ABC Farms

Environmental Management System Manual

Signature: _____ **Date:** _____

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INTRODUCTION

ABC Farms was created in 1988 and is a family owned and operated farm. ABC Farms is a 2000 head farrow to finish operation.

In order to improve management of environmental issues related to this operation and site, this farm has implemented an environmental management system (hereafter referred to as EMS). This EMS manual presents the various components of ABC Farms EMS.

The EMS is modeled, in large part, after the requirements set forth by the ISO 14001 Standard. Although this EMS manual is modeled after the ISO 14001 Standard, it is not intended for actual ISO 14001 certification and does not address every requirement of the 14001 Standard.

DEFINITIONS

Environmental aspect – elements of the farm's activities that can interact with the environment.

Environmental impact – any change to the environment, whether adverse or beneficial to a farm's activities.

Integrator – the owner/supplier of animals that are grown on a contractual basis by a producer.

External interested parties – individual or group concerned with or affected by the environmental performance of the farm (neighbors, media, environmental organizations, etc.).

Significant environmental aspect – an environmental aspect that has or can have a significant environmental impact.

EMS nonconformance – failure to follow farm Standard Operating Procedures, complete scheduled checklists, review environmental aspects in timeframe specified.

Other requirements – requirements to which the organization subscribes but which are not legal or regulatory requirements.

SCOPE OF THE EMS

The EMS includes hog houses and spray fields.

SECTION 1 - ENVIRONMENTAL POLICY

ABC Farms has defined its environmental policy as follows.

ABC Farms is committed to prevent pollution, compile with all legal requirements and continual improve it.

ABC Farms makes this Policy available and accessible to all its employees and to the public.

_____ _____

Responsible Party Date

SECTION 2 - Environmental Aspects

ABC Farms has identified all known environmental aspects and related impacts of its activities and products, over which it has control and can have an influence, in order to determine which can have a significant impact on the environment.

- The list of environmental aspects and related impacts will be reviewed at least annually by the farm manager in order to identify the significant aspects. Review will also take place within 6 months of implementing new activities or modifying existing activities. Additions or changes to aspects and impacts will then be ranked to determine significance.

- ABC Farms will use the following aspect procedure and related documents to carry out the identification and significance ranking of aspects and associated impacts.

Environmental Aspect and Impact Ranking Procedure

1) When identifying aspects and impacts the environmental aspects related to air emissions, land application of liquid waste, disposal of solid waste, land and water contamination, use of raw material and natural resources, as well as local and community issues should be consider. These issues should be considered for normal as well as abnormal operating conditions.

2) After identifying the aspects and associated impacts the associated aspects and impacts for determined criteria should be ranked. Refer to **Appendix 1** for establishing the ranking of significance.

3) The rank of the associated impacts along with knowledge of daily operations will be used to determine the significance of the associated aspect. Any aspect with a total score of 6 or higher will be considered significant. Please refer to **Appendix 2** for the significant aspects ranking list.

4) If, at any time during the year, a new process or activity is modified or added an aspect and impact analysis will be completed, all aspect and impact lists updated appropriately, and if applicable, objectives and targets updated.

SECTION 3 – Legal and Other Requirements

ABC Farms is committed to compliance with legal and other requirements that are applicable to the environmental aspects of its activities.

- The farm manager will review federal state and local environmental regulations at least annually and communicate relevant information to affected personnel.

- The farm manager is responsible for handling issues related to permitting, reporting and auditing requirements and will update **Table 1** as needed.

Table 1 - Regulatory & Other Requirements*

Permits / Requirements	Agency/Organization	Contact/Backup	Retention
General NPDES Permit Odor control Insect control Animal mortality Riparian buffers Emergency management Irrigation design	NC Division of Water Quality	Owner	Min. of 3 yrs
Operators Certification	NC Water Pollution System Operators Certification	Owner	Min. of 3 yrs
Disease Control	NC Department of Agriculture	Owner	Min. of 3 yrs
Animal Mortality Disposal	NC Department of Agriculture	Owner / Manager	Min. of 3 yrs

External Auditing

Audit Issue	Agency/Organization	Frequency	Retention
Animal Farm Inspection	DENR DWQ	Annual	Min. of 3 yrs
Operations Review	Soil & Water / DWQ	Annual	Min. of 3 yrs
EQIP contract	NRCS	Annual	N/A

Record Keeping Requirements

Records	Agency/Organization	Frequency	Retention
Soil Samples	DWQ/NCDA	1/year	Min. of 3 yrs
Waste Sampling	DWQ/NCDA	Within 60 days of spraying	Min. of 3 yrs
Lagoon Level	DWQ	Weekly	Min. of 3 yrs
Spraying	DWQ	Each Spray Event	Min. of 3 yrs
Crop Types	DWQ	1 time event	Min. of 3 yrs
Crop Yields	DWQ	Every Cut	Min. of 3 yrs
Emergency Action Plan	DWQ	1 time	Min. of 3 yrs
Maps & Lagoon Design	DWQ	1 time	Min. of 3 yrs
Animal ID program	NCDA	Each hog	Min. of 3 yrs
Mortality	Contractor	Weekly	Min. of 3 yrs
Hog shipments	Contractor	Weekly	Min. of 3 yrs
Rainfall records	DWQ	Daily	Min. of 3 yrs
Calibration records	DWQ	Bi-Annually	Min of 3 yrs
Sludge survey	DWQ	Annually	Min of 3 yrs
Stocking records	DWQ	Monthly	Min of 3 yrs
Pesticide License	NCDACS	Annually	

SECTION 4 – Objectives, Targets and Programs

ABC Farms has established and maintains documented environmental objectives and targets.

- When establishing objectives and targets the farm manager will review the significant aspects and the environmental policy and identify ways to improve the operation.

- The following information will be considered when objectives and targets are established and will be considered in reviewing and developing new objectives and targets: legal and other requirements, operational requirements, business requirements and the views of interested parties.

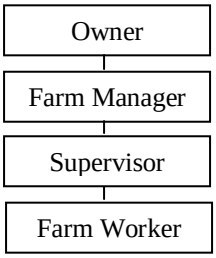
- ABC Farms will establish environmental objectives and targets as needed. Objectives and targets for the current year are listed in **Appendix 3.**

Objectives and targets will be measured and tracked and may be amended as a result of new or revised operations, activities and/or regulations.

