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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

June 25, 2001

STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF:

AMENDMENTS TO LIVESTOCK  
WASTE REGULATIONS  
(35 IL Adm. Code 506)

R01-28

*P.C. #10*

ADDITIONAL POST-HEARING COMMENTS OF TERRY FELDMANN, P.E.

The Department's post hearing comments filed June 19, 2001 are welcome clarifications to the Department's proposal. However, additional comments seem warranted to clarify one issue on which the Department commented.

Section 13 (b) (3) of the Act addresses the issue where aquifer material is found within 5' of the planned bottom. In the proposed rules, section 506.310(b) specifies minimum thicknesses of 5" for floors and 8" for walls. This section seems to apply to all types of waste handling structures using concrete including those that are used to transport manure but not necessarily store it. MWPS-36 uses 4" for floors and 6" for walls as the minimum thicknesses for storage tanks which is consistent with section 6.1 (Structural Design) of ASAE EP393.3. Note, section 6.1 replaces section 4.1 of the older ASAE EP393.2 standard with minor changes. As required by the Act, I believe that the rule must follow the "structural design" section of ASAE EP393.3 or future updates. It outlines the loads (manure, soil, etc.) to be used for the design and the design standards for each material which must be followed (e.g., ACI-318 for concrete).

The Act requires that the facility design prevent seepage to ground water. I contend that the difference in seepage potential of 4" versus 5" floors (slabs on grade) and 6" versus 8" walls is negligible for typical livestock waste facilities. There is little evidence that the Department's proposed thicknesses will reduce seepage potential over the 4" and 6" minimums required by MWPS-36, ASAE EP393.3, ACI-318, and ACI-360. Rather than spend money on increased concrete thickness (e.g., \$4/pig space for an additional inch on the pit floor of a typical swine finisher), I suggest other measures would better ensure against seepage. For example, as alluded to in ASAE EP393.3 section 6.1.2.3.1, additional soil testing and analysis such as soil type, soil strength, seasonal high water table determination, etc. should be required. Designs should then be based on actual site-specific data such as allowable soil bearing strength, soil density, horizontal earth pressures, etc. Site specific design data, rather than general assumptions found in MWPS-36, would enable better, more accurate design to assure against seepage to groundwater.

Thank you for considering these comments.

Sincerely,

*Terry Feldmann*

Terry Feldmann, P.E.