



# How Changes to Pretreatment Impact Process Control

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# A Little Bit About Us

- Town of Montague-Consists of 5 villages
- Old Mill Town (2x papermills)
- 1.83 MGD
- Conventional Activated Sludge
- 2 SIUs
  - Food Manufacturing: fake meat products
  - Fish Farm

# EPA Consent Orders/Non-Compliance

Fall of 2019: EPA inspection due to multiple permit violations

June 2020: Town was issued consent orders

TSS violations  
-Backlog of solids  
-Settling issues

# Tempe Production

Lactic acid fermentation

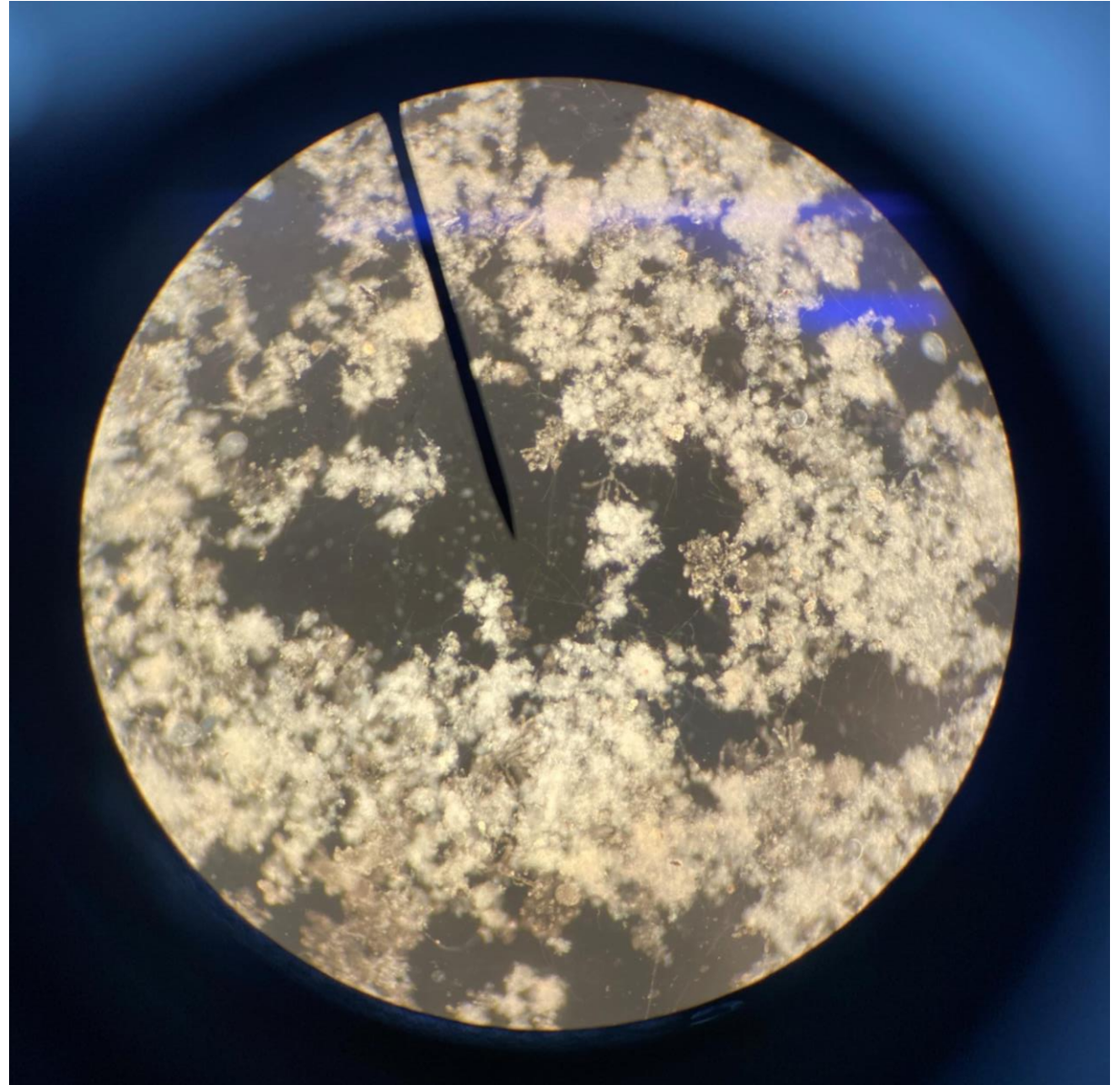
Exo-polysaccharides

Bulking/settling issues

Similar to filamentous-must waste  
out

# Exo- polysaccharides

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# How did we cope?

Able to purchase a new press for volume-but still had settling issues

Tried using polyaluminum chloride (PAC)

- No major impact in secondaries
- Changed to primaries-saw impact, but dropped out too much BOD

SIU recently reduced production of Tempe

- Saw immediate improvement in settling and TSS





# Hidden Trouble

# Chlorine

Right around time of settling issues

Strong odor of chlorine/hypo emitting from Industrial Pump Station

- Inconsistent

Shock to micro observed under microscope

Poor process control/troubleshooting

Feb 07 2022: Random sample of industry, observed high Cl<sub>2</sub> residual in their EFF (out of range)



# Chlorine

2/08/2022 Tested INF,  
PE, EFF found residuals  
in all

Current chlorination  
system was dismantled  
and offline due to upgrade

Contacted SIU, they  
advised they used bleach  
at night during cleanings  
but <5gallons

2/09/2022: SIU EFF  
manhole 13.4mg/L Total  
Cl<sub>2</sub>

# Chlorine

Emergency meeting with SIU

SIU added new cleaning program as not meeting cleaning regulations

Added 2+ pounds of pure chlorine during 0530-0700 every morning

Advised SIU they must halt new cleaning program and use acid wash (neutralized by their new pH neutralization tank)

Advised must monitor and log Cl<sub>2</sub> residuals every hour

# Chlorination



SIU refuted stating Cl<sub>2</sub>  
is not in their permit

Uranium

Required to  
dechlorinate if they  
wanted to continue to  
use high chlorine  
dosing



# Problems?

- Pass through
- Process control-sensitive micro
- **“Discharges with high chlorine residuals can present an imminent endangerment to the health and welfare of persons working in the system, property located in the collection system/wastewater facility, and the overall treatment at the wastewater facility.”**

# Conclusions

We were on-top of SIU

No major issues observed

Permit compliance

Process control/Stress

# Conclusions

Pay attention to your industries

Pay attention to odd process issues  
and take time to investigate

SAMPLE SAMPLE SAMPLE

EPA/DEP are your friends!





Questions/Comments?