SECTION 5 - Structure and Responsibility

ABC Farms has defined and communicated the roles and responsibilities and authority of personnel in order to facilitate effective environmental management. The organizational structure is depicted in **Table 2**.

Table 2 – Organization Structure



SECTION 6 - Training, Awareness and Competence

ABC Farms has identified training needs of all employees in relation to its environmental management system. **Appendix 4** provides a listing of the training needs and those employees that require training in the listed areas.

- The farm manager is responsible for making all existing and new employees whose work activities may create a significant impact upon the environment aware of:
    - The importance of conformance with the environmental policy, relevant procedures and with the requirements of the environmental management system;
    - The significant environmental impacts–actual or potential–of their work activities and the environmental benefits of improved personal performance;
    - Their roles and responsibilities in achieving conformance with the environmental

policy and procedures and with the requirements of the environmental management system, including emergency preparedness and response requirements;
    - The potential consequences of departure from specified operating procedures.

- The farm manager is responsible for evaluating the competence of personnel performing the tasks that can cause a significant environmental impact on the environment, on the basis of appropriate education, training and/or experience. Competence will be evaluated by observance of job performance**.**

- The farm manager will maintain training records. See **Appendix 7** for training sign in form.

SECTION 7 - Communication

ABC Farms has developed procedures for handling internal communications between the various levels and functions of the organization and external communications with outside interested parties. ABC Farms has decided to not provide a list of significant aspects and impacts to any requesting party without prior approval from owner and manager.

Communication Procedures:

Internal Communication

- The farm manager is responsible for communicating information about the EMS to affected employees.

External Communication

- ABC Farms policy statement is posted in the office.

SECTION 8 - Document Control

The EMS manual and its appendices contain all EMS related documents. The farm manager is responsible for approving all EMS documents, and ensuring that current versions of documents are available.

SECTION 9 - Operational Control

ABC Farms has identified operations and activities associated with the identified significant environmental aspects. Operational controls for the significant aspects are listed in **Appendix 5** below. The operating procedures and checklists can be found in **Appendix 6**.

SECTION 10 - Emergency Preparedness and Response

ABC Farms has established and maintains procedures for and response to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.

Emergency Preparedness and Response Procedure:

- ABC Farms has an Emergency Action Plan and Emergency Telephone Contact List in the event of an environmental or other emergency. The plan and list are located main office. The Emergency Action Plan identifies the potential for emergency situations and the corresponding response. The Emergency Action Plan also considers the prevention and mitigation of any environmental impacts associated with accidents or emergency situations.
- The Emergency Telephone Contact List, posted on the main office wall next to phone contains the names and numbers of persons to be contacted in the event of an emergency. This contact list will be reviewed at least annually by the farm manager and revised if necessary, to ensure accuracy.

In the event of fire, or other emergency, staff shall remove themselves from danger, contact the owner, and contact appropriate fire/police/rescue personnel by dialing 911.

These plans shall be reviewed on a regular or after the occurrence of an accident or emergency situation.

SECTION 11 - Monitoring and Measurement

ABC Farms has established and maintains a system for measuring and monitoring its key characteristics related to its significant impacts and objectives and targets.

- The farm manager will maintain data related to electrical consumption, propane consumption, gas consumption, volume of waste applied and average annual plant available nitrogen applied in order to evaluate the farmer's environmental performance. This data will be collected in Appendix 7.

- The farm manager will assure that the irrigation system is calibrated at least annually and that records are kept.

- The farm manager will evaluate compliance with relevant environmental legal and regulatory requirements at least annually through the assistant of soil and water representatives.

- The farm manager will review the DWQ/DSW inspection reports at least annually.

SECTION 12 - Nonconformance and Corrective and Preventive Action

ABC Farms has established and maintains a procedure to identify, investigate and correct EMS nonconformances. This procedure is as follows:

- All employees are empowered to report to the owner(s) any nonconformances relating to the EMS.

- The farm manager will ensure corrective and preventive actions are taken to identify the root cause of the nonconformance, to correct the nonconformance(s), and to reduce the likelihood of recurrence.

- The farm manager will record the nonconformance and corrective actions taken on the form in **Appendix 9**.

- If changes to written SOPs resulting from corrective actions are necessary, the farm manager will communicate revised procedures to employees.

SECTION 13 - Records Management

ABC Farms has established procedures to identify, maintain and locate environmental records. These records are kept to demonstrate conformance to the EMS and applicable regulations. Environmental records are legible, identifiable and traceable to the corresponding activity. Environmental records are stored in a way that they are retrievable and protected against damage, deterioration or loss. The retention time for environmental records is 3 years unless otherwise specified by regulation or the farm manager. All records are main office filing cabinet. See Table 1 for a listing of environmental records and their retention location.

SECTION 14 - Environmental Management System Audit

ABC Farms audits its EMS at least annually. The purpose of audits is to determine if the EMS has been properly implemented and maintained. The EMS Audit procedure is as follows:

Scope The audit will include all components of this EMS.

Frequency The audit will occur at the end of the 2nd quarter each year.

Methodology The farm manager will review EMS documents prior to the audit. The audit will consist of the farm manager reviewing the EMS and assessing the awareness of specified operating procedures by workers. Any findings or corrections needed may be documented in the corrective action form in **Appendix 9.**

Responsibility The farm manager will verify that all negative observations or nonconformances identified during the audit are effectively addressed.

SECTION 15 - Management Review

The farm manager/owner will review the performance of the EMS at least annually to ensure its continuing suitability, adequacy and effectiveness. The results of the review will be documented.

The farm manager/owner will address the possible need for changes to the policy, objectives, significant aspects and other elements of the EMS based upon audit results, corrective and preventive actions, changing circumstances, the commitment to compliance, and continual improvement.

