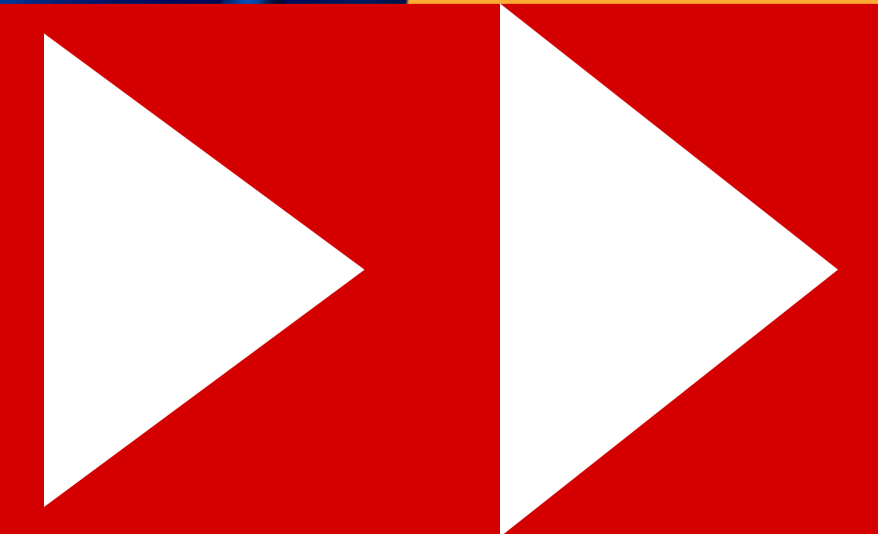




Sand Control in ESP using two-stages filtration system

Final run time 367 days

Case Study

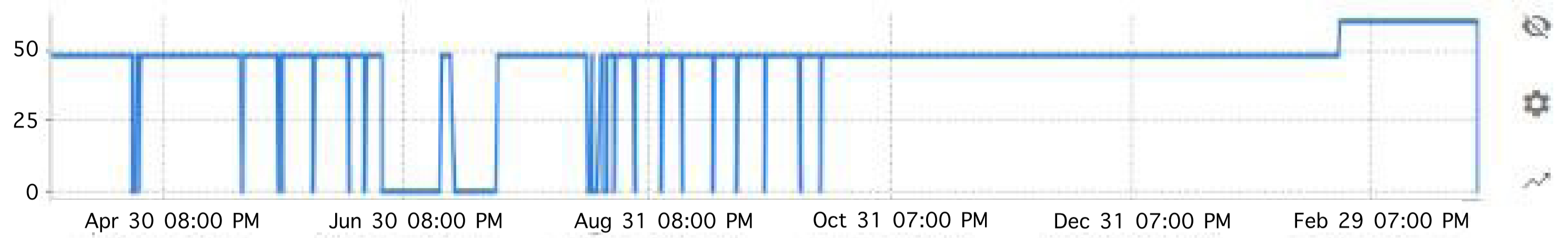


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Well Performance OSI's BHA Design

