

Natural. Safe. Reliable.

## Biological pollutant reduction in oil contaminated soils and waste



# Soil Reactivation

Removal of oil-containing contamination from soils and agricultural land after flood events

## Problem

Flood events lead to massive pollution and sedimentation on agricultural land and gardens. The water mainly disperses oils and diesel from washed up and leaking fuel oil tanks, machinery and cars. Pumping out the flooded and oil contaminated basements into adjacent farmland also results in oily material washing up on the ground surface. Depending on the conditions, naturally existing microorganisms cannot break down the contamination efficiently and promptly – this rules out any immediate further use of the land. At the same time, ground water contamination and impairment of drinking water supplies are potential threats.

## Our Solution

Large-scale applications of a liquid, EU-patented bio-fertilizer, developed and produced by our partner ekolive. It contains both natural heterotrophic (oil-degrading while soil-renaturing) microorganisms and organic acids, which in turn have a biopesticidal effect, as well as dissolved natural minerals that contain important micro- and macronutrients for further use of the soil.

## Benefits

- Removal of oily contaminants spread by floods in a natural and ecological way as well as the restoration and stimulation of microbiological soil-cultures
- Ensuring the timely, sustainable and ecological use of the land
- Significant risk minimization regarding groundwater pollution
- Reduction of the amount of soil to be removed



# Waste Pre-Treatment

Pre-Treatment of toxic mixed waste by inoculation with bacteria to reduce environmental risks

## Problem

Flood disasters leave behind mountains of waste: mud, smashed furniture, paper, cars, plastic, chemicals, sewage and construction debris – mixed and highly contaminated by toxins. On the temporary storage areas, the contained pollutants will leak and be washed out by rainfall. As a result, these mountains of waste not only pose high risks to groundwater and land, but also to human health.

Subsequent landfilling will continue to release and leak toxic contaminants – long before natural bacteria will develop within this waste, spread and begin their decontamination process.

## Our Solution

Pre-treatment of toxic waste with ekolive's effective bacterial cultures rapidly accelerates the natural degradation process even during temporary storage. The material's safety shows a significant short term improvement. Risks for both environment and health are sustainably eliminated in the long term. The added natural and environmentally friendly heterotrophic bacteria decompose fecal matter and toxic substances such as oils and break them down naturally.

## Benefits

- Easy application of bacteria and their stimulation by spraying the waste directly on site
- Applicable for all types of mixed waste
- Fully biological process
- Prevents leaching of pollutants and contamination of the soil and groundwater
- Reliable conversion of toxins into safe end products by bacterial activity
- Complete removal of contamination (removal efficiency up to 99%)
- Reduction of secondary damage



# Köster Competence Center for Environmental Technology and ekolive GmbH

The remediation of hazardous waste deposits, the construction of landfills and preventive environmental protection measures are bundled in our „Competence Center for Environmental Technology“, with the longstanding expertise of a highly specialized team. For the remediation of contaminated soils, we build on the know-how of ekolive Germany GmbH, one of the leading suppliers of biofertilizers and highly effective bacterial cultures for the ecological and natural degradation of organic contaminants.

Our philosophy: the best safety possible for people and nature. This is ensured by highly trained employees and the use of state-of-the-art technologies. Extensive certifications regularly confirm our high quality and safety standards. In order to achieve the optimal solution, both technologically and economically, we accompany the entire construction process from analysis and consulting to planning and implementation.

## We are experts in environmental technology

- More than 30 years of experience in the remediation of contaminated sites and the construction of landfills
- The highest safety standards: BGR 128 and TRGS 519
- SCC certified since 2005: ensuring the greatest possible standard internationally set for occupational safety and environmental and health protection.
- Certified specialist disposal company

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