



Drilling & Well Technology

- Gateway to Norwegian world class technology and competence

REPORT TYPE

03.Aug 2021

Complete Drilling & Well Technology Catalogue





Subsea Wellhead Integrity Monitoring (SWIM™)

2019-11-05 - 4Subsea

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Subsea Wellhead Integrity Monitoring (SWIM™) measures accumulated load and other critical parameters on the wellhead during drilling operations, providing KPIs and prediction analysis as a digital service.

Autonomous sensors are placed on the BOP, monitoring BOP movements, and data from the sensors is transferred wirelessly to the ROV. Operators can reuse critical wells and maximise lifetime of wellheads by scheduling drilling operations based on well criticality and historically accumulated load on wellhead.

The system can provide live monitoring of drilling risers and conductors and uses machine learning to predict into the future and artificial intelligence to detect and manage shallow gas/shallow water, structural failures in the wellhead, and conductor instability issues.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

4subsea website

More information about SWIM™

Contact

4Subsea

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<https://www.4subsea.com>

Conductor analysis

2019-11-05 - 4Subsea

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Service

The conductor is the main load-bearing component in a satellite well, typically drilled for exploration or appraisal purposes. In order to have control of the well, it is crucial that the conductor retains its integrity at all times. Primarily during the entire drilling campaign, but also in the case of an accident, such as loss of position or if a capping stack needs to be installed.

4Subsea's conductor analysis documents that the conductor can maintain required integrity during the entire lifespan of the well. By tailoring the analysis to the specific rig choice, well location and design, we reduce cost by maximising the operational window and avoid oversized equipment.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

4subsea website
Conductor analysis

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Well Access Solutions

2019-11-05 - 4Subsea

Category: Well Intervention and Well Services

Subcategory: Others

Type: Product

Subsea Control Systems are a critical part of all operations linked to subsea wells. 4Subsea delivers subsea HPU control systems that can be used for all types of XT operations. The Well Access Solution reduces operational time and cost through reduced overall tooling need, simplified ROV scope and reduced topside logistics.

The control system operates all types of XT systems from all main vendors and is therefore one common system for XT operations. It can be used for multiple fields and fluid types. In short, the system ensures reduced cost and time of well intervention.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Well Access Solutions

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Wellbore heating

2021-05-31 - Aarbakke Innovation AS

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

We have electric subsurface heating systems used for near wellbore heating (up to 600 deg C) to re-establish the creeping shale formation as a permanent barrier, and flow-through heating systems to heat the fluid (e.g. for hydrate methane production, heavy oil, wax/paraffin/hydrate prevention). These technologies may also be implemented into subsea production systems, as for example as retrofit into a flow line where the along-the-pipeline heating system have failed, etc. Also we have heating systems that may be retrofitted into wellbores for wax, paraffin and/or hydrate build-up prevention

Technology readiness level (TRL)

According to API RP 17N

TRL 3: New technology tested Prototype built and functionality demonstrated through testing over a limited range of operating conditions. These tests can be done on a scaled version if scalable

Reference

Subsurface heating

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Well examination and PEER review

2019-06-06 - Add Energy Group

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Service

Well Examiner is designed for companies who require an independent and qualified PEER review of an activity plan, a system/process or an organization at defined project milestones. Through a structured process, the provided material (e.g. well program, field development plan) is examined and compliance with regulations and standards are measured. The findings (gaps) are categorized, enabling the client to seek prioritized resolution before implementation. Improved compliance will naturally save time and cost in following application and execution processes.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website

Well examination datasheet

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NORSOK D-010 well integrity course

2019-06-06 - Add Energy Group

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Training

Type: Service

From reputable course instructors, you will learn about the general principles of the two-barrier concept, applied in drilling, well testing, completion and abandonment activities. Well intervention operations and blowout control will be briefly touched. Problem solving through case studies and group exam allows time for reading and good discussions. The added knowledge is for you to wisely use in upcoming work – hopefully preventing costly remedial work or worse. The course takes place over 2 days in Stavanger (N), Perth (AU), Houston (U.S.A), Aberdeen (UK) or other places of choice.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website

NORSOK D-010 well integrity 2-d course brochure

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Planned maintenance optimisation

2019-06-14 - Add Energy Group

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

Add Energy provides clients with development and optimisation of equipment maintenance strategies to assure reliability, compliance with performance standards and efficient application of maintenance.

Add Energy can benchmark existing planned maintenance against best practice and reliability data to identify opportunities for rationalisation or where efficiencies can be unlocked. Once this has been identified, Add Energy develops planned maintenance job plans, frequencies, sequences, routes and packages using their library of planned maintenance and localising it to the equipment to assure efficient and effective maintenance execution.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website

Add Energy maintenance optimisation

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Aim-Hi™

2019-06-14 - Add Energy Group

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

Aim-Hi™ is a cloud-based tool that provides you with real-time analytics around your asset's key performance indicators relating to maintenance, risk and performance. The tool enables maintenance teams to quickly identify areas of underperformance and improvement opportunities, understand what is causing underperformance and why, and improve resource utilisation by eliminating time consuming tasks of data manipulation and preparation relating to KPI reporting.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website

Add Energy Aim-Hi™

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Blowout Contingency Planning (BCP)

2019-06-20 - Add Energy Group

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Service

Are you prepared to handle a blowout? A typical BCP consists of blowout and kill simulations in addition to a detailed relief well plan. This includes blowout scenario determination with calculation of potential blowout rates and specification of the best suited kill method and kill resources. Relief well rig availability and equipment requirements will also be investigated.

A carefully worked out BCP will shorten the response time during a blowout or well control incident, saving cost as well as reducing the environmental impact and media exposure.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website

Blowout Contingency Planning data sheet

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Casing magnetization

2019-06-20 - Add Energy Group

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Service

In the event of a blowout, pre-magnetization of casing increases the detectable range of the casing in the blowing well when using passive magnetic ranging techniques deployed in the relief well. This should be used for avoiding well collision in fields with many wells, salt formations and wells requiring shallow relief well intersect.

Casing magnetization gives you increased safety at low cost and with no risk to your wellbore. Field testing of magnetized casing joints at surface has demonstrated that the effect is long lasting.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Add Energy website
Casing magnetization

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Relief Well Injection Spool (RWIS)

2019-06-20 - Add Energy Group

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

The RWIS has been built to significantly increase the pumping capacity of a single relief well by pumping in excess of 200 barrels of kill mud per minute through a single relief well, four times as much kill fluid as typically achievable. A significant advance for the industry which utilizes multiple vessels as opposed to the alternative method requiring multiple relief wells.

In addition to assuring single relief well contingency, the RWIS enables operators to optimize well economics and help unlock projects that wouldn't normally be sanctioned. In purchasing access rights to the RWIS, operators can comply with legislation and reduce the number of wells required to meet production targets by increasing the completion size of the well bore, reducing CAPEX costs and maximizing production.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Add Energy website
Relief Well Injection Spool (RWIS)

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Tornar well cleaning solutions

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Archer's wellbore cleanup tools are designed for successful and effective wellbore cleanup operations. A wellbore clean-up operation enhances efficiency by reducing risk and non-productive time. The use of mechanical wellbore cleanup tools enables removal of debris that interferes with normal operations without damaging the well structure. An effective and successful wellbore cleanup is key to ensure successful completion installation and maximum well return.

Our goal is a complete series of Tornar mechanical wellbore cleaning tools for complete debris management. Our Tornar series of mechanical wellbore cleaning tools are superior in all areas of wellbore cleaning, such as casing cleaning and displacement, BOP & riser cleaning and debris recovery.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website
Tornar well cleaning solutions

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Cflex® cementing solutions

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Casing, tubing, liners, connectors and accessories

Type: Product

Cflex® technology enables high-performance multistage cementing. Qualified “gas tight” equivalent to ISO 14998, Cflex® performs to the highest integrity standards. Installing Cflex® at one or more casing joints gives operators flexibility, reliability and far greater confidence in cementing operations.

Despite advances in cement technology, annulus integrity is one of the biggest challenges facing the industry, both in terms of frequency and impact. The Cflex® cementing system improves annular seal integrity and overcomes the shortcomings of previous stage cementing technology.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website

Cflex® cementing solutions

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MCAP™ system

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Product

Despite advances in cement technology, annulus integrity is one of the biggest challenges facing the industry, both in terms of frequency and impact. The MCAP™ (Mechanical Casing Packer) system improves annular seal integrity and overcomes the shortcomings of cementing technology.

MCAP technology is certified gas tight (V0) and performs to the highest integrity standards. Installing MCAP in combination with the Cflex® gives operators flexibility, reliability and far greater confidence in cementing operations.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Archer Oiltools website

MCAP system

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Perforating services

2019-05-24 - Archer Oiltools

Category: Well Intervention and Well Services

Subcategory: Fracking and perforation

Type: Service

Perforating is essential in delivering wells, improving well performance, Plug and Abandonment (P&A), and remedial work during the lifetime of a well. Archer provides various shaped charges including patented liner material technology, which ensures cleaner perforation tunnels for increased well productivity.

Archer`s extensive P&A experience, combined with our tailor-made perforating systems, ensures time efficient and optimized P&A operations.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website
Perforating services

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X-it® whipstock

2019-05-24 - Archer Oiltools

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

Archer provides high-performance casing exit services using the X-it® system, a single-trip casing exit technology designed to deliver reliable sidetracks, first time, in a wide range of settings.

X-it's unique multi-ramp whipstock geometry and fourth generation mill provides a step change in sidetrack drilling performance. With X-it technology, sidetracks are delivered efficiently, reliably and with far greater accuracy. The X-it system is the result of decades of hard-won experience in deploying and delivering sidetrack technology. In refining X-it, our specialists have maintained a clear focus on efficiency, reliability and accuracy as fundamental requirements of our sidetrack solutions.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website

X-it whipstock

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LOCK® series of barrier plugs

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Product

Archer's plug solutions are tailor-made to provide cost and time savings for a wide range of applications including managing well integrity, securing well suspension, Plug and Abandonment (P&A), and pressure testing.

Derived from the first version plugs, today the LOCK® and SPARTAN® series of plugs form the baseline of the plug portfolio, field proven worldwide. Our plugs are rapid to set and seal, easy to move and reset. The result: high efficiency and low cost.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website
Plugs and plug solutions

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VAULT® dual plug system

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Product

The VAULT® dual plug system enables two Archer barrier plugs to be installed in one run. This saves operational time, operational costs, and reduces rig site handling, improving safety standards.

VAULT streamlines plug operations with the ultimate goal of reducing operational (rig) time. The VAULT dual plug system can be utilized for both LOCK® and SPARTAN® plugs and also a combination of both.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website
VAULT dual plug system

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Stronghold® slot recovery and P&A solutions

2019-05-24 - Archer Oiltools

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Product

Archer Oiltools' Stronghold® systems provide an economical and effective alternative to traditional plug and abandonment (P&A). By eliminating the need for milling, these systems deliver a step-change in efficiency and effectiveness for P&A.

Barricade® system: Archer's field proven Barricade+ system perforates, washes, and cements the annulus, creating a rock-to-rock barrier in just one trip.

Defender® system: Archer's field proven barrier test system enables operators to perforate and test annular barrier.

Fortify® system: Archer's next generation barrier verification system used in plug and abandonment (P&A) and slot recovery. It is a superior system used to verify the integrity of existing annular barriers such as creeping formation and cement, ensuring Permanent Caprock Integrity.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Archer Oiltools website
Stronghold systems

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Double secured winch

2020-01-31 - Axess Group

Category: Well Intervention and Well Services

Subcategory: Others

Type: Product

Alpa Winch is a redundant high-risk application for lifting over Hydro Carbon Pressurized systems and is the only system of its kind with an approved DVR from DnV GL.

The system is designed for safe and easy installation and mobilization with minimum service and maintenance requirements. The system can be adapted to various interfaces due to the system's unique design philosophy which enables multiple interfaces without changing the main structure.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Alpa web page

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Alpa P&A Tower

2020-02-04 - Axess Group

Category: Vessels, rigs and modules

Subcategory: Drilling and Intervention rigs and vessels

Type: Product

Axess Engineering's advanced rigging operations and the material handling technology from Alpa, the Axess Group have been able to develop a cost-efficient P&A lifting solution which is tailor-made for Plug and Abandonment (P&A) operations. This compact system can be mobilized by using the existing cranes and will be ready for operations within a week after mobilizing. The Alpa P&A lifting solution has interface for well control systems from the installation and can perform all typical P&A lifting application in a redundant / high-risk application mode.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Alpa Handling website

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Alpa Material Handling Products

2020-02-04 - Axess Group

Category: Vessels, rigs and modules

Subcategory: Pipe handling and lifting equipment

Type: Product

Alpa AS is a wholly-owned subsidiary of Axess that has an exclusive focus on material handling technology, such as offshore and maritime cranes. Alpa supplies a wide range of products for pipe handling and safe lifting operations, tailored to ensure operational safety and efficiency for our clients. Our material handling solutions are flexible and scalable, helping major oil and gas companies achieve their goals of maximum uptime and zero harm.

