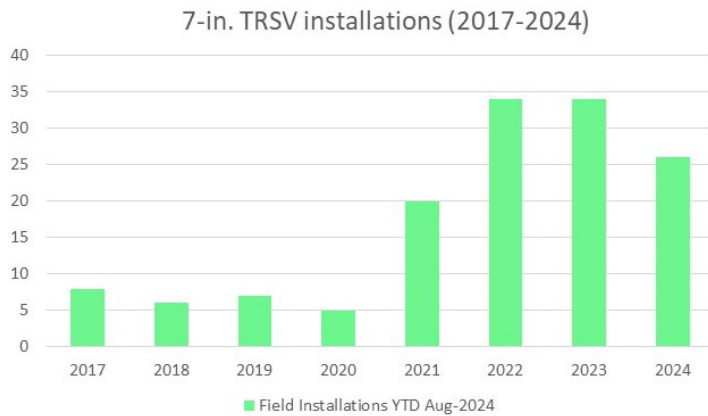


Optimax™ Tubing Retrievable Safety Valves Installed in 140 High-Rate Gas Wells in Largest Offshore Natural Gas Field, Incurred Zero Failures



The reliability of the Weatherford TRSV is the result of intelligent engineering and unique features. Engineering teams studied past successes and failures of safety-valve designs and created an Optimax solution that helps eliminate previous points of failure.

Objectives

- Design and supply 7-in. tubing retrievable safety valves (TRSV) and accessories for completion of offshore gas wells. The TRSVs must be suited for high gas production flow rates and capable of withstanding high concentrations of hydrogen sulfide (H₂S) and carbon dioxide (CO₂) in the produced gas throughout the life of the wells.
- Perform the installation of the TRSVs in the wells safely and efficiently, in full compliance with applicable HSE and quality requirements.

Our Approach

- Weatherford experts designed the TRSVs according to the operator's specifications and carried out qualification tests per API 14A V1 12th edition specifications. With the inclusion of full body gas pressure tests with 100% working pressure for every single TRSV during FAT, while also exceeding standard leakage criteria on the closure mechanism, the Weatherford approach went beyond API testing guidelines.
- With no sleeves, plugs, or other mechanisms that could fail, the rod-piston, flapper-type Optimax TRSVs are engineered for reliability. Actuated by a single control line, hydraulic pressure opens the valve for production or injection. With any pressure loss caused by equipment failure or damage, the valve automatically reverts to its fail-safe position—firmly closed.

LOCATION

Qatar

WELL TYPES

High-rate gas production, CO₂ injection, wastewater injection

FORMATION

Carbonate

CASING SIZE AND TYPE

10-3/4 in., 55.5 ppf

SETTING DEPTH

1,200 ft (365 m)

PRODUCTS/SERVICES

- Optimax TRSVs, Models WSPE-7.5 and WSP-7.5



Optimax™ Tubing Retrievable Safety Valves

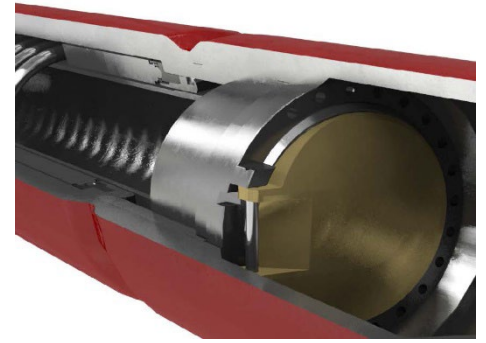
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Our Approach (continued)

- The Weatherford operations team has consistently provided high-quality TRSV field installation services to the operator, including refining the TRSV workshop assembly and testing procedures, enhancing the TRSV running procedure, and implementing several optimizations to the field operations, creating more efficient and flawless installations with zero HSE-related incidents.
- A total of 140 TRSVs were installed in gas production, CO₂ injection, and wastewater injection wells. All 140x safety valves were successfully function, pressure, and inflow tested after installation in every well.

Value to Customer

- Using a simple, rugged design, premium materials, and extreme performance standards, the 7-in. Optimax TRSVs have consistently delivered reliable service, with zero failures attributed to the valve design.
- The reliability of the Optimax safety valves enabled the operator to maintain continuous gas production without the need for costly valve-replacement workovers.
- The field-proven, fail-safe TRSV protects the safety of the operator's crew, equipment, and the environment, a critical aspect for offshore gas production wells.
- The collaboration also played a fundamental role in enabling the operator to safely and reliably perform various intervention and stimulation activities, providing top-class interventions tools, which were also designed and enhanced according to the specific operator requirements. Teamwork and a flexible structure were key for allowing fast responses to deliver the solutions on a timely and efficient manner.



Tubing-pressure insensitive activation reduces requirements on surface control systems.

