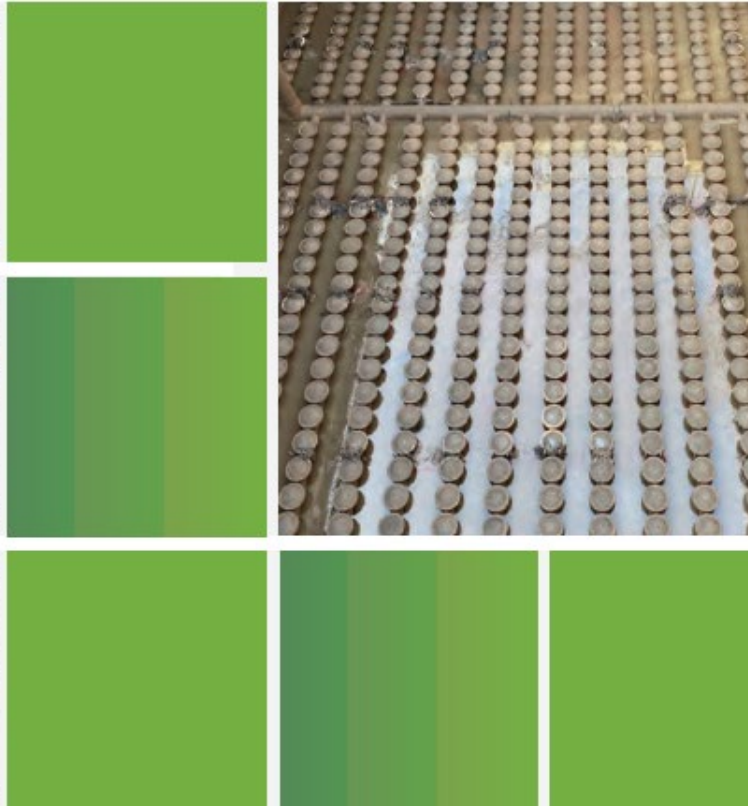


Operations Assistance- SAM Board Update - Draft

July 12, 2021



Agenda

- Sequence of Events
- Operations Observations and Results
- Recommendations
- Regional Board Site Visit
- Recent Plant Upset



Sequence of Events

Timeline

- May 2021, switched from aeration basins 1 and 2 to aeration basin 3
- Before June 4, process was stable with improving numbers
- After June 4, process upset started, SAM contacted BC on June 8 for assistance
- June 9, BC operations specialist on site to address plant upset
 - Performed Triage
- June 16 and 21, follow up visits from BC Operations Specialist and daily check ins
- June 24, Submitted Report to SAM
- June 25, Regional board inspection
- June 30, process upset initiated, SAM contacted BC on July 3

