

QUATERNARY GEOLOGY OF THE KLAIPEDA STRAIT (SE PART OF THE BALTIC SEA, LITHUANIA)

KUTEN N., SLAUTERIS A., and BITINAS A. Science-Technical Company Geoprojektas, Klaipeda, Lithuania; Geological Survey of Lithuania, Vilnius, Lithuania.

The report presents the results of complex geological and geophysical investigations of aquatory of the Klaipeda harbour located on the Curonian Lagoon Strait between Baltic Sea and continental area. Investigations have been carried out as a substantiation of the harbour-dredging project. Direct (drilling) and distance (seismic acoustic profiling) methods of investigation have been used onshore and offshore to estimate the geological structure of the Klaipeda Strait. It has been found out that the main part of Quaternary cover of the aquatorial bed is formed of the morainic and intermorainic strata, which lay in angular unconformity. The following methods of investigation have been applied: estimation of the clay mineralogical composition and hornblende roundness of tills, absolute age determination by OSL and palaeobotanical analysis of intermorainic deposits, seismostratigraphic analysis. The interpretation of seismic records has been performed on the basis of the drilling and dredging data.

The intermorainic strata presented by silty sand, which emerges steeply along the axial part of the Klaipeda Strait. One of the version of explanation of such geological structure is the hypothesis that intermorainic strata were dislocated (glaciotectonized) and incorporated into the till strata during the last (Nemunas, Weichselian) glaciation. The age of intermorainic deposits is 140-160 ka BP. According to the results of palaeobotanical investigations they are formed in interstadial conditions in a big freshwater basin. In natural conditions silty sand is of a very high density and contains fresh groundwater of high pjezometric level (in some places higher than the sea level).