

Synchro-Smart™ Rodless PCP Lifts Heavy Fluid at 6,900 ft Depth

Reliable control of submersible permanent magnet and PCP operation

BENEFITS

- Low maintenance production for pump set at 6,900 feet (2,100m)
- Low profile aesthetics
- Environmentally friendly with low acoustic noise and low soil contamination

WELL BACKGROUND AND CHALLENGES

- Deep well with 35° inclination
- Heavy oil with 80% water cut
- Local authorities request system with low environmental impact

RESULTS WITH SYNCHRO-SMART™ RODLESS PCP

- Daily output of 57 BOPD



Megmeet production facility where the Synchro-Smart permanent magnet motor and subsystems are assembled.

Xinjiang field is located in Northwestern China, where in September 2018, Megmeet installed the Synchro-Smart™ Rodless PCP system in a new well.

The operator desired to use the Synchro-Smart system for a new well with heavy oil based on its suitability in directional wells, eliminating rods which are susceptible to wear out. The well fluid was relatively heavy with 80% water cut. The well depth was 7,000+ feet with a 35° inclination and kick-off point at 4,600 feet. Megmeet performed analysis on the Synchro-Smart Variable Speed Drive to confirm that the filtering was effective to manage any reflected wave and leakage current phenomena for use with the 7,000 feet of cabling. Upon confirmation that the system could reliably operate and receive the sensor data, the Synchro-Smart Rodless PCP system was installed with the pump set at 6,900 feet depth.

Additionally, the local authorities desired a system that would have low environmental impact on the area. With no surface moving parts, the Synchro-Smart system operates with no soil contamination and no audible noise. The submersible motor driven system eliminates the odor, the soil contamination and the noise associated with stuffing box leaks common to other lift methods. The small surface footprint of the system is also valued for improved aesthetics.

The Synchro-Smart system configuration for this application is driven with a 15 kW permanent magnet motor and is successfully operating to produce 57 BOPD. The constant torque characteristic of the motor enables motor start up and speed control for optimized production.