
HYGIENIC ASSESSMENT OF SOLID WASTES OF OIL PRODUCTION

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Introduction: In spite of the steadily developing engineering processes and equipments oil production remains as one of the important sources of the environmental pollution with solid wastes that contains toxic and hazardous agents. Among solid wastes oil sludge that is formed throughout all stages of the complex technologies of oil production is the most dangerous waste. The complex chemical composition of oil sludge complicates the hygienic assessment of its impact on environment and population health.

Objective: The aim of the study was to identify quantitative and qualitative characteristics of oil sludge that would help to develop on the scientific basis its hygienic standardization in soil.

Methods: Multiple-aspects chemical analysis of oil sludge, hydrocarbons and heavy metals were employed. Vegetation experiments on translocation of the components of oil sludge in plants, water-migratory and air-migratory experiments, and microbiological and biochemical investigations of impact of oil sludge to adequate soil indices were implemented.

Results: It was identified that oil sludge that is formed at the shops of complex preparation of crude oil poses the most dangerous waste because of its toxic composition and its environmental impact. These wastes are abundant of oil hydrocarbons light ends and heavy metals and cause severe contamination of soil, plants, ground water and ambient air.

Conclusions: Taking into account the results of multidimensional experiments safety level of solid oil in soil and their danger class was validated and complex prophylactic measures developed.