

# EFFECTIVE METHODS FOR SOIL CONTAMINATION REMEDIATION

## How Does Remediation of Soil Contamination Work?

To reduce or eliminate the risks associated with soil contamination, safeguarding or decontamination measures can be applied. Safeguarding measures may include covering contaminated soil with clean soil to prevent contact between humans and contaminated soil. Alternatively, contaminated soil may need to be completely sealed to prevent the formation of contaminated seepage water. Decontamination options are also available. The easiest solution is to remove and dispose of the contaminated soil in a suitable landfill. Alternatively, more advanced methods involve treating the soil with biological or chemical processes to break down the contaminants. Treatment can occur on-site or in a specialized facility.

The figures below give some examples of commonly applied remediation techniques.



The aim of biological remediation processes is usually to enhance the activity of autochthonous microorganisms that naturally exist in the soil to degrade organic contaminants. This is achieved by optimizing the microorganisms' living conditions.

Solidification and stabilisation are techniques that restrict mobility and decrease the availability of pollutants for emission processes. Solidification methods are frequently employed in the remediation of contaminated sites, where inorganic binders such as lime, cement, and pozzolan are used. The primary mechanism of solidification is to reduce the permeability of the contaminated material when mixed with a binder.



The solidified material can then be deposited in a landfill, as shown in the left-hand figure.

The primary remediation measure involves excavating the contaminated soil and disposing it in a landfill. Depending on the desired safety level and the toxicity of the contaminants, it may be necessary to permanently cover the excavated soil to prevent contamination of the surrounding environment.



This is an example of a landfill for external disposal of contaminated material at an approved waste disposal site.



An artificial hill was created in Germany due to the excavation and redeposition of contaminated soil on site.



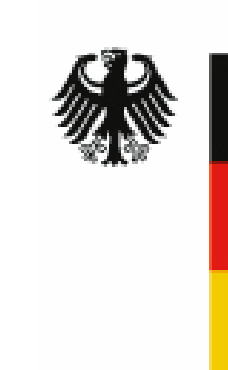
A landfill with surface sealing to prevent a dispersion of the contaminants into the environment by wind or water.

## Key Message

When converting industrial land into urban land, it is important to take special care. Prior to any land use change, an investigation should be conducted and, if necessary, remediation should be carried out.



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