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(54) **Title:** METHOD AND APPARATUS FOR PRODUCING UNCONVENTIONAL OIL AT SHALLOW DEPTHS

(57) **Abstract:** An oil production well is drilled into a kerogenous chalk source rock comprising (i) type IIs kerogen and (ii) shallow naturally-occurring unconventional oil derived from the type IIs kerogen that is resident within pore space of the source rock. In some embodiments, the production well is drilled at a location where the geothermal gradient is at least 3 degrees C per 100 m is present at or near the production well. It is believed that the presence of this geothermal gradient accelerated maturation of the type IIs kerogen of the source rock to convert a portion of the type IIs kerogen into the unconventional oil. In some embodiments, the shallow production well is non-vertical. In some embodiments, at depths that are shallow and within the source rock, the production well is cased and perforated. Oil from the source rock may be produced via the production well and the shallow-depth perforated locations thereof.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 2013/049422

A. CLASSIFICATION OF SUBJECT MATTER

E21B 43/24 (2006.01)

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 43/00, 43/12-43/27

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 practicable, search terms used)

PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, Information Retrieval System of FIPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RU 2263774 C2 (EXXONMOBIL UPSTREAM RESEARCH COMPANY) 10.11.2005, p. 4, lines 5-32, p. 7, lines 15-25, 34-44, 52-p. 8, lines 6-24, p. 10, lines 23-25, 35-37, 44-52, p. 11, lines 27-29	1, 4, 7-10, 12-16, 23-24, 27-28, 30, 36, 44-46, 50, 53-57
Y		2-3, 5-6, 11, 17-22, 25-26, 29, 31-35, 37-42, 47-49, 51-52, 58
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Y		5, 6, 11, 19, 33, 37-39, 41-42
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☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier document but published on or after the international filing date	"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
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"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	

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	RU 2379502 C1 (GOSUDARSTVENNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO PROFESSIONALNOGO OBRAZOVANIYA "ROSSYSKY GOSUDARSTVENNY UNIVERSITET NEFTI I GAZA I. M. GUBKINA" et al.) 20.01.2010, p. 5, lines 51-p. 6, line 11, p. 8, line 29-p. 9, line 6, p. 10, lines 19-20, p. 15, lines 17-21	22, 29, 31-32, 34-35, 51-52, 58
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