Geosistemy perehodnykh zon = Geosystems of Transition Zones / Геосистемы переходных зон

2020, vol. 4, No. 4, pp. 384–392

URL: http://journal.imgg.ru/archive.htm ; https://elibrary.ru/title_about.asp?id=64191

https://doi.org/10.30730/gtrz.2020.4.4.384-392

Application of high resolution seismic to search for local gas anomalies in the South Kirinskoye oil and gas condensate field

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Abstract PDF ENG Резюме PDF RUS Full text PDF RUS

Abstract. Searches for local gas anomalies in water areas are necessary to improve the safety of the construction of offshore oil and gas production facilities. The article presents the results of studies of geological hazards at the South Kirinskoye oil and gas condensate field using high resolution seismic from 2010 to 2017. New high-quality seismic sections, reduced to a single type and level, were built, which to make a correlation of reflecting horizons and map geological hazards at intersecting research sites of different years. Based on the results of the interpretation of seismic sections, local anomalies were found in the upper part of the section, indicating the presence of gas. By the structural features of the bedding in the channel on seismic sections, a turbidite flow was detected at a depth of 900 m from the seabed with a width of 1000 m and a length of more than two and a half kilometers. Correlations between the amplitude on the seismic section and the value of methane content (C1) in the drilling fluid on the log were revealed. The result of the work is the first compiled consolidated map of all geological hazards within the South Kirinskoye oil and gas condensate field, discovered as a result of the interpretation of seismic sections.

Keywords:
geological hazards, high resolution seismic, seismic section, gas anomalies

For citation: Leksin V.K. Application of high resolution seismic to search for local gas anomalies in the South Kirinskoye oil and gas condensate field. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2020, vol. 4, no. 4, pp. 384–392. (In Russ., abstr. in Engl.). https://doi.org/10.30730/gtrz.2020.4.4.384-392

***Для цитирования*:** Лексин В.К. Применение сейсморазведки высокого разрешения для поисков локальных газовых аномалий на Южно-Киринском нефтегазоконденсатном месторождении. *Геосистемы переходных зон*, 2020, т. 4, № 4, с. 384–392. https://doi.org/10.30730/gtrz.2020.4.4.384-392

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