



Weatherford®

REAL RESULTS

Optimax™ Subsurface Safety Valves Provide Valuable Protection with Minimal Leakage as Demonstrated in Rigorous Testing

Objectives

- Conduct slam-closure tests on Weatherford's *Optimax* model WWV, 9 5/8-in. wireline-retrievable subsurface safety valve (SSV), and the *Optimax* WSPE, 7-in. tubing-retrievable SSV. The two valves have identical closure mechanisms, but the model WWV wireline valve includes a Weatherford QXSV lock as part of the assembly.

Results

- The *Optimax* model WWV wireline valve was tested at 410 ft/sec, which equates to a flow rate in excess of 420 MMscf/D or 30% over calculated maximum worst-case flow rates for this tubing size.
- Measured leakage rates for the model WWV valve were well within the parameters set in American Petroleum Institute (API) requirements (14A) for new subsurface safety valves.
- The valve was then cycled five additional times with consistent opening and closing intervals, resulting in minimal leak rates within API 14A specified parameters.
- The 7-in. *Optimax* model WSPE tubing-mounted valve was tested at 460 ft/sec, which equates to a flow rate exceeding 480 MMscf/D or 50% above calculated rates for larger 9 5/8-in. tubing.
- After the first slam-closure test, the model WSPE valve produced no measurable leakage.
- The valve was then cycled five additional times with consistent opening and closing intervals, again producing post-slam leak rates too low to measure. The valve was then slammed again at the same velocity with an identical leak rate.

Value to Client

- With their wide safety margins, *Optimax* systems offer valuable reassurance that wells can be closed-in during blowout conditions, providing important protection to people and the environment.



Weatherford's *Optimax* series tubing- and wireline-retrievable SSV systems help maximize the efficiency and safety of cased-hole completions by controlling leaks—even under extreme conditions.

Flow Rates

- 9 5/8-in. *Optimax* model WWV valve: 410 ft/sec (420 MMscf/D)
- 7-in. *Optimax* model WSPE valve: 460 ft/sec (480 MMscf/D)

Product/Services

- *Optimax* WWV wireline-retrievable SSV
- *Optimax* WSPE tubing-retrievable SSV