

GRETCHEN WHITMER GOVERNOR

#### STATE OF MICHIGAN DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

GARY MCDOWELL DIRECTOR

September 1, 2022

### NOTICE OF MEETING

### MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

### September 14, 2022

The regular meeting of the Michigan Commission of Agriculture and Rural Development will be held on Wed., September 14, 2022. The business session is scheduled to begin at 9:30 a.m. The meeting is open to the public and this notice is provided under the Open Meetings Act, 1976 PA 267, MCL 15.261 to 15.275. The Commissioners will be meeting at AgroLiquid, located at 3055 W M-21 in St. Johns, Michigan. This meeting is also being conducted electronically to allow for greater remote public attendance and participation. To join the meeting, dial by telephone: **1-248-509-0316** and enter the Conference ID: **603 965 247#.** 

In accordance with the Commission's Public Appearance Guidelines, individuals wishing to address the Commission may pre-register to do so during the Public Comment period as noted below and will be allowed up to three minutes for their presentation. Documents distributed in conjunction with the meeting will be considered public documents and are subject to provisions of the Freedom of Information Act. The public comment time provides the public an opportunity to speak; the Commission will not necessarily respond to the public comment.

To pre-register to speak virtually during this meeting, individuals should contact the Commission Assistant **no later than Fri., September 9, 2022,** via email at <u>MDA-Ag-</u>

<u>Commission@michigan.gov</u> and provide their name, organization they represent, address, and telephone number, as well as indicate if they wish to speak to an agenda item. You may also contact the Commission Assistant at that email address to provide input or ask questions on any business that will come before the Commission at the meeting. The Commission Chair will call upon each person by name and telephone number when it is time for them to speak and there will be a meeting moderator facilitating participation. All others wishing to speak will be provided two minutes to do so. Instructions on how to be recognized will be provided at the beginning of the meeting.

Those needing accommodations for effective participation in the meeting should contact the Commission Assistant at 800-292-3939 one week in advance or may use the Michigan Relay Center by calling 711 for deaf, hard of hearing, or speech-impaired persons.

Sarry Me Dowell

Gary McDowell Director

### MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

AgroLiquid 3055 West M-21 St. Johns, Michigan 48879

Option to Join via Remote Technology Dial: 1-248-509-0316; Conf. ID 603 965 247#

SEPTEMBER 14, 2022 – Revised 9/12/22 TENTATIVE AGENDA

- 9:30 a.m. 1. Call to Order and Roll Call
  - 2. Approval of Agenda (action item)
  - 3. **Approval of Minutes** from the July 20, 2022, Commission of Agriculture and Rural Development Meeting (**action item**)
  - 4. Next Scheduled Meeting (information only)
    - November 2, 2022, Location TBD
- 9:35 a.m. 5. Commissioner Comments and Travel (action item)
- 9:45 a.m. 6. Director's Report

### 9:55 a.m. 8. Public Comment on Agenda Items

In accordance with the Public Appearance Guidelines in the Commission Policy Manual, individuals wishing to address the Commission must complete a Public Appearance Card and will be allowed up to three minutes for their presentation. Documents distributed at the meeting will be considered public documents and are subject to provisions of the Freedom of Information Act. The public comment time provides the public an opportunity to speak; the Commission will not necessarily respond to the public comment.

- 10:05 a.m.
   9. Michigan Agriculture Environmental Assurance Program (MAEAP) Standards – Approval of 2023 Standards: Chad Rogers, Deputy Division Director and Joe Kelpinski, MAEAP Manager, Environmental Stewardship Division (action item)
- 10:25 a.m. 10. Generally Accepted Processing Practices (GAPPs) Proposed Revisions: Chad Rogers, Deputy Division Director, and Laura Doud, Environmental Engineer, Environmental Stewardship Division (action item)
- 10:45 a.m. 11. Generally Accepted Agricultural Management Practices (GAAMPs) Process and Introduction of Proposed 2023 GAAMPs: Chad Rogers, Deputy Division Director, and Mike Wozniak, Right to Farm Manager, Environmental Stewardship Division (information only)

11:05 a.m. Break

Michigan Commission of Agriculture and Rural Development September 14, 2022 - Tentative Agenda Page 2

- 11:15 a.m. 12. **Budget Update**: Sylvia Renteria, Director of Finance and Budget (information only) 11:25 a.m. 15. Legislative Update: Ashley Steffen, Legislative Liaison (information only) 11:35 a.m. 16. Electric Vehicles in Michigan: Ashley Steffen, Legislative Liaison (information only) 11:45 a.m. 17. Public Comment In accordance with the Public Appearance Guidelines in the Commission Policy Manual, individuals wishing to address the Commission must complete a Public Appearance Card and will be allowed up to three minutes for their presentation. Documents distributed at the meeting will be considered public documents and are subject to provisions of the Freedom of Information Act. The public comment time provides the public an opportunity to speak; the Commission will not necessarily respond to the public comment.
- 11:55 a.m. 18. Adjourn (action item)

### MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

### Radisson Hotel Lansing at the Capitol Capitol I Conference Room 111 N Grand Ave Lansing, Michigan 48933

and

### Remote Technology via Microsoft Teams Dial: 1-248-509-0316, Conference ID 513 269 9#

### MEETING MINUTES July 20, 2022

#### PRESENT:

Charlie Meintz, Chair, Michigan Commission of Agriculture and Rural Development Andy Chae, Vice Chair, Michigan Commission of Agriculture and Rural Development Patricia Bergdahl, Secretary, Michigan Commission of Agriculture and Rural Development Juliette King-McAvoy, Michigan Commission of Agriculture and Rural Development Monica Wyant, Michigan Commission of Agriculture and Rural Development Gary McDowell, Director, Michigan Department of Agriculture and Rural Development

### CALL TO ORDER AND ROLL CALL

Chair Meintz called the meeting of the Commission of Agriculture and Rural Development to order at 1:12 p.m. on July 20, 2022. Roll call was taken with Chair Meintz, Commissioners Bergdahl, Chae, King-McAvoy, Meintz, Wyant, and Director McDowell announcing themselves as present.

### **APPROVAL OF AGENDA**

MOTION: COMMISSIONER BERGDAHL MOVED TO APPROVE THE MEETING AGENDA FOR JULY 20, 2022. SECONDED BY COMMISSIONER WYANT. MOTION CARRIED.

### APPROVAL OF MAY 18, 2022, MEETING MINUTES

MOTION: COMMISSIONER KING-MCAVOY MOVED TO APPROVE THE MAY 18, 2022, MEETING MINUTES. SECONDED BY COMMISSIONER BERGDAHL. MOTION CARRIED.

#### NEXT SCHEDULED MEETING

The next scheduled meeting is September 14, 2022, at AgroLiquid in St. Johns.

### COMMISSIONER COMMENTS AND TRAVEL

Commissioners shared information relative to their farm operations, as well as agriculture in their respective areas.

Commissioner Wyant thanked the Commissioners and Director McDowell for joining her on a tour of the Meijer Distribution Centers in Lansing, prior to today's meeting. The tour was a nice opportunity to showcase how Meijer works with local farmers to bring their products to market.

Commissioner King-McAvoy noted cherry processor challenges due to short timeframe to process cherries, shortage of harvesting labor and truck drivers, higher cost of sugar, fuel, and plastic pails. These factors translate to a stressful harvest period, but she's confident the harvest will be successful and hopeful to return good prices to the growers.

Commissioner Bergdahl attended a meeting with Michigan State University at Bay College last week. The college will be offering a two-year Forestry Tech Program. Students will receive a certificate upon completion. The college is hoping to attract students who wanting to stay in the Upper Peninsula area upon certification.

Commissioners Bergdahl, Chae, King-McAvoy, Meintz, and Wyant traveled to attend today's meeting. There was no other travel submitted for approval.

### MOTION: COMMISSIONER KING-MCAVOY MOVED TO APPROVE THE COMMISSIONERS' TRAVEL. SECONDED BY COMMISSIONER WYANT. MOTION CARRIED.

### **COMMISSIONER ISSUES**

Commissioner Wyant shared retirement resolutions before the Commission, recognizing Stan Kuchta and Mark Swartz.

Mr. Kuchta was able to attend the meeting remotely and share some of his favorite experiences during his career, as well as upcoming retirement plans.

Director McDowell thanked Mr. Kuchta for his years of service to the department and the state and congratulated him on his retirement.

The Commissioners acknowledged and thanked Stan and Mark for their career and lifetime investments.

### MOTION: COMMISSIONER CHAE MOVED THE RESOLUTIONS FOR STAN KUCHTA AND MARK SWARTZ BE ADOPTED. COMMISSIONER KING-MCAVOY SECONDED. MOTION CARRIED.

### DIRECTOR'S REPORT

Director McDowell introduced Deputy Director, Kathy Angerer, who joined the department on July 18. Deputy Director Angerer comes to the department from the City of Hamtramck, where she most recently served as their City Manager, working closely with residents and businesses to create a vibrant, growing community. She also served six years as a State Representative with the Michigan House of Representatives, serving as Majority Floor Leader during her final term and chairing several committees while working with the administration and fellow legislators on issues of importance to our state. Deputy Director Angerer greeted the Commissioners, noted the remarkable

staff she has met already, and looks forward to the opportunity to work for the department.

Director McDowell announced the Fiscal Year 2023 proposed budget for MDARD includes support for the department's key priorities and initiatives, noting the support received from Administration and Legislature as a direct reflection of the great work staff performs each day

He also shared MDARD recently awarded over \$1.7 million in Value-Added and Regional Food System grants to 18 Michigan producers, processors, and community development organizations. These grants are designed to help retain, expand, attract, or develop agricultural processing in the state through targeted investments in technology and equipment, feasibility studies, healthy food access, regional food systems, and urban agriculture. Later this month, MDARD will formally announce the new Farm Innovation grant program, which is designed to help develop and support innovative solutions to real, immediate, and future problems facing Michigan's food and agricultural industry. Proposals will be accepted around the priority areas of climate smart practices, supply chain resilience, food processing and farm production automation, and rural resiliency, as well as an opportunity for other project submissions.

Director McDowell shared various meetings and events he has been attending during the past couple of months, including The Finland Inbound Trade Mission, May 16-18; Office of Rural Development Stakeholder meetings throughout May and June; the Mackinac Policy Conference, May 3-June 2; an MDARD Gas Inspection Event on June 16; the MASDA Meeting in Chicago, June 27-29; and the Cherry Festival in Traverse City on July 7. Commissioner King-McAvoy also participated in the orchard tours during the Cherry Festival.

Director McDowell also participated in a meeting on July 11 with executives from the 232 and other legislatively established commodity groups; a meeting on July 12 with the Department of Environment, Great Lakes, and Energy and the Michigan Agri-Business Association; and a 2023 Farm Bill discussion with Senator Stabenow's staff on July 14. He has also attended several food and agricultural business tours.

Director McDowell recounted a visit from President Biden to Commissioner King-McAvoy's farm, King Orchards, last summer. He and Commissioner King-McAvoy were very impressed with President Biden's sincere interactions and conversations with migrant workers and their children during his visit.

Commissioner King-McAvoy thanked Director McDowell for his visits to Northern Michigan and shedding light on specialty crops. Chair Meintz thanked Director McDowell for visiting across Michigan and for his efforts to promote and expand the agriculture industry.

### PUBLIC COMMENT (AGENDA ITEMS ONLY)

There was no public comment relative to agenda items.

### MICHIGAN AGRICULTURE ENVIRONMENTAL ASSURANCE PROGRAM (MAEAP) STANDARDS – INTRODUCTION OF 2023 STANDARDS: Jim Johnson, Division Director, and Joe Kelpinski, MAEAP Manager, Environmental Stewardship Division

Mr. Johnson noted the Commission has the statutory responsibility to annually approve the MAEAP Standards. Today's purpose is to introduce recommended changes. The Commission will have the next two months to review and formulate any questions for discussion during the September Commission meeting. Any questions in the meantime can be directed to Mr. Kelpinski.

Mr. Kelpinski indicated new proposed funding legislation may change the review and approval cycle to every other year.

With no issues being identified this past year, there are no recommended changes for the 2023 standards. However, seven of the A\*Syst tools have been combined into one standard A\*Syst tool. The consolidation will result in cost savings by significantly reducing staff time to update the various documents, as well as saving approximately \$25,000 to print the documents. The consolidation will also eliminate waste by reducing the large number of unused documents recycled at the end of each year.

Development of the new MAEAP database focused on how to identify specific practices producers are implementing to become MAEAP verified. Partners need this information to determine how they can continue to assist producers. Sustainability and growth of the program relies on being able to better assist and serve the producers.

Combining the seven A\*Syst tools has been a goal for several years and made sense to complete now, along with the development of the new MAEAP database. Mr. Kelpinski acknowledged MAEAP staff, Josh Appleby and Heather Casteel, for the many hours they dedicated to reviewing the seven tools, eliminating hundreds of duplicate questions, and combining all of the information into one document. The final document, the Farmstead Assessment, combines seven of the A\*Systs into one document.

In response to inquiries from Commissioner King-McAvoy, Mr. Kelpinski indicated the new MAEAP database can be filtered to provide customized reports containing specific data for individual commodity groups. The reports provide data such as types of acres and practices implemented, but they do not include personal producer information. Mr. Kelpinski assured all producer information is confidential.

In response to inquiry from Commissioner King-McAvoy, Mr. Kelpinski indicated the database captures NRCS standards for implementing water quality practices. Work is also being conducted with partners to obtain grants for projects focused on carbon neutrality and carbon reduction. Future A\*Syst tools may include recognized practices specific to carbon reduction.

Chair Meintz expressed concern with the type of information being provided and types of organizations requesting the information. Mr. Kelpinski explained most of the interest comes from commodity groups. They are interested in the progress farmers are making towards sustainability and improving water quality throughout the years. The information is not specific to individual farms.

The Forest, Wetlands & Habitat System will not be combined with the new Farmstead Assessment tool.

### <u>GENERALLY ACCEPTED PROCESSING PRACTICES (GAPPS) – INTRODUCTION OF</u> <u>PROPOSED REVISIONS: Jim Johnson, Division Director, Environmental Stewardship</u> <u>Division</u>

Mr. Johnson advised the Commission is statutorily required to annually approve the Generally Accepted Fruit, Vegetables, Dairy, Meat, and Grain Processing Practices for Noise and Odor (GAPP) as dictated by the Legislature in 1998. Practices were developed specifically around noise and odor related issues to protect food processing operations from nuisance lawsuits. However, the GAPPs do not provide as much protection as the Right to Farm Generally Accepted Agricultural and Management Practices where there are other laws exempting farming operations from the protection of noise and odor issues. The review process for complaints is treated the same for a facility in a rural area and for a facility in an urban area.

In response to Commissioner Chae's inquiry, Mr. Johnson advised the committee that formed the GAPPs was comprised of representatives from the industry, universities, and government agencies. For instances that are not clearly covered under the current GAPPs, engineer staff research standards in the industry in other states.

As indicated in the materials provided to the Commission, there are no changes recommended for the 2023 practices. The Commission will have the next two months to review and formulate any questions, and they will be presented for approval during the September meeting.

### FOOD AND AGRICULTURE INVESTMENT FUND REQUEST: Jamie Zmitko-Somers, Division Director, Agriculture Development Division

Ms. Zmitko-Somers advised two Food and Agriculture Investment Program project requests are being presented for Commission consideration today.

The first project is Ethel's Baking Company, a premium producer of gluten-free dessert bars found in the fresh bakery sections of more than 350 stores in Michigan and across the Midwest. The company was founded in 2011 and has experienced substantial growth over the last decade. Ethel's is planning to add equipment and machinery to its current building in Shelby Township, enhancing baking capacity to meet increasing demand.

Co-Owner, Vince Bommarito, shared details around their \$1.2 million investment. New equipment will help automate their baking process, increase safety, reduce ergonomic issues, and allow the company to begin producing cookies. Workers will transition from manual labor and become trained as machine operators.

Ethel's is committed to Michigan production agriculture. Their largest raw material, butter, is procured from Michigan Milk Producers Association. Annual purchases in 2022 are expected to be 210,000 pounds and forecasts for 2023 are expected to be 305,000 pounds of butter.

Following questions around the project, Ms. Zmitko-Somers advised MDARD is recommending a Food and Agriculture Investment Fund performance-based grant of \$60,000 for Ethel's Baking Company.

### MOTION: COMMISSIONER KING-MCAVOY MOVED TO APPROVE A FOOD AND AGRICULTURE INVESTMENT FUND PERFORMANCE-BASED GRANT OF \$60,000 FOR ETHEL'S BAKING COMPANY. COMMISSIONER WYANT SECONDED. MOTION CARRIED.

Ms. Zmitko-Somers advised the second request is Pop Daddy Popcorn, homemade popcorn that began in the Sarafa family kitchen popping Ruby Red popcorn kernels sourced from Ann Arbor. In 2010, the Sarafas decided to start a small business. Pop Daddy Popcorn has continued to grow, adding seasoned pretzels to their product line, and exporting to Canada and Europe.

Owner, Mark Sarafa, shared the history of Pop Daddy Popcorn and details around the \$1.5 million investment. Equipment will be added and incorporated into two existing manufacturing lines, including a seasoning system and three additional corn popping kettles. Two new manufacturing lines will also be added allowing seasoning and packaging of popcorn and pretzels from beginning to end. The company purchases the Ruby Red kernels from Michigan growers. Purchases have increased 50 percent year-over-year and are expected to increase from 168,000 pounds in 2022 to 300,000 in 2023.

Following questions around the project, Ms. Zmitko-Somers advised MDARD is recommending a Food and Agriculture Investment Fund performance-based grant of \$65,000 for Pop Daddy Popcorn.

### MOTION: COMMISSIONER CHAE MOVED TO APPROVE A FOOD AND AGRICULTURE INVESTMENT FUND PERFORMANCE-BASED GRANT OF \$65,000 FOR POP DADDY POPCORN. COMMISSIONER KING-MCAVOY SECONDED. MOTION CARRIED.

Ms. Zmitko-Somers advised there will not be any projects in September due to the fiscal year-end closing.

### UPDATE ON MIGRANT LABOR HOUSING ADVISORY BOARD RECOMMENDATIONS: Jim Johnson, Division Director, Environmental Stewardship Division

Mr. Johnson provided background on the importance of migrant labor in Michigan. There are over 300 commodities grown in Michigan that rely on migrant labor for harvesting. Two-three dozen of the commodities must be hand-harvested. Every year, approximately, 92,000 migrants and families come to Michigan. The department annually inspects and licenses housing for nearly 27,000 migrants in Michigan. The authority to inspect and license housing is provided under Public Health Code, Part 124.

Part 124 also gives the department director the authority to name an advisory board to identify and assist with issues in the migrant community. Working with the Governor's Office, a 14 member advisory board of subject matter experts was identified in the spring of 2021. The board consists of representation from migrant advocacy, farm

organizations, health organizations, and migrants. In April 2022, the board produced a report of five recommendations meant to improve conditions for migrants and continue to attract migrant labor. The recommendations include investment in housing; provision of housing designs; siting and zoning education; increase in broadband; and community access and relations.

Director McDowell reiterated the importance of migrant labor for Michigan agriculture. The next steps include moving the recommendations report to the Governor's Office for review. The committee will continue to work on other issues they have identified.

In response to Commissioner Chae's inquiry, Mr. Johnson explained the zoning obstacles are within townships that establish setbacks, minimum square feet and density requirements that in essence prevent the construction or improvement of migrant housing. Often, farmers are unable to replace old housing due to new restrictive zoning.

### BUDGET UPDATE: Sylvia Renteria, Director of Finance and Budget

Ms. Renteria provided an update on the Fiscal Year (FY) 2023 budget process. She announced the Governor signed HB 5783 earlier in the day which officially enacts the FY 2023 budget, beginning on October 1, 2022. The total State budget is \$76 billion, an historical high for Michigan. There is an additional \$7 billion still on the table to be allocated.

Ms. Renteria provided a comparison of the FY 2022 and the FY 2023 budget. MDARD was appropriated \$187,715,100, a 21 percent increase over FY 2022. She reviewed the one-time and ongoing investments for FY 2023, federal and technical adjustments, and provided an update on the supplemental bills.

Ms. Renteria advised the hard work begins now to ensure good use is made of the onetime investment dollars.

### LEGISLATIVE UPDATE: Ashley Steffen, Director of Policy Development and Legislative Affairs

Ms. Steffen advised the Legislature is on summer recess until September. Prior to recessing, several MDARD bills were signed into law, including seven bills in the Certificate of Free Sales Package; a package of bills updating provisions in the Dog Law and Dangerous Animals Act; and HB 4842, providing a discount paid to the Michigan Control Commission to craft distillers who use 40 percent of Michigan grown products in their distillate.

Ms. Steffen referred to the MDARD Legislative Update provided to the Commissioners and reviewed other status and activity around bills of interest to the department.

### PUBLIC COMMENT

Mr. Bob Pena, Commissioner for District 10 (East side of Lansing, including a portion of Lansing Township and East Lansing) thanked the Commission for the work being done to address issues and improve conditions for migrant workers. Mr. Pena spoke as a representative of urban agriculture. He expressed members of the community had a desire to raise small livestock within their townships and asked the Commission to support urban agriculture.

### <u>ADJOURN</u>

# MOTION: COMMISSIONER KING-MCAVOY MOVED TO ADJOURN THE MEETING. COMMISSIONER CHAE SECONDED. MOTION CARRIED.

There being no further business, the meeting adjourned at 3:46 P.M.

Attachments:

- A) Agenda
- B) Agriculture and Rural Development Commission Meeting Minutes May 18, 2022
- C) Retirement Resolutions Honoring Mark Swartz and Stan Kuchta
- D) Generally Accepted Fruit, Vegetables, Dairy, Meat, and Grain Processing Practices for Noise and Odor
- E) Food and Agriculture Investment Program Project Briefing Memos:
  - a. Ethel's Baking Company
  - b. Pop Daddy Popcorn
- F) Migrant Labor Housing Advisory Board 2022 Recommendations Report, April 29, 2022
- G) MDARD Budget Update Presentation July 20, 2022
- H) MDARD Summary of 2021-2022 Michigan Legislature July 11, 2022



# 2022 MAEAP Table of Contents

\*New Farm Assessment – Includes all Standards and Educational Questions for every system, excluding the Forest, Wetlands and Habitat\*A\*Syst

- I. LIVESTOCK\*A\*SYST
  - No Recommended Changes
  - Current Livestock\*A\*Syst
- II. FARM\*A\*SYST
  - No Recommended Changes
  - Current Farm\*A\*Syst
- III. GREENHOUSE\*A\*SYST FOR MICHIGAN PRODUCERS
  - No Recommended Changes
  - Current Greenhouse\*A\*Syst
- IV. FRUIT\*A\*SYST FOR MICHIGAN PRODUCERS
  - No Recommended Changes
  - Current Fruit\*A\*Syst
- V. CROP\*A\*SYST FOR FIELD CROP AND VEGETABLE PRODUCERS
  - No Recommended Changes
  - Current Crop\*A\*Syst for Field Crops and Vegetable Producers
- VI. CROP\*A\*SYST FOR NURSERY AND CHRISTMAS TREE PRODUCERS
  - No Recommended Changes
  - Current Crop\*A\*Syst for Nursery Crop and Christmas Tree Producers
- \*Forest, Wetlands and Habitat\*A\*Syst remains an independent assessment
- VII. FOREST, WETLANDS AND HABITAT\*A\*SYST
  - No Recommended Changes
  - Current Forest, Wetlands and Habitat\*A\*Syst

Michigan Agriculture Environmental Assurance Program Livestock Systems Subcommittee Summary of Proposed Amendments for 2022 Livestock (Unified Assessment)

Number	Approval Date	Reason for Change
		NO
		Recommended
		Changes
		Changes

# LIVESTOCK + A + SYST FOR MICHIGAN PRODUCERS EAS 112 + October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609



MICHIGAN STATE UNIVERSITY Extension

	Livestock System Improvement Action Plan				
Risk	List high-risk practice(s) from	Required	Alternative low-risk practice	Action plan	
question	Livestock+A+Syst and medium-risk practices that do not meet MAEAP requirements	for MAEAP verification	(include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed
6.02	Example: Most roof water and upslope watershed drainage runs through livestock lot. No clean water system in place.	Yes	Divert clean roof runoff away from livestock lot. Repair barn gutters and downspouts, discharge roof water in vegetated area west of barn. Install curb/berm on east side of lot to divert runoff.	July, 2021	<b>(√)</b> Completed Aug. 28, 2021
I understand t basis that I ha	I understand that this livestock system assessment (Livestock A Syst) and corresponding Livestock System Improvement Action Plan were developed on the basis that I have disclosed, to the best of my knowledge, all information pertaining to my livestock operations.				
Farm Address	:		Producer's Signature		
Street			Date		
City			Livestock+A+Syst conducted by:		
State Zip			Name		
Watershed name:			Title		
	-		Organization	Date	
					_

### Livestock • A • Syst

### Livestock System Improvement Action Plan (continued)

		•			
Risk	List high-risk practice(s) from	Required	Alternative low-risk practice	Actio	n plan
question	Livestock+A+Syst and medium-risk practices that do not meet MAEAP requirements	for MAEAP (include potential sources of verification technical and financial assistance)	Planned completion date	Indicate date when completed	
	<b>MAEAP Verification Action Plan</b>			D	ate
	Target date for MAEAP verification of C	ropping System			
	Target date for MAEAP verification of Farmstead System         Target date for MAEAP verification of Livestock System				
	Target date for MAEAP verification of Fo	orest, Wetlands a	and Habitat System		
	For MAEAP verification, contact MAEAP office at	the Michigan Depart	ment of Agriculture and Rural Development:	517-284-5609	3

### Introduction

### In 2011, the Michigan Agriculture Environmental Assurance Program

(MAEAP) was codified in law as set forth in P.A. 451, Part 82, of the Natural Resources and Environmental Protection Act (NREPA). The Livestock A Syst tool is updated annually to incorporate the current MAEAP Standards for this system. The tool also includes applicable Generally Accepted Agricultural and Management Practices (GAAMPs) established under Michigan Right to Farm. The completed A Syst tool and associated plan and practices meet the requirement of a Conservation Plan, as defined in Part 82 of NREPA and referenced in Part 87 of NREPA. This statute also ensures producer confidentiality for any information provided in connection with the development, implementation or verification of a conservation plan or associated practices and is exempt from disclosure under the Freedom of Information Act.

MAEAP provides an excellent opportunity for Michigan farmers to manage their farms proactively and voluntarily to protect and enhance soil and water resources. For livestock producers, the ultimate accomplishment in MAEAP is Livestock System verification. Some producers may elect to pursue immediately the completion of a Comprehensive Nutrient Management Plan (CNMP) and MAEAP Livestock System Verification. However, many producers find that smaller, progressive steps in environmental improvement are more economical and practical.

### What is Livestock+A+Syst?

The MAEAP Livestock A Syst is designed to meet the needs of those producers who choose to use a risk management-based assessment to work their way to MAEAP verification via a progressive approach.

The Livestock A+Syst is a series of risk questions and answers about livestock management practices reflecting components of a CNMP. Producers can work one-on-one with a non-regulatory MAEAP partner to identify potential environmental risks and to develop a confidential Livestock Improvement Action Plan to reduce those risks. The action plan is the producer's plan and can be completed at his or her own pace. There is no deadline. Producers determine how far and how fast to go.

Producers have several options for using Livestock A+Syst:

- Complete the risk questions to identify practices that present a high risk of contaminating water resources. At this point, producers may continue using Livestock+A+Syst to develop an implementation plan, or they may determine that they want to obtain the services of a certified CNMP provider to help them through the process of developing a plan to implement the desired changes.
- 2 Develop a Livestock Improvement Action Plan. Producers may choose to implement the action plan using their own resources, or they may choose to enter into a U.S. Department of Agriculture (USDA) Environmental Quality Incentives Program (EQIP) contract to obtain cost-share assistance. The EQIP contract may

include the development of a CNMP.

3. Complete implementation of the Livestock Improvement Action Plan prepares the producer to develop a CNMP, if that is his or her choice. Livestock farm owners may achieve MAEAP Livestock System verification for their farms either through a completed CNMP or by using a completed Livestock A+Syst, Livestock Improvement Action Plan and records indicating conformance with all boxed areas of the Livestock A+Syst. Owners of farms operating in compliance with a Michigan Department of Environment, Great Lakes and Energy, National Pollutant Discharge Elimination System (EGLE NPDES) permit may also request MAEAP verification. These farms must indicate they meet the standards in Section 13 "Mortality Management and Veterinary Waste Disposal" and Section 14 "Odor Management" of the Livestock A Syst, including section 14.01, for Siting GAAMPs verification, if applicable. All other standards for MAEAP verification will be met through the EGLE NPDES permit review and will not be reviewed for MAEAP verification.

The owner of a MAEAP-verified farm is eligible for a variety of incentives. Completion of a Livestock A+Syst verification allows owners of small and medium-sized farms to enjoy the peace of mind knowing that their inspected practices are consistent with the identified current Right to Farm (RTF) Manure Management and Utilization GAAMPS and RTF siting requirements.

4. Farms that have been verified in the MAEAP Livestock System using a CNMP may complete the Livestock◆A◆Syst for reverification.

# How Does Livestock A Syst Work?

 The environmental risk questions are grouped into eight sections. Producers select all relevant sections. Not all risk questions will apply to all livestock farms.

#### Sections are:

- Livestock Improvement Action Plan
- Whole-farm Nutrient Balance
- Farm Site Review
- Silage Storage
- Drinking Water Well Condition
- Manure Spreading Plan
- Conservation Practices for Fields Used for Manure Application
- Emergency Plan and Employee Training
- Mortality Management and Veterinary
   Waste Disposal
- Odor Management
- Other Environmental Risks in the Livestock
   System

Risk questions that address management practices that are regulated by the state or federal law indicate **illegal practices with black bold print**. The numbered footnotes indicate what regulation(s) is (are) violated. (See Table 1, on page 40.)

Risk questions that address management practices included in the Manure Management GAAMPs indicate the management level required for consistence with the identified

#### current GAAMPs with blue bold italic print.

Finally, a blue box indicates the management level(s) required for MAEAP verification.

MAEAP management requirements are aligned with state and federal regulations, the Michigan Right to Farm GAAMPs and environmentally based management practices that are supported by research. The records and/or plans that indicate the approved management practices have been implemented on the farm are listed in the column next to the risk question. This evidence will provide the basis for awarding environmental assurance through MAEAP.

- 2. Producers answer each risk question by selecting the statement that best describes conditions on their farm. The risk question answers indicate whether management practices have a low, medium or high risk of pollution. As noted above, some questions are coded to indicate consistence with GAAMPs or violation of state law.
- After completing each section, producers list the practices that present a high risk of contaminating water resources in the Livestock Improvement Action Plan. (The plan begins inside the front cover of the bulletin.) Medium risks are also included that do not meet MAEAP requirements.
- 4. In the Livestock Improvement Action Plan, producer's list alternative practices, structures or equipment that they plan to use to help reduce risks, and sources of technical and financial assistance. A target date is included for accomplishing the changes as well as a target date for MAEAP verification.

5. Participation in an approved MAEAP Phase 1 educational session is also required for the initial MAEAP verification.

After developing and implementing a Livestock Improvement Action Plan to address the risks indicated by the Livestock A Syst, producers may contact the Michigan Department of Agriculture and Rural Development (MDARD) to request a farm inspection by calling 517-284-5609. An MDARD inspector will schedule a visit at the producer's convenience.

### **Confidential Assistance**

Participating farmers are offered confidential, one-on-one guidance through the risk assessment process. Confidential assistance is offered by members of MAEAP's non-regulatory partner organizations, including local conservation districts, Michigan State University Extension (MSUE) and the Michigan Milk Producers Association. Producers may indicate which organization they would prefer to work with or may contact the MAEAP office at 517-284-5609.

Assistance is available to help producers in a variety of ways, including:

- Guide producers through the Livestock A Syst assessment process.
- Help producers understand MAEAP and other environmental expectations.
- Identify farm-specific areas of concern and opportunities related to environmental stewardship.
- Set farm-specific areas of concern and opportunities related to environmental stewardship.

