LANDFILL
MINING
APPLICATIONS

Best Solution. Smart Recycling.

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The dismantling of a landfill is usually carried out for several reasons. It is always worthwhile from an ecological point of view, achieving the remediation of soil and groundwater. But the main reason is the recovery of free building area. The recycling of metals and energetic utilization of plastic foils and other combustible components just contribute to the profitability of landfill mining.

The first process step consists of a spiral shaft separator (SWS) for screening excavated landfill material. Metals are removed from the fine and the coarse fraction using magnets. The separated metals are recycled. The fine fraction of the SWS is screened again using a trommel screen to produce a midsize fraction between 50 and 150 mm. This fraction is then separated according to density using a wind sifter. The light fraction of the wind sifter can then be utilized energetically. The drum screen fines are mixed with lime and build back into the landfill or moved to the new location of the landfill.

This method mainly relates to municipal waste landfills. The treatment of slag and mining tips will not be considered here.

The main reason for landfill mining is the provision of future construction area. If the landfill remains in service, its volume capacity is increased by removing the target fractions. Thus more waste can be deposited. Useful fractions obtained by processing landfill material are:

- **REFUSE DERIVED FUEL** (Oversize 150 - 500 mm)
- **REFUSE DERIVED FUEL** (Light fraction 50 - 150 mm, see picture above left)
- **RECYCLING** (ferrous metals, see picture above right)
- **FINES AND HEAVIES WILL GO BACK TO LANDFILL**
LANDFILL MINING

PROCESS OVERVIEW

PROCESS DIAGRAM

The spiral shaft separation (SWS or Splitter) is the most robust method on the market for screening waste. It is designed for an unpredictable material like this.

SCREENING
For the secondary screening a trommel screen is sufficient. It removes the fines that would otherwise contaminate the light fraction produced by the wind sifter.

WIND SIFTING
Low density materials such as plastic films are separated from the heavy fraction and represent an important target fraction of the process.

MIXER
Lime is added to the material in a mixer for it to be returned to the landfill.

INPUT

FEEDING

OUTPUT

METAL SEPARATION

OVERSIZE (150 – 500 mm)

FEROUS METALS

LIGHT FRACTION (50 – 150mm)

HEAVIES (50 – 150 mm)

FINES 0 – 50 mm
Landfill mining with Doppstadt solutions

- Robust process for extremely heterogeneous material
- Return on invest due to more landfill capacity if landfill stays in service
- Return on invest due to regained construction area for other purposes
- Energetic and material utilization of part of some landfill components