Michigan Manure

Hauler Certification Program

Environmental Management Systems Plan

for

[Firm name]

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acknowledgements

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# How to use this workbook

## Purpose

This workbook will help you develop an Environmental Management Systems (EMS) plan to achieve Level 3 Certification for the Michigan Manure Hauler Certification Program. The goal is to help you identify risks and challenges that could be reduced by implementing standardized training procedures and documentation resulting in improved profitability and diminished environmental risk. An EMS plan does not ignore business management. As a good citizen, you should be concerned how your firm affects others. You are the “face” of your client on the road and in the field. As a good businessperson, you are also concerned about productivity, input costs, and other costs. In a world of ever-shrinking margins, agriculture simply cannot afford pollution or its liability. Incorporating environmental stewardship into profitable business management is the goal of an EMS plan.

## Procedure

An EMS plan can be developed by the entire staff, just the crew supervisors, or just key personnel. Once developed, the document should be reviewed on a regular basis (at least annually) with all employees for their review, comment, and signature. Employees need to see the commitment of management to the plan (verbally and in action year-round) and buy into the plan themselves.

## Instructions

An EMS plan has eleven sections – Scope, Environmental Issues, Environmental Policy Statement, Standard Operating Procedures, EMS Plan Documentation, Employee Training, Communications Plan, Document Control, Management Review, Signature Page, and Appendix. Instructions for completing each section are provided in this workbook. Use the workbook as a template to develop your EMS plan. Type in the required information for each section. Be as thorough and clear as possible. Delete the instructions for each section so they contain just your information. When all sections are completed you will have an EMS plan.

## EMS Plan Development Assistance

Questions about and assistance with developing an EMS Plan can be directed to Michigan State University Extension educators Erica Rogers (814-441-1356 or roger392@msu.edu), Sarah Fronczak (517-212-1043 or froncza3@msu.edu), or Charles Gould (616-994-4547 or gouldm@msu.edu).

# Scope

Your EMS plan can be very specific (only on worksite items) or very broad (worksite, shop, office). At a minimum, an EMS plan that meets Level 3 certification standards must include equipment transport to work site(s), equipment setup and startup, agitation, pumping/transportation, application, shutdown, cleanup procedures, spill response, and biosecurity. Additional items that you plan to include should be listed here:

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# Environmental Issues

Land application of manure presents a unique set of environmental challenges and circumstances. This exercise will assist you in thinking through environmental issues associated with the equipment you operate and the conditions you are presented with when applying manure. Some examples of potential environmental issues associated with equipment and operating conditions include:

* Equipment tip over
* Vehicle accident caused by employee
* Manure spilled on the road
* Dragline failure
* Mechanical failure
* Splash over, truck too full/overflow at filling site
* Operator error
* Groundwater contamination
* Spreading within setbacks
* Drain tile
* Precipitation and snow melt

For example, think of the potential environmental risk associated with manure agitation. The risk of blowing out the bottom of a concrete manure storage structure is low as compared to blowing out the bottom of an earthen manure storage structure located in a high water table area or over a Karst formation. Another example is the risk associated with putting a hose through a culvert. If a 6” hose is threaded through a 10” hose in the culvert, the risk is low that there will be a leak because the 6” hose is protected from abrasion by the 10” hose. If there is no protection from abrasion the risk is high that vibration or hose movement will damage the hose, causing a leak or a weak spot in the hose.

The issues you select will be used to focus your EMS plan on efforts most likely to address them. It is not acceptable for a business owner to just say they “know” what environmental issues are significant – you must have a system for deciding what they are and how to address them. Considering the scope of your EMS plan can help you identify potential environmental impacts of your work. Make a list of environmental issues in the table below. Add as many rows as you need to capture the issues you identify. Next, rank each issue as either a High Risk, Moderate Risk, or Low Risk. You might list the same item as high risk in some situations, but medium in others. Ranking based on risk will guide you in developing Standard Operating Procedures to address those risks.

|  |  |
| --- | --- |
| **Environmental Issues** | **Risk Level (High, Moderate, or Low)** |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |
| 5. |  |
| 6. |  |
| 7.  |  |
| 8. |  |
| 9. |  |
| 10. |  |

# Environmental Policy Statement

The environmental policy statement establishes the stewardship commitments important to your firm. Future manure application activities will be evaluated by asking, "What does our policy statement say we will do?" Your policy statement needs to include a brief description of your operation and commitments to regulatory compliance, pollution prevention, and continual improvement. Continual improvement is vital and is often overlooked - it means that even if you are good you keep on trying to get better. While you could write a policy statement using generic statements like “We are committed to preventing pollution,” your policy will be more meaningful if you personalize it. Your policy statement should reflect your unique beliefs and intentions. Example commitment statements are as follows:

**General stewardship commitments**

We are committed to…

“Being a profitable and responsible operation that provides jobs and contributes in positive ways to our local community.”

