

Air Flotation for Treatment Industrial Wastes Discharged to Coastal Area

Dr. Saleh Al-Muzaini

Kuwait Institute for Scientific Research, Kuwait

The most large scale industries in Kuwait are located in Shuaiba Industrial Area (SIA). Discharges from SIA are major sources of pollution in the sea area. The effect of industrial effluents on the marine environment were assessed.

To minimize the pollution level in the marine environment, steps were taken to establish a central wastewater treatment plant to include a dissolved air flotation unit (DAF), as a first step to remove oil and volatile organic compounds (VOCs).

The study was initiated to investigate and optimize the various processes of the treatment as well as to collect the data necessary to incorporate into the full scale design of the Shuaiba Industrial wastewater treatment facility.

An actual refining wastewater was fed at rate of 10 liter/min into a pilot plant with 592 liter DAF unit with a pressurizing pump and retention tank to allow a contact between the air bubbles and soil particulates.

Results indicated that liquid detention time and air/water ratio are important factors affecting stripping the organic compounds from industrial effluents. An air ratio of 0.5 was observed to have higher removal of organic compounds to more than 99%.