Packer fluid research and development for Bovanenkovo wells

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Abstract: Low-temperature highly icy frozen rocks (up to minus 7.0°C) and productive formations with temperatures up to 55.0°C under high temperature gradient values (3.3°C/100 m) and small depth, in Bovanenkovo oil-gas condensate field, create conditions for heat transfer from the reservoir to the wellhead with subsequent impact on the surrounding permafrost, including their warming and hydrate plugs dehydration with the annular gas showings. For such conditions, wells are needed, equipped according to the packer scheme, with the placement of non-freezing packer fluid in the packer annulus, which provides thermal convection of heat transfer from the formation to the permafrost zone, preventing their thawing and crushing of production strings. To ensure the safe operation of wells in the Bovanenkovo oil-gas condensate field, the most suitable packer fluids are those based on sodium format.

Keywords: Research, packer fluid, saline solutions, permafrost

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