



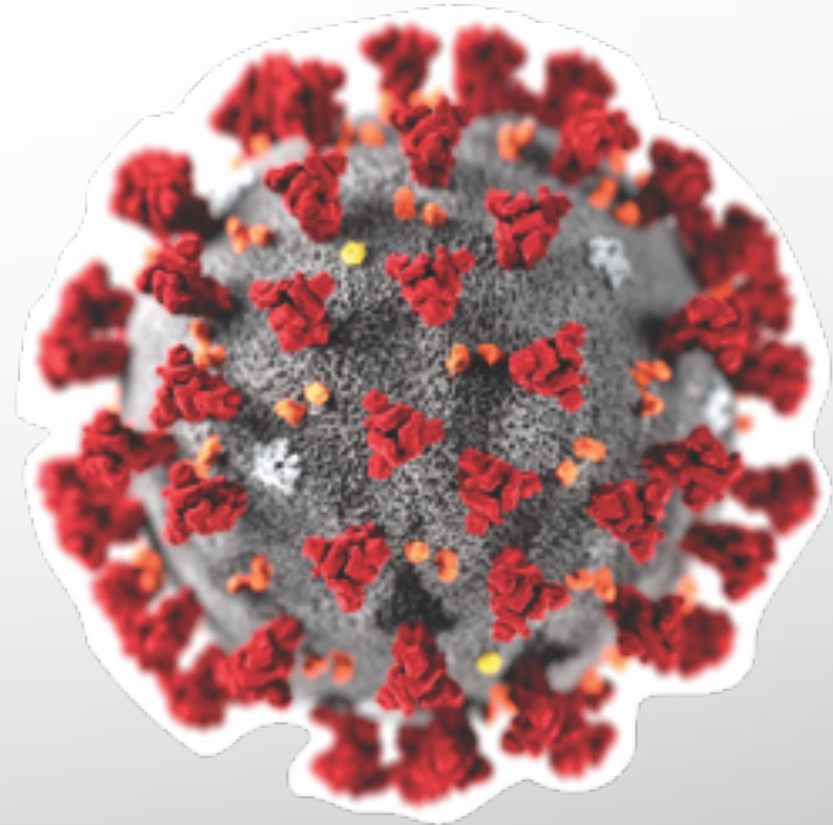
Wastewater Challenges Amid COVID-19

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COVID-19 AND YOUR WASTEWATER FACILITY

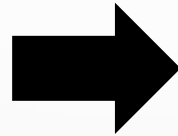
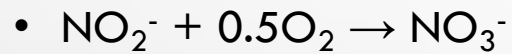
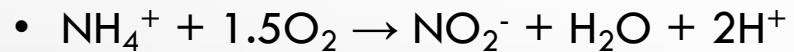
- The growing threat of COVID-19 has created a new set of problems for the wastewater industry
 - Increased use of baby wipes
 - Alternatives to toilet paper
 - **Problems with nitrification**
- The most likely cause is increased loading of surfactants, disinfectants and sanitizers
- So what now?



NITRIFICATION

- Nitrification is essential in wastewater operations

- It is the conversion of ammonia to nitrate



- Domestic sewage typically has 20-40 mg/L of ammonia

- Effluent limitations on ammonia vary by state

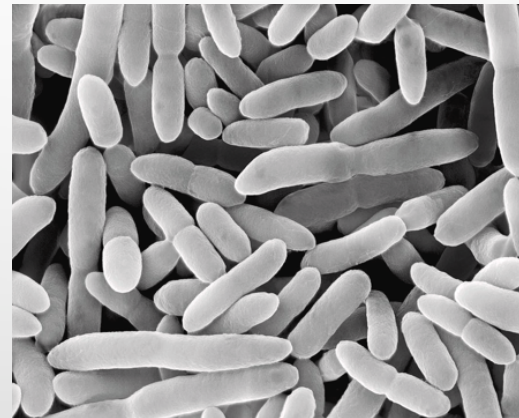
- Without nitrification, there is no ammonia removal leading to fines from state regulators and polluted waterways

- Ammonia may be toxic to fish at concentrations as low as 0.02 mg/L

FRAGILITY OF NITRIFYING BACTERIA

- Nitrifying bacteria are a very sensitive lifeform
- Healthy populations of nitrifiers thrive only in very specific conditions
- Nitrifiers respond to tiny environmental changes and may be faltering under the increased load of sanitary products to wastewater facilities

	Functional Range	Optimal Range
Temperature (°C)	10-45	28-32
pH	6.5-8.5	7.2-8
D.O. (mg/L)	0.5-1.5	1.5-4



WHAT YOU CAN DO

- Nothing
 - Wait and see what happens
 - Sometimes nitrifiers recover on their own
- Risky
 - Violations in ammonia limits
 - WETT test failure
 - May have to write a letter to your state regulators
 - Fish kill in receiving water = bad press



WHAT YOU CAN DO

- Make an operational change
 - Increase the amount of RAS
 - Doesn't work if the nitrifying bugs are already dead



WHAT YOU CAN DO – OUR RECOMMENDATION

- Introduce a new community of nitrifying bacteria
- 1) Sludge transplant
 - Can be risky
 - You never truly know what you might be getting from other facilities
 - Filamentous bacteria



WHAT YOU CAN DO – OUR RECOMMENDATION

- 2) BioLynceus[®] ProBiotic Scrubber[®] NN
 - Safely reintroduces a diverse population of nitrifying bacteria to your wastewater facility
 - Good, clean bugs



PROBIOTIC SCRUBBER[®] NN

- ProBiotic Scrubber[®] NN is engineered to enhance nitrification by using several different species of nitrifying bacteria – IT'S ALIVE!
- Having ProBiotic Scrubber[®] NN on hand to reseed your plant quickly when required is a good proactive strategy
- Ordering ProBiotic Scrubber[®] NN now can provide much needed insurance for your wastewater facility



PROBIOTIC SCRUBBER[®] NN

- Available in 5-gallon pails, 30- & 55- gallon drums, 275- & 330-gallons totes
- Ready to ship today



CONTACT US

- BioLynceus is a family-owned business in Estes Park, CO
- Our business hours are M-F from 8 AM – 5 PM (Mountain Time)
- Call us today at (970) 586-3391 to talk about your wastewater challenges or visit our newly renovated website BioLynceus.net



ONLINE Q&A

Public Service Announcement: Wastewater Nitrification Amid COVID-19



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Jason D. from Biolynceus, LLC
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