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GEODYNAMIC MODEL AND OIL AND GAS POTENTIAL OF THE NORTH-TORGAI BASIN

Abstract. In the course of history different groups of scientists have studied the tectonic structure and evolution and consistency of mineral deposits location on the exposed territory of the Kazakhstan and along the Eastern slope of the Urals. As a consequence, the Torgai depression, which divides the East and West Kazakhstan structures was admitted to be poorly investigated, therefore, this region remains a blank spot on the geodynamic reconstruction schemes over the Kazakhstan.

A geodynamic division into districts of the territory from the Urals in the West to the Kokshetau and Ulytau upheavals in the East was carried out in the article based on the analysis of the latest geological and geophysical materials. The East-Urals anticlinorium, the Denisov's shear zone, the Valeriyanov's synclinorium, the North-Torgai depression and the Kokshetau-Ulytau upheavals zone are emphasized.

The description of each tectonic zone is provided from the plate tectonics standpoint. The structure of the North-Torgai sedimentary Basin is described in more details and, taking into account its geodynamic evolution in the Devonian and Carbonic periods, the oil and gas potential of its central part as to the Devonian and Lower Carbonic sediments is highly appreciated.

Key words: a sedimentary Basin, a volcanic arc, an allochthon, oil and gas potential, a geodynamic model.

The northern Torgai is best known for its magnetite deposits such as Kacharsky, Sokolovo-Sarbaisky, the oolitic iron ore deposits of the Lisakovsk group, the Shaimerden polymetallic deposit, and also bauxite-bearing massive reserves of Denisov-Fedorov's and Valerianov's zones. All of these deposits are in the suture zone of the Ural fold system with the North Torgai depression, in the geodynamic order they were all arranged in the suture zone of the western edge of the Kazakhstan plate with the eastern line of the Urals Ocean of Paleozoic and the East-Urals microplate.

To the East of these acclaimed ore deposits the major part of the territory is covered with the Mesozoic-Cainozoic cover of a considerable thickness, which is actually denoted as the North Torgai depression in the literature. It adjoins in the East to the Kokshetau and Ulytau upheavals and in the North merges into the West Siberian syneclise rich by gas and oil reserves.

At the course of time a notion about " The Geology of East Kazakhstan" in the geological literature has been worked out since N.G. Kassin and R.A. Borukayev, whereby "The East Kazakhstan" was understood as the territory starting the Kokshetau-Ulytau zone the whole area of Kazakhstan, the total outcrops territory of Paleozoic and more ancient formations, since the exposed areas were exactly the exploration target in seeking the solid minerals. The numerous treatises of such luminaries of Kazakhstani geology as R.A. Borukayev, I.F. Nikitin, V.N. Lyubetsky, V.Y. Koshkin, A.V. Avdeyev and et al were dedicated to the Tectonics and paleo-geodynamic reconstructions of "The East Kazakhstan".

Another group of geologists headed by L.A. Yanshin, A.A. Abdullin and others studied the Urals-Mugodzhar zone.

Among the primary treatises "The tectonic map of the Kazakh SSR and adjacent territories of the Union republics" edited by V.F. Bespalov, G.V. Garkovets, V.K. Yeremin et al, (1971) and "The tectonic map of the Paleozoic foldings region of Kazakhstan and adjacent territories (edited by A.A. Abdullin and