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## Using the OMP Template

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## Versions of the OMP Template

- Two different versions of the template
  - OMP Excel® 2007.xlxs
    - For newer versions of Excel
  - OMP Excel 97 & 2003.xls
    - For older versions of Excel
  - Each version is available on the same site as this webinar

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## Odor Management Plan Template

- Resources:
  - Michigan Agriculture Environmental Assurance Program (MAEAP)  
Progressive Planning Fact Sheet  
"Odor Management Plan" available:  
<http://www.maeap.org/uploads/files/Livestock/Odor-Management-Plan.pdf>
  - Michigan Dept of Agriculture and Rural Development (MDARD)  
Site Selection GAAMPs - Appendix B  
"Example Odor Management Plan" available:  
[http://www.michigan.gov/documents/mdard/2012\\_FINAL\\_SITE\\_SELECTION\\_GAAMP\\_378548\\_7.pdf](http://www.michigan.gov/documents/mdard/2012_FINAL_SITE_SELECTION_GAAMP_378548_7.pdf)
  - University of Minnesota bulletin  
"Preparing an Odor Management Plan" available:  
<http://www.extension.umn.edu/distribution/livestocksystems/DI7637.html>

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## OMP Template

- There are other paper copy versions of OMP templates available on-line
- This template:
  - Incorporates the resources from Minnesota OFFSET
  - Guides user through all the points generally included in an odor management plan
  - Includes scroll down boxes and easy to use input cells
- Tool is intended to be valuable to the farmer and to the consultants and agency staff working with farmers

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## Odor Management Plan Template

Odor Management Plan Template for Excel 2007 and 2010

Name  Farm site  State

**Section 1: Odor Sources**

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
		0	0

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## OMP: Help boxes

The "Odor Emission Number" in red font under column G in Section 2 is calculated to provide users a uniform means of recognizing the major odor sources on the farm and act as a guide for determining which facilities or practices should receive the highest priority when considering the implementation of odor control technologies. Larger Odor Emission Numbers indicate a larger source of odor and an area of greater concern. The "Total Farm Odor Emission Number" provides the opportunity to compare different scenarios of the OMP. For example expanding farms may want to consider one scenario for the existing livestock facilities compared to a second scenario adding in the expansion of the livestock buildings or manure storage structures.

**Section 1: Odor Sources**

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
		0	0

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## OMP: Scroll down boxes

**Section 1: Odor Sources**

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
Dairy: Free Stall, Scrape or Deep Pit	Two free stall barns 66' x 373'	6	49,236
		0	0

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## OMP: Animal area

**Section 1: Odor Sources**

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
Dairy: Free Stall, Scrape or Deep Pit	Two free stall barns 66' x 373'	6	49,236
Dairy: Loose Housing	Dry cow barn 40' x 100'	6	4,000
Beef or Dairy: Dirt or Concrete Lot	Dry cow lot 40' x 100'	4	4,000
Dairy: Loose Housing	Heifer barn 60' x 80'	6	4,800
		0	0

### OMP: Section 1: Odor Sources

The "Odor Emission Number" in red font under column G in Section 2 is calculated to provide users a uniform means of recognizing the major odor sources on the farm and act as a guide for determining which facilities or practices should receive the highest priority when considering the implementation of odor control technologies. Larger Odor Emission Numbers indicate a larger source of odor and an area of greater concern. The "Total Farm Odor Emission Number" provides the opportunity to compare different scenarios of the OMP. For example expanding farms may want to consider one scenario for the existing livestock facilities compared to a second scenario adding in the expansion of the livestock buildings or manure storage structures.

Additional information on using this template is available by clicking the "OMP Background" tab in the sheet selections at the bottom of this page.

