5.11 Lead-Acid Batteries

Lead-acid batteries are hazardous waste and are not allowed for disposal in the landfill. Prohibiting the disposal of lead-acid batteries in the landfill reduces the risks of environmental contamination from the lead. Batteries should be stored in a lined, covered container or area, and managed to prevent any release to the environment until they are shipped out of the community for recycling.

List of things you need for good management of lead acid batteries:

- Totes or covered storage area with pallets.
- Absorbent material.
- Banding for shipping.
- Shipping wrap for shipping.
- Layering material for shipping.

Why are these things important?

- Using totes or a covered storage area with pallets is important to keep batteries dry and off the ground. When using totes, it is important that the lids stay on so they don't fill with water while batteries are being collected in them.
- Absorbent materials such as vermiculite or cat litter should be placed in the bottom of the totes to absorb any leaking battery acid.

Covered storage shed for lead acid batteries.

- Banding allows the tote or the batteries to be secured to the pallet, so that nothing shifts during transportation.
- Shipping wrap can stabilize the batteries and help contain them when stacked on pallets.
- Layering material for shipping, such as multiple layers of cardboard, "waffle" or "honeycomb" cardboard, or sheets of foam, should be used between layers of batteries.

This material helps support the weight of the stacked batteries so that all the weight is not solely on the battery terminals, which may cause the batteries at the bottom of the stack to break and leak.

Tote packed and banded for transport.

Helpful Tips:

- Have separate totes for leaking/broken batteries and non-leaking/intact lead acid batteries. This keeps the leaking batteries from contaminating the intact batteries.
- Keep the lids on totes that are stored outside. Otherwise, it creates a tote of battery acid "soup" as the tote collects rain and snow melt.
- Collect and store batteries in the method in which they will be shipped, whether in a tote, on a pallet, in an action packer, etc.
    - This will save time and will ensure that the batteries will only need to be handled once when packaging for shipment.
    - This method allows for an easy inventory and a determination of how much storage space is available before a backhaul event needs to be arranged.

Batteries stored in layers.

- Make sure the liquid from leaking batteries cannot enter the soil or nearby water.
- If shipping batteries in a fish tote, be sure to arrange for return shipping of the tote. Totes can be difficult to obtain and should be returned to the community for future use.
- When shipping batteries, be sure to have a way to track weight. A tote/pallet that has two complete layers of batteries is often heavier than most planes will transport. Be sure that the heavy equipment and the air carrier can handle the tote/pallet before banding it.
- It's is recommended to take backhaul training to learn how to properly package and ship batteries.
- Contact a recycler for more information on what is required for backhaul staging and

shipping information.

- Contact the Department of Transportation (DOT) at 1-800-467-4922 for assistance with the requirements for shipping batteries.

What not to do:

- Batteries should never be burned or left outside in the rain or snow.
- Batteries left out over winter will freeze, split, and leak, especially if the batteries are in direct contact with the ground.
- Do not ship batteries without using containment bags or another DOT approved container.

Personal Protective Equipment (PPE): When handling lead-acid batteries, be sure to use appropriate PPE. This includes eye protection, acid-resistant gloves, and splash resistant clothing.

Examples:

Lid on a fish tote so that water doesn't enter the tote.

Batteries being collected and staged on pallets in a building.

Totes for batteries staged near the HHW collection shed.

Batteries being placed in a tote with absorbent material.