Alpa's Material Handling Products:

- Winches
- Cranes
- Crane cabins
- Access baskets
- Control systems
- CBM systems
- Gripper yokes

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Alpa Handling Website

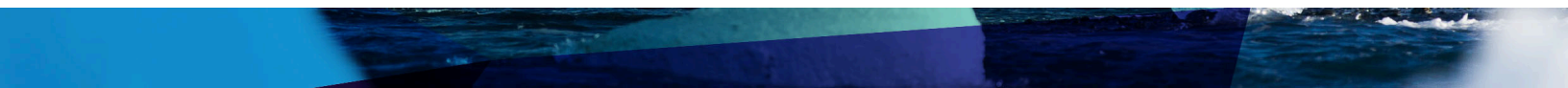
Contact

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Alpa Cranes

2020-02-04 - Axess Group

Category: Vessels, rigs and modules

Subcategory: Pipe handling and lifting equipment

Type: Product

Alpa AS is a wholly-owned subsidiary of Axess that has an exclusive focus on material handling technology, such as offshore and maritime cranes. Alpa supplies a wide range of cranes and lifting equipment, tailored to ensure operational safety and efficiency for our clients. Our material handling solutions are flexible and scalable, helping major oil and gas companies achieve their goals of maximum uptime and zero harm.

Most products are well-suited for retrofit installation.

Products:

- Gantry Cranes
- Knuckle Boom Cranes
- Manipulator Cranes
- Winches
- Conditioning Monitoring System
- Alpa Control System

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

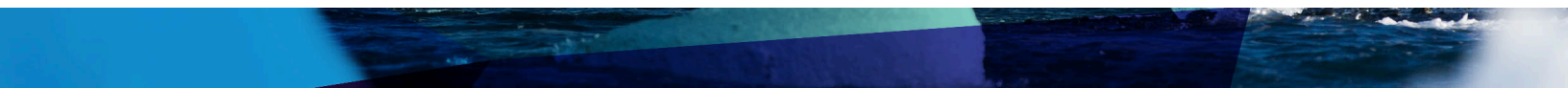
Alpa Products

Contact

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Alpa Winch

2020-02-04 - Axess Group

Category: Well Intervention and Well Services

Subcategory: Others

Type: Product

Alpa AS is a wholly-owned subsidiary of Axess that has an exclusive focus on material handling technology, such as offshore and maritime cranes. Alpa supplies a wide range of winches and lifting equipment, tailored to ensure operational safety and efficiency for our clients. Our material handling solutions are flexible and scalable, helping major oil and gas companies achieve their goals of maximum uptime and zero harm.

Most products are well-suited for retrofit installation.

Products:

- Double Secured Winch
- Spooling Winch
- Utility Winch

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Alpa Products

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DROPS Training and Inspection Programs

2020-02-04 - Axess Group

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Training

Type: Service

We provide hands-on training for improved personnel consciousness and knowledge.

With our DROPS training program, we aim to help raise awareness of potential dropped object hazards, explore prevention methods, and carry out industry best practices to reduce the occurrence and severity of dropped objects incidents.

Our DROPS Training focuses on boosting the understanding and knowledge of:

- Risks of potential dropped objects
- Causes of dropped objects
- Best practices and preventive measures against dropped objects
- Improving the capability to identify potential falling object threats in the workplace
- Implementing adequate dropped object countermeasures
- Establishing a sustained culture of safety

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Axess DROPS Training

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DROPS Inspection and Inspection Programs

2020-02-04 - Axess Group

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Personnel safety

Type: Service

Increase overall awareness and understanding of preventive measures against dropped objects — from rig crew to top management — with our DROPS Inspection System.

We provide tailored checklists and manuals focused on preventing falling object accidents. Our comprehensive DROPS Inspection System for rig crew establishes a culture of safety in the workplace through:

- Educating and increasing awareness of dropped object hazards
- Developing preventive plans
- Equipping personnel with correct materials for secondary retention
- Rectifying existing measures and recommending new solutions to close DROPS findings from inspection reports

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DROPS Inspection System for Rig Crew

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ClampOn DSP Well Collision Detector

2019-05-23 - ClampOn

Category: Well Engineering, Operation and Management

Subcategory: Others

Type: Product

The Well Collision Detector is designed to prevent collisions involving directional drilling within the proximity of existing wells. It provides operators with real-time data so that collision risk analysis calculations are not the only factor determining the bit's proximity to existing wells.

The overall purpose of the Well Collision Detector is to prevent environmental damages caused by collisions and to help increase safe drilling speed and decrease downtime caused by collisions. The ClampOn DSP Well Collision Detector provides the operator with an advanced real-time collision monitoring system with minimal equipment and personnel requirements.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

ClampOn website

ClampOn DSP Well Collision Detector

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ClampOn DSP Particle Monitor

2019-05-23 - ClampOn

Category: Well Engineering, Operation and Management

Subcategory: Others

Type: Product

The ClampOn DSP Particle Monitor sensor monitors sand through passive ultrasonic technology. It detects the ultrasonic signal that is generated by particles impacting the inside of the pipe wall, just after the pipeline bend where the sensor is installed. The instrument has onboard Digital Signal Processing (DSP) for analysing of the collected data and it sends real-time results to control system, giving the operator immediate warning when/if sand is being produced.

Operators are using particle monitors widely to increase production rate by finding a maximum sand free rate. By monitoring and evaluating the data in real-time, the operator can make immediate decisions to ensure safe production.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

ClampOn website

ClampOn DSP Particle Monitor

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Intelligent Coring System ICS

2019-08-07 - CoreAll

Category: Down Hole Technologies, Fluids and Services

Subcategory: Drill-bits, hole-openers, Reamers, Steerable systems and downhole motors, MWD, LWD, and drill-string components

Type: Service

The Intelligent Coring System (ICS) is designed as a fully instrumented core drilling assembly, complete with real-time transmission of data to surface. The patented technology features a novel Logging While Coring (LWC) module that provides real-time formation and fluid data while coring. The current version of ICS comprises:

- (1) Essential data about the subsurface geology such as Gamma Ray and Resistivity in real time during the coring operation;
- (2) Diagnostics data that will allow faster and more accurate operations;
- (3) A mainframe system for additional technologies in instrumented coring.

The Intelligent Coring System is among the first core drilling technologies to provide any kind of downhole instrumentation with real time transmission to surface.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

CoreAll products page

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Cranemaster Shock absorbers and passive heave compensators

2020-02-18 - Cranemaster

Category: Subsea Equipment and Services

Subcategory: Pumps and cutting removal

Type: Product

Keeping tension during sawing and cutting.

For subsea tasks such as cutting/sawing, it might be preferable to compensate for the weight of the tool in water. By having the Cranemaster unit tuned to the correct weight, this can be easily achieved.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Tension control

Contact

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www.cranemaster.com

Cranemaster shock absorbers and passive heave compensators

2020-02-18 - Cranemaster

Category: Vessels, rigs and modules

Subcategory: Pipe handling and lifting equipment

Type: Product

Cranemaster shock absorbers and heave compensators are mounted between the crane hook and the load, expanding your vessel capabilities while protecting crane and personnel. Load range from a few tons up to 1600 tons.

Common applications:

- Increase in offshore crane lifting capacity.
- Reduction of DAF in offshore lifts.
- Expansion of weather window for splash-zone crossing.
- Resonance avoidance during subsea lowering operations.
- Reduction of landing speed and motion for subsea installation.
- Protection of crane/winch during subsea recovery and decommissioning operations.
- Load tensioning for air or subsea installations.
- Protection of equipment and personnel from shock loads.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

A selection of references

Contact

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Global Sales Manager

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www.cranemaster.com



Djuvik Buoyant Drill Pipe Clamp

2021-01-05 - Djuvik

Category: Well Engineering, Operation and Management

Subcategory: Others

Type: Product

Use:

- Clamp umbilicals and service lines to drillpipes
- Used in-riser

Material:

Polyethylene (PE) plastics

- Low friction
- Does not absorb water

Features:

- Buoyant in seawater
- 100% homogeneous
- Lightweight, ranging from 7 to 12 kg depending on the configuration
- Simple and fast installation
- The conical shape provides good guiding
- Can be made to handle multiple umbilicals
- Can be adapted to all umbilical sizes
- Can be adapted to all drill pipe and casing sizes

Benefits

- No loose parts, minimizing the risk for fishing operations and for dropping components
- Designed to prevent clamp from hanging
- Cost-efficient - reduces rig-time by fast and easy installation

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Djuvik website
Product catalogue

Contact

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Sales & Marketing

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www.djuvik.no





Djuvik Power Slips Bushing

2021-01-07 - Djuvik

Category: Vessels, rigs and modules

Subcategory: Others

Type: Product

Use:

Placed as a bushing inside the NOV Power Slips to protect vital equipment during operations. The Djuvik Power Slips Bushing creates a smooth running surface and the material is well suited to protect the equipment from any impact damage.

Benefits:

The Djuvik Power Slip Bushing decreases risks when running vital equipment like wear bushings, full bore tools, or hangers through the power slips. It eliminates the need to remove the slips assembly or the entire slips, thus saving costly rig time and increasing safety when eliminating the need to handle heavy equipment.

Features:

- Can be made with inner diameter suited to customer needs.
- Low weight, bushing for PS-30 slip with inner diameter 18,5" weighs 110 kg.
- Integrated locking mechanism to lock the bushing in place

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Djuvik Power Slips Bushing Website

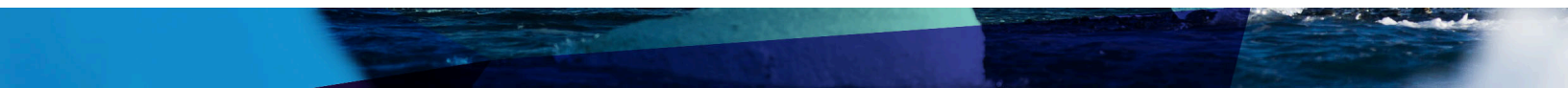
Contact

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Well integrity assessment and barrier verification

2019-06-20 - DNV

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Service

DNV GL supports clients with all aspects of well integrity and barriers. The final scope of the service is defined in co-operation with the client. The following are typical topics:

- Verification of well design, materials selection and cementing
- Audit of management systems for well integrity and operations
- Gap analyses of regulations and industry standards
- Technical due diligence

DNV GL is an independent partner with cutting edge competence. We bring thought leadership with our knowledge on and beyond industry codes and best practices, including our own, and recognized as competent body by local authorities worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DNV GL website

Contact

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www.dnvgl.com



Risk assessment and reliability studies

2019-06-20 - DNV

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Service

DNV GL supports clients with all aspects of drilling & well related risk assessments in all phases of exploration, development and operations. The final scope of the service is defined in co-operation with the client. The following are typical topics:

- Operational risk and reliability analysis
- Facilitation of HAZID, HAZOP, FMECA and well risk assessments
- Develop performance standards for well barriers
- Root cause analyses
- Environmental impact analyses

DNV GL is an independent organization with cutting edge competence. We bring thought leadership with our knowledge on and beyond industry codes and best practices, including our own, and recognized as competent body by local authorities worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DNV GL website

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www.dnvgl.com

Rig audit, condition assessment and rig intake

2019-06-20 - DNV

Category: Vessels, rigs and modules

Subcategory: Drilling and Intervention rigs and vessels

Type: Service

When contracting a rig, DNV GL can assist operators to verify that the rig is fit-for-purpose and can safely operate in accordance with applicable requirements. DNV GL provides independent technical support to supplement the operator's rig intake team, typically through:

- HAZID to identify main risks
- Technical safety, e.g. lifting appliances, drilling and control system, ignition source control, F&G system, ESD and power management
- Maintenance management
- Environmental management
- Regulatory compliance, including preparation of "Application for Consent"
- Site representative on behalf of the operator

DNV GL supports the operator in fulfilling their requirements to the authorities both with in-depth technical competence and local presence in over 100 countries.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DNV GL website

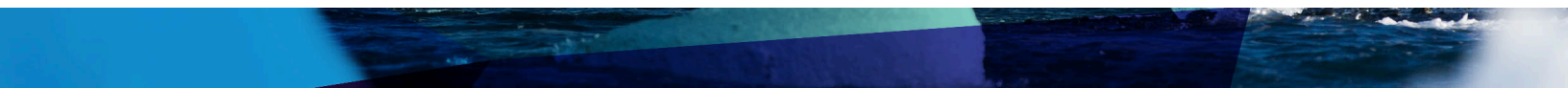
Contact

Jan Egil Sæberg

**Vice President Business
Development**

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+47 958 04 997



Recertification/verification of well control equipment

2019-06-20 - DNV

Category: Well Intervention and Well Services

Subcategory: Others

Type: Service

Maintenance of all critical equipment used to control well pressure during drilling, well testing, completion, workover, and well intervention activities should be subject to a certification scheme including independent verification, typically through a five-year renew cycle.

DNV GL's recommended practice (RP), DNVGL-RP-E101, presents a risk based methodology for recertification of well control equipment. The DNV GL RP gives guidelines for legislations in Norway and the US, but the generic processes may be adapted to other legislations as well.

DNV GL provides:

- Design verification/ certification
- Recertification
- Welding qualification and fabrication follow-up
- Fabrication survey and QA/QC

DNV GL has applied DNVGL-RP-E101 successfully to more than 500 projects in the past decade.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DNV GL website

Contact

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Downhole Wireline Multiset TorcPlug and Torc Method accessories

2021-02-17 - E Plug AS

Category: Well Intervention and Well Services

Subcategory: Coiled tubing, wireline, and running tools

Type: Service

E Plug has succeeded in developing a new patented method for transferring down-hole forces from one tool to another without the use of explosives or pressurized chambers.

The method has been proven with the industry's first barrier qualified bridge plug that can be set multiple times and retrieved on the same run - the TorcPlug®.

P&A products such as a mechanical puncher / cutter and a local expansion tool (stand-off tool) is commercialized.

