Beachside Condos Upgrade to ReCip

On the Crystal Coast, ReCip replaces aging wastewater treatment systems, bringing homeowners peace of mind.

North Carolina’s Outer Banks are known for their pristine coastlines, scenic beaches and diverse wildlife. Properties along the Crystal Coast are popular, particularly when located right on the ocean, like Indian Beach’s 50-unit Windward Dunes community.

Unlike the old, rusty steel package plant previously running on-site, the ReCip system easily resolved recurring Nitrate issues for Windward Dunes, finally bringing the water within permit levels. ReCip easily lived up to all of the residents’ needs—efficient operation and ease of maintenance foremost among them. Other benefits include low energy usage, quiet running and (a clear priority) no unpleasant odors.

And all of this is done beautifully; with a design that can accommodate lush, aesthetic plantings, and materials that withstand the test of time. “We used to be in Hell, but this is absolute Heaven,” says property manager, Kevin Willis, who extolls ReCip technology’s minimal maintenance requirements. “We used to spend $25,000 a decade to rehab the wastewater treatment system. Now, we’re good to go for the long haul.”

Location
Indian Beach, NC

Project
Wastewater Treatment

Project Timeline
2008

Footprint
2860 sq ft

Hydraulic Capacity
20,000 gallons per day

Community Service
50 Condos

Technology Applied
ReCip Reciprocating Wetlands

Windward Dunes ReCip system, Indian Beach, NC
Technological Description

Reciprocating Wetlands are made up of pairs of adjacent cells, which contain plants and rocks. Treatment is brought about by coupling anaerobic, anoxic and aerobic environments within and between the cells via reciprocation—adjacent cells are alternately drained and filled on a defined and recurrent basis. The sequential fill-and-drain technique provides control of microbially mediated processes, such as nitrification and denitrification. Water drained from one cell is stored in the contiguous cell, and vice-versa. During the drain cycle, thin water films surrounding the dewatered substrate and attached biofilms are rapidly oxygenated to saturation values, creating aerobic conditions. When the partner cell is filled and the rocks are submerged, the aerobic biofilm turns rapidly anoxic. Depending on the specific wastewater needs, the treatment cells may undergo between six and 24 cycles per day.

Design Parameters - Local Standards

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<th>Parameter</th>
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Process Schematic

Site Plan

ReCip Treatment Cells