

US EPA ARCHIVE DOCUMENT

Session 8 Closure and Post-Closure



Booz | Allen | Hamilton

Session 8: Agenda

- ▶ Closure
 - What is closure
 - Closure requirements
 - Closure performance standards
 - Closure plan
 - Closure timetable

- ▶ Post-closure care
 - What is post-closure
 - Post-closure requirements
 - Post-closure and corrective action



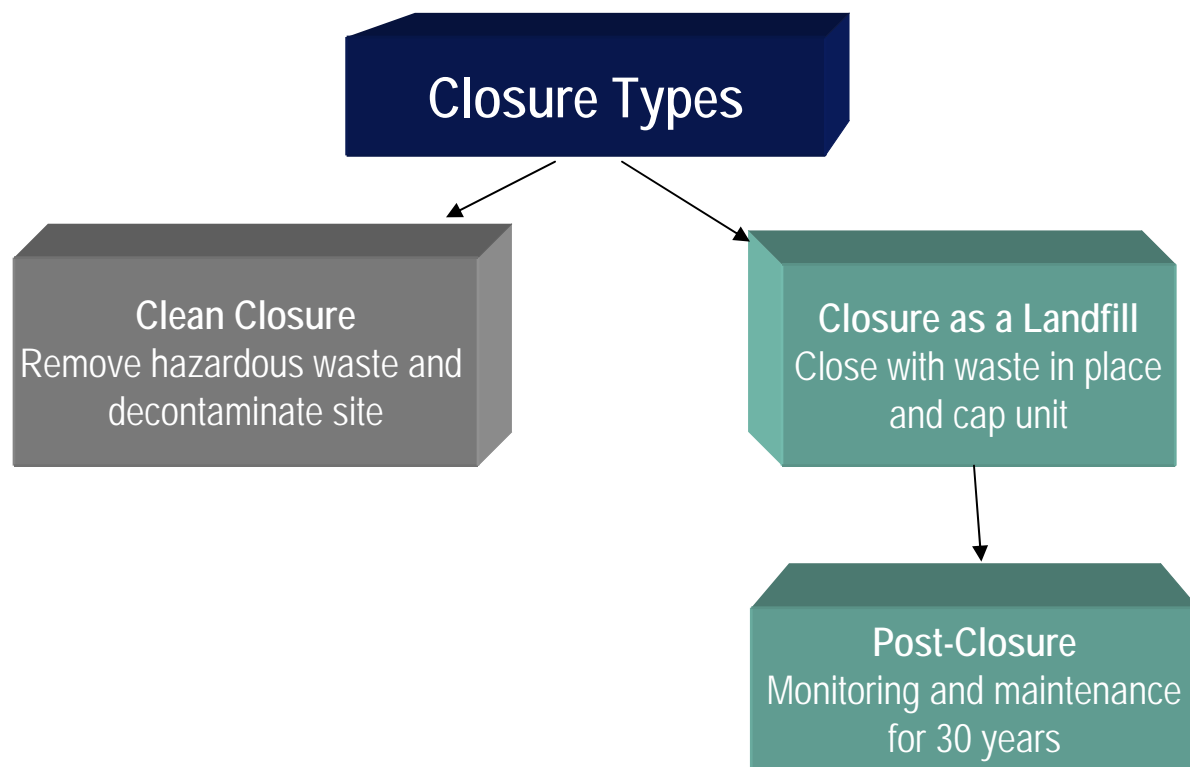
What is closure

What is Closure

- ▶ Closure is the cleanup period after operations cease, where the facility:
 - Stops accepting hazardous waste
 - Completes treatment, storage, and disposal of any wastes left on site
 - Disposes or decontaminates equipment, structures, and soils
- ▶ Closure applies to all hazardous waste units
- ▶ Closure must be conducted in accordance with an approved closure plan



What is closure



Closure Requirements

- ▶ Develop a written closure plan and submit it to EPA for approval
- ▶ Meet closure performance standards
- ▶ Comply with closure timetable (e.g., notification, completion)
- ▶ Certify completion of closure by an independent, registered professional engineer
- ▶ Submit survey plat to local zoning authority (applicable to land disposal units)



Closure requirements

Closure Plan

- ▶ The closure plan documents the procedures a facility will follow to close permitted or interim status units
- ▶ The closure plan is submitted and reviewed with the permit application
- ▶ For interim status facilities, the closure plan must be submitted with sufficient time for agency review prior to closure



Closure requirements

Closure Plan

- ▶ A written closure plan must include the following information:
 - Description of how each unit will be closed
 - Description of how final closure will occur
 - Estimate of maximum amount of hazardous waste ever on site
 - Methods to be used during closure
 - Detailed description of removal and decontamination procedures
 - Expected year for final closure
 - Any additional information



