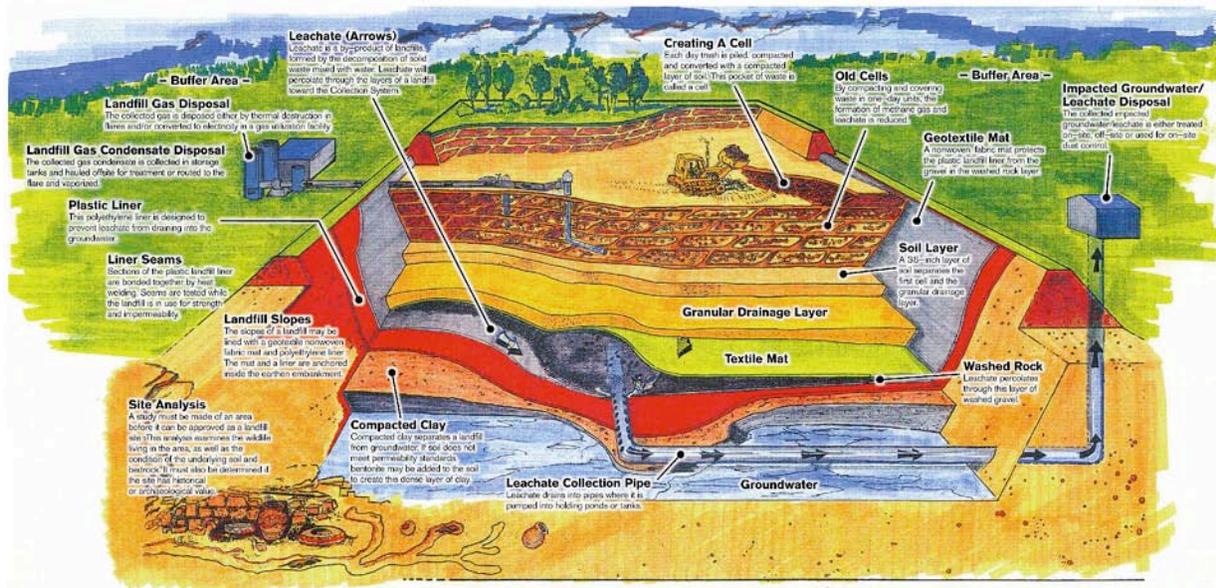




Fact Sheet: Anatomy of a Landfill

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THE ANATOMY OF A LANDFILL

The illustration above shows the anatomy of a landfill with information on the items and the process that create a landfill. Sanitary landfills today are designed, operated, monitored, and closed in accordance with stringent federal regulations. These regulations require controlling landfill gas, protecting ground and surface water from contamination, preventing hazardous waste from entering the landfill, and ensuring that any hazardous waste that is discovered on site is properly handled, stored, and disposed of at a permitted facility designed to accept hazardous materials.

At a sanitary landfill, each day waste is delivered in a variety of vehicles. At the landfill, trucks are directed to designated unloading areas where the waste is dumped, checked for hazardous or other unacceptable material, and pushed into place by bulldozers. The waste is then compacted and covered by an approved cover material (soil, foam, tarps or greenwaste). One day's worth of waste is called a cell. These cells are developed next to each other, ultimately forming a lift or layer of trash. These lifts have been planned for in the landfill's master development plan, and are constructed until a final elevation is reached, at which time the landfill stops receiving trash and closes.

Leachate

Leachate is a by-product of landfills formed by the decomposition of solid waste mixed with water. Leachate will percolate through the layers of a landfill toward the collection system.

Landfill Gas Disposal

The collected gas is disposed either by thermal destruction in flares and/or converted to electricity in a gas utilization facility.

Landfill Gas Condensate Disposal

The collected gas condensate is collected in storage tanks and hauled offsite for treatment or routed to the flare and vaporized.

Plastic Liner

This polyethylene liner is designed to prevent leachate from draining into the ground water.

Liner Seams

Sections of the plastic landfill liner are bonded together by heat welding. Seams are tested while the landfill is in use for strength and impermeability.

Landfill Slopes

The slopes of a landfill may be lined with a geotextile non-woven fabric mat and polyethylene liner. The band and liner are anchored inside the earthen embankment.

Site Analysis

A study must be made of an area before it can be approved as a landfill site. The analysis examines the wildlife living in the area, as well as the condition of the underlying soil and bedrock. It must also be determined if the site has historical or archaeological value.

Compacted Clay

Compacted clay separates a landfill from groundwater. If soil does not meet permeability standards, bentonite may be added to the soil to create this dense layer of clay.

Leachate Collection Pipe

Leachate drains into pipes where it is pumped into ponds or tanks.

Creating a Cell

Each day trash is piled, compacted and covered with a compacted layer of soil. This pocket of waste is called a cell.

Old Cells

Compacting and covering waste in one-day units reduces the formation of methane gas and leachate.

Geotextile Mat

A non-woven fabric mat protects the plastic landfill liner from the gravel in the washed rock layer.

Soil Layer

A 36-inch layer of soil separates the first cell and the granular drainage layer.

Washed Rock

Leachate percolates through this layer of washed gravel.

Impacted Leachate Disposal

The collected impacted leachate is either treated on-site, off-site, or used for on-site dust control.