By using the TorcPlug, TorcPhuncer, TorcStandoff it will:

- Make your intervention planning easier
- Reduce the risk with the intervention operation
- Adjust for the unexpected when needed
- Save valuable time with the drilling rig - land - offshore - intervention vessel

E Plug services has the capabilities to be utilized globally.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

How to do more pre-P&A using intervention methods
offline / rigless

TorcPlug Technology Presentation

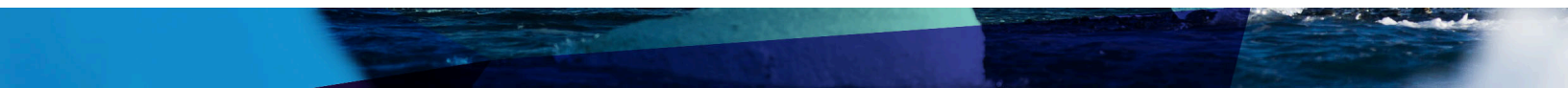
Contact

Hein Andre Langåker

CEO

hal@eplug.no

+47 992 87 428



Leak detection with multiple set TorcPlug

2021-03-09 - E Plug AS

Category: Well Intervention and Well Services

Subcategory: Coiled tubing, wireline, and running tools

Type: Service

With the TorcPlug multiset and released function you can perform leak detection along the wellbore to identify the leak and integrity of the wellbore construction. In the same run you can multiple set and release the TorcPlug and assess the pressure test results and redo the setting and retrieval process multiple times until the leak point is identified. This operation will be conducted in the same run independently of the amount of TorcPlug setting and retrieval activations.

- This will minimize the operational time for the intervention
- Reduce the risk for the intervention operation
- When leak is identified it can be used as deep or shallow set barrier for wellbore integrity
- Minimize the equipment footprint at well site
- Can be used in conjunction with other wireline tools

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

TorcPlug Technology Presentation

Contact

Hein Andre Langåker

CEO

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www.eplug.no



Automated drilling control software

2019-04-08 - eDrilling

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Utilizing the same artificial intelligence and machine learning technologies as in wellAhead™, integrated with the rig's drilling control system, our automated drilling control software will help keep the operational parameters according to well limits, enabling drillers to increase safety and optimize the performance of drilling operations.

eDrilling uses artificial intelligence and predictive analytics to foresee what will happen with your well. The software provides diagnostics and first actions to the crew (or directly to the control system) in order to change the drilling plan – to avoid problems.

Technology readiness level (TRL)

According to API RP 17N

TRL 4: Technology qualified for first use Full-scale prototype built and technology qualified through testing in intended environment, simulated or actual. The new hardware is now ready for first use

Reference

eDrilling website

eDrilling blog & news

Contact

Sven Inge Ødegård

COO

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www.edrilling.no



Real-time managed pressure drilling

2019-04-08 - eDrilling

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Our wellBalance™ improves any MPD control system to better keep a constant bottom hole pressure during MPD-operations and perform planning with an offline model. wellBalance™ provides real-time set points to the MPD control system, based on dynamic real-time simulation, calibrated against downhole measurements. It is complemented with an offline simulation tool, wellBalance™ Offline, to use in engineering and planning of the MPD operation.

eDrilling uses artificial intelligence and predictive analytics to foresee what will happen with your well. Our software provides diagnostics and first actions to the crew (or directly to the control system) in order to change the drilling plan – to avoid problems.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

eDrilling blog & news

Contact

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+47 917 05 013

www.edrilling.no





Dynamic well control

2019-04-08 - eDrilling

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

wellWCA is our solution for dynamic well control engineering for planning and operations. It helps you minimize downtime and make the right decisions, by providing design and implementation of a safe and effective well control operation.

Prior to operations, eDrilling provides you with software to acquire skills and experience on your specific upcoming well, focusing on risk avoidance and handling. During operations, eDrilling software at a very early stage detects anomalies, crews are provided diagnostics messages and notifications in good time to make the necessary adjustments.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

eDrilling blog & news

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+47 917 05 013

www.edrilling.no





Drill well in simulator

2019-04-08 - eDrilling

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

wellSim™ is the software product family for engineering and training of all well engineering disciplines. By improving insight and understanding of dynamic well behavior, it has the potential to change the ways you plan and drill your complex wells. Our software provides forecasting, forward-looking and what-if analysis, allowing for change in parameters for optimal drilling (drilling the perfect well).

Prior to operations, eDrilling provides you with software to acquire skills and experience on your specific upcoming well, focusing on risk avoidance and handling. During operations, eDrilling software at a very early stage detects anomalies, crews are provided diagnostics messages and notifications in good time to make the necessary adjustments.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

eDrilling blog & news

Contact

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+47 917 05 013

www.edrilling.no



Drilling plan optimization

2019-04-08 - eDrilling

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Using dynamic simulations to provide accurate modelling, our wellPlanner™ addresses the industry's need to improve safety margins and reduce and rid themselves of risk, as well as the need to drastically reduce well planning time.

Prior to operations, eDrilling provides you with software to acquire skills and experience on your specific upcoming well, focusing on risk avoidance and handling. During operations, eDrilling software at a very early stage detects anomalies, crews are provided diagnostics messages and notifications in good time to make the necessary adjustments.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

eDrilling blog & news

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www.edrilling.no

wellAhead

2019-10-14 - eDrilling AS

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

wellAhead™ is eDrilling's software solution for automated monitoring, real-time optimization, and live well support. It is designed for use on rig, in Real Time Decision Support Centers, and for any other individual or teams supporting live drilling operations. It is also the foundation of any future rig-side automation.

As the software at a very early stage detects anomalies, crews are provided diagnostics and/or first action messages and notifications in good time to make the necessary adjustments.

Moreover, it enables you to do forward simulations and what-if simulations to detect mismatch and give input to change the drilling plan - to avoid problems, and change parameters for optimal drilling

(drilling the perfect well).

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

Webinars

Contact

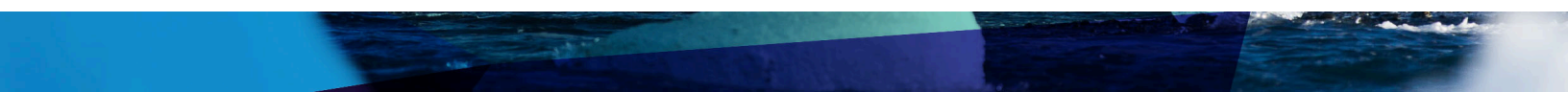
Kenza Lahlou

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wellPlanner

2019-10-14 - eDrilling AS

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

wellPlanner™ focus on high end quality planning simulations and optimizations within a number of well construction effects, and provide planning and quality assurance of drilling operations with high-end Dynamic simulation tools.

Benefits of running software utilizing eDrilling's digital twin technologies (i.e. a digital representation of your actual well) in preparation for upcoming wells :

- Hazard prevention
- Avoidance of NPT
- Performance optimization
- Increased drilling productivity
- Improved well planning accuracy
- Reduced drilling risks and uncertainty
- Optimize procedures

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

Webinars

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+4798640141



Drill Well in Simulator

2019-10-14 - eDrilling AS

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

wellSim™ is the software product family for engineering and training of all well engineering disciplines. By improving insight and understanding of dynamic well behavior, it has the potential to change the ways you plan and drill your complex wells.

wellSim™ models the time development of the operations and takes into account dynamic effects like inertia,

acceleration and retardation, effects of temperature and pressure changes on the downhole process, etc. A Reservoir model is

embedded in the multi-phase hydraulic model for realistic influx behavior. The simulator models dissolved and free-gas realistic during a killing operation. The torque & drag model includes an ROP model for realistic ROP related to WOB based on formation properties.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

eDrilling website

Webinars

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<https://edrilling.no/>





Corrosion Monitoring Solutions

2019-08-07 - Emerson / Roxar

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

Corrosion monitoring solutions are critical to maintaining the integrity of operator assets and optimizing oil and gas production. Emerson Roxar offers a complete corrosion monitoring solution with different technologies.

The products offered are:

- Online probes - Electrical Resistance (ER) Probes and Linear Polarization Resistance (LPR) probes
- Acoustic PIG detection
- Non-intrusive area monitoring (FSM)
- Coupons
- Corrosion transmitter

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Emerson Corrosion and Erosion Monitoring

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Marketing

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EGX (Ennox Green Extraction)

2019-04-30 - Ennox Technology

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Waste management

Type: Product

The Ennox technology is branded Ennox Green Extraction (EGX). The EGX is a novel and game changing processing unit for recovering oil from drill cuttings, oil contaminated soil and other oily solids in a more effective and economical manner, and with significantly less environmental impact than current technologies in the market.

The EGX unit is highly mobile and delivered in a standard 20-foot enclosed container. It will extract close to 100% of hydrocarbons without the use of heat or harmful chemicals and can process up to 10 tons per hour. Furthermore, the EGX process enables the customer to reuse and sell the handled waste. The EGX will redefine how waste management is executed. The unit enables cleaning at the production site, reducing the impact of the waste and transport.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

EGX (Ennox Green Extraction)

Contact

Asbjørn Vagle

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www.ennoxtech.com

A decorative image at the bottom of the page showing a close-up of water with ice cubes, rendered in a blue and green color palette.

EGX (Ennox Green Extraction)

2019-04-30 - Ennox Technology

Category: Vessels, rigs and modules

Subcategory: Drilling machineries, Cementing Equipment, mud equipment and accessories

Type: Product

The Ennox technology is branded Ennox Green Extraction (EGX). The EGX is a novel and game changing processing unit for recovering oil from drill cuttings, oil contaminated soil and other oily solids in a more effective and economical manner, and with significantly less environmental impact than current technologies in the market.

The EGX unit is highly mobile and delivered in a standard 20-foot enclosed container. It will extract close to 100% of hydrocarbons without the use of heat or harmful chemicals and can process up to 10 tons per hour. Furthermore, the EGX process enables the customer to reuse and sell the handled waste. The EGX will redefine how waste management is executed. The unit enables cleaning at the production site, reducing the impact of the waste and transport.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

EGX (Ennox Green Extraction)

Contact

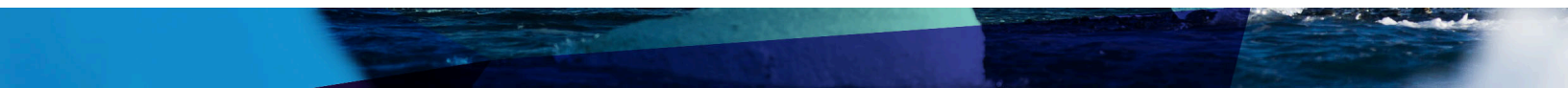
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EXEBENUS

Exeбенus Pulse

2019-05-20 - Exeбенus

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Product

Exeбенus Pulse automatically generates validated digital procedures (DOP/SID) for drilling and completions operations to help streamline execution, operate at or near technical limits and reduce non-productive time. The solution bridges the footprint of past and current operations. It provides approved technology options and associated activities, well information and best practices in planning and execution. Exeбенus Pulse digitalizes the information exchange between office and rig providing you with real-time insight and full-time confidence.

Benefits:

- Reduce downtime and lower operational costs
- Optimize operation within technical limits
- Increase procedure consistency and operator confidence
- Use best practice and lessons learned
- Automatically warns of deviation from procedure

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Exeбенus website

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EXEBENUS

Exeбенus Current ML

2021-02-01 - Exeбенus

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Making informed decisions requires clear, moment-to-moment understanding of the situation. Exeбенus Current Machine Learning (ML) agents provide real-time predictive situational awareness during operations, opening new pathways to productivity.

During planning, ML agents can be used to evaluate risks and prepare ready-for-action contingency plans and eliminate invisible lost time.

During execution, the ML agents use real-time data to recognize deteriorating conditions that may lead to stuck pipe and other issues. This gives your crew a heads-up and time to mitigating actions and avoid events causing NPT.

Key benefits

- Predict and preempt hazardous events
- Provide real-time situational awareness and performance analysis
- Plug and play with existing WITSML Viewer

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Contact

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FieldAQ Smart Hybrid Logger

2020-09-28 - FieldAQ AS

Category: Well Engineering, Operation and Management

Subcategory: Others

Type: Product

Say God Bye to complex cabling with FieldAQ Smart Hybrid Logger, the logger supports both wired and wireless instruments, the logger is Vendor agnostic which means it can read data from any instruments such as Coriolis meters, Multiphase meters, Water Cut, Wet Gas Meters etc. FieldAQ Smart Hybrid Logger reads up to 250 wireless devices & 80 Wired devices at the same time both Analog and Digital channels. For the wired channels, no multi-core cable is needed for the wired channels, only single core is used. The Smart-logger is flexible and can be used with any 3rd party Software

The innovative system utilizes an increased efficiency, quick & safe to rig up - where instruments do not need any CALIBRATION inside of the software.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

FieldAQ Website

Smart Logger

Contact

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<https://www.fieldaq.com/>



FIRE SECURITY

Life extension of electrical cables

2020-09-28 - Fire Security AS

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

Fire Security's Cable Life Extension program is a cost-effective solution to prevent premature or unnecessary cable replacements. Typically, any cables that are exposed to and affected by the environment should be considered for our program.

FS cable life extension is a well-documented solution to significantly extend the expected lifetime of all cables that are exposed to UV, heat, or extreme environmental conditions, causing early aging of cables. Cables affected by constant UV exposure, oil, mud, and chemicals become a safety hazard and this is where our life extension solution is very cost-efficient.

Our approved coating systems will create a protective new outer layer, restore, and upgrade the cables' insulation properties whilst also upgrading the cables fire-technically.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

INFO: WHY FS CABLE LIFE EXTENSION

VIDEO: ELECTRICAL CABLES REPAIR AND LIFETIME EXTENSION

Contact

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President

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www.fire-security.com



FIRE SECURITY

Cable repair

2020-09-24 - Fire Security AS

Category: Vessels, rigs and modules

Subcategory: Power and machineries

Type: Service

Fire Security is a Norwegian company offering cable life extension, cable repair, and fire protection of electrical cables for the oil & gas industry worldwide. We conduct turnkey projects for an extensive client base both onshore and offshore, including rigs, FPSO, LNG vessels, and petrochemical refineries.

