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Elastic-Wave Effect on Oil Production by In Situ Combustion: Field Results

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Abstract

Copyright © 2015 Taylor & Francis Group, LLC. Elastic vibrations can increase the effectiveness of oil extraction. The most successful results for oil extraction can be achieved by a combination of the elastic-wave action with other methods of enhanced oil recovery. The authors describe field tests of the use of elastic-wave action on an oil recovery process with in situ combustion. The experiment was performed for over five years in various plots of the Mordovo-Karmalskoye oil field. As a result of this combination, oil production was increased, water cut recoverable products were decreased, and unit costs were decreased. Physical mechanisms are proposed to explain this phenomenon.

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Keywords

downhole oscillator, elastic wave, heavy oil, in situ combustion, oil recovery