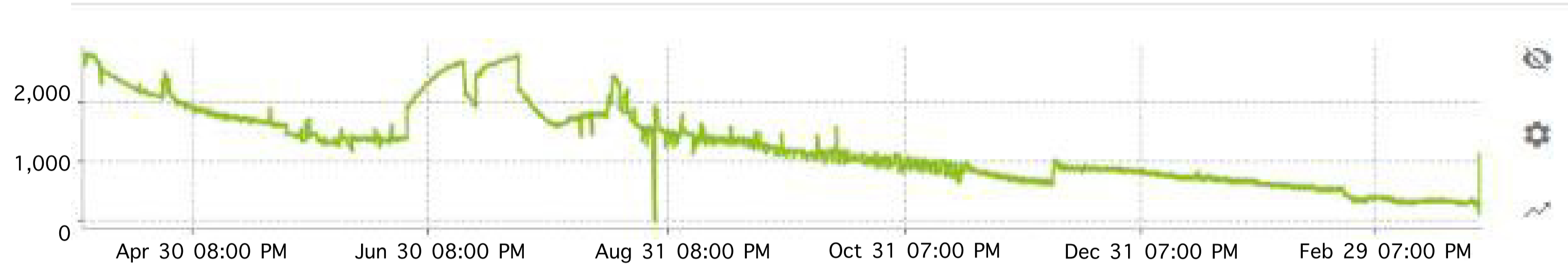
Motor Frequency - hz

√ 56.00 ^ 60.00 ◇ 60.00 44.62



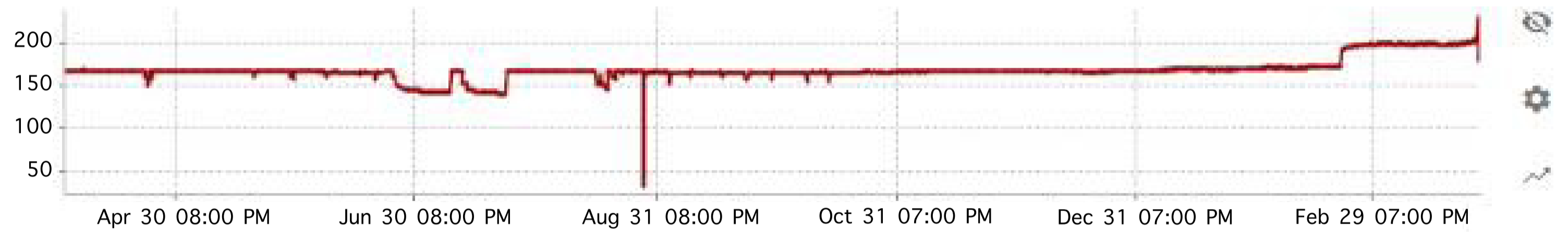
Pump Intake - psi

√ 0.0 ^ 2,797.0 ◇ 2,797.0 1,276.3



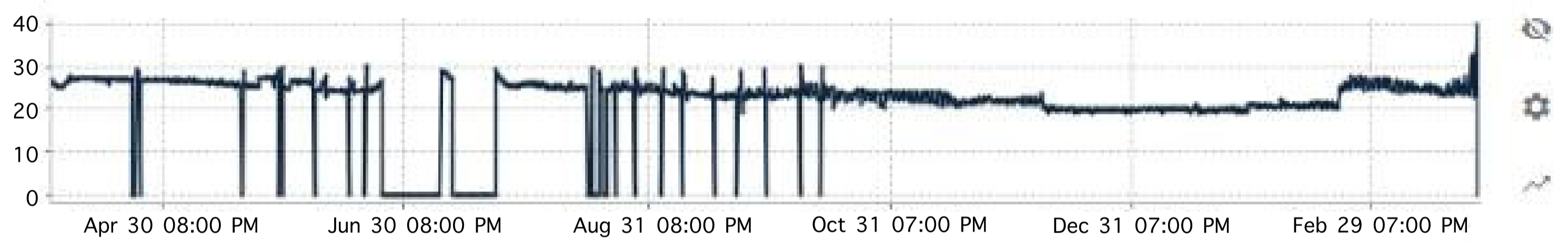
Motor Temperature - F

√ 32.0 ^ 230.1 ◇ 198.1 169.0



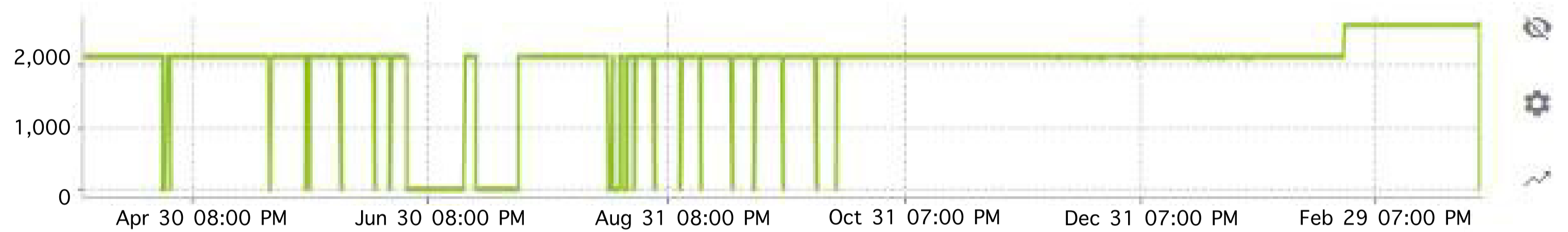
Motor Current - ampa

√ 0.0 ^ 39.7 ◇ 39.7 21.5



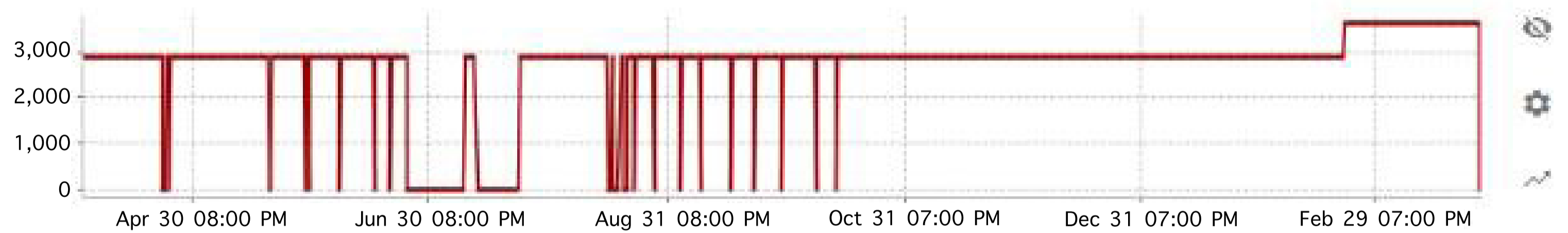
Motor Voltage - volts

√ 0.0 ^ 2,668.8 ◇ 2,668.8 1,977.7



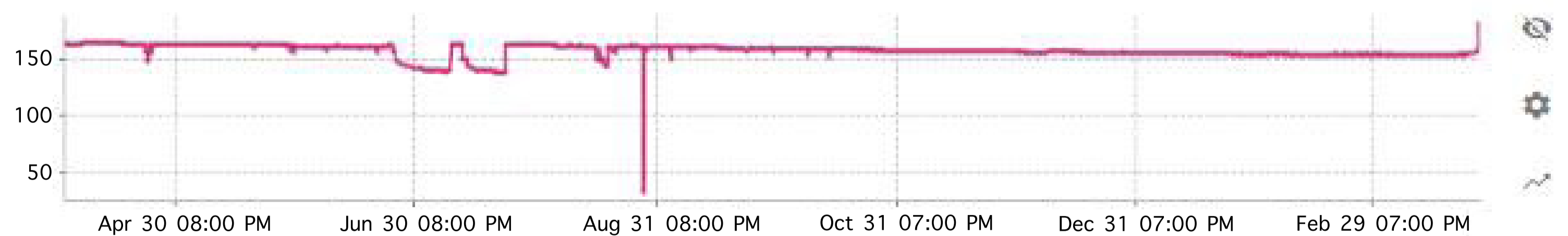
Motor Rpm - rpm

√ 0.0 ^ 3,600.0 ◇ 3,600.0 2,677.1



