



INJECTION vs. LANDFILL DISPOSAL

Milestone Industrial™ is your single source for efficient and responsible waste management. Our solutions include deep well injection – a clean and safe approach that is proven and preferred for its environmental benefits. **Here's how our solution stacks up against landfill disposal.**

	Deep Well Injection Disposal	Landfill Disposal
Overall Assessment	Class I underground injection has been identified by the EPA as an effective disposal method with a lower potential for environmental release when compared to other disposal options. ¹	Landfills are generally the least preferred method for wastewater disposal due to their potentially adverse environmental impacts and risks to humans and wildlife.
Environmental Impacts	Waste is contained deep underground below impermeable rock layers that prevent contamination of drinking water, soil, and surface water, minimizing ecosystem risks.	When rain or other liquids mix with industrial waste, leachate is formed. This contaminated liquid can release greenhouse gases and seep through the waste, polluting the soil or nearby ecosystems.
Human Health Impacts	Studies by the University of Miami and the EPA (2000, 2001) suggest that, due to the secure isolation of wastewater, injection wells have the least potential for impact on human health when compared to ocean and surface discharges. ²	Without proper containment and monitoring, leachate can pollute drinking water, contaminate soil, impact plant growth, and potentially enter the food chain.
Containment Reliability	Injected into a thoroughly assessed, impermeable geological formation far below drinking water aquifers, the waste is permanently isolated, ensuring long-term containment while minimizing future risk and liability.	Well-designed landfills built to EPA standards rely on containment systems, which can still be compromised by liner damage, leachate generation, and poor maintenance, potentially causing leaks and contamination of soil, surface water, or groundwater.
Regulations	The EPA's Underground Injection Control program is regulated under the Safe Drinking Water Act. Operators must obtain permits, conduct geologic studies, monitor continuously, and comply with strict reporting requirements to prevent contamination of underground water sources.	Non-hazardous industrial waste landfills are regulated by the EPA under RCRA Subtitle D, which outlines design criteria, location restrictions, financial assurance, corrective cleanups, and closure requirements.
Monitoring and Reporting	Subject to rigorous EPA oversight, deep well injection requires continuous monitoring, mechanical integrity testing, and detailed reporting to ensure permanent containment. The process offers full traceability and long-term compliance assurance.	To allow for timely corrective action and regulatory compliance, active and closed landfills require routine monitoring to detect potential problems such as groundwater contamination and gas emissions.

¹ SOURCE: [Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances](#)

² SOURCE: [Wastewater Deep Injection Wells for Wastewater Disposal – Industries Tap a Unique Resource](#)