

Arizona Landfills

Arizona has
117
landfills

- 41 open municipal solid waste landfills
- 25 open non-municipal solid waste landfills
- 19 open private landfills
- 32 closed landfills

What is municipal waste, non-municipal waste and inert waste?

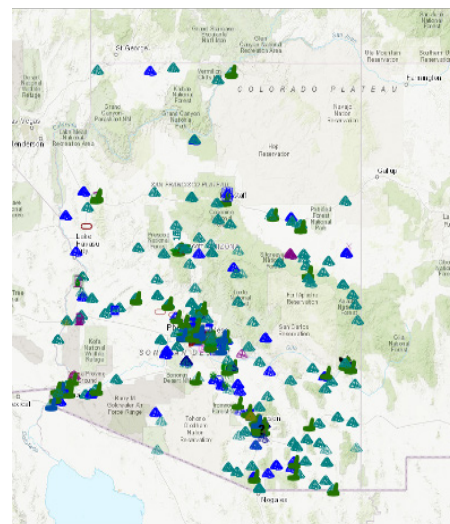
Municipal solid waste is garbage, refuse and similar solid waste material discarded from residential, commercial, institutional, industrial sources and community activities, including materials for recycling.

- Typically includes paper/paperboard, glass, metals, plastics, rubber, leather, textiles, wood, food scraps and yard trimmings.

Non-municipal solid waste is typically derived from construction and demolition activities, such as when buildings or other structures are repaired, remodeled or demolished.

- Typically includes roadwork material, landscape rubble, vegetation, glass, metal, shredded tires, soil, excavated material, and demolition, construction, renovation and site clearance materials.

Inert waste includes concrete, asphaltic pavement, brick, rock, gravel, sand, soil and metal, if used in concrete reinforcement. This waste does not include special waste, hazardous waste, glass or other metals.



Types of Landfills

A **municipal solid waste landfill** is a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well or waste pile. These landfills may receive other types of wastes, such as commercial solid waste, non-hazardous sludge, hazardous waste from very small quantity generators and industrial solid waste.

Non-municipal solid waste landfills include construction and demolition landfills, mining operation landfills and private landfills.

- Construction and demolition landfills** accept construction and demolition waste but not hazardous waste or industrial solid waste.
- Mining operation landfills** only accept waste generated and incidental amounts of putrescible waste at mining operations where the landfill is located.

- Private landfills** only accept permitted wastes generated on-site.

A **surface impoundment** is a facility designed to hold liquid wastes or wastes containing free liquids (not an injection well). Examples of surface impoundments include holding storage, settling, and aeration pits, ponds, and lagoons.

Permits for Landfills

- Non-Municipal Solid Waste Aquifer Protection Permits are for facilities that accept non-municipal solid waste and have surface impoundments
- Master Facility Plan Approvals (MFPAs) are for facilities that accept municipal solid waste.

Landfill Life Cycle

- **Active** — The facility is actively accepting waste for disposal.
- **Closure** — The facility is no longer accepting waste for disposal. Every landfill is required to prepare a written closure plan that describes the steps necessary to close the unit in accordance with the closure requirements. Closure standards for landfills require owner/operators to install a final cover system to minimize infiltration of liquids and soil erosion.
- **Post-Closure** — Care period activities consist of maintaining and monitoring the waste containment systems as well as monitoring groundwater and landfill gasses to ensure that waste is not escaping and polluting the surrounding environment. The required post-closure care period is 30 years from site closure, but this can be shortened or extended by the director of ADEQ

Landfill Monitoring

Landfill environmental monitoring activities are required through the active life of the landfill, closure and post-closure. These include:

Groundwater Monitoring —

Landfills have the potential to impact groundwater. Monitoring for potential contamination is critical to protecting public health and the environment. All municipal solid waste landfills are required to monitor groundwater.

- Groundwater monitoring system includes wells, installed around the landfill, to yield groundwater samples.
- Wells are sampled for groundwater depth and groundwater flow direction, and water quality is compared to the Aquifer Water Quality Standards.

Landfill Gas Monitoring — Landfill gas can migrate away from a landfill and into the surrounding soil, depending on the pressure of gas built up inside the landfill. It is important to control the off-site migration of landfill gasses to minimize impacts to the environment and protect public health.

- A large part of biodegradable materials, which are decomposed by naturally occurring microorganisms. These microorganisms break down the organic matter and create carbon dioxide (CO₂) and methane (CH₄).
- Methane and carbon dioxide have been identified by the EPA as a greenhouse gas. Methane is odorless, colorless, flammable and explosive in concentrations between 5 and 15 percent by volume. Carbon dioxide is odorless and colorless, and is not flammable or explosive in landfill situations.
- Municipal Landfills are required to monitor landfill gas generation and ensure that concentration of methane does not exceed 25 percent of the lower explosive limit (5 percent by volume) for methane at the facility.



Liners — are either synthetic membranes or compacted clay layers placed at the bottom of landfills.

- The purpose of a bottom liner system is to prevent liquids from migrating into the groundwater beneath a landfill. Liners also help prevent landfill gas migration into the surrounding environment.
- The liner system typically consists of “barrier” layers designed to intercept liquids before they reach groundwater.

How often are landfills inspected?

Annually, or more frequently as needed.

How do we know when rules are broken?

- Environmental Monitoring Results (Landfill gas and Groundwater)
- Inspections
- Complaints





Landfill Regulations

Municipal Solid Waste Landfills

- 40 Code of Federal Regulations (CFR) 258
- Arizona Revised Statutes (ARS)
 - The Arizona Revised Statutes adopt the federal criteria for municipal solid waste landfills - 40 Code of Federal Regulations (CFR) 258 or “Resource Conservation and Recovery Act (RCRA) Subtitle D” — by reference.
 - Title 49, Chapter 4
- Arizona Administrative Code (AAC)
 - Title 18, Chapter 13

Non-Municipal Solid Waste

- 40 Code of Federal Regulations (CFR) 257
- ARS Title 49, Chapter 2

Non-Municipal Solid Waste at Mining Operations

- AAC R18-13-802

Municipal and Non-Municipal Solid Waste Surface Impoundments

- ARS Title 49, Chapter 2
- AAC Title 18, Chapter 9

Contact:

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For more information please
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For translations or other communications aids, please email the Title VI Coordinator, Leonard Drago, at Drago.Leonard@azdeq.gov or call 602-771-2288.

Para traducciones u otras ayudas de comunicación, envíe un correo electrónico al Coordinador del Título VI, Leonard Drago, a Drago.Leonard@azdeq.gov o llame al 602-771-2288.