

Dairy Manager's Summary of Holsum Dairy's First year of Green Tier Qualification

Considerable effort from the DNR, Dairy Industry, and Holsum Dairies has been given to the Green Tier program and we are excited by the progress and future potential. The process of developing an Aspects and Impacts Scoring Table and documenting the procedures stands out as the most arduous of our efforts. However, we now have a prioritizing and monitoring model for years to come and formalized procedures for identifying, planning, implementing, and evaluating changes to improve the environment.

In addition, some of the changes we completed this year are:

-Converting our digesters' fuel oil boiler to a methane fueled boiler reduced fossil fuel consumption and will pay for itself quickly.

-Reducing Copper Sulfate in our footbaths by more than 50%, minimizes copper's reaching our fields and reduces costs, while maintaining the herd's hoof health.

Involvement with Green Tier helped us focus on all the good environmental decisions we have made, as well as those areas awaiting improvement. Local, national, and international visitors have expressed concerns about the environment. They were thankful to learn how the State of Wisconsin and our dairy were partners in this effort.



Respectfully,

Our Reclaimed Wetland

Kenn Buelow, Dairy Manager, Holsum Dairy, Hilbert, Wisconsin 54129

Holsum Dairies, LLC, has been an enthusiastic and conscientious supporter of nearly all endeavors which sustain and improve the environment as it pertains to its modern dairy facilities. We are the first dairy in Wisconsin to achieve ISO 14001 Functional Equivalency (October 2006)

Our reasons for involvement in the Green Tier effort were several:

-we were proud of our environmental accomplishments and ready to be assisted in reaching new heights.

Note: Our major environmental accomplishments in this first year were on the drawing board prior to system implementation.

-in 2006, we installed methane powered manure digester boilers

-in 2006, 82% of acres and 86% of loads of manure were applied by hose (versus spread by tanker trucks or tractor towed wagons.) We surpassed our goal of 80%.

-we hoped to evaluate the system and to streamline the process to make it workable for a broad range of Wisconsin dairies.

-‘Workable’ means affordable in time and money; farmers in general are overworked.

-Money costs for first year for EMS representative’s development and maintenance of the system: = 329.7 hrs X \$30/hr = \$9891

-Time costs for first year for manager: ~ 2 weeks

-Time costs, first year: Rep’s 330 hours is about two months’ full time equivalent.

-Time costs, ongoing: We perceive documentation, compared to other industries, to be less integrated in our daily operations. Yet, compared to our peers in the dairy industry, we are probably in the high group for keeping records. For 2007, we will monitor where we can use or combine existing metrics with Green Tier necessities.

For example, Green Tier requires documentation of external environmental communications. We find it onerous to record all communications that are environmentally related. Scheduling a tour (external communications) of environmental biology students can generate a flurry of emails and phone calls. When some classes visit, students frequently send a note. We will not attempt to document all this. We enter the tour event into our external communications log book.

To date, spiral notebooks have served for ‘suggestion box’, agenda for meetings, and record of completed action items.

If we find it unnatural to create numerous documents such as this, how can we persuade other dairymen to become involved?

-we were ready to partner with the WDNR, as opposed to a regulator-regulated relationship.

-We believed that WDNR was to develop informational/promotional materials for the state’s dairy industry. Mr. Tom Eggert says that an annual press release for our individual farm and our being on the web site are what they provide.

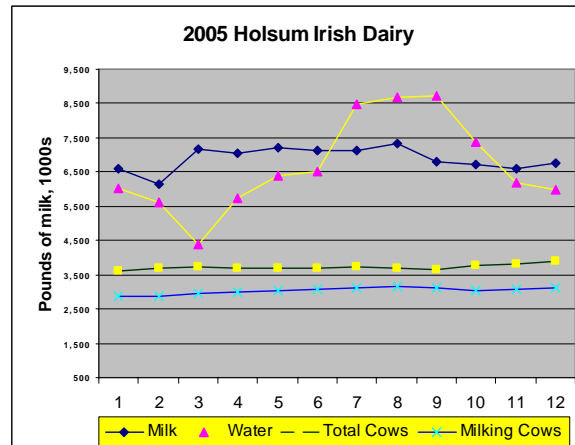
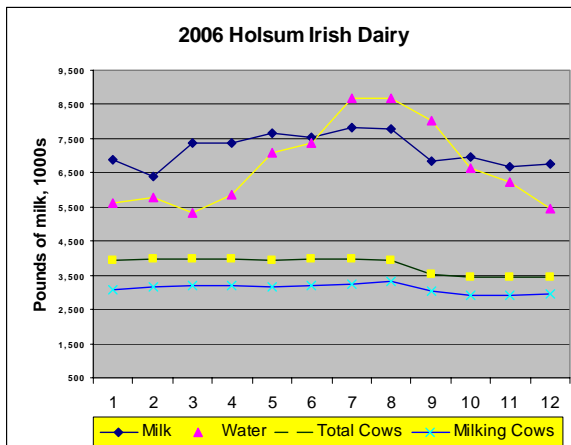
-As a result of Green Tier status and our facilities, we were broadcast on the television show, Into the Outdoors. This child oriented show focused on the farm’s water reuse and the “cow poop” conversion to electricity.

