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[Continued on next page]

(54) Title: FLUID DISPLACEMENT METHODS AND APPARATUS FOR HYDROCARBONS IN SUBSEA PRODUCTION TUBING

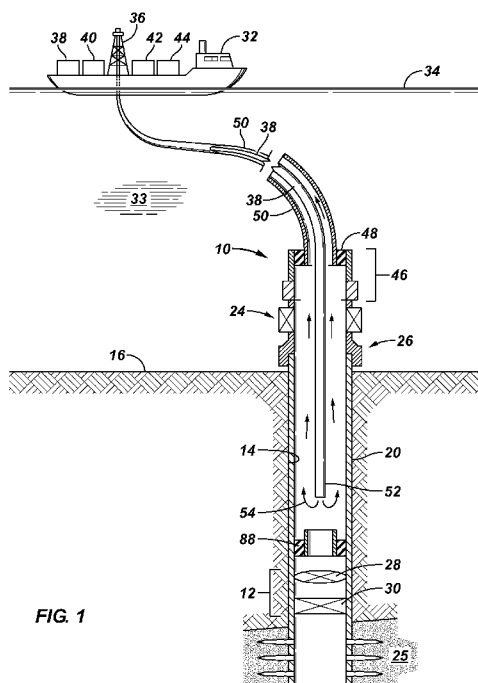


FIG. 1

(57) Abstract: The method for subsea well intervention includes creating a lubricator section within the production tubing of the well. The lubricator section can then be flushed of hydrocarbons facilitating further well intervention from the open water. An intervention device that facilitates flushing production tubing that has equipment, such as electric submersible pumps, is deployed in the wellhead, for example in the valve tree.





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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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8 December 2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/031800**A. CLASSIFICATION OF SUBJECT MATTER***E21B 43/01(2006.01)i, E21B 33/035(2006.01)i, E21B 34/04(2006.01)i, E21B 29/12(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 43/01; E21B 43/00; E21B 43/16; E21B 23/00

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: intervention, tubing, conduit, evacuating, flushing, circulating, plug

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008-0230228 A1 (ASKELAND TOM KJETIL) 25 September 2008 See abstract, paragraphs 0034,0039 and claims 1-33	1-11, 13-20
A	US 2009-0266537 A1 (HANSEN HENNING et al.) 29 October 2009 See abstract, paragraph 0020, claims 1-16 and figure 1	1-11, 13-20
A	WO 2010-020956 A2 (SERVICES PETROLIERS SCHLUMBERGER et al.) 25 February 2010 See abstract, claims 1-12 and figure	1-11, 13-20
A	US 2004-0094305 A1 (ODD B SKJ&AELIG;RSETH et al.) 20 May 2004 See abstract and claims 1-10	1-11, 13-20

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

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Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/031800

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

- 2. Claims Nos.: 12
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Claim 12 is missing in this application.

- 3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
- 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

- 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/031800

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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