

WellMaster

WellMaster is well equipment reliability data shared among operators

WellMaster – Reliability Data for Well Completion Equipment

Reliability is probably the most important attribute for maintaining safety and profit in application of well and subsea technology

Needs

Operators are in possession of data about equipment failures that impact safety and profit of their operations. All operators should collect, analyse and use these experiences in efforts for securing continuous safety and profit improvements for both existing and new field developments.

The solution

WellMaster is a database with equipment and experience data for well completions and a software tool for data collection, analyses and reporting.

Benefits

Operators using WellMaster may confidently monitor and make decisions on issues involving safety, reliability and profit of their wells supported by use of a comprehensive and industry recognised experience data source and analysis tool.

Background and history

- SINTEF SCSSV reliability study phases I-III conducted during the 1980's.
- Well Completion Equipment JIP reliability study SINTEF 1990-1992 (Phase I). The study objective was to collect, analyze and disseminate operational reliability data back to the oil companies and manufacturers of completion equipment. The main result was a reliability database on selected completion equipment.
- Phase II (1993-1996) funded by 13 oil companies a Windows-based program was developed and the database was extended to cover the entire completion string. This software package and database has from then on been referred to as WellMaster.
- Phase III (1997-1999) was funded by 16 oil companies, with the objectives to continue improve the WellMaster software and update the database with specialized completions, and it was extended to include multilateral- and monobore completions.
- Phase IV (2000 - 2002) funded by 13 oil companies marked the handover of WellMaster from SINTEF to ExproSoft. Continuity of the WellMaster project and software was ensured through transfer of key personnel and technology to ExproSoft.
- Phase V (2002 - 2005) was funded by 10 oil companies. The well simulator tool developed in Phase IV was extended to a field simulator ('FieldSim') in Phase V and improved capability was developed for collection and analysis of reliability of completions with sand control features (screens and gravel pack completions).
- Phase VI (2006 – 2009) was funded by 11 oil companies. Phase VI included a major modernisation of WellMaster software and a major back-log data updating effort. This making WellMaster one of the most comprehensive industry equipment reliability databases world-wide.
- Phase VII (2010 -) represents a shift in JIP project management with the WellMaster software and database solution offered as separate item to the JIP group. Also, the organisation of the JIP is re-arranged for more frequent database updating including continuous updating with annual database releases and reports on the reliability data