- Set farm-specific goals, timelines, and plans for improving and sustaining good environmental stewardship.
- Identify the appropriate resource persons to assist in the completion of specific steps toward environmental improvement.

### **No Obligation**

Completing the Livestock A Syst does not obligate the farmer to specific changes. Farmers can progress as far as they feel comfortable or to meet individual farm goals. Note that some circumstances (e.g., Concentrated Animal Feeding Operation [CAFO] designations, some Environmental Quality Incentives Program [EQIP] requirements and Michigan Department of Environment, Great Lakes and Energy [EGLE] enforcement actions) require farms to implement a CNMP and/ or other farm practice changes more quickly.

### **A Few Final Words**

The key to Livestock A Syst is that once producers have identified environmental risks, the plan is implemented to reduce the risk(s). Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement.

Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow. Producers who have developed a plan and implemented changes to address the risks are ready to consider MAEAP verification of their Livestock System.

### **Points of Reference**

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research and promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the MDARD Web site: www.michigan.gov/mdard.

**P.A. 451 of 1994, Part 82**, ensures the confidentiality of the producer information that farmers provide to the MDARD for system verification. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

### Tools in the Livestock+A+Syst Supplement (FAS112S)

Animal Waste Management (AWM). AWM is a planning/design tool for animal feeding operations that can be used to estimate the production of manure, bedding and process water, and determine the size of storage/ treatment/facilities. The procedures and calculations used in AWM are based on the USDA Natural Resources Conservation Service (NRCS) Agricultural Waste Management Field Handbook. Bodies of Dead Animals Act (BODA) Recordkeeping Forms. These forms provide the necessary documentation for both composting and burial of mortalities. These forms are found at www.maeap.org and in the MSUE bulletin "Recordkeeping System for Crop Production," E-2342.

Manure Management: Getting Started. This nutrient balance worksheet is a tool to determine farmland base sustainability. Found at www.maeap.org.

Manure Storage Review Sheets. This evaluation checklist assists in determining proper storage construction and notes if the structure can be verified. Found at www.maeap.org.

Odor Management Plan. This plan has been developed to address odors associated with livestock operations. Information on an odor management plan can be found at www.maeap. org and msue.anr.msu.edu/resources/odor\_ management\_plans.

Proper Disposal of Dead Animal Carcasses Worksheet. This worksheet helps evaluate proper disposal of dead animal bodies and compliance with the BODA. Found at www.maeap.org.

Silage Leachate Management. This information provides tips for reducing silage leachate and associated risks. Find in the CNMP Guidance Document, question 7, at www.maeap.org.

### **Table of Contents**

### Whole-farm Nutrient Balance

Section 1.01 Farmland base	. 9
Section 1.02 Percent of feed produced on the farm	. 9

### Farm Site Review

Section 2.01 Right to farm	9
Section 2.02 Precipitation management	9
Section 2.03 Well and water isolation	9
Section 3.00 Milking center wastewater	10
Section 3.01 Milking center wastewater	10
Section 3.07 Milking center septic systems	11
Section 3.10 Application of wastewater to vegetated	
infiltration system	11
Section 3.13 Direct discharge to surface water	12
Section 4.00 Manure Storage	12
Section 4.01 Manure storage capacity	12
Sections 4.02 and 4.03 Well isolation	13
Section 4.04 Liquid manure storage structures	14
Section 5.00 Solid bedded systems and composted	
manure systems	16
Section 5.01 Solid manure storage at the farmstead	16
Section 5.07 Temporary stockpiled manure in the field	18

Section 6.00 Outside livestock lot management	.19
Section 6.01 Water management	.19
Section 6.03 Lot runoff management	.19
Section 6.04 Manure removal	.20
Section 7.00 Pasture management	.20
Section 7.01 Pasture management	.20
Section 7.04 Stream crossing	.21
Section 7.05 Animal concentration points	.21
Section 7.06 Snow or frozen conditions	.22

### Silage Storage

Section 8.01 General silage storage	22
Section 8.06 Whole tires and sidewalls	23
Section 8.09 Bunker silos	23
Section 8.13 Upright silos	24
Section 8.16 Silage bag management	24

### **Drinking Water Well Condition**

Section 9.01 Drinking water well condition	25
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### Table of Contents

#### Manure Spreading Plan

Sec	tion 10.01 Soil and manure tests	26
Sec	tion 10.04 Application rates	
Sec	ction 10.07 Records	
Sec	ction 10.09 Nitrogen application rates	29
Sec	ction 10.10 Phosphorus application rates	29
Sec	tion 10.11 Odor management	29

### Conservation Practices for Fields Used for Manure Application

Section 11.01 Conservation practices for fields used for	
manure application	30
Section 11.05 Manure application	32
Section 11.06 Streams and wetlands	32
Section 11.07 Tile management	32
Section 11.08 Application through an irrigation system	33

### **Emergency Plan and Employee Training**

Section 12.01 Emergency plan	35
Section 12.02 Employee training	35

#### Mortality Management and Veterinary Waste Disposal

Section 13.01 Animal mortalities	.35
Section 13.02 Mortality composting	. 35
Section 13.08 Veterinary waste disposal	. 37
Section 13.09 Unwanted or unusable animal medications	. 37

### **Odor Management**

Sections 14.01 through 14.03 Site Selection GAAMPs verification	.37,38
Section 14.04 Odor complaints	.39
Section 14.05 Odor management plans	.39

### Other Environmental Risks in the Livestock System

Section 15.01 Water pumping capacity	39
Section 15.02 Other environmental risks	39

Whole-farm Nutrient Balance					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.01)</b> Is there adequate land base for all nutrients used on the farm?	There is adequate land base or manure is sold or transferred off site.	Lacks adequate land base but fields test low (< 75 <i>PPM</i> ) in phosphorus and manure applications can be balanced on nitrogen basis.	Lacks adequate land base.	Complete Manure Management: Getting Started (see Supplement) or use NRCS farm nutrient balance spreadsheet.	
<b>1.02)</b> What portion of the animal feed is produced on the farm?	75 percent or more of the protein and phosphorus in the ration originates from on-farm sources.	Between 50 and 75 percent of the protein and phosphorus in the ration originate from on-farm sources and no manure is sold or transferred off site.	Less than 50 percent of the protein and phosphorus in the ration originate from on-farm sources and no manure is sold or transferred off site. This results in the buildup of soil phosphorus and other nutrients.		
		Farm Site R	eview		
<b>2.01)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint, or the concern was not verified, or the concern was resolved.		There was a formal Right to Farm complaint and the concern was not resolved.	Producer's verbal indication of complaint history.	
<b>2.02)</b> Do rain, snow (including plowed snow) roof water or surface water come into contact with manure, compost, feed/silage, livestock lots or travel lanes resulting in contaminated runoff?	There is no clean water contact with the listed areas, or contaminated <i>runoff is collected or</i> <i>treated</i> and does not discharge directly to surface water.		Areas are exposed to rain/snow or surface water, and runoff is not collected or treated. <b>Runoff discharges</b> <b>directly to surface water.</b> <sup>4</sup>	Visual inspection of the farmstead. Visual inspection of flow patterns are most apparent during or shortly after a rainfall event and/or thaw.	
<b>2.03)</b> If surface drains are present around the farmstead, what are they collecting and where does the runoff end up?	Surface drains do not capture contaminated runoff or there are surface drains <i>but runoff</i> <i>is collected or treated</i> and does not discharge directly to surface water.		Surface drains collect contaminated <b>runoff and</b> <b>discharge directly to</b> <b>surface water</b> <sup>4</sup> or run to low areas and pond.	Visual inspection of the farmstead. Visual inspection of flow patterns are most apparent during or shortly after a rainfall event and/or thaw.	

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Farm Site Review (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<ul> <li>2.04) How far away is the well from the following areas:</li> <li>1) Temporary manure stacking areas?</li> <li>2) Livestock lots?</li> </ul>	Isolation distance is maximized to the extent possible but is not less than 75 feet for public wells and 50 feet for private wells.	Three to six feet.	Isolation distance is less than 75 feet for public wells and 50 feet for private wells. <sup>1,3</sup>	Required for MAEAP Farmstead System verification.		
<b>2.05)</b> Do livestock watering systems have backflow prevention devices to protect the well from contamination?	All watering systems have backflow prevention build into the waterer or in the water lines to the waterers, or an air gap.		No backflow prevention for livestock watering systems. <sup>1</sup>	Required for MAEAP Farmstead System verification.		
MILKING CENTER WASTEWA	ATER					
<b>3.01)</b> How many gallons of water per cow per day are utilized in parlor cleanup?	Fewer than 10 gallons.	Between 10 to 20 gallons.	More than 20 gallons.			
<b>3.02)</b> Where are milking center chemicals, disinfectants and antibiotics stored?	Stored in a partitioned off protected area away from drains.	Stored in a location where a spill could reach the drain.	Stored in high-traffic area near drains.			
<b>3.03)</b> How is plate cooler water handled?	100% of plate cooler water is reused for livestock watering or other livestock-related use or permitted for discharge.	Less than 10,000 gal/day are discharged onto ground surface. Discharged water does not intercept surface water.	More than 10,000 gal/day are discharged onto ground surface or intercept surface water without a permit. <sup>4</sup>	Appropriate cooling water management demonstrated.		
<b>3.04)</b> What are the parlor cleanup practices?	Milk, milky rinse water, manure, and feed waste are land applied or otherwise appropriately utilized, and are never discharged to septic or other infiltration type treatment systems.	Some milk, milky rinse water, manure, or feed waste is discharged to septic or other infiltration-type treatment systems. Systems are monitored and managed for proper operation.	Significant milk, milky rinse water, manure, or feed waste is discharged to septic or other infiltration- type treatment systems. Wastewater is <b>discharged</b> <b>directly to surface water</b> . <sup>4</sup>	Appropriate milking center cleanup practices demonstrated.		
<b>3.05)</b> Is all wastewater collected and stored?	Wastewater is stored, used, hauled daily or passes through a designed treatment system.	Wastewater passes through a properly functioning filtration system.	Wastewater is directly discharged to a lake, drainage ditch, stream or field. <sup>4</sup>	Appropriate wastewater management is demonstrated. No direct discharge.		

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Farm Site Review (continued)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MILKING CENTER WASTEW	ATER (CONTINUED)				
<b>3.06)</b> Is rejected milk collected and stored?	Rejected milk is stored, hauled out or fed.		Milk is discharged to surface water, <sup>4</sup> put into septic system or put into treatment strip.	Rejected milk is properly managed.	
MILKING CENTER SEPTIC S	YSTEMS (IF THIS METHOD IS N	NOT USED, SKIP TO THE NEXT	SECTION)		
<b>3.07)</b> Is all milkhouse waste water treated by the septic system?	All milkhouse waste water is treated by septic system.		Some waste water is not treated or <b>is discharged to tile, inlet or drainage ditch</b> <sup>4</sup>	Collection and treatment of all wastewater is demonstrated.	
<b>3.08)</b> Is the septic system managed adequately to handle the volume of wastewater?	Septic system is <i>managed</i> <i>in a manner to prevent</i> <i>pollution to waters of the</i> <i>state.</i>		Septic system is not managed adequately and discharges directly to surface waters. <sup>4</sup>	System operating effectively, without evidence of a discharge.	
<b>3.09)</b> Is the septic system periodically pumped?	Tank pumped more frequently than once a year.	Annual pumping.	Tank is pumped less frequently than once a year.		
APPLICATION OF WASTEWA	TER TO VEGETATED INFILTR	ATION SYSTEM (IF THIS METI	HOD IS NOT USED, SKIP TO THE	NEXT SECTION)	
<b>3.10)</b> Is storage used prior to treatment, such as a settling tank or detention basin?	Properly sized settling tank, detention basin or other pretreatment system is used.	Undersized settling tank, lagoon or other pretreatment system.	No pretreatment.		
<b>3.11)</b> Does the system handle the capacity of milking center wastewater generated?	Infiltration area effectively treats the quantity of wastewater generated. <i>Treatment area is</i> <i>managed to prevent</i> <i>pollution to waters of the</i> <i>state.</i>	Infiltration area effectively treats the quantity of wastewater generated, but shows minor erosion, wastewater ponding or burned vegetation.	Infiltration area has excessive erosion, wastewater ponding or burned vegetation.	Properly operating system confirmed by visual inspection of vegetated infiltration system. Refer to <i>Guidelines for</i> <i>Milking Center Wastewater</i> <i>(Wright and Graves, 1998)</i> and <i>Milking Center</i> <i>Wastewater Guidelines</i> <i>(Holmes and Struss, 2009)</i> for more information.	

Farm Site Review (continued)					
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
APPLICATION OF WASTEWAT	TER TO VEGETATED INFILTR	RATION SYSTEM (IF THIS MET	HOD IS NOT USED, SKIP TO THE	NEXT SECTION) (CONTINUED)	
<b>3.12)</b> How is the vegetated infiltration system maintained?	Vegetation maintained and harvested at least once per year. Accumulated solids removed, if needed.	Occasional maintenance.	No maintenance.	Vegetation maintained and harvested. Records of maintenance kept.	
DIRECT DISCHARGE TO SURF	FACE WATER				
<b>3.13)</b> Is wastewater directly discharged to a lake, drainage ditch, stream, regulated or natural wetlands or other surface waters?	Milk parlor and milkhouse wastewater are managed in a manner to prevent discharge into waters of the state.		Milking center wastewater is discharged directly to surface water. <sup>4</sup>	No discharge present. It is acceptable to discharge milk parlor and milkhouse wastewater into constructed wetlands designed and intended to process those wastes. (NRCS practice standard 656 "Constructed wetland").	
MANURE STORAGE (INCLUD	ES ALL STORAGE SYSTEMS	USED FOR MANURE, WASTEW	ATER OR RUNOFF CONTAINME	NT)	
<b>4.01)</b> What is the storage capacity of manure systems?	There is six months or greater manure storage or manure is transferred offsite.	There is less than six months storage; adequate land base is available for winter and summer applications.	There is minimal or no manure storage on site. Adequate land base is not available.	Manure Application Risk Index (MARI) shows adequate acres for winter spreading. Records on manure production and storage capacity provided. MAEAP manure storage review sheets or NRCS animal waste management calculations are completed for storages to determine volume. (See FAS 112S.)	

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	Farm Site	Review (con	tinued)		
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MANURE STORAGE SYSTEMS	<b>}</b>				
<ul> <li>4.02) How far is the <u>liquid</u> manure storage from any well?</li> <li>(Private wells include irrigation, livestock watering, cooling etc.</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees)</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation from the Local Health Department for the well, OR,</li> <li>Between 200 and 800 feet with approved storage and well, and protective site</li> </ul>		For private wells: Less than 150 feet. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate well isolation distance for site characteristics. Required for MAEAP Farmstead System verification.	
Use Table 1 in FAS107 for well type identification* <b>4.03)</b> How far is the <u>dry</u> manure storage from any	For Type IIa public wells, refer to FAS 112S. For private wells: • 150 feet or greater		For private wells:	Appropriate well isolation	
manure storage from any well? (Private wells include irrigation, livestock watering, cooling etc. Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking	<ul> <li>OR</li> <li>50 feet or greater, for covered facility with protective site features, with an MDARD review.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR</li> <li>Approved isolation distance deviation from the Local Health Department for the</li> </ul>		For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	characteristics. Required for MAEAP Farmstead System verification.	
fountains, etc. on dairy farms or farms with employees) Use Table 1 in FAS107 for well type identification.*	<ul> <li>well OR</li> <li>Between 200 and 800 feet with approved storage and well, and protective site features.* OR</li> <li>75 feet or greater for covered facility with protective site features, with MDARD review.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>				

<u>\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.</u>

A boxed risk level indicates the level required for environmental assurance verification.

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Farm Site Review (continued)					
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk
LIQUID MANURE STORAGE	Systems				
<b>4.04)</b> What design standards are utilized for liquid manure storage structures?	As-built documentation is available. Construction design for manure storage and treatment facilities meets standards and specifications in accordance with MI NRCS- FOTG, Concrete Manure Storages Handbook (MWPS-36), Circular Concrete Manure Tanks publication TR-9 (Midwest Plan Service, 1998). For steel: Manual of Steel Construction, American Institute of Steel Construction. For concrete: Building Code Requirements for Reinforced Concrete, ACI 318, American Concrete Institute. For earthen storage, the permeability of the earthen liner is known and the earthen storage meets NRCS standard 313: Waste Storage Facility. No evidence of overflow.	The storage was designed and built by professionals, but the as-built design standards are unknown. The storage structure meets the requirements as outlined in Extension Bulletin FAS 112S.	Storage design is unknown and conformance has not been determined or the system is not functioning properly.	Appropriate manure storage design and installation demonstrated. Completed MAEAP manure storage review sheets or as-built engineering standards available. (See FAS 112S) System analysis procedure (seepage meter) provides evidence storage meets conformance standards.	

	Farm	Site Review (	continued)		
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
LIQUID MANURE STORAG	SE SYSTEMS (CONTINUED)	· · ·	· · · · · · · · · · · · · · · · · · ·		
<b>4.05)</b> Are structures properly maintained?	Structure is properly maintained and in good condition. No damage to the liner or breaches are evident. No visible signs of issues with push-off ramps, load-out areas, pumps, piping, etc.	Structure appears to be in good condition.	Lining material integrity broken. Evidence of overflow. Coarse-textured soils, no clay liner. Evidence of extensive cracking, leaning, etc. Structure needs repair.	MAEAP manure storage review sheets completed. (See FAS 112S) Additional Criteria may be required for CNMP development.	
<b>4.06)</b> Are areas adjacent to manure storage structures properly maintained?	Banks are mowed and inspected regularly for potential problems. No brush, trees or animal burrows present.	Banks are not mowed regularly. Woody plant material present.	Lack of maintenance around storage site and/or numerous areas in need of repair and/or burrows present.	MAEAP manure storage review sheets completed. (See FAS 112S)	
<b>4.07)</b> Is clean water (i.e. roof and surface runoff) diverted away from the manure storage facility?	Clean water is diverted away from manure storage.	Clean water is not diverted but storage is designed to accommodate the additional water while still maintaining the freeboard.	Potential exists for overflow of manure storage.	MAEAP manure storage review sheets completed. (See FAS 112S)	
<b>4.08)</b> How is freeboard maintained and overflow prevented in storage structures?	Minimum freeboard is known and observed. A minimum freeboard of twelve inches (Six inches for fabricated structures) plus the additional storage volume necessary to contain the precipitation and runoff from a 25-year, 24-hour storm event. Freeboard markers are in place.	No evidence of manure overflowing storage. Safe freeboard level is known but not visibly marked. Freeboard not always maintained.	Evidence that manure overflowed the storage structure. Freeboard level is unknown and unmarked.	Appropriate manure storage management demonstrated. Safe freeboard level indicated on storage. Runoff is calculated.	
<b>4.09)</b> If liquid manure storage structures are no longer needed and are to be closed or converted to another use, how are they decommissioned?	Liquid manure storage structures are decommissioned according to the NRCS Practice standard 360 waste Facility Closure.	Liquid manure storage structures are not decommissioned but are closely monitored.	Liquid manure storage structures are abandoned.		

Farm Site Review (continued)						
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your	
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk	
SOLID-BEDDED MANUR	E SYSTEMS AND COMPOSTED	MANURE SYSTEMS				
<b>5.01)</b> How are animal facilities with bedded manure packs designed and constructed?	Constructed with a floor of impermeable material or fine-textured soil. Adequate bedding is provided to maintain solid nature of manure. No rainfall or runoff enters the manure area. No waterers in the building.	Medium- to fine-textured soils, limited bedding provided, some rainfall or runoff enters manure area. Waterers in the building.	Building has an earthen floor on coarse-textured soil. Contaminated runoff directly discharges to surface water. <sup>4</sup>	Appropriate manure storage design and management for leachate/runoff control.		
<b>5.02)</b> At the farmstead, where is manure temporarily stacked?	Manure can be temporarily stacked on an impermeable pad with sides. Runoff does not flow onto neighboring property or into surface waters.	Manure stacked on the ground with appropriate management to minimize leaching and prevent runoff flow onto neighboring property or into surface waters - such as rotating locations, complete removal of manure, records documenting timing of removal and location used and seeding of previous location.	Manure is temporarily stacked on the ground without appropriate management to minimize leaching and prevent all runoff such as rotating locations, complete removal of manure, seeding of previous location and records documenting location used. For example: manure is stacked in the same location every year, piles are located within 50 feet of surface water, and/or there is evidence that <b>manure- contaminated runoff flows</b> <b>to surface water</b> <sup>4</sup> or to adjacent property.	Appropriate temporary manure stacking demonstrated at the farmstead for surface water and groundwater protection.		
<b>5.03)</b> At the farmstead, how long is manure temporarily stacked?	Less than 365 days with complete removal of manure.		Greater than 365 days without complete removal of manure.	Manure not stacked for more than 365 days. Refer to manure application records.		

Farm Site Review (continued)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
SOLID-BEDDED MA	NURE SYSTEMS AND COMPOS	TED MANURE SYSTEMS (CONTINUED)			
<b>5.04)</b> At the farmstead, what management practices are used to reduce odors and pests from outside temporary stacks?	Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes <u>and</u> stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.	Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes <u>Or</u> stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.	Stockpiled manure is closer than 50 feet to property lines or 150 feet to non-farm homes and stockpiled manure is not covered. No additives are used to reduce odors and pests.	Appropriate manure storage management demonstrated for odor and pest control.	
<b>5.05)</b> At the farmstead, how are solid manure storage structures designed and constructed?	Constructed with a floor of concrete, or equivalent material, and with walls that prevent leachate from entering surrounding soils. Leachate and rainfall/snowmelt runoff discharged into a designed system.	Constructed with floor of compacted asphalt or fine- or medium-textured soils. Leachate will have direct contact with earthen floor or side walls. The permeability of the earthen floor is known and the earthen floor meets NRCS Standard 313. Leachate and rainfall/snowmelt runoff discharged into a designed system.	Earthen floor constructed with coarse-textured soils. Rainfall and leachate will have direct contact with earthen floor or sidewalls. Runoff and leachate are uncontrolled and <b>discharge directly to surface</b> water. <sup>4</sup>	Appropriate manure storage design and management for leachate/runoff control.	
<b>5.06)</b> At the farmstead, is runoff from solid manure storage structures directly discharging to surface water or groundwater?	Provisions made to control and/or treat runoff from stored manure. And/or a designed and maintained vegetative infiltration area or runoff storage basin effectively handles storage runoff.	Inadequate runoff control. Signs of manure runoff past perimeter of vegetated area or exceeding storage basin capacity.	Manure storage runoff discharges directly to surface water. <sup>4</sup>	Appropriate runoff control from manure storage area(s).	

	Farm Site Review (continued)						
<b>RISK QUESTION</b>	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	RISK		
SOLID-BEDDED MA	NURE SYSTEMS AND COMPOST	ED MANURE SYSTEMS (CON	TINUED)				
<b>5.07)</b> In the field, how is manure <u>temporarily</u> stockpiled in relation to surface water?	Manure stockpiles are kept a least 150 feet from surface waters or areas subject to flooding unless conservation practices are used to protect against runoff and erosion losses to surface waters.		Manure stockpiles are closer than 150 feet to surface waters or areas subject to flooding, and conservation practices are not used to protect against runoff and erosion losses to surface waters.	Appropriate temporary manure stacking demonstrated in the field for surface water protection.			
<b>5.08)</b> In the field, what management practices are used to reduce odors and pests from manure <u>temporarily</u> stockpiled?	Stockpiled manure is at least 150 feet away from non-farm homes and stockpiled manure is covered with a tarp, straw or other materials or additives are used to reduce odors and pests.	Stockpiled manure is at least 150 feet away from non-farm homes.	Stockpiled manure is closer than 150 feet to non-farm homes.	Appropriate manure stockpiling demonstrated for odor and pest control.			
<b>5.09)</b> In the field, how long is manure <u>temporarily</u> stockpiled?	Manure is spread as soon as field and weather conditions allow, and does not exceed six months; or if covered with an impermeable cover, twelve months.		Manure stockpiled for more than six months without a cover, or more than twelve months with an impermeable cover.	Manure not stockpiled for more than 365 days. Refer to manure application records. For CNMP's manure may be stockpiled in the field for 20 days on soils with a High N Leaching index and 90 days on soils with a Medium N Leaching index. NRCS standard 634.			

Farm Site Review (continued)						
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your	
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	RISK	
<b>OUTSIDE LIVESTOCK LC</b>	DT MANAGEMENT					
<b>6.01)</b> How far is the livestock lot from surface water?	Livestock lot is more than 300 feet from surface water and <i>runoff control protects</i> <i>neighboring land areas</i> <i>and prevents direct</i> <i>discharge to surface</i> <i>waters or groundwater.</i>	Livestock lot is less than 300 feet from surface water and runoff control protects neighboring land areas and prevents direct discharge to surface waters or groundwater.	Evidence that manure- contaminated runoff flows from lot and <b>discharges</b> <b>directly to surface water</b> or to adjacent property. <sup>4</sup>	Appropriate livestock isolation distance from surface water.		
<b>6.02)</b> What efforts are made to divert unwanted drainage from upslope watersheds and roof water from becoming contaminated with manure?	Provisions are made to collect, store, utilize and/or treat manure accumulations and contaminated runoff from outside open lot(s) used for raising livestock. Clean water is diverted away from the livestock lot(s).	Most roof water and upslope watershed drainage are diverted around livestock lot(s). Water that contacts manure is treated or contained and applied to cropland.	No clean water system in place. Most roof water and upslope watershed drainage runs through lot(s).	Appropriate clean water management for livestock lot(s).		
<b>6.03)</b> How is livestock lot runoff managed to protect surface water, groundwater and/or neighboring properties?	All lot runoff is directed to a properly designed and maintained runoff storage basin, or runoff is directed to a designed settling basin and vegetated infiltration area where vegetation is annually harvested. No evidence of runoff to surface water, groundwater and/or neighboring properties, or ponding in low areas.	No evidence of runoff flow to surface water or ponding in low areas. Vegetation or cropland that is annually harvested exists between lot and surface water.	Evidence of runoff flow discharging directly to surface water <sup>4</sup> or intermittent waterway.	Appropriate site management for livestock lot(s). Producer records of manure scraping/collection should be kept and evaluated to assess risk reduction.		

Farm Site Review (continued)						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>OUTSIDE LIVESTOCK I</b>	LOT MANAGEMENT (CONTINUI	ED)				
<b>6.04)</b> How often is manure scraped and removed from livestock lot(s)?	Manure is scraped and removed periodically from livestock lot(s) or other heavy use areas.		Manure is seldom scraped and removed from lot and feeding and watering areas.	Appropriate manure management in livestock lot(s).		
<b>6.05)</b> What type of floor or base does the livestock lot(s) have?	Properly maintained concrete, compacted asphalt, or other equivalent material.	Continuous-use, compacted dirt or compacted gravel. Minimal plant material growing.	Poorly compacted dirt or gravel layer as indicated by plant growth.	Appropriate floor or base in livestock lot(s).		
PASTURE MANAGEME	NT				-	
<b>7.01)</b> Are there current soil tests on the pastures?	All fields are sampled and tested on a regular basis, at least every one to four years, depending on crops being grown and the cropping system.	Most fields are sampled and tested every one to four years. Producer plans to bring all field soil tests up-to-date within the next three years. (See also 10.01)	Fields have not been tested within the past four years.	Field names or map. Acres in the cropped portions of the field. Up-to-date soil test reports or schedule to bring all tests up-to- date. If pursuing a CNMP, soil samples should be taken every three years or more frequently.		
<b>7.02)</b> What is the condition of pasture vegetation?	Pasture is well-managed with all areas vegetated. <i>Runoff from pasture</i> <i>feeding and watering</i> <i>areas travels through a</i> <i>vegetated filter area to</i> <i>protect surface and</i> <i>groundwater.</i> Or no contaminated runoff is noted.	Pasture is well-managed and vegetated except in feeding and watering areas, which are scraped. <i>Runoff from pasture</i> <i>feeding and watering</i> <i>areas travels through a</i> <i>vegetated filter area to</i> <i>protect surface and</i> <i>groundwater.</i> Or, no contaminated runoff is noted.	Pasture is overgrazed with bare spots. Erosion may be present. <b>Runoff from pastures is</b> carrying sediment and nutrients to surface waters <sup>4</sup> or neighboring property.	No direct discharge from pasture(s).		

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Farm Site Review (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
PASTURE MANAGEMENT	Γ (CONTINUED)					
<b>7.03)</b> How is the pasture managed to protect surface water?	Livestock are excluded from actual contact with streams or watercourses except for controlled crossings and accesses. Flash grazing may be implemented to control vegetation between fenced-in areas.	Herd density in the pasture is such that the stream bank remains vegetated with no eroded areas. Animals are not allowed to congregate under trees close to the waterway causing bare areas. And/or the practices of flash grazing is being implemented to control vegetation between fenced-in areas.	Runoff results in <b>direct</b> <b>discharge to surface</b> <b>waters.</b> <sup>4</sup> Livestock have free access to streams or watercourses, causing erosion.	Pasture managed to protect surface water from erosion and contamination demonstrated. Refer to <i>Prescribed Grazing 528</i> (USDA-NRCS-MI eFOTG) or Acceptable Practices for Managing Livestock along Lakes, Streams and Wetlands (E-3066, MSUE, 2008) for more information.		
<b>7.04)</b> If you plan to build a controlled stream crossing or access for livestock, do you have a permit from the of the Michigan Department of Environment, Great Lakes and Energy, Water Resources Division?	A Part 301, Inland Lakes and Streams permit has been obtained.	No.4				
<b>7.05)</b> What is being done to reduce manure concentration around watering tanks/feeders in pasture areas?	Water tank/feeding areas are rotated to different areas of pasture. Or, watering/ feeding areas are permanent, but manure is removed frequently to prevent concentration of nutrients. Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface water and groundwater.	Watering/feeding areas are permanent, but manure is removed at least annually to prevent concentration of nutrients. Runoff from pasture feeding and watering areas travels through a vegetated filter area to protect surface water and groundwater.	Watering/feeding areas are permanent with infrequent or no manure removal. There is evidence of <b>direct</b> <b>discharge to surface water</b> <sup>4</sup> or ponding in low areas.	Proper manure management around water and feed demonstrated.		

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Farm Site Review (continued)						
<b>RISK QUESTION</b>	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your	
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk	
PASTURE MANAGEMENT	(CONTINUED)					
<b>7.06)</b> How are animals handled in pastures or fields when ground is frozen or snow-covered?	Livestock are removed from fields or pastures during the winter months where runoff is a concern.	Livestock are grazed on fields or pastures for part of the winter months where runoff is a concern.	Livestock are present all winter on pastures or fields where runoff is a concern.			
Silage Storage						
<b>8.01)</b> Does untreated silage leachate or polluted runoff run to a low area and pond?	Provisions are made to control and/or treat leachate to protect groundwater and surface water.		Silage leachate ponding and/or runoff evident.	Appropriate silage leachate management demonstrated.		
<b>8.02)</b> Is clean water (rainwater, snow melt, etc.) diverted away from silage?	Clean water is diverted away from silage.		Clean water is not diverted away from silage, resulting in contaminated runoff.			
8.03) Are silage leachate and contaminated runoff collected and/or treated?	Provisions are made to control contaminated runoff and/or treat leachate to protect groundwater and surface water from a direct discharge. (Includes capturing of leachate from drains.) Designed system or management controls are in place.	Designed system in place but not maintained.	No system in place or lack of appropriate management or direct discharge to surface water or groundwater. <sup>4</sup>	Appropriate silage leachate management demonstrated.		
<b>8.04)</b> At what moisture content is silage typically harvested and stored?	Generally <i>below 67 percent</i> .	Between 67 and 80 percent.	Over 80 percent.			

