

EMS Case Study:
 Location:
 Industry
 Pollution Prevention Application:
 SIC:

Swine Producer Pilot Farms
 North Carolina
 Pork Production
 Environmental Management System
 0213

BACKGROUND:

North Carolina has more pigs than people with about 9.6 million hogs raised annually. These significant production rates have led to environmental concerns for groundwater contamination, odors and surface water pollution from lagoons and spray fields. These environmental issues have prompted increased regulation and scrutiny of the North Carolina pork production industry. Recognizing that regulation alone would not lead to the needed level of environmental protection, interest has increased in improved technologies and management practices. One area of interest is implementation of environmental management systems in pork production.



In April 2001, the U.S. EPA awarded the N.C. Division of Pollution Prevention and Environmental Assistance, working cooperatively with the N.C. Cooperative Extension Service and the NCSU Department of Biological and Agricultural Engineering, a grant to assist pork producers in designing and implementing environmental management systems. Applications to participate in the project were mailed to approximately 2,400 North Carolina pork-producing facilities. Following evaluation of numerous applications, eight pilot farms were chosen. Information reviewed for each applicant included geographic locations, compliance records, variety of operations and size, environmental conditions, ownership, causes of and solutions to environmental concerns and other background information. The following producers created an EMS for varying areas of their farm activities.

| Pilot Farm & Owner: | Location: | Type of Operation: | Number of Hogs: | EMS Scope: |
|--------------------------------------|-------------------|------------------------------|-----------------------------|----------------------|
| Beaver Dam Farm, Sam Hosking | Cumberland County | Contract nursery | 5,200 nursery piglets | Nursery operations |
| Cowan Farms, Doug Cowan | Craven County | Contract sow farrow to wean | 720 sows | Sow operations |
| Craven Farms, Allen McCoy | Jones County | Independent sow to finish | 3,600 finishers 630 sows | Finishing operations |
| King Farms, Craig & Kathy King | Duplin County | Contract finisher | 2,900 finishers | Finishing operations |
| Little Creek Hog Farms, Chuck Stokes | Pitt County | Contract finisher | 36,720 finishers | Finishing operations |
| Sarem Farms, Bundy Lane | Gates County | Contract sow farrow to wean | 4,800 sows | Sow operations |
| TDM Farm #5, Ted Neidmond | Sampson County | Corporate sow farrow to wean | 2,500 sows | Sow operations |
| White Rock Farm, Rodney Purser | Union County | Contract sow farrow to wean | 2,200 sows | Sow operations |

PLANNING AND IMPLEMENTATION:

Coaches were appointed to each pilot farm from DPPEA staff and NCSU agricultural extension representatives. After the pilot farms were identified and coaches had received EMS, swine production and associated environmental regulation training, work began one-on-one with the producers. Each pilot producer determined the goals for their farm and coaches initiated producer-specific EMS design. Although one of the pilot hog farms chose to leave the project due to resource constraints, seven of the original eight had a custom-designed EMS for their farms.

Most of the pilot farms followed a format similar to the ISO 14001 model, addressing all of the 17 elements. Only one farm expressed interest in ISO 14001 certification, but all were striving to better manage their farm's environmental impacts. Each producer's EMS manual stated specific objectives and targets for their farm as well as all aspects and impacts that may affect the environment. Employees at the farms were trained on EMS steps and policies, their job's significant environmental aspects and their responsibility to follow the related procedures. As part of their EMS manual, specific instructions describe how to perform routine and periodic maintenance and other procedures. Many farms provided employees procedures written in both English and Spanish so that everyone would be able to understand thoroughly. Photos taken while performing actual farm activities accompany many procedures to visually demonstrate the correct method for completing the task.

All farm employees are expected to know and understand their farm's environmental performance goals. Most farms conduct a scheduled review, which ensures that EMS goals and targets are being evaluated and met. Employees are made aware of their role in the EMS through training sessions. One pilot farm hired an EMS coordinator who is responsible for assuring that all EMS aspects are being maintained.

TOOLS:

One of the project's key aspects was creation of tools for use by pork producers to facilitate EMS design and implementation. While large producers may have the resources to provide assistance to company-owned farming operations, a number of independent operations and contract growers do not have this support.

As coaches worked with the producers they developed lists of activities, identified environmental aspects and impacts related to those activities, listed their legal requirements and created numerous checklists, forms, work instructions and operational controls. These documents were reviewed to identify the best examples and the information was organized and compiled to create assistance tools that could help other pork producers develop an EMS. An interactive tool called the Aspects/Impacts Manager was created from this information. This on-line tool enables farmers to create a user ID and go step by step in determining their operation's environmental aspects and impacts. This program creates a customized snapshot of farm activities that could potentially interact with the environment. This tool also enables the user to prioritize the organization's most significant environmental impacts. Upon completion of this guide, a table displaying the identified activities and related environmental aspects and impacts ranked from highest to lowest in order of selected criteria can be viewed and printed.

Also for producer convenience, a template was created showing specific examples of each ISO 14001 element. These downloadable resources include an EMS manual template, procedures/work instructions, charts and calendars. These materials can be customized to address the environmental aspects and impacts unique to pork producer's activities. The EMS is best designed by following a step-by-step, element-by-element approach as outlined in this guide. To access these tools please visit the Web site <http://www.p2pays.org/iso/TipsTools.asp>.

LESSONS LEARNED:

The participating farmers agree that EMS implementation has had a beneficial impact on their operations and they see numerous advantages. The EMS has changed several aspects of these organizations'

Producer EMS Benefits

“Although EMS has not instantaneously corrected all of my problems it has given me the vision needed to address environmental impacts related to my farm. Within the year I feel confident that my overall operation will be dramatically enhanced by the implementation of EMS.”

-Chuck Stokes

- Improves environmental performance
- Improves management techniques & efficiency
- Improves compliance
- Increases employee awareness and accountability
- Streamlines everyday activities
- Reduces operating expenses
- Improves communication
- Improves public image
- Enhances customer trust
- Reduces liability

operations, such as creating procedures for emergency response and monitoring and measuring. However, the assistance, encouragement and continual support of coaches were essential elements of successful development and implementation. Contract and independent farms without easy access to assistance need one-on-one help to design and implement an EMS.

For pilot farmer Chuck Stokes, the greatest benefits of implementing the EMS included an improved documentation process, which led to an increase in accountability and responsibility, as well as better communication between employees and neighbors. He commented that with the help of the EMS communications requirement he found several ways to maintain good relations with his neighbors, such as sending out a newsletter about the operations and encouraging them to inform him when they are planning outdoor activities.

Bundy Lane also noted that the effectiveness of his EMS was apparent during hurricane Isabel in 2003. The farm's hurricane preparation time was cut down from four days to two because each employee knew their individual duties and were able to

quickly perform them, saving the farm both time and money. He also credits the EMS for preventing temporary “patches” to problems on the farm, helping to provide a more permanent basis for repairs.

Even though many benefits can be found by implementing an EMS, some concern was expressed that the EMS design and implementation took too much time and increased paperwork. Producers feel they must already keep a good deal of paperwork for their permits and land applications programs. Some shied away from written procedures and checklists. The tools that were developed as part of this project should greatly streamline the process involved with design steps, thereby reducing the amount of time required. The tools should also make documents easier to produce initially and then update over time.

Although EMS development on these farms did take a considerable amount of time and effort, the farmers agree that operations have significantly improved. This voluntary approach gives the farms more flexibility and more control over their environmental activities. If more information on this project is requested, contact the N.C. DPPEA at 1-800-763-0136 or 919-715-6500 or visit www.p2pays.org.