15A NCAC 13B .0105    COLLECTION AND TRANSPORTATION OF SOLID WASTE
(a) The solid waste collector shall be responsible for the collection and transportation of all solid waste to a solid waste management facility as defined in G.S. 130A-290 that is permitted by the Division.
(b) The solid waste collector shall transport to a site or facility only those solid wastes that are allowed by facility permit.
(c) Vehicles or containers used for the collection of solid waste, and transportation by whatever means, including highway, rail, and navigable waterway, shall be constructed, operated, and maintained to be leak resistant in order to prevent the creation of a nuisance to public health from the escape of solid, semi-solid, or liquid waste. In order to meet the requirement to be leak resistant, the owner and/or operator of the vehicle or container shall adhere to the following standards:

(1) All surfaces that come in contact with waste shall be smooth and non-absorbent.
(2) All drain holes and valves shall be closed, plugged, or sealed.
(3) The vehicle or container shall be equipped with seals, gaskets, or other devices pursuant to manufacturer specifications in order to prevent the escape of liquids. Such seals, gaskets, and other devices shall be maintained and replaced pursuant to manufacturer specifications.
(4) The vehicle or container body, waste holding area, and hopper, if so equipped, shall be free of holes, cracks, rusting, corrosion, or other evidence of damage or weakness that may allow the escape of solid, semi-solid, or liquid waste.
(5) The waste holding area, including the hopper and around the packer blade, if so equipped, shall be clean of debris to prevent vectors or the accumulation of litter.
(6) The vehicle or container shall be loaded, transported, operated, and maintained to prevent the escape of solid, semi-solid, or liquid waste to the environment.
(7) The vehicle or container shall be serviced, repaired, and cleaned to maintain sanitary conditions, to preserve the integrity of the door seal, to prevent the accumulation of mechanical fluids, dirt, and filth on the vehicle's exterior, and to prevent contamination of the environment by fluids.

History Note:  Authority G.S. 130A-294(b); S.L. 2013-413;
Eff. April 1, 1982;
The ® Sealable Liner is a cleaner, more convenient way of managing large volume biological and organic waste streams and the associated odor, leakage, disease and environmental contamination issues.

Animal Carcasses  Meat Processing Residue
Bird Droppings  Contaminated Manure
Animal Litter & Bedding  Spoiled Feed Material
Contaminated Compost  Bio-Sludges

Constructed using a proprietary, thermally bonded layering of polypropylene-based material and featuring an industrial grade zippered sealing system, The ® Sealable Liner fits securely inside industrial roll-off containers, trailers or truck racks from 10 to 40 cubic yards in total volume. It’s easy to install, contains large, heavy loads and slips right out when it’s time. ONE SIZE FITS ALL.

 ® features:

• Contact barrier to minimize human exposure, container cleaning, vermin, bugs and disease vectors
• Liquid resistant, flexible construction
• Light material containment during transportation
• Strong, puncture-resistant material
• Breathable zipper to minimize potential vapor expansion
• Odor barrier
• Opaque, visual barrier
• Natural heat retention to jump-start the composting process

Best of all, with The ® Sealable Liner, you have the peace-of-mind knowing that you used The Best Available Technology for responsibly managing your large volume biological and organic waste streams.

Make an intelligent investment today to protect your future.

Contact Chris Pierce at cpierce2@wm.com, 317-430-2566, or Josh Kaylor at jkaylor@wm.com, 281-733-3507, to place your order.

The ® Sealable Liner is also available on-line at www.wmupstream.com.

From everyday collection to environmental protection,
Think Green. Think Waste Management.
Carcass Disposal:
Off-Site Transport and Locations

The use of rendering facilities or landfills may be necessary for carcass disposal when on-site methods, such as burial or burning, are not feasible or are not permitted.

Rendering
- Heat conversion of animal carcasses into useable products
  - Meat and bone meal (protein-based solids)
  - Melted fat (tallow)
  - Water
- Temperature between 240-275°F - Moisture converted to steam
  - Destroys harmful pathogens
- Considerations
  - Disposal of final product (e.g., landfill or burial)
  - Coordination of transport to facilities
  - Surge capacity may be limited
  - Biosecurity and wastewater procedures in place
  - Process is closely regulated

Landfills
- Public and privately owned
  - Existing site with liners, leachate and gas collection systems
  - Minimal environmental risk
- EPA’s I-WASTE tool to find locations.
  - [http://www2.ergweb.com/bdrtool/](http://www2.ergweb.com/bdrtool/)
- Highly regulated
  - Resources Conservation and Recovery Act (RCRA)
    - Title 40 Code of Federal Regulations Parts 239-299
- Considerations
  - Immediately available
  - Minimal environmental risk
  - May have limited capacity
  - Owner acceptance and terms of use
  - Transportation biosecurity and cost
  - Public opposition

Off-Site Transportation
The transportation of carcasses off-site will require thoughtful planning to ensure good biosecurity measures are used to prevent further spread of disease.

- Planning
  - Ensure all personnel have training & guidelines
  - Obtain enough transport vehicles
  - Determine a direct travel route
  - Supplies for
    - Cleaning and disinfection
    - Personal protective equipment
  - Permits and official documents
    - Federal, state & local

- Transport Containers
  - Biohazardous waste must be transported in closed, leak-proof containers or trucks.
  - Additional or secondary containment may be necessary.
  - Containers must be liquid tight and equipped with an absorption or liquid collection system.
    - Approximately one foot of wood shavings, or other absorbent material should be distributed on the floor of the container to absorb liquid in the transport container
    - A heavier concentration of sawdust should be placed near the rear door
  - Containers for hauling the carcasses should be double lined.
    - Polyethylene plastic is commonly used
    - There should be sufficient lining material on all sides to allow “wrapping” of the carcasses

- Loading the Containers
  - Fill container
    - One foot from top
    - Maximum weight limit
  - Spray carcasses with disinfectant
  - Wrap and seal load
  - Cover the container with its lid or several layers of tarpaulin and polyethylene plastic
  - Before leaving the loading site, check for leaks
  - Clean and disinfect the container exterior before leaving the site

Transportation Regulations
- Special procedures and permitting will be needed
- Regulations on handling and transport
  - Environmental Protection Agency (EPA)
  - Department of Transportation (DOT)
  - Dot Hazardous Materials Program
- Definitions and General Procedures – 49 CFR Part 105
- Additional official documents may be required by local, state, or federal authorities
  - Movement permit
  - Certificate of disinfection
- Special escort vehicles may be needed

Transport Process
- Use designated routes
- Avoid unplanned stops (unless for an emergency)
- Have drivers take breaks on long distance trips
- Two-way communication at all times

Unloading at the Disposal Site
- Unloading procedures specified by facility
- Unload close to the disposal site
- Prior to unloading, check for any leaks and lid/cover integrity
- Clean and disinfect after unloading
  - Vehicle interior, exterior, undercarriage
  - Tools and equipment
- Dispose of PPE at the end of the shift

Additional Resources
USDA Foreign Animal Disease Preparedness (FAD PReP) Guidelines: Disposal


Development of this educational material was by the Center for Food Security and Public Health at Iowa State University through funding from the Multi-State Partnership for Security in Agriculture MOU-2011-HSEMD-012. December 2012. Revised July 2014.