Appendix 1

Table 1 – Significance Criteria

Category	3 – High	2 - Medium	1 – Low
Severity	Significant long term effects on the environment, and/or potentially life threatening or life altering to humans or wildlife. Impacts irreversible.	Short-term effects on the environment, and/or danger of non-life threatening health affects to human or wildlife. Impacts reversible with intervention	Little or no impact to the environment and/or no danger to the health of humans or wildlife. Impacts reversible without intervention
Frequency	Impacts occur quarterly or more frequently	Impacts occur annually	Impacts haven't occurred
Contribution	Aspect is major source of impact in question	Aspect is medium source of impact in question	Aspect is a minor source of impact in question
Control	Slight control or uncontrolled.	Average controls in place	Very effective controls in place

Appendix 2

Activity	Aspect	Impact	Ranking				
			Severity	Frequency	Contribution	Control	Total
Animal Environments	Trough flushing	Water Usage	1	3	3	1	8
Drinking Water	Nipples	Water Usage	1	3	3	1	8
Animal Environments	Fans	Non-renewable energy / natural resource	1	3	3	1	8
Waste Management	Direct/continuous flush	Odor	1	3	3	1	8
Drinking Water	Well system	Water Usage	1	3	3	1	8
Preventive Maintenance	Cooling systems	Water Usage	1	3	2	2	8
Animal Environments	Lighting (heat lamps)	Non-renewable energy / natural resource	1	3	2	2	8
Fuel	Storage	Water Pollutant	2	1	2	2	7
Fuel	Storage	Soil Contamination	2	1	2	2	7
Waste Management	Berm and bank management	Soil Contamination	2	1	3	1	7
Preventive Maintenance	Heating system	Non-renewable energy / natural resource	1	3	2	1	7
Birthing/Farrowing	Mortalities	Odor	1	3	1	1	6
Preventive Maintenance	Irrigation: Pipes	Water Pollutant	2	1	1	2	6
Preventive Maintenance	Irrigation: Hardhose traveler/center pivot	Soil Contamination	2	1	1	2	6
Preventive Maintenance	Irrigation: Hardhose traveler/center pivot	Water Pollutant	2	1	1	2	6
Preventive Maintenance	Irrigation: Equipment maintenance	Soil Contamination	2	1	1	2	6
Preventive Maintenance	Irrigation: Equipment maintenance	Water Pollutant	2	1	1	2	6
Preventive Maintenance	Drinking water flow	Water Usage	2	1	2	1	6

Preventive Maintenance	Irrigation: Risers	Water Pollutant	2	1	1	2	6
Preventive Maintenance	Irrigation: Pipes	Soil Contamination	2	1	1	2	6
Waste Management	Lagoon monitoring	Water Pollutant	2	1	2	1	6
Mortality	compost	Odor	1	2	2	1	6
Waste Management	Waste analysis	Soil Contamination	2	1	2	1	6
Preventive Maintenance	Trucks/tractors	Non-renewable energy / natural resource	1	1	3	1	6
Preventive Maintenance	Foggers	Water Usage	1	3	1	1	6
Sprayfield Management	Soil testing	Soil Contamination	2	1	2	1	6
Sprayfield Management	Soil testing	Water Pollutant	2	1	2	1	6
Sprayfield Management	Raking	Non-renewable energy / natural resource	1	2	2	1	6
Preventive Maintenance	Irrigation: Sprinklers	Soil Contamination	2	1	2	1	6
Preventive Maintenance	Irrigation: Sprinklers	Water Pollutant	2	1	2	1	6
Waste Management	Waste analysis	Water Pollutant	2	1	2	1	6
General Cleaning	Power-washing equipment	Water Usage	1	3	1	1	6
Sprayfield Management	Hay baling	Soil Contamination	1	1	2	2	6
Sprayfield Management	Hay baling	Water Pollutant	1	1	2	2	6
General Cleaning	Water use	Water Usage	1	3	1	1	6
Drinking Water	Well system	Non-renewable energy / natural resource	1	3	1	1	6
Mortality	Catastrophic loss	Solid waste	2	1	1	1	5
Waste Management	Lagoon monitoring	Soil Contamination	2	1	1	1	5
Waste Management	Berm and bank management	Water Pollutant	2	1	1	1	5
Animal Removal	Aisles, floors, walls, etc. washed	Water Usage	1	1	2	1	5
Preventive Maintenance	Irrigation: Risers	Soil Contamination	2	1	1	1	5
Facility Management	Roof repair	Recyclables (mortality)	1	2	1	1	5
Preventive Maintenance	Waste management pipes/troughs	Soil Contamination	1	2	1	1	5
Waste Management	Pumps	Non-renewable energy / natural resource	1	1	2	1	5
Health Care	Packaging waste	Solid waste	1	1	2	1	5
Deliveries/Supplies	Fuel	Soil Contamination	1	1	2	1	5
Birthing/Farrowing	Mortalities	Recyclables	1	1	2	1	5
Feed and Feeders	Molded/expired feed	Recyclables	1	2	1	1	5
Preventive Maintenance	Generator operation and testing	Recyclables (mortality)	1	1	1	1	4
Fuel	Pumping	Soil Contamination	1	1	1	1	4
Biosecurity	Soaps, etc.	Solid waste	1	1	1	1	4
Biosecurity	Washing machine	Water Usage	1	1	1	1	4

Biosecurity	Bird control (fencing)	Solid waste	1	1	1	1	4
Health Care	Sharps	Solid waste	1	1	1	1	4
Animal Removal	Empty feed bins	Water Pollutant	1	1	1	1	4
Animal Removal	Empty feed bins	Water Usage	1	1	1	1	4
Health Care	Identification	Solid waste	1	1	1	1	4
Health Care	Tail/Ear snip	Recyclables	1	1	1	1	4
Health Care	Glass bottles	Solid waste	1	1	1	1	4
Health Care	Medications	Solid waste	1	1	1	1	4
Health Care	Castration	Recyclables	1	1	1	1	4
Health Care	Ear tags	Solid waste	1	1	1	1	4
Birthing/Farrowing	Gloves	Solid waste	1	1	1	1	4
Waste Management	Waste storage/flush tank(s)	Soil Contamination	1	1	1	1	4
Waste Management	Waste storage/flush tank(s)	Water Pollutant	1	1	1	1	4
Waste Management	Berm and bank management	Non-renewable energy / natural resource	1	1	1	1	4
Waste Management	Direct/continuous flush	Non-renewable energy / natural resource	1	1	1	1	4
Waste Management	Direct/continuous flush	Soil Contamination	1	1	1	1	4
Waste Management	Traditional lagoon	Soil Contamination	1	1	1	1	4
Waste Management	Traditional lagoon	Water Pollutant	1	1	1	1	4
Waste Management	Pipes	Water Pollutant	1	1	1	1	4
Animal Environments	Cool cells	Water Usage	1	1	1	1	4
Animal Environments	Curtains	Non-renewable energy / natural resource	1	1	1	1	4
Animal Environments	Curtains	Solid waste	1	1	1	1	4
Animal Environments	Dripper	Non-renewable energy / natural resource	1	1	1	1	4
Animal Environments	Dripper	Water Usage	1	1	1	1	4
Worker Environment	Cups, paper products	Solid waste	1	1	1	1	4
Worker Environment	Showering	Water Usage	1	1	1	1	4
Worker Environment	Restrooms	Water Pollutant	1	1	1	1	4
Worker Environment	Restrooms	Water Usage	1	1	1	1	4
Facility Management	Herbicide/Pesticide	Water Pollutant	1	1	1	1	4
Facility Management	Stormwater runoff	Water Pollutant	1	1	1	1	4
Facility Management	Road maintenance	Non-renewable energy / natural resource	1	1	1	1	4
Facility Management	Road maintenance	Dust	1	1	1	1	4
Facility Management	House repair	Solid waste	1	1	1	1	4
Facility Management	Clippings	Recyclables	1	1	1	1	4
Facility Management	Painting	Soil Contamination	1	1	1	1	4
Facility Management	Painting	Solid waste	1	1	1	1	4
Facility Management	Mowing	Non-renewable energy / natural resource	1	1	1	1	4
Sprayfield Management	Compacting	Water Pollutant	1	1	1	1	4

