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Structural changes of heavy oil in the composition of the sandstone in a catalytic and non-catalytic aquathermolysis

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Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved. Currently in connection with exhaustion of actively developed resources of light crude and the increasing consumption of energy carriers the development task solution of scavenger oil which will soon become the most important resource of stabilization and increase of oil production is relevant. The share of scavenger oil which, in particular, treats superviscous heavy oil steadily grows in overall balance therefore in the next years the gain of oil extraction will be provided at the expense of such naphtha. It is accepted to call these resources of hydrocarbons non-conventional as their extraction requires application of the technologies and methods different from traditional methods of light oil production. One of such methods is steam impact on the layer which is characterized by downloading settlement volume of the heat carrier through delivery wells, creation of a thermal fringe and its subsequent advance by not heated water on layer towards production wells. At the same time use of various additional receptions, in particular, forcing of catalytic systems will allow to increase energy efficiency and to intensify process of heavy oil extraction. Relevance of such researches does not raise doubts. In this work the heavy native oil structural changes are studied; they lie in a sample of petrosaturated sandstone of the Volga-Ural province, being impacted by process of catalytic and not catalytic aquathermolysis.

Keywords

Aquathermolysis, Bitumoid, Catalyst precursor, Heavy crude oil, Steam injection