building. Total Energy Concepts came in and did their survey of the plant; a proposal on energy efficiency is being put together and will be delivered in the month of March. The planned upgrades to the SCADA system have been initiated with Industrial Network Systems and should be completed within the next two months.

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

