

CASE HISTORY

SCIENTIFIC IDENTIFIES LEAK IN HIGH TEMPERATURE GAS RESERVOIR

APPLICATION

HT Leak Detection
Conventional Oil & Gas

TECHNOLOGY

Vulcan™ FLS 1.75

LOCATION

North Sea

CUSTOMER CHALLENGE

The customer's asset is a high profile HPHT gas reservoir in the North Sea. Annulus pressures indicated the presence of a leak in the 9-7/8" casing behind the 5" tubing. The customer needed to pinpoint the location of the leak in order to plan subsequent remedial interventions.

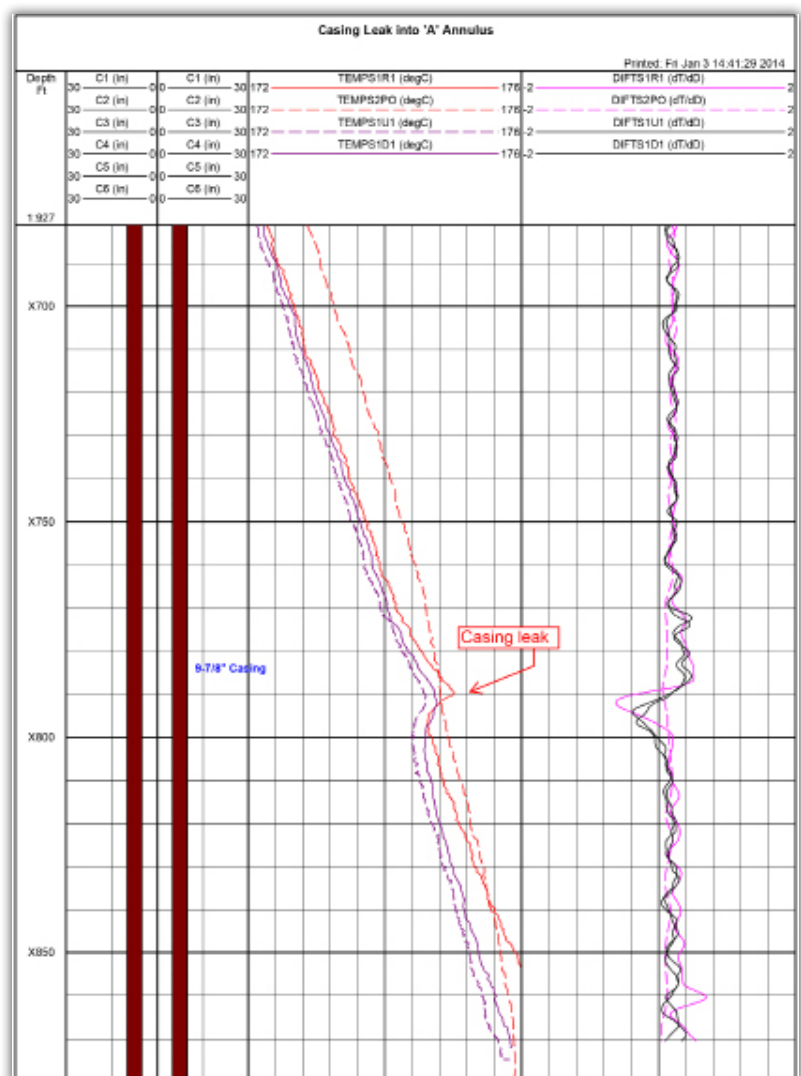
SCIENTIFIC SOLUTION

Scientific Drilling provided the customer with their Vulcan™ FLS (Flow Logging System) 1.75, incorporating gamma-ray/CCL, pressure and temperature sensors, all of which are proven in extreme temperatures. SDI helped successfully identify the leak point using temperature analysis techniques. The logging program consisted of baseline passes across the interval of interest and again during pressure bleed-down of the 'A' annulus.

The leak was identified by a Joule Thompson heating anomaly in the temperature response. The heating anomaly was due to the high pressure source of the gas which exceeded 7,250 psi. The symmetrical profile of the temperature response was one of the diagnostic features used to interpret the temperature anomaly as a leak.

CUSTOMER VALUE

SDI's experience in this specific field offered assurance in the quality of data acquired. Subsequent to the identification of the leak, the customer retrieved the tubing and significant corrosion was evident at the fluid entry point into the annulus, ultimately verifying the data analysis.



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