

## Liquid manure, miles of draglines; 2 more illegal discharges

The snaking paths of draglines stretch from the Southern Michigan Dairy lagoons, through road culverts, across fields, through numerous pumping stations, along the edges of roads, across driveways – even across streams.

With the facilities still shut down, still for sale by the bank, SMD began emptying all lagoons this spring. Contractors unrolled miles of draglines and pumped millions of gallons of liquid manure to remote fields.

At the end point, the hoses attach to a field applicator which drags them back and forth, like large intestines – spraying manure through nozzles onto the field.

One hose lies kinked (lower right), in a tributary to Bean Creek. On May 1, the same dragline blew out in a field, leading to a discharge.



*Under the road. On the road. All risky. But draglines in water? An extreme risk. In an ECCSCM phone conversation May 3 with SMD spokesperson Mark Fischels of Rabo AgriFinance, Fischels acknowledged the risk of placing a dragline in a stream and ordered the field crew to remove it immediately. "There is no excuse for it," he said. Are DEQ and MDARD listening? The practice of placing draglines in waterbodies should be **prohibited**.*



May 1 – SMD dragline breaks along Donnelly Rd. A quick fix with belts does not work.

### VIOLATION NOTICES

SMD was cited for 2 discharges in May 2012 after liquid manure reached surface waters during dragline application on fields east of the SMD 2 facility on US-127.

An SMD dragline ruptured on May 1, with liquid manure flowing down a ditch, and on May 2, DEQ staff "found that waste had indeed made it through the tile line and had discharged to the head of a tributary to Fisher Lake."

In the 3-day period, April 30-May 2, 2012, two other incidents of discharge and over-application occurred: on April 30, SMD reported liquid waste leaking into a tile line, and the same day, SMD reported application rates of 18,000 gal/acre. DEQ told them to "cut that in half."

DEQ Violation Notice (May 10, 2012)

## USGS studies liquid manure in tiles flowing to Lime Creek, Bean Creek

After many manure discharges from dairy CAFOs in the Bean Creek Watershed over the last decade, the USGS and USDA-NRCS tested the water flowing from 8 sub-surface tiles under field plots in Lime Creek and lower Bean Creek. The study, conducted in 2006-2007, was recently posted on the USGS website.

Water samples were taken before liquid manure application to the fields, after 4 hrs, and after 1, 2, 6, 7, and 14 days, some timed to follow rainfall events. Sites were selected to assess different tillage practices and also 2 different rates of manure application: 4,000 or 8,000 gallons per acre. [see ECCSCM note below]

Samples were analyzed for nutrients, fecal coliform and *E. coli* bacteria, antibiotics, chemicals and genes from bovine-specific bacteria.

### *E. coli* levels excessive at 8,000 gal/acre

Rate of application turns out to be extremely important. *E. coli* levels and other microbiological tests remained at acceptable levels at the 4,000 gallon application rate, but at 8,000 gal/acre *E. coli* exceeded water quality standards in samples taken immediately after application.

At the 8,000 gallon application rate, ammonia as well as the bovine-specific bacteria genes and fecal chemicals, which were not detected in samples before manure application, were present. The researchers note: "These findings may indicate rapid transport of the LDME [liquid dairy manure effluent] to tile water."

### Excess nutrients in all samples

Water tests showed excess nutrients in ALL tile-drain water samples, even in samples without manure application. 53 of the 56 samples exceeded EPA criteria for total Phosphorus.

ALL samples exceeded the total Nitrogen criteria. The implication of these results is that fields accumulate and retain excess nutrients, which can flow to streams year-round. USGS samples were taken between Nov and March, the non-growing season. These data provide striking evidence of the cumulative and ongoing impact of agriculture's contribution to the excess nutrients in Lake Erie, where all these streams flow.

See full details and data at the USGS website below.