Sprayfield Management	Seeding	Non-renewable energy / natural resource	1	1	1	1	4
Sprayfield Management	Seeding	Water Pollutant	1	1	1	1	4
Sprayfield Management	Grazing	Soil Contamination	1	1	1	1	4
Sprayfield Management	Grazing	Water Pollutant	1	1	1	1	4
Sprayfield Management	Mowing	Non-renewable energy / natural resource	1	1	1	1	4
Office/Administrative	Electronic equipment	Non-renewable energy / natural resource	1	1	1	1	4
Artificial Insemination	Insemination tubes	Solid waste	1	1	1	1	4
Preventive Maintenance	Generator operation and testing	Non-renewable energy / natural resource	1	1	1	1	4
Preventive Maintenance	Waste management pipes/troughs	Water Pollutant	1	1	1	1	4
Preventive Maintenance	House repair/upkeep	Solid waste	1	1	1	1	4
Preventive Maintenance	Irrigation: Motors	Non-renewable energy / natural resource	1	1	1	1	4
Preventive Maintenance	Irrigation: Motors	Soil Contamination	1	1	1	1	4
Preventive Maintenance	Heating system	Recyclables	1	1	1	1	4
Preventive Maintenance	Septic system	Soil Contamination	1	1	1	1	4
Preventive Maintenance	Septic system	Water Pollutant	1	1	1	1	4
Preventive Maintenance	Used tires	Recyclables	1	1	1	1	4
Preventive Maintenance	Feeders	Recyclables	1	1	1	1	4
Preventive Maintenance	Motors	Non-renewable energy / natural resource	1	1	1	1	4
Preventive Maintenance	Motors	Soil Contamination	1	1	1	1	4
Preventive Maintenance	Belts	Solid waste	1	1	1	1	4
Preventive Maintenance	Fans	Solid waste	1	1	1	1	4
Preventive Maintenance	Fluids management	Soil Contamination	1	1	1	1	4
Preventive Maintenance	Fluids management	Water Pollutant	1	1	1	1	4
Preventive Maintenance	Freshwater pipes	Water Usage	1	1	1	1	4
Preventive Maintenance	Walkway screens	Recyclables	1	1	1	1	4

Activity	Aspect	Impact	Ranking				
			Severity	Frequency	Contribution	Control	Total
Preventive Maintenance	Trucks/tractors	Air Pollutants	1	1	1	1	4
Preventive Maintenance	Oil/air filters	Solid waste	1	1	1	1	4
Sprayfield Management	Supplemental nutrients	Water Pollutant	1	1	1	1	4
Sprayfield Management	Weed control	Soil Contamination	1	1	1	1	4
Sprayfield Management	Weed control	Water Pollutant	1	1	1	1	4
Sprayfield Management	Hay removal	Non-renewable energy / natural resource	1	1	1	1	4
Sprayfield Management	Hay removal	Recyclables	1	1	1	1	4
Sprayfield Management	Herbicides	Soil Contamination	1	1	1	1	4
Sprayfield Management	Herbicides	Water Pollutant	1	1	1	1	4
Sprayfield Management	Hay baling	Non-renewable energy / natural resource	1	1	1	1	4
Office/Administrative	Electronic equipment	Solid waste	1	1	1	1	4
Office/Administrative	Packaging	Solid waste	1	1	1	1	4
Office/Administrative	Furniture	Solid waste	1	1	1	1	4
Office/Administrative	Supplies	Solid waste	1	1	1	1	4
Office/Administrative	Toner	Solid waste	1	1	1	1	4
Office/Administrative	Paper	Solid waste	1	1	1	1	4
Office/Administrative	HVAC	Non-renewable energy / natural resource	1	1	1	1	4
Facility Management	Surface water runoff	Water Pollutant	1	1	1	1	4
Facility Management	Dust	Dust	1	1	1	1	4
Deliveries/Supplies	Receiving Animals: Transportation	Non-renewable energy / natural resource	1	1	1	1	4
Deliveries/Supplies	Feed	Solid waste	1	1	1	1	4
Animal Environments	Incandescent lamp replacement/disposal	Solid waste	1	1	1	1	4
Animal Environments	Fogger/mister	Water Usage	1	1	1	1	4
Animal Environments	Cool cells	Non-renewable energy / natural resource	1	1	1	1	4
Animal Environments	Cool cells	Water Pollutant	1	1	1	1	4
Worker Environment	Laundry	Water Pollutant	1	1	1	1	4
Worker Environment	Laundry	Water Usage	1	1	1	1	4
Birthing/Farrowing	Afterbirth	Water Pollutant	1	1	1	1	4
Birthing/Farrowing	Afterbirth	Recyclables	1	1	1	1	4
Birthing/Farrowing	Afterbirth	Odor	1	1	1	1	4
Birthing/Farrowing	Needles	Solid waste	1	1	1	1	4
Birthing/Farrowing	Bottles	Solid waste	1	1	1	1	4

