

**Manure on Frozen and Snow-Covered Ground**  
Response to Issues Raised at the December EPC Meeting  
December 19, 2008

Two important issues were raised at the December EPC meeting regarding the draft rules.

**1. Roofed deep bedded cattle operations** are commonly classified as confinements, which means that the proposed rules apply to them when they exceed 500 animal units. In contrast, most open feedlots would not have to abide by the proposed rules unless they exceed 1000 animal units. In effect, this provides an incentive for cattle producers to raise their animals in open feedlots which generally pose a greater risk of runoff than roofed operations. Also, the classification of these operations as confinements means that there are separation distance requirements and more stringent restrictions on manure control. According to some producers, these operations do not have space available under the roof for more than 2 weeks of manure production. They have requested an exemption from the February 15<sup>th</sup> to April 15<sup>st</sup> prohibition on manure application when the ground is frozen or snow-covered.

**Response:** The Department recognizes that this type of operation poses less risk to water quality than un-roofed open feedlots and commends producers for choosing to raise animals in this manner. Based on the available research, we still believe there is an increased risk of loss of nutrients and bacteria from any type of solid manure if it is applied to frozen or snow-covered ground, especially in late winter.

It should be noted that the date restriction (February 15<sup>th</sup> to April 15<sup>th</sup>) ONLY applies to frozen or snow-covered conditions. The need to have enough storage capacity for 60 days is a worst-case scenario. In 2006, for instance, there was a big snowstorm that hit northwest Iowa in mid-March, but by March 27<sup>th</sup> no snow was left on the ground and by the 29<sup>th</sup> the ground had thawed completely. According to the Iowa Environmental Mesonet, the probability of 4 inch soil temperatures below 32 degrees F in Calmar (far NE Iowa) is 0% after April 10<sup>th</sup>. Snowfall over 1 inch is possible in Calmar until the end of April. In southern Iowa (Muscatine) the probability of frozen ground is 0% after March 21<sup>st</sup> and average snowfall does not exceed 1 inch after April 15<sup>th</sup>.

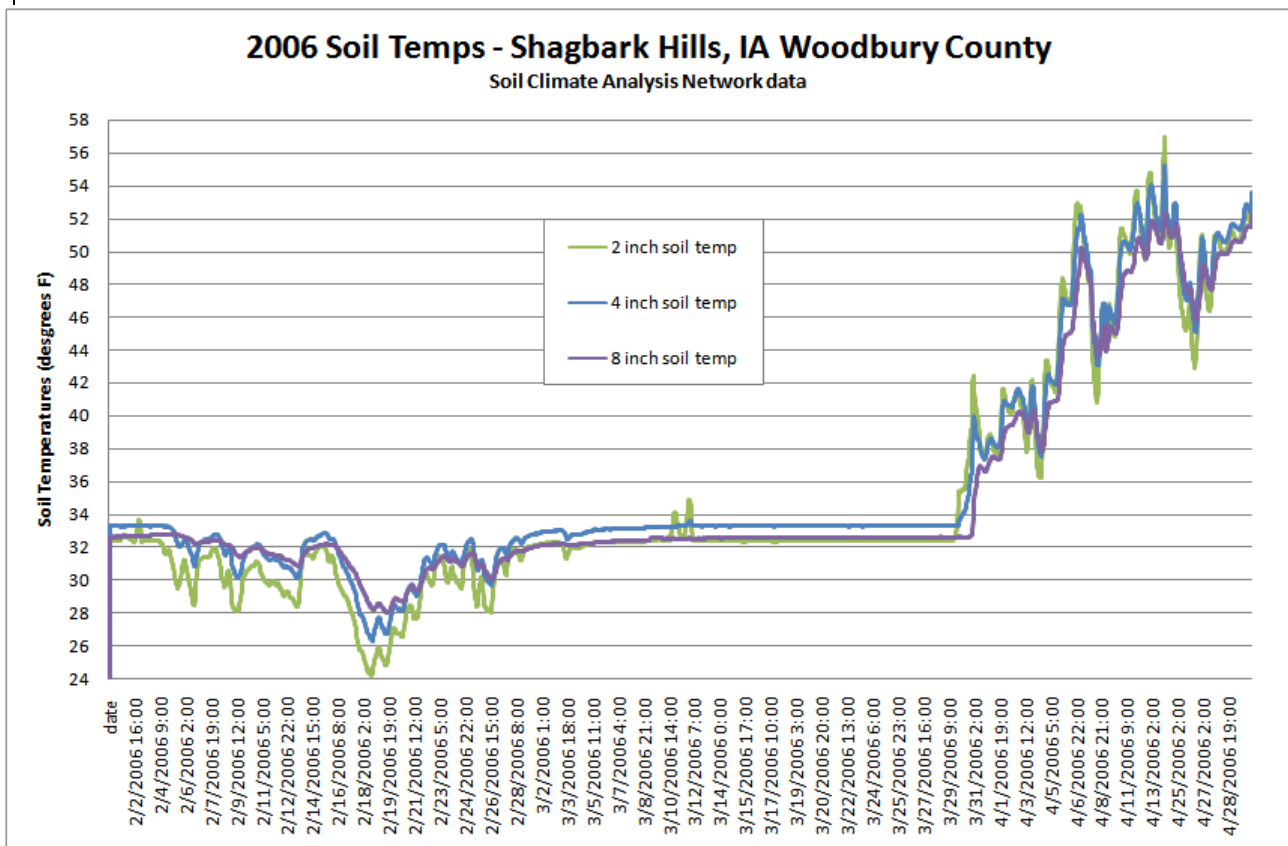
Deep bedded barns, such as hoop barns and monoslopes, have a variety of management practices that can be used successfully to operate the facility. Most of the manure and bedding is stored in the barn until the cattle are sold and the manure is removed from the building for land application or storage. Some operations do scrape the area by the feed bunks regularly to prevent manure build up in that area. That scraped manure can be moved back to the bedding pack or removed from the building for land application or storage, with the seemingly preferred practice to remove it from the building. An overview of the construction and operation of these barns presented by Shawn Shouse (ISU Extension) via webcast can be viewed at this address: <http://connect.extension.iastate.edu/p54261684/>.

