

Title (en)

Method for electromagnetic stimulation of downhole area during hydrocarbon production

Title (de)

Verfahren zur elektromagnetischen Stimulation von Bohrlochbereichen während der Kohlenwasserstoffförderung

Title (fr)

Procédé de stimulation électromagnétique de zone de fond de trou au cours de production d'hydrocarbures

Publication

EP 2644822 B1 20160406 (EN)

Application

EP 13003802 A 20130730

Priority

RU 2012133097 A 20120801

Abstract (en)

[origin: EP2644822A2] The present invention relates to oil industry and can be used in order to increase the volume of pumped-out fluid, oil recovery efficiency, and oil production rate, as well as to reduce natural hydrated and hydrated hydrocarbonaceous deposits on the downhole area elements. The method comprises the positioning of a device with a radiator and a controlled generator at the base of the electric immersible electromotor of the electric centrifugal pumping plant in order to create an electromagnetic wave field in the downhole area, in which the electromagnetic wave field radiation is provided at the resonant frequency for the downhole area and predetermined by available experience, modelled results, or test results, where the testing is carried out at the selected frequency and the generator is operated in resonant frequency mode between two tests, the resonant frequency being determined during testing, for formation of standing electromagnetic waves by the radiator, the standing electromagnetic waves dispersing wave energy throughout the downhole area. The method according to the present invention provides resonant wave stimulation of the fluid and the downhole area and allows wells to be revived and significantly extends the life of oil fields with low flow rate, flooded areas, low-gravity oil, etc., due to the increase in oil recovery efficiency, oil quality and rheological properties. Moreover, the method provides protection of the downhole area elements from harmful deposits.

IPC 8 full level

E21B 37/00 (2006.01); **E21B 43/12** (2006.01); **E21B 43/16** (2006.01)

CPC (source: EP FI US)

E21B 37/00 (2013.01 - EP); **E21B 43/128** (2013.01 - EP FI US); **E21B 43/16** (2013.01 - EP FI)

Cited by

US10900353B2; US10253608B2; WO2018169991A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 2644822 A2 20131002; **EP 2644822 A3 20140326**; **EP 2644822 B1 20160406**; FI 20135802 L 20140202; RU 2012133097 A 20140227; RU 2529689 C2 20140927; WO 2014021736 A1 20140206

DOCDB simple family (application)

EP 13003802 A 20130730; FI 20135802 A 20130731; RU 2012133097 A 20120801; RU 2013000616 W 20130719