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Biochemical Approach to Assess Groundwater Pollution by Petroleum Hydrocarbons (Case Skikda Algeria)

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Author(s)

Sofiane Labar, Azzedine Hani, Larbi Djabri

ABSTRACT

Due to the accelerated population growth and development in all sectors especially industry, more water has been pumped and more effluents have been rejected to the natural system. In the coastal Skikda Valley; Petrochemical industry is practiced along the year and almost groundwater are threatened. This work is referred to the characterization of the environmental hydrobiochemistry in the coastal petrochemical industrial area. The study has investigated the groundwater pollution by hydrocarbons using biochemical approach and assessing the nature and extent of contamination of groundwater in relation to petroleum industrial activities surrounding tank, channel and pipe. At site of this industrial zone, groundwater circulates on slight deep in the mio-pliocene alluviums (sand and gravel) which is characterized by an important permeability. Groundwater quality analysis proved that groundwater quality is largely polluted with respect to BOD_5, COD, TPH and TSS. So, a narrow relationship between BOD and TPH and important qualitative degradation of the groundwater is shown, especially in the parts situated in the down gradient area and in direct proximity of tank, channel and pipe. The extent of groundwater contamination is influencing by the depth of the water table, permeability of the soil and therefore infiltration rate. In order to prevent further pollution of groundwater, oil must be stored and transported via impervious tank, pipe and channel. So, effluents must be treated prior to discharge.

KEYWORDS

Groundwater; TPH; Biochemical Parameters; BOD5; Algeria

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