

عنوان مقاله:

Application of an innovative induced gas flotation (IGF) system for oil-water separation at oil production sites

محل انتشار:

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خلاصه مقاله:

Petroleum industry is a major source of oily wastewater. If cleanup goal is protection of the environment by application of offshore/onshore environmental discharge regulations, relying on conventional gravity-based systems such as API (American Petroleum Institute), CPI (Coalescing Plate Interceptor) and skimmer tanks are not advised. Currently the flotation process is attracting much attention for produced water cleanup due to its high separation efficiency, low capital investment and low operational costs. Meanwhile, Induced Gas Flotation (IGF) process is preferred to other flotation devices such as Dissolved Gas Flotation (DGF) systems because of its small footprint and high efficiency. In this article, the results of an innovative IGF pilot plant for the treatment of synthetic produced water resembling the Kharg Island oil refinery/ terminal produced water which contains an average oil content of 150 mg/l and total dissolved solids (TDS) up to 300 g/l are presented. The results of the innovative IGF system (which could be referenced as the first pilot plant IGF system in Iran), showed that oil removal efficiencies up to 90% is reachable in high temperature (100oC) in just a single flotation cell without adding any chemicals such as flotation aids. This process however meets Kuwait Convention concerning marine pollution resulting from exploration and exploitation of the continental shelf for Persian Gulf area when followed by one or two other flotation cells in series as usually is performed in oilfield installations.

کلمات کلیدی:

Induced Gas Flotation (IGF), Oily Wastewater, Power Consumption, Produced Water

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