## ANAEROBIC DIGESTER AND AEROBIC MBR FOLLOWED BY REVERSE OSMOSIS FOR WHISKEY MANUFACTURER

A whiskey manufacturer needed a wastewater treatment system to reduce the very high organic content (BOD and COD) as well as the solids content (TSS) of the wastewater stillage to achieve the demanding final treated water discharge standards.

The wastewater COD was 50,000 mg/l and the discharge requirement for COD was 100mg/l and the discharge requirement for copper was 15ppb. After reviewing potential treatment options Dynatec suggested to that an anaerobic digester followed by an aerobic (MBR) Membrane Bioreactor with reverse osmosis for final clarification was the best option for this project.

The anaerobic digester reduces COD 85% and MBR reduces COD 99% and the RO system removes the balance of the COD and ensures reaching the very low requirement for copper. A membrane filter is used for pretreatment prior to the anaerobic system. The tubular membrane filter employed with the biological system is not dependent on the settling characteristics and produces very high quality effluent.

The equipment was containerized to make the implementation as easy as possible.