

F:M Treatment with Candy Carbon® at an Activated Sludge Plant

Many wastewater systems experiencing high infiltration and inflow (I&I) have issues with hydraulic overloading, which can impact biomass stability. I&I can impair the capacity of wastewater collection systems and wastewater treatment infrastructure.¹

Increased flows in the collection system contribute to hydraulic overloading at wastewater treatment facilities. This disrupts the biological treatment process by diluting the organic carbon supply available to the biomass at the plant. Without a high-strength organic food supply, the growth and metabolism of wastewater-processing microorganisms are inhibited.

Wastewater treatment facilities may struggle to comply with state and federal water quality standards due to high I&I. The following case study details the application of Candy Carbon® at an activated sludge plant (ASP) to improve biomass stability after I&I washouts.



Figure 1. Google Earth image of the 2 MGD ASP experiencing washout events due to I&I.

A 2 MGD ASP in a mountainous area of Arizona was having trouble processing wastewater after large precipitation events and during spring snowmelt. After a surge of stormwater or snowmelt entered the system, organic carbon levels decreased, starving the biology in the treatment process. Facility operators suspected that the system was experiencing increased I&I following these events. To sustain biological treatment at the plant, facility staff added an organic carbon source to the return activated sludge (RAS) stream. The first product they used required a very high application rate and had minimal impact on increasing the biomass in the system. Seeking a new organic carbon supplement, the plant supervisor contacted the wastewater experts at BioLynceus®.

The ASP began injecting CC into its RAS during periods of increased I&I. After the first two applications of CC, facility operators were impressed by how quickly the biomass recovered from the washouts. They needed less product than before to restore the biological treatment process.

The head wastewater operator at the plant reported that the facility applied 75% less CC than the previous product. As a result, injecting CC was much easier and less time-consuming than implementing the prior treatment.

BioLynceus® helped minimize storage space, application time, and treatment recovery time. CC provided the wastewater system with an adequate organic carbon source to support the biomass during periods of elevated I&I. The facility continues to use CC during the winter and spring months to improve the efficiency of its biological process.

¹ National Small Flows Clearinghouse West Virginia University. (1999, spring). Infiltration and Inflow can be Costly for Communities. Pipeline, 10(2), 1-8.