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(54) **Title:** TIME-DELAY FLUIDS FOR WELLBORE CLEANUP

(57) **Abstract:** A method for delaying the removal of a majority of an oil-based mud (OBM) filter cake from a hydrocarbon reservoir wellbore that utilizes a multiple phase composition is described. The use of the multiple phase composition allows for a microemulsion, a miniemulsion, or a nanoemulsion to form in situ downhole at a controllable time. The method includes pumping the multiple phase composition comprising an additive into the wellbore. The multiple phase composition may be broken thereby releasing the additive. The broken multiple phase composition and the additive may contact the OBM filter cake particles to form an in situ emulsion selected from the group consisting of a nanoemulsion, a miniemulsion, a microemulsion, a multiple emulsion, a water-continuous emulsion and mixtures thereof. The in situ emulsion may incorporate more of the external oil from the OBM filter cake in order to more easily remove the OBM filter cake.



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A. CLASSIFICATION OF SUBJECT MATTER***E21B 43/22(2006.01)i, E21B 37/00(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E21B 43/22; E21B 43/04; C09K 8/524; C09K 8/04; E21B 37/08; C09K 8/22; C09K 8/52

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: filter cake, emulsion and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008-0110618 A1 (QUINTERO, LIRIO et al.) 15 May 2008 See abstract and claim 1.	1-17
A	US 2009-0114394 A1 (JAVORA, PAUL H. et al.) 07 May 2009 See abstract and claims 1-6.	1-17
A	US 2006-0073986 A1 (JONES, THOMAS, A. et al.) 06 April 2006 See abstract and claim 1.	1-17
A	US 7222672 B2 (BLAUCH, MATTHEW E. et al.) 29 May 2007 See abstract and claim 1.	1-17



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

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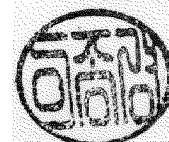


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INTERNATIONAL SEARCH REPORT

Information on patent family members

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