

### CHALLENGE

Well had initially been a producer for 8 years and then was converted to an injector. Over the next 40 years, the well was re-perforated twice due to declining injection rates. After the second re-perf, the injection rate declined gradually for 10 years. After being shut-in for almost 2 years, the client decided to try a different type of technology to obtain better, longer lasting results.

#### HIGHLIGHTS

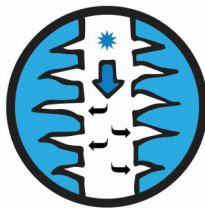
Conventional oil  
Vertically drilled  
Perforated completion

#### LOCATION

Saskatchewan, Canada

#### CONDITIONS

Depth: 1,000m (3,300ft)  
Sandstone

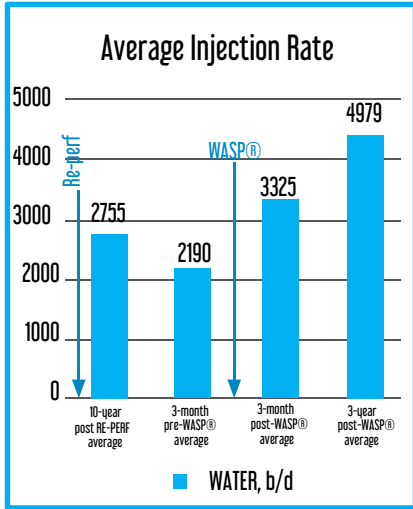


Injection Wells

### OUTCOME

- The wellbore was reconnected to the reservoir, as pressures decreased and injection rates increased
- Public data for the WASP® treated well showed an average injection increase from 2,190 b/d to 3,325 b/d for 3-months post stimulation (52% increase)
- Sustained injection over three years has averaged 4,979 b/d compared to the 10-years post re-perf value of 2,755 b/d (80% increase)

Injection rate up  
**52%**  
over 3 month average;  
**80%**  
over long term rate



### SOLUTION

- Improve injectivity into the reservoir by clearing out blockages using electro-hydraulic stimulation technology
- Sandstone reservoir was treated with Blue Spark WASP® (Wireline Applied Stimulation Pulsing) to improve injectivity
- No special tools or equipment were required on location to complete the remediation operation, other than third party E-Line
- Approximately 13 m (42 ft) of perforated interval were treated with our wireline conveyed tool in one working day
- Injection rates and pressures were both monitored for comparison to pretreatment values