We repair cable sheaths that are damaged by UV, oil, mud, and mechanical stress. The coating restores the cable value, prevents future damage to cables and cable jackets, and eliminates the need for large-scale replacement.

Our clients get high-quality products and a professional delivery with a minimum of interruption to their operations. Our coating systems have obtained type approval certificates from the world's leading international classification societies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

BROCHURE: Cable repair for the OIL & GAS industry.

INFO: Non-Disruptive Cable Repair

Contact

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www.fire-security.com



FIRE SECURITY

Fire protection of cables

2020-09-24 - Fire Security AS

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

Fire Security specializes in Class Approved passive fire protection of electrical cables by way of cable coating. Our applications can be completed on live cables with no disruption to your operations.

Fire Security manufactures an intumescent coating system designed for internal or partially sheltered applications and an ablative coating system for internal and external applications.

Both coating systems are tested to meet the IEC Publication 60331 and 60332 requirements and are additionally tested to Hydrocarbon Fire Curve of 1100° Celsius for a minimum of 60 minutes. Our intumescent coating system is also tested fire resistant for up to 3 hours at 830° Celsius.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

VIDEO: Fire Protection of Electrical Cables

BROCHURE: Fire protection for the OIL & GAS industry.

Contact

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Fishbones stimulation technology

2019-04-03 - Fishbones

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

Fishbones is a provider of unrivalled technology that has defined a new level of precision and efficiency in reservoir stimulation. By means of short pumping operations, numerous titanium tubes are extended from the mother-bore to create long channels, delivering significant improved reservoir productivity.

Fishbones, like no other stimulations system available today, guarantees deep connectivity with your reservoir precisely where planned with the optimal use of valuable resources.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Fishbones website

Fishbones products

Contact

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CEO

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Drilling - BOP/fire rated hose assemblies

2019-06-28 - Flux Group

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

Active Service is a leading service provider of high quality hoses, couplings and services to the oil and gas industry and other marine players. Our comprehensive product portfolio covers all drilling applications whether offshore or onshore. Rotary hoses meet the highest levels of the latest API 7K specification and our choke and kill lines exceed the requirements of the demanding API 16C specification.

Our hoses are designed to operate in sub-zero temperatures. They can be delivered with heat trace, a self-regulating electric heating cable, for extreme cold conditions to mitigate the risk of freezing fluid.

With focus on quality, flexibility and delivery, Active Service is committed to continue to develop solutions by working closely with our customers and our suppliers.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Flux Active Service website

Contact

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www.fluxgroup.com



API 6A Valves

2019-07-03 - Flux Group

Category: Vessels, rigs and modules

Subcategory: Drilling machineries, Cementing Equipment, mud equipment and accessories

Type: Product

Flux Valvision offers API 6A valves and manifolds to various application within drilling; choke and kill, mud and cement.

Our experienced personnel provide valuable advice in evaluation and selection of valves, and for service related issues

Further we offer SPS classing at own or customer site, offshore or onshore.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Flux Valvision

Contact

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www.fluxgroup.com



FORCENSE Structural Monitoring

2020-09-11 - FORCE Technology Norway

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Others

Type: Product

Vent gas monitoring (VGM) system reduces this risk by providing key information on the integrity of the flexible riser. The VGM system provides real-time and historical data on the condition of flexible riser annulus, providing the operators with an opportunity to make qualified decisions based on actual measurements. This is highly beneficial at both start up and routine inspections to see that the riser is working according to specifications, but also when considering lifetime extension or planning for replacement. Polymer Cupon Monitoring system allows you to evaluate the status of the polymer layer and predict its future degradation.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Contact

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<https://forcetechnology.com/no>



Conductor and riser analysis

2020-09-11 - FORCE Technology Norway

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Service

The conductors and risers are modelled and analyzed using the OrcaFlex or Riflex software. In collaboration with Structural Monitoring, FORCE can calibrate and fine tune the analysis model to the real response, allowing for accurate prediction future behavior and remaining service life estimates. The global model include

- Loads Modelling – Permanent loads, wave, currents, pre-tensioning system
- Rig
- Tensioning system
- Riser
- Flex joint
- BOP stack
- Conductor
- Wellhead
- Soil Modelling –Springs - API P-y Curves, or Local models
- Cement Levels uncertainty

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Contact

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Dynamic surge & swab simulations

2019-05-21 - Heavelock

Category: Well Engineering, Operation and Management

Subcategory: Well construction and management services

Type: Service

Our software calculates surge & swab margin when tripping/pulling drill pipe or completion string and takes the influence of rig heave into consideration. Our surge & swab model is a very advanced transient model that takes into account elastic properties of the drill string, friction in the well, non-Newtonian character of drilling mud. It has been extensively verified using real field data together with our partner Equinor.

Using our simulations you can determine the margins of your bottom-hole pressure profile as induced by such factors as rig heave and tripping/pulling velocity. We are able to perform advanced dynamic simulations with various configurations of drill string, marine riser, casings, liners and completion strings.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Heavelock website

Contact

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www.heavelock.no

HeaveLock downhole choke valve

2019-05-21 - Heavelock

Category: Down Hole Technologies, Fluids and Services

Subcategory: Drill-bits, hole-openers, Reamers, Steerable systems and downhole motors, MWD, LWD, and drill-string components

Type: Product

HeaveLock™ downhole choke valve, placed in the BHA, keeps bottom-hole pressure stable during drill pipe connections on floating rigs, counteracting surge & swab effects. The tool is robotic and highly autonomous. On-board sensor suit makes it possible to detect motion of the drill string and the choke valve compensates for surge & swab by dynamically controlling the flow of drilling mud (use of Continuous Circulation System is required).

With HeaveLock you stay within drilling pressure margins also on drill pipe connections, when topside heave compensation is disabled. This enables drilling of previously "un-drillable" wells and avoid costly well control issues such as ballooning, loss/gain and kicks, making drilling from floating rigs in harsh weather safer and more efficient.

Technology readiness level (TRL)

According to API RP 17N

TRL 2: Concept validated. Concept design or novel features of design validated through model or small scale testing in laboratory environment. Shall show that the technology can meet specified acceptance criteria with additional testing

Reference

Heavelock website

SPE-195641

SPE-194143

SPE-189657

Contact

Dmitri Gorski

Chief Technology Officer

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+47 418 47 928



Wellhead Control Panel

2019-10-16 - Hitec Products AS

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

The WHCP is a complex hydraulic control system that provides control of the topside or direct-hydraulic subsea christmas tree.

We can provide state-of-the-art systems for small one-well developments to major new developments with multiple trees.

Hitec Products has built standard systems with integrated Hydraulic Power Units, and also custom-built modules for high profile reference projects. Our latest generation control system is modular based, compact and designed in cooperation with our clients. In each case we have involved the necessary resources in order to develop the best possible system with regards to layout, HSE, ergonomics, user friendliness and reliability. We have a strong reference base and are the natural partner when designing or modifying a Wellhead Control System.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Wellhead Control Panel

Contact

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HYDRAWELL

Perf, Wash and Cement, PWC®

2019-09-19 - Hydrawell Intervention

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Service

HydraWell are the inventors of PWC® (perf, wash and cement) and owns several patents regarding this technology. The PWC® method replaces section milling for annulus remediation in several well abandonment applications including, but not limited to; P&A, Slot Recovery, Casing Shoe Repair, Annulus Pressure Remediation

The method is run as a 1-trip system where a perf device (high shot density TCP guns) is run below the PWC® assembly to the planned plug depth. Guns are fired to create access to annulus for the washing operation to commence. Fresh wash fluid is jetted into the annulus before the subsequent cement job is done, leaving a uniform 360-deg cement plug in the area.

This operation reduces the time to remediate a wellbore from 5-15 days with section milling down to 2 days with PWC®.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

HydraWell web page

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Annular Integrity Testing

2019-09-19 - Hydrawell Intervention

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Service

Some times the operator want to test the integrity of the annulus as part of a P&A or slot recovery programme.

HydraWell have the solution called Annular Integrity Testing (AIT); A dual swab cup assy w/ TCP guns is RIH. At the depth where the formation is believed to be squeezing against the casing, the guns are fired-typically 100ft apart-and the AIT tool is positioned to straddle lower sets of perms. Fluid is then pumped into the annulus, and if the formation is holding, no return is seen on surface. The tool can then be disconnected and a balanced cement plug set on top to finalise the barrier.

Conventional methods consist of several runs to set bridge plugs and retrieveable packers to perform testing. HydraWell's AIT solution is a 1-trip system and can be done in less than one day.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Annular Integrity Testing

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Personnel tracking (POB)

2019-05-20 - IDENTEC SOLUTIONS

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Personnel safety

Type: Product

Identec's personnel safety solution is developed to tackle the strict regulations, regarding personnel logistics offshore. Our Personnel on Board (POB) mustering system provides, without compromising safety, great HS&E benefits in the following areas:

- Safe and efficient mustering in real-time
- Faster and more accurate search and rescue for missing personnel
- Automated updates on head count in case of an emergency
- Access control to restricted areas or other installations

The solution is tried and tested, and is in operation with some of the largest and most HSE-aware energy companies around.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Identec Solutions website

POB description

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Subsea Sealing and Construction Clamps

2019-07-03 - IK-Group

Category: Subsea Equipment and Services

Subcategory: Other support systems

Type: Product

Combined structural and sealing clamp with circumferential packers to mechanically secure the flange couple in combination with external injection of a pressure activated sealant

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Combined Structural and Sealing Clamp

Contact

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**Business Development and
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Caison Repair - Remote Operated Clamps

2019-07-03 - IK-Group

Category: Subsea Equipment and Services

Subcategory: Other support systems

Type: Product

Caison Repair Clamp for Remote Operated installation

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Caison Repair

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Residential WROV & onshore control center

2019-06-12 - IKM Subsea

Category: Subsea Equipment and Services

Subcategory: Other support systems

Type: Service

IKM Subsea was the first operator to demonstrate a successful track record in development and use of electric WROVs. This in-house knowledge has been fundamental in placing IKM at the forefront of the Resident ROV solution providing 24/7 – 365 ROV operations utilizing the IKM onshore control center. The features of the electrical WROV is of paramount importance and the heart of the reliability when it comes to our ability to stay submerged for long operational periods.

- In-house technology
- Electric trusters
- Immediate readiness
- No daily launch/recovery
- No waiting on weather
- Full redundancy
- No overheating
- Green design
- 13 weeks submerged
- Subsea toolstand
- Remote operations, since May 2017
- Task specific simulation, in-house simulator / training center

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

IKM Subsea website

Contact

Hans Fjellanger

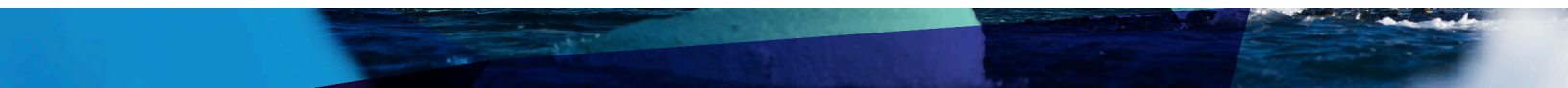


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Well services

2020-05-06 - IKM Testing

Category: Well Intervention and Well Services

Subcategory: Others

Type: Service

- Stimulation Services
- Nitrogen Services
- Wellhead and tree valve maintenance
- Well Integrity Services
- Well decommissioning Services
- Scale squeeze services

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Well Services

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CTS

2020-05-20 - IKM Testing

Category: Subsea Equipment and Services

Subcategory: Pumps and cutting removal

Type: Service

IKM Testings CTS systems used during the top hole drilling operation are generally of a very flexible design, and we has been involved in CTS Services for more than 20 years.

IKM Testings CTS solutions are based on 2 essential pre-requisites relative to the drill system and drilling program:

- Use of water based drill fluid
- Suitable low pressure wellheads with sufficiently designed discharge piping to CTS suction hoses.

For standard CTS operations control and monitoring of the system performance is done by use of pressure gauges, flow meters and close cooperation with the drilling crew onboard the rig. IKM supervisors, having been part of the development, design and operation of the systems for years.

Low manning: Standard crew consists of 4 persons for 24/7 operation

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Contact

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Magnetic Mud Filter

2019-06-13 - Innovar Solutions

Category: Vessels, rigs and modules

Subcategory: Drilling machineries, Cementing Equipment, mud equipment and accessories

Type: Product

Removal of steel particles is important to decrease wear of rig equipment. With its extremely powerful magnets and easy to use filter bags, the Innovar Solutions Magnetic Mud Filter® (MMF) is an innovative, leading ditch magnet system popular with the rig crew.

The MMF is designed to remove any steel particles from the fluid system. A patented exchangeable filter bag system allows the magnets to remain in the ditch, thus avoiding challenging heavy lifts. The filter bag is placed onto a handling frame, and easily pulled on and off the magnet rod. The cleaning procedure is safe, easy and completed in less than one minute.

A replaced, used filter bag contains steel particles and debris which can be analyzed to obtain important information about the drilling process and casing wear.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Innovar Solutions website

Contact

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InnoBristle drift & cleaning tool

2019-06-13 - Innovar Solutions

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Running a completion string containing multiple packers and external control lines is a high-risk operation. The Innovar Solutions InnoBristle is designed to reduce this risk by improving running conditions.