“Being recognized as a leader in environmental management by our clientele.”

“Recognizing that our firm exists within a community and our activities can affect the quality of life for others in that community.”

“Safeguarding the health and safety of those who work for our firm.”

**Regulatory compliance commitments**

We are committed to…

“Remaining informed and in compliance with all pertinent environmental regulations.”

“Meeting or exceeding environmental regulations that apply to our operation and our client’s operation.”

**Pollution prevention commitments**

We are committed to…

“Preventing discharge of potentially harmful materials into the soil, water, air, or other resources.”

“Properly managing manure as a valuable source of plant nutrients, desirable soil amendment,
and a means for recycling and sequestering carbon in the soil.”

“Minimizing soil erosion through the best available management practices.”

**Continual improvement commitments**

We are committed to…

“Regular reviews of environmental performance and identifying solutions for improvement.”

“Developing or maintaining records that provide useful data for tracking environmental performance and profitability.”

“Seeking opportunities to increase my environmental knowledge and awareness.”

“Fully training and mentoring all new employees”

Now, it’s your turn. Make a list of original, personalized statements that best reflect your firm’s commitment to regulatory compliance, pollution prevention, and continual improvement below.

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Now, summarize those sentences into a paragraph. This is your environmental policy statement.

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# Standard Operating Procedures

Standard Operating Procedures (SOPs) help address the risks you identified in the environmental issues section. SOPs are written instructions for completing a specific activity. They can be developed for anything done on a regular basis but are especially important for taking samples, calibrating equipment, completing complicated inspections/maintenance, or any place the integrity of your product could be compromised. Non-critical, simple activities that are common knowledge do not require this formality, but you should consider developing a written SOP if:

* There could be serious environmental, legal, or safety consequences if the procedure is done incorrectly.
* A procedure is done infrequently, cannot be easily memorized, must be done the same way
each time, or may be done by several different people.
* Someone else may need to complete the task in the absence of the person who usually completes that procedure.
* It will speed up orientation of newly hired employees or those who work on a seasonal
or infrequent basis.

SOPs do not have to be elaborate. A good SOP needs to be understandable (if necessary, translated into another language). It should also be posted where it is needed and possibly laminated to keep it legible. A rule of thumb is that someone who has never been on your operation should be able to understand and follow the SOP and then correctly perform the task. You can use an extension publication, copy an owner’s manual page, or take a series of photos showing the procedure. SOPs should be written for the following tasks:

* Spreader calibration
* Equipment transport to site
* Equipment setup and startup
* Agitation
* Pumping/transportation/transfer
* Application
* Shutdown
* Cleanup procedures
* Spill response
* Biosecurity
* Other SOPs deemed necessary

A good SOP will contain the following information:

* Name of SOP.
* A creation date or a revision date.
* Purpose for SOP.
* Steps required to complete SOP.
* Names and signatures of those who prepared and approved the procedures outlined in the SOP.

See the appendix for an example of a SOP.

At a minimum, SOPs are reviewed annually during the management review. Employees need to be made aware of any changes to a SOP. As soon as possible after their date of hire, new and returning seasonal employees should be informed and trained on SOPs relevant to their job responsibilities. Ideally, all training is as hands-on as possible. Mentorship in the field with an experienced employee reinforces what was learned during the training. Employees should clearly understand that they are responsible to ensure that other employees are always following SOPs and are required to address individuals one-on-one or with a crew supervisor if they are not being followed.

# EMS Plan Documentation

Doing business today requires sophisticated knowledge of your system and interactions between system components. Increasing regulations and a demanding public means greater scrutiny of many of your practices. Accurate and organized records will help you document compliance with regulations, track progress toward achieving your objectives, and identify improvements. Records also provide proof that you are implementing your Environmental Policy Statement.