A PIG (Program Implementation Guidance) has been developed and implemented to allow solid manure, including deep bedded manure, from confinement operations to be stockpiled as long as

certain practices are followed. Since manure nutrients are more valuable due to the increased cost of commercial fertilizer, all producers should consider constructing a manure storage facility to protect the manure nutrients from weather in order to maximum use of these nutrients for crop production. This includes manure application and incorporation into the soil to minimize nutrient loss due to leaching or volatilization. While the manure storage facility requires an investment in the facility and time to move the manure in and out of the facility at an appropriate time, the investment should be worthwhile to protect the nutrients contained in the stored manure.

Current Iowa Code provisions regulate all confinements in the same manner regardless of the type of manure (solid or liquid) or the species-dependant nutrient content (cattle, poultry, or swine). Rather than attempt to provide a species-specific exemption to this proposed rule, we anticipate that legislative proposals during the upcoming legislative session may address this problem. To accommodate the concerns expressed by operators of deep bedded operations and to encourage this method of production over open feedlots, we propose to delay the effective date of 65.3(4)“c”(3) until October 1, 2010, for manure originating from deep bedded cattle operations. This will allow sufficient time for manure control issues to be resolved and give producers time to increase their storage capacity if necessary.

We would be more comfortable removing the predictive restrictions 65.3(4)“c”(1) and 65.3(4)“c”(2) than the date restriction in 65.3(4)“c”(3). National Weather Service predictions can change frequently and following or enforcing such a restriction may be very challenging.



**2. Scraped snow and ice** from open feedlots may contain some solid manure. Scraping the lots is preferable to leaving the snow and ice on the lots both for reasons of animal health and potential runoff. Stockpiling large amounts of snow and ice is not a viable option either. Therefore, some exception should be made for this practice. Dave Petty stated that in a well-managed operation, where manure is scraped from lots prior to snow fall, scraped snow and ice is not likely to contain more than 10% manure solids. Determining percent solids in the field would be very difficult. Therefore, we feel the best option is to exempt scraped snow and ice (including incidental manure) from these rules with the understanding that producers are still responsible for any water quality violations that result from the application of these materials.