**[ECCSCM NOTE:** CAFOs often apply liquid manure at much higher rates than were tested in this study. As noted on p. 1, SMD admitted to DEQ its application of 18,000 gal/acre this spring, and DEQ's recommendation of half that is still higher than any rate sampled by USGS]

Source: Sheridan Haack and Joseph Duris, "Chemical and Microbiological Water Quality of Subsurface Agricultural Drains during a Field Trial of Liquid Dairy Manure Effluent Application Rate and Varying Tillage Practices, Upper Tiffin Watershed, Southeastern Michigan"  
Available at: [http://pubs.usgs.gov/of/2008/1189/pdf/ofr2008-1189\\_web.pdf](http://pubs.usgs.gov/of/2008/1189/pdf/ofr2008-1189_web.pdf)

## NEWS IN BRIEF

### Illinois researchers find hormones in dairy waste can persist for years in waterways

A USDA-funded study published in *Environmental Science & Technology* has shown that hormones excreted by dairy cows do not break down quickly, as previously thought. Instead, researchers at the Illinois Sustainable Technology Center of the University of Illinois found that estrogens convert to another form in anaerobic lagoons and can persist in the wastewater and in surface or groundwater for years.

Lactating cows excrete natural as well as synthetic estrogens from drugs like rBGH, a growth hormone widely used in industrial dairies. Since the animal waste is often sprayed on fields, the hormones can reach surface waters or groundwater.

The study showed hormone levels in dairy wastewater at 100 to 1,000 times the levels in human sewage.

There are no water standards for hormones, and very little testing is done for veterinary drugs or animal hormones in recreational waters or drinking water.

### Risk of estrogens in water, in plants

"These estrogens are present at levels that can affect the (reproductive functions of) aquatic animals," said Wei Zheng, leader of the study. Low levels of estrogens can "feminize" animals that spend their lives in the water, causing male fish to have low sperm counts or to develop female characteristics, such as producing eggs, undermining their ability to reproduce.

"Hormones that end up in surface or groundwater can pollute sources of drinking water for humans," said Zheng. "The estrogens may also be taken up by plants – a potential new route into the food chain."

Sources: [www.eurekalert.org/pub\\_releases/2012-06/uoia-tdh060512.php](http://www.eurekalert.org/pub_releases/2012-06/uoia-tdh060512.php)  
W. Zheng et al, "Anaerobic Transformation Kinetics and Mechanism of Steroid Estrogenic Hormones in Dairy Lagoon Water," *Environmental Science & Technology* (May, 2012)

### After Oprah – new honors for Lynn Henning

In April, Lynn Henning, Sierra Club CAFO Water Sentinel and ECCSCM member, appeared on Real Time with Bill Maher, talking about her experience with CAFO pollution.

She also appeared in the new documentary on water quality issues, *Last Call at the Oasis*, released this spring, and was recently named one of the 2012 Planet Defenders by Rock the Planet.

### DEQ approves NPDES permits for SMD

DEQ approved National Pollution Discharge Elimination Permits for SMD on April 19. Just 12 days later, SMD was cited for 2 illegal Discharges.

Discharge **Elimination** Permits? No way. The permits don't work and need to be changed. Contact Mike Bitondo, DEQ: [bitondom@michigan.gov](mailto:bitondom@michigan.gov)

*ECCSCM Meetings - 3rd Wednesday of the month, 7:30 p.m. Hudson Community Center  
(check our website for last-minute changes)*

**JOIN US:** Yes, I want to help protect our water and air, and promote sustainable agriculture. **All contributions support monitoring projects and community education.**

Name: \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

\_\_\_\_ Annual Membership \$25 \_\_\_\_ Senior Membership \$10

**ECCSCM is a 501(c)3 nonprofit. Donations are tax-deductible.**

Click on the  button on [www.eccscm.org](http://www.eccscm.org)

Or, mail check to: ECCSCM, P.O. Box 254, Hudson, MI 49247

**Thank You!**

### We Support Sustainable Agriculture

- that preserves and protects our air, streams and lakes
- that raises animals in a healthy, natural environment, grazing, absorbing sunshine
- that avoids the steady diet of hormones and antibiotics given animals in the crowded, confined conditions of industrial facilities
- that values and protects farmland, the environment and the rural community