Running a bottom sub with an OD slightly larger than the packer OD, ensures that the hole is not restricted. To further enhance the ability to reach packer depth, the InnoBristle bottom sub is equipped with magnets capable of picking up debris. A flexible brush improving the packer ability to generate a seal against the casing wall. A multiple packer BHA with several control lines clamped on the outside, can be very difficult to rotate. To overcome this the Innobristle can be equipped with a self-aligning mule shoe that rotates 180 degrees by simple downward force.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Innovar Solutions website

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Jet Bailer

2019-06-13 - Innovar Solutions

Category: Well Intervention and Well Services

Subcategory: Coiled tubing, wireline, and running tools

Type: Product

The Innovar Solutions Jet Bailer® is a wireline operated tool used to loosen stuck material and fishing non-magnetic objects and debris. The principle of the Jet Bailer is to jet and suck in one simultaneous and extremely powerful operation. The tool is driven by the hydrostatic well pressure, and activated either by added pressure from the surface or by jarring by the wireline tool string.

The Jet Bailer is superior to other bailers since it generates an extreme jetting force that agitates and loosens objects and debris below the tool. The expelled fluid is sucked into a fishing chamber together with the debris. The fluid ejection also minimizes the risk of getting hydraulically stuck.

Technology readiness level (TRL)

According to API RP 17N

TRL 4: Technology qualified for first use Full-scale prototype built and technology qualified through testing in intended environment, simulated or actual. The new hardware is now ready for first use

Reference

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WirlTool BOP cleaning tool

2019-06-13 - Innovar Solutions

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

Conventional Blow Out Preventer (BOP) cleaning techniques utilize a jetting sub. However, water cutting from such tools may damage seals inside the BOP calling for dismantling and repair of the BOP.

The Innovar Solutions WirlTool provides a gentler cleaning process of BOP's by setting up a powerful circular flow pattern that establishes a vortex that draws/pulls debris out from the BOP cavities and crevices. Combined with Innovar Solutions' powerful fishing and wellbore cleaning tools, it represents a very efficient well cleaning assembly.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Innovar Solutions website

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Innomag string magnet

2019-06-13 - Innovar Solutions

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

Wellbore debris is blamed for a third of all failed completions. The effects of debris could result in multiple runs being required to set and test the completions and plugs. These are costly additional runs for the operator, causing unnecessary down time resulting in lost revenue.

Innovar Solutions delivers a wide range of string magnets for wellbore cleaning purposes. Cleaning magnets, using laser-focused technology, are designed to have the magnetic field pointing towards the wall for maximum cleaning effect. Multiple string magnets can be run together to remove debris in one trip, reducing the need for excessive runs. Wellbore cleaning tools can also be combined with the strong fishing magnets.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

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Magnum fishing magnet

2019-06-13 - Innovar Solutions

Category: Well Intervention and Well Services

Subcategory: Fishing and inspection

Type: Product

Innovar fishing tools are characterized by use of a laser-focused magnet technology directing all the magnetic field towards the fish, ensuring all energy is used to catch the debris or lost item. The Innovar Solutions laser-focused magnets have the highest Bottom Hole Temperature (BHT) range available on the market, ensuring high efficiency up to 160°C.

Innovar Solutions provides field-proven, highly successful, easy to use magnets for fishing operations to assist our customers increasing up-time and reducing costs. Laser-focused magnets permit powerful magnets to be shielded for air transport according to IATA regulations. This allows helicopter transport to the rig location, saving considerable rig downtime.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

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Inter Remote Shatter Valve (IRSV)

2019-06-25 - Interwell

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

The Inter Remote Shatter Valve (IRSV) is a qualified barrier valve, which is remotely opened. It can be integrated as part of the completion string or installed below an intervention packer.

The IRSV provides a barrier while running new completion strings. It is used for setting of the completion packer and pressure integrity test of the tubing. This enables the customers to protect lower zones while finishing the upper completion installation. Remote actuation enables complete removal of the barrier without any further intervention.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Inter Remote Shatter Valve (IRSV)

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HPHT Retrievable Bridge Plug

2019-06-25 - Interwell

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

The patented High Pressure High Temperature Retrievable Bridge Plug (HPHT) contains an innovative seal module which both compresses and constrains the element, enabling it to withstand extreme differential pressures.

HPHT features:

- Patented metal to metal sealing support module and exclusive packer element technology
- Ideal for workover applications: well control barrier, packer for injection valve, fixed choke etc.
- Slim design (small OD/large ID)
- Equalise and retrieve with standard GS in a single operation (no prong required)
- Can be run on slickline, e-line, coiled tubing and pipe
- Other sizes available on request

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

HPHT Retrievable Bridge Plug

Contact

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HEX Retrievable Bridge Plug

2019-06-25 - Interwell

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

The High Expansion Retrievable Bridge Plug (HEX) is the most versatile mechanical plug on the market. It has been designed to pass through extremely narrow wellbore restrictions (such as valves, nipples and straddles) and set in larger ID casing.

Product features:

- Highest expansion retrievable bridge plug on the market
- Centralising adapter kit that ensures the sealing element is centralised when setting the plug
- Short tool length
- Ideal for workover applications: tubing barrier, packer for injection valve, fixed choke etc.
- Slim design (small OD)
- Equalise and retrieve with standard GS in a single operation (no prong required)
- Can be run on slickline, e-line, coiled tubing and pipe
- Other sizes available on request

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

HEX Retrievable Bridge Plug

Contact

Janne Freuchen Halvorsen

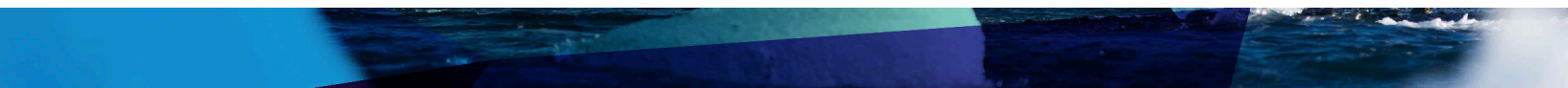
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ME Retrievable Bridge Plug

2019-06-25 - Interwell

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

The Medium Expansion Retrievable Bridge Plug (ME) is a high performance bridge plug/packer which features a solid elastomeric element, a robust anchoring module and an internal junk extension.

Product features:

- Ideal for workover applications; well control barrier, packer for injection valve, fixed choke etc.
- Slim design (small OD/large ID)
- Equalize and retrieve with standard GS in a single operation (no prong required)
- Can be run on slickline, e-line, coiled tubing and pipe
- Other sizes available on request

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

ME Retrievable Bridge Plug

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High Expansion Gauge Hanger

2019-06-25 - Interwell

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

The High Expansion Gauge Hanger (GH) is an ultra-slim design which allows it to be deployed through narrow restrictions or smaller completion tubing and set in larger ID liners/casings. Most importantly, the slim design minimises the restriction to flow enabling better quality data to be recorded during production and/or injection conditions.

The GH provides cost effective solution for data acquisition, with a variety of adaptor kits; allowing one size of GH to be set in a wide range of tubing sizes, weights and grades.

Product features

- High expansion
- High load capacity
- Low flow restriction
- Short tool string
- Self centralising
- Standard setting and retrieval tools
- Run on slickline, e-line, CT and pipe

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

High Expansion Gauge Hanger

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RockSolid Thermite-based barrier

2020-08-28 - Interwell

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Service

Interwell is pioneering a more cost-effective, more sustainable, and safer solution as an alternative to current P&A methods. Ongoing rigless deployments with our unique thermite-based solution have delivered a targeted and controlled exothermic reaction that aims to reinstate caprock integrity in the well cross-section, permanently.

Our ultimate ambition is to deliver a rock-solid impermeable barrier with long-lasting integrity, independent of well-design, application, and formation type; first time, every time.

We have, so far, set 21 barriers in 18 wells before our next set of field trials will start at the end of 2020. Once these next trials are concluded, the technology will be rolled out as an alternative to section milling and punch&squeeze.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Rig-Less Plug & Abandonment

Contact

Janne Freuchen Halvorsen

Global Marketing &

Communications

Coordinator

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www.interwell.com



Well service pump units

2019-05-21 - JB Well Solutions

Category: Well Intervention and Well Services

Subcategory: Coiled tubing, wireline, and running tools

Type: Product

Our diesel driven well service pump units range from 100HP to 2000HP. All models can be customized according to customers specifications. All Zone 2 pump units are delivered with JB Group's own 3GHI Protection™ system and are certified by DNV GL for operation without exhaust flame arresters in hazardous areas (Zone 2).

All pump units can be fully certified in accordance with local requirements such as ATEX, IECEx, NORSOK Z-015, OLF 70, Puwer, GOST, etc. DNVGL-ST-E272 certification and SOLAS compliance is also available on request. All units will be CE marked.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

JB Well Solutions website
Well service pump units

Contact

Gisle Odemotland
Managing Director

giod@jbwell.com

+47 922 24 252

www.jbwell.com



Pump units

2019-05-21 - JB Well Solutions

Category: Well Intervention and Well Services

Subcategory: Fracking and perforation

Type: Product

Our diesel driven well service pump units range from 100HP to 2000HP. All models can be customized according to customers specifications. All Zone 2 pump units are delivered with JB Group's own 3GHI Protection™ system and are certified by DNV GL for operation without exhaust flame arresters in hazardous areas (Zone 2).

All pump units can be fully certified in accordance with local requirements such as ATEX, IECEx, NORSOK Z-015, OLF 70, Puwer, GOST, etc. DNVGL-ST-E272 certification and SOLAS compliance is also available on request. All units will be CE marked. The units are certified by a third party (DNV GL) and delivered with full documentation and warranty.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

JB Well Solutions website
Well service pump units

Contact

Gisle Odemotland
Managing Director

giod@jbwell.com

+47 922 24 252

www.jbwell.com



Generator units for hazardous areas

2019-05-21 - JB Well Solutions

Category: Well Intervention and Well Services

Subcategory: Others

Type: Product

Our diesel driven generator units range from 75 kVA to 1500 kVA. All models can be customized according to customers specifications. All Zone 2 generator units are delivered with JB Group's own 3GHI Protection™ system and are certified by DNV GL for operation without exhaust flame arresters in hazardous areas (Zone 2).

All generator units can be fully certified in accordance with local requirements such as ATEX, IECEx, NORSOK Z-015, OLF 70, Puwer, GOST, etc. DNVGL-ST-E272 certification and SOLAS compliance is also available on request. All units will be CE marked. The units are certified by a third party (DNV GL) and delivered with full documentation and warranty. All our generator units are operated by JB Group's own DECAM™, safety and user-friendly, cost effective human interface.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

JB Well Solutions website
Generator units for hazardous areas

Contact

Gisle Odemotland
Managing Director

giod@jbwell.com

+47 922 24 252

www.jbwell.com



Coiled tubing package CTU 600

2019-05-21 - JB Well Solutions

Category: Well Intervention and Well Services

Subcategory: Coiled tubing, wireline, and running tools

Type: Product

JB Well Solutions next generation coiled tubing package CTU 600 is complete with control cabin, diesel or electrical driven hydraulic power pack, BOP skid with hydraulic hose reels, jacking frames, coil tubing reels etc. All units is designed with special focus on easy access for maintenance and short rig up time.

- Field proven technology: Our CTU products are in daily operation offshore
- Design based on operational experience
- On shelf components that is available globally
- Focus on operation and maintenance friendly solutions
- Short rig up time
- Reduces operational crew
- Digital Oil Field (DOF) ready
- High degrees of automation/remote operation available
- Global compliance
- Integration with JBWS well service pump units for remote operation from control cabin

Technology readiness level (TRL)

According to API RP 17N

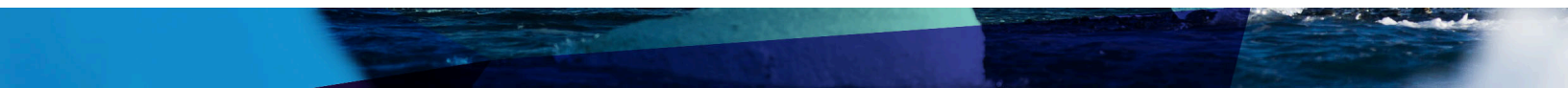
TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

JB Well Solutions website
Coiled tubing package CTU 600

Contact

Gisle Odemotland
Managing Director
giod@jbwell.com



Leidar Influx Loss Detection (ILD) module

2019-06-13 - Kelda Dynamics

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

Leidar Influx Loss Detection (ILD) module is a kick detection algorithm, able to detect symptoms of downhole incidents before they evolve into a well control event. It has been tested against the Straume® hydraulic simulator, in real-life and accounts for transient drill operations (connections, pressure set-point changes, surge & swab effects) to avoid false alarms.

Features:

- Enable earlier detection of influx/loss
- Avoid false alarms
- Single-most cost-effective measure to reduce Non-Productive Time (NPT) caused by kick/loss-incidents

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Kelda website

Contact

Martin Culen

Chief Commercial Officer

martin@kelda.no

www.kelda.no



Straume hydraulics simulator

2019-06-13 - Kelda Dynamics

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

Straume® is a highly configurable high-end multiphase well simulator with full pressure and flow dynamics, rigorous fluid definitions - including multi-fluids, capable of simulating most MPD/UBD/DGD operations and contingency scenarios. The simulator is suitable for testing of control systems and training of MPD/UBD/DGD personnel in a controlled environment.

With fully integrated multiphase physics, Straume enables the driller to train on complex MPD/UBD/DGD operations, introducing various contingency scenarios, into a controlled environment. Under training, the driller can execute drillers operations and in-depth analyze the consequence of operations. Moreover, training on well incidents such as kick/loss educates the driller to take actions in case of a real incidence.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Kelda website

Contact

Martin Culen

Chief Commercial Officer

martin@kelda.no

www.kelda.no



Leidar pressure controller

2019-06-13 - Kelda Dynamics

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

The Leidar pressure controller is built on the latest technology in advanced adaptive control, typically used in autonomous aircrafts for extreme performance and robustness.