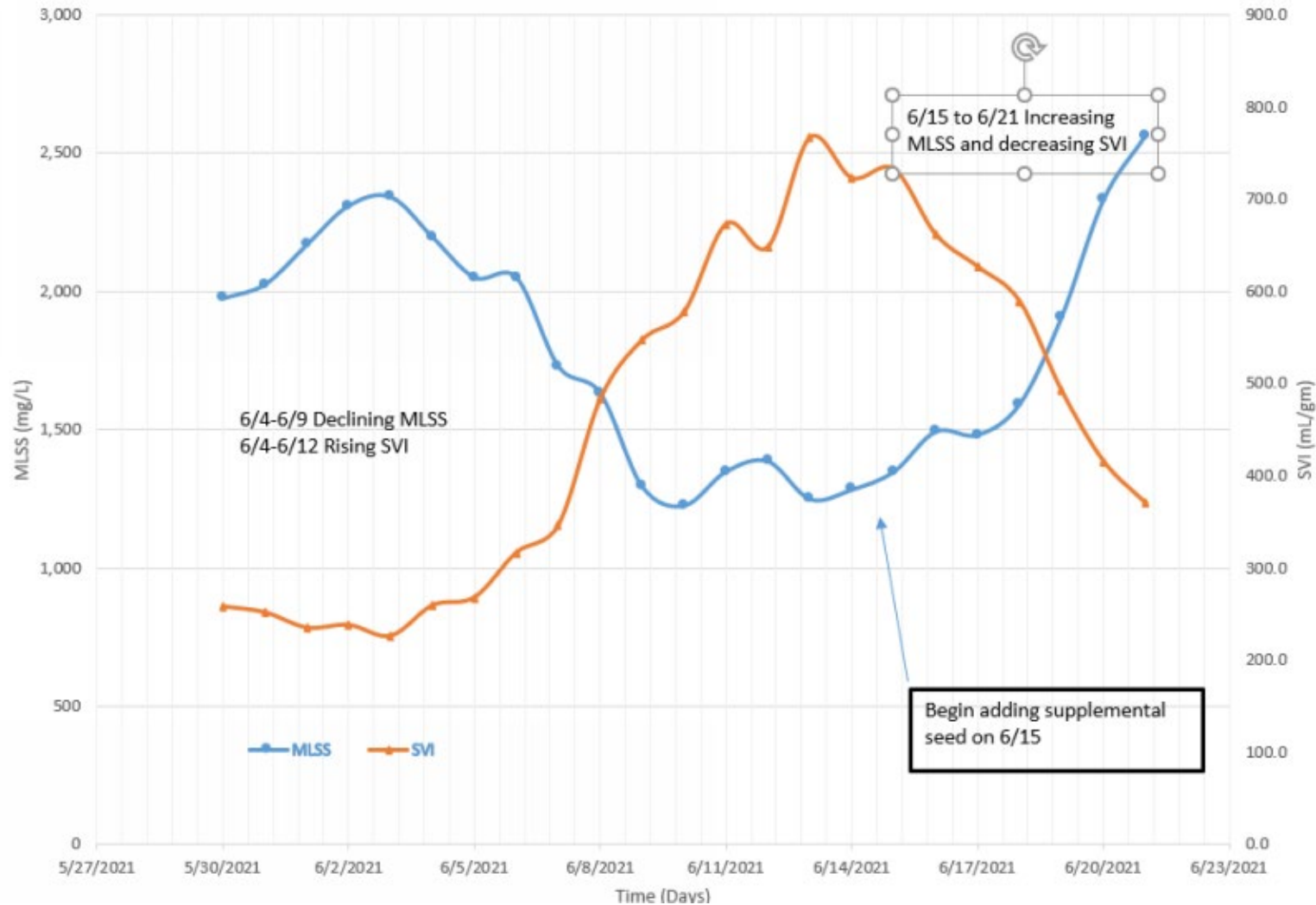


BC Operations Assistance

BC Operations Assistance Activities (Triage)

- Aeration Basin Observations and Data Review
- Microscopic Examination of Sludge
- Jar testing for Polymer
- Septicity Evaluation
- Mitigation Strategy