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
Dairy: Free Stall, Scraper or Deep Pit	Two free stall barns 66' x 373'	6	49,236
Dairy: Loose Housing	Dry cow barn 40' x 100'	6	4,000
Beef or Dairy: Dirt or Concrete Lot	Dry cow lot 40' x 100'	4	4,000
Dairy: Loose Housing	Heifer barn 40' x 80'	6	4,800
Click here to select species and housing		0	

Liquid or solid manure storage structures	Description	Odor Emission Number	Area Sq. Ft.
Earthen Basin, Single or Multiple Cells	Free stall barn earthen storage 250' x 350'	13	87,500
Earthen Basin, Single or Multiple Cells	Dry cow lot runoff storage 60' x 75'	13	4,500
Crustrated Solid Manure Stockpile		2	6,000
Click here to select type of manure storage		0	
Earthen Basin, Single or Multiple Cells		0	
Dirt or Concrete Lot, Above or Below Ground		0	
Click here to select type of manure storage		0	

### OMP: Additional odor sources

Animal species and housing type	Description	Odor Emission Number	Area Sq. Ft.
Dairy: Free Stall, Scraper or Deep Pit	Two free stall barns 66' x 373'	6	49,236
Dairy: Loose Housing	Dry cow barn 40' x 100'	6	4,000
Beef or Dairy: Dirt or Concrete Lot	Dry cow lot 40' x 100'	4	4,000
Dairy: Loose Housing	Heifer barn 40' x 80'	6	4,800
Click here to select species and housing		0	

Liquid or solid manure storage structures	Description	Odor Emission Number	Area Sq. Ft.
Earthen Basin, Single or Multiple Cells	Free stall barn earthen storage 250' x 350'	13	87,500
Earthen Basin, Single or Multiple Cells	Dry cow lot runoff storage 60' x 75'	13	4,500
Crustrated Solid Manure Stockpile	Heifer barn stock pile 20' x 30'	2	6,000
Click here to select type of manure storage		0	
Click here to select type of manure storage		0	

Other odor sources	Description	Odor Potential
Collection and transfer of manure		High
Manure agitation and pumping		High
Manure land application		High
Field stacking of manure		High
Stored feed/bunk silo/face of bunk silo		High
Feed processing and feed storage area		High
Mortality handling		High

Listed below are additional odor sources which are not considered in OFFSET. The "Odor Potential" on the right in column G gives the worst case evaluation. Below in section 2 "Current odor control practices", and in the next tabs, users are provided the opportunity to provide greater detail on each odor source.

### OMP: Section 2: Odor control

Animal species and housing type	Description	Odor control practices from OFFSET	Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
Dairy: Free Stall, Scraper or Deep Pit	None	None	1	1	30
Dairy: Loose Housing	None	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	None	None	1	1	2
Dairy: Loose Housing	None	None	1	1	3
Click here to select species and housing	None	None	1	1	0

Liquid or solid manure storage structures	Description	Odor control practices from OFFSET	Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
Earthen Basin, Single or Multiple Cells	None	None	1	1	114
Earthen Basin, Single or Multiple Cells	None	None	1	1	6
Crustrated Solid Manure Stockpile	None	None	1	1	1
Click here to select type of manure storage	None	None	1	1	0
Click here to select type of manure storage	None	None	1	1	0

Other identified odor sources	Description	Odor Magnitude
Collection and transfer of manure	Manure is pushed using tractor/scraper into storage	Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home	Medium

### OMP: Housing odor reduction

Animal species and housing type	Description	Odor control practices from OFFSET	Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
Dairy: Free Stall, Scraper or Deep Pit	None	None	1	1	30
Dairy: Loose Housing	broiler connected to all exhaust fans	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	oil or other dust control products sprayed in animal area	None	1	1	2
Dairy: Loose Housing	None	None	1	1	3
Click here to select species and housing	None	None	1	1	0

Liquid or solid manure storage structures	Description	Odor control practices from OFFSET	Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
Earthen Basin, Single or Multiple Cells	None	None	1	1	114
Earthen Basin, Single or Multiple Cells	None	None	1	1	6
Crustrated Solid Manure Stockpile	None	None	1	1	1
Click here to select type of manure storage	None	None	1	1	0
Click here to select type of manure storage	None	None	1	1	0

Other identified odor sources	Description	Odor Magnitude
Collection and transfer of manure	Manure is pushed using tractor/scraper into storage	Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home	Medium

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### OMP: Manure storage odor reduction