Activity	Aspect	Impact	Ranking				
			Severity	Frequency	Contribution	Control	Total
General Cleaning	Cleaning brooms, shovels, buckets, rags	Solid waste	1	1	1	1	4
General Cleaning	Power-washing equipment	Non-renewable energy / natural resource	1	1	1	1	4
General Cleaning	Wastewater discharge	Soil Contamination	1	1	1	1	4
General Cleaning	Cleaning products	Water Pollutant	1	1	1	1	4
General Cleaning	Water heater	Non-renewable energy / natural resource	1	1	1	1	4
General Cleaning	Sweeping	Water Pollutant	1	1	1	1	4
Waste Management	Pumps	Soil Contamination	1	1	1	1	4
Waste Management	Pumps	Water Pollutant	1	1	1	1	4
Waste Management	Pipes	Soil Contamination	1	1	1	1	4
Feed and Feeders	Mechanized feeder	Water Pollutant	1	1	1	1	4
Feed and Feeders	Manual feeder	Water Pollutant	1	1	1	1	4
Feed and Feeders	Spills	Recyclables	1	1	1	1	4
Drinking Water	Nipples	Recyclables	1	1	1	1	4
Drinking Water	Pipes	Water Usage	1	1	1	1	4
Drinking Water	Pipes	Solid waste	1	1	1	1	4
Animal Removal	Aisles, floors, walls, etc. washed	Water Pollutant	1	1	1	1	4
Biosecurity	Stray animal/rodent control	Water Pollutant	1	1	1	1	4
Biosecurity	Washing machine	Water Pollutant	1	1	1	1	4
Biosecurity	Clothing, boots	Solid waste	1	1	1	1	4
Biosecurity	Showering	Water Usage	1	1	1	1	4
Fuel	Spillage	Soil Contamination	1	1	1	1	4
Mortality	compost	Recyclables	1	1	1	1	4
Mortality	Buckets/bins	Solid waste	1	1	1	1	4
Artificial Insemination	Insemination bags	Solid waste	1	1	1	1	4

Appendix 3

Objectives and Targets

Objective	Replace old incinerator with a more environmental friendly mortality composter
Target	Replace incinerator with a mortality composter by the end of 2010.
Action Steps	**1.** Work with local SWC district and NRCS representatives to obtain cost sharing and design information **2.** Purchase composter **3.** Install composter
Responsible Staff	Joe Johnson (Farm Manager)-primary Jimmy Smith (employee) -secondary
Timeframe for Completion	December 2010
Monitoring and Measuring	When job is complete
Evaluation Summary	
Was objective and target achieved? If yes, what are the results of the achieved objective and target? If no, please describe why the objective and target were not achieved.	
Will the objective and target remain in the EMS? If yes, what actions will be taken to ensure the goals are met? If not, describe why the objective and target has been removed from the EMS.	

Appendix 4
Training Requirements

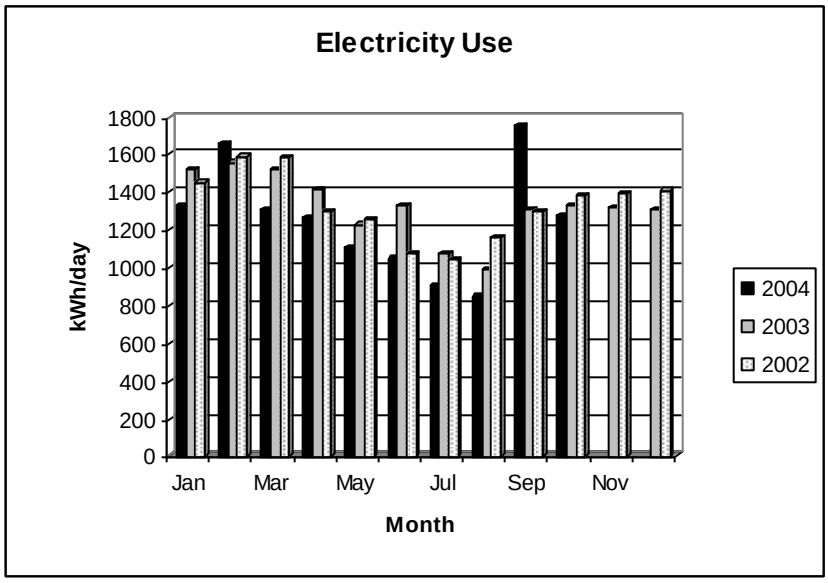
Documentation		Owner	Manager		Supervisor		Workers	
Document	Location		Required	Date	Required	Date	Required	Date
EMS Manual	Managers Office	Trainer	✓					
Aspect and Impact Ranking	Managers Office	Trainer	✓					
Maintenance Checklist	Managers Office	Trainer	Trainer		✓		✓	
Farrowing House Checklist	Managers Office	Trainer	Trainer		✓		✓	
Breeding House Checklist	Managers Office	Trainer	Trainer		✓		✓	
Emergency Response Plan	Managers Office	Trainer	Trainer		✓		✓	

Appendix 5

Significant Aspect	Impact	Operational Control
Trough flushing	Water Usage	Maintenance, Farrowing and Breeding House Checklists
Nipples	Water Usage	Farrowing and Breeding House Checklists
Fans	Non-renewable energy / natural resource	Maintenance, Farrowing and Breeding House Checklists
Direct/continuous flush	Odor	Maintenance, Farrowing and Breeding House Checklists
Well system	Water Usage	Maintenance Checklist
Cooling systems	Water Usage	Maintenance, Farrowing and Breeding House Checklists
Lighting (heat lamps)	Non-renewable energy / natural resource	Maintenance, Farrowing and Breeding House Checklists

Appendix 6

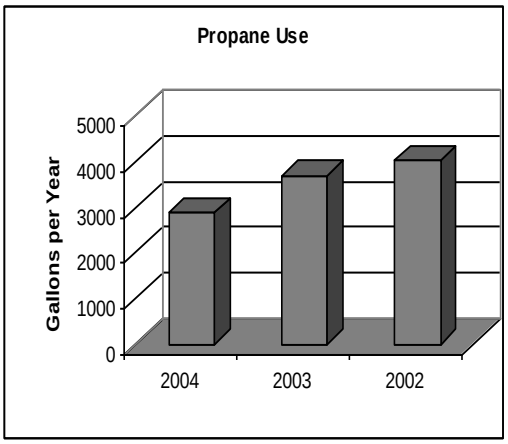
Monitoring and Measuring of Key Characteristics



