Transport and accumulation of hydrocarbonic pollution in soils and rocks of Arctic regions.

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The purpose of researches. Research of influence of cryogenic factors on distribution hydrocarbonic contaminates in soils and rocks of Arctic regions.

A stage for the objective. Development of oil-extracting branch of Northern regions of Russia results in extensive hydrocarbonic environmental contamination. Landscapes of the cryolitozone have low stability to technogenic influences and low regeneration ability. Therefore oil spills here cause natural complexes especially strong damages. In additional oil pollution results in change of temperature regime and properties of soils that can impact on stability of engineering constructions. The estimation of oil pollution and the forecast of its distribution areas in soils of cryolitozone are important for the successful decision of ecological, agricultural and industrial problems of Far North. The field and experimental works have appeared recently, show active influence of cryogenic factors on hydrocarbonic pollution: for example, straight freezing-thawing of soils facilitates intensive redistribution of the contaminant, frozen soils are permeable for oil hydrocarbons. The result of cryogenic factors are transformation and fractional separation of hydrocarbonic digests. However these questions are not quite investigated yet. Therefore it is supposed to investigate exist forms, and accumulation, transformation hydrocarbonic contaminants in conditions of cryogenic factors, as well as reveal specifics of transport and accumulation of hydrocarbons of various Arctic areas and landscapes.

Expected results. Identification of exist forms of oil components in soils and permafrost deposits, their transformation resulted by cryogenic factors influence; research of the mechanisms and regularities of oil pollution transport in seasonal freezing and permafrost soils; hydrocarbons affection on cryogenic soils formation; identification of the various north areas specifics in different landscape conditions.

The main kinds of researches. Field researches: drilling in oil floods places with core, organic liptic and chemical analyse of core sample. Laboratory studying of transport and accumulation of oil and oil products in frozen and freezing soils.

Time, location and resources of field works. Summer field seasons in the European North of Russia (Pechora delta), the North of Western Siberia, archipelago Spitsbergen. The resources are the drilling equipments, forwarding equipments.