

Title (en)

Method of enhanced hydrocarbon production by injection of a liquid and gaseous phase at least partially miscible with water

Title (de)

Verfahren zur Stimulation der Gewinnung von Kohlenwasserstoffen durch Injektierung einer wässrigen und einer gasförmigen Phase, zumindest teilweise mischbar mit Wasser

Title (fr)

Procédé de récupération assistée d'hydrocarbures par injection combinée d'une phase aqueuse et de gaz au moins partiellement miscible à l'eau

Publication

EP 1046780 B1 20060208 (FR)

Application

EP 00400945 A 20000406

Priority

FR 9905584 A 19990423

Abstract (en)

[origin: EP1046780A1] A permanent control at the wellhead controls the flow rates of the aqueous phase and the gas forming the balancing fluid so gas is saturated or supersaturated at the bottom of the injection shaft. The petroleum fluid is recovered by continuous injection into the deposit through an injector (IW) of a balancing fluid made of water with a gas added to it which is at least partially miscible with an aqueous phase and in the petroleum fluid. The balancing fluid is formed by mixing the aqueous phase with the gas at the bottom or the top of the injection shaft. A means of control placed in the shaft is used to increase the rate of dissolution of the gas in the aqueous phase and/or a packing is placed in the injection shaft to ensure the thorough mixing of the gas and the aqueous phase and/or a multi-phase pump is used to mix the gas and the aqueous phase. Data from detectors at the bottom of the shaft are used to control the flow so the gas is saturated. The gas contains an acid gas such as carbon dioxide or hydrogen sulfide. At least one treatment device is used to extract the effluents from the deposit, including at least part of the balancing fluid. At least part of the gaseous effluent from a thermal or chemical unit is used to form at least part of the gas, and the water from the deposit is used as all or part of the aqueous phase. A tensioactive additive is added to the aqueous phase to improve the gas dispersion and/or an additive is added to the aqueous phase to improve gas solubility. Carbonized water is injected into shafts which are substantially sloped, horizontal or with complex geometry. The petroleum fluid is recovered using a deviated or complex shaft. Each shaft is local to the top of the deposit.

IPC 8 full level

E21B 43/16 (2006.01); **E21B 43/20** (2006.01)

CPC (source: EP US)

E21B 43/164 (2013.01 - EP US); **E21B 43/20** (2013.01 - EP US)

Designated contracting state (EPC)

DK GB IT NL

DOCDB simple family (publication)

EP 1046780 A1 20001025; **EP 1046780 B1 20060208**; CA 2305946 A1 20001023; DK 1046780 T3 20060410; FR 2792678 A1 20001027; FR 2792678 B1 20010615; NO 20002029 D0 20000418; NO 20002029 L 20001024; US 6325147 B1 20011204

DOCDB simple family (application)

EP 00400945 A 20000406; CA 2305946 A 20000418; DK 00400945 T 20000406; FR 9905584 A 19990423; NO 20002029 A 20000418; US 55020400 A 20000417