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Silage Storage (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
GENERAL SILAGE STO	RAGE					
<b>8.05)</b> Does an emergency plan exist for times when leachate production exceeds current management controls?	An up-to-date written plan is available and is reviewed with all applicable employees.	Emergency action plan is incomplete or out-of-date.	No emergency action plan that covers excess leachate.	An up-to-date emergency action plan.		
<b>8.06)</b> Are whole tires or tire sidewalls used for securing the cover on bunker silos?	<ul> <li>Use 3,000 or less whole tires (unless EGLE approved). No limit on tire side walls.</li> <li>Whole tires are properly drilled for water drainage.</li> </ul>		<ul> <li>Use more than 3,000 whole tires without EGLE approval.</li> <li>Whole tires are not drilled for water drainage.</li> </ul>			
<b>8.07)</b> How are tires and tire sidewalls stored?	Tire and tire sidewall piles are: - Not more than 40' x 200' horizontal area. - Not higher than 15'. - No closer than 30' between piles. - No closer than 20' from property lines. - No closer than 60' from buildings and structures. - Not stored with hazardous products.		Tire and/or tire side-wall storage is not in conformance with low risk guidelines.			
<b>8.08)</b> In the case of a tire fire, does the farm have an up-to-date emergency farm plan?	The farm has an up-to-date emergency farm plan which is reviewed with all applicable employees.	More than one-year-old plan or an incomplete plan is available.	No emergency farm plan when more than 3,000 whole scrap tires are stored on the farm. <sup>4</sup>	An up-to-date emergency action plan.		
BUNKER SILOS						
<b>8.09)</b> What type of floor does the silage storage have?	Concrete, compacted asphalt or equivalent material. No excessive cracking (cracks that a finger can fit into or spider webs) or cracks are repaired.	Earthen floor with fine- textured soils (clay, clay loam, silty clay loam, sand clay, sandy clay loam and silty clay).	Earthen floor has permeable soils. Or, concrete, asphalt or lined surface contains many cracks.	A maintained impervious surface or fine-textured earthen floor.		

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Silage Storage (continued)								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
BUNKER SILOS (CONTINUE	ED)							
8.10) Is silage covered?	Silage is covered to prevent silage leachate.	Cover leaks.	No cover.					
<b>8.11)</b> Are the silage pad and surrounding area kept clean and free of loose silage?	Pad and surround area are kept clean.	Evidence of spilled or loose silage.	Pad is not kept clean.					
<b>8.12)</b> Is silage kept with a vertical face to reduce contact with clean water?	Yes.		No.					
UPRIGHT SILOS								
<b>8.13)</b> If there is a floor drain, is leachate collected, treated and/or stored, and applied at agronomic rates?	All leachate is collected, treated, and/or stored and applied according to nutrient management plan.		Leachate is not collected and/or <b>directly discharges</b> <b>to surface water.</b> <sup>4</sup>	Appropriate silage management demonstrated.				
<b>8.14)</b> How often is silo inspected?	Twice a year.	Once a year.	Less than once a year.					
<b>8.15)</b> Is leachate evident around the outside of the silo?	No.	Yes. Leachate is treated or stored.	Yes. Leachate is not treated or stored.					
SILAGE BAG MANAGEME	NT							
<b>8.16)</b> Are holes repaired and the bag water tight?	Yes, holes are repaired and the bag is watertight.	Some holes are repaired.	Holes are not repaired, and moisture is entering the bag.					

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Silage Storage (continued)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
SILAGE BAG MANAGEMEN	NT (CONTINUED)							
<b>8.17)</b> Is there a mechanism for collecting or treating or utilizing accumulated leachate?	Yes, leachate is collected and does not pond or reach surface water.		No. Leachate runs from bags to surface water. <sup>4</sup>	Appropriate silage management demonstrated.				
<b>8.18)</b> Is plastic disposed of in a licensed landfill or recycled?	Plastic is either recycled or disposed of in a landfill.	Plastic is stored on-site.	No, plastic is burned on- site. <sup>4</sup>					
	Drinki	ng Water Well	Condition					
<b>9.01)</b> Is there an unused well located on the farmstead?	No unused well or abandoned well properly sealed.	Unused well temporarily abandoned properly: - Meets minimum isolation distances - Is disconnected from any water distribution piping. - Has the top of the casing securely capped.	Unused, unsealed well at farmstead. <sup>1</sup>	Required for MAEAP Farmstead System verification.				
<b>9.02)</b> How often is drinking water tested for nitrates and bacteria?	Tested yearly.	Tested within the past three years.	No water testing done, or more than three years since last test.	Required for MAEAP Farmstead System verification.				
<b>9.03)</b> What are the water test results?	No coliform bacterial or nitrate detected.	Water contamination detected. Public water well(s) test below health advisory limits.	Water contamination detected. <b>Public water</b> well(s) test above health advisory limits. <sup>3</sup>	Required for MAEAP Farmstead System verification.				

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	Manure Spreading Plan						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>10.01)</b> How often are fields tested for nutrient levels (P, K, Ca, Mg) and pH?	All fields are sampled and tested on a regular basis, at least every one to four years, depending on crops being grown and the cropping system.	Most fields are sampled and tested every one to four years. Manure is not applied to fields without a current soil test. Producer plans to bring all field soil tests up-to-date.	Fields have not been tested within the past four years.	Field names or map. Acres in the cropped portions of the field. Up- to-date soil test reports or schedule to bring all tests up-to- date. On farms pursuing a CNMP, soil samples must be taken every three years or more frequently.			
<b>10.02)</b> Do soil sampling procedures adequately represent field conditions?	One composite sample is taken from uniform field areas of 15 to 20 acres or from uniform management areas on grid or zone sampling procedures.	One composite sample is taken from uniform field areas of 20 to 40 acres.	One composite sample is taken from areas of greater than 40 acres.	Predominant soil types/soil maps. Cropping histories. Proper soil sampling procedure.			
<b>10.03)</b> How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown or not considered.	All manure analyses or book values on file. Multiple manure samples collected over one to two year period provide evidence of manure nutrient values.			
<b>10.04)</b> How are desired application rates achieved?	Manure analysis (book value, manure test, or mass balance) and <i>field application rates are known.</i>		Application rate is not known.	Rate of manure applied known for all spreaders. Records indicate date of calibration.			

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Manure Spreading Plan (continued)									
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
<b>10.05)</b> How is the soil's ability to hold water and nutrients considered when calibrating for manure application?	Rates are at or below a level that manure does not run off or escape via tile drains. Tile outlets inspected after application. <i>Manure is prevented from</i> <i>reaching the tile lines.</i>		Manure application rates may be above the soil's ability to hold the water and nutrients. Manure reaches the tile lines and/or <b>directly</b> <b>discharges to surface</b> water. <sup>4</sup>	No evidence of runoff or tile discharge. Tile lines monitored before and after manure application.					
<b>10.06)</b> How are fertilizer application rates determined?	Consistent with Michigan State University recommendations and manure nutrients are credited. When MSU recommendations are not available other land grant university recommendations developed for the region may be used.	Fertilizer rates are based on soil testing lab recommendations but not consistent with MSU or other land grant university recommendations.	Fertilizer is not based on soil testing.	Applications consistent with MSU recommendations (MSU soil test printout or calculated MSU or other land grant university recommendations on field). When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used.					

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	Manure Spreading Plan (continued)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
<b>10.07)</b> What manure management records are maintained?	Complete application records of manure analysis, soil test results and rates of manure application for individual fields are maintained.	A minimum of one season of manure application records, or partial manure application records have been kept. Complete manure application records will be kept immediately and will be available for review at the time of re-verification.	Minimal or no records maintained.	<ul> <li>Additional nutrient management records that are needed.</li> <li>Date(s) of manure application and incorporation when applicable.</li> <li>Rate of manure application.</li> <li>Weather conditions during application of manure (e.g., sunny, 70 degrees F).</li> <li>Field conditions during application of manure (wet, dry, frozen, etc.)</li> <li>Manure/wastewater quantities produced and nutrient analysis results.</li> <li>Records of rental or other agreements for application of manure/wastewater on land not owned by the producer.</li> <li>Record of manure/wastewater sold or given away to other landowners.</li> </ul>					

	Manure Spreading Plan (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>10.08)</b> Are weather forecasts monitored when making decisions about field applications of manure?	Weather forecasts are monitored before field application decisions. Manure applications are delayed if excessive precipitation is predicted. Manure is not applied if greater than or equal to 70% probability of more than 0.5 inches of precipitation is forecasted within the next 24 hours.	The weather forecasts are monitored but manure applications are based on when the storage is full or timing is convenient. Application may be made when excessive precipitation is predicted	The weather forecasts are not monitored. Manure applications made regardless of weather forecasts.	Producer has a procedure in place to monitor weather forecasts prior to making decisions about field application(s) of manure. Manure is not applied when excessive precipitation is predicted.			
<b>10.09)</b> How are manure nitrogen (N) application rates managed?	Manure nitrogen rates do not exceed requirements of the crop and are credited toward fertilizer needs. Pre-sidedress nitrate test (PSNT) may be part of the program.	Manure nitrogen credits are considered but not to their full extent.	Commercial nitrogen is not reduced to account for manure nitrogen credits.	Manure rates do not exceed crop N needs, consistent with GAAMPs.			
<b>10.10)</b> How are manure phosphorus (P) application rates managed?	High testing fields (>150 ppm Bray P1) do not receive manure, and fields between 75 and 150 ppm P receive no more than four years, crop P205 removal if one-year application, is impractical.	High testing fields (>150 ppm Bray P1) removed from spreading plan, but crop removal rates are not followed.	Manure application rates are not based on soil tests and/or crop removal rates.	Manure rates do not exceed crop P needs. If developing a CNMP, refer to USDA-NRCS 590 Standard.			
<b>10.11)</b> Are odor reduction practices utilized when manure is land applied?	Manure is incorporated within 48 hours or injected into the soil.	If manure is not incorporated within 48 hours: <i>Conservation practices</i> (residue management, cover crops, perennial crops, etc.) <i>are used to protect against</i> <i>runoff and erosion losses</i> <i>to surface waters</i> or fields are snow covered or frozen preventing incorporation or injection.	All manures are surface applied and may not be incorporated until field is covered or until spring tillage.	Manure application records. Incorporation exceptions include: pastures or forage crops, or fields where crop residues are retained for erosion control or records show fields were snow covered or frozen preventing incorporation or injection.			

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Cons	Conservation Practices for Fields Used for Manure Application							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>11.01)</b> Are manure applications managed to avoid ponding, soil erosion and/or runoff?	Liquid manure applications are being managed in a manner to optimize nutrient utilization and do not result in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or surface water.	Some consideration is given to ponding, soil erosion and/or runoff.	Ponding, soil erosion and/or runoff are not considered. Manure <b>directly discharges</b> <b>to surface water.</b> <sup>4</sup>	No evidence of manure ponding, soil erosion and/or runoff.				
<b>11.02)</b> Have environmentally sensitive areas been identified (land near surface water, highly erodible soils, soils with high leaching or runoff potentials, wells and surface inlets) that require additional management when applying nutrients (manure and fertilizers)?	Environmentally sensitive areas are identified. Family members, employees and contractors are aware of and understand the management practices to protect these areas.	Some environmentally sensitive areas are identified.	Environmentally sensitive areas are not considered.	<ul> <li>Sensitive areas identified on field maps with appropriate management or setbacks:</li> <li>Areas next to surface water.</li> <li>Fields with shallow ground water.</li> <li>Fields with water wells.</li> <li>Areas near surface water inlets.</li> <li>Fields with highly erodible soils.</li> <li>Fields with highly leachable soils.</li> <li>Fields with high runoff potential.</li> <li>Training/communication plan to inform workers and contractors of appropriate management or setbacks is in place.</li> </ul>				

A boxed risk level indicates the level required for environmental assurance verification.

Bold Black print indicates a violation of state or federal regulation. Bold Blue Italic print indicates a management practice consistent with 2021 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

Conservation Practices for Fields Used for Manure Application (continued)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>11.03)</b> How are fields selected for spreading on frozen and snow- covered ground?	No applications on frozen or snow-covered ground without injection or incorporation.	Manure Application Risks Index (MARI)has been completed for each field receiving manure on frozen or snow-covered ground. Frozen or snow-covered fields receiving manure have met MARI criteria for either Very Low or Low rating and no liquid manure is applied on slopes greater than 3%, and no solid manure is applied to slopes over 6%.	Applications are made to fields where runoff to water resources may occur.	MARI completed for each field receiving winter manure application, or spreading plan does not include winter spreading.			
<b>11.04)</b> Is soil erosion under control on the farm fields?	Soil erosion losses are within tolerances as documented by the Revised Universal Soil Loss Equation (RUSLE2) and the Wind Erosion Prediction System (WEPS). Minimal evidence of erosion and no evidence of concentrated water flows. Cover crop may be in place.	RUSLE2 and WEPS are run on fields that are not: In pasture or hay ground, or no-till planting systems. Receiving fall tillage, with >30% residue on less than 12% slopes. Receiving more than one pass fall tillage that leaves fields rough with >40% residue and less than 8% slopes. And regardless of fall tillage, spring tillage leaves > 20% residue. And for all of the above there is no evidence of sheet, rill or gully erosion.	Excessive soil erosion is occurring on the farm.	RUSLE2 and WEPS calculations completed and on file.			

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Conserv	Conservation Practices for Fields Used for Manure Application (continued)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>11.05)</b> How is manure generally applied to fields?	Manure is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, cover crops, perennial crops, etc.) are used to protect against runoff and erosion losses to surface waters.	Manure is generally surface- applied, and conservation practices are employed to reduce the risk of runoff.	Manure is applied in a manner that results in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or <b>discharges directly</b> <b>to surface water.</b> <sup>4</sup>	Manure application records.				
<b>11.06)</b> How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	Manure is incorporated within 48 hours or injected. Or, surface applications are not done within 150 feet of surface water. Or, filter strips, riparian buffer strips, and other conservation practices are maintained between fields and surface waters on the farm and around surface water inlets.	Conservation practices are maintained on some fields.	Manure is applied within 150 feet of surface waters and not incorporated without conservation practices. And/or, manure occasionally reaches neighbor's property.	Field maps with setbacks and conservation practices identified. Records of manure incorporation.				
<b>11.07)</b> How are field tiles managed to prevent manure discharge to surface water?	Liquid manure is prevented from reaching tile lines. Management practices are in place to prevent runoff to surface inlets. Tile line outlets are monitored.		Tile outlets are not monitored for manure discharge.	Tiled fields identified on map. Record of tile flow before and after application (flow rate, color and odor). It is recommended tile outlets are marked where possible using either physical markers (stakes or flags) or GPS.				

Conservation Practices for Fields Used for Manure Application (continued)						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
MANURE PIPELINE, HOSE A	AND IRRIGATION SYSTEM MANA	GEMENT				
<b>11.08)</b> If liquid manure is applied through an irrigation system, is care taken to assure that application rates do not exceed soil infiltration rates?	Application rates do not exceed soil infiltration rates. System is monitored for proper function.		Application rates exceed soil infiltration rates, and/or runoff occurs.	No field evidence of runoff. Irrigation records.		
<b>11.09)</b> When systems are connected to a surface or well water source are appropriate backflow prevention devices in place and properly maintained when applying liquid manure through irrigation?	Backflow prevention safety devices, chemigation valve that creates an air gap or Reduced Pressure Zone (RPZ) valve, are used and properly maintained when irrigating with liquid manure.	Backflow prevention safety devices, chemigation valve that creates an air gap or Reduced Pressure Zone (RPZ) valve, are almost always used and/or properly maintained.	Backflow prevention devices are not used and/or properly maintained.	Operational backflow prevention devices field confirmed.		
<b>11.10)</b> When manure is transferred through a pipeline or hose is a system in place to continuously monitor for leaks and to rapidly stop flow if required?	Automatic or remotely- controlled shut down system installed.	Remote communication system in place and pump operator is always on standby when manure is being pumped.	Leaks not immediately detected. No means for remote communication or automatic shutdown. Delayed response time for system shutdown.	Satisfactory explanation of monitoring system provided by owner		
<b>11.11)</b> Are pipes, hoses and other system components in good repair, properly installed and supported, protected from damage and operated according to manufacturer recommendations?	System is regularly inspected and maintained. Manufacturer recommendation for proper installation, operation and maintenance are followed.		Leaks not immediately detected. No means for remote communication or automatic shutdown. Delayed response time for system shutdown.	This question is not required for MAEAP verification since the verifiers cannot verify operations based on manufacturer recommendations. 11.10 and 11.12 deal with the same topic in areas that can be verified. This question is for discussion and increasing awareness.		

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Conservation Practices for Fields Used for Manure Application (continued)						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
MANURE PIPELINE, HO	SE AND IRRIGATION SYSTEM MANAG	GEMENT (CONTINUED)				
<b>11.12)</b> When disassembled or moved, how is the residual manure in the system handled?	An air-driven device is used, or system is flushed with water, or other means are employed to properly remove manure from the system prior to disassembly.	Residual manure is drained and collected for land application or returned to storage.	System is disassembled with manure allowed to dump at low points.	Satisfactory explanation of hose disassembly provided by owner		
<b>11.13)</b> Is care taken to ensure that irrigated manure does not flow into subsurface drains?	Field conditions are monitored before, during and after irrigation, and liquid manure is prevented from reaching tile lines. Appropriate measures are taken to avoid surface water discharges.		No care is taken to monitor field conditions, tile drains, etc., when irrigating liquid manure. <b>Direct discharge</b> <b>to surface water</b> . <sup>4</sup>	No evidence of manure flow into surface drains.		
<b>11.14</b> ) If there are instances where diluted wastewater (≤ 1 percent solids) is applied to fields testing over 150 ppm P soil test, can the farmer document appropriate conditions for application?	<ul> <li>Growing plants in the application area.</li> <li>Wastewater application rate supplies less than 75% P crop removal.</li> <li>Annual sampling of wastewater P content.</li> <li>Soil P test levels decline over time.</li> <li>No other P applied to field.</li> <li>Tile drain fields monitored for manure flow.</li> </ul>	Appropriate conditions are partially met.	Appropriate conditions for dilute wastewater application are not present.	Appropriate dilute wastewater management demonstrated. Refer to the Manure Management and Utilization GAAMPs. Note: The CNMP guidelines and NRCS Nutrient Management Practice standard (590) require the use of the Michigan Phosphorus Index (PI) when wastewater is applied to fields testing over 150 ppm P soil test. A PI of 17 or lower is needed.		

	Emergency	Plan and E	mployee Traii	ning	
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>12.01)</b> Is there an emergency plan in place in the event of a manure spill?	Up-to-date written plan available and understood by all appropriate farm employees. <i>All uncontained</i> <i>spills or releases should be</i> <i>reported to the MDARD</i> <i>Agriculture Pollution Emergency</i> <i>Hotline: 1-800-405-0101,</i> or the EGLE Pollution Emergency Alerting System: 1-800-292-4706	Incomplete or out-of- date action plan available.	No emergency action plan that deals with manure spills.	Up-to-date emergency farm plan, such as MSU Extension Bulletin E-2575 "Emergency Planning for the Farm".	
<b>12.02)</b> What method of training is used to inform employees about the farm's emergency plan?	Employees are trained either by formal (class) or informal methods to respond properly to spills and discharges.	Training is sporadic or occasional.	No training is provided to employee responsible for manure handling.		
Мс	ortality Managem	ent and Ve	terinary Wast	e Disposal	
<b>13.01)</b> How are animal mortalities handled?	Animals are buried, incinerated (requires permit), land filled, placed in a compost pile or picked up by a rendering service within 24 hours of death or stored for a maximum of seven days at 40 degrees F or a maximum of 30 days at 0 degrees F before proper disposal of the carcass.		Animals are not buried, incinerated, land filled, placed in a compost pile or picked up by a rendering service within 24 hours of death. Or, stored for more than 7 days at 40 degrees F or more than 30 days at 0 degrees F before disposal of the carcass. <sup>5</sup>	Disposal of dead animal bodies is done according to the Bodies of Dead Animals Act (BODA), as amended in 2007. Up-to-date forms on file for verification. (See FAS 112S.) Forms for recording mortality disposal including burial record forms and compost record forms are available on the MAEAP website at: https://maeap.org/resource- library/?resource-type=livestock- system-resource.	
<b>13.02)</b> If burial of mortality (including both individual and common graves) is used, what are the isolation distances for the burial site(s)?	Burial site is located at least 200 feet from any well and dead animal(s) do not come into contact with waters of the state.		Site(s) is located less than 200 feet from any well and/or come into contact with waters of the state. <sup>5</sup>	Isolation distances meet BODA requirements. The BODA supplement, available at the MAEAP.org website, has been completed and reviewed.	

Mortality	y Management	and Veterina	ary Waste Dis	posal (continued)	
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MORTALITY COMPOSTING	(CONTINUED)				
<b>13.03)</b> If mortality composting is used, what are the isolation distances for the composting site?	Site is located at least 200 feet from waters of the state, 200 feet from any well, 200 feet from nearest non-farm residence and 2 feet above seasonal high water table.		Site is located less than 200 feet from waters of the state, 200 feet from any well, 200 feet from nearest non-farm residence, and 2 feet above seasonal high water table. <sup>5</sup>	Isolation distances meet BODA requirements. The BODA supplement, available at the MAEAP.org website, has been completed and reviewed.	
<b>13.04)</b> Is the site properly selected?	Site was properly selected for compost system regarding setbacks and composting method.		Site was NOT properly selected for compost system regarding setbacks and composting method.	Combining mortality from multiple sites may make the farm a large CAFO. See: <u>http://msue.anr.msu.edu/news</u> /can_combining_mortality_co mposting_from_two_separate _farms_constitute_a_caf	
<b>13.05)</b> Is the compost system sized to handle the normal, expected mortality for the facility?	System capacity is adequate for the mortality at all times.	Capacity is normally adequate; however, system capacity is at times exceeded because of normal fluctuations in mortality rate.	System is sized inadequately to handle the volume of mortality for the operation.	Properly operating compost system confirmed by visual inspection of mortality compost.	
<b>13.06)</b> Does the composting process follow standards identified in the Bodies of Dead Animals Act, (BODA), as amended in 2008?	Current BODA standards followed.		BODA standards not followed.⁵	Practices are followed as described in the Michigan Animal Tissue Composting Operation Standard (MATCOS), available online at: <u>http://www.michigan.gov/docu</u> <u>ments/mda/BODA_Compostin</u> <u>g_Operational_Standards_21</u> <u>6592_7.pdf</u> . The BODA supplement has been completed and reviewed.	

Mortality Ma	inagement an	d Veterinary	Waste Dispos	sal (continued	l)
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MORTALITY COMPOSTING (CONT	INUED)				
<b>13.07)</b> Is compost actively aerated and temperature monitored at least weekly through three heat cycles?	Yes.		No. <sup>5</sup>	Compost is properly managed.	
<b>13.08)</b> Are records of compost management being kept according to BODA?	Yes.	Partial composting records have been kept. Complete composting records will be kept immediately and will be available for review at the time of reverification.	No. <sup>5</sup>	See FAS 112S, Proper Disposal of Dead Animals Worksheet for the required compost records.	
<b>13.09)</b> How are animal health care needles and syringes disposed?	Sharps are put into a puncture resistant container, labeled and taken to licensed landfill.		Disposal at landfill without protective containment, or disposed of on the farm. <sup>2</sup>	Presence of a Sharps disposal container.	
<b>13.10)</b> How are unwanted or unusable animal medications and healthcare products disposed of?	Taken to licensed landfill or veterinarian or distributor for disposal.		Flushed down the drain, dumped on the farm or dumped in the manure pit. <sup>2</sup>		
	00	dor Managem	ent		
14.01) Were the Michigan Right to Farm Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control for New and Expanding Livestock Facilities (Site Selection GAAMPs) evaluated for livestock facility?	Farm has Michigan Department of Agriculture and Rural Development (MDARD) <i>Site Selection</i> <i>GAAMPs</i> verification.	The farm has submitted the Livestock Site Screening Tool and passes the MDARD review.	The farm has built new or expanded since 2000 and does not meet all of the <i>Site Selection GAAMPs</i> , or the Livestock Screening Tool has not been completed and reviewed.	Records of evidence. Producer has official site selection GAAMP verification documentation. Producer has completed site screening tool and has passed MDARD review.	

ordinance has been enacted to allow for agriculture. In addition, siting does not apply to research and educational institutions, or other locations as determined by MDARD.

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	Odo	r Manageme	ent (continued)		
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>14.02)</b> Has there ever been an odor complaint?	No.	Yes, but situation was mediated without third party involvement.	Yes, MDARD was called in and determined the farm was not following GAAMPs and the farmer chose to not continue to work with MDARD to resolve the issues and come into conformance with GAAMPs.	No odor complaints, or no verified odor complain(s) that were not resolved.	
<b>14.03)</b> Does the farm have an odor management plan?	An odor management plan has been developed and implemented. <i>Farm is</i> <i>managed to minimize</i> <i>odor impacts upon</i> <i>neighbors.</i>	A partial odor management plan has been developed and implemented.	No odor management plan has been developed.	A written odor management plan has been developed and reviewed. (See FAS 112S Odor Management Plan.)	
Otl	ner Environm	nental Risks	in the Livestoc	k System	
<b>15.01)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 100,000 gallons per day (70 gallons per minute) for agricultural purposes has "water use" been registered and reported to the State of Michigan?	Pump capacity is less than 100,000 gallons per day (70 gallons per minute), OR, registered and reported annual water use to Michigan Dept. of Agriculture and Rural Development.		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan. <sup>13</sup>	Farm records indicate compliance.	
<b>15.02)</b> Are there other activities, products, processes/equipment, services, byproducts, and/or wastes at this farm that pose contamination risks to groundwater or surface water?	No additional contamination risk(s) are identified.	Plan to mitigate the identified contamination risk(s).	No plan to mitigate identified contamination risk(s).	No other environmental risks found.	

#### LIVESTOCK IMPROVEMENT ACTION PLAN

Develop a Livestock Improvement Action Plan for risks on the farm beginning on the inside cover of this bulletin. Once the plan is implemented, MAEAP Livestock System verification can be requested by calling the Michigan Department of Agriculture and Rural Development at (517) 284-5609.

Table 1. Le	gal citations for environmental risks in Livestock+A+Syst	
Footnote	Michigan Law	Description
1	Public Health Code, Public Act 368 of 1978, as amended	Part 127: Water Supply and Sewer Systems
2	Public Health Code, Public Act 368 of 1978, as amended	Part 138: Medical Waste Regulatory Act
3	Safe Drinking Water Act, Public Act 399 of 1976, as amended	
4	Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended	Part 31: Water Resources Protection
5	Bodies of Dead Animals Act, Public Act 239 of 1982, as amended	
8	Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended	Part 115: Solid Waste Management
9	Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended	Part 55: Air Pollution Control
10	Grade A Milk Law, Public Act 266 of 2001, as amended	
11	Natural Resources and Environmental Protection Act Public Act 451 of 1994, as amended	Part 169: Scrap Tires
13	Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended	Part 327: Great Lakes Preservation

#### Table 2. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline — 1-800-662-9278, MDARD information — 1-800-292-3939.

Environmental regulatory requirements	Description	Frequency	Administering Agency	Your Expiration Date
Private pesticide applicator certification	Any persons using or supervising the use of restricted-use pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/Pesticide and Plant Pest Management Division (PPPM)	
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/PPPM	
NPDES permit CAFO	National Pollutant Discharge Elimination System permit for large concentrated animal feeding operations (CAFOs).	5 years or as noted on permit	EGLE/Water Resources Division	
Farm motor vehicle fuel storage tanks greater than 1,100 gallon capacity (above- and below- ground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Air use permit	Permit to install and operate equipment or processes, which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged), and any livestock facility over 5,000 animal units.	5 years	EGLE/Water Resources Division	
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulation, ordinances and codes.	Before construction	Local health department	N.A.
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.

#### Table 2. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline — 1-800-662-9278, MDARD information — 1-800-292-3939.

Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, under water.	Before construction	EGLE/ Water Resources Division	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or groundwater that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	
Other Environmental Guidelines	Description		Administering	g Agency
Manure management and utilization	The Michigan Right to Farm Act (Act 93 of 1981) requires the establishment of generally accepted agricultural and management practices (GAAMPs). Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation. The GAAMPs are reviewed annually. The latest GAAMPs can be accessed at: www.michigan.gov/mdard.		MDARD	
Pesticide utilization and pest control				
Nutrient utilization				
Site selection and odor control for new and expanding livestock production facilities				
Irrigation water use				
MAEAP verification: Livestock, Farmstead, Cropping and Forest, Wetlands and Habitat	MAEAP systems verification (PA 1 & 2, 2011) is valid for five years. MAEAP verification in good standing is dependent on following the practices specific to each syste conformance with the applicable GAAMPs, an annual plan review and update ( and updates as pecessary as conditions change on the farm	em, being in (livestock system)	MDARD	
Cystems	and updates as necessary as conditions change on the faill.			41

	ADDITIONAL NOTES:
and Latitude and Longitude)         /ary)         rUDE:         RANGE:         hat receives mail.)	FARM INFORMATION         FARM NAME:         (If no physical address, please use Section, Township, Range, FARM SITE STREET ADDRESS:         FARM SITE CITY:         STATE: MICHIGAN (ONLY) (Mailing Address May \ FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE TOWNSHIP:         LATITUDE:       LONGIN         SECTION:       TIER:         (If there is no mailbox at the farm site location or not a place         FARM MAILING) STREET:       (MAILING) STREET:         (MAILING) STATEE:       (MAILING) ZIP CODE:
HOME PHONE NUMBER:	FARM MANAGER CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
HOME PHONE NUMBER: MOBILE/CELL NUMBER: (MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:	OWNERS CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
r Home Address)	BUSINESS NAME: BUSINESS OWNER NAME: BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION: MAILING) STREET: (MAILING) STREET: (MAILING) CITY: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:

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c	Is there Evidence of Discharge:
	Yes
	q
	No

# FARMSTEAD

Fuel Storage: (Gallons)	(Pounds)
Fertilizer Storage: (Gallons)	(Pounds)
Pesticide Storage: (Gallons)	(Pounds)
Farmstead Wells (each):	
EHS Threshold: Yes or No	

# CROPPING

Milkhouse Discharge (Gallons/year):
Grade Stabilization (Each):
Conservation Tillage (Acres):
No Till (Acres):
Cover Crops (Acres):
Buffer Strips (Linear Feet):
Irrigation (Acres):
Pesticide Applied (Acres):
Fertilizer Applied (Acres):
Manure Applied (Acres):
Name of Farm(s) Covered In CNMP:
CNMP Reviewed By:
Date of CNMP Approval:
CNMP Written By:
CNMP (Acres):
LIVESTOCK
ואומוזעו פיג (באז/ וכמו).
Manuro V (Lbc/Voor).
Manure P (I hs/Year)
Manure N (Lbs/Year):
Manure Purchased (Gallons/Year):
Manure Applied (Gallons/Year):
Grade Stabilization (Each):
Conservation Tillage (Acres):
No Till (Acres):
Cover Crops (Acres):
Buffer Strips (Linear Feet):
Irrigation (Acres):
Pesticide Applied (Acres):
Fertilizer Applied (Acres):
Manure Applied (Acres):
NMP (Acres):

# GREENHOUSE

FOREST, WETLANDS, AND HABITAT
Land Management Plan (Acres)
Plan Type: Forest Wetland Habitat All Three
Plan Writer:
Date Plan Written:
Date Plan Expires:
Forestland (Acres):
Grassland (Acres)
Wetland (Acres)
Restored/Improved Wetland Habitat (Acres):
Restored Non-Wetland Habitat (Acres):
Management for Invasive Species (Acres):
Managed as Buffers (Acres):
Length of Streambanks/Shorelines (Feet):
Notes:

			Notes:

Manure K (Lbs/Year): Manure N (Lbs/Year): Manure P (Lbs/Year):

Manure Manifested (Gallons/Year):

Silage Pad (Acres): \_\_\_\_\_ Manure Produced (Gallons/Year): \_\_\_\_\_ Manure Sold (Gallons/Year): \_\_\_\_\_

Livestock Exclusion (Linear Feet):

Ť	STOCK QUANTITY	OTHER LIVES	OTHER LIVESTOCK TYPE:
Y:	STOCK QUANTITY	OTHER LIVES	OTHER LIVESTOCK TYPE:
	100	ALL	10,000 sheep or lambs
		OTHER	
	350	BOAR	
	375	LACTATING	CAFO
	275	GESTATING	2, our swine each weigning over co pounds, or 10,000 swine weighing less than 55 pounds = Large
	150	GROW-FINISH	
	25	NURSERY PIG	
	1000	ALL	500 horses = Large CAFO
		ALL	55,000 turkeys = Large CAFO
		PULLETS	
		LIQUID SYSTEM	82,000 Laying hens dry = Large CAFO
		DRY SYSTEM	30,000 Laying hens or broilers liquid, or
	250	VEAL	
	1400	DRY COW	
	1400	LACTATING COW	
	1000	HEIFER	1,000 Veal calves = Large CAFO
	750	HEIFER	700 Mature dairy cattle (whether milked or dry cows), or
	250	CALF	
	150	CALF	
	1000	COW	
	1100	HIGH ENERGY	
	1100	HIGH FORAGE	
	750	HIGH ENERGY	1 000 Reef cattle or cow/calf pairs = I arge CAEO
	750	HIGH FORAGE	
	450	CALF	
QUANTITY	Average Animal Weight	CLASS	ANIMAL TYPE
	Type and Class	Factors by Animal	Animal Unit (AU) Conversion

CROP NAME	ACRES	CROP NAME	ACRES	CROP NAME	ACRES
Alfalfa		Cucumbers, Fresh	-	Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots	¥.	Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries		Grapes, Juice		Rye	
Carrots		Grapes, Wine		Small Grain, Other	5
Cherries, Sweet		Green Beans		Soybeans	
Cherries, Tart		Greenhouse, Annual	-1.5	Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed		Greens, Herbs		Sunflower	
Corn, Grain		Hay/Pasture		Vegetable, Other	
Corn, Seed	s	Hops		Wheat	
Corn, Silage		Mixed Garden		Other:	
Corn. Sweet		Nursery		Other:	

Note: Express acres to the closest quarter acre.

