

CASE STUDY

Rotomesh

Cauley Creek Water Reclamation Facility, GA



Upgrade to Pre-Membrane Screens Helps to Cut Maintenance Costs

Overview

Cauley Creek Water Reclamation Facility was built in 2002 near Atlanta, Georgia, to serve a community that includes a multi-million dollar residential housing development. The 5 MGD facility is one of the most advanced large-scale plants to use membrane bio-reactors, and it supplies much needed urban reuse water to surrounding irrigations customers.

Since opening, it has recorded a perfect environmental permit compliance record.

Problem

Originally, the plant used 2 mm band screens for protection of the membranes. Gradually the plant started seeing solids larger than 2 mm in the reactor basins. The band screen was allowing too many solids to pass, causing the membranes to foul faster than anticipated. The membrane modules had to be manually removed twice a year for cleaning, which was time-consuming and expensive.

Solution

Cauley Creek approached Parkson Corporation to resolve the by-pass issue. After visiting the plant and weighing different options, Parkson recommended its Rotomesh rotating drum screen with 1 mm openings. Research



shows that rotating drum screens with perforated plates are the most successful solution for pre-membrane screening. Stringy material such as hair and lint is harmful to membranes. Unlike other technologies, Rotomesh does not allow stringy material or other types of solids to line up with screen openings and pass through.

Cauley Creek installed two Rotomesh Screens downstream of the existing band screens in 2008. Both screens discharge material into a Helixpress shaftless spiral compactor that removes the excess water from the screened solids.

Results

Final results exceeded expectations. The Rotomesh screens removed an astonishing amount of solids, which had been making their way past the band screens. The following are some results of the removal rates of the 1 mm perforated Rotomesh screens following the 2 mm band screens.

| REMOVAL RATES | |
|--------------------------|-----|
| Total Suspended Solids | 9% |
| Biological Oxygen Demand | 11% |
| Fat, Oil & Greases | 14% |

The plant is also seeing an approximate 30% reduction in dewatering sludge removal, due to the Rotomesh's removal of in-organics at the head of the plant. The benefits of Rotomesh screens are clear for an MBR system:

- Extended overall membrane life
- Reduction in operational costs
- Better-quality sludge and reduction in sludge waste
- Decrease in maintenance of membranes, especially in cleaning

With the fine screens in operation, plant maintenance issues have significantly decreased. Cauley Creek uses two of Parkson's Pre-Membrane Rotomesh Screens and a Helixpress compactor as their pre-membrane screening solution.

Additional equipment was installed to aid in dewatering the screenings, which reduced the screening weight by an additional 20% and provided more cost savings.

The plant performs well, and operators welcome visitors by appointment.

For more information on the plant or Parkson screens, please contact Serdar Umur at Parkson Corporation at 1.847.477.4563 or SUmur@parkson.com. ■



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