

Multiphase Pumping In Bitumen And Heavy Oil Recovery

John Pacello*

LOP Inc., 775, 444 - 5th Ave S.W. Calgary, AB T2P 2T8
jpacello@lopinc.com

and

Derek Wilkinson P.Eng.
CNRL, Calgary, AB

ABSTRACT

Multi-Phase Pumps (MPP) successfully enhance crude oil production by lowering backpressure plus revive marginal wells and increase production several hundred percent. Economic payout is rapidly achieved. Multiphase production does not require any separation of crude oil, gas or water produced by the well. Separate pipelines are not required for moving of gas or liquids. The MPP unit acts as both a compressor and a pump eliminating the need for additional compressors.

Multi-Phase twin screw pumps are capable of handling a wide range of flows from 100% liquid to 100% gas or any variation between, with discharge pressures up to 1500 PSI.

A Typical twin screw MPP unit is a totally self contained pump system with pump, variable speed drive, full control and monitoring system, electric or internal combustion power source, skid mounted with building enclosure, suction and discharge piping to edge of skid.

The presentation will be in two parts:

- a) The first section focuses on the Multi-Phase pumping/compression technology, describing how the pump mechanism operates and examines how the MPP unit functions in various applications.
- b) The final section describes CNRL's site experience with a twin screw multiphase pumps in CSS (Cyclical Steam Stimulation) applications.