

Unconventional Reservoirs of West Siberia Basin – New Targets of Opportunity

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The rapid depletion of discovered fields in West Siberia basin drives Company-operators towards exploration and testing of new unconventional and, to a certain extend, exotic reservoirs. And with reservoirs in question the formation lithology is usually complex or the target geology calls for advanced methods, and often both are present. Despite the large amount of core, seismic and logs recovered during earlier evaluation and development stages, several sequences receive practically no attention and no credit for production potential.

Based on the study of seven producing fields (Em-Egovskoe, Kalchinskoe, Kamennoe, Koshilskoe, Tor-Eganskoe, Ust-Vakhskoe and Zimnee) five under-explored groups of formations with commercial reserves have been identified. The majority of these targets are penetrated by vertical holes and tested regardless of logs with little to no information gained from LWD/MWD, cuttings and advanced tools (NMR). As demonstrated by field examples, following pay zones were proven to have economic potential: Basement and Weathered crust formation (conglomerates, breccias, poorly-sorted sandstones filling the local depressions), Abalak shales (illite-mixed layered clays with limestone/spongolite and siliceous material), The Black shales of Bazenov Formation, Intrusions and several types of slump/slope slide and re-deposited lithofacies, Formations contains high amounts of capillary-bound water.