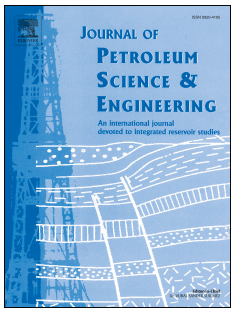
Accepted Manuscript



An appraisal of procedures to determine the flow curve of cement slurries

Elias C. Rodrigues, Flávio de Andrade Silva, Cristiane Richard de Miranda, Gabriella M. de Sá Cavalcante, Paulo R. de Souza Mendes

PII: S0920-4105(17)30749-0

DOI: 10.1016/j.petrol.2017.09.053

Reference: PETROL 4296

To appear in: *Journal of Petroleum Science and Engineering*

Received Date: 27 July 2017

Revised Date: 12 September 2017

Accepted Date: 21 September 2017

Please cite this article as: Rodrigues, E.C., de Andrade Silva, Flá., de Miranda, C.R., de Sá Cavalcante, G.M., de Souza Mendes, P.R., An appraisal of procedures to determine the flow curve of cement slurries, *Journal of Petroleum Science and Engineering* (2017), doi: 10.1016/j.petrol.2017.09.053.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

An appraisal of procedures to determine the flow curve of cement slurries

Elias C. Rodrigues*[1], Flávio de Andrade Silva†[2], Cristiane Richard de Miranda‡[3], Gabriella M. de Sá Cavalcante§[3], and Paulo R. de Souza Mendes¶[1]

[1]Department of Mechanical Engineering, Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, Brazil
[2]Department of Civil Engineering, Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, Brazil
[3]Petrobras Research Center (CENPES), Petrobras, Av. Horácio Macedo 950, Cidade Universitária, Ilha do Fundão, Rio de Janeiro, RJ 21941-598, Brazil

Preprint submitted to *Journal of Petroleum Science and Engineering* on September 12, 2017

Abstract

The performance of protocols usually employed for the rheological characterization of oil well cement slurries is investigated. To this end two cement slurries were employed, namely Paste A and Paste B. The API procedure is addressed and a modification to it is investigated. Flow curves are determined with the aid of a rotational rheometer using three different methods (ramp up/down, ramp down, and *minimum-viscosity*). The API procedure yielded flow curves that significantly overestimate (Paste A) or underestimate (Paste B) the viscosity throughout the whole range of shear rate. The deviations become particularly dramatic in the low end of this range and for Paste B, clearly because the steady state is not attained due to a thixotropic behavior. The investigated modification to the API procedure resulted in flow curves similar to the ones based on the minimum-viscosity method.

*eliasc.rodrigues@aluno.puc-rio.br
†fsilva@puc-rio.br
‡crisrichard@petrobras.com.br
§gabriellam@petrobras.com.br
¶corresponding author, pmendes@puc-rio.br

Download English Version:

https://daneshyari.com/en/article/5483891

Download Persian Version:

https://daneshyari.com/article/5483891

Daneshyari.com