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THE ROLE OF BIOAUGMENTATION IN THE BIOREMEDIATION OF CONTAMINATED SOILS WITH PETROLEUM PRODUCTS

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Abstract

Biological treatment methods generally rely upon the stimulation and natural selection of indigenous microorganisms in the soil. However, the natural soil flora may not have the metabolic capability to degrade certain compounds or classes of compounds or to emulsify the water-insoluble components. On the other hand, they may have the ability but not the biomass necessary to degrade the compounds rapidly enough to meet treatment criteria. When a contaminated site requires immediate treatment or when indigenous bacteria at the site are insufficient in number or capability to degrade the pollutants involved, it may be necessary to employ bioaugmentation.

Bioaugmentation means the introduction of cultured microorganisms into the subsurface environment for the purpose of enhancing bioremediation of organic contaminants. Generally the microorganisms are selected for their ability to degrade the organic compounds present at the contamination site to enhance bioremediation.

Keywords: indigenous microorganisms, selected microorganism, bioaugmentation, bioremediation

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