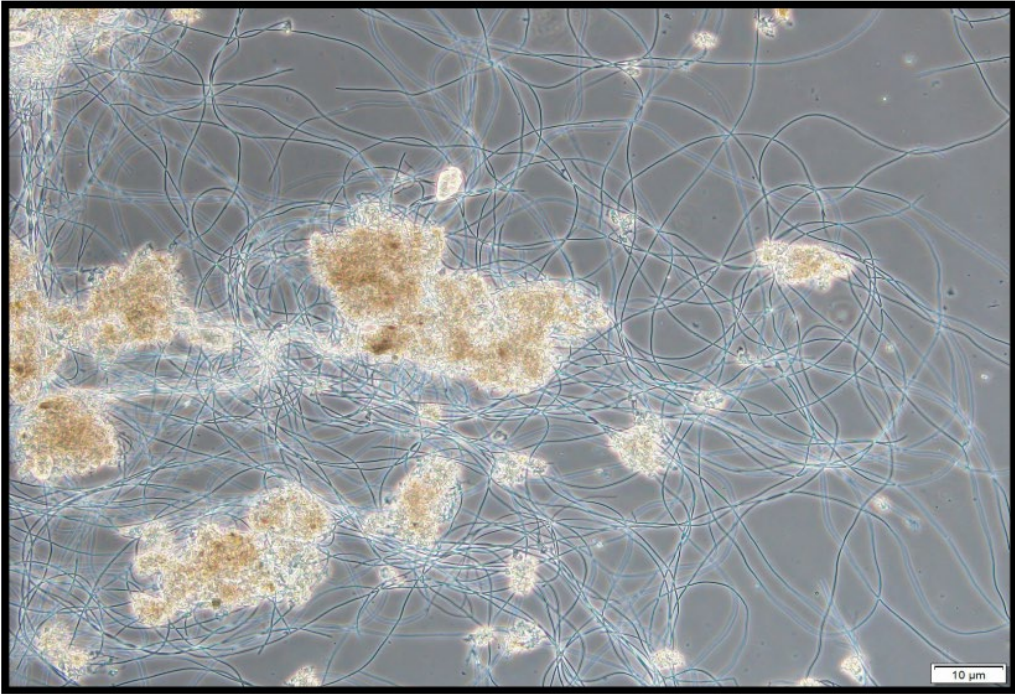
Aeration Basin Observations



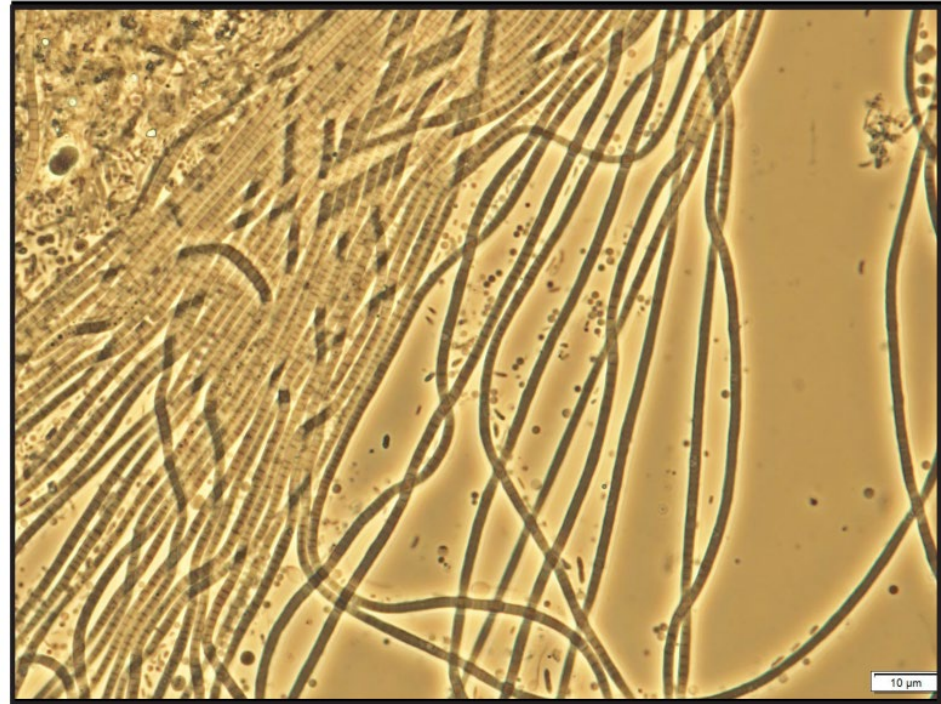


Microscopic Examination of the Sludge

Microscopic Examination



100X phase contrast, wet mount. Some pin, small to medium size floc.



1000X phase contrast, wet mount. *Type O21N* was the most common filament observed.