Notes:

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# MICHICAN STATE EXtension

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Michigan Agriculture Environmental Assurance Program Farmstead Systems Subcommittee Summary of Proposed Amendments for 2022 Farmstead (Unified Assessment)

Number	Approval Date	Reason for Change
		NO
		Recommended
		Changes
		Changes

# FOR MICHIGAN PRODUCERS

FAS 107 · October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609



MICHIGAN STATE UNIVERSITY Extension

## Farm • A • Syst

# Farmstead System Improvement Action Plan

Risk	List high-risk practice(s) from	Required	Alternative low-risk practice	Action plan		
question	Farm+A+Syst and medium-risk practices that do not meet MAEAP requirements	for MAEAP verification	(include potential sources of technical and financial assistance)	; of tance) Planned completion date		
3.05	(example) Pesticides stored on permeable floor surface.	Yes	Install concrete pad with curbs for pesticide storage area. Technical assistance — NRCS & MSUE. Cost share — NRCS.	Sept. 2021	<b>(√)</b> Completed Oct. 28, 2021	

## Farm • A • Syst

#### Farmstead System Improvement Action Plan (continued)

Risk	List high-risk practice(s) from	Required	Alternative low-risk practice	Actio	n plan				
question	Farm+A+Syst and medium-risk practices that do not meet MAEAP requirements	for MAEAP verification	(include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed				
	(continued on next page) 3								

# Farm • A • Syst

## Farmstead System Improvement Action Plan (continued)

Risk	Risk List high-risk practice(s) from Required		Alternative low-risk practice	Actio	n plan
question	Farm◆A◆Syst and medium-risk practices that do not meet MAEAP requirements	for MAEAP verification	(include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed
l understar the basis tl Farmsteac	nd that this farmstead system assessment (Farm hat I have disclosed, to the best of my knowledg I address:	A◆Syst) and co je, all information	orresponding Farmstead System Improveme n pertaining to my farmstead operations. Producer's signature	nt Action Plan were d	eveloped on
Street			Date		
City			_ Farm+A+Syst conducted by:		
State	Zip		_ Name		
Watershee	name		_ Title		
			Organization	Date	
MA	EAP Verification Action Plan			Date	
Та	rget date for MAEAP verification of Croppi	ng System			
Та	rget date for MAEAP verification of Farmst	tead System			
Та	rget date for MAEAP verification of Livesto	ock System			
Та	rget date for MAEAP verification of Forest,	, Wetlands, &	Habitat System		
	Aerial map with farmstead boundaries is attache	ed.			

#### Farm • A• Syst

#### Introduction

In 2011, the Michigan Agriculture Environmental Assurance Program (MAEAP) was codified in law as set forth in P.A. 451, Part 87. of the Natural Resources & Environmental Protection Act (NREPA). The Farm+A+Syst tool is updated annually to incorporate the current MAEAP Standards for this system. The tool also includes applicable Generally Accepted Agricultural and Management Practices (GAAMPs) established under Michigan Right to Farm. The completed A Syst tool and associated plan and practices meet the requirement of a Conservation Plan, as defined in Part 82 of NREPA and referenced in Part 87 of NREPA. This statute also ensures producer confidentiality for any information provided in connection with the development, implementation or verification of a conservation plan or associated practices and is exempt from disclosure under the Freedom of Information Act.

The Michigan Agriculture Environmental Assurance Program is a comprehensive, proactive and voluntary agricultural pollution prevention program. It takes a systems approach to assist producers in evaluating their farms for environmental risks. The four systems are Livestock, Farmstead, Cropping and Forest, Wetlands and Habitat. Farm•A•Syst assesses the environmental risks of the Farmstead System.

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the Michigan Department of Agriculture and Rural Development (MDARD) Web site: www.michigan.gov/mdard. Producers who complete the Farm+A+Syst assessment will be able to determine what management, structural or equipment changes (if any) will be needed for the farmstead to be environmentally assured through MAEAP.

Once the producer develops and implements a Farmstead Improvement Action Plan to address the risks indicated by the Farm+A+Syst assessment, he or she can contact MDARD at (517) 284-5609 to request a MAEAP Farmstead System verification process. The owner of a MAEAP verified farmstead will be eligible for incentives and can enjoy the peace of mind that comes from knowing that Farmstead System practices are consistent with the identified current Right to Farm GAAMPs. Verified Farmstead Systems are positioned to achieve regulatory compliance with state and federal environmental laws.

#### What is the Farmstead Assessment System?

The Farmstead Assessment System (Farm+A+Syst) is a series of risk questions that will help assess how effectively the farmstead structures, management practices and site conditions protect water resources. The risk questions are grouped in the following sections:

	Farmstead Improvement Action Plan	8	Septic System Management
1	Farmstead Site/Soil Evaluation	9	General Livestock Management
2	Water Well Condition	10	Livestock Manure Storage
3	Pesticide Storage and Handling	11	Livestock Lot Management
4	Pesticide Handler and Worker Safety	12	Silage Storage
5	Fertilizer Storage and Handling	13	Milking Center Wastewater Treatment
6	Petroleum Product Storage and Management	14	Other Environmental Risks in the Farmstead System
7	Waste Management		

### Farm • A• Syst

#### How Does Farm+A+Syst Work?

1) Select all relevant sections for the farm.

2) Answer the risk questions by selecting the statement that best describes conditions on the farmstead. Indicate the risk level in the column to the right. Skip any questions that don't apply to the farmstead.

Note: For MAEAP verification, complete the risk questions with a Farm•A•Syst trained individual (water stewardship technician, Michigan State University Extension [MSUE] educator, Natural Resources Conservation Service [NRCS] resource conservationist or other MAEAP trained partner).

3) After completing each section of the risk questions, list the practices that present a high risk of contaminating water resources in the Farmstead Improvement Action Plan. The plan is printed inside the front cover of the bulletin. Also include medium-risk practices that do not meet MAEAP verification requirements.

4) In the Farmstead Improvement Action Plan, list:

- Alternative practices, structures or equipment that are planned to implement or install that will help reduce risks to water resources.
- · Sources of technical and financial assistance.
- Target dates for accomplishing the changes.
- Target date for MAEAP verification of the Farmstead System.

Risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**. The numbered footnotes indicate what regulation(s) is (are) violated.

Risk questions that address management practices that are consistent with a specific GAAMP are identified with *blue bold italic print*.

Finally, a blue box indicates the management level(s) required for MAEAP verification.

The numbered footnotes indicate what regulation(s) is (are) violated (refer to Table 3, page 65).

#### **A Few Final Words**

The key to Farm•A•Syst is that, once the environmental risks have been identified, implement a plan to reduce the risk(s).

Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices or structures may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow.

Once a plan has been developed and changes have been implemented to address the risks on the farmstead, MAEAP Farmstead System verification can be requested.

#### Agriculture's Role in Protecting Surface and Groundwater



Farmstead Site/Soil Evaluation							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>1.00)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint, or the concern was not verified, or the concern was resolved.		There was a formal Right to Farm complaint and the concern was not resolved.	Producer's verbal indication of complaint history.			
<b>1.01)</b> What is the texture of the dominant soil (zero to five feet deep) at the farm site?	Very Fine-textured soils: clay, clay loam, silty clay loam, sandy clay, sandy clay loam, and silty clay.	Medium-textured soils: loam, silt loam, sandy loam and silt.	Course-textured soils: sand, fine sand, very fine sand, loamy very fine sand.				
<b>1.02)</b> What is the depth of the topsoil and subsoil (A & B horizons)?	Greater than 40 inches.	30 to 40 inches.	Less than 30 inches.				
<b>1.03)</b> What is the depth to the seasonal high water table?	Greater than six feet.	Three to six feet.	Less than three feet.				
<b>1.04)</b> What is the soil organic matter content?	Greater than four percent.	One to four percent.	Less than one percent.				
<b>1.05)</b> What is the makeup of the geological materials more than five feet underground?	Low-permeability materials: silt, clay, shale, clay stone.		Highly permeable materials: sand, gravel, fractured rock, karst limestone.	No significant erosion present at the farmstead.			
<b>1.06)</b> Is the farmstead site subject to visible soil erosion?	Site does not erode.	Slight or occasional erosion with limited risk to surface water.	Significant erosion occurs annually. <sup>4</sup>	No significant erosion present at farmstead.			

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

		Water Well C	Condition		
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
<b>2.01)</b> How old is the well that serves the farmstead?	Less than 10 years old.	10 to 25 years old.	More than 25 years old, or age is unknown.		
<b>2.02)</b> What kind of well(s) is/are present?	Drilled and grouted.	<b>Drilled and not grouted</b> <sup>1</sup> or driven point or water jetted.	Large diameter (12 to 48 inches) dug well, or construction is unknown.		
<b>2.03)</b> Is the farm well classified as a private or public water supply? Use Table 1 in FAS107 for well type identification.	Private: potable water for drinking or domestic or greenhouse purposes for family members only.	Public: water for drinking or household/greenhouse purposes to persons other than the owner and family (greenhouse with employees or that is open to the public).			
<b>2.04)</b> What is the slope from the well to potential contamination sources?	Well is upgrade from all contamination sources.	Well is at grade from most contamination sources.	Well is downgrade or in a depression relative to contamination sources.		
<b>2.05)</b> What is the condition of the well casing and cap?	No holes or cracks. Cap tightly secured.		Holes or cracks visible. Cap loose or missing. Water can be heard running into well. Exposed well casing bent. <sup>1</sup>	Satisfactory well casing and cap present.	
<b>2.06)</b> If the drinking water well serves 25 or more people for 60 consecutive days is it registered as a Type II public water supply and has it been tested according to the local health department requirements?	The water supply is a Type IIa or IIb system that is registered with the local health department and routine water sampling is completed as required.	The water supply use is less than 20,000 gallons per day on average, making it a Type IIb water supply, and water sampling is not completed in accordance with local health department requirements. <sup>3</sup>	The water supply use is 20,000 gallons or more per day on average, making it a Type IIa water supply, and water sampling is not completed according to local health department requirements. <sup>3</sup>		

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

Water Well Condition (continued)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
<b>2.07)</b> From the well installation record, is there a protective soil layer (confining material) in the soil formation?	Continuous clay or shale layer more than ten feet thick. Or, Continuous clay mixture more than twenty feet thick.	Clay or shale layer less than ten feet thick. Or, Clay mixture less than twenty feet thick.	No protective layer (unconfined aquifer).		
<b>2.08)</b> What is the depth of the well casing?	More than 100 feet. Or, Minimum of 60 feet with ten feet of clay or twenty feet of clay mixture (confining material.)	At least 25 feet, but no confining material.	Less than 25 feet, or no casing. <sup>1</sup>		
<b>2.09)</b> What is the casing height above grade?	12 inches or more.	From grade level to less than 12 inches. <sup>1</sup>	Below grade or in a pit or in a basement. <sup>1</sup>		
<b>2.10)</b> When was the last time the well was inspected by a professional well driller or pump installer?	Within the past 10 years.	Between 10 and 20 years ago.	More than 20 years ago, or don't know when the well was last inspected.		
<b>2.11)</b> How is backflow or back siphoning of fertilizer or pesticide mixtures into the water supply prevented?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and air gap maintained above the overflow level of the tank. Air Gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow</i> <i>device installed,</i> including reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, or <i>air gap</i> <i>maintained above the</i> <i>overflow level of the tank.</i> Air Gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an anti-backflow device nor air gap maintained. <sup>1</sup>	Anti-backflow device installed, including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.	
	Water	Well Condition	(continued)		
---	--	---	---	---	--------------
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
<b>2.12)</b> Is there an unused well located on the farmstead?	No unused well or abandoned well properly sealed.	-Unused well temporarily abandoned properly: Meets minimum isolation distances. -Is disconnected from any water distribution piping -Has the top of the casing securely capped.	Unused, unsealed well at farmstead. <sup>1</sup>	Unused well(s) properly sealed.	
<b>2.13)</b> How often is the drinking water tested for nitrates and bacteria?	Tested yearly.	Tested within the past 3 years.	No water testing done, or more than 3 years since last test.	Water tests for nitrates and coliform bacteria within the past 3 years.	
<b>2.14)</b> What are the water test results?	No coliform bacteria or nitrates detected.	Water contamination detected. Public water well(s) test below health advisory limits.	Water contamination detected. <b>Public</b> water well(s) test above health advisory limits. <sup>1</sup>	Water tests within health advisory limits for public wells.	
<b>2.15)</b> Is the farm, or portions of the farm, included in a community wellhead protection area?	No.	Yes, or don't know, and soil characteristics and farm operations pose minimal risks to groundwater.	Yes, and soil characteristics and/or farm operations pose significant risks to groundwater.		
2.16) If a frost-free yard hydrant is connected to a water system, is the hydrant Michigan Department of Environment, Great Lakes and Energy (EGLE) approved?	EGLE-approved yard hydrant protects water supply from contaminated water back-siphoned into the hydrant's drain valve. Or, <b>Yard hydrant is not EGLE-</b> <b>approved</b> , <sup>1</sup> but an anti-backflow valve is installed between the hydrant and the water source.		Yard hydrant is not EGLE-approved 1 and there is no anti- backflow valve.		

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

	Water Well Condition (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
<b>2.17)</b> If the drinking water well serves 25 or more people for 60 consecutive days (type IIb public water supply), has it been tested for arsenic?	Drinking water tested on a quarterly basis. Average arsenic level is less than 10 ppb.		Drinking water is not tested. <sup>3</sup>				
<b>2.18)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 70 gallons per minute (100,000 gallons per day) for agricultural purposes, has water use been registered and reported to the State of Michigan?	Pump capacity is less than 70 gallons per minute (100,000 gallons per day); Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development by April 1.		Pump capacity is greater than 70 gallons per minute (100,000 gallons per day) and water use is not reported to the State of Michigan. <sup>14</sup>	Farm records indicate compliance with water use reporting.			

A boxed risk level indicates the level required for environmental assurance verification.

Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

Water Well Condition (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
2.19) Is a horizontal sock well (HSW) present in the farmstead system?	<ul> <li>HSW outlets are clearly identified as not being suitable for human consumption.</li> <li>HSW is completely separated (no common piping) from any potable water supply system.</li> <li>HSW meets isolation distance requirements the entire horizontal length of the HSW.</li> <li>Both ends of the HSW are identified.</li> </ul>	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meeting isolation distance requirements the entire length of the HSW, except for chemigation/fertigation systems during active use season that have Reduced Pressure Zone (RPZ), double check valve assembly or chemigation valve with an internal air gap installed and secondary containment. -Both ends of the HSW are identified.	HSW is being used for human consumption, shares common piping with a potable water supply, does not have both ends clearly identified, or does not meet State of Michigan isolation distances or MAEAP standard for its entire horizontal length <sup>1, 3</sup>	Low risk criteria are present or demonstrated.			

A boxed risk level indicates the level required for environmental assurance verification.

# **Table 1: Farm Well Description and Isolation Distance**

### Table 1. Farm Well Description and Isolation Distances.

Farm Well Information Isolation Distance (in feet) From:											
Description	Private or Public	Fuel Storage	Pesticide Storage	Fertilizer Storage	Mix/Load Area	Liquid Manure Storage	Dry Manure Storage	Dirt Animal Lot	Septic System	Other	Other
1											
2											
3											
4											
5											
6											
7											
8											

#### What is considered a private water supply?

A private water supply provides water to the supplier of the water (e.g., the owner) and includes water for the supplier's drinking water, household use, livestock water, irrigation, etc.

#### What is considered a public water supply?

In Michigan, wells that provide water to non-family member employees or that service a milkhouse or milkroom are considered public water supplies. Public water supplies are classified based on capacity and number of employees.

- A Type II public water supply is a non-community supply with at least 15 service connections or which serves 25 or more individuals (employees) on an average daily basis for at least 60 days out of the year.
- A Type IIa water supply has an average daily production for the maximum month of 20,000 gallons or more.

- A Type IIb water supply has an average daily production for the maximum month of less than 20,000 gallons.
- A Type III public water supply is one that does not meet the above requirements for the number of service connections or employees.

Pesticide Storage and Handling							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
<ul> <li><b>3.01)</b> How far is the pesticide storage located from any water well? (Private wells include irrigation, livestock watering, cooling etc.)</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees).</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater. Or,</li> <li>with secondary containment, 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation for the well, OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate pesticide storage isolation distance for site characteristics.			
<b>3.02)</b> How far is the pesticide storage located from surface water? (drains, streams, ponds, catch basins on farmstead, etc.)	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate pesticide storage isolation distance from surface water.			
<b>3.03)</b> How are pesticides delivered to the farm?	Just-in-time delivery provided by dealer or farmer to mix/load site.	Responsible, trained farm employee or family member or dealer transports pesticides to storage.	Untrained farm employee or family member transports pesticides.				

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

Bold black print indicates a violation of state or federal regulation.

	PESTICID	E STORAGE AND	HANDLING (CONTIN	IUED)	
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (Significant Hazard)	RECORDS OR EVIDENCE FOR	YOUR
<b>3.04)</b> What kind of structure is used for pesticide storage?	Separate long-term or seasonal structure especially designed for pesticide storage.	Pesticides stored in separate single-use structure not designed or retrofitted for pesticide storage.	Pesticides stored in farm building used for multiple purposes.	MALAI VERIFICATION	Nisk
<b>3.05)</b> What design features does the pesticide storage have to contain spills and leaks?	Impermeable floor surface does not allow spills to soak into soil. Curb installed on floor to contain leaks and spills or individual package containment.	Impermeable floor surface without curb.	Permeable floor surface (wood, gravel or dirt floor) or impermeable floor with cracks. Spills could contaminate soil. <b>Drain in</b> <b>the floor that discharges to</b> <b>the environment.</b> <sup>4</sup>	Adequate secondary containment for pesticide storage.	
<b>3.06)</b> What type of pesticide storage shelving is used?	Metal or plastic shelving, with shelf lips to prevent containers from falling. And, Dry formulations are stored on upper shelves and liquids on lower shelves.	Metal or plastic shelves without lips. Or, Wood shelves, covered with an epoxy paint or plastic liner.	Bare wood shelving without lips. Or, No shelves, pesticides containers are on the floor where they may be damaged.		
<b>3.07)</b> What level of security is provided for the pesticide storage?	Fenced or locked area, secure from unauthorized access. Storage is separate from all other activities.	Storage is open to activities that could damage containers or spill chemicals.	Open access to pesticide storage could result in theft, vandalism, and injury to children, pets or wildlife. <sup>20</sup>	Adequate pesticide storage security.	
<b>3.08)</b> What signage is posted on the storage facility?	A highly visible, weatherproof sign indicates that pesticides are stored there. A "No Smoking" sign is also posted.	Pesticide storage sign is posted, but "No Smoking" is not posted.	The pesticide storage has no signs.	Pesticide storage signage present.	

A boxed risk level indicates the level required for environmental assurance verification.

	PESTICIDE STORAGE AND HANDLING (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>3.09)</b> What kind of spill kit is available at the pesticide storage?	A complete spill kit is immediately available. A fire extinguisher approved for chemical fires is easily accessible and useable.	<i>Spill kit is immediately available,</i> but no fire extinguisher.	<b>A spill kit is not available</b> <sup>18</sup> A fire extinguisher is not available.	Spill kit with fire extinguisher present at pesticide storage.			
<b>3.10)</b> What total quantities of pesticides are stored on the farm?	No pesticides stored at any time, or only seasonal use	1 gallon, or 10 pounds, or more of each pesticide in long- term storage.	More than 56 gallons, or more than 55 pounds, of each pesticide in long-term storage.*				
<b>3.11)</b> What quantities of liquid pesticides are stored?	No liquids – all dry formulations.	Some liquid formulations stored.	More than 55 gallons of liquid formulations stored.				
<b>3.12)</b> Are pesticides with high leaching potential stored?	No pesticides stored, or only pesticides with low leaching potential.	Pesticides with low and medium leaching potential stored.	Pesticides with high leaching potential stored.				
<b>3.13)</b> Have Extremely Hazardous Substances (EHS) been reported to authorities?	No EHS stored or used. Anhydrous ammonia is not used on the farm.	EHS stored or used on farm have been identified and reported to local and state authorities (if stored at or above threshold planning quantity).	EHS stored or used on farm have NOT been identified or reported. <sup>21</sup>	Records that indicate EHS have been shared with authorities or that EHS are not used on the farm.			
<b>3.14)</b> What is the condition of stored pesticide containers?	Original containers clearly labeled or containers appropriate for pesticide storage that are properly labeled. No holes, tears or weak seams.	Old containers with hard to read labels. Patched containers, metal containers showing signs of rusting.	Containers have holes or tears that allow chemical to leak. <b>Some containers have no</b> <b>labels.</b> <sup>20</sup>	Stored pesticides in satisfactory condition with labels attached.			

\*Producers who store certain bulk pesticides in containers that exceed 10 gallons, or 100 pounds, capacity may be subject to additional regulations.

A boxed risk level indicates the level required for environmental assurance verification.

PESTICIDE STO	RAGE AND HAN	NDLING (CONTINUE	D)	
Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
Pesticides accurately inventoried. Old product used first. Unusable product disposed of through Clean Sweep program.	Some inventory process maintained. Unsure of status of unusable product in storage.	No pesticide inventory maintained. Unusable product maintained in storage for indefinite time.		
Jp-to-date plan developed and shared with authorities (if required), employees and family members.	More than one-year-old plan or an incomplete plan is available.	An emergency farm plan has not been developed.	An up-to-date emergency plan.	
A written drift management plan is utilized that minimizes off- target drift.	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential of off- target drift. <sup>18</sup>	Drift management plan on file.	
<ul> <li>For private wells:</li> <li>150 feet or greater. OR,</li> <li>with secondary containment, 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation for the well, OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate mixing and loading area isolation distance for site characteristics.	
	<b>PESTICIDE STO</b> Low RISK – 3 (RECOMMENDED) esticides accurately inventoried. Id product used first. Unusable roduct disposed of through Clean weep program. p-to-date plan developed and nared with authorities (if equired), employees and family embers. written drift management plan autilized that minimizes off- arget drift. or private wells: 150 feet or greater. OR, with secondary containment, 50 feet or greater. or Type IIb or Type III public rells: lore than 800 feet or greater from the farm well, NR, Approved isolation distance deviation for the well, NR, Between 75 and 800 feet with approved storage and well, and protective site features.* or Type IIa public wells, refer to AS 112S.	PESTICIDE STORAGE AND HANLow Risk – 3 (RECOMMENDED)MEDIUM Risk – 2 (POTENTIAL HAZARD)esticides accurately inventoried. Id product used first. Unusable roduct disposed of through Clean weep program.Some inventory process maintained. Unsure of status of unusable product in storage.p-to-date plan developed and hared with authorities (if equired), employees and family embers.More than one-year-old plan or an incomplete plan is available.written drift management plan sutilized that minimizes off- arget drift.Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.or private wells: 150 feet or greater. OR, with secondary containment, 50 feet or greater. or Type IIb or Type III public ells: lore than 800 feet or greater from te farm well, IR, Approved isolation distance deviation for the well, DR, Between 75 and 800 feet with approved storage and well, and protective site features.*Hepium Charlen Charle	Vertice of the product in storage         Medium Risk - 2 (POTENTIAL HAZARD)         High Risk - 1 (storage(CANT HAZARD))           Pesticides accurately inventoried. Id product used first. Unusable roduct disposed of through Clean weep program.         Some inventory process maintained. Unusable product in storage.         No pesticide inventory maintained. Unusable product maintained. Unusable product in storage.         No pesticide inventory maintained. Unusable product maintained. Unusable product maintained. Unusable product in storage.           p-to-date plan developed and hared with authorities (if squired), employees and family.         More than one-year-old plan or an incomplete plan is available.         An emergency farm plan has not been developed.           written drift management plan sutilized that minimizes off- arget drift.         Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.         Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential of off- target drift. <sup>18</sup> or private wells: 150 feet or greater. OR, with secondary containment, 50 feet or greater. or Type IID or Type III public ells: lore than 800 feet or greater from te farm well, R, Approved isolation distance deviation for the well, DR, Between 75 and 800 feet with approved storage and well, and protective site features.*         For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Spectrum         Medium Risk - 2 (RECOMMENDED)         Medium Risk - 2 (RECOMMENDED)         High Risk - 1 (STEMPTICAT HAZARD)         Records on Evidence For MAEAP Verification           esticides accurately inventoried. Id product used first. Unusable orduct disposed of through Clean weep program.         Some inventory process maintained. Unsue of product miscage.         No pesticide inventory maintained. Unusable product miscage.         Records on Evidence For MAEAP Verification           p-to-date plan developed and nared with authorities (if quired), employees and family embers.         More than one-year-old plan or an incomplete plan is available.         An emergency farm plan has not been developed.         An up-to-date emergency plan.           written drift management plan utilized that minimizes off- arget drift.         Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.         Spraying operations are completed regardless of weather conditions or forecast, and regardless than 150 feet or greater. OR, with secondary containment, 50 feet or greater. OR, with secondary containment, 50 feet or greater. OR, with secondary containment, for the potential of off- utilized.         For private wells: Less than 50 feet without secondary containment, or less than 800 feet or site characteristics.         Appropriate mixing and loading area isolation distance for site characteristics.           R, Approved isolation distance deviation for the well, R, R, Between 75 and 800 feet with approved isolation distance deviation for the well, R, R         Sub feet from the farm well. <sup>3</sup> Applicateristics.

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

	PESTICIDE	STORAGE AND HAI	NDLING (CONTINUE	D)	
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	Medium Risk – 2 (Potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>3.19)</b> On the farmstead, how far is the mixing and loading area from surface water or catch basins?	200 feet or greater.	Less than 200 feet, with appropriate security measures.	Less than 200 feet, without appropriate security measures.	Appropriate mixing and loading area isolation distance from surface water.	
<b>3.20)</b> How is the potential reduced for surface and groundwater contamination at the mix/load area(s)?	Mixing and loading pad with curb keeps spills contained. Sumps allow collection and transfer to storage.	Mixing and loading in the field without mix/load pad. Different location every time reduces risks to groundwater. Or, mixing and loading on concrete pad without curbs.	No mixing and loading pad. Permeable soil. Spills soak into ground. Same location every time.	Satisfactory explanation of mixing and loading procedures. No evidence of burned vegetation.	
<b>3.21)</b> How is backflow, or back siphoning, of pesticide mixtures into the water supply prevented?	Anti-backflow device installed, including a Reduced Pressure Zone (RPZ) valve, double check valve assembly or chemigation valve with an internal air gap, or 6 inch air gap maintained above the overflow level of the tank. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow device</i> <i>installed,</i> including a RPZ valve, double check valve assembly or chemigation valve with an internal air gap, or 6 inch <i>air gap maintained above</i> <i>the overflow level of the tank.</i> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an anti-backflow device, including a RPZ valve, double check valve assembly or chemigation valve with an internal air gap, nor air gap maintained. <sup>1</sup>	Anti-backflow device installed, including a RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.	
<b>3.22)</b> How are tank overflows prevented when filling the sprayer?	Sprayer monitored when being filled.		Sprayer seldom or never monitored when being filled.	Satisfactory explanation of spray tank filling procedures.	
<b>3.23)</b> How are pesticides, additives and water quantities measured when loading the sprayer system?	Measuring devices labeled and kept in pesticide storage area. Devices rinsed and rinse water put into spray tank. Tank capacities labeled.		A variety of unlabeled measuring devices used. Devices may be used for other purposes. Tank capacities not identified.	Set of dedicated measuring devices for pesticides. Spray tank capacities labeled.	

Bold black print indicates a violation of state or federal regulation.

PESTICIDE STORAGE AND HANDLING (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>3.24)</b> How are pesticide products transferred from their containers to the sprayer tank?	Closed system for all liquid and dry product transfers.	All liquid and dry products hand-poured. Mixing/storage tank opening easy to reach.	All liquid and dry products hand-poured. Mixing/storage tank opening hard to reach.	Satisfactory explanation of procedures for excess spray mixtures.		
<b>3.25)</b> How is excess spray mixture or rinse water from the interior of the spray system disposed?	Spray mixture applied to labeled site at or below labeled rate of application or appropriately stored for later use.		Spray mixture dumped at farmstead or in nearby field or surface water. <sup>4</sup>	Satisfactory explanation of procedures for excess spray mixtures.		
<b>3.26)</b> How is accumulated spray building wastewater or other comingled rinsates that cannot be directly applied to growing crops disposed?	Applied to a site where there is growing vegetation or where a crop will be planted following labeled setbacks at or below labeled rates. Application areas are rotated, and records of contents of material and application site are kept. Or taken to a hazardous waste landfill.		Dumped at the farmstead, in the field, or discharged to surface water. <sup>4</sup>	Records of application provided.		
<b>3.27)</b> Where is the exterior of the spray equipment and tractor washed if there is accumulated residue?	Washed in containment or washed in the field in different locations >200' from surface water, catch basins or tile inlets and >150' from a well.		Sprayer washed at the farmstead. Rinse water dumped at farmstead or in nearby area or pond. <sup>4</sup>	Satisfactory explanation of procedures for rinsing sprayer system.		
<b>3.28)</b> How are empty pesticide containers rinsed and disposed?	<b>Containers triple-rinsed or</b> <b>power-rinsed, punctured</b> and returned to dealer, or disposed of in a licensed landfill. Bags are returned to dealer or taken to licensed landfill. Properly rinsed containers can be disposed in a dumpster that is taken to a licensed landfill.	Disposal of empty containers and bags on the farm property. <sup>9</sup>	Disposal of partially filled containers. Burning of containers on the farm property. <sup>5,9</sup>	Rinsed jugs stockpiled for recycling or landfilling. No un-rinsed jugs on farmstead.		

