Case Study
Phase Separator
Maintained Motor Integrity while Pumping $N_2$
Case Study No. 3601

RESULTS:
A customer in the Montney wanted to mill out frac ports on a three well pad that had lower bottom hole pressure. Their goal was to maintain returns by comingling $N_2$ with produced water without sacrificing motor performance and milling effectiveness. Utilizing Thru Tubing Solutions’ **Phase Separator** to re-direct the $N_2$ into the annulus, full returns were maintained allowing a total of 51 frac ports to be milled out in an average time of 12 - 15 minutes.

**HIGHLIGHTS**
- Successfully Separated Fluids
- Maintained Returns
- Consistent Motor Performance
- Prolonged Milling Effectiveness

**DETAILS:**
- **Location:** Northern Alberta, Canada
- **Formation:** Montney
- **Casing Size:** 4 1/2” 22.47 kg/m (15#)
- **Conveyance:** 2 3/8” CT
- **Operation Depth:** 4834m - 5292m (15,859 - 17,168’)
- **Well Orientation:** Horizontal
- **Fluid:** Produced Water and $N_2$
- **Fluid Rate:** 300 - 400 L/min (80 - 106 GPM)
- **$N_2$ Rate:** 25 - 35 SCM (880 - 1236 SCF)
- **Tools Used:** 2 7/8” Frac Port Milling Assembly