Recommended Practice for Field Testing Water-based Drilling Fluids

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ISO 10414:2001 (Modified)
Petroleum and natural gas industries—
Field testing of drilling fluids—
Part I—Water based fluids

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API Foreword

This standard is under the jurisdiction of the API Subcommittee 13, Drilling and Completion Fluids. This API standard is a modified adoption of the English version of ISO 10414-1:2001. ISO 10414-1:2001 was prepared by Technical Committee ISO/TC 67, Materials, equipment and offshore structures for petroleum and natural gas industries, Subcommittee SC3, Drilling and completion fluids, and well cement.

In this standard certain modifications have been made. New annexes J, K and L are added as shown in Annex I. This standard shall become effective on the date printed on the cover but may be used voluntarily from the date of distribution.

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Contents

Page

API Foreword ... **ii**

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Term and definition ... **2**

3 Abbreviated terms ... **2**

4 Drilling fluid density (mud weight) ... **2**

5 Alternative drilling fluid density method ... **4**

6 Viscosity and gel strength ... **6**

7 Filtration ... **8**

8 Water, oil and solids contents ... **12**

9 Sand content ... **16**

10 Methylene blue capacity ... **17**

11 pH ... **20**

12 Alkalinity and lime content ... **23**

13 Chloride ion content ... **25**

14 Total hardness as calcium ... **27**

Annex A (informative) **Chemical analysis of water-based drilling fluids** ... **29**

Annex B (informative) **Shear strength measurement using shearometer tube** ... **45**

Annex C (informative) **Resistivity** ... **47**

Annex D (informative) **Removal of air or gas prior to testing** ... **48**

Annex E (informative) **Drill pipe corrosion ring coupon** ... **49**

Annex F (informative) **Sampling, inspection and rejection** ... **52**

Annex G (informative) **Rig-site sampling** ... **54**

Annex H (informative) **Calibration and verification of glassware, thermometers, viscometers, retort kit cup and drilling fluid balances** ... **57**

Annex I (normative) **National adoption modifications** ... **62**

Annex J (normative) **High-temperature/high pressure filtration testing of water-based muds using the permeability plugging apparatus and cells equipped with set screw secured end caps** ... **63**

Annex K (normative) **High-temperature/high pressure filtration testing of water based muds using the permeability plugging apparatus and cells equipped with threaded end caps** ... **71**

Annex L (informative) **Water-based drilling mud report form** ... **78**

Bibliography ... **82**

Foreword

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Attention is drawn to the possibility that some of the elements of this part of ISO 10414 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 10414-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 3, *Drilling and completion fluids, and well cements*.

ISO 10414 consists of the following parts, under the general title *Petroleum and natural gas industries — Field testing of drilling fluids*:

— *Part 1: Water-based fluids*

— *Part 2: Oil-based fluids*

Annexes A to H of this part of ISO 10414 are for information only.

Introduction

This part of ISO 10414 is based on API RP 13B-1, second edition, September 1997 [2].

As with any laboratory procedure requiring the use of potentially hazardous chemicals, the user is expected to have proper knowledge and received training in the use and disposal of these chemicals. The user is responsible for compliance with all applicable local, regional and national requirements for worker and local health, safety and environmental liability.

In this part of ISO 10414, where practical, U.S. customary units are included in brackets for information.

Petroleum and natural gas industries — Field testing of drilling fluids —

Part 1:
Water-based fluids

1 Scope

This part of ISO 10414 provides standard procedures for the determining following characteristics of water-based drilling fluids:

a) drilling fluid density (mud weight);

b) viscosity and gel strength;

c) filtration;

d) water, oil and solids contents;

e) sand content;

f) methylene blue capacity;

g) pH;

h) alkalinity and lime content;

i) chloride content;

j) total hardness as calcium.

Annexes A, B, C and E provide additional test methods which may be used for

k) chemical analysis for calcium, magnesium, calcium sulfate, sulfide, carbonate, potassium;

l) determination of shear strength;

m) determination of resistivity;

n) drill pipe corrosion monitoring.

Annexes D, F, G and H provide procedures that may be used for

o) removal of air;

p) sampling, inspection and rejection;

q) rig-site sampling;

r) calibration and verification of glassware, thermometers, viscometers, retort kit cup and drilling fluid balances.