

# Attachment 4

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The Geo-membrane lined manure basins will be built as per Odournet UK 2001's report **“Odour Impacts and Odour Emission Control Measures for Intensive Agriculture - Part A Odour annoyance assessment and criteria for intensive livestock production in Ireland”**. Attached is a drawing, sourced from Odournet UK, of the proposed Geo-Membrane Lined Basin.

*Enclosed slurry storage*

*“Flexible solutions are becoming more popular, using methods of cover that avoid creation of headspace. An example of a covered storage without headspace are foil basins in an earth enclosure, with a floating foil cover.*

*Floats support the cover, and an extraction system for escaping digestion gas is provided in the design. They are made out of reinforced plastic (PVC) foil of 1 mm thick (see Figure 9). Stirring of the slurry is achieved through pumping slurry through a specially designed fixed tubing system. These fully enclosed foil basins have an economic lifespan of at least ten years.*

*Hundreds if not thousands of these systems have been installed in the Netherlands, at commercial pig units. No precise cost data are available, but the supplier indicates that the investment cost is close to half the cost of a concrete storage tank of the same capacity. The foil liner will be viable for an economic life of 10-14 years.”*

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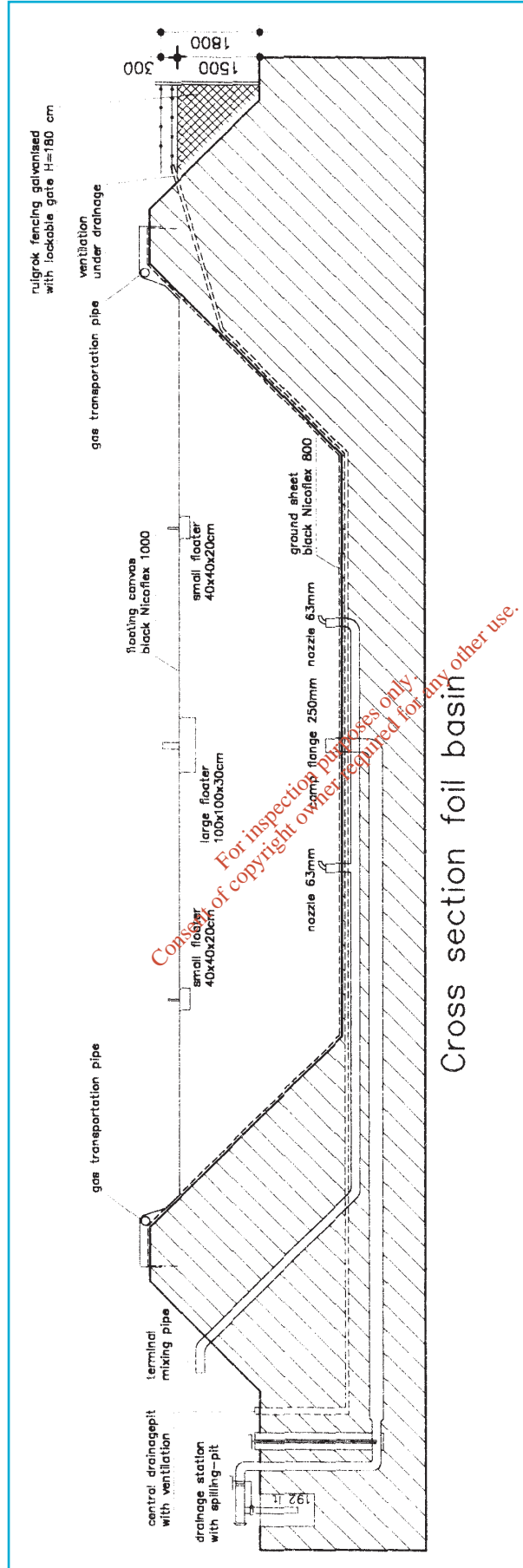


Figure 9 Fully enclosed slurry storage in earth shape with 1mm reinforced PVC lining  
(drawing courtesy of www.steenbergen.org)