

Nitrate Pollution Prevention Regulations 2008

Nitrate Vulnerable Zones (NVZs)

NVZ Fact Sheet 1: Slurry and dirty water

Version 2.0, February 2011

This Fact Sheet supplements Nitrate Vulnerable Zone (NVZ) Guidance [Leaflet 3](#)¹. It clarifies the difference between the terms **slurry** and **dirty water** with regard to the Nitrate Pollution Prevention Regulations 2008 (NVZ regulations).

The NVZ Regulations require a livestock farmer to provide sufficient storage for the **slurry** produced by their livestock while in a yard or building during the following periods:

- six months (1 October to 1 April inclusive) for pig slurry;
- five months (1 October to 1 March inclusive) for other livestock slurry.

Note: Poultry manure is normally produced as 'solid manure'. This requires six months storage and is not covered by this Fact Sheet.

A store must be large enough to hold all the faeces, urine, rainfall, washings and other liquids that enter the store (either directly or indirectly) during the storage period. A process must be followed to calculate the farm's storage requirement. NVZ Guidance [Leaflet 4](#) (Annex 1) explains how to do this.

Farmers can exclude **dirty water** from the calculation provided it is collected and stored separately from slurry. Examples of situations that result in slurry, and ones which create dirty water, are given in the following pages of this Fact Sheet.

What is slurry and dirty water?

Slurry and dirty water are defined in the glossary of NVZ Guidance [Leaflet 3](#), as:

Slurry

Excreta produced by livestock (other than poultry) while in a yard or building (including any bedding, rainwater and washings mixed with it) that has a consistency that allows it to be pumped or discharged by gravity. The liquid part of separated slurry is also defined as slurry. Slurry is defined (as above) and referred to in the NVZ Regulations.

Dirty water

Lightly-contaminated runoff from lightly-fouled concrete yards or from the dairy/parlour that is collected separately from slurry. Dirty water is not referred to in the NVZ Regulations.

Under the NVZ Regulations an organic manure means any nitrogen fertiliser derived from animal, plant or human sources, including livestock manure. Slurry and dirty water fall within this category. Both

¹ All the leaflets referred to in this Fact Sheet can be obtained from the [Defra website](#) or by telephoning 0845 955 6000

slurry and dirty water have a high readily available nitrogen content, so the rules for organic manure on storage and the closed periods should apply. However, compared with slurry, dirty water has a low total nitrogen content that limits its impact on nitrate leaching. Taking this into account, Defra and the Environment Agency have agreed to exclude dirty water from the need for long-term storage. This means it can be applied to land during the closed periods – provided it is managed and spread safely, so that it does not enter surface water.

IMPORTANT: It is not acceptable to deliberately dilute slurry by adding water to produce dirty water to avoid management restrictions for slurry.

Examples of what is and what isn't classed as slurry or dirty water under the NVZ rules are listed below. In some situations, some examples of 'slurry' may be considered as dirty water - provided it is correctly managed. See the accompanying notes which give further details.

Examples of slurry

- **Liquids from weeping-wall stores, strainer boxes, and slurry separators.**

- **Effluent from silage clamps**

Effluent produced from a silage clamp has a high readily available nitrogen content. If this enters a dirty water store, the rules on storage and the closed period apply. If effluent is no longer being generated (that is, several weeks after ensilage), provided the surface of the clamp has been fully sheeted, any subsequent run-off collected may be considered **dirty water**.

- **Effluent arising from over-wintering pads, e.g. woodchip corrals and stand-off pads**

- **Run-off from loafing yards and other yard areas where livestock are fed, for example, feeding face of silage clamps**

- **Run-off or drainage from solid manure heaps**

Runoff or drainage from properly-constructed farmyard manure (FYM) heaps (that is, from deep straw-bedded livestock systems) is classed as dirty water if it is sufficiently diluted by rainfall, or directed into dirty water storage tanks. (In the case of pigs, this will include FYM from housing where the **whole** pen area is regularly bedded with straw to absorb faeces and urine, and the subsequent manure is removed regularly in the interests of hygiene and reducing ammonia emissions). Undiluted drainage from FYM heaps and runoff or drainage from solid manure heaps is classed as slurry if the heap includes manure collected from scraped passageways (even if it has been mixed with straw or other bedding material).