Mortality handling: High

**Section 2: Current odor control practices**

Odor control practices from OFFSET		Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
<b>Animal species and housing type</b>	<b>Description</b>			
Dairy: Free Stall, Scrape or Deep Pit	None	1	1	30
Dairy: Loose Housing	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	None	1	1	2
Dairy: Loose Housing	None	1	1	3
Click here to select species and housing	None	1	1	0
<b>Odor control practices from OFFSET</b>				
<b>Liquid or solid manure storage structures</b>	<b>Description</b>			
Earthen Basin, Single or Multiple Cells	None	1	1	114
Earthen Basin, Single or Multiple Cells	Straw or natural crust on manure: 4" thick	1	1	6
Crusted Solid Manure Stockpile	None	1	1	1
Click here to select type of manure storage	Straw or natural crust on manure: 4" thick	1	1	0
Click here to select type of manure storage	Straw or natural crust on manure: 4" thick	1	1	0
Click here to select type of manure storage	Impervious cover including plastic or concrete	1	1	0
<b>Other odor control practices</b>				
<b>Other identified odor sources</b>	<b>Description</b>			<b>Odor Magnitude</b>
Collection and transfer of manure	Manure is pushed using tractor/scrapper into storage			Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home			Medium

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### OMP: Manure storage odor reduction

Mortality handling: High

**Section 2: Current odor control practices**

Odor control practices from OFFSET		Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
<b>Animal species and housing type</b>	<b>Description</b>			
Dairy: Free Stall, Scrape or Deep Pit	None	1	1	30
Dairy: Loose Housing	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	None	1	1	2
Dairy: Loose Housing	None	1	1	3
Click here to select species and housing	None	1	1	0
<b>Odor control practices from OFFSET</b>				
<b>Liquid or solid manure storage structures</b>	<b>Description</b>			
Earthen Basin, Single or Multiple Cells	Straw or natural crust on manure: 4" thick	0.4	1	46
Earthen Basin, Single or Multiple Cells	None	1	1	6
Crusted Solid Manure Stockpile	None	1	1	1
Click here to select type of manure storage	None	1	1	0
Click here to select type of manure storage	None	1	1	0
<b>Other odor control practices</b>				
<b>Other identified odor sources</b>	<b>Description</b>			<b>Odor Magnitude</b>
Collection and transfer of manure	Manure is pushed using tractor/scrapper into storage			Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home			Medium

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### OMP: Other odor sources

Odor control practices from OFFSET		Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
<b>Animal species and housing type</b>	<b>Description</b>			
Dairy: Loose Housing	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	None	1	1	2
Dairy: Loose Housing	None	1	1	3
Click here to select species and housing	None	1	1	0
<b>Odor control practices from OFFSET</b>				
<b>Liquid or solid manure storage structures</b>	<b>Description</b>			
Earthen Basin, Single or Multiple Cells	Straw or natural crust on manure: 4" thick	0.4	1	46
Earthen Basin, Single or Multiple Cells	None	1	1	6
Crusted Solid Manure Stockpile	None	1	1	1
Click here to select type of manure storage	None	1	1	0
Click here to select type of manure storage	None	1	1	0
<b>Other odor control practices</b>				
<b>Other identified odor sources</b>	<b>Description</b>			<b>Odor Magnitude</b>
Collection and transfer of manure	Manure is pushed using tractor/scrapper into storage			Medium
Manure land application	Manure is transferred to an enclosed pipe or channel for storage			Medium
Manure land application	Manure is applied within 24 hours			Low
Field stacking of manure	Manure is not stacked in fields			Med/High
Stored feed/bunk silo/face of bank silo	Manure is collected and hauled to storage with splash tank			None
Stored feed/bunk silo/face of bank silo	Manure is hauled with water to storage			Low
Feed processing and feed storage area	Feed area is clean/has spilled feed/has standing water			Low
Mortality handling	Mortality is buried, incinerated or hauled away within 24 hours			Low
<b>Total Farm Odor Emission Number</b>				<b>89</b>

