

# RESEARCH OF THERMAL PROCESSES IN THE SOIL DURING THE DEVELOPMENT OF OIL FIELDS IN THE FAR NORTH BY COMPRESSION METHOD WITH HEATING

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**Abstract.** We study the risk of adverse effects of heat on the ground permafrost as a result of long-term method of viscous oil production in the Far North by thermocompression supply superheated steam to the oil-bearing layer. It was found that due to the divergent nature of heat transfer, convective complex movement of air in the space between the tubing and the casing temperature is the latest in load-bearing elements, heated to 130 °C, is about 70 °C. The heterogeneity of the temperature field is leveled up to 4–5 % at a distance of 400–420 mm from the axis of the tubing. The thickness of the melting of ground ice within 90 days of operation the tubing depends on the percentage of water-filled pores in the soil. With a minimum (10 %) percentage water-filled pores in the soil layer, thickness of melting ground ice for 90 days of operation the tubing does not exceed 2.6 m.

**Keywords:** soil of the permafrost, viscous oil production, foundering of ground ice, filing superheated steam to the oil-bearing layer, oil well tubing.