



## Case Study

### SUREstart™ Successfully Improves Wellbore Design

On a well located in the Midale formation in the province of Saskatchewan, an operator improved their wellbore design by utilizing Gryphon Oilfield Solutions' SUREstart™ Valve.

The operator was running a toe initiation system commonly referred to as a "burst port", consisting of several bursting discs arrayed in a sub. The discs are designed to rupture when a specific pressure is reached which allows access to the formation. The customer was also running a wireline retrievable plug with recorders attached to record the pressure response when the toe port was opened.

#### Operational Challenge

When the burst discs rupture, it is difficult to get more than a single bursting disc to rupture as fluid begins to enter the formation and does not allow sufficient pressure to be built to rupture the other discs. This reduces the flow area to the formation and causes operational problems as it may not be possible to get the full fracturing rate desired into the formation.

#### Solution and Field Performance

The SUREstart™ valve uses a bursting disc only as an activation device. Once the burst disc has been ruptured, an activation chamber is filled with fluid and a sleeve is sheared, fully opening the valve. The chamber design, hold down spring and the magnetic latch are all features which ensure that the valve fully opens and remains fully open 100% of the time. This ensures that there are no flow restrictions when the valve is opened, so the full fracturing rates can be achieved.

The operators' procedures for a typical well was to run a wireline retrievable plug (WR) to depth, open the burst port and set the WR with recorders on bottom. On this well, when opening the SUREstart valve, the flow past the WR was so much greater due to the 360 degree opening of the ports, that the WR plug was disconnected from the wireline. The operator easily fished out the BHA and now installs the WR after the SUREstart™ valve is opened. After this well was completed, the operator successfully completed another 32 wells with the SUREstart valve installed at the Toe.

#### Operational Data

- 5,413 ft (1,650 m) TVD
- 4-1/2 in, 11.6 lb/ft (114.3 mm, 17.26 kg/m) LTC, P-110
- 167° F (75° C) bottom hole temperature