PESTICIDE STORAGE AND HANDLING (CONTINUED)							
RISK QUESTION	Low Risk – 3 (Recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>3.29)</b> What type of pesticide containers are purchased?	Where available, all pesticide products are purchased in recyclable or returnable containers to reduce the number of empty containers that require disposal.	Some pesticide products are purchased in recyclable or returnable containers.	Most pesticides are purchased in containers that require special handling or treatment before disposal.				
	PESTICIDE	HANDLER AND W	ORKER SAFETY				
<b>4.01)</b> How are pesticide handlers/workers trained on pesticide use and handling?	All handlers/workers are certified pesticide applicators or have had Worker Protection Standard (WPS) training.		Handlers/workers are not certified pesticide applicators and have not had WPS training. <sup>22</sup>	Pesticide applicator certification or WPS training.			
<b>4.02)</b> How are handlers/workers informed of risks associated with pesticide applications?	Central notification of pesticide applications is provided. Display includes EPA-approved safety poster, emergency medical information and pesticide application information.	Central notification provided, although not all posting requirements are met. <sup>22</sup>	No central notification provided. <sup>22</sup>				
<b>4.03)</b> What supplies are provided to handlers/workers for pesticide decontamination?	Clean water, soap, disposable towels and clean coveralls (handlers) are available for all handlers/workers within one- quarter.	A decontamination site is provided, although not all WPS requirements are met. <sup>22</sup>	A decontamination site is not available. <sup>22</sup>				
<b>4.04)</b> How are workers notified of pesticide applications?	Oral and/or posted warnings about pesticide application provided.		No notice about pesticide application provided. <sup>22</sup>				
<b>4.05)</b> Who provides and maintains personal protective equipment (PPE) and trains handlers in its use?	All label-required PPE provided and maintained by employer. Training on use of PPE provided.	WPS requirements for PPE partially met. <sup>22</sup>	PPE not provided. <sup>22</sup>				

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Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

	Ferti	LIZER STORAGE	AND HANDLING	5	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<ul> <li>5.01) How far is the fertilizer storage located from any water well? (Private wells include irrigation, livestock watering, cooling etc.)</li> <li>Type IIb and Type III (Public wells include wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees)</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater.</li> <li>OR,</li> <li>with secondary containment 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well.</li> <li>OR,</li> <li>Approved isolation distance deviation for the well.</li> <li>OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> <li>For Type IIa public wells, refer</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate fertilizer storage isolation distance for site characteristics.	
<b>5.02)</b> How far is the fertilizer storage located from surface water? (drains, steams, ponds, catch basins on farmstead, etc.)	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate fertilizer storage isolation distance from surface water. Note: bulk liquid fertilizer storages installed after August 13, 2008, having a capacity greater than 2,500 gallons, or having combined capacity of all takes greater than 7,500 gallons, must be located 200 feet or more from surface water.	

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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FERTILIZER STORAGE AND HANDLING (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>5.03)</b> Is the fertilizer storage facility (both liquid and dry) identified with a sign?	Storage facility labeled "Fertilizer", or the fertilizer containers labeled with fertilizer analysis.	No sign.		Note: Bulk liquid fertilizer storages installed after August 13, 2008, having a capacity greater than 2,500 gallons, or having combined capacity of all tanks greater than 7,500 gallons, must be located 200 feet or more from surface water.			
<b>5.04)</b> What level of security is provided for the fertilizer storage?	Fertilizer storage areas, valves, and containers are secured when not in use.	Appropriate conditions are partially met.	Fertilizer storage facilities are not locked or secured by any means. Open access to theft, vandalism and children exists.	Adequate fertilizer storage facility.			
<b>5.05)</b> Is fertilizer stored in the direct presence of fuel products?	No. Fertilizer is not stored in the direct presence of fuel products.		Yes. Fertilizers and fuel products are stored together – posing an increased potential for explosions and significant disposal problems.				
<b>5.06)</b> Is liquid fertilizer stored in the direct presence of pesticide products?	No.	Fertilizer and pesticide products are stored in the same structure but separated with secondary containment.	Yes. Fertilizers and pesticide products are stored together – posing an increased potential for significant disposal problems.				
<b>5.07)</b> How often is the fertilizer storage area inspected for safety concerns?	At least annually.		No regular inspections of the storage facility.	Evidence fertilizer storage is inspected at least annually.			
<b>5.08)</b> Is there a written emergency plan to deal with fertilizer spills, discharges and other farm emergencies?	Up-to-date plan developed and shared with authorities (if required), employees and family members.	More than one-year-old plan or an incomplete plan is available.	An emergency farm plan has not been developed.	Up-to-date emergency plan.			

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FERTILIZER STORAGE AND HANDLING (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1 (SIGNIEICANT HAZARD)					
<b>5.09)</b> What total quantities of liquid fertilizers are stored on the farm?	No liquid fertilizer stored at any time.	Less than 2,500 gallons.	More 2,500 gallons.	MALAF VERIFICATION	Niak			
<b>5.10)</b> What quantities of dry fertilizers are stored?	No dry fertilizer stored at any time.	Less than 20 tons.	More than 20 tons.					
<b>5.11)</b> What kind of structure is used for dry fertilizer storage?	A structure or device capable of preventing contact with precipitation and/or surface water.		Storage allows fertilizer contact with precipitation and/or surface water.	Satisfactory dry fertilizer storage facilities.				
<b>5.12)</b> What kind of container is used for liquid fertilizer storage?	Stored in containers approved for, and compatible with, the fertilizer being stored.		Liquid fertilizer stored in containers not approved for/or compatible with the fertilizer being stored. Or fertilizer stored in underground tanks.	Satisfactory liquid fertilizer primary storage containers.				
<b>5.13)</b> Are poly tanks used as intended?	Yes. Vertical (upright) tanks are used for stationary fertilizer storage, and horizontal tanks with tie-down features are used for stationary storage and/or transportation applications.		Vertical tanks are used as mobile nurse tanks or in other transportation applications.					
<b>5.14)</b> Are poly tanks inspected periodically for structural soundness?	Poly tanks are inspected for crazing (spider webbing) and cracking in the spring and again at the end of the season. Damaged tanks are replaced or used for water.	Poly tanks are inspected periodically and replaced as necessary.	Tanks are not inspected regularly. High potential for tank failure is present.					
<b>5.15)</b> How long is liquid fertilizer stored on the farm?	Less than 60 days.	60 to 270 days.	More than 270 days.					

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FERTILIZER STORAGE AND HANDLING (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>5.16)</b> Is there secondary containment for liquid fertilizer stored on the farm?	All liquid fertilizer is stored with secondary containment.	Containers with greater than 2,500-gallon capacity or all containers located at a single site with a combined total capacity of greater than 7,500 gallons have secondary containment.	Containers with greater than 2,500-gallon capacity or all containers located at a single site with a combined total capacity of greater than 7,500 gallons do not have secondary containment. <sup>19</sup>	Satisfactory liquid fertilizer secondary storage containers, if required.				
<b>5.17)</b> What is the condition of storage tanks, hoses, valves and fittings used for liquid fertilizer?	Tanks, hoses, fittings and valves are in good condition, well maintained and <i>compatible with the</i> <i>fertilizer being stored.</i>	Tanks, hoses, fittings and valves have some rust or signs of wear. Tanks previously used for underground petroleum storage are in good condition and in secondary containment.	Rusty, aged, worn, damaged or leaking storage tanks, hoses, fittings or valves <b>directly</b> <b>discharging to surface waters,</b> <sup>4</sup> or use of underground petroleum tanks without secondary containment.	Satisfactory condition of liquid fertilizer storage system.				
<b>5.18)</b> How are precipitation and clean-up leakage managed, if it occurs, in the onfarm liquid fertilizer secondary containment facility?	Leakage cleaned up immediately. Appropriate products are used to clean residual fertilizer off the surface of the secondary containment structure. Contained precipitation/fertilizer mixture spread on field at or below agronomic rate.	Spilled fertilizer recovered, but secondary containment surface not cleaned up after a spill or leakage.	Contained leakage not recovered. Leakage with accumulated precipitation <b>directly discharged</b> <b>in surface waters.</b> <sup>4</sup>	Satisfactory explanation of precipitation and leakage management in the secondary containment facility.				

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FERTILIZER STORAGE AND HANDLING (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>5.19)</b> How is leakage prevented when filling storage tanks, sprayers or mobile containers?	A permanent or temporary mix/load pad used during loading operations. Spills cleaned up immediately. Or, Fertilizer loaded in the field at different locations every time. Spills cleaned up immediately. Or, Dry couplers used to reduce spills and drips when loading liquid fertilizers. Spills cleaned up immediately.	Drips and leakage contained in buckets placed under couplers. Collected fertilizer reused. Spills cleaned up immediately.	No system in place to capture and prevent spills. Leakage from hose connections allowed to drain onto unprotected soils. Spills not cleaned up. <sup>4</sup>	Satisfactory explanation of tank filling procedures.			
<b>5.20)</b> If on-farm bulk liquid fertilizer storage requires secondary containment under Regulation 642, is it an operational pad or a closed containment system used?	An operational pad with 750 gal capacity measuring 10' by 20' minimum is in place. Fertilizer loading and unloading operations are supervised at all times.	No operational pad present; closed containment system (dry couplers, hoses under manufacturer warranty, anti- overflow devices, and 150 gal container under point of transfer) are in place. Fertilizer loading and unloading operations are supervised at all times.	There is no operational pad or closed containment system for loading and unloading bulk fertilizer. <sup>19</sup>	When required, an operational pad or closed containment system is present per Regulation 642: On-Farm Fertilizer Bulk Storage.			
<b>5.21)</b> How is backflow or back siphoning of fertilizer mixtures into the water supply prevented?	Anti-backflow device installed, including a Reduced Pressure Zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and a 6-inch air gap maintained above the overflow level of the tank. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow device</i> <i>installed,</i> including a RPZ valve, double check valve assembly, or chemigation valve with an internal air gap installed, or 6-inch <i>air gap</i> <i>maintained above the overflow</i> <i>level of the tank.</i> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an anti- backflow device, including a RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, nor air gap maintained. <sup>1,4</sup>	Anti-backflow device, including a RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.			

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FERTILIZER STORAGE AND HANDLING (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>5.22)</b> What is done with excess fertilizer when field operations are complete?	Fertilizer applied to crop land at or below agronomic rate. Or, Excess fertilizer returned to dealer.	Excess fertilizer stored until next year.	Excess fertilizer applied to cropland without agronomic considerations. Fertilizer dumped at farmstead or direct discharge to surface water. <sup>4</sup>					
<b>5.23)</b> How are liquid fertilizer storage, transfer and application equipment cleaned out?	Fertilizer equipment rinsed on a containment pad or in field. Rinse water applied to crop land at or below agronomic rate.	Fertilizer equipment not rinsed.	Sprayer rinsed out at farmstead. Rinse water dumped at farmstead or direct discharge to surface water. <sup>4</sup>					
<ul> <li>5.24) How far is the mixing and loading area from the water well? (Private wells include irrigation, livestock watering, cooling etc.)</li> <li>Type IIb and Type III (Public wells include wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees).</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater.</li> <li>OR,</li> <li>With secondary containment 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation for the well, OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> <li>For type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate mixing and loading area isolation distance for site characteristics.				

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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FERTILIZER STORAGE AND HANDLING (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>5.25)</b> On the farmstead, how far is the mixing and loading area from surface water?	200 feet or greater.	Less than 200 feet, with appropriate security measures.	Less than 200 feet, without appropriate security measures	Appropriate mixing and loading area isolation distance from surface water.				
<b>5.26)</b> When not in use, where are planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle returned to a secure location when not in use. Fertilizer and pesticides (including treated seed) properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide (including treated seed) supply vehicle left in an unsecured location. Or, Fertilizer and pesticides <b>stored</b> <b>less than 150 feet from any</b> well. <sup>1</sup>	Map showing where vehicles should not be parked adjacent. No evidence vehicles left in unsecure location.				

## **PETROLEUM PRODUCT STORAGE AND MANAGEMENT**

THIS SECTION IS DESIGNED TO HELP MEET ENVIRONMENTAL CONCERNS RELATED TO PETROLEUM STORAGE. IT IS NOT INTENDED TO REPRESENT ALL OF THE LEGAL REQUIREMENTS FOR STORAGE AND HANDLING OF PETROLEUM PRODUCTS ON THE FARM.

ALL PETROLEUM STORAGE FACILITIES						
<b>6.01)</b> Are fuel storage tanks designed for the way they are being used and compatible with the material stored?	Each tank designed for the way it is being used and compatible with the material stored.	Below-ground tank being used for above-ground petroleum storage, above- ground tank being used for under-ground petroleum storage or tank does not meet specifications for usage. <sup>16</sup>	Fuel tanks used appropriately.			
<b>6.02)</b> Are fuel storage piping, secondary containment and related equipment designed for the way they are being used and compatible with the material stored?	Fuel storage piping and equipment are designed for the way they are being used and compatible with the material stored.	Fuel storage piping or equipment not designed for the way it is being used. Below- ground piping on all under- ground tanks or above- ground tanks of greater than 1,100-gallon capacity not corrosion protected. <sup>16</sup>	Fuel storage equipment appropriate for use.			

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
ALL PETROLEUM STORAG	E FACILITIES (CONTINUED	<b>)</b> )						
<b>6.03)</b> Are fuel tanks monitored for leaks and are leaks repaired?	Owner and operator ensure that releases do not occur.		Tank and piping not monitored and repaired on aboveground tanks equal to or less than 1,100 gallons capacity. <b>Tank</b> <b>and piping not monitored and</b> <b>repaired on all tanks greater</b> <b>than 1,100 gallons capacity.</b> <sup>16</sup>	No fuel leaks present.				
<b>6.04)</b> What design feature(s) does the fueling station have to prevent spills from entering the groundwater, surface water or subsurface soils?	Impermeable surface for fuel transfer such as concrete without cracks.	Compatible surface for fuel transfer such as asphalt for diesel fuel, sealed asphalt for gasoline, steel or other compatible liner material.	Incompatible surface, such as unsealed asphalt surface, for gasoline.	Impermeable surface or incompatible present for fuel transfer.				
<b>6.05)</b> Is the fill opening separate from the vent opening?	Yes.		<b>No.</b> <sup>16</sup>					

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Pi	ETROLEUM PROD	OUCT STORAGE	AND MANAGEMEN	IT (CONTINUED)	
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
ALL PETROLEUM STOP	RAGE FACILITIES (CONTINUED	)			
<ul> <li>6.06) How far is the fuel storage from any water well? (Private wells include irrigation, livestock watering, cooling etc.)</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees.)</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	<ul> <li>For private wells:</li> <li>50 feet or greater for tanks less than 1,100 gallon-capacity with no secondary containment,</li> <li>OR,</li> <li>50 feet or greater for tanks greater than 1.100 gallon capacity or more with secondary containment.</li> <li>For Type III or Type IIb public wells:</li> <li>More than 800 feet from the farm well,</li> <li>OR</li> <li>Approved isolation distance deviation for the well,</li> <li>OR</li> <li>No less than 75 feet for a Type IIB or III well if secondary containment, and site and well protective features are present.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 50 feet for most storage tanks. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well without an approved deviation, protection features or secondary containment. <sup>3</sup>	Appropriate fuel storage isolation distance from water well.	

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3	Medium Risk – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk		
ALL PETROLEUM STOP	RAGE FACILITIES (CONTINUED	<b>)</b>					
<b>6.07)</b> Does the tank have secondary containment?	Double-walled tank with continuous space between the two walls, tank in concrete vault or tank in diked area.	No secondary containment for tanks equal to or less than 1,100 gallons capacity.	No secondary containment when combined aboveground storage capacity is 2500 gallons (55-gallon containers or larger) or an individual aboveground tank is greater than 1,100 gallons. <sup>16</sup>				
<b>6.08)</b> If a combined aboveground petroleum storage capacity of greater than 2500 gallons (counting 55- gallon containers and greater) is present and could reasonably discharge into navigable waters of the United States, has a spill prevention control and counter-measure (SPCC) plan been developed?	Plan developed and copy present at farm facility.		No plan. <sup>23</sup>				
<b>6.09)</b> What is the maximum fuel storage capacity (in aggregate) on the farm?	48,000 gallons or less of gasoline or 80,000 gallons or less of diesel in UL 142 single- or double-walled tanks.		Greater than 48,000 gallons of gasoline or 80,000 gallons of diesel in UL 142 single or double wall tanks. <sup>16</sup>				
<b>6.10)</b> Does each tank's fill opening have a lockable closure?	Fill pipe equipped with lockable closure.		No lockable closure on fill pipe. <sup>16</sup>				

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
ALL PETROLEUM STORAGE	FACILITIES (CONTINUED)						
<b>6.11)</b> How far is the tank from a storm drain, surface water or designated wetland?	Tank is more than 50 feet away or has some other engineering control present that would control or divert a spill from reaching a storm drain, surface water or designated wetland.		Tank 50 feet or less. <sup>16</sup>	Appropriate fuel storage isolation distance from surface water.			
<b>6.12)</b> How far are LP gas tanks (propane tanks) from aboveground storage tanks (AST's)	LP gas tanks (propane tanks) are more than 20 feet from aboveground fuel tanks.		LP gas tanks (propane tanks) are less than 20 feet from aboveground fuel tanks. <sup>16</sup>				
<b>6.13)</b> How far are LP gas tanks (propane tanks) from the fill and dispensing points of underground storage tanks (UST's)?	LP gas tanks are at least 20 feet from the fill point of the UST and at least 10 feet from the dispensing point of the UST.		LP gas tanks are at less than 20 feet from the fill point of the UST and/or less than 10 feet from the dispensing point of the UST. <sup>16</sup>				
<b>6.14)</b> For tanks <1,100 gallons, how far is the (non- fire protected) tank from buildings and property lines?	- More than 40 feet from a building or a structure.		<ul> <li>Located inside a building.</li> <li>40 feet or less from a building, or a structure.<sup>16</sup></li> </ul>				
<b>6.15)</b> How many tanks (equal to or less than 1,100 gallons are at each site at one facility?	3 or fewer.	More than 3.					
<b>6.16)</b> How far apart are fueling sites at the facility?	100 feet or greater.	Less than 100 feet.					
<b>6.17)</b> Are the portable fueling tank and transfer system adequate to reduce risk of environmental contamination?	UL-approved tank and adequate fueling system.	Adequate portable fueling system that reduces risks.	Inadequate portable fueling system that poses risk of environmental contamination.	Adequate portable fueling			

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	PETROLEUM PRODU	JCT STORAGE AN			
<b>RISK QUESTION</b>	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1		YOUR
ALL ABOVEGROUN	D PETROLEUM STORAGE FACILIT	IES			NISK
6.18) Do mobile fuel tanks meet the Federal Hazardous Materials Regulations (FHMR) and USDOT specifications?	Yes, the mobile fueling system meets the FHMR including USDOT specifications or USDOT specifications do not apply because the tank is less than 502 gallons and only goes from farm to field and is properly secured and free from leaks.		No. The tank poses an environmental risk.	Meeting USDOT specifications includes having shipping papers, tank markings and placards. See FAS 112S.	
6.19) Is the tank labeled according to its contents with letters three inches or more in height?	Yes, labeled according to contents (Gasoline or Diesel) and with the following: "FLAMMABLE" (OR "COMBUSTIBLE") and "KEEP FIRE AND FLAME AWAY". If tank is not a fire- protected type, it is also labeled: "KEEP 40 FEET FROM BUILDINGS."		Tank labeled with contents. Tanks storing gasoline not labeled: FLAMMABLE - KEEP FIRE & FLAME AWAY. Tanks storing diesel not labeled: COMBUSTIBLE – KEEP FIRE & FLAME AWAY. <sup>16</sup>		
<b>6.20)</b> Is the tank elevated off the ground to protect from corrosion?	Tank stably mounted on solid timbers, solid cement blocks, manufactured cradles or equivalent to protect the tank bottom from corrosion due to contact with ground. The tank is elevated to allow for a visible inspection of all tank surfaces.		Tank is not stably elevated in order to allow adequate visible inspection of all tank surfaces. <sup>16</sup>	Appropriate tank elevation.	
<b>6.21)</b> Are siphons, manifolds or internal pressure discharge devices present on tank(s)?	Siphons not present on tank(s). Multiple tanks not connected together (no manifold). No internal pressure discharge device present.	Manifold(s) present on tanks installed prior to 2003. After 2003, tanks equipped with a shut off valve for each tank, a spill bucket and audible overfill alarm may have top only manifolds.	Siphons or internal pressure discharge device(s) present on tanks installed after 2003. <sup>16</sup>	No siphons or internal pressure discharge devices present. No manifolds present on tanks installed after 2003 Unless additional protection factors are present.	

PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	YOUR RISK		
ALL ABOVEGROUND PE	TROLEUM STORAGE F	ACILITIES (CONTINUED)					
<b>6.22)</b> Is the tank dispenser (top-opening tank) or discharge connection (gravity discharge tank) made inoperable when not in use?	Yes, locked or otherwise made inoperable.		No. <sup>16</sup>				
<b>6.23)</b> Does the top- opening tank pump discharge or gravity discharge tank have a self-closing nozzle?	Yes.		No. <sup>16</sup>				
<b>6.24)</b> If a single-walled tank is in a dike with rain protection, is the roof or canopy and supports constructed of non-combustible material and designed so vapors don't collect?	Yes.		No, combustible materials used, or design is such that vapors collect under the roof or canopy. <sup>16</sup>				
<b>6.25)</b> If the tank is covered, are roof and canopy supports located on edge of dike or outside diked area?	Yes.		No. <sup>16</sup>				
<b>6.26)</b> If the tank is covered, is the lowest elevation of the roof or canopy six feet or higher above the top of the tank?	Yes.		No. <sup>16</sup>				

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PE		DDUCT STORAGE			
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
ALL ABOVEGROUND PE	TROLEUM STORAGE FA	CILITIES (CONTINUED)			
<b>6.27)</b> If the tank is covered, does the normal tank vent extend through the roof or canopy?	Yes.		<b>No.</b> <sup>16</sup>		
ALL ABOVEGROUND PE	TROLEUM STORAGE TA	NKS >1,100 GALLON CAPACI	ГҮ		
<b>6.28)</b> Is the tank registered and is valid proof of registration displayed?	The aboveground storage tank with capacity greater than 1,100 gallons is registered, and valid proof of registration is available.	For aboveground storage tanks with a capacity greater than 1,100 gallons, but less than or equal to, 3,000 gallons <b>the tank is not registered, or</b> <b>valid proof of registration is</b> <b>not available</b> <sup>1,6</sup> but an inspection finds it meets all applicable boxed MAEAP requirements in the Petroleum Products Storage and Management Section.	The tank is not registered and/or the tank does not bear a UL tag, and/or valid proof of registration is not available. <sup>16</sup>	Aboveground storage tank is registered or there are minimal environmental risks.	
<b>6.29)</b> Does tank fill pipe have spill protection?	Spill protection (catch basin) installed and maintained on tank fill pipe.		Tank fill pipe does not have spill protection. <sup>16</sup>	Catch basin installed on fuel tank.	
<b>6.30)</b> Is there an emergency control disconnect for electrically operated fuel systems?	Emergency control disconnect located 20 to 100 feet away from dispensing area.		No emergency control disconnect present. <sup>16</sup>	Appropriate disconnect control present.	
<b>6.31)</b> Are there absorbent materials, a container with lid and a non-metallic shovel to deal with a petroleum spill?	Spill kit present.		No spill kit. <sup>16</sup>	Spill kit present.	
<b>6.32)</b> Does the tank have an audible alarm?	Yes, audible alarm is present.				

PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
ALL ABOVEGROUND PETR	ROLEUM STORAGE TANKS >1,1	00 GALLON CAPACITY (co	ONTINUED)					
<b>6.33)</b> Does the tank have secondary containment?	Double walled tank or tank within diked area.		No secondary containment. <sup>16</sup>	Appropriate secondary containment.				
<b>6.34)</b> How far is the tank from buildings, property lines and public ways? In-vault tank up to 15,000	From From From Bldg. lot line public wa	Y	Less than distance indicated for type of tank. <sup>16</sup>					
gallons: Protected aboveground tank (UL 2085 tank) 6.000 college or logg:	5 feet 15 feet 5 feet							
UL 2085 tank 6,000 to 12,000 gallons or less:	15 feet 25 feet 10 fee							
UL2080 tank 0-12,000 gallons:	25 feet 50 feet 25 fee							
Other secondary containment tank up to 12,000 gallons:	50 feet 100 feet 50 fee							
<b>6.35)</b> Is there a fence to prevent unauthorized entry?	Tank or property fenced or tan within vault with entry protecte from unauthorized entry or vandalism.		Unprotected from unauthorized entry. <sup>16</sup>					
<b>6.36)</b> Is there crash protection for the tank and piping?	Guard posts or appropriate barrier installed for crash protection.		No crash protection. <sup>16</sup>	Crash protection present for fuel tank.				

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)							
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your Risk		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION			
ALL ABOVEGROUND PETR	ROLEUM STORAGE TANKS >1,100	GALLON CAPACITY (co	DNTINUED)	1	I		
<b>6.37)</b> Is the tank labeled according to its contents with letters three inches or more in height?	Yes, labeled according to contents (Gasoline or Diesel) and with the following "FLAMMABLE (or COMBUSTIBLE) LIQUIDS" and "KEEP FIRE AWAY."		Tank not labeled.				
<b>6.38)</b> Are there any unused fuel storage tanks on the farm?	If aboveground tank present, it has been emptied, cleaned of liquid and sludge, rendered vapor free and safeguarded from trespassing.		Aboveground tank present and not empty, clean and/or vapor free. Tank fill opening not secured to prevent trespassers from putting chemicals in tank. <sup>16</sup>				
UNDERGROUND STORAGE	Tanks				<u>-</u>		
<b>6.39)</b> Has the underground fuel tank (installed before August 1, 2003 with a capacity of less than 1,100 gallons) been tested for leaks within the past three years?	No leaks detected.		No testing.	Appropriate report indicates no leaks present.			
<b>6.40)</b> Does the underground storage tank (installed after August 1, 2003 with a capacity of less than 1,100 gallons) meet Flammable Liquid Combustible Liquid (FLCL) rules?	Leak detection system in place. Tank has corrosion protection, spill bucket installed and overflow prevention in place (alarm or shutoff valve).		FLCL rules not met. <sup>16</sup>	Tank meets FLCL rules.			

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
UNDERGROUND STORAGE	E TANKS (CONTINUED)							
<b>6.41)</b> Do tank(s) or piping that are in contact with the soil have corrosion protection on all parts?	Properly engineered, installed, maintained and inspected (every three years) corrosion protection provided for tank, piping or portions in contact with the soil.		Tank or piping in contact with soil without corrosion protection or unmaintained protection. Not inspected at least once every three years. <sup>16</sup>					
<b>6.42)</b> Are there any unused fuel storage tanks on the farm.	If tank present, it has been emptied, cleaned of liquid and sludge, rendered vapor free and safeguarded from trespassing.		Tank present and not empty, clean and/or vapor free. Tank fill opening not secured to prevent trespassers from putting chemicals in tank. <sup>16</sup>					
<b>6.43)</b> Is the underground tank registered, and is valid proof of registration available?	The underground storage tank with capacity greater than 1,100 gallons is registered and proof of registration is present.		The tank is not registered, and/or proof of registration is not present. <sup>16</sup>	Underground storage tank is registered.				
<b>6.44)</b> If there is an underground fuel storage tank (UST) greater than 1,100 gallons on the farmstead is there a State of Michigan certified operator for the farm?	Yes.		No. <sup>16</sup>					
<b>6.45)</b> Did a professional (trained and certified by the tank manufacturer) install the tank?	Professional installation.		No. <sup>16</sup>					

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
UNDERGROUND STORAGE	TANKS (CONTINUED)			•	•			
<b>6.46)</b> Is there insurance or demonstration of financial responsibility should there be a fuel release?	Yes, meet the \$500,000 financial responsibility level for tanks less than 10,000 gallons.		Unable to demonstrate financial responsibility for third party injury and property damage due to accidental release. <sup>16</sup>					
<b>6.47)</b> Are there any unused underground fuel storage tanks on the farm?	No, tanks have been removed from the ground and the site. Excavation site checked for evidence of contamination (site assessment). Any contamination present was properly handled.	Underground tanks have been removed or filled with inert solid material. A site assessment has not been completed.	In-ground tank has been left unused for 12 months. Tanks greater than 1,100 gallons have been removed or filled with inert material but a site assessment has not been completed. <sup>16</sup>	Proper management of an unused underground fuel storage tank(s).				
OTHER PETROLEUM PROD	UCT STORAGE				•			
<b>6.48)</b> Is the heating oil tank for a farm building being used as designed?	Tank is labeled and used as designed.	Tank is not labeled and used outdoors.	Tank is not being used as designed.	Heating oil storage tank is appropriate.				
<b>6.49)</b> Is a heating oil tank being used to store diesel fuel?	Yes, but tank is labeled as a UL 80 tank and is being used as designed.		Tank is not labeled or is not being used as designed.	Diesel fuel storage tank is appropriate.				
<b>6.50)</b> How far is the home heating fuel or kerosene tank from a building?	Minimum of 5 feet from the building.		Less than 5 feet.					

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Pe	TROLEUM PRODUC	CT STORAGE	and Managemen	IT (CONTINUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
OTHER PETROLEUM PRO	DUCT STORAGE (CONTINUED)				
<b>6.51)</b> How far is the fuel tank for the emergency generator from any well?	For private and public wells: Close proximity to the well if the emergency generator provides power to the well in the event of a power outage, and the fuel is in secondary containment. If the emergency generator is not used to run the well, standard well isolation distance criteria applies.		The emergency generator does not run the well and does not meet standard well isolation distance: For private wells: Less than 50 feet for most fuel tanks. <sup>1</sup> For public wells: Less than 800 feet from the well without an approved deviation, protection features or secondary containment. <sup>3</sup> Less than 75 feet with fuel in secondary containment. <sup>1,3</sup>	Acceptable fuel storage isolation distance from water.	
<b>7.01)</b> How are	All waste recycled or disposed	WASTE MAN	AGEMENT Household waste burned on		
household waste and waste generated at the farm managed?	of in a licensed solid waste facility or incinerator.		site (if allowed by local government). <b>Farm waste burned on site.</b> <sup>9</sup>		
7.02) Is there a farm dump?	No farm dump or farm dump property cleaned up and closed.	Farm dump exists but is not being used.	Farm dump still in use.		

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WASTE MANAGEMENT (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>7.03)</b> If a household trash burn barrel or incinerator exists, how are ashes disposed?	Ashes collected and disposed at a licensed landfill.	Ashes stored or disposed on the farm more than 300 feet from a well or surface water.	Ashes stored or disposed on the farm within 300 feet of a well or surface water.					
<b>7.04)</b> How are hazardous product containers (treated seed packages, fertilizer bags, chemical containers, etc.) disposed?	Recycled or reused appropriately. Or, Disposed at a licensed landfill, or hazardous waste collection service used, or returned to the dealer.		Empty and partially filled containers burned or disposed on the farm. <sup>9</sup>					
<b>7.05)</b> How is waste oil disposed?	Recycled.	Burned in waste oil heater or furnace.	Dumped on the farm. <sup>8</sup>	Evidence of proper oil recycling or disposal.				
<b>7.06)</b> How is wash water, that contains solvent-based degreasers, disposed from an on-farm truck washing operation?	Discharged onto the ground and the landowner has a valid groundwater discharge permit. OR Discharged into a municipality sewer system with the approval of the municipality		Discharges more than 1,000 gallons of wash water per month per acre. <sup>4</sup> Landowner does not have a groundwater discharge	Valid groundwater discharge permit and/or up-to-date discharge logs.				
on a routine basis.)			Discharge is within 100 feet of property line. <sup>4</sup> Discharge causes runoff or					
			waste deposition on adjacent properties. <sup>4</sup> Landowner does not keep a log of discharge locations.					
			Wash water is discharged into surface waters. <sup>4</sup>					

	7	WASTE MANAGEMENT	(CONTINUED)		
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>7.07)</b> How is wash water, that does <u>NOT</u> contain degreasers and solvents, disposed from an on-farm truck washing operation? (Several trucks washed on a routine basis.)	Discharged onto the ground and the landowner has a valid groundwater discharge permit (GW1520000). OR Discharged into a municipality sewer system with the approval of the municipality. OR Wash water is only removing non-polluting substances from the exterior of the vehicle and does not include the undercarriage, no additives are used, and the washing process does not add significant pollutants to the water.	Discharges less than 2,000 gallons per day of only wash water with additives onto the ground ("additives" do NOT include solvents and/or degreasers). Additives (soaps and detergents) are used for intended purpose and in accordance with manufacturer's directions. Washing is limited to exterior of the vehicle and does not include the undercarriage. Wash water does not contain polluting or hazardous substances. Discharge does not runoff, causing ponding or flooding to adjacent properties. Landowner maintains a log detailing the discharge volume of wash water with additives and retains the log for 3 years.	Discharges more than 2,000 gallons per day of wash water with additives onto the ground. <sup>4</sup> Landowner does not have a valid groundwater discharge permit. <sup>4</sup> Wash water contains polluting or hazardous substances. <sup>4</sup> Discharge runoff causes ponding or flooding to adjacent properties. <sup>4</sup> Landowner does not maintain a log detailing the discharge volume of wash water with additives for the past three years. <sup>4</sup>	Valid groundwater discharge permit and/or up to date discharge logs.	
<b>7.08)</b> How is used antifreeze disposed?	Recycled.	Disposed of in municipal sewer (with municipality's approval).	Dumped on the farm. <sup>8</sup>	Evidence of proper antifreeze recycling or disposal.	
<b>7.09)</b> How are scrap tires disposed?	Recycled.		Disposed on the farm. <sup>12</sup>		
<b>7.10)</b> How are lead- acid batteries disposed?	Recycled.		<b>Disposed of</b> or stored <b>on</b> the farm. <sup>8</sup>	Evidence of proper battery recycling.	
<b>7.11)</b> How are paints, solvents, and cleaners disposed?	Used up, taken to household hazardous waste collection or recycled.	Liquid evaporated in open air, sludge taken to licensed landfill.	Burned or disposed of or stored on the farm. <sup>8</sup>	Evidence of proper recycling or disposal.	

