

Conservation and Environmental Stewardship

Situation Overview:

A. *How does this farm view their environmental responsibilities for both the farm and land? Please describe.* We take our environmental stewardship of the farm and land seriously, as evidenced by our commitment to the digester project.

B. *What conservation and environmental best management practices (BMPs) have been incorporated into the farm plan during the last 5-10 years?*

- Crop residue management
 - No-till practices - 15 years
- Contour farming
- Contour strip cropping
- Filter Strip
- Conservation buffers
- Crop rotations
- Cover crops
- Half acre bee pollinator habitat
- Stream bank, intentionally planted
- Grassed waterways
- Terraces (one being built spring 2014 – no till river terrace)
- Diversions
- Pasture and hay land plantings
- Stream bank protection – all fenced off
- Animal Trails/Walkways
- Structure for water control
- Watering system in pasture, to keep cows out of springs
- Barnyard runoff controls/Heavy use area protection
- Water (manure) storages/Manure Stacking
- Manure Composter
- Milk House Waste (Goes to digester)
- Roof Runoff Management
- Precision Feeding/Feed Management
- Agri-Chemical Handling Facility
- Integrated Pest Management

C. *Does the farm have a Nutrient Management Plan (NMP) or Manure Management Plan? Yes. Did this project change the way the farm handles animal manure? Please describe.* We have a phosphorus based nutrient management plan. Even though we now have the methane digester, at the end of the day, we still have a tanker that removes our farm's manure; it just now takes a longer journey.

D. *Are phosphorus levels in your soils rising to excessive levels [200 ppm of P] due to the application of manure generated on the farm? Please describe.* No. We are trying to prevent excessive levels with our deep bedded solids.

Conservation and Environmental Stewardship...continued

E. *Is manure applied in the winter months (generally December – February)? Is the manure applied in winter due to not enough storage or for other reasons such as timing, field conditions in spring, etc.?* Yes, but not on top of the snow. We want to apply manure to the cover crops during winter so it's there when the crops start to grow in the spring.

F. *Does the farm have a conservation plan or an agricultural erosion and sedimentation control plan? If yes, what are the key components?* Yes. Cover crops, crop rotation and no-till.

G. *Did a farm expansion require the development of an Odor Management Plan and any odor management Best Management Practices? No. How did you become aware of these requirements? Did you find enough experience private sector planners to assist?* While we didn't need an Odor Management Plan, odor reduction was a huge benefit to this digester project. Although the digester is fed dairy, hog and chicken manure, poultry sludge and occasional food waste, we can spread that manure close to neighbors, and they don't complain about odor. Before the digester, our dad would check wind velocity and wind direction before he spread manure because of odor concerns.

H. *Can the farm quantify the environmental impact of the project? Please describe.* Yes. We can measure impact in terms of energy our digester provides to the power grid and the energy savings on our farm, as detailed in the Modernization Chapter. We also benefit from the deep bedded solids, a by-product of the digester that we use as bedding on the farm.

I. *What is the most significant environmental/conservation improvement made on this operation within the last 5 years, and what improvement(s) did it result in?* The most significant improvement is our digester. We are converting waste manure from multiple farms, and multiple species, to electricity that fuels our farm and our neighbors' homes.

The U.S. Center for Dairy Innovation has named our family one of three winners of the 2014 Dairy Environmental Stewardship Awards.