Training and Qualification of Drilling and Completion Fluids Specialists

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Introduction

The professional discipline of drilling and completion engineering is divided into subdisciplines in which technical expertise is required. One subdiscipline deals with fluids that are essential to many well construction operations—the subject of this recommended practice. For the purpose of this document, "fluids" include:

— drilling fluids,

— completion fluids,

— solids control applications.

Fluids expertise requires knowledge and skills in both engineering and chemistry. These specialized operations may not always be covered in depth by college and university engineering curricula. Individuals with technical degrees or degrees in science or engineering are well suited to be fluids professionals, although required knowledge can be gained by industry classroom and/or on-the-job training. Whether entering the subdiscipline without a formal degree as a drilling fluids specialist or with a formal degree as a drilling fluids specialist, the skills necessary to perform duties at the rig site are gained by a combination of formal classroom and practical training/experience.

This recommended practice is set out in two parts. The first part addresses the professional core skills that a drilling and completion fluids specialist, laboratory technician, or solids control technician should possess. The second part addresses more advanced skills that are required to work on more complex wells. Documents published by API Subcommittee 13 on drilling, completion, and fracturing fluids may be used as guidance for drilling and completion fluids during a well construction operation with the most relevant documents listed as normative references in Section 2 and in the Bibliography. API publications may be used by anyone desiring to do so.

This recommended practice is not intended to establish certification procedures for drilling fluids personnel but is to be used for general guidance in evaluating training processes and evaluating the professional acceptability of drilling and completion fluids specialists.

Training and Qualification of Drilling and Completion Fluids Specialists

1 Scope

This recommended practice is written in two parts. The first part is a summary of basic training and knowledge that an employee or contractor shall possess to be identified as a Drilling and Completion Fluids Specialist. The first part covers basic skills as would be taught at an entry-level drilling fluids training program. The second part covers a set of advanced skills that will be required to support complex wells at the rig site. Levels of understanding for both core and advanced skills have been generally outlined, but not totally defined.

This document has been developed from a review of the curriculums that are followed by drilling fluids service companies in their basic schools and from input by industry subject matter experts. The output from this, "Professional Core Skills", is found in Section 5. Ten key professional core skill areas are identified and further broken down into topics with the knowledge expected for that topic. "Advanced Professional Skills" found in Section 6 are structured in the same way and identify additional skills required to work on complex wells. Skills identified in Section 6 are not taught in depth as part of basic training; rather these are additive skills attained throughout a career as a drilling and completion fluid specialist and related disciplines.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.

API Recommended Practice 13B-1, *Field Testing of Water-based Drilling Fluids*

API Recommended Practice 13B-2, *Field Testing of Nonaqueous-based Drilling Fluids*

API Recommended Practice 13C, *Drilling-fluid Processing Systems Evaluation*

API Recommended Practice 13D, *Rheology and Hydraulics of Oil-well Drilling Fluids*

API Recommended Practice 13J, *Testing of Heavy Brines*

3 Terms, Definitions, Abbreviations, and Symbols

For the purposes of this document, the following definitions apply.

3.1 Terms and Definitions

3.1.1
advanced professional skills
Additional knowledge required to support complex well types obtained both by additional classroom training and field experience.

3.1.2
brine and completions operator/technician
An individual skilled in the operation, monitoring, and maintenance of oilfield brines, filtration equipment, and related tasks associated with completions.

3.1.3
drilling and completion fluids specialist
An individual with specialized knowledge of the application of drilling, workover, and completion fluids during the drilling, workover, and completion operations. He/she would typically work at the rig site on a 24-hour or drive-by