

# Digging into the benefits of landfill mining

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Research in the *International Journal of Environmental Engineering* reveals details of the first successful, large-scale landfill mining project in Andalusia, Spain.

Landfill mining is an emerging approach for the remediation of old

waste sites. It allows for the reuse of valuable materials, such as plastics and metals that may have been dumped before recycling facilities were widely available. The process might also allow an entire brownfield site to be remediated sufficiently for development or even rewilding.

David Caro-Moreno, Francisco J. Rodríguez-Gallardo, and Francisco A. Jiménez-Cantizano of the Environmental and Water Agency, part of the Regional Government of Andalusia, together with Germán Coca-López of the Council of Sustainability, Environment and Blue Economy of Andalusia, have assessed a [pilot project](#) carried out in the town of Dehesas Viejas, Granada.

This site was an illegal hillside dumping ground for construction and demolition wastes rather than a conventional municipal landfill. The profile of materials there would be rather different from the materials found in a municipal landfill. Nevertheless, the work undertaken on this illegal dump was sufficient to revert the entire site to its natural state thus requiring no ongoing maintenance. Almost 90% of the waste materials were retrieved and found to be low-hazard and so suitable for road construction projects or backfilling conventional landfill sites that have been mined.

Where mining of conventional landfill might be required, there is perhaps a greater need for segregation of the [waste materials](#) during the recovery process with a view to their being reused or recycled. The present [research](#) nevertheless bodes well for clearing up other big flytipping or illegal landfill sites.

Landfill mining could become an effective approach to addressing the [environmental hazards](#) posed by old landfill sites. Moreover, it could offer a supply of raw materials, such as rare and difficult-to-source metals used in electronics. These could be fed into the industrial recycling and supply chains. There will, of course, be issues of

contamination with [hazardous materials](#) in some landfills set for excavation and mining.

With appropriate safety measures in place during the process, [landfill mining](#) has great potential for the reuse of erstwhile waste and the possibility of remediating sites either for development or repurposing as wildlife reserves, or simply ensuring that they revert to their natural state.

**More information:** David Caro Moreno et al, Successful illegal dumpsite remediation: a landfill mining demonstration project at Andalusia (Spain), *International Journal of Environmental Engineering* (2023). [DOI: 10.1504/IJEE.2023.132627](https://doi.org/10.1504/IJEE.2023.132627)

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