The Leidar pressure controller allows the driller to choose one of four control modes:

- Choke pressure (single/dual)
- Downhole pressure (requires Leidar® hydraulic model)
- Standpipe pressure
- Choke flow

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Kelda website

Contact

Martin Culen

Chief Commercial Officer

martin@kelda.no

www.kelda.no



Bivrost cloud portal

2019-06-13 - Kelda Dynamics

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

Bivrost is a tool for viewing, analyzing and handle all logged signals from a well. With an intuitive user interface, it is a low-threshold application for data visualization and uses cloud-storage to avoid monopolizing your computer disk space.

Bivrost has a customizable dashboard that gives a fast overview of the current well. It shows real-time updated values of e.g. well depth, bit depth, and drill string volume, as well as a visual representation of the well trajectory and an interactive chart of the well casing distribution.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Kelda website

Contact

Martin Culen

Chief Commercial Officer

martin@kelda.no

www.kelda.no

Leidar hydraulic model

2019-06-13 - Kelda Dynamics

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

The Leidar hydraulic model is a high-performance, real-time downhole pressure estimator, tested and verified with field data. It captures the downhole dynamics and is both easy to configure and calibrate. The Leidar hydraulic model can be used standalone or with the Leidar® pressure controller.

Features:

- Estimates downhole pressure at any location (virtual sensors)
- Automatic calibration
- Continuous estimation between PWD updates (e.g. connections) or manual calibration (calculated)
- Handles circulation, drilling, connections, multi-fluid operations, surge-swab and more

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Kelda website

Contact

Martin Culen

Chief Commercial Officer

martin@kelda.no

www.kelda.no

FADE - Dissolving plugs

2021-03-22 - Marwell

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

FADE is a family of dissolvable alloys and thermoplastic materials that provides a reliable dissolution rate when in contact with fresh water, brine, oil-based mud or acid. There are three categories of materials available to accommodate a controlled dissolution in different downhole conditions. FADE dissolving plugs can be used as dissolvable inserts in liners, inflow control devices (ICDs) and sliding sleeves. The added values for customers when using FADE are:

- Enable wash down capability
- Eliminate middle completion
- No intervention required to perforate well
- Enable circulation and placement of fluid without innerstring
- Open sleeves without need for intervention

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

FADE product website

Contact

Petter Rommetvedt
Completion and Intervention
Manager

petter@marwell-tech.no

+4747632085

www.marwell-tech.no

FLEX carbon tubular for open hole junctions

2021-03-22 - Marwell

Category: Down Hole Technologies, Fluids and Services

Subcategory: Casing, tubing, liners, connectors and accessories

Type: Product

Through in-depth work with clients Marwell have gained extensive knowledge on carbon fiber materials resulting in the commercialized product FLEX carbon tubular for open hole junctions. It is run above drop-off liners to provide flow path for production fluids inside an open hole junction, and is therefore designed to resist formation collapse. FLEX system for both 6-1/2" and 8-1/2" open hole are available.

The added values for customers when using FLEX carbon tubular for open hole junctions are:

- Avoid the open hole junction to collapse and plug the flow path
- Extremely high collapse resistance
- Drillable and millable with conventional tools

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

FLEX product website

Contact

Petter Rommetvedt
Completion and Intervention
Manager

petter@marwell-tech.no

+4747632085

www.marwell-tech.no

TIME toe valves

2021-03-22 - Marwell

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

By using the FADE technology Marwell have designed two different TIME toe valves. The valves are installed in the deep end of the lower completion to control the toe zone and can be run in hole in either open or closed position. The valves are actuated differently:

- The pressure activated version has an hydrostatic initiator with a pre-set actuation delay between 10 hours and 3 days
- The fluid activated version is actuated when exposed to brine or acid. When exposed to oil base mud there is no activation

The added values for customers when using TIME toe valves are:

- Straightforward and cost effective way to control toe zone
- Few moving parts and possible leak points
- No need for intervention or to send pressure signals
- Actuation of valve can be set up to suit the completion program

Technology readiness level (TRL)

According to API RP 17N

TRL 2: Concept validated. Concept design or novel features of design validated through model or small scale testing in laboratory environment. Shall show that the technology can meet specified acceptance criteria with additional testing

Reference

Marwell products

Contact

Petter Rommetvedt
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Manager

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+4747632085
www.marwell-tech.no



Edit submission workflow TEST

2019-08-14 - Netpower Web Solutions AS

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Others

Type: Other

TEST

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

CACHING TEST

2019-08-22 - Netpower Web Solutions AS

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Personnel safety

Type: Other

cache

this is a test

Technology readiness level (TRL)

According to API RP 17N

TRL 0: Unproven idea/proposal Paper concept. No analysis or testing has been performed

Drilling and Mud Modules

2019-12-12 - Nymo AS

Category: Vessels, rigs and modules

Subcategory: Drilling and Intervention rigs and vessels

Type: Product

Nymo has over the years established very good relations with the major suppliers of drilling and mud treatment equipment throughout the world. We are in cooperation with world leading drilling equipment suppliers, and are experienced in all types of drilling equipment both for fixed platforms and floating drilling vessels. Our success in these projects has given us first class expertise on optimal layout/ function and interaction of the equipment.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Drilling and Mud Modules

Contact

Magne Snekkevik

Sales and Market Manager

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+4791562585

<https://www.nymo.no/home>





Octio DrillWatch

2019-06-06 - OCTIO

Category: Well Engineering, Operation and Management

Subcategory: Others

Type: Service

Octio DrillWatch consists in passive seismic monitoring during drilling. A cable with 4C sensors is deployed on the seabed to analyse sounds originated in the subsurface by the drilling operation.

The applications of DrillWatch are:

- Geosteering of the drill bit, with a few meters resolution, for more efficient operation and increased oil recovery rates
- Seismic imaging of horizons and geobodies ahead of the drill bit
- Monitoring of fractures and their location, resulting from injection tests or incidents
- Improved knowledge base for planning future wells

Octio DrillWatch does not interfere with the drilling operation, and does not introduce any additional complication or risk. The seismic data is processed in real time, and provided for prompt decision taking during the operation.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Octio website
Octio DrillWatch

Contact

John Even Lindgård
Vice President Sales &
Services

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Semisubmersible heavy transport vessels

2019-06-21 - OHT Management

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

OHT currently owns and operates the five open deck semi-submersible heavy transportation vessels. The company has transported well over a hundred jack-up drilling rigs for the majority of the largest rig-owners in the world. Our experience and long track record within the industry make us the preferred supplier for our customers.

Hawk is amongst the top five largest semi-submersible heavy lift vessels in the world. The vessel transports the world's largest and heaviest drilling jack-ups. Osprey is a narrower sister of Hawk with even more submerging capabilities. Albatross is characterized by superior speed and low consumption. Eagle and Falcon are sister vessels and the workhorses of the family.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.



Reference

Askepott on Hawk from Korea to Norway
Osprey transported Gulliver
Albatross with offshore wind foundations
Shelf drilling rig transported by Falcon
Noble drilling rig on Eagle

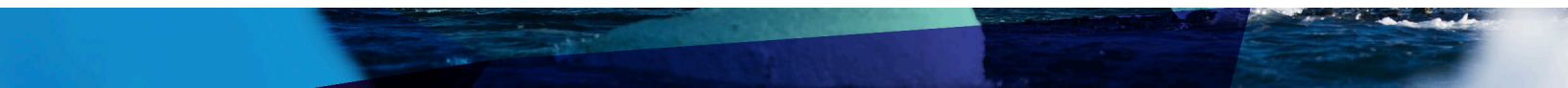
Contact

Trond Kjetil Nodberg
Head of Business
Development & Tendering

tkn@oht.no

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www.oht.no



Oliasoft WellDesign

2019-04-08 - Oliasoft

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Oliasoft WellDesign™ is a modern integrated cloud engineering software package providing a complete well planning tool for drilling engineers, covering all required well design calculations. The software is cloud based and accessible through the web browser and thus do not require any set-up support.

The combination of all calculations in an integrated solution allows for a seamless and time efficient workflow where changes made to the well design are updated throughout the entire software, making it possible to easily rerun all calculations based on the new design.

Oliasoft WellDesign is built using modern software technology with open REST APIs, enabling the possibility to both send and receive data from external applications. This is essential to digitize the oil industry.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Oliasoft WellDesign™

Contact

Lene Lykke Erichsen

Sales and Technical Support

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+47 944 06 667

www.oliasoft.com

A decorative image at the bottom of the page showing an oil rig at sea with a blue and green color scheme.

Oliasoft blowout & kill simulations

2019-05-02 - Oliasoft

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Oliasoft blowout & kill simulation is one of four modules in Oliasoft WellDesign™. This module provides a probabilistic simulation of blowout rates as well as a dynamic kill engine.

The probabilistic blowout simulation takes the uncertainty of the input parameters into account, providing the results as a probability range expressing various probabilistic scenarios. The dynamic kill model use two-phase flow simulations based on conservation equations and closure laws for the different flowing phases and calculates upper and lower kill limits.

Due to Oliasoft WellDesign's modern architecture the blowout & kill simulation module can either be used as a stand-alone product or in combination with any of the other modules. The user can create a system solution that cover the company's needs.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Oliasoft website

Oliasoft blowout & kill simulations

Contact

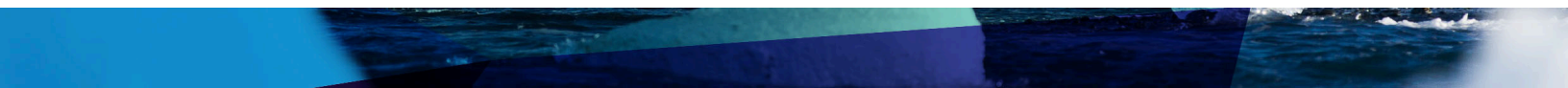
Lene Lykke Erichsen

Sales and Technical Support

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www.oliasoft.com



Oliasoft tubing design

2019-05-02 - Oliasoft

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Oliasoft tubing design is one of four modules in Oliasoft WellDesign™. This module provides accurate determination of thermal effects from movement of fluids and multi-string analysis, such as pipe body movement, wellhead growth and annular fluid expansion.

The transient temperature simulator handles multiphase fluid production through tubing and annulus, circulation and shut-in scenarios and calculates the accurate temperatures and pressures throughout the entire well. The multi-string analysis ensures analysis of advanced temperature effects.

Due to Oliasoft WellDesign's modern architecture, the casing design module can either be used as a stand-alone product or in combination with any of the other modules. Thus, the user can create a system solution that cover the company's needs.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Oliasoft website
Oliasoft tubing design

Contact

Lene Lykke Erichsen
Sales and Technical Support
lene@oliasoft.com
+47 944 06 667
www.oliasoft.com



Oliasoft casing design

2019-05-02 - Oliasoft

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Oliasoft casing design is one of the four integrated modules in Oliasoft WellDesign™. This module offers full triaxial casing design, compatible with NORSOK, ISO and API standards, in addition to torque & drag and hydraulics analysis.

Predefined load cases for full authority requirements are available, as well as generic load cases and options for custom loads. Advanced internal and external profiles, integrated with temperature and production simulations are available, in addition to extensive libraries with casing and connection data per vendor.

Due to Oliasoft WellDesign's modern architecture, the casing design module can either be used as a stand-alone product or in combination with any of the other modules. Thus, the user can create a system solution that cover the company's needs.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Oliasoft website
Oliasoft casing design

Contact

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Sales and Technical Support
lene@oliasoft.com
+47 944 06 667
www.oliasoft.com



Oliasoft well trajectory design

2019-05-02 - Oliasoft

Category: Well Engineering, Operation and Management

Subcategory: Remote/integrated operation/digitalization

Type: Product

Oliasoft well trajectory design is one of the four integrated modules in Oliasoft WellDesign™. The module is a full fledged trajectory engineering and data management system.

The system is designed to support multiple planned versions of any well trajectory with full revision tracking and bulk management of wells, fields and areas. The module supports a range of parametric build options, in addition to import capabilities of survey lists and integration with 3rd party systems through Oliasoft API.

Due to Oliasoft WellDesign's modern architecture, the well trajectory module can either be used as a stand-alone product or in combination with any of the other modules. Thus, the user can create a system solution that cover the company's specific needs.

Technology readiness level (TRL)

According to API RP 17N

TRL 5: Technology integration tested Full-scale prototype built and integrated into intended operating system with full interface and functionality tests

Reference

Oliasoft website

Oliasoft well trajectory design

Contact

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+47 944 06 667

www.oliasoft.com

A decorative image at the bottom of the page showing a ship's wake on the water, with blue and green hues.

Drilling waste management

2020-11-26 - Onsite Treatment Services (OTS)

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Waste management

Type: Service

Onsite Treatment Technologies (OTT) is a complete supplier of cuttings handling equipment, drilling waste handling and high pressure pumping equipment, from handling the drilling waste on a drilling installation to effective bulk transfer from the rig. We have the know-how and expertise in automation, diesel/electric powered equipment and hydraulic/pneumatic systems. Our equipment is designed, manufactured and certified compliant to the highest quality standards and includes a comprehensive documentation package.

OTT provides effective HSE oriented solutions for handling and treatment of drilling waste and other waste materials. We offer a large and modern fleet of rental equipment and experienced personnel.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

OTT website

Contact

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CEO

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www.ots.as



Cement Support Tool (CST)

2019-04-03 - Perigon

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Product

Perigon is the inventor and supplier of the well known Cement Support Tool (CST) which ensures success when setting off-bottom cement plugs.

