

SWC 2007 PAAL. LLC. "PAL" CASING PLUNGER
"HYBRID CASING PLUNGER FOR MULTIPLE ZONE STRIPPER WELLS"

EXECUTIVE SUMMARY

This proposal offers to extend the efficiency of recently developed innovations in casing plungers into the critical application of stripper gas well production from multiple production zones. Current casing plunger applications are limited to fluid removal above the top perforations of any well bore. A plunger cycle starting at the bottom perforation would lose critical pressure as it ascends into the higher perforations, especially perforated sections longer than the casing plunger length. The essential pressure would leak around the casing plunger, out into the reservoir and back into the casing above the plunger through higher perforations disabling further ascent. Producers and casing plunger manufacturers have steadfastly refused to attempt such casing plunger applications. Even conventional tubing plungers experience this same limitation. Consequently, many stripper gas wells with multiple producing zones remove fluid accumulations with generally cost ineffective rod pumps and jacks. Small volumes of fluid are removed through the tubing and gas sales occur through the tubing/casing annulus.

Most producers co-mingle all producing zones permitted by statute. Producers see the cost benefit, and subsequent production increases, of fluid removal from the lower production zones. Producers frequently inquire at technical seminars, trade shows, and casing plunger presentations if casing plungers can be used below the top perforation to remove fluid from lower production zones.

This proposal will address this critical need in the stripper well industry. Tools will be designed and fabricated that will permit the removal of fluid from the lower perforations. Such tools will be capable of being set and retrieved with conventional wire line equipment. Further, such tools will permit the production of the fluid from lower perforations to be accumulated and held briefly above the top perforation. Subsequent cycles of a conventional casing plunger would further remove the fluids to the surface separation equipment. This cost effective method will permit the anticipated increase in production from stripper wells and enable better utilization of lease assets. Provisions will be included to record down hole pressures during the complete flow cycle for better technical evaluation of optimum performance.