* Each SOP should include regular inspections and a way to document they were done.
* Create your own inspection form based on what you plan to do.
* Separate forms will be needed for different time frequencies (for example, there are some duties that are done daily while others are done weekly).
* Decide if you want a form in each vehicle or a unified master set with one person (easier to keep track of, but easier to forget to fill out).
* Keep your recordkeeping system as simple as possible while including all the necessary information.

# Employee Training

A record of employee training and orientation should be maintained as a part of an EMS Plan. You should spell out how you ensure that every employee is adequately trained to do their job, meet environmental responsibilities, and follow the EMS plan. Every employee needs to understand the overall environmental policy. They also need to know all the environmental aspects and responsibilities of their particular job. Keeping records of who has been trained on what and when they got the training is a best management practice. Also, think about whether refresher training will ever be needed. If an OSHA or state investigation happens after an accident, the first thing they will want to see is your training records. Accurate training records are your defense.

# Communications Plan

Your firm should have a plan for what you communicate, who you communicate with (your employees; your customers; your neighbors/public; EGLE/MDARD/other government agencies), and when. The plan should also cover how you “listen”. For example, if you get a question or a complaint from a neighbor, how do you respond? Keep your communications plan simple. The plan should also designate a single point of contact who will respond to external questions. Employees need to know what information they can share with the public (i.e. who’s manure are you spreading) versus what the crew supervisor/point of contact should communicate to the public.

# Document Control

Your business needs to have a systematic way to ensure that outdated documents are not accidentally used (an example would be an outdated procedure for what to do if there is a manure spill). Typically, it includes:

* + Annual review of all SOP’s, spill response plans, and key documents to ensure that all documents are both up to date and the most recent are both marked with an effective date and date it was last updated.
	+ Having a record retention policy (for example: all spill, application, employee records will be stored for x years in case needed later).
	+ Dating all important documents.
	+ Knowing who has a copy of important documents.
	+ When procedures or other important information changes, ensuring that every outdated document **is replaced.**

# Management Review

On a regular schedule, usually at least annually, top management should review the EMS plan to see if it is working as intended and decide whether they need to revise/correct/improve any part of the plan.

# Signature Page

All employees should review and sign. New employees should review and sign within 48 hours of hire or their first day on the job/returning to the job.

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_/\_\_\_/\_\_\_

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# Appendix

The appendix is where SOPs and other documents go that support your EMS plan. There is no limit to the number of documents you have in your appendix but each of them needs to be referenced somewhere in your EMS plan.

## Appendix A. Standard Operating Procedure Examples

### Title: Proper response to a manure spill.

**Purpose:** To reduce the time it takes to recognize and then control an unintended release of manure. The first 5-30 minutes will determine the eventual impact of the spill and any possible penalties.

**Steps:**

1. **STOP** the flow of manure by shutting down all manure pumps and irrigation equipment. Close valves. Park tractor on hose end to stop manure flow. Separate pipes to create air gap to stop manure siphon flow.
2. **STOP** all other activities to address the emergency.
3. **ASSESS** the extent of the emergency. Determine how much help is needed.
4. **CALL** for help as needed. If serious human injuries have occurred, immediately call an ambulance. If manure has been spilled on the road, contact law enforcement for traffic control.
5. **ATTEND** to any severely injured people.
6. **CONTAIN** the spill by moving soil around to create a berm to prevent the leading edge of the spill from entering the waters of the state. If manure enters the waters of the state, build a dam with soil downstream of the leading edge of the spill. Protect tile inlets, and if possible, plug tile outlets.
7. **REPORT** the spill according to requirements as indicated in the Appendix.
8. **CLEAN** all manure from the affected area. Vacuum pump the manure to an approved manure storage or land apply the manure according to the nutrient management plan. Flush residual materials from the area with pressurized fresh water. Capture and land apply rinse water. Remove the temporary containment and flush the affected area with large volumes of fresh water until clean.
9. **REPAIR** the equipment that caused the discharge before further use.
10. **RESTORE** the grade and vegetation of affected area.
11. **DOCUMENT** all cleanup and repair activities with a written log and photographs.

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Name(s) and signature(s) of individual(s) who approved SOP

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Date SOP approved

Source: Adapted from The Maschhoffs Inc. 2005 EMS Plan.