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	WAST	TE MANAGEMENT	(CONTINUED)		
<b>RISK QUESTION</b>	LOW RISK – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE	Your Risk
<ul> <li>7.12) How far from water wells are hazardous products stored?</li> <li>(Private wells include irrigation, livestock watering, cooling, etc.)</li> <li>(Type IIb and Type III Public wells include that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees).</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	For private wells: 150 feet or greater. OR, With secondary containment, 50 feet or greater. OR, For public wells (dairy farms or farms with employees): More than 800 feet from the farm well. OR, Approved isolation distance deviation for the well. OR, Between 75 and 800 feet with approved storage and well, and protective site features.* For Type IIa public wells, refer to FAS 112S.		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For Type IIb or Type III public wells: Less than 800 feet from the farm well. <sup>3</sup>		
<b>7.13)</b> Are used motor oil, new oil and hydraulic oil stored in acceptable containers and properly isolated from drinking water wells?	Oil in acceptable containers stored on impermeable floor or in secondary containment, and with reasonable isolation from any well and does not discharge to surface water.	Oil stored in acceptable containers, but with inadequate isolation from any well and does not discharge to surface water.	Oil stored in leaking containers. Evidence of oil soaking into the soil and/or <b>discharges to surface</b> water.4	Acceptable oil storage demonstrated.	
<b>7.14)</b> Are there any storage tanks being used to store motor oil, new oil, hydraulic oil, or any other petroleum product underground?	There are no storage tanks in use underground.	Yes. The tanks meet all the applicable underground storage tank standards found in the Petroleum Product Storage and Management section of the Farm*A*Syst (FAS107).	Yes. But the tank does not meet the standards found in the Petroleum Product Storage and Management section of FAS 107. <sup>16</sup>		

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

Risk questrion         Low Risk - 3 (Recommedee)         Menuw Risk - 2 (rotentrul Hazard)         Hench Risk - 1 (significant Hazard)         Recons on evidence for (significant Hazard)         Your Ris MAEAP Verificant on to an appropriate system designed for the materials drained.         Your Ris Reconservert to an appropriate system designed for the materials drained.         Menuw Risk - 2 (rotentrul Hazard)         Hence Risk - 1 (significant Hazard)         Recons on evidence for MAEAP Verificant on autrials to on the reader of the materials are stored in secondary containment to prevent leaks from entering drain.         Hence Risk - 1 (significant Hazard)         Recons on evidence for MAEAP Verificant on autrials to for anaterials stored in secondary containment to prevent spills or major losses from entering the drain.         Your Ris Materials to report and prevent spills or materials stored in secondary containment to prevent spills or maporpaties systems.         Containment or prevent spills or materials stored in secondary containment or prevent spills or maporpaties systems.         Recons evidence materials to containment or prevent spills or materials or materials spill agaiges on the farm.         Your Ris Geondary containment or prevent spills or materials or materials spill agaiges on the farm.         Conservation materials or prevent spills or materials or materials or prevent prevent spills are spill or discharge reaching spill are spills or al eak or spill.         Seconde spill a leak or spill.         No sign of spill or discharge reaching spill or spil	WASTE MANAGEMENT (CONTINUED)								
7.15) Are floor drains present in farm buildings?       No floor drains. Or. all drains go to an appropriate system designed for the materials or materials are subcered in secondary containment or floor drains are underside so dra appropriate system. designed for the materials or materials	RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
7.16) Is there a mercury manometer on the farm?       No mercury manometer.       Mercury manometer present.       No mercury manometer gauges on the farm.         7.17) Are there mercury containing devices on the farm? (Examples include fluorescent lights, thermostats, thermometers, irrigation switches, septic lift station switches and other switches.)       No.       Some mercury-containing devices in use, proper disposal methods used when replaced.       Yes, many mercury-containing devices.       Examples: Recycling center or returned to retailer.         7.18) Are portable toilets located to a place that minimizes the risk for anvironment contamination in the case of tipping, leaking, or maffunction?       Portable toilets are properly located to prevent or minimize risk of contamination to water water sources.       A spill or leak from a portable toilet may run into earby surface water or water water sources, and are addressed in the Emergency. Plan and spill kits are available.       Portable toilets or other water sources, and are addressed in the Emergency. Plan and spill kits are available.       Semage added to manure or building pit.''No septic system. Direct <sup>4</sup> discharge of wastes to environment.         8.01) Is the farm bathroom is connected to a septic system to treat the waste?       Farm bathroom is connected to a septic any proved by the Local Health Department.       Semage added to manure or building pit.''No septic system. Direct <sup>4</sup> discharge of wastes to environment.	<b>7.15)</b> Are floor drains present in farm buildings?	No floor drains. Or, all drains go to an appropriate system designed for the materials drained.	Floor drains are made inoperable except when used for appropriate materials, or materials are stored in secondary containment to prevent leaks from entering drain.	Floor drains are discharged to surface 4 water, are vulnerable to spills, or drain hazardous materials to inappropriate systems.	Quantities of hazardous materials stored in secondary containment or floor drains plugged to prevent spills or major losses from entering the drain.				
7.17) Are there mercury- containing devices on the farm? (Examples include fluorescent lights, thermostats, thermometres, irrigation switches, septic lift station switches and other switches.)       No.       Some mercury- containing devices in use, proper disposal methods used when replaced.       Yes, many mercury- containing devices.       Examples: Recycling center or returned to retailer.         7.18) Are portable toilets other switches.)       Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources, and are addressed in the Emergency Plan and spill kits are available.       Portable toilets or other water sources.       A spill or leak from a portable toilet may run into mathy surface water, sanitation units located a safe distance from sensitive areas.       No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.         SEEPTIC System MANAGEMENT         8.01) Is the farm bathroom connected to a septic system to treat the waste?       Farm bathroom is connected to a septic tank and drainage field, or to another system approved by the Local Health Department.       Farm bathroom, it muse the case to environment.       If there is a farm bathroom, it muse the connected to a functioning septic system. Human waste must not be added to livestock manure storage	<b>7.16)</b> Is there a mercury manometer on the farm?	No mercury manometer.		Mercury manometer present.	No mercury manometer gauges on the farm.				
7.18) Are portable toilets located in a place that minimizes the risk for environment case of tipping, leaking, or malfunction?       Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources, and are addressed in the Emergency Plan and spill kits are available.       Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources, and are addressed in the Emergency Plan and spill kits are available.       No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.         8.01) Is the farm bathroom connected to a septic system to treat the waste?       Farm bathroom is connected to a septic tank and drainage field, or to another system approved by the Local Health Department.       Farm bathroom is connected to a septic system. Direct <sup>4</sup> discharge of wastes to environment.       If there is a farm bathroom, it must be connected to a functioning septic system. Human waste must not be added to livestock manure storage	<b>7.17)</b> Are there mercury- containing devices on the farm? (Examples include fluorescent lights, thermostats, thermometers, irrigation switches, septic lift station switches and other switches.)	No.	Some mercury- containing devices in use, proper disposal methods used when replaced.	Yes, many mercury- containing devices.	Examples: Recycling center or returned to retailer.				
8.01) Is the farm bathroom is connected to a septic tank and drainage field, or to another system approved by the Local Health Department.       Sewage added to manure or building pit. <sup>17</sup> No septic system. Direct <sup>4</sup> discharge of wastes to environment.       If there is a farm bathroom, it must be connected to a functioning septic system. Human waste must not be added to livestock manure storage	<b>7.18)</b> Are portable toilets located in a place that minimizes the risk for environment contamination in the case of tipping, leaking, or malfunction?	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources, and are addressed in the Emergency Plan and spill kits are available.	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources.	A spill or leak from a portable toilet may run into nearby surface water or water wells in the event of a leak or spill.	No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.				
8.01) Is the farm bathroom connected to a septic system to treat the waste?Farm bathroom is connected to a septic tank and drainage field, or to another system approved by the Local Health Department.Sewage added to manure or building pit.17No septic system. Direct 4 discharge of wastes to environment.If there is a farm bathroom, it must be connected to a functioning septic system. Human waste must not be added to livestock manure storage	SEPTIC SYSTEM MANAGEMENT								
	<b>8.01)</b> Is the farm bathroom connected to a septic system to treat the waste?	Farm bathroom is connected to a septic tank and drainage field, or to another system approved by the Local Health Department.		Sewage added to manure or building pit. <sup>17</sup> No septic system. Direct <sup>4</sup> discharge of wastes to environment.	If there is a farm bathroom, it must be connected to a functioning septic system. Human waste must not be added to livestock manure storage.				
NOTE: WHEN THERE IS A SEPTIC SYSTEM FOR THE BATHROOM IN THE FARM BUILDING, COMPLETE THE REMAINDER OF THIS SECTION FOR BOTH THE FARM BUILDING AND HOU SEPTIC SYSTEMS. IF NOT, COMPLETE IT FOR THE HOUSE SEPTIC SYSTEM.	Note: When there is a se septic systems. If not, co	PTIC SYSTEM FOR THE BATHROOM IN DMPLETE IT FOR THE HOUSE SEPTIC S	THE FARM BUILDING, COMPLE YSTEM.	TE THE REMAINDER OF THIS SEC	TION FOR BOTH THE FARM BUILDIN	G AND HOUSE			

SEPTIC SYSTEM MANAGEMENT (CONTINUED)								
RISK QUESTION	Low RISK – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	YOUR			
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	RISK			
NOTE: WHEN THERE IS A	SEPTIC SYSTEM FOR THE BATH		DING, COMPLETE THE REMAINDER	OF THIS SECTION FOR BOTH TH	E FARM			
BUILDING AND HOUSE SE	EPTIC SYSTEMS. IF NOT, COMPL	ETE IT FOR THE HOUSE SE	PIIC SYSTEM.					
8.02) Is the septic	Septic system designed to	Capacity just meets	Design capacity is much less					
system adequately	nandle more wastewater than	wastewater	than potential flow of					
Sized to treat	number of bodrooms in bourse	requirement.	Or					
in the house?	and soil characteristics		No septic system: <b>direct</b>					
in the nouse:			discharge of wastes to					
			environment. <sup>4</sup>					
<b>8.03)</b> What is the age of the septic system?	Less than 5 years old.	6 to 20 years old.	More than 20 years old.					
<b>8.04)</b> What distance separates the septic system components from water wells?	Greater than 50 feet from private wells (75 feet from public wells, including dairy farms and farms with employees).		Less than 50 feet from a private well(s) (less than 75 feet from public wells, including dairy farms and farms with employees.) <sup>3</sup>					
<b>8.05)</b> When was the last time the septic tank was pumped out?	Within the past 5 years.	Between 5 and 10 years.	More than 10 years ago.					
8.06) Who pumps out	Licensed septage hauler.		Farmer/self or unlicensed	Satisfactory explanation of				
the septic tank?			contractor. <sup>10</sup>	tank pumping procedures.				
<b>8.07)</b> How is the drain field protected from traffic, deep-rooted plants (like crops) and structures?	Vehicles and other heavy objects or activities kept away from drain field area. No deep-rooted plants, pavement or structures over the drain field.		Vehicles, livestock, heavy objects or other disturbances permitted in area. Trees planted in or directly next to the drain field.					
<b>8.08)</b> Are there any signs of trouble with the septic system?	Household sanitary drains flow normally. No sewage odors inside or outside. Soil over drain field firm and dry. Well water tests negative for coliform bacteria.	Household drains run slowly or soil over drain field is sometimes wet.	Sewage odors noticed in the house or near the drain field. Drains plugged or backed up. Soil wet or spongy in the drain field area. Well water tests positive for coliform bacteria.					

SEPTIC SYSTEM MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
NOTE: WHEN THERE IS A SEPTIC SYSTEM FOR THE BATHROOM IN THE FARM BUILDING, COMPLETE THE REMAINDER OF THIS SECTION FOR BOTH THE FARM								
BUILDING AND HOUSE SEPTIC SYSTEMS. IF NOT, COMPLETE IT FOR THE HOUSE SEPTIC SYSTEM.								
<b>8.09)</b> What records are maintained on the septic system?	Good map and records of system repairs and maintenance are kept.	Some records maintained.	No map and maintenance records kept.					
<b>8.10)</b> How frequently is the septic system used for grease and solid waste disposal from the kitchen?	Solid kitchen waste and grease are not disposed of in the septic system.	Moderate use of the septic system for solids and grease disposal from the kitchen.	Frequent use of the septic system for solids and grease disposal from the kitchen.					
<b>8.11)</b> What kinds farm cleaners, solvents and other chemicals are poured down the drain?	Moderate use of cleaning products that end up in wastewater. Hazardous chemicals never poured down the drain or toilet.	Moderate use of cleaning products. Small amounts of hazardous chemicals poured down drain or toilet.	Heavy use of cleaning products. Septic system used to dispose of hazardous chemicals (solvents, degreasers, acids, oils, paints, disinfectants, pesticides). <sup>4</sup>					
<b>8.12)</b> How is water conserved in the household?	Water-conserving fixtures and practices used. Drips and leaks fixed immediately.	Some water-conserving steps taken (low-flow shower heads, fully loaded washing machine or dishwasher).	No water-conserving practices. High-volume standard bathroom fixtures used. Leaks not repaired.					
<b>8.13)</b> How is the water softener recharge handled.	Underground drainage separated at least 50 feet from well and septic systems (75 feet from the farm well for greenhouse with employees or open to the public).	Open ditch, farm field drain.	Septic system.					
<b>8.14)</b> How are discharges from footer drains, basement sumps and roof drainage handled?	Grassed area, open ditch, field drain.		Directed into the septic system.					
GENERAL LIVESTOCK MANAGEMENT								
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RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>9.01)</b> Were the Michigan Right to Farm Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control for New and Expanding Livestock Facilities (Site Selection GAAMPs) evaluated for livestock facility?	Farm has Michigan Department of Agriculture and Rural Development (MDARD) <i>Site Selection GAAMPs</i> verification.	The farm has submitted the Livestock Site Screening Tool and passes the MDARD review.	The farm has built new or expanded since 2000 and does not meet all of the <i>Site</i> <i>Selection GAAMPs</i> , or the Livestock Screening Tool has not been completed and reviewed.	Record of evidence. Producer has official Site Selection GAAMP verification documentation. Producer has completed site screening tool and has passed MDARD review.				
* These questions do not apply zoning ordinance has been er determined by MDARD.	to farms where siting is not applicable, s acted to allow for agriculture. In additio	such as farms located in mu n, siting does not apply to	unicipalities with populatio research and educational	ns greater than 100,000 whe institutions, or other location	ere a s as			
<b>9.04)</b> Is there a utilization plan for the manure nutrients generated on the farm?	Total nutrient production is known, and sufficient crop acres available to use manure nitrogen and phosphorus safely. <i>Manure</i> <i>applications discontinued if the</i> <i>soil phosphorus test reaches 300</i> <i>pounds per acre (150 ppm) of</i> <i>Bray P1 phosphorus.</i> Or other utilization plan safely uses manure nutrients.		Manure nutrient production is unknown, or nutrient production exceeds land capacity, or no plan exists for manure utilization.					
<b>9.05)</b> What manure management records are maintained?	Complete application <i>records of</i> <i>manure analysis, soil test results</i> <i>and rates of manure application</i> <i>for individual fields are</i> <i>maintained.</i>	A minimum of one season of manure application records, or partial manure application records have been kept.	Minimal or no records maintained.					

A boxed risk level indicates the level required for environmental assurance verification.

	GENERAL LIVESTOCK MANAGEMENT (CONTINUED)						
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>9.06)</b> Is there an emergency plan in place in the event of a manure spill?	Up-to-date written plan available and understood by all farm employees. <i>All uncontained spills or releases</i> <i>should be reported to the MDARD</i> <i>Agriculture Pollution Emergency</i> <i>Hotline: 1-800-405-0101,</i> or to the EGLE Pollution Emergency Alerting System: 1-800-292-4706.	Incomplete or out-of- date action plan available.	No emergency action plan that deals with manure spills.	Up-to-date emergency farm plan.			
<b>9.07)</b> How are animal mortalities handled?	Animals are buried (at least 200 feet from any existing groundwater well that is used to supply potable drinking water), incinerated (requires permit), land filled, placed in a compost pile or picked up by a rendering service, anaerobically digested or other methods as approved by the Director of MDARD. Mortality is removed within 24 hours of death or stored for a maximum of 30 days at 0 degrees For a maximum of 30 days at 0 degrees F before proper disposal of the carcass. Records of mortality disposal, including burial, are kept on file and available for inspection.		Animals are not buried, incinerated, land filled, placed in a compost pile or picked up by a rendering service within 24 hours of death. Or, stored for more than seven days at 40 degrees F or more than 30 days at 0 degrees F before disposal of the carcass. <sup>15</sup>	Disposal of dead animal bodies is done according to the Bodies of Dead Animals Act (BODA), as amended in 2008. Up-to- date forms on file for verification. (See FAS 112S) Forms for recording mortality disposal including burial record forms and compost record forms are available on the MAEAP website at: https://maeap.org/resource- library/?resource- type=livestock-system- resource.			
<b>9.08)</b> If burial of mortality (including both individual and common graves) is used, what are the isolation distances for the burial site(s)?	Burial site is located at least 200 feet from any well and dead animal(s) do not come into contact with waters of the state.		Site(s) is located less than 200 feet from any well and/or come into contact with waters of the state. <sup>15</sup>				

Bold black print indicates a violation of state or federal regulation.

GENERAL LIVESTOCK MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>9.09)</b> If mortality composting is used, what are the isolation distances for the composting site(s)?	Site is located at least 200 feet away from waters of the state, 200 feet from any well, 200 feet from nearest non- farm residence and 2 feet above seasonal high-water table.		Site is located less than 200 feet away from waters of the state, 200 feet from any well, 200 feet from nearest non-farm residence, and 2 feet above seasonal high water table. <sup>15</sup>	Isolation distances meet BODA requirements. The BODA supplement, available at the MAEAP.org website, has been completed and reviewed.				
<b>9.10)</b> How are animal healthcare needles and syringes disposed?	Sharps are put into a puncture- resistant container, labeled and taken to licensed landfill.		Disposal at landfill without protective containment or disposed on the farm. <sup>2</sup>	Use of labeled, puncture-proof container for sharps.				
<b>9.11)</b> How are unwanted or unusable animal medications and healthcare products disposed?	Taken to licensed landfill, veterinarian, or distributor for disposal.		Flushed down the drain, dumped on the farm or dumped in the manure pit. <sup>4</sup>					
<b>9.12)</b> Do livestock waterers have backflow prevention to protect the well from contamination?	All waterers have backflow prevention built into the waterers or in the water line to the waterers, or an air gap.	Most waterers have backflow prevention.	No backflow prevention for livestock waterers. <sup>1</sup>	Backflow prevention on livestock waterers.				

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Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

GENERAL LIVESTOCK MANAGEMENT (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>9.13)</b> Do rain, snow (including plowed snow) roof water or surface water come into contact with manure, compost, feed/silage, livestock lots or travel lanes resulting in contaminated runoff?	There is no clean water contact with the listed areas, or <b>contaminated runoff</b> is <b>collected</b> <b>or treated</b> and does not discharge directly to surface water.		Areas are exposed to rain/snow or surface water, and runoff is not collected or treated. <b>Runoff discharges</b> <b>directly to surface water</b> <sup>4</sup>	Visual inspection of the farmstead. Flow patterns are most apparent during or shortly after a rainfall event and/or thaw.			
	Lives	STOCK MANUR	e Storage				
<ul> <li>10.01) How far is the liquid manure storage from any well?</li> <li>(Private wells include irrigation, livestock watering, cooling etc.</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees)</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation from the Local Health Department for the well, OR,</li> <li>Between 200 and 800 feet with approved storage and well, and protective site features.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 150 feet. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate well isolation distance for site characteristics.			

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

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LIVESTOCK MANURE STORAGE (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<ul> <li>10.02) How far is the <u>dry</u> manure storage from any well?</li> <li>(Private wells include irrigation, livestock watering, cooling etc.</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees)</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater OR</li> <li>50 feet or greater, for covered facility with protective site features, with an MDARD review.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation from the Local Health Department for the well, OR,</li> <li>Between 200 and 800 feet with approved storage and well, and protective site features.*</li> <li>75 feet or greater for covered facility with protective site features, with MDARD review.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 150 feet. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate well isolation distance for site characteristics.			
LIQUID MANURE STOR	AGE SYSTEMS						
<b>10.03)</b> Are structures properly maintained?	Structure is properly maintained and in good condition. No damage to the liner or breaches evident. No visible signs of issues with push-off ramps, load-out areas, pumps, piping, etc.	Structure appears to be in good condition.	Lining material integrity broken. Evidence of overflow. Coarse- textured soils, no clay liner. Evidence of extensive cracking, leaning, etc. Structure needs repair.	MAEAP manure storage review sheets completed. (See FAS 112S). Additional criteria may be required for CNMP development.			

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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LIVESTOCK MANURE STORAGE (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
LIQUID MANURE STOP	RAGE SYSTEMS (CONTINUED)						
<b>10.04)</b> What design standards are utilized for liquid storage structures?	As-built documentation is available. <i>Construction design for manure</i> <i>storage and treatment facilities</i> <i>meets standards and</i> <i>specifications in accordance with</i> <i>MI NRCS-FOTG, Concrete Manure</i> <i>Storages Handbook (MWPS-36),</i> <i>Circular Concrete Manure Tanks</i> <i>publication TR-9 (Midwest Plan</i> <i>Service, 1998).</i> For steel: Manual of Steel Construction, American Institute of Steel Construction. For concrete: Building Code Requirements for Reinforced Concrete, ACI 318, American Concrete Institute. For earthen storage, the permeability of the earthen liner is known and the earthen storage meets NRCS standard 313: Waste Storage Facility. No evidence of overflow.	Storage was designed and built by professionals, but the as-built design standards are unknown. The storage structure meets the requirements as outlined in Extension Bulletin FAS112S.	Storage was designed and built without engineering standards.	Appropriate manure storage design and installation demonstrated. Completed MAEAP manure storage review sheets or as-built engineering standards available. (See FAS 112S)			
<b>10.05)</b> How is freeboard maintained and overflow prevented in storage structures?	Minimum freeboard is known and observed. A minimum freeboard of 12 inches (6 inches for fabricated structures) plus the additional storage volume necessary to contain the precipitation and runoff from a 25- year, 24-hour storm event. Freeboard markers are in place.	No evidence of manure overflowing storage. Safe freeboard level is known but not visibly marked. Freeboard not always maintained.	Evidence that manure overflowed the storage structure. Freeboard level is unknown and unmarked.	Appropriate manure storage management demonstrated. Safe freeboard level indicated on storage. Runoff is calculated.			
<b>10.06)</b> Is clean water (i.e. roof and surface runoff) diverted away from the manure storage facility?	Clean water is diverted away from the manure storage.	Clean water is not diverted, but storage is designed to accommodate the additional water while still maintaining the freeboard.	Potential exists for overflow of manure storage.	Appropriate manure storage management demonstrated. Clean water diverted from manure storage.			

Bold black print indicates a violation of state or federal regulation.

	LIVESTOCK MANURE STORAGE (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3		HIGH RISK - 1	RECORDS OR EVIDENCE FOR				
SOLID-BEDDED MAN	URE STORAGE SYSTEMS	(FOTENTIAL HAZARD)		MALAI VERIFICATION	Nisk			
10.07) At the farmstead, where is manure <u>temporarily</u> stored?	Manure is temporarily stacked on an impermeable pad with sides. Runoff does not flow onto neighboring property or into surface waters.	Manure is temporarily stacked on the ground with appropriate management to minimize leaching and prevent runoff flow onto neighboring property or into surface waters – such as rotating locations, complete periodic removal of manure, seeding of previous location and records documenting location used.	Manure is temporarily stacked on the ground without appropriate management to minimize leaching and prevent all runoff such as rotating locations, complete periodic removal of manure, seeding of previous location and records documenting location used. For example: manure is stacked in the same location every year, piles are located within 50 feet of surface water, and/or there is evidence that <b>manure-contaminated runoff</b> <b>flows to surface water</b> <sup>4</sup> or to adjacent property.	Appropriate temporary manure stacking demonstrated at the farmstead for surface water and groundwater protection.				
<b>10.08)</b> How far are the buildings with bedded packs from a well?	Isolation distance is maximized to the extent possible but is not less than 75 feet for public wells and 50 feet for private wells.		For public wells: Less than 75 feet. <sup>1</sup> For private wells: Less than 50 feet. <sup>1</sup>	Appropriate well isolation distance for the type of well (public or private) or approved health department deviation for well isolation.				
<b>10.09)</b> At the farmstead, what management practices are used to reduce odors and pests from outside manure stockpiles?	Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes <u>and</u> stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.	Stockpiled manure is at least 50 feet away from property lines or 150 feet away from non-farm homes <u>Or</u> stockpiled manure is covered with a tarp, fleece blanket, straw, woodchips or other materials or additives to reduce odors and pests.	Stockpiled manure is closer than 50 feet to property lines or 150 feet to non-farm homes and stockpiled manure is not covered. No additives are used to reduce odors and pests.	Appropriate temporary manure stacking demonstrated at the farmstead.				

**Bold black print** indicates a violation of state or federal regulation.

LIVESTOCK MANURE STORAGE (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
SOLID-BEDDED MANURE	STORAGE SYSTEMS (CONTI	NUED)					
<b>10.10)</b> At the farmstead, what management practices are used to reduce odors and pests from outside temporary stacks or solid manure storage structures.	Less than 90 days. Stacked in different locations each time.	More than 90 days, but <i>less than</i> 365. Stacked in different location each time.	365 days or more. Stacked in same location each time.	Manure not stacked for more than 365 days.			
<b>10.11)</b> How far away is the well from <u>temporary</u> manure stockpiling or transfer areas?	Isolation distance is maximized to the extent possible but is not less than 75 feet for public wells and 50 feet for private wells.		Isolation distance is less than 75 feet for public wells and 50 feet for private wells. <sup>1,3</sup>	Appropriate well isolation distance for the type of well (public or private) or approved health department deviation for well isolation.			
<b>10.12)</b> At the farmstead, how are solid manure storage structures designed and constructed?	Constructed with a floor of concrete, or equivalent material, and with walls that prevent leachate from entering surrounding soils. Roof or cover prevents rainfall from entering storage.	Constructed with floor of compacted asphalt or fine- or medium-textured soils. Leachate will have direct contact with earthen floor or side walls. The permeability of the earthen floor is known and the earthen floor meets NRCS Standard 313. Leachate and rainfall/snowmelt runoff discharged into a designed system.	Earthen floor constructed with coarse-textured soils. Rainfall and leachate will have direct contact with earthen floor or sidewalls. Runoff and leachate are uncontrolled and <b>discharge</b> <b>directly to surface water.</b> <sup>4</sup>	Appropriate manure storage design and management for leachate/runoff.			
<b>10.13)</b> How are animal facilities with bedded manure packs designed and constructed?	Constructed with a floor of impermeable material or fine-textured soil. Adequate bedding is provided to maintain solid nature of manure. No rainfall or runoff enters the manure area. No waterers in the building.	Medium- to fine-textured soils, limited bedding provided, some rainfall or runoff enters manure area. Waterers in the building.	Building has an earthen floor on coarse-textured soil. <b>Contaminated runoff</b> <b>discharges directly to</b> <b>surface water.</b> <sup>4</sup>	Appropriate manure storage design and management for leachate/runoff.			

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	LIVESTOCK MANURE STORAGE (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
SOLID-BEDDED MANUF	RE STORAGE SYSTEMS (CONTINUE	ED)			THOR		
<b>10.14)</b> Is runoff from manure storage area(s) directly discharging to surface or groundwater?	Provisions made to control and/or treat runoff from stored manure. A designed and maintained vegetative infiltration area or runoff storage basin effectively handles storage runoff.	Inadequate runoff control. Signs of manure runoff past perimeter of vegetated area or exceeding storage basin capacity.	Manure storage runoff discharges directly to surface water. <sup>4</sup>	Appropriate runoff control from manure storage area(s).			
	LIVESTOCK LOT MANAGEMENT						
<b>11.01)</b> How far is the livestock lot located from any well? (Private wells include irrigation, livestock watering, cooling etc.)	50 feet or more from private wells (75 feet from public wells including the farm well for dairies or farms with employees).		Less than 50 feet from private wells <sup>1</sup> (less than 75 feet from public wells including the farm well for dairies or farms with employees). <sup>4</sup>	Appropriate livestock isolation distance from water well(s).			
<b>11.02)</b> How far is the livestock lot from surface water?	Livestock lot is more than 300 feet from surface water and, runoff control protects neighboring land areas and prevents direct discharge to surface waters or groundwater.	Livestock lot is less than 300 feet from surface water and, runoff control protects neighboring land areas and prevents direct discharge to surface waters or groundwater.	Evidence that manure- contaminated runoff flows from lot to surface water or to adjacent property.4	Appropriate livestock isolation distance from surface water.			
<b>11.03)</b> What efforts are made to divert unwanted drainage from upslope watersheds and roof water from becoming contaminated with manure?	Provisions are made to collect, store, utilize and/or treat manure accumulations and contaminated runoff from outside open lots used for raising livestock. Clean runoff is diverted away from the livestock lot.	Most roof water and upslope watershed drainage are diverted around livestock lot. Water that contacts manure is treated or contained and applied to cropland.	No clean water system in place. Most roof water and upslope watershed drainage runs through lot.	Appropriate clean water management for livestock lot(s).			

A boxed risk level indicates the level required for environmental assurance verification.

LIVESTOCK LOT MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>11.04)</b> How is livestock lot runoff managed to protect surface water, groundwater and/or neighboring properties?	All lot runoff is directed to a properly designed and maintained runoff storage basin, or runoff is directed to a designed settling basin and vegetated infiltration area where vegetation is annually harvested. No evidence of runoff to surface water, groundwater and/or neighboring properties, or ponding in low areas.	No evidence of runoff flow to surface water or ponding in low areas. Vegetation or cropland that is annually harvested exists between lot and surface water.	Evidence of runoff discharging directly to surface water <sup>4</sup> or intermittent waterway.	Appropriate runoff control for livestock lot(s).				
<b>11.05)</b> How often is manure scraped and removed from livestock lots?	Manure is scraped and removed periodically from livestock lot or other heavy use areas.		Manure is seldom scraped and removed from lot and feeding and watering areas.	Appropriate manure management in livestock lot(s).				
<b>11.06)</b> What type of floor or base does the livestock lot have?	Properly maintained concrete or compacted asphalt.	Continuous-use, compacted dirt or compacted gravel. Minimal plant material growing.	Poorly compacted dirt or gravel layer as indicated by plant growth.	Appropriate floor or base in livestock lot(s).				
SILAGE STORAGE								
<b>12.01)</b> How far is the silage storage located from a water well?	More than 300 feet.	50 to 300 feet.	Less than 50 feet.					
<b>12.02)</b> How far is silage storage from surface water?	More than 300 feet.	50 to 300 feet.	Less than 50 feet.					
<b>12.03)</b> What type of soil is on the property?	Fine-textured soils (clays).	Medium-textured soils (silt loam, loam).	Coarse-textured soils (sands).					

