

TRUST

Transient rapid underbalance surge technique

APPLICATIONS

- Downhole testing
- Shoot-and-pull TCP operations
- TCP in unconsolidated sands
- Cased hole gravel-pack completions

BENEFITS

- Increased productivity due to pressure underbalance during perforation
- Single-trip operation
- Minimized QHSE risk because no hydrocarbons are produced to surface during surging
- Rig-time savings

FEATURES

- Reduced risk of sanding in the BHA
- Optional single- or multiple-trip performance based on well conditions and customer preference
- Enhanced well control from combining hydrostatic fluid and packer
- Loss monitoring and recording during string repositioning prior to surge operations
- Maximized cleanup and minimized sand production due to surge-chamber design
- Effective perforation methodology for unconsolidated sand and gravel-pack completions

The TRUST transient rapid underbalance surge technique is a single-trip perforating and surge process used in unconsolidated sands. Specifically designed to achieve effective cased hole gravel-pack completions, the technique also provides efficient cleanup of the perforation tunnels by removing perforation debris and crushed sands behind casing.

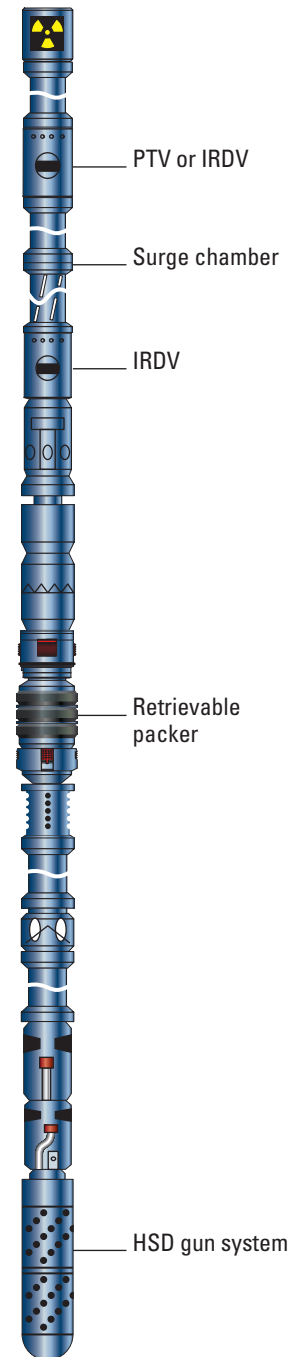
At the heart of the TRUST system is a downhole atmospheric chamber with either a single-shot annulus-pressure-activated pipe tester valve (PTV) or an intelligent remote dual valve (IRDV) at the top. At the bottom is another IRDV, which is positioned above the gun string. Following guidelines derived from laboratory studies, specialists size the chamber volume to provide a set inflow per perforation.

High differential pressure localized around perforations causes formation fluid to surge into the wellbore. This flow helps push out loose fines from the tunnels, and then the fines settle to the bottom of the rathole. The surge chamber design is critical for success and must be carefully done to ensure effective cleanup without formation collapse.

The standard TRUST assembly consists of

- an HSD* high shot density gun system for TCP operations
- a retrievable packer
- an IRDV (lower valve)
- a surge chamber
- a PTV or IRDV (upper valve).

An eFire* electronic firing head system or a stand-alone fast gauge can be run to record the dynamic underbalance during the surge.



TRUST assembly.