Newly discovered Reserves exploited using Sulzer Multiphase Pumps in Siberia

Two Sulzer multiphase pumps were commissioned on the Samatlor field in Siberia in Spring 1998 to facilitate the development of significant new reserves were discovered in previous years.

Sulzer Multiphase Pumps

The Sulzer MPP range of pumps are of the helico-axial design originally developed from the Poseidon research programme.

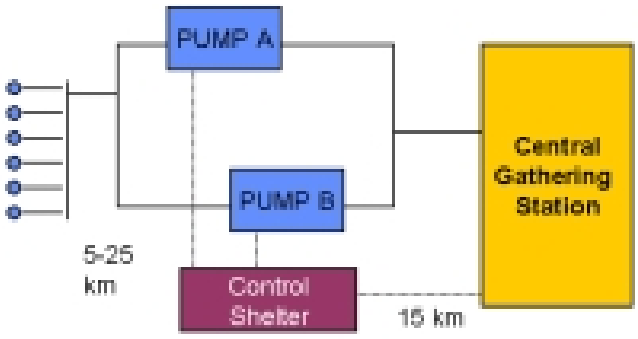
Pump capacities of 500,0000 bpd total per pump are currently available.

Advantages of multiphase boosting

- The options for extending the development of this field were either a conventional separation system or a multiphase pumping station.
- Multiphase pumps were selected because
- They represent a cost effective solution (especially in remote or difficult environments
- The pumps will enable low pressure wells to produce to the existing facilities
- Compact infield installation
- No need for flaring
- Multiphase pump stations are suitable for unmanned operation and be controlled remotely

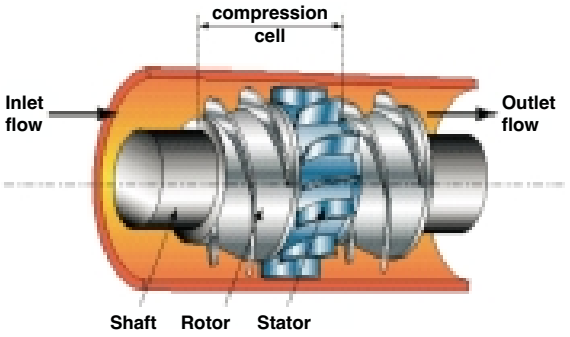
The Samatlor Multiphase Pump Installation

The pumps are located at distances of 5 to 25 km away from the pump station. There are two pumps each housed in a weatherproof shelter. The control / electrical shelter is located in a safe area. The pumps will boost the process well flow over 15km to the existing Central gathering Station.



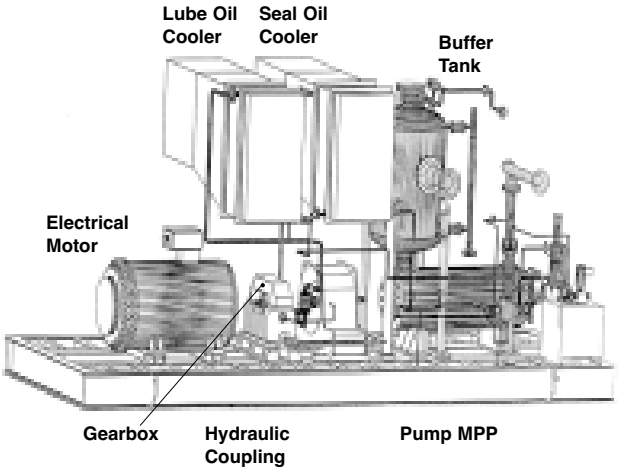
Poseidon helico-axial hydraulics

Helico-axial multiphase pumps offer a high degree of inherent hydraulic flexibility. They are also very tolerant of sand particles entrained in the wellstream.



Pump Specification

- Two off 60% pumps
- Total Capacity 83,000 bpd
- GOR 400 scf/bbl
- Water Cut 35%
- Up to 200mg/litre solids
- Motor Rating 400 kW
- Variable speed drive 1500 - 4000 rpm



Environmental Protection

- The pumps are installed in weatherproof Shelters.
- Each shelter is fitted with a fire and gas detection system
- Heating and ventilation systems are included
- The pumpsets are suitable for operation in ambient temperatures ranging from –45°C to +35°C

Winter in Siberia

The two pumpset enclosures.

The Siberian Summer

- The electrical shelter interfaces with the Central Gathering Station
- The electrical shelter houses the pump (PLC based) control panels and the LT distribution system

Future Development

- Two larger pumps multiphase pumps are currently under manufacture for the same field
- These will be installed 10km further away
- These will be sized for a total capacity of 150,000 bpd per pump and be driven by 2,000 kW motors.