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Nansmerrow Farm Slurry Lagoon

EPR/KB3506UU/A001

Non-Technical Summary

Nansmerrow Farm is a family-owned specialist dairy farm working 200 acres of owned working land and 350 acres of additional rented land. The operation also incorporates Polperrow Farm within the stated acreage. The land is mainly let to grass for grazing or conserved as clamp silage. Two hundred acres of maize are grown for silage. All the land falls within a Nitrate Vulnerable Zone (NVZ).

The farm has 300 head of dairy cows with an average milk yield of 3750000 litres per year. (12500 litres per cow) Calving is continuous throughout the year. Milking takes place in a modern milking shed which occupies the land adjacent to the proposed slurry lagoon. The buildings at Polperrow Farm are used for rearing replacement stock.

The cattle shed has capacity for 74 cattle but has granted planning permission to extend the building to accommodate 136 livestock for milking. Included in the planning permission is the proposed new slurry lagoon which is required for both the additional cattle and the shortfall of storage in the existing operation.

The purposed expansion of the dairy herd, cattle shed and slurry lagoon amount to a considerable capital investment by the owner, with a great deal of cost occurred to date in the obtaining of planning permission, design and professional consultation fees.

The scheme has a specific purpose serving as a crucial part of the dairy expansion. The slurry lagoon has been professionally designed to meet the technical requirements for the operation. The lagoon will be constructed in accordance with the engineered design and the granted planning permission. The finished lagoon will be as sympathetic as possible to the surrounding landscape, with grassed banks to blend in as much as possible with the adjoining topography. The lagoon will be constructed by the importation of waste soils and sub soils described under waste code 17 05 04 Soil and stone With the haul tracks and access points being constructed with importation of demolition hardcore under waste codes 17 01 01, 17 01 02, 17 01 03 and 17 01 07.

There is a clearly defined requirement for the scheme as part of an overall expansion for the dairy operation as set out by in the independent agricultural report 31st January 2020. With the increase in head of cattle from dairy the by-product volume of slurry needs to be stored for use as a natural fertiliser for use on the farm.
Even setting aside the expansion of the dairy operation there is an existing shortfall of slurry storage.

With the changing agricultural sector, due to the restructuring from the U.K leaving the European Union. It has been identified that the dairy operation needs to expand to future proof the family business. Planning permission for the expansion of the dairy and slurry lagoon has already been approved. Consideration now needs to be given to the most environmentally friendly method of construction that best serves the circular economy. The naturally occurring clays found at the location have been identified as being suitable for providing a natural waterproof liner to retain the liquid slurry and therefore minimise the requirements of imported material.

The construction type of using natural clay liners and soils is a proven method of achieving the structural requirements of a lagoon of the design type.

The requirement is to identify the most suitable material to construct the banks of the lagoon. The lagoon has been designed as naturally aesthetic as possible and to blend in with the surrounding topography.

The main engineering requirements for the material used to construct the banks of the lagoon are compaction and binding which is crucial to the supporting structural integrity for retaining the pressure of the liquid slurry.

The lagoon has been designed to use naturally occurring local soils and sub soils as they fulfil the engineering requirements of scheme and would be better suited to the location.