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The contaminating impact of surface water runoff from the MSW landfill on the river Krutovka (through the example of samosyrovskaya landfill, Kazan, Russia)

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Abstract

© Research India Publications. One of the attributes of the present stage of urbanization is the accelerating rate of waste generation, from both human activity, the commercial packages, as well as industrial production. According to official information of the Federal Service for Supervision of Natural Resource Usage (Rosprirodnadzor) for the Republic of Tatarstan, the republic produces about 8 million tons waste, 3 million of which are municipal solid waste. One of the largest waste disposal sites in the city of Kazan is Samosyrovskaya landfill, having been operating since the 1960s. The MSW landfill operation causes pollution of air, soil, surface water, and groundwater. This paper deals with hydrological and hydro-chemical studies for assessing the impact of the landfill on water bodies and the choice of sites for bioengineering facilities for surface runoff treatment. An important thing in monitoring the surface water pollution is the choice of observation posts reflecting the impact of the affecting object on the hydrological, and hydro-chemical properties of watercourses. Studying the hydrological parameters of Krutovka stream, we have developed a distribution model for main streams of the surface runoff from the territory of Samosyrovskaya landfill, and determined the localization of the most probable point of water pollution. Our hydro-chemical observations confirmed the presence of contaminants at the confluence of surface runoff.

Keywords

Filtrate, Landfills, Monitoring, Small rivers, Surface runoff