

### CHALLENGE

The need for additional fresh water in Northern Alberta, Canada, to support ongoing SAGD (steam-assisted gravity drainage) –type production. A cased hole completion with a wire-wrapped sand screen and a gravel pack completion with an ESP pump, failed to yield expected desirable rates of water production. Known remediation techniques were reviewed and deemed unsuitable.

#### HIGHLIGHTS

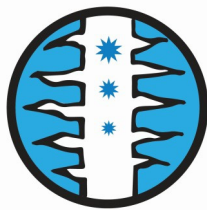
Onshore  
Water source well, supporting SAGD  
Vertically drilled

#### LOCATION

Northern Alberta, Western Canada

#### CONDITIONS

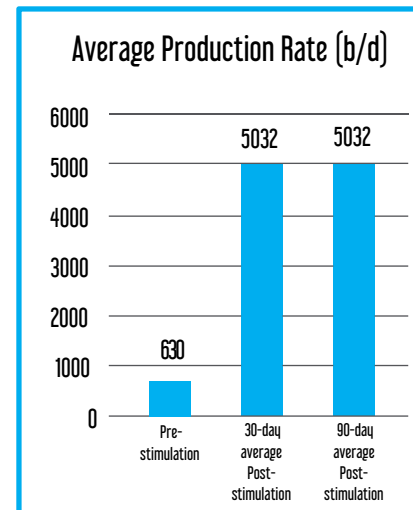
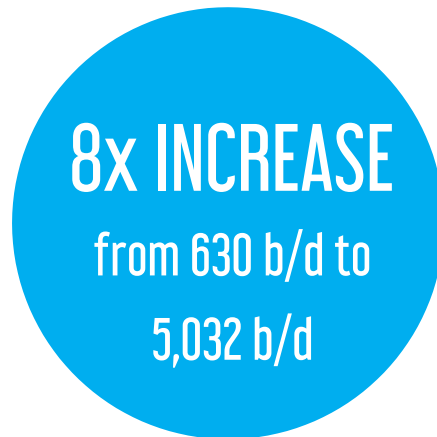
Depth: Shallow  
Temperature: 25°C (77°F)  
Unconsolidated sandstone



New Well

### OUTCOME

- Client data from the WASP® treated well showed an average production increase from 100m<sup>3</sup>/d (630 b/d) to 800m<sup>3</sup>/d (5,032 b/d) over a one-month period.
- Sustained production over 90 days maintained an average of 800 m<sup>3</sup>/d (5,032 b/d)
- Client is evaluating the continued use of electro-hydraulic stimulation in other similar source wells, especially where inflow expectations are not being met.



### SOLUTION

Improve connectivity to the reservoir through a wire-wrapped sand screen gravel pack completion, using electro-hydraulic stimulation technology.

- In consultation with our client, the well was evaluated to confirm its suitability in terms of temperature and other factors, and subsequently treated with our Blue Spark WASP® (Wireline Applied Stimulation Pulsing) technology.
- Approximately 20 m (65 ft.) of sand screen were treated with our wireline conveyed tool.
- No special tools or equipment were required on location to complete the remediation operation, other than third party E-line.
- The remediation treatment took less than one day to complete, with immediate, significant, and sustained rates observed during production testing conducted shortly thereafter.

