

Sustainable landfilling

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The mass flow of emissions associated with landfilling (leachate, gas) should be monitored in both the short and long-term. In the short term, this would imply the creation of acceptable environmental conditions for workers, populations and ecosystems close to a waste management facility. In the long term, acceptable environmental conditions should be created not only for our immediate future, but also for the future of generations to follow, according to the concept of environmental sustainability.

As for all types of environmental issues, the main factor in the control of contamination is represented by a limitation of the mobility of those elements that are not in balance with the environment. This simple principle should act as the main driver in the process of designing a sustainable landfill today. On the one hand we should be able to guarantee, both for the short and long term, environmental protection by limiting the mobilization of substances present in leachate and landfill gas - by installing appropriate barriers and emissions treatment - whilst at the same time achieving, in the shortest possible time span, a final waste quality and overall structure capable of ensuring a balance between the landfill and the environment. On the other hand, the landfill can act as a final sink for the stable, non-mobile substances that we no longer require and - at least in the medium term - want to isolate from the environment (sink concept).

How to implement the concept of sustainable landfilling into practice, how to set the Final Storage Quality, how to predict and assess the final environmental benefits are some of the problematic questions this book is trying to answer.

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