Note:

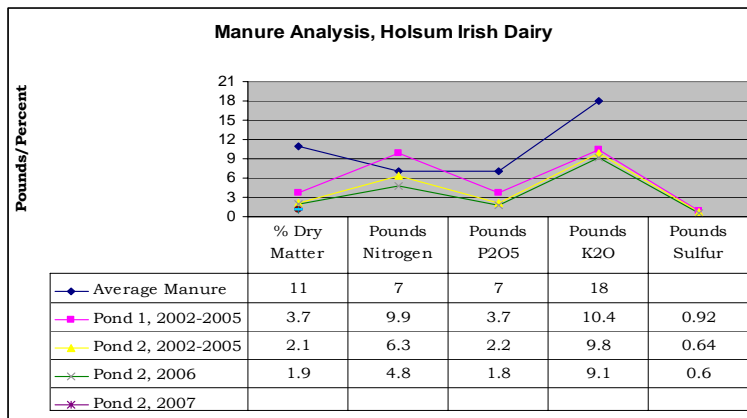
In **2005**, we produced enough electricity for our operation and the equivalent of 205 homes (1,797,284 kwh excess).

In **2006**, our dairy produced enough electricity for our operation and the equivalent of 7 homes (62,993 kwh excess). We had mechanical/electrical problems in 2006, resulting in much downtime of the generator. The situation has been fixed; we anticipate exceeding 2005 in the upcoming year.

Regulated topics: We are tracking our **water usage** from each well, as required by statute, and comparing it to the numbers of cows (milking and dry) and the amount of milk shipped from the dairy. Increased water usage in hot months is for cow cooling primarily. Water conservation has been in place for four years; the differences in the next graphs are related to ambient conditions. For 2007, we will add our own weather station. We will be able to document the local microclimate each day.



Manure composition is of interest to us for our **nutrient management plan**, as well as for minimizing our environmental footprint. After capturing the energy and fibrous material from cow “waste”, we have effluent with 82% less dry matter, 32% less nitrogen, 75% less phosphorous pentoxide (44% phosphorus), and 49% less potassium oxide (83% potassium); when compared normal manure values.



What do all these digested manure numbers mean?

-Less phosphorus builds up in the soil, no longer available to run into streams and contribute to algae bloom.

-We provide nitrogen and potassium (potash) and water to the alfalfa crop. By applying effluent when the soil is relatively dry, and the plant is actively growing, we reduce the likelihood of nitrogen leaching through the root zone. We reduce the purchase, transport and additional application of fertilizer.

2005 gallons applied: 29,599,495 2006 gallons applied: 46,040,343

Environmental Errors:

Liquid manure spills August 2006, Severity 0	Year 2006 1
0 == no impact on surface or ground water	
1==reached ditch (dry)	
2==reached sediment retention ponds	
3== reached surface water (stream/pond/lake)	
4==impacted ground water	

Unregulated topics:

Feed pile covering: Our Environmental Management Plan 2006-6 for this is covered in detail in our Functional Equivalency document, previously submitted. In summary, we reduced the amount of plastic by switching away from horizontal silo bags to greater use of drive over silage piles.

Worker safety: ISO 14001, 4.4.7, contains a requirement for identifying potential emergencies and, of course, measures to reduce or eliminate them.

- Eliminating head trauma in 'man passes' (EMP 2006-3B) was easy – closed cell foam was affixed to pipes faster than the EMP could be written.
- Fire and accident (EMP 2006-3A) possibilities were ameliorated through coordination with the fire department and ambulance service. We held our first fire drill in August, using real fire and smoke to generate discussion.
- Severe weather emergencies (EMP 2006-3C) resulted in the purchase of National Oceanic and Aeronautics Administration (NOAA) weather radios with a flashing alarm light mounted for conspicuity. We selected high winds, tornados, and blizzards as most likely to result in worker danger or injuries.

