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(54) Title: METHODS AND APPARATUS FOR WELL PRODUCTIVITY

(57) Abstract: A system and method for drilling a formation and a method for computing expected production from a wellbore in a formation and/or hydrocarbon reserves associated with the formation, the formation having a plurality of naturally-occurring fractures, the method including computationally modelling the formation; computing one or more wellbore positions intersecting some or all of the fractures; and computing an expected production from the wellbore at least partially based on an expected wellbore damage associated with a particular type of drilling technique.
Published: (88) Date of publication of the international search report: 7 January 2016
— 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))

(15) Information about Correction:
Previous Correction:
see Notice of 3 September 2015
**INTERNATIONAL SEARCH REPORT**

A. CLASSIFICATION OF SUBJECT MATTER

INV. E21B7/00 E21B7/04 E21B49/00

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

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

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

EPO-Internal, TULSA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>WO 2013/062591 A1 (LANDMARK GRAPHICS CORP [US]; KUMAR AMIT [US]; DUSTERHOFT RONALD G [US]), 2 May 2013 (2013-05-02), Paragraphs [0001], [0003], [0026], [0031], [0035].</td>
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[See patent family annex.]

Further documents are listed in the continuation of Box C.

* Special categories of cited documents :

- **Y** 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 novel or cannot be considered to involve an inventive step when the document is taken in combination with one or more other such documents, such combination being obvious to a person skilled in the art
- **A** document member of the same patent family

Date of the actual completion of the international search: 1 September 2015

Date of mailing of the international search report: 20/11/2015

Name and mailing address of the ISA:

European Patent Office, P.B. 5818 Patentilaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Fax. (+31-70) 340-3016

Authorized officer:

Rampelmann, Klaus

Form PCT/ISA/210 (second sheet) (April 2005)
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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.: 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:

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).

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

see additional sheet

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 fees, this Authority did not invite payment of additional fees.

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.:

   1-11, 50, 51

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.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11, 50, 51
   Method for computing expected production from a wellbore

2. claims: 12-16
   Method for forming a wellbore

3. claims: 17-34
   Drilling system

4. claims: 35-49
   Method of drilling a formation