

Application of optical cables for well logging in Belarus



Overview

Here we outline some new technologies in this context within case studies from different research projects including permanent installation of fiber-optic sensor cables behind casing, monitoring of high-temperature wells, a hybrid wireline logging system, and seismic. Here we outline some new technologies in this context within case studies from different research projects including permanent installation of fiber-optic sensor cables behind casing, monitoring of high-temperature wells, a hybrid wireline logging system, and seismic. Fiber optics, a technology that uses thin strands of glass or plastic fibers to transmit data as light signals, has revolutionized the way we communicate, transfer, and acquire information. Unlike traditional single-point measurements that rely on discrete sensors measuring the data at. More specifically, the invention is related to designs for a well logging cable including optical fibers for signal communication. 5,495,547 issued to Rafie et al and assigned to the assignee of this invention describes limitations in the signal carrying capacity of electrical well. Permanent downhole fiber-optic cables are critical infrastructure in wellbore monitoring systems, ensuring reliable transmission of data for applications such as distributed temperature, acoustic, and strain sensing (DTS, DAS, and DSS)—all with one 1/4-in control line. The enclosure is adapted to be able to be elongated to the maximum expected axial strain on the logging cable without permanent deformation and to withstand crushing. FOWell, a distributed fiber optic sensing well monitoring solution, enables for real-time detection of leaks or.



Article Content

Hybrid Electro-Optical Cable for Coiled Tubing Logging and ...

This study presents the evolution of downhole fiber optics to a new hybrid electro-optical cable for coiled tubing (CT) applications. The optical fibers enable optical communication and

Development and Application of Visual Logging Equipment

The Hawkeye downhole TV logging technology has been widely used in casing damage detection and production well monitoring fields. Aiming at the fact that downhole television transmits

Innovative Coiled Tubing Hybrid Fiber Optics Technology Increases ...

Abstract. Production logging is very essential to understand the flow profile of the formation that is being produced from. It helps to identify the contribution of the oil, water, and gas to

Distributed optical fiber temperature sensor and its application in ...

Download Citation | On Oct 25, 2017, Xiaofei Zhu and others published Distributed optical fiber temperature sensor and its application in high-temperature well logging | Find, read and cite all ...

Application of Fiber Optics for Completion Design Optimization: A ...

The methodology comprises a comprehensive analysis of completion and stimulation reports, fiber optics, microseismic data, and well logs.

Well and reservoir surveillance | FOWell | FEBUS Optics

Our FOWell solution is a Measurement, Monitoring, and Verification (MMV) technology based on distributed fiber optic sensing, that ensures real-time and continuous monitoring of reservoir integrity

Optical fiber logging cable Special cable

Optical fiber logging cable is a type of cable used in oil and gas well logging applications. It is designed to provide high-speed data transmission over long distances in harsh environments.

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The Rafie et al "547 patent discloses a well logging cable having optical fibres which can substitute for one or more of the electrical conductors in a well logging cable to increase...

The Optic Oil Field: Deployment and Application of Permanent In-well ...

This paper presents several recent deployments of in-well fiber optic monitoring systems, including descriptions of the downhole sensor assemblies, installations, and measured data.

Application status and development prospects of fiber optic logging ...

Continuous tubing fiber optic logging technology breaks through the bottleneck of long-distance transportation in horizontal well sections. China's independently developed special optical cable can

Permanent fiber-optic cable

Permanent downhole fiber-optic cables are critical infrastructure in wellbore monitoring systems, ensuring reliable transmission of data for applications such as distributed temperature, acoustic, and

Fiber-Optic Technology Reduces Production Logging ...

The new technique uses coiled tubing equipped with optical fibers to acquire real-time measurements from the downhole logging string. The advantages of this conveyance option include

Bazaid et al No 1

Specifically, we highlight the diagnostic power of distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) in two real-world field applications. In each case, traditional tools failed to

US6392151B1

In the preferred embodiment, the tube is surrounded by an elastomeric jacket, and is filled with hydraulic oil or the like to prevent entry of wellbore fluids into the tube under hydrostatic...

Pioneering Well Logging: The Role of Fiber Optics in Modern

These results demonstrate that fiber optics represents a paradigm shift in well integrity assessment, transitioning from interpretive and reactive methodologies to real-time, high-resolution,

How Fiber Optics Are Used in the Oil & Gas Industry

Our specialty optical fibers are designed to withstand the harsh and challenging conditions of the oil and gas industry. They are highly resistant to extreme

Real-Time Fiber Optic Monitoring Applications in Various Downhole ...

Following are a few field cases where this technology has helped companies make decisions and produced outstanding results. A fiber-optic cable was permanently installed along the

A High Data Rate Fiber Optic Well Logging Cable

This development has led to a new logging cable with superior mechanical properties, containing eight electrical wires and three optical fibers with a data rate of at least 10 Mbits/s each. This fiber

Application of fiber optics in oil and gas field development ...

In this study, we presented a comprehensive review on the application of fiber optics in monitoring well integrity, sand production, well propping, fracture orientation and propagation, and enhanced oil recovery.

Distributed Acoustic Sensing Acquired Wellbore Seismic Data Using ...

When optical fibers are part of a hybrid optical-electrical logging cable, seismic data can be acquired during any logging intervention, improving efficiency and data collection. This integration

New methods in geophysical exploration and monitoring with DTS and

We show that fiber-optic sensing opens up new possibilities for geophysical measurements with a broad range of applications in well logging and seismic exploration and monitoring.

Efficiency of Coiled Tubing Well Interventions Increased by ...

The ACTIVE Power CT real-time powered downhole measurements system delivers continuous fiber-optic data and power from surface through a hybrid electro-optical cable installed in

Optiq Fiber-Optic Solutions | SLB

Optiq StreamLINE conveyance offers the industry's only fiber-optic wireline deployment in treatment wells during stimulation services. Its patented polymer

Reducing Intervention in Subsea Wells With Fiber-Optic

Fig. 1—For distributed-temperature applications, optical fibers were traditionally deployed into a well by pumping into a control line. Now that fibers

Cable Logging? Optical Fiber Logging?—JASON is

Difference between Optic-Fiber logging and traditional cable logging The electrical-based sensors used in cable logging can not work continuously in harsh

GB2333610A

A well logging cable 10 includes an optical fibre 2 and a pressure sealed enclosure 26 surrounding the fibre. The enclosure is adapted to be able to be elongated to the maximum expected axial strain on

OSP Design and Standards Overview

This document provides standards and guidelines for optical fiber cable infrastructure design, deployment, and construction. It addresses standards for fiber, cable, trenches, manholes, aerial

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