

Petrobras P51 (283,020 BWPD)

Process: **Sulphate Removal**
Client: **Petrobras P51**
Country: **Brasil**
Contract Description: **Supply of Sulphate Removal System**
Contract Date: **November 2004**
Contract Completion Date: **September 2006**

SRP Capacity: **283,020 BPD (45,000m³/day)**
Sea Water Conversion: **75%**
Sea Water Feed Quality: **36,000 (tds)**
Product Water Output Quality: **<100mg/l sulphate**

Project Description:

The Project is for the design, supply of a seawater treatment plant sized for 283,020 BPD (45,000 m³/day) of low sulphate water.

The Project scope consists of a single lift module arrangement comprising: Coarse inlet strainers, Vacuum Deaerator package, HP Feed Pumps, Guard Cartridge Filtration, Sulphate Removal Membrane System, Chemical Cleaning System, Chemical Dosing Systems, Control Valves and Instrumentation.



Process Description:

Inlet feed is first coarse filtered and then oxygen is removed by a vacuum type deaerator package. 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 six (6) 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 the plate heat exchanger and vacuum deaerator (both 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.