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### OMP: Total odor

Odor control practices from OFFSET		Odor reduction factor	Additional reduction factor	Current Odor Emission Factor
<b>Animal species and housing type</b>	<b>Description</b>			
Dairy: Free Stall, Scrape or Deep Pit	None	1	1	30
Dairy: Loose Housing	None	1	1	2
Beef or Dairy: Dirt or Concrete Lot	None	1	1	2
Dairy: Loose Housing	None	1	1	3
Click here to select species and housing	None	1	1	0
<b>Odor control practices from OFFSET</b>				
<b>Liquid or solid manure storage structures</b>	<b>Description</b>			
Earthen Basin, Single or Multiple Cells	Straw or natural crust on manure: 4" thick	0.4	1	46
Earthen Basin, Single or Multiple Cells	None	1	1	6
Crusted Solid Manure Stockpile	None	1	1	1
Click here to select type of manure storage	None	1	1	0
Click here to select type of manure storage	None	1	1	0
<b>Other odor control practices</b>				
<b>Other identified odor sources</b>	<b>Description</b>			<b>Odor Magnitude</b>
Collection and transfer of manure	Manure is pushed using tractor/scrapper into storage			Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home			Medium
Manure land application	Manure is incorporated within 24 hours			Med/High
Field stacking of manure	Manure is not stacked in fields			None
Stored feed/bunk silo/face of bank silo	Feed is covered (plastic, roof or bin) and has slight spoilage			Low
Feed processing and feed storage area	Feed area is clean/has spilled feed/has standing water			Low
Mortality handling	Mortality is buried, incinerated or hauled away within 24 to 48 hrs. after death			Medium
<b>Total Farm Odor Emission Number</b>				<b>89</b>

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## OMP: Total odor

B	C	D	E	F	G	H
Dairy: Free Stall, Scrape or Deep Pit	None		1	1	30	
Dairy: Loose Housing	None		1	1	2	
Beef or Dairy: Dirt or Concrete Lot	None		1	1	2	
Dairy: Loose Housing	None		1	1	3	
Click here to select species and housing	None		1	1	0	
<b>Odor control practices from OFFSET</b>			<b>Odor reduction factor</b>	<b>Additional reduction factor</b>		
<b>Liquid or solid manure storage structures</b>						
Earthen Basin, Single or Multiple Cells	Straw or natural crust on manure < 4" thick		0.4	1	46	
Earthen Basin, Single or Multiple Cells	None		1	1	6	
Covered Solid Manure Storage	None		1	1	1	
Click here to select type of manure storage	None		1	1	0	
Click here to select type of manure storage	None		1	1	0	
<b>Other identified odor sources</b>			<b>Other odor control practices</b>			<b>Odor magnitude</b>
Collection and transfer of manure	Manure is pushed using tractor/scrapper into storage					Medium
Manure agitation and pumping	Manure is agitated when neighbors aren't at home					Medium
Manure land application	Manure is injected					Low
Field stacking of manure	Manure is not stacked in fields					None
Stored feed/bunk silage/bunk silo	Feed is covered (plastic, roof or bin) and has slight spoilage					Low
Feed processing and feed storage area	Feed area is clean/no spoiled feed/no standing water					Low
Mortality handling	Mortality is buried, incinerated or hauled away within 24 hours					Low
<b>Total Farm Odor Emission Number</b>					<b>89</b>	

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## OMP: Odor reduction factors

**Description of "Additional reduction factor":**  
Incorporating an "Additional reduction factor" into the odor management plan requires the odor control method having been proven by third party research and published in an extension bulletin or peer reviewed article. In the space below provide an explanation of the odor control method, the corresponding reduction factor and a reference to the bulletin or article.

**Current odor control practices without odor reduction factors:**  
Some odor control methods, such as vegetative buffers, are accepted odor control practices but research to date has not provided a reliable odor control factor that can be incorporated in tools like OFFSET. In the space below describe those odor control practices that could not be included with the factors discussed above but are currently, or will be, incorporated in the management practices on this site.  
Examples include vegetative buffers or wind breaks and some manure additives.

**Optional odor control practices:**  
Discuss here the odor control practices that will be considered should odor issues develop in the future.

