

FPSO Saxi-Batuque (150,000 BWPD)

Process:	Sulphate Removal
Client:	Single Buoy Moorings Inc.
Country:	Monaco, Switzerland, Angola
Contract Description:	Supply of membrane plant for sulphate removal
Contract Date:	May 2006
Contract Completion Date:	July 2007
Capacity:	150,000 BPD (23,850m³/day)
Sea Water Conversion:	75%
Sea Water Feed Quality:	36,000 mg/l (tds)
Fresh Water Output Quality:	≤ 40 mg/l sulphate

Project Description:

The Project is for the design and supply of a seawater treatment plant sized for 150,000 BPD (23,850 m³/day) of low sulphate water for FPSO Saxi-Batuque, which will operate in the Block 15 Field, offshore Angola.

The Project scope consists of a multi-skid arrangement comprising: Guard Cartridge Filtration, HP Feed Pumps, Sulphate Removal Membrane System, Chemical Cleaning System, Chemical Dosing Systems, Control Valves and Instrumentation. A Service Water System is also provided, sized for 12,075 BPD.



Process Description:

Fine filtration is achieved by a set of cartridge filters to provide fine filtration down to 5µm prior to membrane trains. The set of cartridge filters supplies feed water for three (3) trains.

The conditioned water, boosted to the required feed pressure, enters the Sulphate removal trains. Each membrane train is fitted with pressure vessels containing SR90-400i nanofiltration elements. A recovery of 75% is achieved by a 2:1 brine staged configuration. Brine reject from the process is discharged overboard, while the low Sulphate permeate is routed to a vacuum deaerator (provided by others). A dedicated clean in place (CIP) package, consisting of cleaning tank, pump, heater and cartridge filter vessel is provided for membrane cleaning purposes. A SWRO package plant is provided to supply wash water for the main process plant. Chemical Dosing systems for the SRP system and the Client supplied equipment (pre-treatment and deaerator) are also provided.