

2D shallow seismic study of heated by steam flooding heavy oil reservoir of Ashalchinskoye field

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Abstract

The aim of executed seismic experiments was to estimate a possibilities of shallow seismic in data support of heavy oil recovery process like steam assisted gravity drainage (SAGD), in particular a localization of steam chamber under geological conditions within the western slope of the South Tatar arch. Seismic acquisition, peculiarity of data processing and results received at Ashalchinskoye heavy oil field, are presented in this article. It was found that steam chambers within seismic survey area were mapped by low values of interval velocity. Developed shallow seismic technology make it possible to delineate zones with decreased bitumen viscosity because of heat carrier injection in terrigenous reservoir (steam chambers) and get information about possible geologic causes of steady temperature regimes in productive formation.

Keywords

Digital signal processing, Heavy oil, Interval velocity, Shallow seismic, Steam chamber