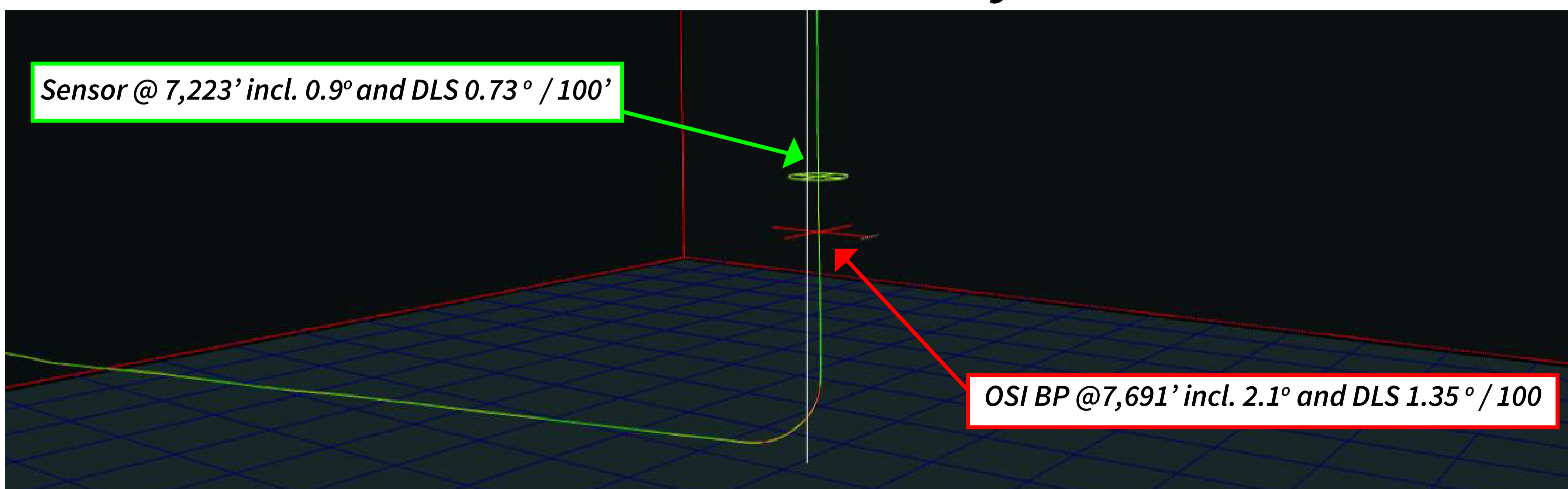
Fluid Temperature - F

√ 32.0 ^ 182.4 ◇ 150.4 158.



- The well was completed since the beginning with the two stages filtration system to avoid damages in the pump by the frac sand. After its completion in April 2019, the well run for **367 days** long
- Initially the well was producing at 45 Hz with a PIP of 3000 psi. Gradually the pump was able to decrease 2000 pounds in 3 months maintaining a stable pump operation at 50 Hz.
- There were no significant increases in the motor current which mean No solids were interfering in the operation of the pump and no additional power was required for the motor
- Because the stable operation of the motor, the motor temperature behaved stable along the whole period. Avoid overheating of the motor is the key to extend the run life of the equipment
- The voltage was pretty much constant, and the motor was producing at 3600 RPM for the whole period
- After October the performance stabilize even more achieving a steady the trend in all the parameters, which is translated in more productive time and fewer shutdowns

