

Renewable Energy at Closed Landfills Workshop:

*Landfill Post Closure Use
Permitting Guidelines*

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Massachusetts Department of Environmental Protection

MassDEP

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What Approvals Are Needed...?



- Post Closure Use Permit
- Massachusetts Environmental Policy Act (MEPA)
- Local Permits
 - wetlands, zoning, building, etc.

Getting Started

- Review Existing Approvals and Permits
 - Site Assignment
 - Closure Plans & Assessment
 - What If No Closure Plan Approval Exists?

Pre-application Meeting

Solid Waste Management Section Chiefs

- Southeast Regional Office: David B. Ellis,
(508-946-2833), Dave.Ellis@state.ma.us
- Northeast Regional Office: John Carrigan,
(978-694-3299), John.Carrigan@state.ma.us
- Central Regional Office: Lynne Welsh,
(508-849-4007), Lynne.Welch@state.ma.us
- Western Regional Office: Dan Hall
(413-755-2212), Dan.Hall@state.ma.us

Post Closure Permit Application

- Who can complete the permit application?
 - Registered Massachusetts Professional Engineer with Owners Approval
- Major or Minor Post Closure Use Permit Application
 - Timeline to issuance typically 2-5 months
 - If no landfill assessment add 1-12 months
- MassDEP Review Criteria
 - Maintain integrity of final cover system
 - No adverse impacts to public health, safety, welfare and the environment

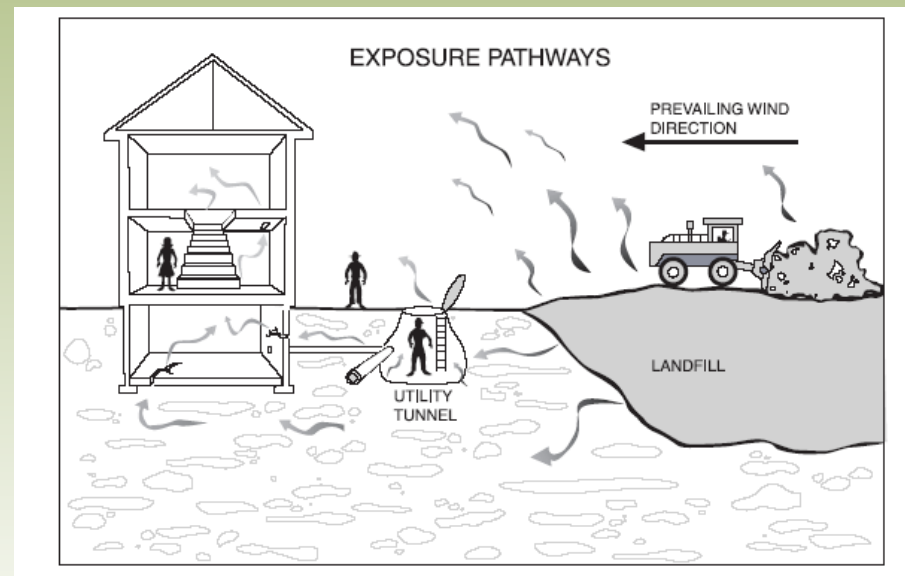
Post Closure Use Permit (cont.)

- Existing Site Conditions
 - Site plans
 - Report (narrative)
 - Environmental assessment findings
- Proposed Post Closure Design Plans
 - Site plans
 - Report
 - Effect of changes

Effect on Public Health, Safety, Welfare and the Environment

- Evaluate Exposure Pathways
- Why landfill gas poses a concern?
 - Health, Safety, Welfare
- Is additional landfill gas data collection necessary?
 - Landfill gas migration
 - Landfill gas characterization
 - Near surface methane monitoring
 - Ambient air monitoring

Potential Exposure Pathways to Landfill Gas



Source: ATSDR 2001

Landfill Gas Control and Monitoring Plan

- Landfill Gas Control System (existing and proposed)
- Design criteria
 - Public Health (toxic compounds in ambient)
 - Safety (explosion, fire, asphyxiation)
 - Welfare (nuisance odors)
- Landfill Gas Control and Risk Reduction Methods
 - Engineering
 - Management controls
 - Monitoring

Stormwater Management & Erosion Controls

- Maintain final cover system and prevent adverse impacts to receptors
- Existing and proposed storm water controls
- Design for 24-hour, 25 year storm event
- Evaluate for 24-hour 100 year storm event for flooding

Geotechnical Analysis – Settlement & Stability

- Required if Structures on Fill
 - No adverse impact to final cover system
 - Scope of analysis will vary widely
- Settlement
 - Waste Characteristics (depth, age, composition, compaction)
 - Pre and Post Settlement Monitoring
- Stability analysis

Post Closure Monitoring & Maintenance Plan

- Inspections
 - professional engineer or qualified professional
 - problems noted & scheduled for follow-up attention
- Routine Monitoring and Repairs
 - mowing, removing brush and trees, reseeding
 - storm water
 - landfill gas collection system
 - leachate collection system
 - environmental monitoring system
- Post Closure Monitoring
 - evaluate effectiveness of final cover system
 - post closure use areas

Contact Information

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Resources

- How MassDEP permitting works?
<http://www.mass.gov/dep/service/online/gettings.htm>
- Post Closure Use Instructions and Application Form
<http://www.mass.gov/dep/recycle/approvals/swforms.htm#postclos>
- Landfill Technical Guidance Manual
<http://www.mass.gov/dep/recycle/laws/policies.htm>
- Control of Odorous Gas at Massachusetts Landfills
<http://www.mass.gov/dep/recycle/laws/policies.htm>
- 310 CMR 19.000 Solid Waste Regulations
<http://www.mass.gov/dep/recycle/laws/regulati.htm#sw>
- 301 CMR 11.00 MEPA Regulations
<http://www.mass.gov/envir/mepa/thirdlevelpages/meparegulations/meparegulations.htm>
- fact sheet: Developing Renewable Energy Facilities on Closed Landfills
<http://www.mass.gov/dep/energy/landfill.htm>