Transportation of optical cables through wells

Overview

Subsea wells' fiber optic installations must operate over several km of subsea cabling and through a critical chain of wet connects on the subsea tree (which provide optical continuity from one fiber to the next in installations that cannot be completed with a single. Subsea wells' fiber optic installations must operate over several km of subsea cabling and through a critical chain of wet connects on the subsea tree (which provide optical continuity from one fiber to the next in installations that cannot be completed with a single. 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. These monitoring systems help. A flexible optical fiber cable, either as a wireline or a disposable fiber deployed using a pumped fiber payout shuttle, in a horizontal well, can be used to measure distributed near-static or dynamic strain. These measurements can be used to monitor the hydraulic fracturing treatment of nearby. Aspects of the subject technology relate to systems and methods for deploying fiber optic lines in a wellbore using a fiber optic deployment device. Fiber allows longer transmission distances and higher data rates than copper — a fortuitous development, as offshore drilling moves to deeper depths. Conventional CT can be length limited by lock-up, and heavy-weight coil can be weight limited for transport from boat to deck. To address these concerns, ExxonMobil Corp. and. Distributed acoustic sensing (DAS), distributed temperature sensing (DTS) and distributed vibration sensing (DVS) are some of the most important applications of specialty optical fibers in the oil and gas industry. DAS and DVS technology uses optical fibers to monitor and analyze acoustic signals.

Article Content

New developments in fiber optics benefit offshore surveillance

Within a few years, fiber optic sensing has enabled new insights into fluid movement across the reservoir and into the well and provides assurance that wells are performing correctly and...

Review of the usage of fiber optic technologies in electrical power ...

This article provides an overview of fiber optic technology applications in the broad field of electrical power engineering. Various constructions of power transmission lines integrated with

Route Design/Cable Laying Technologies for Optical Submarine Cables

3. Route Design Based on the results of marine route surveys and informa-tion regarding existing structures (such as fish nets etc.), the cable route is designed by taking into consideration the ease

The accurate location of multi-phase medium interfaces in the water ...

Therefore, the thorough analysis of the temperature-distance data obtained after heating an optical cable is crucial for addressing the complex technical challenge of locating the interface of a oil

Theory and Practice of a Flexible Fiber-Optic Cable in a ...

The novel aspect of the paper is the first presentation of a theoretical background for the understanding of the performance of flexible cables inside horizontal wells used as static or dynamic

Google''s subsea fiber optics, explained

Using an optical spectrum analyzer we check the quality of the signal as we pulse lasers, pushing 1.2 Tbps of 0s and 1s through the cable! But fiber is

Application of Electro-Optical Hybrid Cables in Horizontal Well ...

This paper mainly introduces the unique structural features and various applications of the electro-optical hybrid cables which were deployed into downhole with the help of coiled tubing technology.

Theory and Practice of a Flexible Fiber Optic Cable in a Horizontal ...

These measurements can be used to monitor the hydraulic fracturing treatment of nearby wells. It is the objective of this paper to present a theoretical framework for the understanding of the...

WIRELINE ORIENTED PERFORATION IN DEEP GAS WELL

The well has been planned to perforate with a 2 7/8” HSD gun system, followed by Hydraulic Fracture Stimulation in 4 stages ensuring the integrity of the Fiber Optic Cable

How Fiber Optics Are Used in the Oil & Gas Industry

With over 40 years of experience in manufacturing high reliability optical fibers, we are proud to offer a wide range of specialty optical fibers that are designed

Theory and Practice of a Flexible Fiber Optic Cable in a Horizontal ...

A flexible optical fiber cable, either as a wireline or a disposable fiber deployed using a pumped fiber payout shuttle, in a horizontal well, can be used be measure distributed near-static or ...

Underground Installation of Optic Fiber Cable Placing

Placing cables underground has the added benefits of reducing transmission losses, aiding planning consent and reduced risk of service supply loss through extreme weather. This practice covers the

Optical fiber sensors in infrastructure monitoring: a comprehensive ...

Abstract The purpose of this article is to review and further promote the application of optical fiber sensor technology in infrastructure monitoring. Compared with traditional sensors, optical

The surprising way that fiber optics connects us

THROUGH A GLASS TUBE LIGHTLY: Optical fibers are thin strands of glass capable of transmitting information at the speed of light across great distances. (University of Rochester photo /

Permanent fiber-optic cable

These monitoring systems help improve well productivity by identifying trends throughout the producing life of the well, and they rely on the robust design and long-term survivability of optical cables under

System and method for deploying fiber optic lines in a wellbore

Each of the one or more fiber optic lines can be coupled to a bridge plug at a first end and coupled to a cable at a second end opposite the first end. The device can include a sleeve...

Invisible highways: The vast network of undersea cables powering our ...

Connecting different parts of the world through communication cables is not a new idea. In 1850, England and France were linked for the first time by an undersea telegraph cable. Since then,

FIBER OPTIC CONNECTOR TECHNOLOGY RELIABILITY

Fiber optics (FO) technology is finding new uses in subsea applications. Fiber allows longer transmission distances and higher data rates than copper — a fortuitous development, as offshore

Buried Installation of Optic Fiber Cable

A general description of placing fiber cables will be presented in this Note. The Direct buried cable placing methods described in this document are intended as guidelines. National, state, local, and

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

SECURING OIL WELLS USING FIBER OPTICS

Distributed sensing cable in industrial environments Sensing can take one of several technological forms, and can be used in many applications.

Submarine Cables | National Oceanic and Atmospheric Administration

Submarine cables clearly play a critical role in global communications. For the United States, they provide connectivity between the contiguous United States and Alaska, Hawaii,

FIBER OPTICS: Downhole Fiber-Optic Monitoring: An

It has been an impressive comeback for a technology that once stood on the brink of failure. The upstream oil and gas industry has largely resolved

ExpressFiber™ disposable fiber service

The ExpressFiber disposable fiber cable is an economic, low-risk fiber solution for cross-well monitoring that provides direct measurement of well interference.

Contact Us

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