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Paleo-incisions and gas zones of Pliocene-Quaternary sediments at the site of engineering and geological surveys on the shelf of Sakhalin Island

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Abstract. The engineering and geophysical studies are carried out before installation of a drilling platform and construction of engineering structures in the water areas in order to identify and map geological hazards, including the anomalous gas zones, from which involuntary release of hydrocarbons is possible, when the drill string passes through in the upper part of the geological section. The paper presents the results of expeditionary studies carried out at the site of engineering and geological surveys using continuous seismoacoustic profiling. The site is in the Sea of Okhotsk at the northeastern shelf of Sakhalin Island and adjoins Nogliksky district of the Sakhalin Region. Two seismoacoustic complexes were identified according to the data of continuous seismoacoustic profiling in the section of the study area, which differ from each other in the nature of the wave pattern. Gas zones and paleo-incisions were found in the bottom part of the section. The identified geological hazards are mapped and must be taken into account during further drilling of wells and construction of engineering structures.

Keywords:

time section, geological hazards, gas zones,

continuous seismoacoustic profiling, paleo-incision

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