



Covid-19 Disinfection and Sanitizing Impact on Wastewater Treatment Plants

Due to Covid-19 (Coronavirus) throughout the world, health officials, government leaders and others are recommending the use of disinfectants and sanitizers to clean hands and contact surfaces on a regular basis in order to reduce the transmission of this virus. These cleaning measures will most assuredly help with reducing the transfer of the disease but may undoubtedly have a negative impact on the microbiology in the sewer system and the downstream biological wastewater treatment facility.

Unintended Consequences

The increased use of these products is designed to kill off microbes of all types including pathogens. However, the “good” bacteria that are required to successfully remove contaminants at the wastewater treatment plant will also be negatively impacted. If the concentration of these anti-microbial products is too high in the wastewater treatment plant, specifically the biological portion of the plant (both anaerobic and aerobic processes), the bacteria that are used to reduce BOD (organic material) and nutrients (nitrogen and phosphorus) in this process could be severely reduced or even “killed off” and the treatment process will be incomplete. This could lead to effluent discharge (the “treated” water leaving the facility) that does not meet the treatment objectives and could harm the receiving body of water (creek, stream, river, pond, lake, ocean). Other negative impacts could be increased such as, odors, increased chemical costs, maintenance issues and other operational issues.

The Cause

Disinfectants and sanitizers usually fall into one of three categories:

1. Strong oxidizers (chlorine, ozone, peracetic acid)
2. Quats (quaternary ammonium compounds)
3. Alcohols (isopropyl or ethyl alcohol)

Strong oxidizers generally react with organic matter quickly and may be inactivated during equalization or anaerobic/anoxic conditions. Alcohols are only disinfecting at very high concentrations; dilution in the plant and biodegradation will usually reduce the concentration sufficiently to prevent negative effects. Quats however, may be used at high concentration (hundreds of ppm) for sanitizing but will have inhibitory effects on bacteria at low ppm concentrations. They will only slowly biodegrade in a typical wastewater treatment plant and therefore have bioaccumulative properties. Unfortunately, users of these products often overuse them or improperly dilute them per instructions allowing higher concentrations entering the wastewater treatment plant to cause problems.

A Solution

Bioaugmentation, the addition of beneficial bacteria from an outside source, can be used to supplement the bacteria in the biological portion of the treatment facility, to restore the health and stability of the bacteria and other microbiological components (biomass) which may be suffering due to the use of these disinfectants and sanitizers.

Specific microbial products have been developed that can be used for bioaugmentation. These products can be used to supplement the bacteria in the sewer system or wastewater treatment plant for very specific treatment objectives including BOD (organic material) removal, nutrient (nitrogen and phosphorus) reduction, odor elimination and many others. An examination of the treatment system and its operating data will allow for the selection of the most appropriate bioaugmentation product to be used. Every treatment plant is different (in design, flow rate, operating characteristics, treatment objectives, personnel, etc.) so understanding the operation of the plant and its capabilities is imperative. By diagnosing the problems of the treatment plant, the most appropriate solution can be selected and applied.

For more information contact your Monera Technologies Corporation representative or distributor.

