# Can you Cope with the Pressure?

As global demand for oil continues to rise upstream energy producers find themselves under increasing pressure to retrieve crude from existing, proved reserves. Traditional sub-surface oil recovery methods that are most effective at first "tap" become less productive over time. Retrieval rates drop as wells are depleted, and producers are consistently tasked with finding new ways to reach deeper – such as water injection.  But bringing crude up from the depths using water presents challenges.  Without sufficient and consistent well pressure, producers are unable to extract the crude and keep pace with consumption.

Apache Energy is one producer with a global footprint that leverages water injection methods to boost well pressure and increase recovery rates. By pumping sea water into a well's cavity, Apache engineers increase the positive pressure on the crude.  This, in turn, forces crude to the top and improves the well's yield.  Controlling pressure can be a challenge though as fluctuations in pressure can hinder control and make an already hazardous job even more so. To help with these challenges, Apache looked to Yokogawa and Control Station.

# When a Picture Tells a Thousand Words
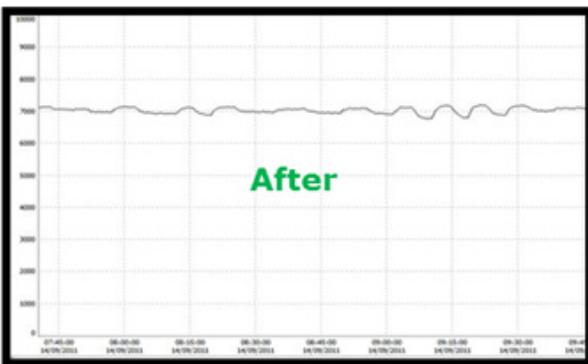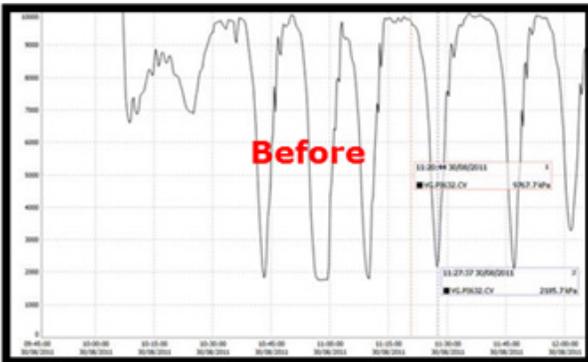


Engineers at Apache Energy were challenged by a water injection pressure system that was highly oscillatory. The system's performance not only impacted valve health but it also caused costly upsets to downstream processes. Depressurization and pressurization rates for the system were recorded at 11 and 19 bar/min respectively whereas its targets were 1.5 and 2.5 bar/min.  Knowing that performance was beyond an acceptable operational state, engineers investigated the root cause and isolated the controller's tuning parameters as the source of the issue.

csTuner Powered by Control Station integrated seamlessly with Apache's Yokogawa CentumVP DCS. csTuner Powered by Control Station integrated seamlessly with Apache's Yokogawa

CentumVP DCS.  Using this innovative software, engineers were able to accurately model the process' dynamics in spite of its oscillatory behavior. csTuner utilizes a patent-pending modeling innovation that eliminates the need for a steady-state condition.  It enabled the production engineers to regain control over this critical system.  Depressurization and pressurization rates were reduced to 1.0 and 1.3 bar/min respectively – well within appropriate safety and effective production levels. csTuner clearly stood up to this important pressure test.

**Finally – tune your facility's most complex PID control loops for optimal performance.**

Learn more about csTuner!
Contact us today at +1 (860) 872-2920 or sales@controlstation.com.