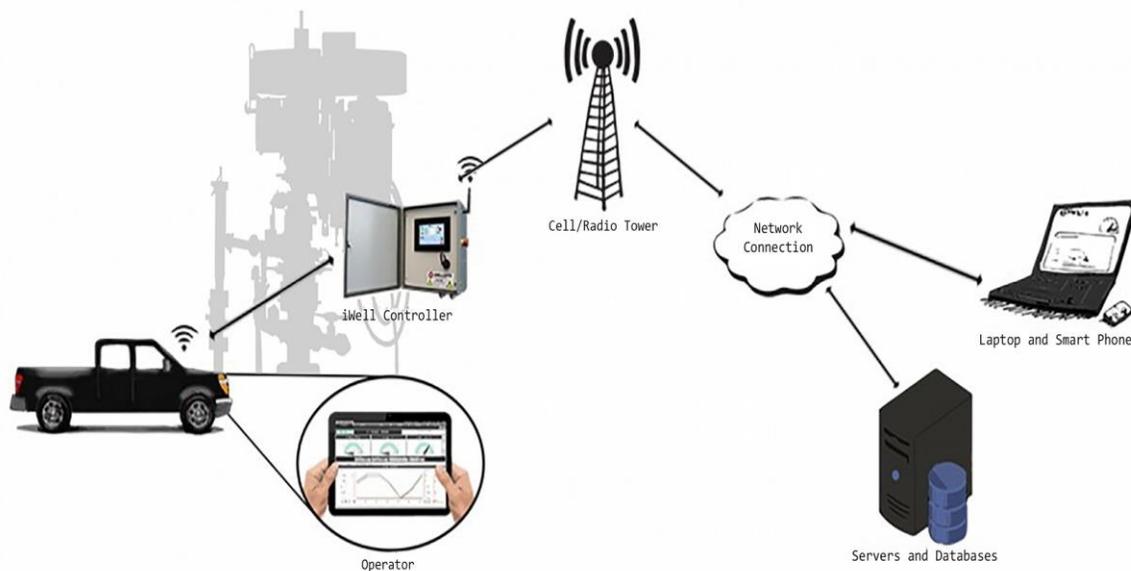


## iWell Operating System (iWellOps) Demonstrates the Value of Continuous Monitoring

### iWellsite Background

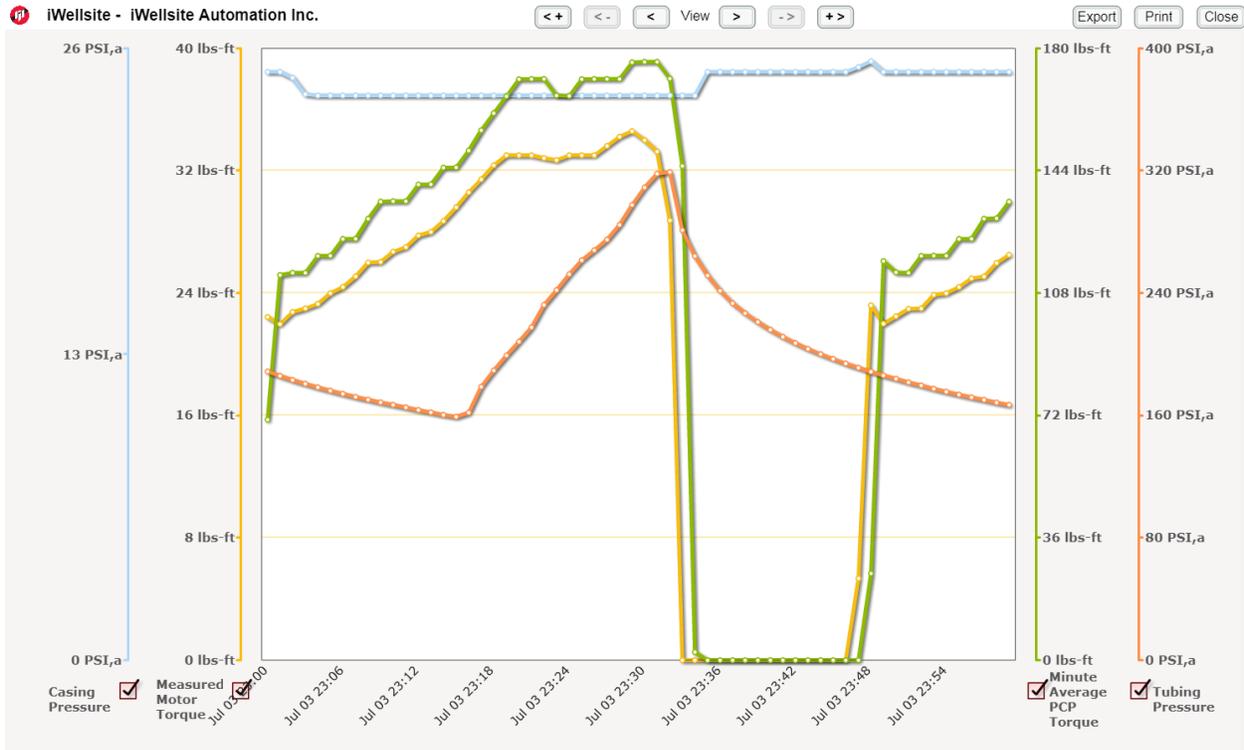
The iWell Operating System (iWellOps) uses the latest communication technology to quickly and reliably take critical data from your wells and field to a web based platform allowing field operations personnel, engineering staff and other decision makers the opportunity to make timely actions and informed decisions. Accessed through any mobile device, laptop, or desktop through a simple app, iWellOps places the ability to view, control and optimize any pump in any field in the hands of those required. Whether operated as an automatic control system or simply to monitor and alarm, the iWellOps will maximize your profits through increased production and reduced downtime.



**iWell Operating System Schematic**

In the early summer of 2017 an oil and gas company operating in SW Saskatchewan took advantage of iWellsite Automation's free trial program for the newly launched iWell Operating System. They placed 3 units on progressive cavity pumps in their Battrum field. One of the units on the 13A – 14 well, began alarming on the night of July 3<sup>rd</sup>.

The alarm was that the VFD for the pump had shut down, then restarted. The alarm repeated over the course of the evening and into the early morning of July 4<sup>th</sup>. Investigation following the alarm indicated that the flow line from the well had become plugged by a high viscosity emulsion, resulting in high flow line pressure and the well going down on high pressure. This was alleviated by batching a demulsifying chemical into the line and introducing a continuous injection program of the demulsifier. Subsequently the flowline and operations returned to normal.



Snapshot of graph from July 3<sup>rd</sup> showing spike in pressure (orange line) to shutdown point of 320 psi

Perhaps the most important learning from the information was that the VFD would shutdown for 15 minutes and then restart itself. This short interval of time did not allow the pump to complete its backspin cycle and resulted in a high torque start-up situation risking potential rod damage.





### Another shutdown sequence observed shortly after initial occurrence

The alarms and graphical evidence provided the company's operation team the information to quickly identify two potentially catastrophic problems at this well. By implementing a chemical injection program to reduce emulsion viscosity and reprogramming the drive to allow enough time for the full backspin cycle to complete, they could not only increase production run time, but also increase equipment life expectancy.

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