

## E -03-Sour Water Stripper



Taravosh Jam Co. is a Manufacturer in Iran & Middle East for the design and fabrication of the sour gas water stripper.

Sour water is the wastewater that is produced from crude distillation columns at refineries. Hydrogen sulfide and ammonia are typical components in sour water that need to be removed before the water can be reused elsewhere in the plant.

### Gas strip deaerators

Where natural gas is available, gas stripping via the **gas strip** deaerators may be used. Gas stripping **deaerator** is packed bed—back mixing of the gas phase as a result of the high liquid to gas ratios for deaeration.

### Sour Water Stripper

The sour water stripper is designed to remove  $H_2S$  and  $NH_3$  from process water. This process is done by contacting the sour water with stripping steam in a packed bed. The massive void volume and low-pressure drop of packing help to alleviate scaling, fouling, or foaming. Gas stripping requires that the sulfides and ammonia are both present in the gaseous form. The ideal pH for stripping  $H_2S$  is below 5. For pH above 5 sulfides are primarily found in the form of ions ( $HS^-$  or  $S^{2-}$ ). Efficient ammonia stripping requires a pH above 10 to prevent the formation of ammonium ( $NH_4^+$ ) ion that cannot be stripped.

We are using a pH around 8, which allows adequate removal of both gases. Injecting caustic near the bottom of the tower improves the ammonia stripping while still allowing sulfide stripping at the top.

