

Operation and Maintenance of your Open Feedlot

Tips from the



Department of
Natural Resources

Rainfall, mid-winter thaws and summer storms can cause runoff from open feedlot operations, which can reach a nearby stream or lake. If runoff reaching the stream is discolored or smells bad, it is in violation of state and federal water quality standards.

Producers can reduce the risk of that happening with their operation and maintenance activities. In many cases, Iowa Department of Natural Resources (DNR) environmental specialists who investigate manure spills and fish kills have found that better day-to-day maintenance would have prevented solid manure or liquids from reaching the creeks.

The DNR inspectors recommend:

Cattle Pens

- Scrape pens frequently so that solid manure does not accumulate.

Solids Settling Structures

- Clean out solids settling structure after every rainfall and before the structure is full.
- Make sure slotted gates aren't plugged or frozen.
- Retain liquids long enough for solids to settle out, but as short a time as possible so that ammonia levels don't become elevated.
- Check berms frequently for erosion.
- Maintain vegetation on berms to stabilize the side slopes.

Areas below Solids Settling Structures

- Keep grass mowed so that you can inspect waterways and filter strips.
- Make sure that liquid run-off spreads out, so that it is more likely to be absorbed by soils.
- Check grass waterways frequently for signs of channelizing.
- Check grass filter strips frequently for signs of channelizing or trenching.
- Repair, reseed and mulch areas that are channelized as soon as possible to reestablish vegetation and prevent more damage.
- Check for tile inlets and subsurface tile lines. Plug the tile or divert the manure away from the tile if there is a potential for contamination.

After a Rain Storm or Freeze/Thaw Cycle

- Look for odors and signs of brown water in waterways after a rain storm or freeze/ thaw cycle. If brown water or odors are present, there may be a problem. Make sure the run-off is not reaching a stream.
- Check below the solids settling structure to make sure that liquid run-off does not go directly to a stream. The longer the distance run-off has to travel, the more likely that it will be absorbed or diluted.



Runoff can cause gullies to form below solids settling structures, especially when the area has been newly seeded. Using mulch or erosion control blankets can reduce channelizing.



Check below solids settling structures during and after rainfall or thawing.

Minimum Requirements and Expectations

The minimum required for open feedlots is to protect water quality, so that downstream waters are free from unpleasant odors or color, sludge deposits and floating debris. Downstream waters must also be free from substances like manure solids or excess nutrients that can cause algae blooms or fish kills.

All open feedlots need to have a solids settling structure, although a few open feedlots are located on land that is so flat and so far from a stream that a solids settling structure is not required.

Minimum requirements for solids settling structures can be found in the Iowa Administrative Code Chapter 65. However, producers need to know that an open feedlot can meet the requirements for solids settling and still cause a water quality problem if the lot is not maintained, or if it is in a poor location. It is up to the producer to find the source of the problem and to see that it gets fixed. However, help is available. (*See below.*)

Additional Controls

Depending on the size of your lot and whether or not it discharges, you may need to have additional controls and a National Pollutant Discharge Elimination System (NPDES) permit. These permits are issued by the Iowa Department of Natural Resources. You may need a permit if you have an animal unit capacity of 1,000 animal units or more. Smaller open feedlots may be required to get an NPDES permit if they have caused a water quality problem or fish kill, or if they have a direct discharge to a water of the state through a man-made conveyance like a grassed waterway or they have a stream running through the lot.



Solids settling structure with slotted gate.

Assistance

Contact the nearest [DNR field office](#) for technical assistance:

Spencer	712-262-4177
Atlantic	712-243-1934
Mason City	641-424-4073
Des Moines	515-725-0268
Manchester	563-927-2640
Washington	319-653-2135

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