Bio Augmentation

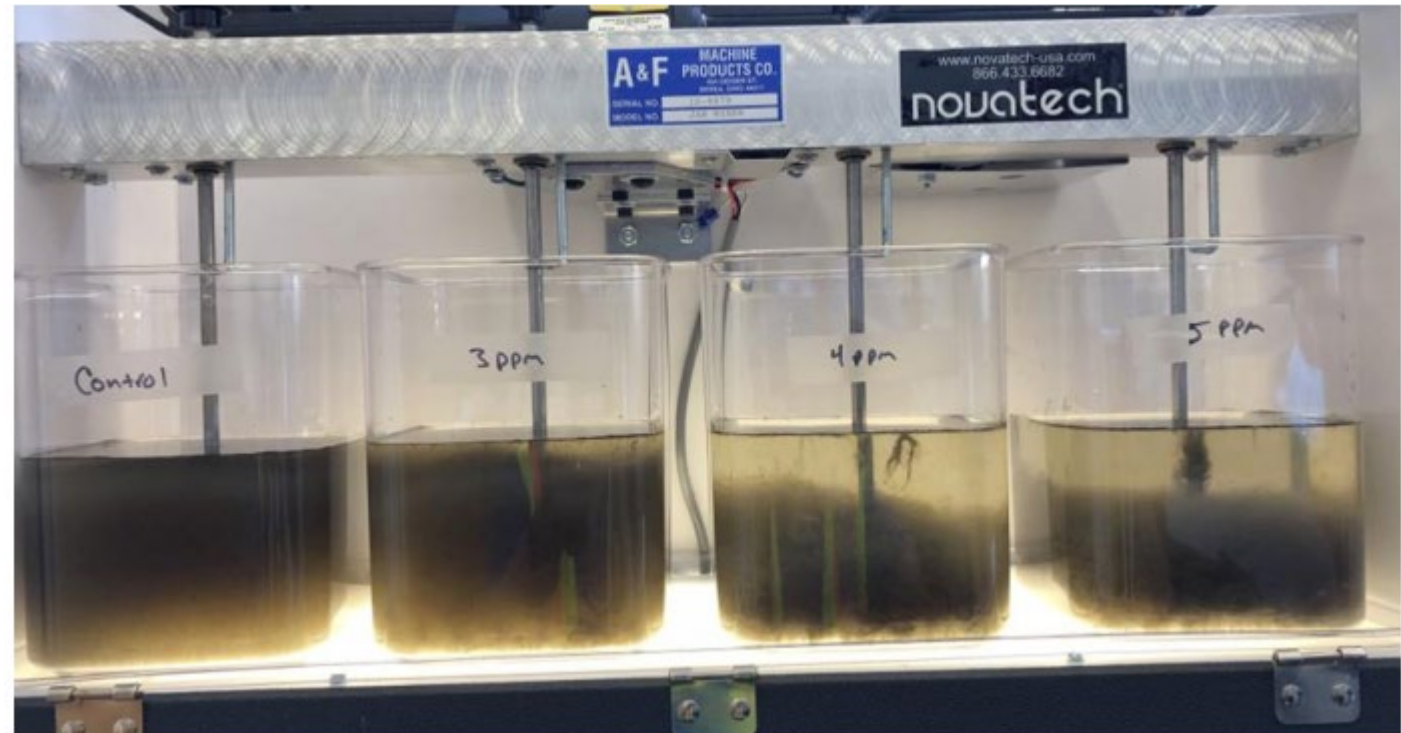
- Adding Seed Supplement to promote growth of the “good” bugs
- EBS Biostar Product showed effective performance
- Keep product on site for future upsets



Polymer Addition

Polymer Addition

- Implemented Polymer addition
 - Polymer Vendor (Polydyne) on site to conduct jar testing
 - Selected New Polymer and dosage
 - High Charge High Molecular weight Polymer
 - Still need to optimize dosage
 - Need new feed pumps





Septicity Analysis



Collection System Evaluation

- Large Collection System and several pump stations
- Lots of time in the system, overnight creates septicity
 - Basic Rudimentary Controls limit flexibility
- FOG accumulation observed in pumping station
- High BOD samples in collection system have been reported



Septicity Monitoring

- ORP – oxidation reduction potential – measures septicity
- Rented portable probe to conduct monitoring
- Primary Clarifiers – 3 in service, ferric feed not flow paced
 - Septicity Identified
- Checked at various locations at the plant



Most Recent Recurrence (6/30/2021)

Second Upset

- Another plant upset started on 6/30/2021
 - Sludge settling problems
 - Nocardia identified in addition to 021N
- Interim recommendations
 - Source evaluation program - Need to understand sources
 - Add seed supplement daily same as last time
 - Add polymer to help settling – Use the new polymer that was jar tested
 - Build up solids in the system MLSS target = 3,000 mg/l once the event passes
 - Increase dissolved oxygen in the system
 - Direct Wasting to RDT during day
 - Need ability to wasting continuously - Ideal

QUESTIONS?