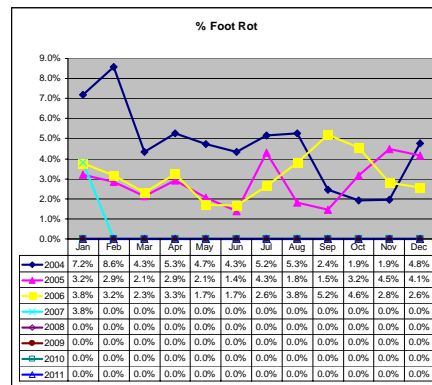
Our restored wetland: Nestled just west of the Irish Dairy's cattle barns, the wetland attracts migratory birds and three season resident ducks and herons. Besides the memorable views, the spring chorus of frog songs is restorative to any listener.

Fuel Usage:

	2005	2006	Comment
Diesel, gallons	55,270	62,117	Elm Dairy added
Gasoline, gallons	2,566	2,964	Elm Dairy added

Monitoring hoof health, specifically Foot Rot, related to copper sulfate reduction in 2006: The yellow line is 2006. For the first seven months, percent of hoof trims was nearly identical to 2005. August, September, and October seemed to contradict the concept that we could reduce copper sulfate usage and maintain good hoof health. In fact, the footbath was not in operation in August and part of September due to improper drain cleaning.

Hoof health improved after that problem was corrected. We are continuing to monitor as we continue to return less copper to the land.



New Dairy:

We started a new dairy in 2006, first milking was in September. The Holsum Elm Dairy is approximately 4 miles west and north of the Holsum Irish Dairy facility. It will be at capacity by June 2007.

Highlights of Elm Dairy construction:

- cooperation with the Focus on Energy utility program led to the inclusion of more efficient lights, heat exchangers for in-floor heat, manure digester motors (25-36% more efficient than comparables at Irish Dairy), and variable speed drives
- inclusion of wet sediment basins, as part of storm water management
- construction of both lagoons to the highest standard in the state (necessitated with manure solids at lower than 2%)

Narrative Discussion

How is Green Tier evaluated within your business to determine whether it is adding value? Have other investors weighed in on this?

Partial budget analyses attempt to estimate the dollar impact of Green Tier. Then, guesses at the environmental impact are weighed against the time commitment involved in documenting decisions. All partners understand environmental issues relative to potential liability. To a lesser extent, they consider our environmental management system's impact on profit, community, vendor partnerships, image, and application demands.

How has your EMS been integrated into management decision-making by your senior management team?

Environmental concerns have always been a part of Holsum Dairies' making decisions and planning. However, using the EMS (and Green Tier) has made it clear to key middle management that not only is it OK to consider the environment in management, it is a requirement. Now, during management discussions, key individuals will bring up environmental concerns and suggest ideas to implement.

Unfortunately, it has been extremely difficult to get the same response from our entry-level workers. Many are in "environmental kindergarten," needing consistent reminders just to recycle cans, paper, plastic, and cardboard; and to stop discarding garbage out the car windows.

The future:

We have completed our Aspects/Impacts scoring for 2007. The list of EMPs is in process.

The internal audit suggests that we have fallen short in the arena of internal environmental communications and training.

To improve, we are actively listening to employees, informally, in order to find better ways to make training relevant, timely and efficient. Our most problematic group to reach is the under 30 years old Hispanic male. Recycling seems to be a difficult concept/philosophy for this demographic group, so we will specify tasks in their job descriptions.

Looking Back:

Knowing what you now know, would you enter Green Tier again?

We are appreciative of the opportunity to be involved with the DNR through the Green Tier Program. Would we enter the Green Tier program knowing what we know now, "YES". However, at this point I find it difficult to recommend to other dairy operations to participate in the Green Tier Program.

On the positive side:

1. We have a great relationship with the DNR, and good understanding of each other's concerns and limitations.
2. People think Green Tier is good.
3. The EMS methodology has improved our overall management.
4. Being part of Green Tier has improved the morale of our key employees and a number of the vendors with whom we work.

On the negative side:

1. The formality (structured paperwork, methods) is difficult, time consuming, and on occasion, limiting. I sometimes feel that more positive environmental outcomes could be accomplished without this formality.
2. People have little understanding of how comprehensive Green Tier is.
3. The costs in time, energy, and dollars are higher than expected.

We have very realistic hopes that the Green Tier program will result in:

1. A distinctive emblem that is widely recognized, well earned, and highly prized,
2. Diminished annual costs after this development stage,
3. A format which is practical to apply efficiently (in dollars and human energy) while having a maximum positive impact on the environment
4. Recognition by agriculture, consumers, businesses, and communities that the environment is included in our decision processes at the same level as our time, dollars, and ethics.
5. Future participants (especially in agriculture) having an easier, less costly time developing an EMS, using some of our experiences, documents, and results.

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