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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Petroleum and natural gas industries - Well integrity - Part 1:
Life cycle governance**

石油天然气工业 井完整性 第 1 部分：生命周期管理
(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 45966 "Well Integrity in the Petroleum and Natural Gas Industry". GB/T 45966 has been published as follows part.

--- Part 1: Lifecycle management.

Introduction

GB/T 45966 "Well Integrity in the Petroleum and Natural Gas Industry" aims to propose the integrity of oil and gas wells from design, construction, production, workover, and abandonment throughout their life cycle.

The basic requirements and recommended practices for well integrity management at each stage of the cycle will help improve the overall level of well integrity management.

constitute.

--- Part 1: Lifecycle management;

--- Part 2: Well integrity management during the production phase.

This document is Part 1 of GB/T 45966 and is used in conjunction with other parts.

This document is intended to guide my country's oil and gas industry throughout the life cycle of a well, including the design foundation phase, design phase, well construction phase, and the document is written to effectively manage well integrity during the production, workover and abandonment phases. It proposes the minimum requirements for ensuring well integrity management.

requirements, technical recommendations tailored to the specific risk characteristics of the well, ensuring integrity management during well design, construction, and the remaining life of the well.

Well integrity in the oil and gas industry Part 1: Lifecycle Management

1 Scope

This document specifies the basic requirements and recommended practices for well integrity management throughout the life cycle of oil and gas wells in the petroleum and natural gas industry, including well integrity management.

Safety strategy and management system, well integrity design basis, well design stage, well construction stage, production stage, well workover stage, and well abandonment stage.

This document applies to the integrity management of high-risk wells in the oil and gas industry.

This document is not applicable to well control management in the oil and gas industry, nor is it applicable to open hole wellbore integrity management.

Note 1: A high-risk well is a well that meets any two or more of the following conditions simultaneously.

- a) The reservoir pore fluid pressure is not less than 70 MPa;
- b) The reservoir temperature is not less than 150°C;
- c) The H₂S content in the reservoir is not less than 30g/m³;
- d) The gas production predicted by oil testing or the gas production allocated for production is greater than 20x10⁴m³/d;
- e) Wells with water depth exceeding 500m.

Note 2: Open hole wall integrity refers to the ability of the open hole to maintain its shape and integrity after drilling and completion, also known as "borehole stability".

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

Well integrity

Comprehensively apply technical, operational and organizational management solutions to reduce the risk of uncontrolled leakage of formation fluids throughout the life cycle of oil and gas wells.

risk.

failure

Loss of ability to perform required tasks.

fault

An abnormal or undesirable condition of a system component due to the presence of improper commands, lack of appropriate commands, or failure.

Note 1: Any failure will result in a malfunction; not all malfunctions are caused by a failure.

NOTE 2 System components may include entire subsystems, assemblies or parts.