



Domestic Wastewater Treatment



Case Study

Waterview Mobile Home Park

Industry: Mobile Home Park

Location: Gloucester, Virginia

Capacity: 20,000 GPD (76 m³/Day)

Installed: 2018

This mobile home park required both capacity expansion and a more enhanced treatment process to manage the increased flow and the more stringent effluent quality. The existing MBBR was modified to an MBR.

The Approach

The revised approach centred on the addition of a membrane bioreactor (MBR) as the final biological treatment and solids separation step. This allowed the existing secondary clarifiers to be converted to post-anoxic reactors complemented by external carbon feed for enhanced denitrification. With the MBR located downstream of the expanded post-anoxic reactors, excess carbon can be added to ensure denitrification without concern for high effluent BOD and TSS. The MBR effluent reflects very low BOD, TSS, and turbidity and thus can be disinfected with UV light.

The existing Primary Clarifier was converted into an aerobic sludge digester.

The second Primary Clarifier chamber continues to provide primary solids separation and incorporates a Trash Tank to provide grit removal, primary solids and trash removal as well as hair, string, and rag control. An aerated wedge wire screen with 0.1" (2.5mm) openings and a grinder pump that allows the operator to manually pump down the Trash Tank and

discharge primary solids to the adjoining new Sludge Digester.

The MBBR carriers were removed from the Pre-Anoxic chamber to improve mixing and eliminate issues with carriers blocking the screens. The nitrification MBBR carriers remain, but the Post-Anoxic zone was emptied of carriers to again improve mixing.

Newterra then supplied a new MBR system in a 20-foot High Cube cargo container, constructed with insulated walls, heating and ventilation. This modular system was complete with new aeration blowers, membrane feed pumps, dual stainless steel membrane tanks, MicroClear MB3-1 membranes, permeate extraction, CIP system and controls. The old UV system was taken out and new UV units supplied with the Newterra package.

The system was ordered in March of 2018, and delivered in June 2018. Start-up was completed in July.

1.800.420.4056
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