



# DANE COUNTY

## Land and Water Resources Department

Kevin Connors

Director

DATE: December 6, 2013

TO: Pat Downing, Chair  
Environment, Agriculture, and Natural Resources Committee,  
  
Members, Dane County Board of Supervisors

FROM: Kevin Connors, Director of the Dane County Land and Water Resources Department

RE: On the impact and remediation of the Clear Horizon Manure Digester Spill

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Chair Downing;

As you know, the manure digester owned, operated, and managed by Clear Horizons, Inc. had a pipe failure last week which released 300,000 gallons of manure. I write to share our understanding of the extent and impact of the spill, the remediation effort, and how we are moving forward.

We are cautiously optimistic that this manure spill will have little to no impact on water quality in Lake Mendota as preliminary data shows that only 30 pounds of phosphorus will reach the lake. This is based on data collected from a monitoring station downstream from where the spill occurred – data that was collected over the course of the three days that the spill was detectable in the water. A normal three day level of phosphorus detected at this same testing station ranges between 9 to 15 pounds. When it rains, these levels are much higher. For example, a 1.5 inch rain this past March resulted in 4,450 pounds of phosphorus registering at this monitoring station. When the snow melted last spring on March 28, 29, and 30 this testing station registered 2,830 of phosphorus over the course of three days.

While the spill was not discovered for several hours, it occurred a mile from the waterway and was contained shortly after reaching that waterway, so only a fraction of the manure spilled made it into a waterway. Second, the efforts to contain the spill were comprehensive, well-executed, and effective.

While we are optimistic that this event will not impact lake water quality, we would be remiss not to view this as an opportunity to identify and mitigate risks to water quality. Manure digesters potentially play a critical role in our overall effort to restore the Yahara watershed because they allow us to address phosphorus in cooperation with an important industry and community in our county. To that point, in 2012, nearly 73,000 pounds of phosphorus processed at the Waunakee digester were exported from the watershed; since beginning operations three years ago, the Waunakee Community Digester owned and operated by Clear Horizons has processed more than an estimated 87,000,000 gallons of manure and converted it into green, home grown energy providing electricity for thousands of homes. Nevertheless, any system holding and processing manure will pose risks of failure and risks to water quality. The department has impressed upon Clear Horizons that it must take steps to minimize those risks in order to advance our water quality efforts.

### **Basic timeline of spill and clean up events**

Late in the evening on November 24, a pipe from the #1 digester burst and began discharging manure. The burst pipe and spill wasn't discovered for several hours, and in that time flowed approximately a mile through the stormwater basins, down an embankment, into a farm field. While the manure slowly pooled in many areas, the front edge of the manure bled into a drainage ditch. The drainage ditch is fed by tile from groundwater, and has a continuous low flow which goes to a tributary of Six Mile Creek.

Shortly after the leading edge of the manure first reached flowing water, a coordinated team of Clear Horizons staff, neighboring farmers, DNR staff, and Dane County installed two berms in the drainage ditch, stopping the flow of the manure-water mix and any furthering of the spill downstream.

Once the berms were installed in the ditch on November 25, the manure-water mix was pumped into tankers and spread on multiple fields of the Tierney, Karls, and Ripp farms under the direction of LWRD and DNR staff. As pumping drained the ditch, groundwater would soon refill it. In all, over one million gallons of the manure-water mix was pumped out of the ditch. Water quality testing conducted by Clear Horizons on the morning of November 28, detected no remaining manure in the water in the drainage ditch.

On land, earthen berms and hay bales were used to stop the flow of manure, and the manure was then cleaned up with vacuum tankers and septic haulers. The effort to clean out the onsite stormwater basins collected a significant portion of the manure. Most of the manure and material was returned to the digester, and some to the manure storage facility at the Ripp dairy farm.

### **Moving Forward**

In the coming weeks, Clear Horizons states they are committed to taking the following actions:

- complete the formal spill report and submit it to the DNR, copying Dane County
- clean and restore the stormwater swales and stormwater outlet
- investigate causes of the pipe failure and address the cause

Dane County Land and Water Resources will work with the DNR and Clear Horizons to understand what happened and why, and will evaluate options for minimizing risk for this and future digesters. Some issues we evaluate will include the sufficiency of existing safety alarms and early detection protocols, and secondary containment options.

As always, please do not hesitate to contact me with questions.