



Carcass Disposal

Off-Site Locations
(Rendering and Landfills)
and Transportation Biosecurity



Off-Site Carcass Disposal


- Rendering Facility or Landfills
- Use depends on
 - Animal species
 - Quantity of carcasses
 - Pathogen of concern
 - Persistence
 - Ability to spread
 - Regulations
 - Local, state, federal

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RENDERING

Rendering

- Heat conversion of animal carcasses into useable products
 - Meat and bone meal (protein-based solids)
 - Melted fat (tallow)
 - Water
- 200 rendering plants throughout US and Canada



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Rendering Process

- Continuous rendering system
 - One vessel used for entire process
 - Processes are simultaneous
 - Little to no manual operation
- Moisture converted to steam
 - Temperature between 240-275°F
 - Destroys harmful pathogens

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Rendering: Considerations

- Disposal of final product
 - Landfill
 - Burial
- Coordinate transport to facilities
- Surge capacity
- Biosecurity and wastewater procedures
- Process closely regulated


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LANDFILLS

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Landfills


- Public and privately owned
 - EPA’s I-WASTE tool
- Existing site
 - Liners
 - Leachate and gas collection systems
 - Minimal environmental risk
- Carcass degradation may take longer



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Landfill: Regulations

- Highly regulated
 - Resources Conservation and Recovery Act (RCRA)
 - Title 40 Code of Federal Regulations Parts 239-299



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Landfills: Considerations

- Immediately available
- Minimal environmental risk
- May have limited capacity
- Owner acceptance and terms of use
- Transportation
 - Biosecurity
 - Cost
- Public opposition

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TRANSPORTATION

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Carcass Transport: Planning

- Training & guidelines
 - Supervisors, operators, drivers
- Obtain transport vehicles
- Determine travel route
 - Direct as possible
- Supplies
 - Cleaning and disinfection
 - Personal protective equipment
- Permits & official documents
 - Federal, state & local

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Transport Containers

- Liquid tight
 - Seal holes & cracks
 - Layers of duct tape & plastic
- Lining material
 - Polyethylene plastic
 - Sufficient material on all sides
- Absorbent material
 - Wood shavings

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Loading the Containers


- Fill container
 - One foot from top
 - Maximum weight limit
- Spray with disinfectant
- Wrap and seal load
- Cover the container
- Check for leaks
- Clean and disinfect before leaving the site



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Regulations

- Environmental Protection Agency
- Department of Transportation
 - DOT Hazardous Materials Program Definitions and General Procedures
 - 49 CFR Part 105



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Transport Process

- Use designated routes
- Avoid unplanned stops
- Have drivers take breaks on long distance trips
- Two-way communication at all times

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Unloading

- Unloading procedures specified by facility
- Unload close to the disposal site
- Check for leaks and cover integrity
- Clean and disinfect after unloading
 - Interior, exterior, undercarriage
 - Tools and equipment
 - Dispose of PPE



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Resources for Off-Site Disposal and Transport

- USDA Foreign Animal Disease Preparedness (FAD PReP) Guidelines: Disposal
 - http://www.aphis.usda.gov/animal_health/emergency_management/nahems_guidelines.shtml
- Carcass Disposal: A Comprehensive Review. USDA and Kansas State University
 - <http://fss.kstate.edu/FeaturedContent/CarcassDisposal/CarcassDisposal.htm>

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