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Investigations of the petrogeneration zones western Bering sea by airborne geophysical data

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In 2011, work continued on the interpretation of geophysical data in western Bering Sea. Bering Sea oil-and-gas bearing province occupies a single sedimentary megabasin of the Bering Sea, the formation of which is caused by stage of the Alpine geodynamic development cycle of the Pacific mobile belt. At present, the geological-geophysical exploration maturity of the Bering Sea with respect to oil-gasbearing prognosis is at the level of regional study stage. In 2003, an additional study of oil-gas prospective zones of the Kamchatka Shelf of the Bering Sea was carried out. In the course of works, profile seismic studies and airborne gravity-magnetic survey at 1:200,000 scale were made at three territories: Ilpinsky, Olyutorsky I, and Olyutorsky II. Average survey elevation for the whole area is 300 meters. Geological modeling of sedimentary basin systems was made for this area. Geomagnetic sections it possible to compare the location of the magnetic and weakly magnetic structures with seismic and geological boundaries marker and conducting layers of geoelectric sections. This makes it possible to trace the features of placing magnetic differences in the geologic rock section, to identify their stratigraphic association, select the layers flyuidstubborn, adumbrate reservoir heterogeneity and establish the heterogeneity of internal structure oil-gasbearing zones.

Age correlation, thickness estimation and formational characteristics of litho-stratigraphic complexes building up sections are carried out. Geomagnetic deep sections transecting main zones of prospective oil-gas accumulation to airborne magnetic data. Distribution of magnetization in the development interval of potentially productive sandy strata at depths from 1 to 5 km is obtained. The most prospective zones of possible oil-gas accumulation are distinguished in the Olyutorsky and Ilpinsky sedimentary basins. At height of 400 km this minimum keeps the form that speaks about stability of a condition of the permeable zones supervising oil-gas-bearing.