Minimize cost by ensuring successful setting of balanced off-bottom cement plugs on first attempt. Industry track record for these types of plugs claims 2.4 attempts per plug before objective is achieved. After supplying more than 3500 units, the Cement Support Tool (CST) have a track record of above 95% on first attempt when setting balanced off-bottom cement plugs. The savings compared to other cement plug base technologies are significant, especially due to rig time cost. Operators have reported to spend over one week to achieve a successful plug using traditional base methods compared to one day using the CST as base.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Product page with product sheets, white paper and guide
The Cement Plug Blog
FAQ page

Contact

Per Arild Årebråt
General Manager

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+47 91686186
www.perigon.no



CleanPipe for drill pipe

2019-11-20 - Perigon

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

When drill pipe connections are broken and the pipes are racked back on the drill floor after downhole operations, the fluid stuck to the inner walls of the pipes drips on the drill floor and accumulates on the set back area. The accumulated volume of this residual fluid is surprisingly large and generates several cost elements such as increase mud consumption, increased slop treatment and increased thread wear.

Additionally, there are significant HSE benefits such as less well fluid spill on drill floor and less work in red zone when the fluid is left in the well. Drilling Supervisor in the North Sea reported 95 % reduced mud spill when using CleanPipe!

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

CleanPipe

Contact

Per Arild Årebråt

General Manager

pa@perigon.no

+47 91686186

www.perigon.no



CleanPipe for casing

2019-11-20 - Perigon

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

When casings are being removed from wells for various reasons, the fluid stuck to the inner walls creates a mess on drill floor, pipe deck and during transportation back to land. The accumulated volume of this residual fluid is surprisingly large and generates several cost elements such as increase mud consumption, increased slop treatment and increased cost when casings are being destructed. Additionally, there are significant HSE benefits such as less well fluid spill on drill floor and less work in red zone when the fluid is left in the well.

CleanPipe is designed to wipe the inside of the casing. When ready to pull the casing out of hole, simply slug the casing and drop the Cleanpipe tool inside.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

CleanPipe

Contact

Per Arild Årebråt
General Manager

pa@perigon.no
+47 91686186
www.perigon.no



SafeLift IPO - gas lift valve

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Unloading valve reliability issues often arise as traditional bellows systems have major limitations when it comes to pressure, open & close cycles and temperature. These effects are more pronounced in deeper, hotter wells.

PTC's SafeLift® Injection Pressure Operated (IPO) valve is the only valve accredited to the most extreme barrier and erosion testing requirements. SafeLift IPO's unique bellows technology and erosion and chatter resistant check valve design, provides enhanced well integrity and well uptime. Since its introduction in 2007, the product family has achieved significant market penetration with all major operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
SafeLift IPO

Contact

Shawn Le Maitre

VP Sales & Marketing

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+47 51 95 08 00

www.ptc.no



SafeLift - orifice gas lift valve

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Change out of gas lift valves (GLV) due to valve failures or non-optimum gas lift design can be costly, especially in offshore and subsea environments. Interruption of, or non-optimum gas lifted production has a negative impact on field economics. Furthermore, leaking GLV's often lead to downgrading of the wells integrity level.

PTC's SafeLift® gas lift valve is the only valve accredited to the most extreme barrier and erosion testing requirements. SafeLift's unique erosion and chatter resistant check valve design, provides enhanced well integrity and well up-time. Since its introduction in 2007, the product family has achieved significant market penetration with all major operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
SafeLift - orifice gas lift valve

Contact

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www.ptc.no



DuraLift - scale resistant GLV

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Failure of gas lift valves as a result of scale deposition has been an issue that has plagued the industry for decades. In certain fields GLV's have to be changed several times per year. Interruption of, or non-optimum gas lift assisted production will have a negative impact on field economics.

PTC's DuraLift™ gas lift valve is an evolution of the field proven SafeLift® product family. DuraLift has a unique architecture and surface coating which significantly reduces the propensity for mineral scale deposition. Since its introduction in 2015, DuraLift has delivered significant well uptime improvements for major operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
DuraLift™

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www.ptc.no



GoLift - retrofit gas lift system

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Dwindling production and/or sub-optimal completion design may require introduction of artificial lift or different gas unloading/injection depths at some point in well's life cycle. Although a full workover could potentially solve the issue, the relatively high costs of such an operation may render the project to be unviable.

PTC's GoLift™ gas lift sub is installed as part of a straddle assembly within the production tubing. It incorporates PTC's barrier qualified gas lift valves and provides a reliable means to retrofit or repair gaslift functionality without a workover. Since its introduction in 2013, GoLift has delivered significant incremental production for many operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
GoLift™

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www.ptc.no



Life of Field - gas lift design tool

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Service

Traditionally decisions regarding the optimum number and setting depths of valves in gas lifted wells have been made considering only a small number of operating scenarios. As a result, wells often do not perform as expected.

PTC's proprietary gas lift simulation software tool facilitates the design and comparison of multiple gas lift simulation cases. As a result, decisions on mandrel depths and valve settings can be taken considering the entire range of lifecycle operating scenarios. Numerous operating companies rely on PTC's gas lift design tool to configure their well completions.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
Life of Field - gas lift design tool

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www.ptc.no



ShearLift T - shear open GLV

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

When completing new gas lift wells the standard practice is often to install dummy valves in all side pocket mandrels. These dummy valves provide a barrier between the annulus and the tubing during the well completion phase. Before the wells can start producing, the dummy valves need to be replaced with gas lift valves. These intervention operations are often time consuming and costly.

PTC's ShearLift-T™ are the only gas lift valves that allow multiple IPOs and orifice GL valves to be simultaneously sheared open using tubing pressure. ShearLift-T's unique design eliminates the need to run dummy valves, thus saving significant time during well completion or commissioning. To date, an average of two days rig time has been saved per well.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
ShearLift T

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www.ptc.no



ShearLift A - shear open GLV

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

When completing new gas lift wells the standard practice is often to install dummy valves in all side pocket mandrels. These dummy valves provide a barrier between the annulus and the tubing during the well completion phase. Before the wells can start producing, the dummy valves need to be replaced with gas lift valves. These intervention operations are often time consuming and costly.

PTC's ShearLift-A™ annulus pressure activated gas lift operating valves, are accredited to the most extreme barrier and erosion testing requirements. ShearLift-A's unique design eliminates the need to run a dummy valve, thus saving significant time during well completion or commissioning. The product family has an excellent track record since its introduction in 2009.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
ShearLift A

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NexLift SI - unwelded SPM

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Conventional Side Pocket Mandrels (SPM) have inherent challenges related to welding and heat treatment. These issues are exacerbated when welding nickel-chromium alloys, such as S13%Cr, 25%Cr and Alloy 718, common materials for high cost completions.

PTC's NexLift SI™ is the only true single-piece, unwelded SPM in the industry. This unique design provides unrivalled structural integrity, removes the last welded completion component from the well along with issues related to installation and retrieval of valves. International operating companies are now installing the field proven NexLift SI worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
NexLift SI

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NexLift SI CI - unwelded CI SPM

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Conventional Side Pocket Mandrels (SPM) have inherent challenges related to welding and heat treatment. These issues are exacerbated when welding nickel-chromium alloys, such as S13%Cr, 25%Cr and Alloy 718, common materials for high cost completions.

PTC's NexLift SI-CI™ is the only true single-piece, unwelded SPM in the industry. This unique design provides unrivalled structural integrity, removes the last welded completion component from the well along with issues related to installation and retrieval of chemical injection valves. International operating companies are now installing the field proven NexLift SI-CI worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
NexLift SI CI

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www.ptc.no



NexLift SI-B - unwelded barrier SPM

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Conventional Side Pocket Mandrels (SPM) have inherent challenges related to welding and heat treatment. Welding and post weld heat treatment rely on extensive human intervention, requiring stringent and elaborate QA/QC processes exceeding the current standards. As such, satisfactory repeatability of the manufacturing process is difficult to achieve.

PTC's NexLift SI-B™ is the only true single-piece, unwelded dual barrier SPM in the market place today. This unique design provides unrivalled structural integrity, while protecting the production casing from potentially harmful fluids and pressure. NexLift SI-B is an ideal choice for high-profile and harsh environment wells.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
NexLift SI-B

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www.ptc.no



NexLift RO - SPM

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Current manufacturing processes for conventional Side Pocket Mandrels (SPM) have inherent challenges related to welding and heat treatment. Welding and post weld heat treatment rely on extensive human intervention, requiring stringent and elaborate QA/QC processes exceeding the current standards.

PTC's NexLift RO™ is an innovative SPM with only two circumferential welds, manufactured using proprietary robotic TIG welding eliminating many of the shortcomings in the conventional manufacturing processes. This enhances the quality and reduces the risk of completion failure along with issues related to intervention operations. International operating companies are now installing the field proven NexLift RO worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
NexLift RO

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www.ptc.no



NexLift RO-CI - CI SPM

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Current manufacturing processes for conventional Side Pocket Mandrels (SPM) have inherent challenges related to welding and heat treatment. Welding and post weld heat treatment rely on extensive human intervention, requiring stringent and elaborate QA/QC processes exceeding the current standards.

PTC's NexLift RO-CI™ is an innovative SPM with only two circumferential welds, manufactured using proprietary robotic TIG welding eliminating many of the shortcomings in the conventional manufacturing processes. This enhances the quality and reduces the risk of completion failure along with issues related to intervention operations. International operating companies are now installing the field proven NexLift RO-CI worldwide.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
NexLift RO-CI

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SureFlo-R - CI valve

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Wells with scale or corrosion issues often require continuous injection of treatment chemicals. The most common method employs the use of control lines to place the chemicals at the desired injection point in the well. Issues associated with the stable flow of chemicals through the control lines (no u-tubing), testing of control lines and well integrity have plagued the industry for decades.

PTC's SureFlo-R™ retrievable chemical injection valve is accredited to the most extreme barrier and erosion testing requirements. SureFlo-R's anti u-tube system and dual barrier check valve design, provides stable chemical injection, enhanced well integrity and well up-time. Since its introduction, the product family has achieved significant market penetration with all major operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
SureFlo-R

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www.ptc.no



SureFlo - CI sub

2019-05-28 - Petroleum Technology Company (PTC)

Category: Down Hole Technologies, Fluids and Services

Subcategory: Well completion, equipment and fluids, artificial lift

Type: Product

Wells with scale or corrosion issues often require the continuous injection of treatment chemicals. The most common method employs the use of control lines to place the chemicals at the desired injection point in the well. Issues associated with the stable flow of chemicals through the control lines (no u-tubing), testing of control lines and well integrity have plagued the industry for decades.

PTC's SureFlo™ chemical injection sub is accredited to the most extreme barrier and erosion testing requirements. SureFlo's anti u-tube system and dual barrier check valve design, provides stable chemical injection, enhanced well integrity and well up-time. Since its introduction, the product family has achieved significant market penetration with all major operating companies.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Petroleum Technology Company website
SureFlo

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MSAS - Master Surface Annulus Safety Valve

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

PTC's MSAS fail-safe close barrier valve is the only integrity-valve solution that delivers independent double barrier integrity at wellhead side outlets. The MSAS mitigates the risk of uncontrolled release of annular content from leaks or accidents, including dropped objects. The product family has an excellent track record since its introduction in 2008.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

MSAS - Master Surface Annulus Safety Valve

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www.ptc.no



HSAS - Surface Annulus Safety Valve

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

PTC's HSAS fail-safe close wellhead annulus barrier valve is the only integrity-valve solution that delivers independent double barrier integrity. The HSAS mitigates against the uncontrolled release of annular content from leaks or accidents. The product family has an excellent track record since its introduction in 2008.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

HSAS - Surface Annulus Safety Valve

Contact

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VR Sense - Double Barrier Annulus P&T Sensor

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

PTC's VR Sense systems are unique annulus monitoring solutions that delivering independent double barrier integrity at wellhead side outlets. Their use eliminates the need for gate valves and instrument flanges. Consequently, they are a cost effective and higher-performing alternative. The product family has an excellent track record since its introduction in 2012.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

VR Sense - Double Barrier Annulus P&T Sensor

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VR Sense-R - Double Barrier Annulus P&T Sensor

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

PTC's VR Sense-R systems are unique annulus monitoring solutions delivering independent double barrier integrity at wellhead side outlets. They are also retrievable under pressure. Their use eliminates the need for gate valves and instrument flanges.

Consequently, they are a cost effective and higher-performing alternative. The product family has an excellent track record since its introduction in 2012.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

VR Sense-R - Double Barrier Annulus P&T Sensor

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www.ptc.no



A-PRO - Annulus Pressure Management System

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

PTC's A-PRO, is a highly customizable Annulus Pressure Monitoring and/or Management System that facilitates the seamless integration of PTC's Wellhead Sensors and/or MSAS Surface Annulus Safety Valves. It provides a cost effective and reliable system for remote and continuous annulus pressure and temperature monitoring and pressure management. A-PRO can be integrated into an existing SCADA system or run as a stand alone unit. Operators have implemented A-PRO on a number of unmanned production facilities.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

A-PRO - Annulus Pressure Management System

Contact

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VP Sales & Marketing

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www.ptc.no



VR Lubricator Tool - Versatile VR Profile Intervention Tool

2019-07-03 - Petroleum Technology Company (PTC)

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

The PTC VR Lubricator Tool assures safe and efficient wellhead intervention operations. It is the safest, shortest, lightest and most versatile lubricator tool on the market. The kit includes accessory tools for cleaning and refreshing the profile and removing stuck plugs.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

VR Lubricator Tool - Versatile VR Profile Intervention Tool

Contact

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www.ptc.no

Marine and offshore project management and survey

2019-05-21 - Project & Survey

Category: Vessels, rigs and modules

Subcategory: Others

Type: Service

Project & Survey comprises a highly specialized and experienced team in the field of technical and operational support for the maritime and energy industry. Working with us involves meeting people you can trust, a reliable corporation and reliable services. We have a strong focus on QHSE on all levels of operation.