Wellbore Survey



Wellbore Diagram

Sensor

X-Over

Slotted Sub

Centralizer

GV Cup Packer

Centralizer

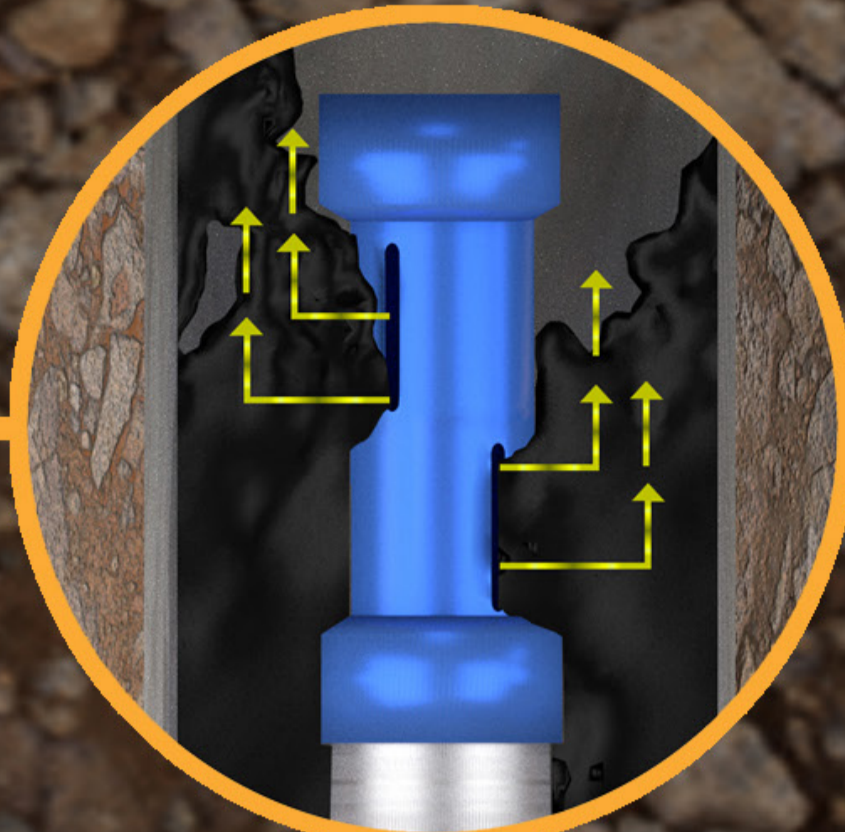
Bypass Valve

Tubing Screen x4

