Pit & Trench Burial

INFORMATION SHEET

Burial is a widely used method of waste disposal that can be utilised on-farm or at designated disposal sites. The biggest challenges of this method include determining groundwater levels at potential disposal sites and managing the leachate, or liquid wastes, produced by carcasses.

Site Suitability

Specific guidelines for planning pit and trench locations in Tasmania vary depending on the volume of carcass material to be buried. The information listed below should be used initially to guide site selection.

The criteria assessed by the EPA for proposed landfill sites include:

- Deep clay textured soils
- Groundwater table at seasonal peak at least 2m below the bottom of the trench
- Slope of less than 10%
- Trenches running generally across the slope
- Meets the minimum buffer distances (see Table 2 below)

The locations considered should not be prone to flooding and be located such that surface run-off draining towards the pit or trench is minimised. Stock access to the area must be prevented.

Table 2 Buffer distances for an abattoir slaughter waste pit. *Source: EPA 'Guide for the Burial of Slaughter Waste'* www.epa.tas.gov.au

Land Use or Feature	Minimum Separation Distance (m)
Meat Processing Premises	150
Water Courses & Dams	200
Bores	250

Property Boundary	50
Residences & Sensitive Areas	500

Construction Method

For construction excavators of the appropriate tonnage are the preferred equipment. Personnel must not enter a burial pit or trench at any time during or following its construction.

Pits should be 5 metres deep and are preferably constructed in the battered style with sloped sides, which reduces the risk of pit collapse (Figure 1). Carcasses are placed allowing coverage with at least 2 metres of soil, which is then mounded.

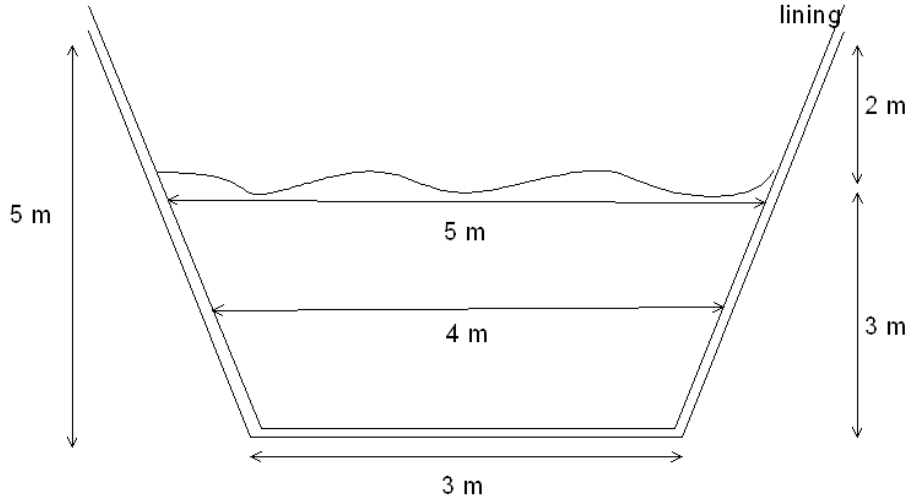

Figure 1 Battered burial pit or trench, can be constructed with or without a liner. *Source: DPIRD WA*

Dimensions required:

- 1.5 m3 per 500kg cow
- 0.3 m3 per 50kg sheep or 50kg pig
- 0.005m3 per 2 chickens
- Minimum depth of pit: 5m
- Required depth of soil to cover carcasses: 2m

A pit or trench dug 3 metres wide at the base, 5 metres wide at the top of the carcasses, and 5 metres deep, filled with carcasses to within 2 metres of ground level (see Figure 1) has an effective available volume of 12m3 for every linear metre.

Using these dimensions, for each linear metre of trench 8 cattle or 40 sheep can be buried.

Trenches are 7m wide. A gap of 10m should be maintained between trenches.

Lining or partially lining trenches and the use of absorbent layers may help control the generation, release and degradation of leachate.

Additional Considerations

Leachate is the liquid that is released during the decomposition of wastes, including animal carcasses. It has been estimated that 50% of the available fluids will leak out of carcasses within the first week following death, and nearly all fluid will drain from the carcasses in the first 2 months. Following the outbreak of foot-and-mouth disease (FMD) in the United Kingdom in 2001, it was estimated that 170 litres of fluid was released in the first 2 months by each adult cattle carcass, and 16 litres was released from each adult sheep carcass (UK Environment Agency 2001).

The potential for leachate to cause long-term problems is significant, especially from carcass disposal pits. Pits or trenches should be dug at sites with clay soils or synthetic liners considered. This will reduce the movement of leachate through the soil to the water table but creates instead a reservoir of liquid waste material which needs to be carefully managed.

Gas production from decomposition within unopened carcasses may result in a considerable increase in the volume of the buried material, to the extent that the surface of the closed pit may rise, and carcasses and/or leachate may be expelled. A small puncture hole can be made in rumens at the side of the pit before the carcass is placed in the pit. Alternatively, attachments on excavating equipment can be used to puncture carcasses when this is considered necessary. Under no circumstances should personnel enter a pit or trench during filling.

Acknowledgement

Much of the above information is sourced from the EPA Tasmania and AUSVETPLAN Operational Manual: Disposal. References available on request.

For further information contact:

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