

PRIVATE SWD FIRM OPTIMIZES PRODUCTION THROUGH AUTOMATION

Firm cuts power consumption and extends pump life with NOV Guardian™ software from DNOW



► BACKGROUND

A saltwater disposal (SWD) operator sized and constructed a new SWD facility based on anticipated incoming flow rates and pressure, which were significantly lower than anticipated. The operator was not able to keep the pump capacity on the curve by utilizing a traditional back pressure regulator. The operator was utilizing the Guardian™ variable frequency drive (VFD) as a simple 'on/off' controller and not utilizing its smart Guardian™ capabilities.

► CHALLENGES

Unexpected Well Conditions

- Well injecting at lower pressure than anticipated
- Incoming flows significantly less than anticipated
- Incoming flows inconsistent

Unoptimized Equipment

- Pump running against back pressure regulator
- VFD capabilities not being fully utilized

► SOLUTION

DNOW Process Solutions utilized the Guardian™ technology in the operator's existing VFD to control an automated choke based on the pump curve and tank level.

- Implemented NOV Guardian™ HPS VFD for control of current pump system
- Installed NOV automated choke for back pressure control
- Programmed the Guardian™ to maintain lowest back pressure possible, while keeping pump on curve and protecting pump from damage

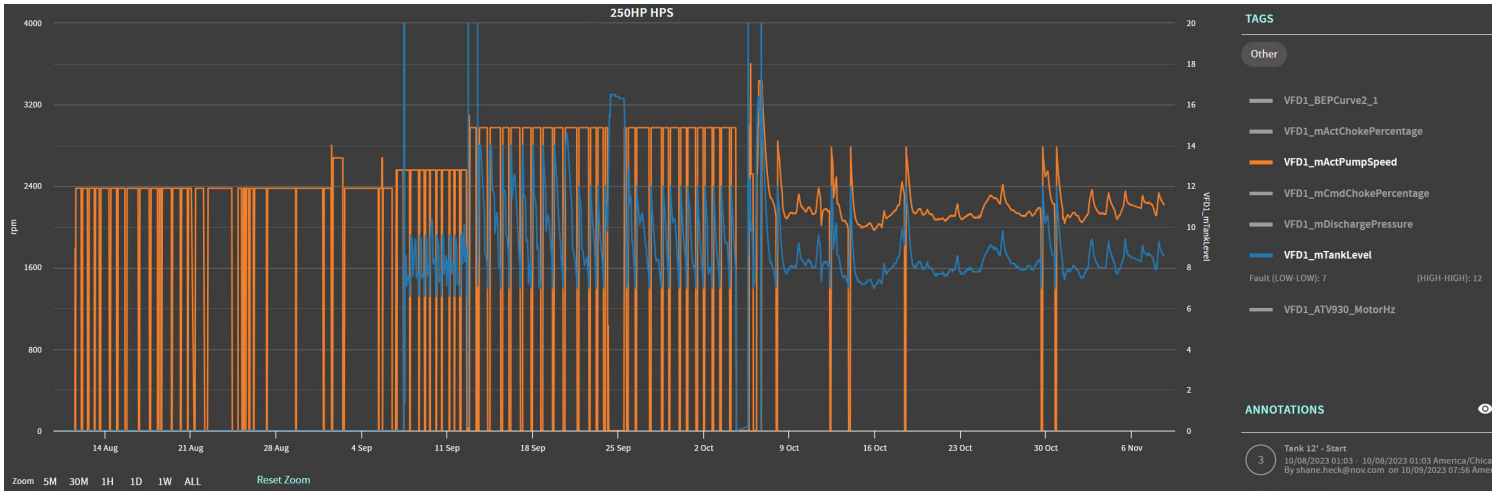
► RESULTS

This solution reduced up-front and operating costs for the SWD facility:

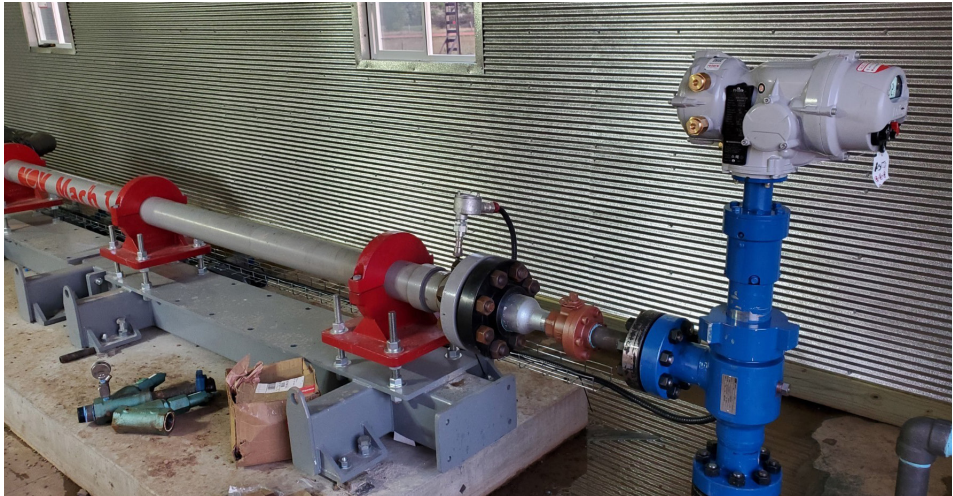
- Eliminated expense of a new pumping system
- Cut electrical consumption in half, saving over \$70k annually on one pump
- Reduced number of cold pump starts by more than 50%
- Minimized freezing potential by allowing system to run continuously
- Eliminated cost of manual site supervision through remote monitoring/control

\$75k saved
per year in electrical
costs - half of energy
costs

50% fewer
cold pump starts



This chart shows the history of pump starts and stops for the customer's HPS. In this case study, automation using the Guardian™ software begins just over halfway through the measured period, resulting in a greatly reduced number of pump starts and stops.



This HPS at the customer's SWD facility is equipped with an automated choke, controlled by the NOV variable frequency drive (VFD).



Current status is displayed on the NOV VFD screen through the Guardian™ software.



Current operating conditions are displayed in a dashboard view, showing flow, pump speed, discharge pressure, tank level, output and more.