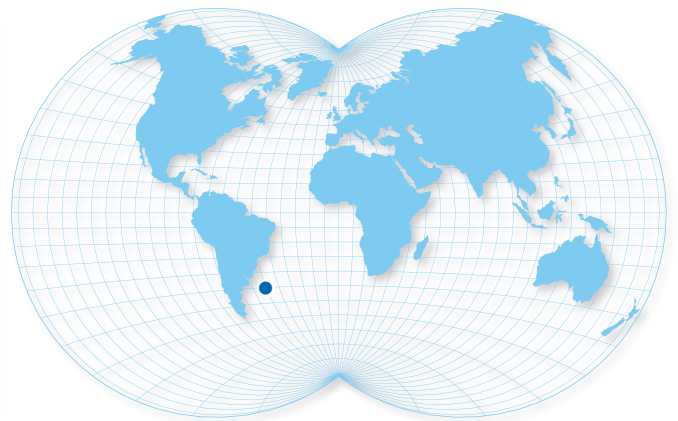


CERNAMBI SOUTH FIELD, BRAZIL:

FPSO Cidade de Mangaratiba MV24 Spread Mooring



Scope of Work

SOFEC designed and procured a spread mooring system for the FPSO Cidade de Mangaratiba – MV24 located in the Cernambi Sul field in Santos Basin.

The FPSO is capable of processing 150,000 barrels of oil per day or 180,000 barrels of total fluids per day, 8,000,000 Sm³/d of gas and has a storage capacity of 1,600,000 barrels. The FPSO is able to inject 240,000 barrels of water per day.

The FPSO is able to accommodate a total of 55 flexible risers and umbilicals. The FPSO is also able to accommodate 15 steel risers instead of the 15 flexible pipes serving the production/gas injection wells.

The SOFEC spread mooring system is ABS classed.

General Description

Client Name:	Petrobras
Contract Award:	September 2011
Installation Date:	September 2014
First Oil:	November 2014

Vessel Size:	300,000 dwt
Storage Capacity:	1,600,000 bbls
Water Depth:	2,220m (7,283ft)

Design Environmental Criteria (100-year storm)

Sig. Wave Height:	11.6m (38ft)
Wind Velocity:	34.5m/s (67.1 kts)
Current:	1.67m/s (3.24 kts)

Mooring System

- 24-leg synthetic polyester/chain system arranged in four (4) sets of six (6) anchor legs
- Torpedo piles supplied by owner

Riser System

- 1 x Fiber Optics Cable
- 21 x Function Electrical-Hydraulic Umbilical
- 10 x Service Flexible
- 10 x Oil Production Flexible
- 1 x Gas Export Flexible
- 5 x Gas Injection Flexible
- 7 x Water Injection Flexible