

Dairies and the Clean Water Act

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In the news the past few months there has been the question of what is going to happen with enforcement of the Clean Water Act which deals with the protection of the state's waterways. According to DNR spokesman Kevin Baskins in a November 13 article posted on the internet by KWWL TV from Waterloo, "The Iowa Department of Natural Resources has a policy of encouraging voluntary compliance instead of using punitive measures to force compliance." Baskins said that data on facilities with more than 1,000 animals has shown manure discharges to have been reduced by more than one half in the last 10 years.

Due to complaints from some environmental groups, the Environmental Protection Agency (EPA) has looked into the DNR's handling of manure issues. The EPA feels that the DNR has failed to adequately respond to manure discharge issues, failed to issue all permits required by law, and failed to assess adequate penalties for violations. How these issues are resolved will have an impact on all producers regardless of operation size.

Four areas that should be of concern for all farms include manure, milking center waste water, fuel and chemical storage and containment, and run off from feed storage areas.



Picture Source: "Dairy Farm" Bing Maps ©2012 Microsoft Corporation
Pictometry Bird's Eye ©2012 MDA Geospatial Services, INC Accessed 12-4-2012

Manure is the highest profile issue. The priority in the past has been the large farms. The focus in the future will increasingly be smaller facilities, especially those near a waterway.

The photo below of a non-Iowa farm clearly shows the paths runoff takes as it flows away from the cattle yards to a larger stream. The darker green area in the middle of the picture below the buildings indicates well fertilized forage from the nutrients running from the lot. Other bare areas may be washed out ground that is channeling water to a larger stream.

A producer has some options if they are concerned about runoff on their land. Test kits are available to be checked out free of charge from some County Extension offices for people to test if ammonia is entering a stream from their lots. Locations of offices with these kits as well as instructions for their use can be found at <http://www.agronext.iastate.edu/immag/smallfeedlots/dairy.html>. These tests are done privately by the producer so the results are confidential. Aerial maps such as the one above are available on the internet on many search engines by typing in the address and selecting a map option. These will help a producer to see the paths that runoff takes as well as possible ways to control it.

Your local NRCS office

(<http://offices.sc.egov.usda.gov/locator/app?state=ia>),
DNR office
(http://www.iowadnr.gov/Portals/idnr/uploads/fo/fo_factsheet.pdf), and area Iowa State University Extension and Outreach Ag Engineer
(<http://www.extension.iastate.edu/ag/engineering>) can help with questions and help resolve runoff issues.

Milking center waste water can be a major issue. In the past, dairies disposed of waste water by running it into a ditch or dry well. This usually wasn't a problem as the amounts were small and the degree of environmental concern was less. Today, with auto-mated cleaning systems and large amounts of wash down water, this is

no longer acceptable due to the potential for surface and ground water contamination.

One solution is to mix it in with the manure and spread it on the field. This works well for facilities with adequate manure storage facilities. If this isn't possible, a separate storage tank is an option. This storage would need to have enough capacity to store the liquids through the winter until they can be spread. Setting up a system to recycle the liquid for washing down parlor and holding pen floors would reduce the storage requirement. It is also possible to set up a system to settle out the solids and run the liquids out to a vegetative filter strip where the waste is broken down. <http://www.iowafarmbureau.com/files/pages/194/EDC269.pdf> has information on handling milking center waste water.

Petroleum and other farm chemicals are also a threat to water ways and their storage needs to be looked at. Fuel storage tanks 1101 gallons or more require secondary containment. An Oil Spill Prevention, Control, and Countermeasure Plan (OSCCP Plan) is required for farms with oil storage of 1320 gallons or more. This includes petroleum based oils, fuel, and grease along with animal fats and oils stored in containers 55 gallons or more.

Below are some links pertaining to farm chemical storage and containment.

<http://www.iowafarmbureau.com/files/pages/194/EDC273.pdf> discusses petroleum storage.

<http://www.iowafarmbureau.com/files/pages/194/EDC272.pdf> discusses fertilizer storage.

<http://www.iowafarmbureau.com/files/pages/194/EDC271.pdf> discusses pesticide use.

Runoff from feed storage areas is often overlooked. Nutrients that leach out from around silos, feed bags, or commodity sheds can easily contaminate a nearby stream. Some research has shown that one gallon of leachate from a silage storage structure has the potential to lower the available oxygen in 10,000 gallons of stream water to levels below the requirements for fish survival. Care needs to be taken to make sure that this runoff is contained or diverted to an area where the nutrients can be filtered out, such as a vegetative filter strip. Containing runoff from these areas and mixing it with manure and land applying it is another possibility.

[PM 3019 Small Open Lot Dairies](#), is a recent publication that discusses the water quality issues of dairies and offers information to help resolve and prevent potential water runoff and discharge issues. As mentioned earlier, your area Extension Ag Engineer as well as the local DNR and NRCS personnel can be great assets in understanding the impacts and resolution of potential runoff issues and water quality issues.