KNOWING WHAT'S IN YOUR WASTEWATER

By Kevin Maine

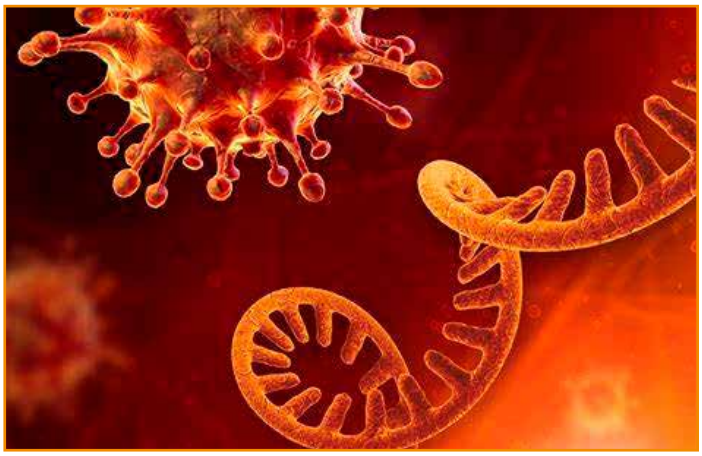
Over the years, we've been asked to sample our waste streams for various items. We've always tested for BOD, TSS, temperature, and pH in both our influent and effluent, along with many other newer compounds.

For the last two years we have been experiencing a COVID-19 pandemic. During this time, there has been a push to begin sampling our wastewater for various strains of COVID. In most cases this has been on a voluntary basis.

However, recently in the Binghamton area (Cortland, Chenango, Tioga, Broom, and Delaware counties) The Department of Health will be examining their wastewater. The plan is to expand monitoring to all 62 counties in New York. See the article from WNBF New York to Test Counties' Wastewater for COVID Variants · NewsKudo (https://www.newskudo.com/new-york/cortland/coronavirus/9324154-new-york-to-test-counties-wastewater-for-covid-variants)

Sampling in most cases is a 24-hour composite sample. However, in some cases a 6-hour composite may be collected. Samples are collected at the influent and can coincide with monthly BOD5 sampling schedules. As with any sampling protocol there is always a chance of sampling errors. These include but are not limited to the following errors: contaminated or dirty sampler (samplers should be disinfected between each use) samples stored at improper temperature (4ºC). The most common problem operation specialists are noting is the impact of I&I on the samples. Shipping samples. The laboratory provides sample bottles, labels, ice packs and insulated shipping container. A 250 mL aliquot is siphoned from the composited sample packed in ice and shipped to the laboratory.

The COVID and other viruses cannot live outside a host for any length of time. Laboratories will be looking for the remains of COVID or the RNA (ribonucleic acid). There are four result classifications. Non detect # of RXN = 0. Detected but not quantifiable RXN ≤3.



This is usually an indication an early/latent outbreak depending on the community population size. Quantifiable RXN = 3 indicating active transmission needing immediate remediation. Finally, unable to determine. This can be caused by sample errors, I&I, etc.

Now that testing is becoming somewhat more reliable – what do we do with the data? Sampling and testing may only give us a five-to-ten-day window to react. How will this impact public health? Hopefully these tests will help us return to a pre-pandemic norm.

At the time of this publication, we will have had several of our apprentices graduate the program. A congratulatory shout out to all those who have completed the program thus far! 💦💦💦

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