

An application of sector equipment of acoustic logging VAK-32 for research of oil wells

Kosarev V., Gorgun V., Akchurin A., Yusupov K., Smirnov G., Gorbachev V., Mikheev M.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The processing of research results of sector equipment of acoustic logging in the carbonate section was carried out taking into account the separate registration of wave patterns into four independent spatial sectors. It was detected the significant difference in the arrival times of acoustic waves to the different sectors of equipment. Authors propose a formation procedure of monopole or dipole wave packets considering the separate registration on different sectors and shifts between wave patterns of individual sectors. The difference in the values of interval times obtained for the wave packets recorded by the classical method and calculated with allowance for shifts between sectors can result to differences in the calculation of porosity coefficient to 4 or more absolute percent. Apart from the formation of the correct wave packet processing of wave patterns on different sectors allows to reveal the occurrence of elastic anisotropy for well diameter. In addition, analysis of interval time curves allows to reveal areas with occurrence of inclined layers in relation to the well. Further processing of such data will allow to receive a geological information like we getting from processing of borehole imagers.

Keywords

Acoustic logging, Compressional wave, Monopole, Slowness