

Composition of a Mixture for Breaking and Washing off, Oil Deposits (arpd). Stimulation of Residual Oil Inflow Using Process Fluids

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Abstract

In order to increase the efficiency of residual oil production, which is characterized by an increased content of asphaltenes, paraffins and resins, the role of using chemical methods to remove asphaltene-resin-paraffin deposits (ARPD) from oilfield equipment, wells and bottom hole formation zone.

The article discusses the conditions for the formation of deposits of paraffin deposits in equipment, during oil production (tubing) and also during the storage of transit oil in stationary tanks. An extractive method is proposed, which ensures the removal of deposits of paraffin deposits with the participation of composite washing liquid.

In order to search for effective and cheap hydrocarbon raw materials, we chose secondary, regenerated petroleum oils from among the renewable resources of oil refining. The proposed process fluid was prepared on the basis of low-viscosity, used, and then purified petroleum oil with the addition of an organic solvent, a mixture of different classes of surfactants and a dispersant. The composition of the composition mixture of the washing liquid was chosen according to its functional purpose. The process of ASPO dissolution was controlled by the gravimetric method and by the refractometry method. The experiments were carried out in the conditions of the educational laboratory of the university together with the laboratory of the Batumi oil terminal.

As a result of the tests, it was found that the tested process fluid reduces the viscosity of deposits and the interfacial tension between the walls of the pipeline and and ARPD. and leads to an increase in the movement of fluid in the pipeline (tubing). It has been established that the process of washing off deposits depends on the composition of the ARPD, on the composition of the washing liquid composite, on the dosage of the solvent, on the contact time and temperature. The optimal mode and prescription composition of the washing liquid has been selected. The effectiveness of washing off the studied liquid in comparison with other means is shown, while it should be noted that this liquid has a simple component composition and is much cheaper than other means.

Keywords: AARPD. Solvent, Surfactant, Dispersant, Used Petroleum Oil, Washing ability.

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