Electrical Consumption

Month	2005	2004	2003	2002
Jan		1326	1517	1450
Feb		1658	1557	1589
Mar		1311	1523	1585
Apr		1264	1416	1299
May		1107	1228	1257
Jun		1048	1331	1072
Jul		908	1071	1040
Aug		846	991	1161
Sep		1749	1307	1299
Oct		1272	1326	1381
Nov			1317	1389
Dec			1308	1409
		1317.6	1376.6	1379.4

Propane Consumption

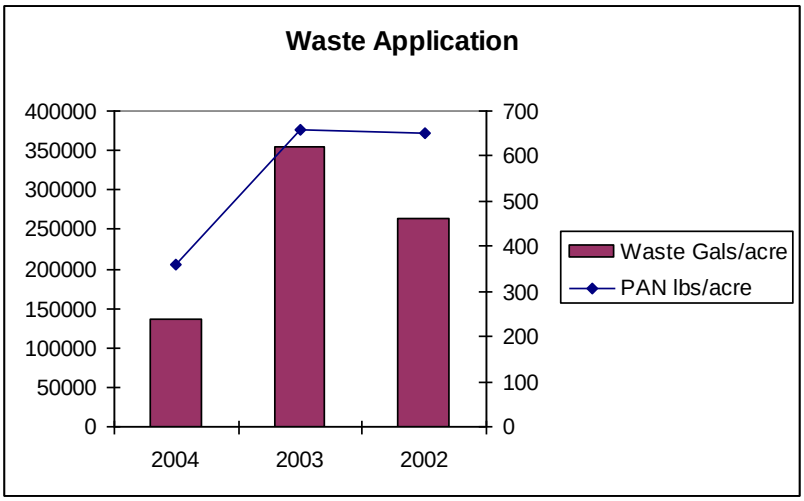


Year	Gas, gals
2005	
2004-July	2870
2003	3688
2002	3710

Appendix III

Monitoring and Measuring of Key Characteristics

Waste Application



Year	Waste Gals/acre	PAN lbs/acre
2005		
2004-Oct.	136744	361
2003	354960	658
2002	263988	650

Soil Sampling

Year	N, Average	P, Average
2005		
2004	622	86
2003	457	81
2002	602	173

Appendix 7

ABC Farms Training Sign-in Sheet

Procedure (s) to be trained on:

Trainer:

Date:

Trainees:

Name	Signature	Date

Appendix 8
Operational Controls

Farrowing House Checklist (English)

The following checklist should be used by Porter Farms employees to:

- ✓ Achieve desired production rates
- ✓ Assure healthy living environment and minimize mortality
- ✓ Conserve use of water, electricity, and fuel
- ✓ Reduce water and pollutant loading in the lagoon

1. Daily Activities (use footbaths/scrub boots entering and leaving the house)

    1.1. Check Room Temperature

        1.1.1. Record room temperature on farrowing house door chart. If outside the listed ranges use room heater for low temp and check ventilation for high temps - see farm manager:

        - New born to 3-4 days range 70-72 ^{o}F
        - 3-4 days range 69-71 ^{o}F
        - 8-17 days range 68-70 ^{o}F

    1.2. Check Ventilation

        1.2.1. Make sure that at least one fan is operating (fresh air should come on within 10 minutes) and assess whether too many fans are operating (low room temp)

    1.3. Check Pits

        1.3.1. Check at lower end for blockage of drain or strong ammonia odor

            1.3.1.1. If there is blockage/odor then use hose to flush and record event and area on meeting room board

        1.3.2. Pits should flush 6 times per day

    1.4. Check overhead lines

        1.4.1. Assure the water lines and feed lines are not broken or leaking. If so mark and record on main board

1.5. Check Individual crates (move from youngest to oldest)

1.5.1. Feed (three times per day)

1.5.1.1. Clean feeders and stand sows up for feeding

1.5.1.1.1. If not feeding, assess reasons including no water (check nipple), fever (check sow temp if over 103.5oF), constipation (hard pebbly manure), record findings and lack of appetite on cards.

1.5.1.2. Track pounds fed on cards.

1.5.1.3. When you finish all crates turn on feeder to fill bins.

1.5.1.4. Check each nipple for proper water flow or leakage. Replace nipple if needed.

1.5.2. Farrowing

1.5.2.1. Check for signs of farrowing including not getting up to feed, increased respiration, nervousness, dilation of vulva, stream of milk from teats, discharge from vulva. Record info on card.

1.5.2.2. For Farrowing sows

1.5.2.2.1. Clean behind sow before due and right after farrowing

1.5.2.2.2. Place a rump bar (if not too big) to keep them from gate.

1.5.2.2.3. Assure sow is arranged properly for drip cool which should come on at 85 ^{o}F

1.5.2.2.4. Add heat lamp in rear for piglets

1.5.2.2.5. Use creep mat in wintertime for piglets (remove after five days)

1.5.2.2.6. Check for birthing problems (low birth count 2 or 3, real red skin color, or agitation) and check inside with glove for stuck piglet. Perform proper hygiene steps and effort to save piglet.

1.5.3. Piglets

1.5.3.1. Check for mortality and record on card

1.5.3.2. Check for signs of discomfort (spread out – may be hot, piled together may be cold) adjust heat lamp as necessary. Use thermometer gun if needed.