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## OMP: Optional odor control

Some odor control methods, such as vegetative buffers, are accepted odor control practices but research to date has not provided a reliable odor control factor that can be incorporated in tools like OFFSET. In the space below describe those odor control practices that could not be included with the factors discussed above but are currently, or will be, incorporated in the management practices on this site.  
Examples include vegetative buffers or wind breaks and some manure additives.

**Optional odor control practices:**  
Discuss here the odor control practices that will be considered should odor issues develop in the future.  
Practices may include vegetative buffers, covered earthen storage, bio-filters on ventilation fans or manure additives.

**Other odor sources:**  
On many farms the odor from the housing and manure storage is considered "ingrained" in the system. Odors from the "Other identified odor sources" may actually make significant contributions to the overall farm odor and may be more easily minimized by day to day management practices. Describe the current odor management for each of the identified other odor sources.

**Collection and transfer of manure**

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## OMP: Discussion of other odors

**Other odor sources:**  
On many farms the odor from the housing and manure storage is considered "ingrained" in the system. Odors from the "Other identified odor sources" may actually make significant contributions to the overall farm odor and may be more easily minimized by day to day management practices. Describe the current odor management for each of the identified other odor sources. To differentiate and make comparisons between "current" and "optional" odor control practices use the default term for current practices and bold or colored text for optional.

**Collection and transfer of manure**  
Manure is pushed into the tank of earthen storage using a skid steer tractor. The skid steer tank storage contains just enough ventilation that gases flow from the dry cow lot into the storage.

**Manure agitation and pumping**  
The closest neighbor is over 1/4 mile SW of the facility. The neighbors to the N and E are protected by the woods. Agitating manure when the neighbors are not at home will cause them additional annoyance and therefore, "manure agitation and pumping" should be considered as "Low".

**Manure land application**  
The best land for liquid manure storage. Manure is only hauled on days when field conditions allow for direct injection of liquid manure. During the spring, summer and fall solid manure is only hauled on days when it can be immediately incorporated. During the winter solid manure is stored on fields with a 40% spreader. "Low" due to the manure's ability to incorporate there in their normal practices.

**Field stacking of manure**  
Manure is not field stacked.

**Stored feed/bunk silage/bunk silo**  
All bunk silos are kept in the covered continuous building. Fermented feeds are tightly covered within 24 hours of finishing bunks.

**Feed processing and feed storage area**  
Feed processing area is near and well kept. Silage and hulls and all waste are captured and added to the liquid manure storage.

**Mortality handling**  
Slaughtering operations have been completed and they have agreed they are notified by 3:00 AM of mortalities and will be picked up by 4:00 AM the same day. All employees have been instructed to make sure the carcass is contained as soon as they are notified to be picked up.

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## OMP: Monitoring and perception

**Monitoring odor**  
 Each individual has a unique response to farm odors. Some may find the odor extremely offensive while others may find the same odor a minor annoyance. When odor concerns arise it is difficult to determine if the concerned resident is extremely sensitive or if the odor is extremely offensive. One suggestion is for farm management to ask individuals unrelated to the farm, but whose opinion they trust, to monitor the odor level at the farm. This practice will not appease the concerned resident but will inform the manager if the odors seem excessive. These individuals could be a feed sales person, equipment sales or friend from town. The monitoring doesn't need to be formal and could be as simple as asking them as they drive into the farm site. In the space below describe the farm's policy for monitoring odor.

**Other community activities**  
 Open dialog can sometimes head off or prevent minor issues from advancing into persistent neighborhood conflict. In the space below describe those planned community activities that will help maintain an open dialog between the farm management and those rural residents impacted by the farm's normal functions. These community activities may be as simple as delivering meat to neighbors on holidays, hosting a neighborhood picnic and tour of the farm, regular farm newsletters or just making it a point to stop for a visit at least once a year. Other community activities that should be included are serving on local township or school boards and time volunteered to support local youth programs.

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## Odor Management Plan Template

- OMP is complete
- Save under a unique name
- Print off hard copies
- Share with state or federal agency staff
  - MDARD Right to Farm visit
  - MDARD Site Selection Verification Request

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Thank you

For questions and concerns contact:  
 Jerry May  
 may@msu.edu