Circular screen separators protect disc centrifuges in domestic/industrial wastewater treatment system.

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Circular Screen Separators

Circular screen separators help protect disc centrifuges in domestic and industrial wastewater treatment systems.

Two Kason Vibroscreen® units used to collect hair. plastic and other material in the wastewater prior to Its transport to a centrifuge for clarification.

To protect its centrifuges from oversize material such as hair, plastic and gritty material, the Ocean County Utilities Authority uses circular screen separators that usually operate eight to 16 hours per day, seven days a week. Located in West Creek, N.J., the 20 mgd activated sludge, secondary wastewater treatment facility uses primary settling tanks, aeration tanks, final clarifiers and chlorine contact tanks to handle a combination of domestic and industrial wastewater from various townships in southern Ocean County. Because of its proximity to beaches along New Jersey's southern shoreline, recreationists boost the amount of wastewater that must be treated during the summer months.

Installed in 1977, the two 48 in. diameter circular screen separators alternate handling approximately 200 GPM of wastewater in the treatment system. In essence, they protect disc centrifuges used to thicken waste sludge from the final clarifiers. The centrifuge nozzle diameters of 0.08 in. would easily become clogged if oversize material entered the centrifuge. To prevent this from occurring, a Kason Vibroscreen a circular screen separator is located upstream of each of the two centrifuges.

The circular screen separators were first installed with 30 mesh stainless steel screens but the plant switched to 10 mesh screens which were found to be optimum. Solids content averages about one-half percent, ranging from 0.2 to 0.9 percent, according to Bradford R. Hazley, director of the southern division wastewater treatment facility.

Each separator has two screens in case the top screen breaks. This assures that maintenance personnel won't have to worry about cleaning out a plugged centrifuge -- a nasty half-day job. Screen breakage has not been a problem though, said Hazley.

Ocean County Utilities Authority; West Creek, NJ. Wastewater treatment facility handles wastewater without polluting the nearby ocean and recreational areas.

The hair, plastic and gritty material falls into a basket and is then taken to a landfill while the sludge and water are pumped from a sump to the centrifuge, explained Hazley. The concentrate from the centrifuge is routed to the treatment plant headworks and the thickened sludge goes to a primary anaerobic digester for stabilization. After passing through a secondary anaerobic digester and sludge dewatering system consisting of two solid bowl centrifuges, the sludge is disposed of in a landfill. '

Final clarifier effluent passes through chlorine contact tanks for disinfections before being pumped to an ocean out fall which extends more than a mile from the shore.