

**Impact Technologies LLC
2007 Proposal to the
Stripper Well Consortium**

Novel Low Rate, Electric Plunger Pump System

PUBLIC EXECUTIVE SUMMARY

Stripper wells, both oil and gas, need to lower costs as production decreases over time to maintain their economic life. Many stripper oil wells produce very low volumes (1-15 barrels per day) of liquid (crude oil plus water) and need only a low volume pump to produce these volumes to the surface. Many stripper gas wells need to remove low volumes of liquid out of the wellbore to maintain gas production. These processes must be done cleanly, efficiently, with low capital and operating cost and be environmentally friendly. Most of these well depths are less than 5000 ft and only require about one horsepower for these volumes. Such pumps for deeper wells are also needed.

To lift these low volumes of liquids out of these stripper wells, a downhole electric driven plunger pump is proposed. This unique pump will also have a unique deployment method. The pump will be installed through the tubing in the well, set in a fixed seat at the bottom of that production tubing all by a wireline which also serves as the electric power line. This pump can also be deployed inside casing or on the end of a coil tubing string (steel or composite). It will be pulled by the same wireline or coil after its productive life is over. Installation and retrieval will be by a coiled reel instead of a conventional service rig. Retrieval and “fishing” options will also be provided. Simple pump off controls will be deployed to start-stop the motor based on the fluid level in the casing to save pump life. Simple displays at the surface will provide performance readings as to pump/ motor stroke speeds and down times. Small (1/8) inch stainless steel tubing can be attached to the wireline for chemical injection (paraffin, scale, corrosion, etc...) at/through the pump. Pump designs will be optimized to minimize gas and solids interference through the pump.

Benefits of this unique pump include lower capital requirements since no pumping unit and no rods will be required, lower horsepower with no gear and rod losses, smaller surface foot print and profile than beam pumping units, no tubing wear and will work in bad casing. While it will be more expensive to purchase and operate (requires electrical power) than plunger lift systems, it will be more reliable and allow lower reservoir pressures to be obtained for extended well life and reserves. It will also work with less gas production than required by plunger lift systems. It can be reduced to fit in microholes or increased for higher production rates and/ or for deeper wells.

Such benefits will allow many of the 400,000+ stripper wells in the United States a longer productive life and provide significant additional gas and oil reserves for the public good.