Closure requirements

Examples of Unit-Specific Closure Plan Requirements

Tanks	Waste removal from tanks and equipment, decontamination of all equipment, disposal of wastes and residues, and maximum inventory.
Waste Piles	Procedures for determining whether decontamination has been successful, and sampling and analytical techniques.
Surface Impoundments	Those without liners or with liners that do not meet requirements must provide contingent closure and post-closure plans.
Incinerators	Describe how all wastes, residues (including ash, scrubber waters and sludge) will be removed from incinerator, including ductwork, piping, air pollution equipment, etc. that have contacted waste. Or describe how the incinerator will be removed and dismantled.
Landfills	Provide engineering diagrams that describe final cover components in detail. Cover installation and construction quality assurance procedures should be thoroughly described.
Boilers and Industrial Furnaces (BIFs)	Describe how all wastes, residues (including ash, scrubber waters, scrubber sludges) will be removed from the BIF including ductwork, piping, air pollution equipment, that have contacted waste. Or describe how BIF will be removed and dismantled. If any wastes or components remain after closure, provide plans for closing BIF as a landfill, including post-closure plan.
Containment Buildings	Demonstrate that all hazardous waste will be removed, including subsoils, structures, equipment contaminated with waste, waste residue, or leachate. If any wastes, structures, etc. remain after closure, provide plans for closing as a landfill and include post-closure plan.



Closure Plan

- ▶ Owner or operator must amend closure plan whenever:
 - There is a change in operating plans
 - There is a change in expected year of closure
 - An unexpected event occurs during partial or final closure that requires plan modification
- ▶ Must submit written notification or request for a permit modification within certain timeframes
- ▶ EPA also may request modifications to the closure plan
- ▶ Interim status facilities do not need to amend plan—they can simply change it any time prior to notification of intent to close



Closure performance standards

Closure Performance Standards

- ▶ Minimizes the need for future maintenance
- ▶ Identifies the specific criteria that will be used to demonstrate clean closure
- ▶ Complies with closure requirements (e.g., demonstrates successful clean closure, removal of hazardous constituents, proper installation of final cover)
- ▶ Controls, minimizes or eliminates escape of
 - Hazardous waste
 - Hazardous constituents
 - Leachate
 - Contaminated runoff
 - Hazardous waste decomposition products