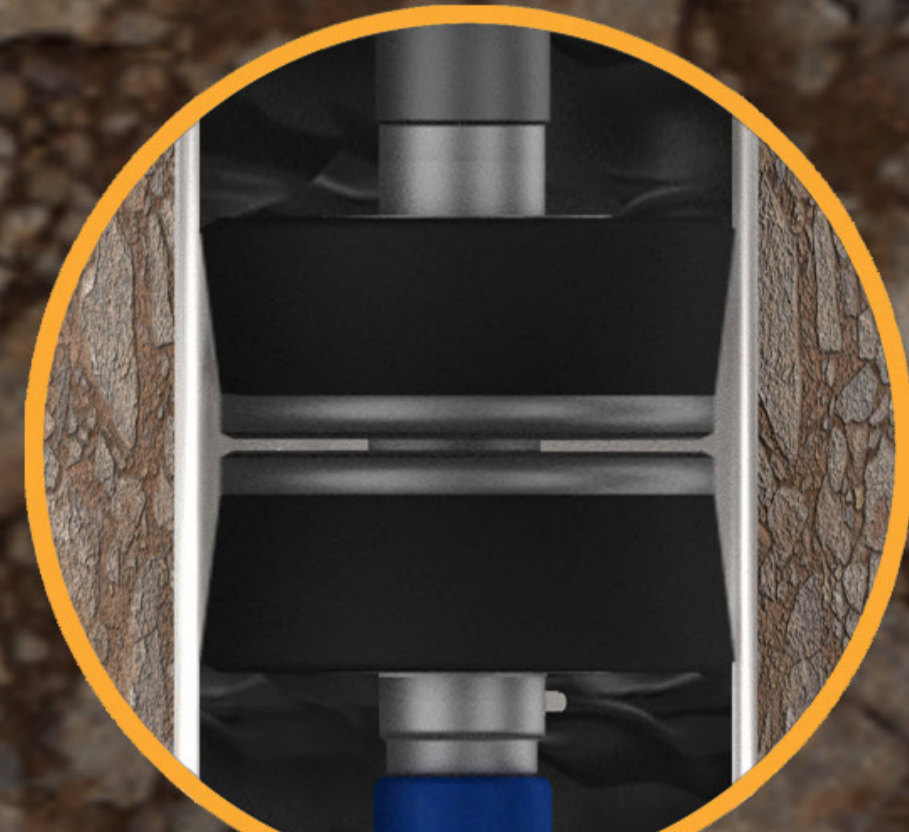
Vortex System

Mud Joint X8

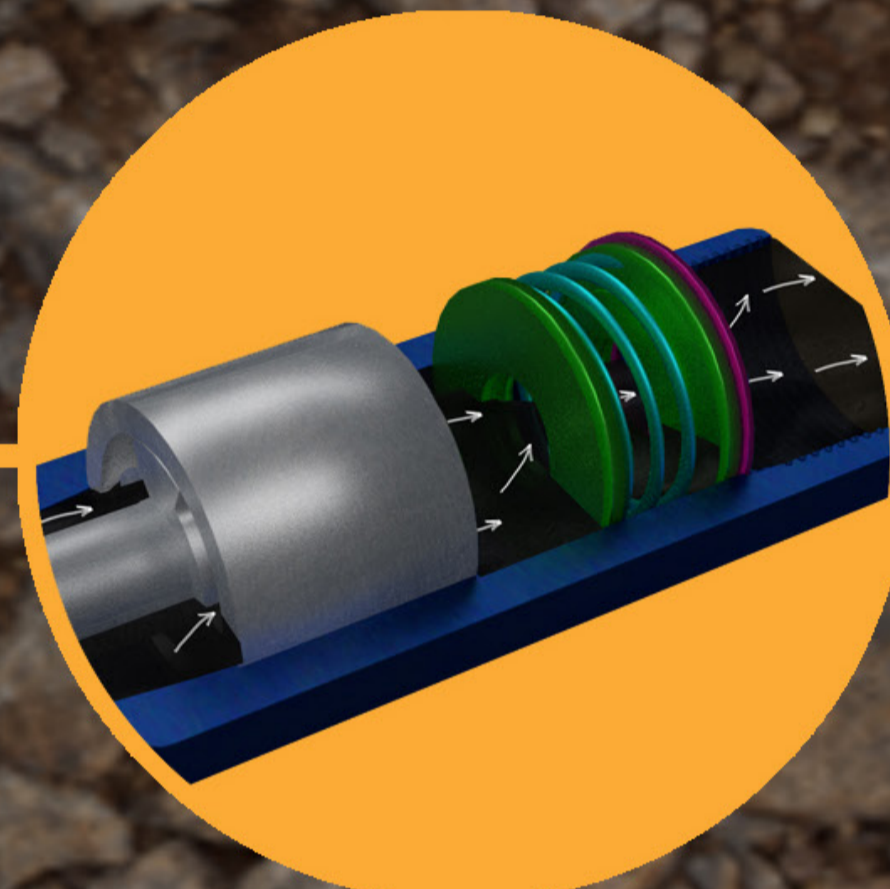
Bull Plug



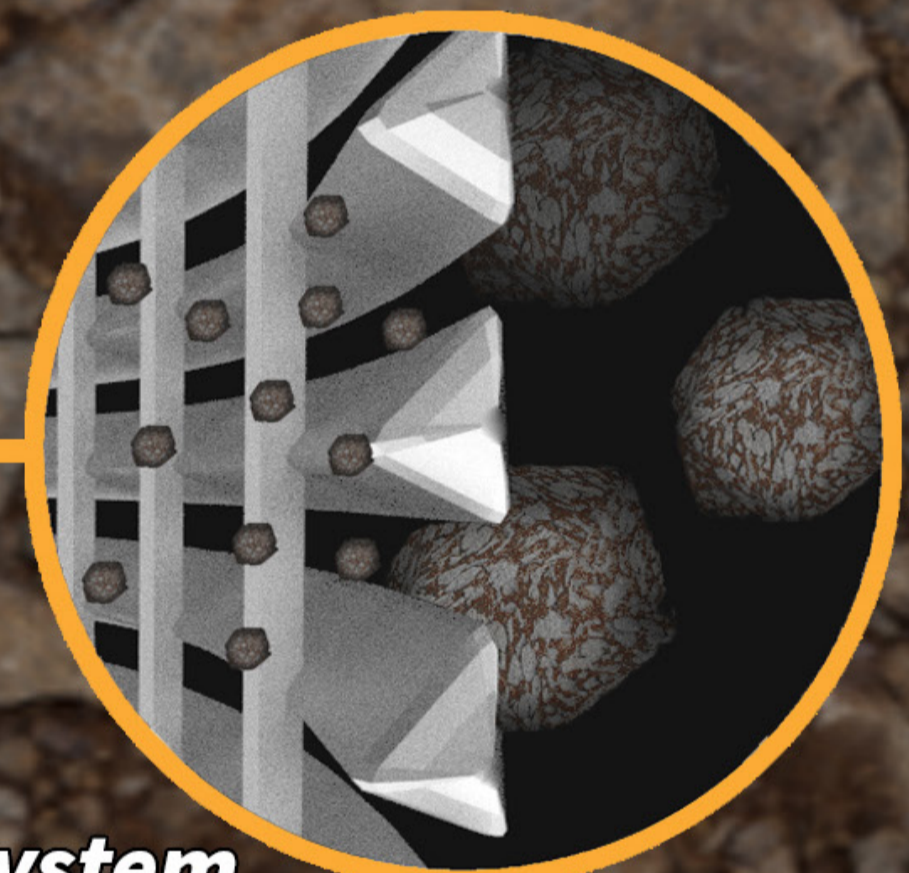
Fluid out (Stage 3)