1.5.3.3. Check out litter sizes and equalize as needed. Make decision regarding fall behind and trouble piglets by 3 days

1.5.3.4. Process pigs per company requirements

1.5.3.4.1. At 2-3 days get iron shots, docks tails, ear tattoo, etc.

1.5.3.4.2. At 5 to six days castrate pigs and other as required.

1.5.3.4.3. Wash and disinfect processing and castrating carts

1.5.4. Vaccinate sick pigs as required

2. Room prep

2.1. Monday and Thursday

2.1.1. Scrap manure (dry clean-up)

2.1.2. Unplug all electrical equipment and remove heat lamps

2.1.3. Clean manure pits

2.1.4. Turn on sprinklers for 15 minutes

2.1.5. Spray degreaser with pressure sprayer

2.1.6. Pressure wash with hot water

2.1.7. Add high volume low pressure nozzles and then spray disinfectant

2.2. Put cards up in rooms newly filled including feed car, sow card, farrowing door chart, sow and piglet treatment records

Farrowing House Checklist (Spanish)

La siguiente lista de verificaciones debe ser usada por empleados de Porter Farms para

- ✓ Conseguir las deseadas tasas de producción
- ✓ Asegurar un ambiente vital sano y minimizar la mortalidad
- ✓ Conservar el uso de agua, electricidad y combustible
- ✓ Reducir la carga de agua y contaminante en la laguna

1. Actividades diarias (use los lavabos y limpiabotas al entrar y salir de la casa)
    1.1 Compruebe la temperatura ambiente
        1.1.1 Anote la temperatura en el gráfico en la puerta del criadero. Si la temperatura está fuera de los límites mencionados, use calentadores para temperaturas demasiado bajas y compruebe la ventilación para temperaturas demasiado altas—consulte el gerente
            - Recién nacidos hasta 3-4 días límite de 70-72ºF
            - 3-4 días límite de 69-71ºF
            - 8-17 días límite de 68-70ºF
    1.2 Compruebe la ventilación
        1.2.1 Asegure que como mínimo un ventilador esté en funcionamiento (aire fresco debe salir en los primeros 10 minutos) y decida si demasiados ventiladores están en funcionamiento (temperatura ambiente demasiado baja)
    1.3 Compruebe las fosas
        1.3.1 Compruebe que el bajante en la parte baja no esté atascado o huela a amoniaco
            1.3.1.1 Si está atascado o huele a amoniaco use la manguera para limpiar el bajante y anote el incidente y la zona donde ocurrió en el gráfico en la puerta de la sala de reuniones
        1.3.2 Las fosas deben ser limpiadas 6 veces al día
    1.4 Compruebe las tuberías de arriba
        1.4.1 Asegure que las tuberías de agua y pienso no estén rotas o tengan escapes. Si es así, anótelo en el gráfico principal

1.5 Compruebe los cajones (ordene de más joven a más viejo)

1.5.1 Alimente (tres veces al día)

1.5.1.1 Limpie comederos y levante las cochinas para alimentarlas

1.5.1.1.1 Si no comen, determine las razones incluyendo la falta de agua (compruebe tetillas), fiebre (compruebe que temperatura del cochino no esté por encima de 103.5ºF), estreñimiento (heces duras y en bolitas), anote resultados y falta de apetito en las tarjetas

1.5.1.2 Anote libras de pienso administrado en las tarjetas

1.5.1.3 Cuando termine con todos los cajones encienda comedero para rellenar compartimiento

1.5.1.4 Compruebe que cada tetilla tenga la correcta cantidad de agua y que no tenga escapes. Sustituya la tetilla si es necesario

1.5.2 Partos

1.5.2.1 Compruebe señales de parto, por ejemplo: el animal que no se levanta, respiración aumentada, animal nervioso, dilatación de la vulva, segregación de leche por los pezones, segregación de flujo por la vulva. Anote información en la tarjeta.

1.5.2.2 Para las cochinas parturientas

1.5.2.2.1 Limpiar detrás de la cochina antes y depues del parto

1.5.2.2.2 Coloque una barra (sino es muy grande) para que no vayan a la salida.

1.5.2.2.3 Asegure que la cochina esté colocada correctamente para el goteo fresco que debe salir a 85ºF

1.5.2.2.4 Coloque lámpara de calor detrás para las crías

1.5.2.2.5 Utilice estera arrastradera en invierno para las crías (quítela al quinto día)

1.5.2.2.6 Compruebe problemas de nacimiento (pocas crías, 2 o 3, piel de color rojo, o agitación) y compruebe dentro de la madre con guantes por si alguna cría se quedó atascada. Realice pasos apropiados de higiene para salvar la cría.

1.5.3 Crías

1.5.3.1 Compruebe la tasa de mortalidad y anote en la tarjeta

1.5.3.2 Compruebe señales de malestar (animales esparcidos—tal vez haga demasiado calor, animales muy juntos—tal vez haga demasiado frio) ajuste las lámparas de calor si es necesario. Use el termómetro de pistola si es necesario.

1.5.3.3 Cuente el número de crías por cada cochina y repártalos según sea necesario. Tome decisiones acerca de crías problemáticas y débiles antes del tercer día.

1.5.3.4 Procesar los cerdos según requisitos de la empresa.

1.5.3.4.1 Para el día 2-3 de las inyecciones de hierro, córtele la cola, ponerle los tatuajes (sellos)

1.5.3.4.2 Para el día 5-6 castrar los cerdos y otros si lo necesitan

1.5.3.4.3 Lave y desinfecte los carros de procesos y castración.

1.5.4 Vacune las crías enfermas si lo necesitan

2 Preparación de las salas

2.1 Lunes y Martes

2.1.1 Deseche estiércol (limpiado en seco)

2.1.2 Desenchufe todos los aparatos eléctricos y quite las lámparas de calor

2.1.3 Limpie las fosas de estiércol

2.1.4 Encienda aspersores durante 15 minutos

2.1.5 Eche desengrasante con manguera de presión

2.1.6 Lave con manguera de presión con agua caliente

2.1.7 Coloque una boquilla de alto volumen y poca presión y luego eche desinfectante

2.2 Ponga tarjetas de alimentación, tarjeta de parto, tarjeta de cochina y tarjeta de historial de tratamiento de cría en salas nuevamente ocupadas.

Traducido por Rafael Vazquez-Burney (910) 555-5555

Breeding House Checklist (English)

The following checklist should be used by Porter Farms employees to:

- ✓ Achieve desired production rates
- ✓ Assure healthy living environment and minimize mortality
- ✓ Conserve use of water, electricity, and fuel
- ✓ Reduce water and pollutant loading in the lagoon

1. Daily Activities (use footbaths/scrub boots entering and leaving the house)

1.1. Check Room Temperature

1.1.1. Temp should be around 65 ^{o}F year round. If excessively outside the list temp use room heater for low temp and check ventilation for high temps and see farm manager.

1.2. Check Ventilation

1.2.1. Make sure that at least one fan is operating (should come on within 10 minutes) and assess whether too many fans are operating (low room temp)

1.2.2. Check cool cells which should be running when temperatures exceed 84 ^{o}F. Make sure cool cell pad is being thoroughly soaked.