Closure timetable

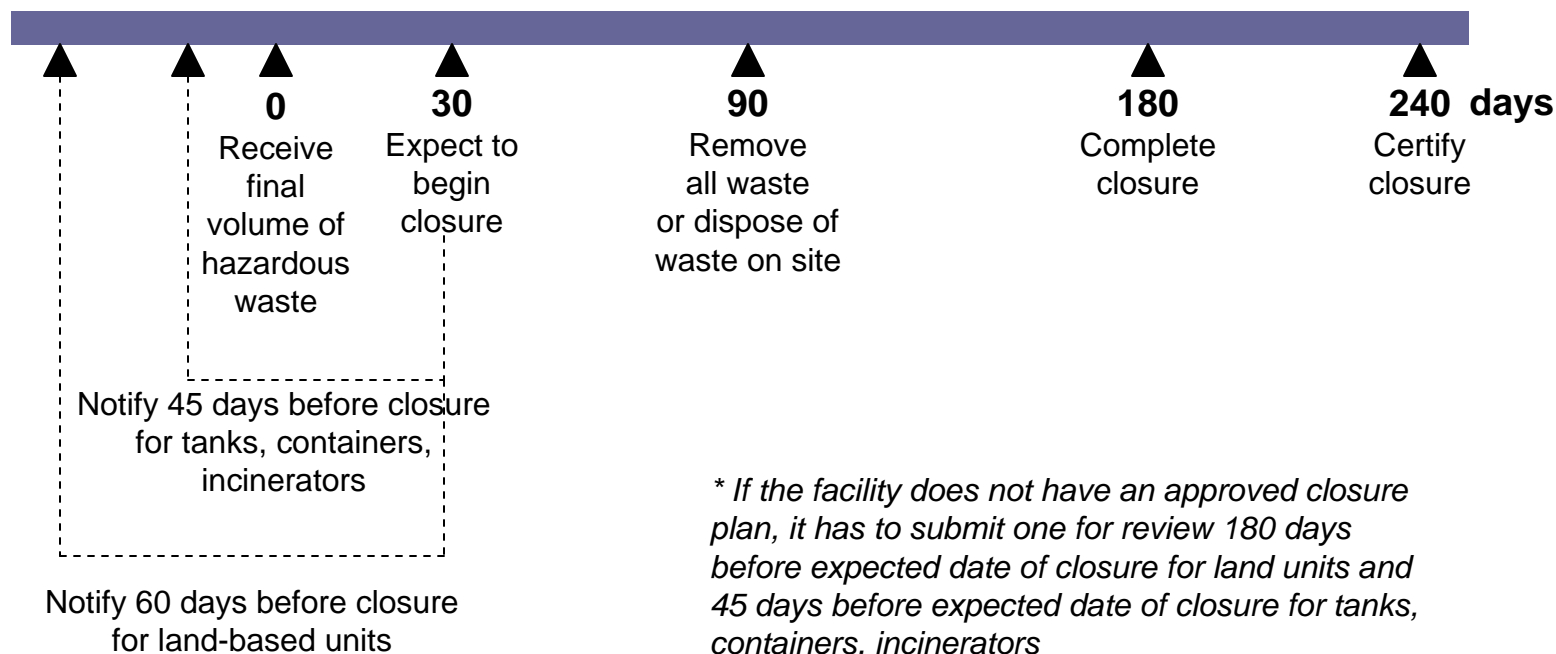
Closure Timetable

- ▶ An owner or operator must comply with certain time frames
- ▶ Two critical dates trigger all other closure dates
 - Date “receive final volume of hazardous waste”
 - Date “expect to begin closure”
- ▶ Interim status facilities have same timeline; must base it on final receipt of hazardous waste or approval of closure plan (whichever is later)



Closure timetable

Closure Timeframes for Permitted Facilities and Interim Status Facilities with Approved Closure Plans*



Closure timetable

Closure Timetable – Delay of Closure

- ▶ EPA may approve an extension to closure deadlines if:
 - Closure will take longer than time frames allow
 - Facility has capacity to accept additional hazardous waste within one year

- ▶ Closure may be delayed to receive additional nonhazardous waste if certain criteria are met; only applies to the following units:
 - Landfills
 - Land treatment units
 - Surface impoundments



Closure timetable

Certification of Closure

- ▶ The facility must certify that closure has been completed in accordance with the specifications in the approved closure plan within 60 days of completing closure
- ▶ The certification must be signed by the owner and operator and by an independent, registered, professional engineer



Closure timetable

Submission of Survey Plat

- ▶ Owners and operators must submit survey plat to local zoning authority for any units closed with the waste in place
- ▶ Survey plat is due within 60 days of completion of closure (240 days from final receipt of hazardous waste)
- ▶ Restricts future disturbance of the site
- ▶ Survey plat must include location and dimension of units
- ▶ Must be certified by a professional land surveyor



What is post-closure

What is Post-Closure

- ▶ Post-closure is the period after closure during which owners and operators conduct monitoring and maintenance activities.
- ▶ Post-closure care applies to all units that close with waste in place
 - Landfills
 - Land treatment units
 - Surface impoundments (if used for disposal)
 - Waste piles
 - Miscellaneous units
 - Tanks that cannot "clean close" and must close as a landfill



What is post-closure

What is Post-Closure

- ▶ Units that cannot clean close must obtain a permit or enforceable document for post-closure care
- ▶ Post-closure requirements last for at least 30 years
- ▶ EPA requires the submission of specific information for post-closure permits in §270.28



What is post-closure

What is Post-Closure

- ▶ Post-closure care consists primarily of groundwater monitoring and maintenance of the waste containment system. Such activities include:
 - Maintaining the final cover, the leak detection system, and the groundwater monitoring systems
 - Providing long-term protection from liquids migrating into the closed unit, promoting drainage of liquid, and accommodating settling of waste in the unit
 - Ensuring that the final cover, liners, or other containment or monitoring systems are not disturbed
 - Monitoring groundwater to detect any releases of hazardous constituents.



Post-closure care requirements

Post-Closure Care Requirements

- ▶ Post-closure plan—description of monitoring and maintenance activities and contact information
- ▶ Post-closure monitoring—groundwater and leachate collection procedures
- ▶ Post-closure maintenance—routine facility inspections, integrity of waste containment system, maintenance of monitoring and security systems
- ▶ Certification of post-closure—certification by an independent, registered professional engineer
- ▶ Post-closure notices—submit to local zoning authority within 60 days of certification



Post-Closure and Corrective Action

- ▶ Note that post-closure care can now be conducted through corrective action in lieu of a post-closure permit if the following conditions are met:
 - The hazardous waste unit must be situated among solid waste management units (SWMUs) or areas of concern (AOCs), and both the unit and the SWMU/AOC are likely contributors
 - When EPA determines that post-closure care is not necessary because the cleanup remedy developed through corrective action is deemed protective
 - When the remedy selected will satisfy RCRA Closure Performance Standards

