

The Three Pillars of Well Integrity Management in BU Germany, Wintershall Dea Deutschland GmbH

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Well integrity is defined in NORSOK Standard D-010 as the “application of technical, operational and organisational solutions to reduce risk of uncontrolled release of formation fluids throughout the life cycle of a well”.

In Wintershall Dea, Well Integrity is an important part of the overall asset integrity policy. Global requirements for Well Integrity are governed in three processes as part of the Business Management System:

- Process for ‘Ensure Asset Integrity and Barrier Management’ by HSEQ
- Process for Well Barriers (for all phases related to well design and construction, intervention and abandonment)
- Process for Well Integrity Operational Phase

According to asset integrity, each well operator within Wintershall DEA shall have a Well Integrity Management System (WIMS) in order to ensure that well integrity is maintained throughout the life cycle of a well by using a combination of technical, operational and organisational processes. In this paper the WIMS for BU Germany will be introduced. How well integrity management system supports well operation activities and which technologies are used by the company to ensure the business continuity along with well integrity management.

These main three pillars, technical, operational and organisational process are the key for well integrity management system. Management of the well integrity is a continuous and recurring process that takes place over the entire life cycle of the well. The continuous updating of the well diagram with the envelopes, the risk register and the categorisation ensures that the well integrity is guaranteed and regularly monitored in accordance with ABBERgV §22b.

In this paper the author will explain how crucial is to have a requirement of technical, operational and organisational process of well integrity management.

PILLAR 1: ORGANISATIONAL WELL INTEGRITY

- Define KPI for well integrity
- Define RACI for well integrity activities
- Define mechanical scope limit for well integrity
- Define well categorisation for well integrity (Well Integrity Assessments)
- Offer training and improve competency of well integrity
- Use software for WIM
- Risk assessments and their considerations
- Well integrity assurance and continuous improvement

PILLAR 2: TECHNICAL WELL INTEGRITY

- Well barrier selection

- Well barrier verification and performance standards
- Well barrier Illustration

PILLAR 3: OPERATIONAL WELL INTEGRITY

- Well monitoring
- Well maintenance
- Well failure model