SILAGE STORAGE (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	YOUR RISK		
<b>12.04)</b> Does untreated silage leachate or polluted runoff run to a low area and pond?	Provisions are made to control and/or treat leachate to protect groundwater and surface water.		Silage leachate ponding and/or runoff are evident.	No evidence of leachate runoff and/or ponding.			
<b>12.05)</b> Is clean water (rain water, snow melt, etc.) diverted away from stored feed?	Clean water is diverted away from silage.		Clean water is not diverted away from silage, resulting in contaminated runoff.				
<b>12.06)</b> Are silage leachate and polluted runoff collected and/or treated?	Provisions are made to control contaminated runoff and/or treat leachate to protect groundwater and surface water from a direct discharge. (Includes capturing of leachate from drains.) Designed system or management controls are in place.	Designed system in place but not maintained.	No system in place. OR, Lack of appropriate management. OR, <b>Directly discharged to</b> surface water <sup>4</sup> or groundwater.	Appropriate silage leachate management.			
<b>12.07)</b> What moisture content is silage typically harvested and stored?	Generally below 67 percent.	Between 67 and 80 percent.	Over 80 percent.				
BUNKER SILOS							
<b>12.08)</b> What type of floor does the silage storage have?	Concrete or compacted asphalt No cracking (cracks that a finger can fit into or spider webs) or cracks are repaired.	Earthen floor with fine-textured soils (clay, clay loam, silty clay loam, sandy clay, sandy clay loam and silty clay).	Earthen floor has permeable soils or concrete, asphalt or lined surface with many cracks.	A maintained impervious surface or fine-textured earthen floor.			
12.09) Is silage covered?	Silage is covered to prevent silage leachate.	Cover leaks.	No cover.				

SILAGE STORAGE (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
BUNKER SILOS (CONTINUI	ED)	· · · · · ·						
<b>12.10)</b> Are the silage pad and surrounding area kept clean and free of loose silage?	Pad is kept clean.	Evidence of spilled or loose silage.	Pad is not kept clean.					
<b>12.11)</b> Is silage kept with a vertical face to reduce contact with clean water?	Yes.	Mostly vertical.	No.					
<b>12.12)</b> Does an emergency plan exist for times when leachate production exceeds current management controls?	An up-to-date written plan is available and understood by all farm employees.	Emergency action plan is incomplete or out-of-date.	No emergency action plan that covers excess leachate.	An up-to-date emergency action plan.				
<b>12.13)</b> Are whole tires or tire sidewalls used for securing the cover on bunker silos?	-Use 3,000 or less whole tires (unless EGLE approved). No limit on tire side walls. -Whole tires are properly drilled for water drainage.		- Use more than 3,000 whole tires without EGLE approval. <sup>12</sup> - Whole tires are not drilled for water drainage.					
<b>12.14)</b> How are tires and tire sidewalls stored?	Tire and tire sidewall piles are: - not more than 40' x 200' horizontal area - not higher than 15' - no closer than 30' between piles. - no closer than 20' from property lines. - no closer than 60' from buildings and structures. - not stored with hazardous products.		Tire and/or tire side wall storage is not in conformance with low risk guidelines.					

Bold black print indicates a violation of state or federal regulation.

	5	SILAGE STORAGE	(CONTINUED)		
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
BUNKER SILOS (CONTINU	JED)				
<b>12.15)</b> In the case of a tire fire, does the farm have an up-to-date emergency farm plan?	The farm has an up-to-date emergency farm plan that is understood by employees.	More than one-year-old plan or an incomplete plan is available.	No emergency farm plan when more than 3,000 whole scrap tires are stored on the farm. <sup>17</sup>	An up-to-date emergency action plan.	
UPRIGHT SILOS					
<b>12.16)</b> If there is a floor drain, is leachate collected, treated and/or stored and applied at agronomic rates?	All leachate is collected, treated, and/or stored and applied at agronomic rates.		Leachate is not collected and directly discharges to surface water. <sup>4</sup>	Appropriate silage leachate management demonstrated.	
<b>12.17)</b> How often is the silo inspected?	Twice a year.	Once a year.	Less than once a year.		
<b>12.18)</b> Is leachate evident around the outside of the silo?	No.	Yes. Leachate is treated or stored.	Yes. Leachate is not treated or stored.		
<b>12.19)</b> For glass-lined storage facilities, how old is the lining?	Less than 6 years.	Between 6 and 40 years.	Older than 40 years.		
SILAGE BAGS					
<b>12.20)</b> Are holes repaired and the bag watertight?	Yes, holes are repaired and the bag is watertight.	Some holes are repaired.	Holes are not repaired, and moisture is entering the bag.		
<b>12.21)</b> Is plastic disposed of in a licensed landfill?	Yes.		No.		
<b>12.22)</b> Is there a mechanism for collecting or treating accumulated leachate?	Yes, leachate is collected and does not pond or reach surface water.		No, Leachate runs from bags to surface water. <sup>4</sup>	Any leachate managed properly.	

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	Milking	CENTER WASTER	VATER TREATMEN	NT	
<b>RISK QUESTION</b>	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your
<b>13.01)</b> How many gallons of water per cow per day are utilized in parlor cleanup?	(RECOMMENDED) Fewer than 10 gallons.	(POTENTIAL HAZARD) Between 10 to 20 gallons.	(SIGNIFICANT HAZARD) More than 20 gallons.		RISK
<b>13.02)</b> Where are milking center chemicals, disinfectants and antibiotics stored?	Stored in partitioned off, protected area away from drains.	Stored in a location where a spill could reach the drain.	Stored in high-traffic area near drains.		
<b>13.03)</b> How is plate cooler water handled?	100% of plate cooler water is reused for livestock watering or other livestock- related use or, permitted for discharge.	Less than 10,000 gallons per day are discharged onto ground surface. Discharged water does not intercept surface water.	More than 10,000 gallons per day are discharged onto ground surface or intercept surface water without a permit. <sup>4</sup>	Appropriate cooling water management demonstrated.	
TOTAL COLLECTION ME	THOD. IF THIS METHOD IS NOT	USED, SKIP TO THE NEXT SECT	ION.		
<b>13.04)</b> Is all wastewater collected and stored?	Wastewater is stored, used or hauled daily.	Wastewater passes through a properly functioning filtration system.	Wastewater is directly discharged to a lake, drainage ditch, stream or field. <sup>4</sup>	Appropriate collection of wastewater demonstrated. Records of application.	
<b>13.05)</b> Is rejected milk collected and stored?	Rejected milk is stored, hauled out or fed.		<b>Milk is discharged</b> , <sup>4</sup> put into septic system or put into treatment strip.	Appropriate rejected milk management demonstrated.	
MILKING CENTER SEPTI	C SYSTEMS. IF THIS METHOD	IS NOT USED, SKIP TO THE NEXT	SECTION.		
<b>13.06)</b> Is the septic system managed adequately to handle the volume of wastewater?	The septic system is managed in a manner to prevent pollution to waters of the state.		The septic system is not managed adequately and discharges directly to surface water. <sup>4</sup>	Reject milk properly managed. System operating effectively, without evidence of a discharge.	
<b>13.07)</b> Is the septic system periodically pumped?	Tank pumped as needed or every three to four months.	Annual pumping.	Tank is rarely or never pumped.		

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Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

	MILKING CENT	ER WASTEWATER	R TREATMENT (C	ONTINUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MILKING CENTER SEPT	IC SYSTEMS. IF THIS METHOD	S NOT USED, SKIP TO THE NEXT	SECTION.		
<b>13.08)</b> Is all milkhouse wastewater treated by the septic system?	All milkhouse wastewater is treated by the septic system.		Some wastewater is not treated or is <b>discharged</b> to tile, inlet or drainage ditch. <sup>4</sup>	Collection and treatment of all wastewater demonstrated.	
<b>13.09)</b> What are the parlor cleanup practices?	Milk, milky rinse water, manure, and feed waste are land applied or otherwise appropriately utilized, and are never discharged to septic or other infiltration type treatment systems.	Some milk, milky rinse water, manure, or feed waste is discharged to septic or other infiltration-type treatment systems. Systems are monitored and managed for proper operation.	Significant milk, milky rinse water, manure, or feed waste is discharged to septic or other infiltration- type treatment systems. Wastewater is <b>discharged</b> <b>directly to surface water.</b> <sup>4</sup>	Appropriate milking center cleanup practices demonstrated.	
<b>APPLICATION OF WAST</b>	EWATER VEGETATED INFILTRA	TION SYSTEM. IF THIS METHOD	S NOT USED, SKIP TO THE NE	XT SECTION.	
<b>13.10)</b> Is storage used prior to treatment, such as a settling tank or detention basin?	Properly sized settling tank, detention basin or other pretreatment system is used.	Undersized setting tank, lagoon or other pretreatment system.	No pretreatment.		
<b>13.11)</b> Does the system handle the capacity of milking center wastewater generated?	Infiltration area effectively treats the quantity of wastewater generated. <i>Treatment area is</i> <i>managed to prevent</i> <i>pollution to waters of the</i> <i>state.</i>	Infiltration area shows minor erosion, wastewater ponding or burned vegetation.	Infiltration area has excessive erosion, wastewater ponding or burned vegetation.	Properly operating system confirmed by visual inspection of vegetated infiltration system. Refer to <i>Guideline for Milking</i> <i>Center Wastewater</i> (Wright and Graves, 1998) and <i>Milking</i> <i>Center Wastewater Guidelines</i> (Holmes and Struss, 2009) for more information.	
<b>13.12)</b> How is the designed infiltration system maintained?	Vegetation maintained and harvested at least once per year. Accumulated solids removed, if needed.	Occasional maintenance.	No maintenance.	Vegetation maintained and harvested. Records of maintenance.	

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	MILKING CENT	ER WASTEWATE	RTREATMENT	(CONTINUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
DIRECT DISCHARGE TO S	SURFACE OR GROUNDWATER			-	
<b>13.13)</b> Is wastewater directly discharged to a lake, drainage ditch, stream or field?	Milk parlor and milkhouse wastewater are managed in a manner to prevent discharge into waters of the state.		Milking center wastewater is discharged directly to surface water. <sup>4</sup>	No discharge present. It is acceptable to discharge milk parlor and milkhouse wastewater into constructed wetlands designed and intended to process those wastes. (NRCS practice standard 656 "Constructed Wetland.")	
	OTHER ENVIRON	MENTAL RISKS IN	THE FARMST	EAD SYSTEM	
<b>14.01)</b> Are there other activities, products, processes/equipment, services, by-products, and/or waste at this farmstead that pose contamination risks to groundwater or surface water?	No additional risk(s) identified.	Plan to mitigate the identified contamination risk(s).	No plan to mitigate identified contamination risk(s).	No other environmental risks found at farmstead.	

# FARMSTEAD SYSTEM IMPROVEMENT ACTION PLAN

Develop a Farmstead Improvement Action Plan for risks on the farmstead beginning on the inside cover of this bulletin. Once the plan is implemented, MAEAP Farmstead System verification can be requested by calling the Michigan Department of Agriculture and Rural Development at (517) 284-5609.

A boxed risk level indicates the level required for environmental assurance verification.

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#### Table 2. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline — 1-800-662-9278, MDARD information — 1-800-292-3939.

Environmental regulatory requirements	Description	Frequency	Administering agency	Your expiration date
Private pesticide applicator certification	Any persons using or supervising the use of restricted-use pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/Pesticide and Plant Pest Management Division (PPPM)	
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/PPPM	
NPDES permit CAFO	National Pollutant Discharge Elimination System permit for large concentrated animal feeding operations (CAFOs).	5 years or as noted on permit	EGLE/Water Resources Division	
Farm motor vehicle fuel storage tanks greater than 1,100 gallon capacity (above- and below- ground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Air use permit	Permit to install and operate equipment or processes, which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged), and any livestock facility over 5,000 animal units.	5 years	EGLE/Water Resources Division	
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulation, ordinances and codes.	Before construction	Local health department	N.A.
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.

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Environmental regulatory requirements	Description	Frequency	Administering agency	Your expiration date
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, under water.	Before construction	EGLE/ Water Resources Division	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or groundwater that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	
Other environmental guidelines	Description		Administering agency	
Manure management and utilization	The Michigan Right to Farm Act (Act 93 of 1981) requires the establishment of generally accepted agricultural and management practices (GAAMPs). Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation. The GAAMPs are reviewed annually. The latest GAAMPs can be accessed at: www.michigan.gov/mdard.		MDARD	
Pesticide utilization and pest control				
Nutrient utilization				
Site selection and odor control for new and expanding livestock production facilities				
Irrigation water use				
MAEAP verification: Livestock, Farmstead, Cropping and the Forest, Wetlands and Habitat Systems.	MAEAP systems verification (PA 1 & 2, 2011) is valid for five years. MAEAP wing good standing is dependent on following the practices specific to each system conformance with the applicable GAAMPs, an annual plan review and update and updates as necessary as conditions change on the farm.	verification em, being in (livestock system)	MDARD	

Table 3. L	egal citations for environmental risks in Farm+A+Syst.	
Footnote	Michigan Law	Description
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems
2		Part 138: Medical Waste Regulatory Act
3	Safe Drinking Water Act, Public Act 399 of 1976	
4	Natural Resources and Environmental Protection Act 451 of 1994	Part 31: Water Resources Protection
5		Part 55: Air Pollution Control
6		Part 83: Pesticide Control
7		Part 85: Fertilizers
8		Part 111: Hazardous Waste Management
9		Part 115: Solid Waste Management
10		Part 117: Septic Waste Servicers
11		Part 121: Liquid Industrial Waste
12		Part 169: Scrap Tires
13		Part 201: Environmental Response
14		Part 327: Great Lakes Preservation
15	Bodies of Dead Animals Act, Public Act 239 of 1982 as amended	
16	Fire Prevention Code Public Act 207 of 1941	Storage and Handling of Flammable and Combustible Liquids
17	Grade A Milk Law, Public Act 266 of 2001	
18	Michigan Department of Agriculture and Rural Development Pesticide Regulation 637	Pesticide Use
19	Michigan Department of Agriculture and Rural Development Regulation 642	On Farm Fertilizer Bulk Storage
	Federal Law	
20	Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	
21	Title III of the Superfund Amendments and Reauthorization Act of 1986, als Community Right-to-Know Act	o known as the Emergency Planning and
22	Worker Protection Standard for Agricultural Pesticides	
23	Clean Water Act, Oil Pollution Regulation	

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	ADDITIONAL NOTES:
e, <u>and</u> Latitude and Longitude)   	FARM INFORMATION         FARM NAME:         (If no physical address, please use Section, Township, Rang         FARM SITE STREET ADDRESS:         FARM SITE CITY:         STATE: MICHIGAN (ONLY) (Mailing Address May         FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE TOWNSHIP:         LATITUDE:         LATITUDE:         LATITUDE:         If there is no mailbox at the farm site location or not a pla         FARM MAILING) STREET:         (MAILING) P.O. BOX:         (MAILING) CITY:         (MAILING) ZIP CODE:         (MAILING) ZIP CODE:
HOME PHONE NUMBER:	FARM MANAGER CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
HOME PHONE NUMBER: MOBILE/CELL NUMBER: (MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:	OWNERS CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
or Home Address)	BUSINESS ADDRESS INFORMATION (Main Office (MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:
	BUSINESS NAME: BUSINESS OWNER NAME: BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION:

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Is there Evidence of Discharge: Yes q No

FARMSTEAD	
Fuel Storage: (Gallons)	_ (Pounds)
Fertilizer Storage: (Gallons)	(Pounds)
Pesticide Storage: (Gallons)	(Pounds)
Farmstead Wells (each):	I
EHS Threshold: Yes or No	
CROPPING	
NMP (Acres):	
Manure Applied (Acres):	I
Fertilizer Applied (Acres):	l
Pesticide Applied (Acres):	

Irrigation (Acres): \_\_\_\_\_ Buffer Strips (Linear Feet): \_\_\_\_ Cover Crops (Acres): \_\_\_\_\_ No Till (Acres): \_\_\_\_\_

Manure P (Lbs/Year): Manure P (Lbs/Year): Manure K (Lbs/Year):	Manure Purchased (Gallons/Year):	Manure Applied (Gallons/Year):	Grade Stabilization (Each):	Conservation Tillage (Acres):	
s/Year): s/Year): s/Year):	nased (Gallons/Year):	ed (Gallons/Year):	ation (Each):	Tillage (Acres):	

Manure K (Lbs/Year):
Manure P (Lbs/Year):
Manure N (Lbs/Year):
Manure Manifested (Gallons/Year):
Manure Sold (Gallons/Year):
Manure Produced (Gallons/Year):
Silage Pad (Acres):
Livestock Exclusion (Linear Feet):
Milkhouse Discharge (Gallons/year):
Grade Stabilization (Each):
Conservation Tillage (Acres):
No Till (Acres):
Cover Crops (Acres):
Buffer Strips (Linear Feet):
Irrigation (Acres):
Pesticide Applied (Acres):
Fertilizer Applied (Acres):
Manure Applied (Acres):
Name of Farm(s) Covered In CNMIP:
CNMP Reviewed By:
Date of CNMP Approval:
CNMP Written By:
CNMP (Acres):
LIVESTOCK
Manure K (Lbs/Year):

# GREENHOUSE

EHS Threshold: Yes or No
Greenhouse Wells (Each)
Pesticide Capacity: (Gallons) (Pounds)
Fertilizer Capacity: (Gallons) (Pounds)
Fuel Storage: (Gallons) (Pounds)
Greenhouse Size (Square Feet):
Grade Stabilization (Square Feet):
Conservation Tillage (Square Feet):
No Till (Square Feet):
Annual Cover Crop (Square Feet):
Buffer/Filter Strips (Square Feet):
Irrigation (Square Feet):
Pesticide Applied (Square Feet):
Fertilizer Applied (Square Feet):
Manure Applied (Square Feet):
NMP (Square Feet):

# FOREST, WETLANDS, AND HABITAT

Length of Streambanks/Shorelines (Feet):	Managed as Buffers (Acres):	Management for Invasive Species (Acres):	Restored Non-Wetland Habitat (Acres):	Restored/Improved Wetland Habitat (Acres):	Wetland (Acres)	Grassland (Acres)	Forestland (Acres):	Date Plan Expires:	Date Plan Written:	Plan Writer:	Plan Type: Forest Wetland Habitat All Thr	Land Management Plan (Acres)
											l Three	

		Notes:

Animal Unit (AU) Conversion	Factors by Animal	Type and Class	
ANIMAL TYPE	CLASS	AVERAGE ANIMAL WEIGHT	QUANTITY
	CALF	450	
	HIGH FORAGE	750	
1 NNN Roof rattle or now/calf nairs = 1 arge CAFO	HIGH ENERGY	750	
	HIGH FORAGE	1100	
	HIGH ENERGY	1100	
	COW	1000	
	CALF	150	
	CALF	250	
700 Mature dairy cattle (whether milked or dry cows), or	HEIFER	750	
1,000 Veal calves = Large CAFO	HEIFER	1000	
	LACTATING COW	1400	
	DRY COW	1400	
	VEAL	250	
30,000 Laying hens or broilers liquid, or	DRY SYSTEM		
82,000 Laying hens dry = Large CAFO	LIQUID SYSTEM		
	PULLETS		
55,000 turkeys = Large CAFO	ALL		
500 horses = Large CAFO	ALL	1000	
	NURSERY PIG	25	
	GROW-FINISH	150	
2,500 swine each weigning over 55 pounds, or 10,000 swine weighing less than 55 pounds = Large	GESTATING	275	
CAFO	LACTATING	375	
	BOAR	350	
	OTHER		
10,000 sheep or lambs	ALL	100	
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	Y:
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	Y:
			ž

		Crop Commoditi	e.		
CROP NAME	ACRES	CROP NAME	ACRES	CROP NAME	ACRES
Alfalfa		Cucumbers, Fresh		Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots		Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries		Grapes, Juice		Rye	
Carrots		Grapes, Wine		Small Grain, Other	
Cherries, Sweet		Green Beans		Soybeans	
Cherries, Tart		Greenhouse, Annual		Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed		Greens, Herbs		Sunflower	10
Corn, Grain		Hay/Pasture		Vegetable, Other	
Corn, Seed	n 10	Hops		Wheat	× 7
Corn, Silage		Mixed Garden		Other:	
Corn, Sweet	× .	Nursery		Other:	
		Note: Express acres to the clo	sest quarter a	cre.	
Notes:					

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#### Michigan Agriculture Environmental Assurance Program

Cropping Systems Subcommittee Summary of Proposed Amendments for 2022 Cropping – Greenhouse (Unified Assessment)

Number	Approval Date	Reason for Change
		NO
		Recommended
		Changes
		Changes

# **GREENHOUSE**•A•SYST FOR MICHIGAN PRODUCERS

floriculture involves a number of processes that done.

G reenhouse production in Michigan generates more than \$376 million in products (2011 wholesale value) annually. Floriculture requires advanced technology and precise use of pesticides, fertilizers, light, temperature and water to produce bedding and potted plants within a limited area. Like other agricultural enterprises,

FAS 108 · October 2021

can potentially affect Michigan's surface and groundwater. Although many improvements have been made to reduce pollution risks, more can be

Greenhouse A Syst was developed to assist greenhouse growers to identify pollution risks and make any needed improvements to protect water resources. Greenhouse A Syst will also help growers become aware of applicable federal, state and local environmental regulations.

For MAEAP Verification Contact the MAEAP Office at the Michigan Department of **Agriculture & Rural Development** 

(517) 284-5609



 $\frac{\text{MICHIGAN STATE}}{U N I V E R S I T Y} | \text{Extension}$ 

# Greenhouse+A+Syst

# Greenhouse (Cropping and Farmstead Systems) Improvement Action Plan

	List high-risk practice(s) from Requ		Management practice to reduce risk.	Action plan		
Risk question	Greenhouse+A+Syst and medium- risk practices that do not meet MAEAP requirements	MAEAP verification?	(Include potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed	
3.09	(example) Pesticide spill clean-up kit not available in pesticide storage	Yes	Acquire pesticide spill clean-up kit for pesticide storage area.	Feb. 2021	( <b>√)</b> Completed Feb. 20, 2021	
For MAEAP	verification, contact MAEAP office at the Michigan	Department of Agric	culture and Rural Development: 517-284-5609.	(continued c	n next page) 2	

# Greenhouse • A • Syst

# Greenhouse (Cropping and Farmstead Systems) Improvement Action Plan

Risk	List high-risk practice(s) from	Required for		Action plan		
question	Greenhouse+A+Syst and medium- risk practices that do not meet MAEAP requirements	MAEAP verification?	Management practice to reduce risk. (Include potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed	
I understar Systems) I cropping o	nd that this farmstead and cropping system ass mprovement Action Plan were developed on th perations.	essment (Green he basis that I ha	house◆A◆Syst) and corresponding Greenhouse ve disclosed, to the best of my knowledge, all in	(Cropping and Fa formation pertaini	armstead ng to my	
Farmstead	address:		Producer's signature			
Street			Date			
City			Greenhouse+A+Syst conducted by:			
State	StateZipName					
Watershed	name		Title			
			Organization	Date		
MAI	EAP Verification Action Plan			Date		
Tarc	net date for MAEAP verification of <b>Croppin</b>	a System				
Targ	at date for MAEAP verification of <b>Croppin</b>	ad Svetom				
	yet date for MAEAF verification of Farmiste					
iarg	get date for MAEAP verification of Livestoc	CK System				
Targ	get date for MAEAP verification of Forest,	Wetlands & Ha	ibitat System			

For MAEAP verification, contact MAEAP office at the Michigan Department of Agriculture and Rural Development: 517-284-5609.

## Greenhouse + A + Syst

#### Introduction

Greenhouse A+Syst will help growers develop and implement management plans and site improvements that prevent contamination of groundwater and surface water resources and maintain economic crop production. Plans will be consistent with the identified current Michigan Right to Farm Generally Accepted Agricultural and Management Practices (GAAMPs) and with applicable state, federal and local environmental regulations.

Nutrients used in greenhouse production come from chemical fertilizers and naturally occurring sources. All nutrients, whether synthetic or naturally occurring, can become mixed with surface water or groundwater by natural processes such as runoff and leaching. Nitrate contamination of groundwater and phosphorus contamination of surface water can be problems in Michigan.

Greenhouse+A+Syst will assess current nutrient management practices and identify alternative management practices that, when implemented, will reduce nutrient losses to the environment.

Virtually all crops produced in Michigan greenhouses may be threatened by serious pest problems - disease-producing organisms, insects and weeds. Producers are encouraged to adopt pest management practices that achieve the desired crop quality and yield while minimizing any adverse effects on non-target organisms, humans, and soil and water resources. Greenhouse A+Syst will assess current pest management practices and identify alternative management practices that, when implemented, will reduce negative impacts on the environment.

#### The Michigan Agriculture Environmental Assurance Program (MAEAP) is a

comprehensive, proactive and voluntary agricultural pollution prevention program. It takes a systems approach to assist producers in evaluating their farms for environmental risks. The on-farm risk evaluation uses specific tools for each system. Greenhouse A+Syst covers the environmental risks for both the Farmstead and the Cropping Systems.

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the Michigan Department of Agriculture and Rural Development Web site: www.michigan.gov/mdard.

#### Producers who complete the

Greenhouse A Syst assessment will be able to determine what structural, management practices or recordkeeping changes (if any) will be needed for the businesses to be environmentally assured through MAEAP. Once a producer develops and implements a Greenhouse (Cropping and Farmstead System) Improvement Action Plan to address the risks indicated by the assessment, he or she can contact the Michigan Department of Agriculture and Rural Development (MDARD) at (517) 284-5609 to request a MAEAP Greenhouse verification (Cropping and Farmstead Systems) inspection. An MDARD inspector will schedule a site inspection to complete the verification process.

P.A. 451. Part 82. of the Natural Resources and Environmental Protection Act ensures the confidentiality of the producer information provided to the MDARD for verification. Any information connected with the development. implementation or verification of a conservation plan or conservation practices is confidential.

Owners of a MAEAP-verified Greenhouse (Cropping and Farmstead System) are eligible for various incentives and can enjoy legislated incentives if an agricultural pollution emergency ever occurs at their facilities and MAEAP standards are practiced.

For a list of currently available incentives and information on how to get started, contact a local conservation district. Michigan State University (MSU) Extension or USDA Natural Resources Conservation Service (NRCS) representative.

Greenhouse operations with nursery stock production will also need to complete Nurserv+A+Svst. Section 13 of this document (Outdoor Container Management Practices) is for greenhouse producers who have outdoor production of floricultural crops.

#### What is the Greenhouse Assessment (Cropping and **Farmstead Systems**)

Greenhouse A Syst is a series of risk questions that will help assess how effectively a producer's greenhouse management practices protect groundwater and surface water resources. The risk questions are 4 grouped in the following sections:

	Greenhouse (Cropping and Farmstead Systems) Improvement Action Plan
1	Greenhouse Site/Soil Evaluation
2	Water Well Condition
3	Pesticide Storage and Handling
4	Pesticide Handler and Worker Safety
5	Fertilizer Storage and Handling
6	Petroleum Product Storage and
	Management
7	Waste Management
8	Septic System Management
9	Nutrient Management Practices
10	Water Management Practices
11	Soil and Water Conservation Practices
12	Pest Management Practices
13	Outdoor Production Container
	Management
14	Other Environmental Risks at the
	Greenhouse Operation

Each risk question assesses the impact of management practices on groundwater and surface water resources. The risk question answers indicate whether management practices have a low, medium or high risk of water contamination. Producers are generally recommended to adopt the low-risk management practice.

Responses to risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**. The numbered footnotes indicate what regulation(s) is violated. Refer to Table 3, page 52.

## Greenhouse • A • Syst

Responses to risk questions that address management practices covered by the GAAMPs indicate a management practice consistent with a specific GAAMP *with blue bold italic print*.

#### Finally,

a blue box indicates the management level(s) required for MAEAP verification.

MAEAP management requirements are aligned with state and federal environmental regulations. The GAAMPs and environmentally based horticultural management practices are supported by research. The records and/or evidence that indicate the approved management practices have been implemented on the farm are listed in the far right column. This evidence will provide the basis for awarding environmental assurance through MAEAP.

Horticultural advisors (both public and private) can assist growers to make the appropriate management changes to become environmentally assured through MAEAP.

#### How does Greenhouse+A+Syst Work?

- 1) Select all relevant sections for the greenhouse operation.
- 2) Answer each risk question by selecting the answer that best describes management practices used in the operation. Indicate the risk level in the column to the right. Skip any questions that do not apply to the Greenhouse (Cropping and Farmstead Systems) verification.

Note: For MAEAP verification, complete the risk questions with a Greenhouse A+Syst trained individual. Locate a MAEAP technician through the county conservation district or MSU Extension office.

- 3) After completing each section of risk questions, list the practices that present a high risk of contaminating ground water and surface water resources in the Greenhouse System Improvement Action Plan (printed inside the front cover of the bulletin). Also include any medium-risk practices that do not meet MAEAP verification requirements.
- 4) In the Greenhouse (Cropping and Farmstead System) Improvement Action Plan, list:
  - Management practices or site improvements that are planned for implementation that will reduce the identified risk.
  - · Sources of technical and financial assistance.
  - Target dates for accomplishing the changes.
  - Target date for MAEAP Greenhouse (Cropping and Farmstead Systems) verification.

### **A Few Final Words**

The key to Greenhouse AASyst is that once environmental risks to groundwater and surface water resources have been identified, the plan is implemented to reduce the risks. Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow. Once a plan is developed and changes are implemented to address the risks, the greenhouse is ready for MAEAP Greenhouse (Cropping and Farmstead System) verification.

	GREEN	HOUSE SITE/SC	IL EVALUATION		
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.00)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint or the concern was not verified or the concern was resolved.		There was a formal Right to Farm complaint and the concern was not resolved.	Producer's verbal indication of complaint history.	
<b>1.01)</b> What is the texture of the dominant soil (0 to 5 feet deep) at the greenhouse site?	Very fine-textured soils: clay, clay loam, silty clay loam, sandy clay, sandy clay loam and silty clay.	Medium-textured soils: loam, silt loam, sandy loam and silt.	Course-textured soils: sand, fine sand, very fine sand, loamy very fine sand.		
<b>1.02)</b> What is the depth of the topsoil and subsoil (A & B horizons)?	Greater than 40 inches.	30 to 40 inches.	Less than 30 inches.		
<b>1.03)</b> What is the depth to the seasonal high water table?	Greater than 6 feet.	3 to 6 feet.	Less than 3 feet.		
<b>1.04)</b> What is the soil organic matter content?	Greater than 4%.	1% to 4%.	Less than 1%.		
<b>1.05)</b> What is the makeup of the geological materials more than 5 feet underground?	Low-permeability materials: silt, clay, shale, claystone.		Highly permeable materials: sand, gravel, fractured rock, karst limestone.	No significant erosion present at the greenhouse.	
<b>1.06)</b> Is the greenhouse site subject to visible soil erosion?	Site does not erode.	Slight or occasional erosion with limited risk to surface water.	Significant erosion occurs annually. <sup>4</sup>	No significant erosion present at the greenhouse site.	

