**Cyfoeth Naturiol** Cymru **Natural Resources**



Wales

**Guidance for farmers**

**Temporary Slurry Storage**

**January 2015**

This guide is provided to help farmers manage slurry following the recent wet weather, by using temporary slurry storage.

This can avoid the need to spread slurry in contravention with the Code of Good Agricultural Practice, when damage to land and polluting run-off is likely.

**You are strongly advised to contact our Customer Service line - 0300 065 3000 - to notify us in advance of any actions you are intending to undertake**

Please discuss proposals with us **before** undertaking any works outlined below. Our aim is to help you manage in current difficult weather conditions without excessive costs to yourself, or unacceptable damage to the wider environment.

**Short term extra storage** may be on one, or a group of farms.

Options include :

* re-using existing tanks or lagoons, including tanks reclaimed from elsewhere;
* installing new tanks or lagoons, including 'off the shelf slurry bags', or pre-fabricated stores/tanks, which may then be used elsewhere- e.g. water harvesting;
* re-instating stores on farms that are no longer used for slurry storage.

**Regulatory matters**

If your farm is within a NVZ area, then the NVZ rules require at least 5 months slurry storage. **We are not in a position to reduce this requirement.** Provision of 5 months storage capacity should, however, ensure that additional storage is not yet required. If **further** storage is needed before the end of this winter, we can look at proposals as part of this guidance.

Check with the Local Planning Authority for any planning requirements, making clear that this is a temporary arrangement.

For temporary installations, **used until 1 October 2016 only,** we will consider reducing the Silage, Slurry & Agricultural Fuel Oil Regulations -SSAFO, requirements, such as:-

* The usual 20-year design criteria .
* Use of lower-grade liners to provide impermeable floors or walls.
* Re-visit the requirement not to construct stores within 10m of a watercourse.
* Re-consider the 'freeboard requirements' for stores.
* Agree to the use of some 'slurry bags', or other storage options, not normally accepted for slurry storage.

**It is essential, however, that you discuss and agree with us any options for temporary storage before they are used and:-**

* + The systems are de-commissioned before 1 October 2016 (or are re-assessed for full SSAFO acceptance at your expense).
  + Health and safety requirements are complied with- see HSE sheet AIS9.
  + We are notified in writing before construction.
  + Each location is agreed with us before construction, although generic CIRIA design may be adopted. We will not accept locations which are higher or lower than other storing facilities since if the upper storing facility leaks this could affect the lower storage facility.
  + The base of earth bank lagoons must be above the water table – it is recommended that there is at least one metre of clay subsoil beneath the proposed base.
  + Trial pits are required to confirm the depth of the basal clay or clayey soil layer, preferably outside the footprint of the base of the lagoon. Careful initial assessment is required and resulting holes must be backfilled and puddled in.
  + Use higher grade liners for higher risk areas.
  + Tanks/ slurry bags etc. are installed to manufacturer's instructions.
  + You frequently check the system and surrounding watercourses.
  + Liners must be used where there is any doubt about earth bank or floor permeability.

**Practical matters for shared facilities:**

* + consider any risks to bio-security;
  + the management arrangements and where the ultimate responsibility lies must be agreed between the parties and written down;

Farming organisations may be able to help to broker shared facilities.

**Proximity to watercourses, including land drains, permeability, liners, and above ground storage**

Ideally, site stores at least 10 metres from watercourses and land drains, and 50 metres from a borehole, well or spring used for water supply. If this constrains availability of otherwise suitable locations, please discuss with us before finalising arrangements. Temporary trial trenches are recommended if there is any doubt about the presence of land drains.

There are a wide range of liners available for lining storage lagoons. Synthetic liners such as polyethylene (HDPE or LLDPE) or geosynthetic clay liners GCL (normally polythene coated) are widely available and generally cheaper than the butyl rubber alternatives. Thickness and type of liner need to be appropriate for the onsite specific conditions.

Low grade liners may suffice provided the site is not a high groundwater risk area (Groundwater Source Protection Zone 1 or 50m from an abstraction). Use higher grade liners for high risk areas.

If you are uncertain about the suitability of your soil, you can assess it using a jar settlement test or hand texturing. We have reproduced the guidance below.

Where sheets have to be joined to cover a large area, the supplier can advise on minimum thickness and methods to ensure that joints are properly sealed. Thin polyethylene liners are more susceptible to puncturing, so they must be laid on top of sufficient sand, or a geotextile membrane. Take extra care during installation of thinner liners. HDPE is normally used for longevity as 1.5mm or 2mm thickness, however 1mm polyethylene can be applicable for short term duration, all polyethylene lining material will require welding by [CSWIP](http://www.cswip.com/) approved Contractors. GCL (polythene coated) can be supplied with self sealing edges if overlapped by 300mm, however this should be laid on a smooth finished surface and have a confining pressure of 300 (sides) to 500mm (base) of fine grained soil placed and rolled on top. The nature of this clay product provides an element of self sealing as it expands when hydrated. This can be quicker and less costly assuming Contractors are available.

Where possible, avoid filling earth bank stores above the original ground level to avoid pressure on walls. If the above ground capacity exceeds 10,000m3 it is anticipated through new regulations to be classed as a reservoir and would require construction using a “Panel Engineer” and the structure will require supervision during construction. This must be avoided and we do not anticipate above ground temporary storage solutions to exceed 30% of this value. Where filling must be above ground, the design should maintain 750 millimetres freeboard between slurry level and the top of the walls to avoid instability if overtopped. If this is not possible, please contact us before such a freeboard is compromised.

**Soil clay content tests** from Mason, P A (1992) Farm waste storage: guidelines for construction, R126, CIRIA, London (ISBN: 978-0-86017-352-6). Go to: [www.ciria.org](http://www.ciria.org)



