

FEEDBACK

Dr. John D. Humphrey, a foreign supervisor from King Fahd University of Petroleum & Minerals, has evaluated the dissertation work of D.E. Urmanova, entitled "Assessment of the hydrocarbon potential of the sedimentary complex of the south of the Precaspian Basin (including the water area of the Northern Caspian Sea) based on the results of basin modeling and determination of prospects", submitted for the degree of Doctor of Philosophy in the educational program, "8D070206-Geology of Oil and Gas." The assessment is as follows.

Ms. Dilyara Urmanova's dissertation work is focused on the study of hydrocarbon systems of the subsalt complex of the southern side of the Precaspian basin, and the assessment of its oil and gas potential.

Her research on this topic is highly relevant to further hydrocarbon exploration and development in the Precaspian basin. In order to satisfy the demand for fossil fuels, it is necessary to continue to explore for, produce, and bring to market new oil and gas fields. Many existing reservoirs around the world have passed their peak production and their current production continues to decline. Application of new and improved science and engineering to exploration and production will ensure that society will be able to meet the demand for hydrocarbons, even as we move through the energy transition to more sustainable solutions. Ms. Urmanova's dissertation directly addresses this societal need.

The conclusions of the first section of the dissertation are based on the analysis and synthesis of extensive geological and geophysical background and are based on modern approaches to the interpretation of seismic sections and geodynamic development.

The dissertation research uses an integrated approach, combining original laboratory work, contemporary research on petroleum organic geochemistry, and sound geological and geophysical reasoning. In the geochemistry section, the most complete characterization of the hydrocarbon systems of the subsalt complex was performed for the first time. Using these data, and an updated scheme of oil and gas geological zoning was proposed. The conclusions are consistent with the data generated and modern approaches to hydrocarbon system characterization.

The work has passed the necessary approbation. Results of dissertation research has resulted in the generation and dissemination of 7 publications, including 1 publication in a Scopus-indexed Q3 journal, and 6 articles in republican specialized publications. The principal conclusions and protected provisions have been successfully presented at international scientific and practical conferences, including Geoeurasia (2022) and SPE Annual Caspian Technical Conference (2021), among others.

The conclusions demonstrated by Ms. Urmanova are of practical importance and contribute new and novel concepts to the scientific community at large. The conclusions are reasoned and based on the synthesis of a large amount of data. The results of the research can be used in planning exploration operations within Devonian to Permian strata of the southern Precaspian basin oil and gas province. During the research, the applicant demonstrated the ability to integrate various geological information, carry out laboratory studies, and provide a series of logical and cogent conclusions. The conclusions and results obtained are justified and meet the objectives set. The dissertation is well-structured, written in clear language, is well-illustrated, and is internally consistent.

As a suggestion for further research of the dissertation, it is recommended to consider the possibility of lateral migration of oil and gas. This is due to the long-term structural asymmetry of the basin under consideration, which could significantly affect the development of oil and gas systems.

I conclude that the dissertation research and documentation entitled, "Assessment of the hydrocarbon potential of the sedimentary complex of the south of the Caspian Basin (including the waters of the Northern Caspian Sea) based on the results of basin modeling and determination of prospecting prospects," was performed at a high scientific level and fully meets all the requirements for dissertations, and its author, Ms. Dilyara Urmanova, deserves to be awarded the required PhD degree in the specialty 8D070206-"Geology of Oil and Gas."

I agree to the inclusion of personal data related to the work of the dissertation council and their further processing.

Scientific Supervisor, PhD

J.D.Humphrey