Contact information

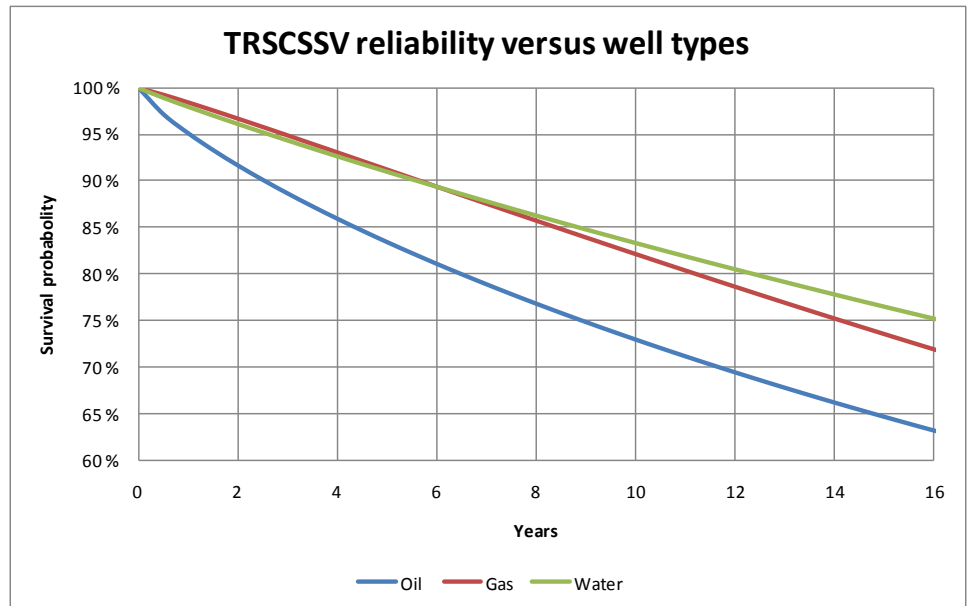
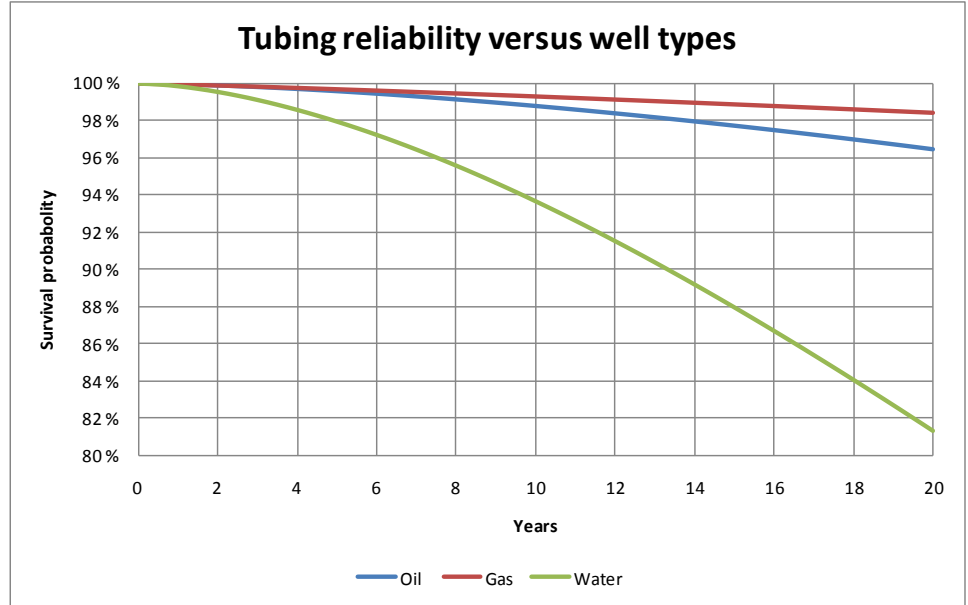
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WellMaster

Operators using WellMaster confidently make decisions supported by an updated industry recognized data source for safety, reliability and profit analysis

Examples

Examples on WellMaster results are illustrated in the figures below.



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Key features

- Comprehensive `well file' with detailed information of well completions:
 - ✓ String items (tubing, safety valves, packers, screens etc)
 - ✓ Inserted items (items set/pulled through the tubing)
 - ✓ Cables and control lines
 - ✓ Casing and open hole sections
 - ✓ Wellhead/Xmas tree items (valves, connectors etc)
- Compliant with new ISO standard on collection of reliability and maintenance data for the petroleum industry (ISO 14224)
- User interface with a graphical/schematic representation of the well completion string
- Extensive reporting registry:
 - ✓ Failure cause reports
 - ✓ MTTF or failure rate analysis
 - ✓ Reliability/Survivor function analysis
 - ✓ Tubing and casing mileage-based reliability analysis
 - ✓ Run time distributions and item histories
 - ✓ Failed parts distribution
 - ✓ Lifetime data reports
- Integrated reliability data capture and analysis for subsea production systems (SubseaMaster)
- Integrated well completion planning tool (Well Operational Tool)
- Flexible data exchange enabling efficient data collation from many different industry sources

Services and maintenance

ExproSoft is located in Trondheim, Norway, providing independent services related to profit, safety and reliability of well and subsea technology. ExproSoft is responsible for development and maintenance of the WellMaster software solution and also for managing the WellMaster JIP project, including data collection and reporting.

Core team

Geir-Ove Strand, Senior Consultant, Well Risk and Reliability Specialist
 Hans Peter Jenssen, Senior Consultant, Well Integrity and Data Management
 Rita Merete Soerskaar, Senior Petroleum Engineer, Well Integrity and Data Management
 Arne Kristian Ovesen, Software Developer, Databases and Window's clients



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