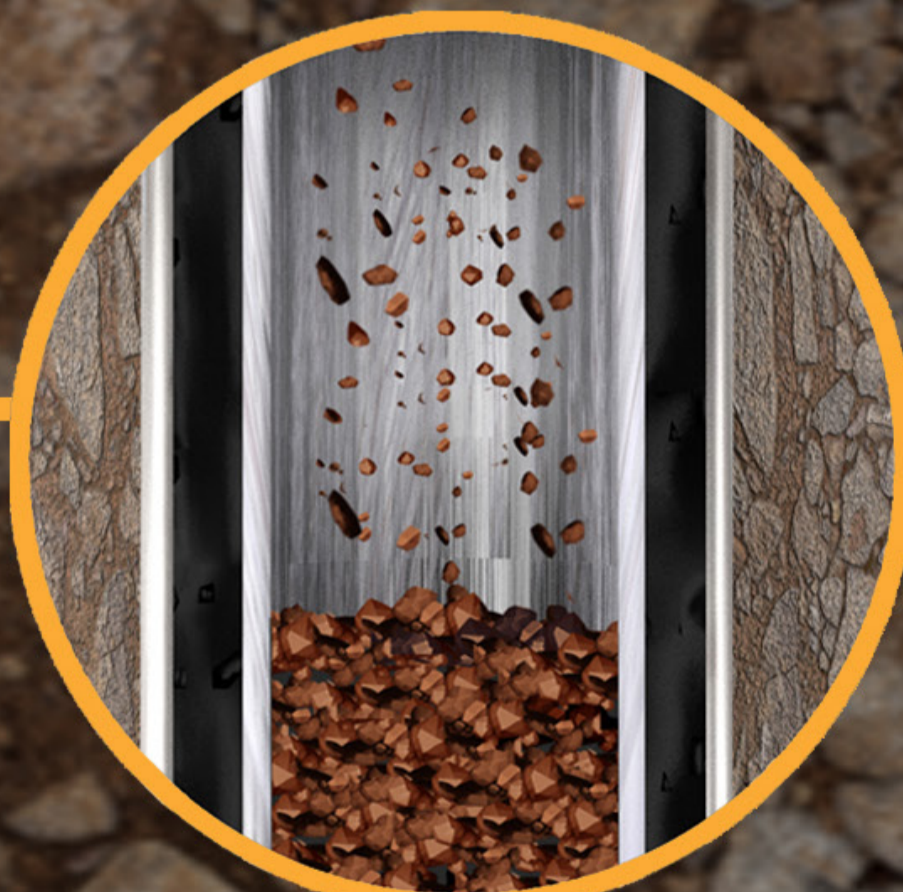
GV Cup Packer



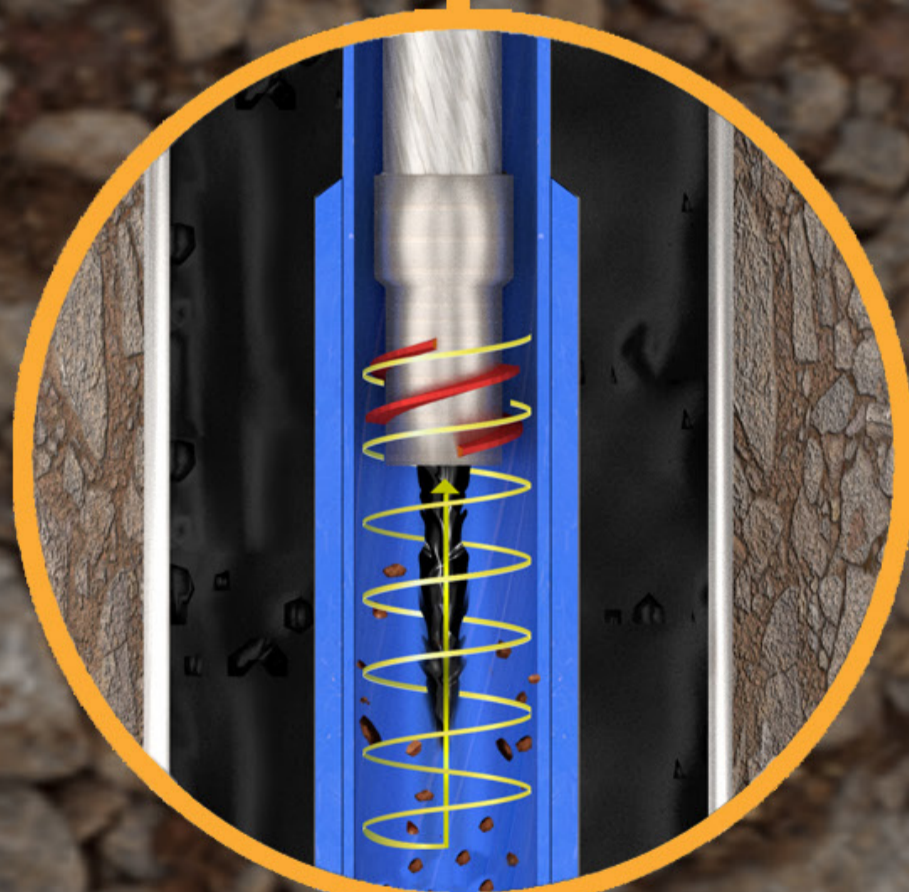
Bypass Valve



Intake system (Stage 1)



Mud Joint



Vortex Separator (Stage 2)