1.3. Check Pits

1.3.1. Check at lower end for blockage of drain or strong ammonia odor

1.3.1.1.If there is blockage/odor then use hose to flush and record event and area on meeting room board

1.3.2. Pits should flush 3 times per day

1.4. Check water and feed lines

1.4.1. Assure the water lines and feed lines are not broken or leaking. If so mark and record on main board

1.4.2. Feed (two times per day)

1.4.2.1.Stand sows up for feeding

1.4.2.1.1. If not feeding, assess reasons including no water (check nipple), fever (check sow temp if over 103.5oF), constipation (hard pebbly manure), record findings and lack of appetite on cards.

1.4.2.2.Treat sick cows

1.4.3. Water

1.4.3.1.Check each nipple for proper water flow or leakage. Replace nipple if needed.

1.4.4. Health

1.4.4.1.Check for signs of heat (clear discharge, legs locking when pressure applied, interest in other animals, etc.) and move to breeding area if in heat

1.4.4.2.Check for signs of infection (heavy white discharge)

1.4.4.3.Check for signs of abortions (embryos)

1.4.4.4.Check for signs of scours

1.4.4.5.Remove dead sows and other mortality

1.4.4.6.Record information on sow card and breeding card.

1.4.4.7.Vaccinate sick sows as required

2. Weekly

2.1. Scrap manure (dry clean-up) then wash and disinfect empty crates, aisles floors, cutting boards, slats and troughs

2.2. Put cards up in rooms newly filled including feed card, sow card, breeding door chart, sow treatment records

Breeding House Checklist (Spanish)

La siguiente lista de verificación debe ser utilizada por los empleados de Porter Farms para:

- ✓ Lograr las deseadas tasas de producción
- ✓ Asegurar un ambiente vital sano y minimizar la moralidad
- ✓ Conservar el uso de agua, electricidad y combustible
- ✓ Reducir la carga de agua y contaminante en la laguna

1. Actividades Diarias (use los lavabos y limpiabotas al entrar y salir de la casa)
   - 1.1 Compruebe la temperatura ambiente
     - 1.1.1 La temperatura debe estar cerca de 65 ^{o}F todo el año. Si la temperatura es muy diferente, use el calentador si es demasiado fría o compruebe que la ventilación es correcta si demasiado caliente, y consulte con el gerente.
   - 1.2 Compruebe la ventilación
     - 1.2.1 Asegure que como mínimo un ventilador funciona (debe encenderse en los primeros 10 minutos) y decida si demasiados ventiladores están en funcionamiento (temperatura ambiente demasiado baja)
     - 1.2.2 Compruebe que los enfriadores funcionen cuando la temperatura es superior a los 84 ^{o}F. Asegure que la almohadilla del enfriador se esté empapando completamente.
   - 1.3 Compruebe las fosas
     - 1.3.1 Compruebe que el bajante en la parte baja no esté atascado o huela a amoniaco
       - 1.3.1.1 Si está atascado o huele a amoniaco use la manguera para limpiar el bajante y anote el incidente y la zona donde ocurrió en el gráfico en la puerta de la sala de reuniones
     - 1.3.2 Las fosas deben de ser limpiadas 3 veces al día.

1.4 Compruebe las tuberías de agua y alimento o comide

1.4.1 Asegure que las tuberías de agua y alimento o comide no estén rotas o tengan escapes. Si es así, anótelo en el gráfico principal

1.4.2 Alimente (dos veces diarias)

1.4.2.1 Levante las cochinas para alimentarlas

1.4.2.1.1 Si no comen, determine las razones incluyendo la falta de agua (compruebe tetillas), fiebre (compruebe que temperatura del cochino no esté por encima de 103.5AF), estreñimiento (heces duras y en bolitas), anote resultados y falta de apetito en las tarjetas.

1.4.2.2 Trate las cochinas enfermas

1.4.3 Agua

1.4.3.1 Compruebe que cada tetilla dé la correcta cantidad de agua y que no tenga escapes. Sustituya la tetilla si es necesario.

1.4.4 Salud

1.4.4.1 Compruebe que no haya señales de celo (descarga transparente, patas agarrotadas al aplicar presión, interés en otros animales, etc.) y mude animal a la zona de cría si está en celo

1.4.4.2 Compruebe que no haya señales de infección (gran cantidad de descarga blanca)

1.4.4.3 Compruebe que no haya señales de aborto (embriones)

1.4.4.4 Compruebe que no haya señales de diarrea

1.4.4.5 Saque animales muertos

1.4.4.6 Anote infamación en tarjetas de cochinos y de cría

1.4.4.7 Vacune cochinas enfermas si es necesario

2 Semanal

2.1 Deseche estiércol (lavado en seco) luego lave y desinfecte cajones vacíos, suelos de los pasillos, tablas de cortar, listones y abrevaderos

2.2 Poner tarjetas de alimento, cochinos, cría, y tratamiento en las salas nuevamente ocupadas.

Traducido por Rafael Vazquez-Burney (910) 555-5555

Maintenance Checklist (English)

The following checklist should be used by Porter Farms employees to:

- ✓ Achieve desired production rates
- ✓ Assure healthy living environment and minimize mortality
- ✓ Conserve use of water, electricity, and fuel
- ✓ Reduce water and pollutant loading in the lagoon

1. Daily Activities
   - 1.1. Check Flush Tanks
     - 1.1.1. Check tanks first thing in morning and last thing in evening to assure proper operation and no leakage
     - 1.1.2. Tanks should be set to flush at least every 2 hours.
   - 1.2. Check water timers (Trough watering, drippers, etc.)
   - 1.3. Check drain line piping for leaks
2. Weekly
   - 2.1. Check drop curtains using curtain drop thermostat (in summer)
   - 2.2. Check fan override thermostats
   - 2.3. Check fan belt tension
   - 2.4. Check cool cell pumps, tanks and controls during warm months
   - 2.5. Perform weekly emergency generator checklist items
3. Monthly
   - 3.1. Check air inlet baffle settings
   - 3.2. Check and set override thermostat controls
   - 3.3. Remove build-up from plungers and piping in bottom of flush tanks

Appendix 9

Date	Authors Initial	What was the Problem? (root cause)	How we fixed it	Date Corrected
1-22-06	JF	Leaking joint on spray irrigation system	Replaced sill and tightened joint closure. Tested new sill and no leaks.	1-24-06 (JF)