- **Liquids from dairy/parlours that have not been scraped or cleaned before washing down**

Reasonable and practical effort must be made to scrape or clean slurry from the areas that are easily accessible by farm cleaning machinery before washing down. If this has been done, the subsequent wash down water will be considered as **dirty water**.

- **Run-off from yards moderately- to heavily-trafficked by livestock, and yards that have not been scraped or cleaned**

Run-off from regularly scraped or cleaned yards (for example, not left overnight) will be considered as **dirty water**.

- **Run-off from collecting/dispersal yards**

The milking routine for dairy cow systems, including speed of milking, can vary considerably. Where livestock are only held for a short period and the yard area is scraped down or cleaned soon after milking, the run-off or drainage from the yard area may be considered **dirty water**. **However**, this is providing the farmer can demonstrate to the Environment Agency that the material is diluted enough

to be managed as **dirty water**.

- **Liquids from livestock housing that have not been scraped or cleaned before washing down**

Reasonable and practical effort must be made to remove faeces and urine, and bedding material it has contaminated, before washing down (for example, litter from poultry houses must be removed and the area should be brushed clean before washing down). If this has been done, the subsequent wash down water will be considered as **dirty water**.

- **Dirty water contaminated by any of the above.**

- **Diluted slurry**

Slurry that has been diluted to give it a low total nitrogen content (kg N/m^3) will still be considered as slurry.

Examples of dirty water

- **Run-off from yards lightly trafficked by livestock where the yards are regularly scraped or cleaned.**
- **Run-off from the surface of fully sheeted silage clamps, provided it does not contain silage effluent or slurry.**

Also see the above box 'Examples of slurry'

NVZ rules for managing dirty water

Dirty water **can be**:

- excluded from the storage capacity rules (NVZ Guidance [Leaflet 4](#));
- applied to land during the closed period (NVZ Guidance [Leaflet 8](#));
- applied to land without complying with the low spreading trajectory rule (NVZ Guidance [Leaflet 8](#));
- applied to bare soil and stubble without having to incorporate it into the soil (NVZ Guidance [Leaflet 8](#)).

IMPORTANT: Dirty water **must not** be applied to land if there is a significant risk of causing water pollution (for example, by surface run-off or via land drains). NVZ Guidance [Leaflet 8](#) (Annex 1) contains a guide for farmers on how to prepare a risk map to decide if a field application of organic manure (including dirty water) can be made without causing water pollution.

In managing and handling dirty water, farmers **must** comply with:

- the SSAFO Regulations² that set construction standards for storage of organic manures (which also apply to dirty water), referred to in NVZ Guidance [Leaflet 4](#);

² The Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations 2010

- the other rules set out in NVZ Guidance [Leaflet 8](#) (Field application of organic manures);
- the rules in NVZ Guidance [Leaflet 6](#) (Planning nitrogen use);
- the rules in NVZ Guidance [Leaflet 7](#) (The N max limit).

Important: Please have NVZ Guidance [Leaflets 3 and 7](#) to hand. As part of compliance with the N max rule (see [Leaflet 7](#)), you must calculate the amount of nitrogen available for crop uptake from dirty water. The percentage that must be used will depend on the livestock production system that the dirty water comes from (refer to NVZ Guidance [Leaflet 3](#), Table 8). For example, for dirty water produced from a dairy farm, the crop available percentage will be 20 per cent (35 per cent from 1st January 2012). To establish the total amount of nitrogen in the dirty water, you can use a standard figure of 0.3 kg total N/cu m or a value determined by sampling and analysis following the Protocol for slurry (see [Leaflet 3](#)).