Wells in the Arctic to be warmed up using 'thermos'

The SibFU scientists develop the unique 'thermocase' for the wells. The device will allow to keep the temperature around the well within the certain range which, in turn, will increase the wells operating period in the permafrost areas. The 'know-how' of the Krasnoyarsk scientists is really topical as the two thirds of the Russian territory are located in the permafrost area, which also contains more than 75% of the mineral resources.

According to Praskovia Pavlova, one of the authors of the project, the so-called 'thermocases' have become the most widely known in today's Russian and foreign practice. It is a construction that consists of two tubes. The tubing annulus is evacuated and filled with the insulating material and the low-temperature gas.

«The thermocases of the passive type that are being used nowadays are simply delaying the time of the thawing of the permafrost. Our thermocase, on the contrary, is of the active type which means that we can control the processes occurring in the system of "the well — permafrost", — clarified **Praskovia**. *— This occurs due to the use of thermoelectric modules based on the use of the thermoelectric Peltier effect - the difference of temperature occurs during the flow of electric current».*

The laboratory model of the thermocase has been produced. It consists of the thermoelectric assembling and the thermal insulation polyfoam ring on the inside, and the protective shock-resistant ABS-plastic lids on the outside. Later on, the scientists are expected to conduct the experimental research in order to determine the optimal characteristics and assess the effectiveness of the application of the Peltier thermoelectric modules.

The project is run by the team of the young scientists including Praskovia Pavlova and Michael Kolosov under the scientific supervision of Petr Kondrashov, the Head of the Department of Machinery and Equipment for Oil and Gas Fields of the SibFU Institute of Petroleum and Natural Gas Engineering

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