
Siemens Water Technologies reveals new walnut shell filter

Thursday, 02 Jul, 2009

Siemens Water Technologies has developed a new, compact walnut shell filter for offshore oil and gas applications. The proprietary filter design requires no moving equipment to perform backwashes, and greatly reduces the volume of backwash water produced. This simplifies the design of the filters, reduces the weight and footprint, and lowers the cost of multiple filter systems, according to Siemens.

Walnut shell filtration was developed as a more suitable method of filtering free oil and suspended solids in applications where sand filters have traditionally been used. Today, walnut shell filtration is used to treat oil field produced water, refinery wastewater, and other types of wastewater.

The filter uses raw process water and gas or air for backwashing, eliminating the need for moving mechanical equipment or external scouring equipment. The filter operates at up to twice the flux rate of conventional filters in the same application, and can remove more than three times the amount of solids before needing to be cleaned.

During the filtration cycle, dirty process water passes through the filter from top to bottom. As the water passes through the walnut shell media, free oil and suspended solids are removed. After 24 hours of filtration, the dirty process water is redirected and pulsed into the bottom of the vessel to fluidize the media bed. In addition, air or process gas is added in a proprietary manner to create an airlift pump. The pump lifts the contaminated media to the top of the vessel where the turbulence of the backwash water and gas separates oil and suspended solids from the walnut shells. The use of air or gas greatly reduces the amount of backwash water required. The mixture of air or gas and backwash water is separated in an external vessel. One separator vessel can be used for multiple walnut shell filters. Upon completion of the backwash cycle, the flow of dirty process water is again returned to the top of the vessel.

(Sourced from www.offshore-mag.com)

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