Our in-house expertise is available to handle all aspects within the industry by interdisciplinary structure and high adaptability. By close cooperation with clients and class societies, we offer services and skilled personnel within a wide range of multidisciplinary tasks.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Project & Survey website

Contact

Trond Hundstuen

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survey.com

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[http://project-survey.no/project
management/](http://project-survey.no/project-management/)

Intelligent Drilling Performance Tool

2020-11-19 - PSW Technology

Category: Down Hole Technologies, Fluids and Services

Subcategory: Drill-bits, hole-openers, Reamers, Steerable systems and downhole motors, MWD, LWD, and drill-string components

Type: Product

Structurally, the SureDrill Intelligent Performance Drilling Tool (IPDT) is similar to a shock-sub or a anti stall tool, with the addition of a damper section that has programmable stiffness. The damper chamber is filled with a magnetorheological fluid that has electronically controlled viscosity. An integrated motion sensor measures displacement several times per second and changes the damping factor over a 7-to-1 range based on observed drilling conditions.

By keeping tool string damping in the right range for current drilling conditions, the IPDT significantly reduces vibration, stick slip and maintaining the bit in better contact with the formation and increasing ROP up to 50%.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

PSW IPDT Web site.

Contact

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Continuous Reservoir Monitoring

2020-07-01 - RESMAN

Category: Well Intervention and Well Services

Subcategory: Others

Type: Service

RESMAN offers Continuous Reservoir Monitoring in order to optimize production and increase the net present value (NPV) of the asset by identifying well events and reducing subsurface uncertainty. Permanently installed tracer systems represent a wireless and risk-free technology providing zonal resolution and thereby digitizing the wellbore. By using trend analysis, changes in oil/water inflow can be identified at the zonal level to support operational decision-making and production optimization. This is achieved by using monitoring techniques (Continuous Well Monitoring, Trend Analysis, focused campaigns). The result is the Digitization of the Wellbore, enabling operational decision support at well and reservoir management levels, together with targeted well operations at zonal resolution.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Resman Global Website

Contact

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DrillExpect

2021-01-25 - Sekal

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

Sekal offers the software application DrillExpect for drilling optimization services and look ahead simulations utilizing the same advanced models as DrillScene and DrillTronics. DrillExpect is often used to verify, improve and optimize drilling plans, avoid lost time on critical operations, saving time and cost. Simulations can be performed both pre-well and during operations as a look ahead feature to DrillScene real-time monitoring operations.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DrillExpect

Contact

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DrillScene

2021-01-25 - Sekal

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

DrillScene real-time forecasting and trend analysis software generates a real-time digital twin of the well being drilled and supports office and rig site drilling personnel in their day-to-day work. The application forecast and detects early symptoms when downhole conditions deteriorate, allowing teams to react before running into drilling incidents or non-productive time (NPT). Such symptoms also indicate when there is room for improvement allowing teams to improve their performance and remove invisible lost time (ILT).

DrillScene have so far been used with various clients for more than 420 wells with a statistical reduction in technical side-tracks from 32% to below 10% realizing substantial cost savings for our clients of close to 700 MUSD.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DrillScene

Contact

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DrillTronics

2021-01-25 - Sekal

Category: Well Engineering, Operation and Management

Subcategory: Well integrity

Type: Product

DrillTronics read data and write back calculated values to the drilling control systems and is the tool to:

/ Dynamically safe guard the well to ensure well integrity keeping the drilling operation within the defined pressure window.

/ Activates safety triggers for over pull, set-down weight, excessive torque and pack-offs.

/ Automate the drilling processes with functions like mud pump start/stop, friction test, reciprocation, tubular and casing running. etc. These functions are provided as modules in addition to the DrillTronics safe guarding and safety trigger package.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

DrillTronics

Contact

asbjorn.sola@sekal.com



Slop treatment technology

2019-05-20 - Soiltech

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Waste management

Type: Service

The oil and gas industry is dependent on processes that produce waste water/slop. Given the nature of the discharge limits to ground or sea, a high percentage of the generated waste water/slop must be transported to designated disposal areas for further treatment.

Soiltech offers technology that treats the generated waste water/slop on location and allow for reuse of the water in the drilling process or discharge to ground/sea. This is very beneficial for operators, especially in remote locations and onshore where water is a scarce resource, as the time and cost for transportation and disposal is removed. The technology is a mechanical process where no chemicals are being used and is suitable both onshore and offshore. It is proven and already in use on the NCS, UKCS and the Middle East.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Solitech website

Contact

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Quick Stab Connectors (QSC)

2019-04-23 - Sub Sea Services

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

Flange or hub coupling connection between any fixed line and umbilical line, which can be disconnected by hand via unlatching locking mechanism and 6 rotations on the nut. Only a single operation without tools is needed to engage and disengage which reduces connection downtime. Our Quick Stab Connector (QSC) is used above sea-level. Its cost-effective design is the advantage of an easy connection.

- End connections, API specifications or other
- Various materials available
- MWP rated from 5.000 to 15.000 PSI
- Hydraulic oil
- Mud
- Sour gas service

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Sub Sea Services website
Quick Stab Connectors (QSC)

Contact

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High Pressure Equalized (HPE) swivel

2019-04-23 - Sub Sea Services

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

Our drape hose swivel secures a highly cost-effective and safe operation. The High Pressure Equalized (HPE) swivel is ideal for dynamically positioned rigs, but broadly used on any drape hose connection. Our technology utilizes pressure equalized rings for 360 degree movement at a constant low torque, irrelevant of the pressure applied. Stress in coflex hoses caused by rig movement results in wear and fatigue, which can lead to a reduced working life or even failure.

- Non separation force, pressure compensated
- Rotates continuously in both directions at full working pressure
- Sizes from 2 1/16 to 4 1/16
- MWP rated from 5.000 to 20.000 psi
- Sour gas service
- End connections, API specifications or other
- DVR in accordance with NPD regulations
- Patent US 7.654.583.B2

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

Sub Sea Services website

High Pressure Equalized (HPE) swivel

High Pressure Equalized (HPE) swivel brochure

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Engineering and Services

2020-11-27 - SUBC SOLUTIONS AS

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Service

SubC Solutions is a multidiscipline engineering company and conducts a wide variety engineering services such as studies, detail engineering, product design and qualification to name a few. For over 10 years, SubC Solutions has provided clients worldwide with a range of engineering services. SubC Solutions endeavors to meet or exceed our client requirements and we often achieve this by combining innovation with field proven concepts and technology to solve our customers challenges.

Our expertise includes:

- Control and monitoring systems
- All electric systems and subsea electrical valve actuators
- Acoustic system
- Sensor systems and sensor development and qualification
- Electronic PCB development and qualification
- Electrical, hydraulic, and mechanical engineering and analyses

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

SubC Solutions Website:

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www.subc.no





Thermomechanical Cuttings Cleaner (TCC)

2019-04-12 - Thermtech

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Waste management

Type: Product

The TCC®, developed by Thermtech, is the most applied thermal desorption solution utilized to treat drill cuttings both offshore and onshore since 2000. The TCC technology is based on converting kinetic energy into thermal energy by creating friction in a Thermtech-developed process mill. The major differentiator compared to any other thermal technology is the extreme short retention time of the waste which results in that the recovered oil is comparable to the original base oil, and therefore allows reuse of the recovered oil. The TCC has a high processing capacity in a small footprint.

Another advantage of the TCC technology is that it can be applied for treating any waste containing volatile substances such as tank bottom sludge and liquid waste streams.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria



Reference

Thermtech website
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Thermtech Test Center

2019-04-12 - Thermtech

Category: Training, Safety, Environment Monitoring and Protection, Waste Management

Subcategory: Waste management

Type: Service

Thermtech offers small-scale tests for R&D purposes and for testing existing and new waste streams. The small-scale test unit enables us to conduct feasibility studies in cooperation with customers on short notice. Thermtech has conducted several successful tests of new waste streams, with positive and exciting results.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Thermtech website
Thermtech Test Center

Contact

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Tomax Anti Stick-slip Tool

2019-04-10 - Tomax

Category: Down Hole Technologies, Fluids and Services

Subcategory: Drill-bits, hole-openers, Reamers, Steerable systems and downhole motors, MWD, LWD, and drill-string components

Type: Product

The Tomax Anti Stick-slip Tool (AST) stabilizes drilling torque originating from the bit through a direct mechanical process where excess torque causes the tool to contract along internal helical splines. This contraction will effectively decrease the depth-of-cut and prevent further accumulation of torque.

Unlike traditional methods of mitigating stick-slip, the AST provides dynamic depth-of-cut regulation, and thus can be run in combination with aggressive bits and achieve high ROP while stick-slip and vibration are maintained at low levels. In short, the AST increase ROP, increase run length, and reduce trips for bit and DH tool failures.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Tomax website

Tomax AST

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Tomax Anti Stick-slip Tool

2019-04-10 - Tomax

Category: Well Intervention and Well Services

Subcategory: Down hole tools

Type: Product

The Tomax Anti Stick-slip Tool (AST) stabilizes milling torque originating from the mill through a direct mechanical process where excess torque causes the tool to contract along internal helical splines. This contraction will effectively decrease the depth-of-cut and prevent further accumulation of torque.

With AST, the regulation of torque keeps motors from stalling out.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Tomax website

Tomax AST

Contact

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www.tomax.no



Ship Management and Offshore Support

2020-11-20 - Tschudi Group

Category: Vessels, rigs and modules

Subcategory: Anchor handling and supply vessels

Type: Service

Tschudi Ship Management offers full ship management and offshore accommodation solutions to clients worldwide. Its team is particularly active in Offshore Wind and, having serviced 50 wind projects, is now seen as a recognized and respected service provider in this market. Also offering - distressed asset management, lay-up guidance, marketing, operations, vessel conversion and tendering for projects.

Tschudi also offer a variety of services within offshore support with related commercial and operational management. We build on over 45 years' experience from owning, operating, and managing various offshore support and ocean towage vessels. Global projects executed relate to terminal support, platform installation, anchor handling and numerous demanding tows.

Technology readiness level (TRL)

According to API RP 17N

Not applic: Not applicable.

Reference

<http://www.tschudishipmanagement.com>

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Plugging and sealing services

2019-05-03 - Wellcem

Category: Down Hole Technologies, Fluids and Services

Subcategory: Cementing and plugs

Type: Service

Wellcem is a provider of engineered solutions for remedial of a variety of well integrity challenges. We offer cost efficient solutions through in-depth knowledge of the unique products combined with vast operational experience.

Our Wellcem Resin System (WRS) consist of two main polymer resin products, ThermaSet® and EnvoSet®, used to solve a variety of well integrity challenges. Typical applications include lost circulation, compromised wellbore integrity, plug and abandonment, and the remediation of sustained casing pressure.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

Wellcem website

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WellSafe Installer

2019-05-20 - WellPartner

Category: Subsea Equipment and Services

Subcategory: Well Control Equipment, drilling risers, Christmas trees and accessories

Type: Product

The WellSafe Installer is a passive weak link system for “locked to bottom” operations using drillpipe from semi-submersibles. Typical applications include installation and retrieval of x-mas tree’s using drillpipe and installation of subsea casing hangers, tubing hangers. In case of a compensator lock scenario, the tool will separate at a pre-set tension force preventing fatal accidents, severe damage to subsea and rig equipment, and non-productive time.

The WellSafe Installer can be set in strong mode (typical same strength as the DP) during installation, and can be remotely operated to “WeakLink” mode when locked to bottom.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

WellPartner website
WellSafe Installer

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Casing Landing Assembly (CLA)

2019-05-20 - WellPartner

Category: Down Hole Technologies, Fluids and Services

Subcategory: Others

Type: Product

The Casing Landing Assembly (CLA) minimizes the time the casing string is stationary in the open hole area, to prevent stuck casing and safely landing of the casing hanger into the subsea wellhead.

The CLA has a working stroke which allows the casing hanger to be landed in the well head while the top is still attached to the rig elevators, acting as a passive heave arrestor. Any heave that is present will be accommodated by the stroke allowing the top to be set in slips while rigging up the cement head and connecting hoses at normal working height. The tool is then fully extended to enable circulation through the string and to proceed with normal cementing operation. The CLA has proven to save up to 5 rig hours per well section during a standard casing/cementing operation.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

WellPartner website
Casing Landing Assembly (CLA)
CLA animation

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WellSafe Explorer

2019-05-20 - WellPartner

Category: Well Intervention and Well Services

Subcategory: Others

Type: Product

WellSafe Explorer is a safety device designed to prevent major incidents during “locked to bottom” operations from a floating drilling vessel. It is applicable for exploration well testing, wireline intervention, well clean up and completion operations.

- Over tension protection system
- Can be turned on and off
- Strong mode during rig up and landing
- Weak mode in “locked to bottom”
- Adjustable weak mode setting point
- Tension system activates on over tension

WellSafe Explorer is compliant with existing rig handling systems, requires no interference to personnel in compensator lock events and protects the well control equipment from accidental tension and compression loads.

Technology readiness level (TRL)

According to API RP 17N

TRL 7: Proven technology integrated into intended operating system. The technology has successfully operated with acceptable performance and reliability within the predefined criteria

Reference

WellPartner website

WellSafe Explorer

WellSafe Explorer animation

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