A boxed risk level indicates the level required for environmental assurance verification. **Bold black print** indicates a violation of state or federal regulation. **Bold italic blue print** indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).
WATER WELL CONDITION								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>2.01)</b> How old is the well that serves the greenhouse?	Less than 10 years old.	10 to 25 years old.	More than 25 years old, or age is unknown.					
<b>2.02)</b> What kind of well(s) are present?	Drilled and grouted.	<b>Drilled and not grouted</b> <sup>1</sup> or driven point or water jetted.	Large diameter (12 to 48 inches) dug well, or construction is unknown.					
<b>2.03)</b> Is the greenhouse well classified as a private or public water supply?	Private: potable water for drinking or domestic or greenhouse purposes for family members only.	Public: water for drinking or household/greenhouse purposes to persons other than the owner and family (greenhouse with employees or that is open to the public).						
<b>2.04)</b> What is the slope from the well to potential contamination sources?	Well is upgrade from all contamination sources.	Well is at grade from most contamination sources.	Well is downgrade or in a depression relative to contamination sources.					
<b>2.05)</b> What is the condition of the well casing and cap?	No holes or cracks. Cap tightly secured.		Holes or cracks visible. Cap loose or missing. Water can be heard running into well. Exposed well casing bent. <sup>1</sup>	Satisfactory well casing and cap present.				
<b>2.06)</b> If the drinking water well serves 25 or more people, for 60 consecutive days, is it registered as a Type II public water supply and has it been tested according to the local health department requirements?	The water supply is a Type Ila or Ilb system that is registered with the local health department and routine water sampling is completed as required.	The water supply use is less than 20,000 gallons per day on average, making it a Type IIb water supply, and water sampling is not completed in accordance with local health department requirements.) <sup>3</sup>	The water supply use is 20,000 gallons or more per day on average, making it a Type IIa water supply, and water sampling is not completed according to local health department requirements. <sup>3</sup>					

A boxed risk level indicates the level required for environmental assurance verification. **Bold black print** indicates a violation of state or federal regulation. **Bold italic blue print** indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

WATER WELL CONDITION (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>2.07)</b> From the well installation record, is there a protective soil layer (confining material) in the soil formation?	Continuous clay or shale layer more than 10 feet thick. Or, Continuous clay mixture more than 20 feet thick.	Clay or shale layer less than 10 feet thick. Or, Clay mixture less than 20 feet thick.	No protective layer (unconfined aquifer).					
<b>2.08)</b> What is the depth of the well casing?	More than 100 feet. Or, Minimum of 60 feet with 10 feet of clay or 20 feet of clay mixture (confining material).	At least 25 feet, but no confining material.	Less than 25 feet, or no casing. <sup>1</sup>					
<b>2.09)</b> What is the casing height above grade?	12 inches or more.	From grade level to less than 12 inches. <sup>1</sup>	Below grade or in a pit or in a basement. <sup>1</sup>					
<b>2.10)</b> When was the last time the well was inspected by a professional well driller or pump installer?	Within the past 10 years.	Between 10 and 20 years ago.	More than 20 years ago, or don't know when the well was last inspected.					
<b>2.11)</b> How is backflow or back siphoning of fertilizer or pesticide mixtures into the water supply prevented?	Anti-backflow device installed, including a Reduced Pressure Zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and 6-inch air gap maintained above level of liquid in sprayer tank. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow</i> <i>device installed,</i> including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or 6-inch <i>air gap maintained</i> <i>above level of liquid in</i> <i>sprayer tank.</i> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an anti-backflow device nor air gap maintained. <sup>1,3</sup>	Anti-backflow device installed, including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.				

A boxed risk level indicates the level required for environmental assurance verification. **Bold black print** indicates a violation of state or federal regulation.

WATER WELL CONDITION (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>2.12)</b> Is there an unused well located on the greenhouse site?	No unused well or abandoned well is properly sealed.	-Unused well temporarily abandoned properly: Meets minimum isolation distances. -Is disconnected from any water distribution piping. -Has the top of the casing securely capped.	Unused, unsealed well at greenhouse site. <sup>1</sup>	Unused well(s) properly sealed.			
<b>2.13)</b> How often is the drinking water tested for nitrates and bacteria?	Drinking water tested yearly.	Drinking water tested within the past 3 years.	No water testing done, or more than 3 years since last test.	Water tests for nitrates and coliform bacteria within the past 3 years.			
<b>2.14)</b> What are the water test results?	No coliform bacteria or nitrate detected.	Water contamination detected. Public water well(s) test below health advisory limits.	Water contamination detected. <b>Public water</b> well(s) test above health advisory limits. <sup>3</sup>	Water tests within health advisory limits for public well.			
<b>2.15)</b> Are the greenhouse site, or portions of the greenhouse site, included in a community wellhead protection area?	No.	Yes, or don't know, and soil characteristics and greenhouse operations pose minimal risks to groundwater.	Yes, and soil characteristics and/or greenhouse operations pose significant risks to groundwater.				
<b>2.16)</b> If a frost-free yard hydrant is connected to a water system, is the hydrant Michigan Department of Environment, Great Lakes and Energy (EGLE)-approved?	EGLE-approved yard hydrant protects water supply from contaminated water back- siphoned into the hydrant's drain valve. Or, <b>Yard hydrant is not EGLE-</b> <b>approved</b> , but an anti- backflow valve is installed between the hydrant and the water source. <sup>1</sup>		Yard hydrant is not EGLE-approved and there is no anti- backflow valve. <sup>1</sup>				

WATER WELL CONDITION (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>2.17)</b> If the drinking water well serves 25 or more people for 60 consecutive days (Type IIb public water supply), has it been tested for arsenic?	Drinking water tested on a quarterly basis. Average arsenic level is less than 10 parts per billion (ppb).		Drinking water is not tested. <sup>3</sup>					
<b>2.18)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 70 gallons per minute (100,000 gallons per day) for agricultural purposes, has water use been registered and reported to the State of Michigan?	Pump capacity is less than 70 gallons per minute (100,000 gallons per day); Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development by April 1.		Pump capacity is greater than 70 gallons per minute (100,000 gallons per day) and water use is not reported to the State of Michigan. <sup>14</sup>	Records indicate compliance with water use reporting.				
<b>2.19)</b> Have new or increased large quantity water withdrawals been registered (pumping capacity greater than 70 gallons per minute [gpm] or 100,000 gallons per day for systems established after July 9, 2009)?	The Water Withdrawal Assessment Tool (WWAT) was used to determine if a proposed withdrawal or expansion is likely to cause an Adverse Resource Impact, and to register the water withdrawal with EGLE, prior to beginning the withdrawal. The WWAT and registration site is: www.egle.state.mi.us/wwat/		No, a new water withdrawal exceeding 70 gpm has been established without the use of the WWAT. <sup>14</sup>	Producer's verbal indication of compliance with regulation.				

A boxed risk level indicates the level required for environmental assurance verification.

Bold black print indicates a violation of state or federal regulation. Bold italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

WATER WELL CONDITION (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
2.20) Is a horizontal sock well (HSW) present at the greenhouse?	<ul> <li>-HSW outlets are clearly identified as not being suitable for human consumption.</li> <li>-HSW is completely separated (no common piping) from any potable water supply system.</li> <li>-HSW meets isolation distance requirements the entire horizontal length of the HSW.</li> <li>-Both ends of the HSW are identified.</li> </ul>	<ul> <li>HSW outlets are clearly identified as not being suitable for human consumption.</li> <li>HSW is completely separated (no common piping) from any potable water supply system.</li> <li>HSW meets isolation distance requirements the entire horizontal length of the HSW except for chemigation/fertigation systems during active use season that have Reduced Pressure Zone (RPZ), double check valve assembly or chemigation valve with an internal air gap installed and secondary containment.</li> <li>Both ends of the HSW are identified.</li> </ul>	HSW is being used for human consumption, shares common piping with a potable water supply, does not have both ends clearly identified, or does not meet State of Michigan isolation distances or MAEAP Standard for its entire horizontal length. <sup>1,3</sup>	Low- or medium-risk criteria are present or demonstrated.				

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PESTICIDE STORAGE AND HANDLING							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<ul> <li><b>3.01)</b> How far is the pesticide storage located from any water well (Private wells include irrigation, livestock watering, cooling, etc.)?</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc., on dairy farms or farms with employees).</li> <li>Use Table 1 for well type identification.*</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater. Or,</li> <li>with secondary containment, 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well,</li> <li>OR,</li> <li>Approved isolation distance deviation for the well,</li> <li>OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> <li>For Type IIa public wells, refer to FAS 112S.*</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate pesticide storage isolation distance for site characteristics.			
<b>3.02)</b> How far is the pesticide storage located from surface water (drains, streams, ponds, catch basins on site, etc.)?	200 feet or greater	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate pesticide storage isolation distance from surface water.			
<b>3.03)</b> How are pesticides delivered to the greenhouse?	Just-in-time delivery provided by dealer or greenhouse employee to mix/load site.	Responsible, trained farm employee or family member or dealer transports pesticides to storage.	Untrained greenhouse employee or family member transports pesticides.				
<b>3.04)</b> Where are pesticides stored?	Storage building is locked and separate from all other buildings.	Storage is within the head house or greenhouse but isolated and locked.	Storage is in high traffic area and unlocked.				

<u>\*See MAEAP water</u> stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

	PESTICIDE STORAGE AND HANDLING (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>3.05)</b> What design features does the pesticide storage have to contain spills and leaks?	Impermeable floor surface does not allow spills to soak into soil. Curb installed on floor to contain leaks and spills or individual package containment.	Impermeable floor surface without curb.	Permeable floor surface (wood, gravel or dirt floor) or impermeable floor with cracks. Spills could contaminate soil. Drain in the floor that directly discharges to surface water. <sup>4</sup>	Adequate secondary containment for pesticide storage.			
<b>3.06)</b> What type of pesticide storage shelving is used?	Metal or plastic shelving, with shelf lips to prevent containers from falling. And, Dry formulations are stored on upper shelves and liquids on lower shelves.	Metal or plastic shelves without lips. Or, Wood shelves, covered with an epoxy paint or plastic liner.	Bare wood shelving without lips. Or, No shelves, pesticides containers are on the floor where they may be damaged.				
<b>3.07)</b> What level of security is provided for the pesticide storage?	Fenced or locked area, secure from unauthorized access. Storage separate from all other activities.	Storage open to activities that could damage containers or spill chemicals.	Open access to pesticide storage could result in theft, vandalism, and injury to children, pets or wildlife. <sup>19</sup>	Adequate pesticide storage security.			
<b>3.08)</b> What signage is posted on the storage facility?	A highly visible, weatherproof sign indicates that pesticides are stored there. A "No Smoking" sign is also posted.	Pesticide storage sign is posted, but "No Smoking" is not posted.	The pesticide storage has no signs.	Pesticide storage signage present.			
<b>3.09)</b> What kind of spill kit is available at the pesticide storage?	A complete spill kit is immediately available. A fire extinguisher approved for chemical fires is easily accessible and useable.	Spill kit is immediately available, but no fire extinguisher.	<b>A spill kit is not available.</b> <sup>6</sup> A fire extinguisher is not available.	Spill kit with fire extinguisher present at pesticide storage.			
<b>3.10)</b> What total quantities of pesticides are stored on the greenhouse site?	No pesticides stored at any time, or only seasonal use.	One gallon to 10 pounds or more of each pesticide in long-term storage.	More than 56 gallons or more than 55 pounds of each pesticide in long-term storage.				

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PESTICIDE STORAGE AND HANDLING (CONTINUED)						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>3.11)</b> What quantities of liquid pesticides are stored?	No liquids – all dry formulations.	Some liquid formulations stored.	More than 55 gallons of liquid formulations stored.			
<b>3.12)</b> Are pesticides with high leaching potential stored?	No pesticides stored, or only pesticides with low leaching potential.	Pesticides with low and medium leaching potential stored.	Pesticides with high leaching potential stored.			
<b>3.13)</b> Have Extremely Hazardous Substances (EHS) been reported to authorities?	No EHS stored or used.	EHS stored or used on farm have been identified and reported to local and state authorities (if stored at or above threshold planning quantity).	EHS stored or used at the greenhouse have NOT been identified or reported. <sup>19</sup>	Records indicate EHS names have been shared with authorities or that EHS are not used at the greenhouse.		
<b>3.14)</b> What is the condition of stored pesticide containers?	Original containers clearly labeled or containers appropriate for pesticide storage that are properly labeled. No holes, tears or weak seams.	Old containers with hard to read labels. Patched containers, metal containers showing signs of rusting.	Containers have holes or tears that allow chemical to leak. <b>Some containers have no</b> <b>labels.</b> <sup>19</sup>	Stored pesticides in satisfactory condition with labels attached.		
<b>3.15)</b> How are pesticide inventory control and disposal of unwanted products managed?	Pesticides accurately inventoried. Old product used first. Unusable product disposed of through Clean Sweep program.	Some inventory process maintained. Unsure of status of unusable product in storage.	No pesticide inventory maintained. Unusable product maintained in storage for indefinite time.			
<b>3.16)</b> Is there a written emergency plan to deal with spills and other farm emergencies?	Up-to-date plan developed and shared with authorities (if required), employees and family members.	More than one-year-old plan or an incomplete plan is available.	An emergency plan has not been developed.	Up-to-date emergency plan.		
<b>3.17)</b> Is there a written pesticide drift management plan for applications made at the farmstead?	A written drift management plan is utilized that minimizes off-target drift.	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential of off-target drift. <sup>3</sup>	A written drift management plan.		

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PESTICIDE STORAGE AND HANDLING (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<ul> <li>3.18) How far is the mixing and loading area from any water well (Private wells include irrigation, livestock watering, cooling, etc.)?</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on greenhouse sites with employees).</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	For private wells: 150 feet or greater. Or, with secondary containment 50 feet or greater. For public wells (greenhouse with employees or that is open to the public): -More than 800 feet from the greenhouse well. Or, approved isolation distance deviation for the well. Or, Between 75 and 800 feet with approved storage and well and protective site features. For Type IIa public wells, refer to FAS 112S.*		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (greenhouse with employees or that is open to the public): Less than 800 feet from the greenhouse well. <sup>3</sup>	Appropriate mixing and loading area isolation distance for site characteristics.			
<b>3.19)</b> On the farmstead, how far is the mixing and loading area from surface water or catch basins?	200 feet or greater.	Less than 200 feet, with appropriate security measures.	Less than 200 feet, without appropriate security measures.	Appropriate mixing and loading area isolation distance from surface water.			
<b>3.20)</b> How is the potential reduced for surface and groundwater contamination at the mix/load area(s)?	Mixing and loading pad with curb keeps spills contained. Sumps allow collection and transfer to storage.	Mixing and loading in the field without mix/load pad. Different location every time reduces risks to groundwater. Or, mixing and loading on concrete pad without curbs.	No mixing and loading pad. Permeable soil. Spills soak into ground. Same location every time.	Satisfactory explanation of mixing and loading procedures. No evidence of burned vegetation.			

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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PESTICIDE STORAGE AND HANDLING (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>3.21)</b> How is backflow or back siphoning of pesticide mixtures into the water supply prevented?	Anti-backflow device installed, including a Reduced Pressure Zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and a 6-inch air gap maintained above level of liquid in sprayer tank. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow</i> <i>device installed</i> , including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or 6-inch <i>air</i> <i>gap maintained above level</i> <i>of liquid in sprayer tank.</i> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an appropriate anti-backflow device nor air gap maintained. <sup>1,6</sup>	Anti-backflow device installed, including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.			
<b>3.22)</b> How are tank overflows prevented when filling the sprayer?	Sprayer monitored when being filled.		Sprayer seldom or never monitored when being filled.	Satisfactory explanation of spray tank filling procedures.			
<b>3.23)</b> How are pesticides, additives and water quantities measured when loading the sprayer system?	Measuring devices labeled and kept in pesticide storage area. Devices rinsed and rinse water put into spray tank. Tank capacities labeled.		A variety of unlabeled measuring devices used. Devices may be used for other purposes. Tank capacities not identified.	Set of dedicated measuring devices for pesticides. Spray tank capacities labeled.			
<b>3.24)</b> How are pesticide products transferred from their containers to the sprayer tank?	Closed system for all liquid and dry product transfers.	All liquid and dry products hand-poured. Mixing/storage tank opening easy to reach.	All liquid and dry products hand-poured. Mixing/storage tank opening hard to reach.				
<b>3.25)</b> How is excess spray mixture, or rinse water from the interior of the spray system, disposed?	Spray mixture applied to labeled site at or below labeled rate of application or appropriately stored for later use.		Spray mixture dumped in greenhouse or directly discharged to surface water. <sup>4</sup>	Satisfactory explanation of procedures for excess spray mixtures.			
<b>3.26)</b> Where is the exterior of the spray equipment and tractor washed if there is accumulated residue?	Washed in containment or washed in the field in different locations >200 feet from surface water, catch basins or tile inlets and >150 feet from a well.		Washed in the same location without collection, or in the field <200 feet from surface water, catch basins or tile inlets or <150 feet from a well.	Satisfactory explanation of procedures for rinsing sprayer system.			

PESTICIDE STORAGE AND HANDLING (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>3.27)</b> How is accumulated spray building wastewater, or other comingled rinsates that cannot be directly applied to growing crops, disposed?	Applied to a site where there is growing vegetation or where a crop will be planted following labeled setbacks at or below labeled rates. Application areas are rotated and records of contents of material and application site are kept. Or taken to a hazardous waste landfill.		Dumped in the farmstead, in the field or a direct discharge to surface water. <sup>4</sup>	Records of application provided.		
<b>3.28)</b> How are empty pesticide containers rinsed and disposed?	<b>Containers are triple-rinsed or</b> <b>power-rinsed, punctured</b> and returned to dealer, or disposed of in a licensed landfill. Bags are returned to dealer or taken to licensed landfill. Properly rinsed containers can be disposed in a dumpster that is taken to a licensed landfill.	Disposal of empty containers and bags on the farm property. <sup>6,8</sup>	Disposal of partially filled containers. Burning of containers on the greenhouse site. <sup>6,8</sup>	Rinsed jugs stockpiled for recycling or landfilling. No unrinsed jugs at greenhouse.		
<b>3.29)</b> What type of pesticide containers are purchased?	Where available, all pesticide products are purchased in recyclable or returnable containers to reduce the number of empty containers that require disposal.	Some pesticide products are purchased in recyclable or returnable containers.	Most pesticides are purchased in containers that require special handling or treatment before disposal.			
	PESTICIDE H	ANDLER AND W	ORKER SAFETY	1		
<b>4.01)</b> How are pesticide handlers/workers trained on pesticide use and handling?	All handlers/workers are certified pesticide applicators or have had Worker Protection Standard (WPS) training.		Handlers/workers are not certified pesticide applicators and have not had WPS training. <sup>23</sup>	Evidence of pesticide applicator certification or WPS training.		
<b>4.02)</b> How are handlers/workers informed of risks associated with pesticide applications?	Central notification of pesticide applications is provided. Display includes EPA-approved safety poster, emergency medical information and pesticide application information.	Central notification provided, although not all posting requirements are met. <sup>23</sup>	No central notification provided. <sup>23</sup>			

PESTICIDE HANDLER AND WORKER SAFETY (CONTINUED)						
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK – 1	RECORDS OR EVIDENCE FOR	Your	
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	RISK	
<b>4.03)</b> What supplies are provided to handlers/workers for pesticide decontamination?	<i>Clean water, soap, disposable towels and clean coveralls (handlers) are available for all handlers/workers within one- quarter.</i>	A decontamination site is provided, although not all WPS requirements are met. <sup>23</sup>	A decontamination site is not available. <sup>23</sup>			
<b>4.04)</b> How are workers notified of pesticide applications?	Oral and/or posted warnings about pesticide application provided.		No notice about pesticide application provided. <sup>23</sup>			
<b>4.05)</b> Who provides and maintains personal protective equipment (PPE) and trains handlers in its use?	All label-required PPE provided and maintained by employer. Training on use of PPE provided.	WPS requirements for PPE partially met. <sup>23</sup>	PPE not provided. 23			
	Fertilize	R STORAGE ANI	D HANDLING			
<ul> <li>5.01) How far is the fertilizer storage located from any water well? (Private wells include irrigation, livestock watering, cooling, etc.)</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees)</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	<ul> <li>For private wells:</li> <li>150 feet or greater.</li> <li>Or,</li> <li>With secondary containment 50 feet or greater.</li> <li>For Type IIb or Type III public wells:</li> <li>More than 800 feet or greater from the farm well.</li> <li>OR,</li> <li>Approved isolation distance deviation for the well.</li> <li>OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> <li>For Type IIa public wells, refer to FAS 112S.*</li> </ul>		For private wells: less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells: (greenhouse with employees or that is open to the public): Less than 800 feet from the greenhouse well. <sup>3</sup>	Appropriate fertilizer storage isolation distance for site characteristics.		

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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FERTILIZER STORAGE AND HANDLING (CONTINUED)									
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
<b>5.02)</b> How far is the fertilizer storage located from surface water (drains, streams, ponds, catch basins on farmstead, etc.)?	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate fertilizer storage isolation distance from surface water.					
<b>5.03)</b> How are liquid fertilizer storage, transfer and application equipment cleaned out?	Fertilizer equipment rinsed on a containment pad or in field. Rinse water applied to crop land at or below argonomic rate.	Fertilizer equipment not rinsed.	Sprayer rinsed out at the farmstead. <b>Rinse water</b> dumped at farmstead or direct discharge to surface water. <sup>4</sup>						
<b>5.04)</b> Is the fertilizer storage facility (both liquid and dry) identified with a sign?	Storage facility labeled "Fertilizer," or the fertilizer containers labeled with fertilizer analysis.	No sign.		Note: Bulk liquid fertilizer storages installed after August 13, 2008, having a capacity greater than 2,500 gallons, or having combined capacity of all tanks greater than 7,500 gallons, must be located 200 feet or more from surface water.					
<b>5.05)</b> What level of security is provided for the fertilizer storage?	Fertilizer storage areas, valves and containers are secured when not in use.	Appropriate conditions are partially met.	Fertilizer storage facilities are not locked or secured by any means. Open access to theft, vandalism and children exists.	Adequate fertilizer storage security.					
<b>5.06)</b> Is fertilizer stored in the direct presence of fuel products?	No. Fertilizer is not stored in the direct presence of fuel products.		Yes. Fertilizers and fuel products are stored together – posing an increased potential for explosions and significant disposal problems.						
<b>5.07)</b> How often is the fertilizer storage area inspected for safety concerns?	At least annually.		No regular inspections of the storage facility.	Evidence fertilizer storage is inspected at least annually.					
<b>5.08)</b> Is there a written emergency plan to deal with fertilizer spills, discharges and other emergencies?	Up-to-date plan developed and shared with authorities (if required), employees and family members.	More than one-year- old plan or an incomplete plan is available.	An emergency plan has not been developed.	Up-to-date emergency plan.					

	FERTILIZER STORAGE AND HANDLING (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
<b>5.09)</b> Is there secondary containment for liquid fertilizer stored on the farm?	All liquid fertilizer is stored with secondary containment.	Containers with greater than 2,500-gallon capacity or all containers located at a single site with a combined total capacity of greater than 7,500 gallons have secondary containment.	Containers with greater than 2,500-gallon capacity or all containers located at a single site with a combined total capacity of greater than 7,500 gallons do not have secondary containment. <sup>20</sup>	Satisfactory liquid fertilizer secondary storage containers, if required.					
<b>5.10)</b> What kind of structure is used for dry fertilizer storage?	A structure or device capable of preventing contact with irrigation, precipitation and/or surface water.		Storage allows fertilizer contact with precipitation and/or surface water.	Satisfactory dry fertilizer storage facilities.					
<b>5.11)</b> What is the condition of storage tanks, hoses, valves, injectors and fittings used for liquid fertilizer?	Tanks, hoses, fittings and valves are in good condition, well maintained and compatible with the fertilizer being stored.	Tanks, hoses, fittings and valves have some rust or signs of wear. Tanks previously used for underground petroleum storage and are in good condition and in secondary containment.	Rusty, aged, worn, damaged or leaking storage tanks, hoses, fittings or valves <b>directly</b> <b>discharging to surface</b> <b>waters,</b> <sup>4</sup> or use of underground petroleum tanks without secondary containment.	Satisfactory condition of liquid fertilizer storage system.					
<b>5.12)</b> How is backflow or back siphoning of fertilizer mixtures into the water supply prevented?	Anti-backflow device installed, including a Reduced Pressure Zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and a 6-inch air gap maintained above the overflow level of the tank. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Either an <i>anti-backflow</i> <i>device installed,</i> including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap installed, or 6-inch <i>air gap</i> <i>maintained above the</i> <i>overflow level of the tank.</i> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Neither an anti-backflow device, including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, nor air gap maintained. <sup>1,4</sup>	Anti-backflow device, including an RPZ valve, double check valve assembly, or chemigation valve with an internal air gap, or air gap present or demonstrated.					
<b>5.13)</b> What is done with excess fertilizer solutions at the end of the greenhouse season?	Fertilizer solutions applied to crop at or below agronomic rate. Or, Excess fertilizer concentrates returned to dealer.	Excess fertilizer stored until next year.	Excess fertilizer solutions applied to crop without agronomic considerations. Fertilizer solution dumped on the greenhouse site or in nearby field or pond. <sup>4,6</sup>						

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	FERTILIZER	STORAGE AND	HANDLING (CONTIN	IUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<ul> <li>5.14) How far is the mixing and loading area from the water well? (Private wells include irrigation, livestock watering, cooling, etc.)</li> <li>Type IIb and Type III (Public wells include wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees).</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	<ul> <li>For private wells: <ul> <li>150 feet or greater.</li> <li>OR,</li> <li>With secondary containment 50 feet or greater.</li> </ul> </li> <li>For Type IIb or Type III public wells: <ul> <li>More than 800 feet or greater from the farm well, OR,</li> <li>Approved isolation distance deviation for the well, OR,</li> <li>Between 75 and 800 feet with approved storage and well, and protective site features.*</li> </ul> </li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well. <sup>3</sup>	Appropriate mixing and loading area isolation distance for site characteristics.	
<b>5.15)</b> How far is the mixing and loading area from surface water?	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet, without appropriate security measures.	Appropriate mixing and loading area isolation distance from surface water.	
<b>5.16)</b> When not in use, where are planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle returned to a secure location when not in use. Fertilizer and pesticides (including treated seed) properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide (including treated seed) supply vehicle left in an unsecured location. Or, Fertilizer and pesticides stored less than 150 feet away from any well. <sup>1</sup>	Map showing where vehicles should not be parked adjacent. No evidence vehicles left in unsecure location.	

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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<b>PETROLEUM PRODUCT STORAGE AND MANAGEMENT</b> This section is designed to help meet environmental concerns related to petroleum storage; it is not intended to represent all of the legal requirements for storage and handling of petroleum products on the farm.										
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk					
ALL PETROLEUM STORAG	E FACILITIES									
<b>6.01)</b> Are fuel storage tanks designed for the way they are being used and compatible with the material stored?	Each tank designed for the way it is being used and compatible with the material stored.		Belowground tank being used for aboveground petroleum storage, aboveground tank being used for underground petroleum storage or tank does not meet specifications for usage. <sup>17</sup>	Fuel tanks used appropriately.						
<b>6.02)</b> Are fuel storage piping, secondary containment and related equipment designed for the way they are being used and compatible with the material stored?	Fuel storage piping and equipment designed for the way they are being used and compatible with the material stored.		Fuel storage piping or equipment not designed for the way it is being used. Belowground piping on all underground tanks or aboveground tanks of greater than 1,100-gallon capacity not corrosion protected. <sup>17</sup>	Fuel storage equipment appropriate for use.						
<b>6.03)</b> Are fuel tanks monitored for leaks and are leaks repaired?	Owner and operator ensure that releases do not occur.		Tank and piping not monitored and repaired on aboveground tanks equal to or less than 1,100-gallon capacity. Tank and piping not monitored and repaired on all tanks greater than 1,100-gallon capacity. <sup>17</sup>	No fuel leaks present.						
<b>6.04)</b> What design feature does the fueling station have to prevent spills from entering the groundwater, surface water or subsurface soils?	Impermeable and compatible surface for fuel transfer, such as concrete without cracks.	Compatible surface for fuel transfer such as asphalt for diesel fuel, sealed asphalt for gasoline, steel or other compatible liner material.	Incompatible surface such as unsealed asphalt surface for gasoline.	Impermeable or compatible surface present for fuel transfer.						

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)									
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
ALL PETROLEUM STORA	GE FACILITIES (CONTINUED)								
<b>6.05)</b> Is the fill opening separate from the vent opening?	Yes.		No. <sup>17</sup>						
<ul> <li>6.06) How far is the fuel storage from any water well? (Private wells include irrigation, livestock watering, cooling, etc.)</li> <li>Type IIb and Type III (Public wells include wells that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees.)</li> <li>Use Table 1 in FAS107 for well type identification.</li> </ul>	<ul> <li>For private wells:</li> <li>50 feet or greater for tanks less than 1,100-gallon capacity with no secondary containment,</li> <li>OR,</li> <li>50 feet or greater for tanks greater than 1,100-gallon capacity or more with secondary containment.</li> <li>For Type III or Type IIb public wells:</li> <li>More than 800 feet from the farm well,</li> <li>OR</li> <li>Approved isolation distance deviation for the well,</li> <li>OR</li> <li>No less than 75 feet for a Type IIB or III well if secondary containment, and site and well protective features are present.*</li> <li>For Type IIa public wells, refer to FAS 112S.</li> </ul>		For private wells: Less than 50 feet for most storage tanks. <sup>1</sup> For public wells (dairy farms or farms with employees): Less than 800 feet from the farm well without an approved deviation, protection features or secondary containment. <sup>3</sup>	Appropriate fuel storage isolation distance from water well.					

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK – 1	RECORDS OR EVIDENCE	Your			
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	RISK			
ALL PETROLEUM STORA	GE FACILITIES (CONTINUED)	1	1					
6.07) Does the tank	Double-walled tank with	No secondary	No secondary containment					
have secondary	continuous space between the	containment for tanks	when combined aboveground					
containment?	two walls, tank in concrete vault	equal to or less than	storage capacity is 1,320					
	or tark in tiket area.	1,100-gailon capacity.	larger) or aboveground tanks					
			is greater than 1,100 gallons. <sup>17</sup>					
6.08) If a combined	Plan developed and copy		No plan. <sup>24</sup>					
aboveground petroleum	present at greenhouse facility.							
storage capacity of								
greater than 1,320								
gallons (counting 55-								
gallon containers and								
could reasonably								
discharge into								
navigable waters of the								
United States, has a								
spill prevention control								
and counter-measure								
developed?								
6.09) What is the	48.000 gallons or less in UL		Greater than 48.000 gallons					
maximum fuel storage	142 single- or double-walled		in UL 142 single or double					
capacity (in aggregate)	tanks; or 80,000 gallons or less		wall tanks; or greater than					
at the greenhouse?	in fire-rated tanks.		80,000 gallons in fire-rated tanks. <sup>17</sup>					
6.10) Does each tank's	Fill pipe equipped with a		No lockable closure on fill					
fill opening have a	lockable closure.		pipe. <sup>17</sup>					
lockable closure?								
6.11) How far is the	Tank is more than 50 feet away		Tank 50 feet or less. <sup>17</sup>	Appropriate fuel storage				
tank from a storm drain,	or has some other engineering			isolation distance from				
surface water or	control present that would			surface water.				
uesignaleu wellanu?	reaching a storm drain surface							
	water or designated wetland.							

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)									
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
ALL PETROLEUM STORAGE FA			· · ·	•					
<b>6.12)</b> How far are LP gas tanks (propane tanks) from aboveground fuel tanks (ASTs)?	LP gas tanks (propane tanks) are more than 20 feet from aboveground fuel tanks.		LP gas tanks (propane tanks) are less than 20 feet from aboveground fuel tanks. <sup>17</sup>						
<b>6.13)</b> How far are LP gas tanks (propane tanks) from the fill and dispensing points of underground fuel tanks (USTs)?	LP gas tanks are at least 20 feet from the fill point of the UST and at least 10 feet from the dispensing point of the UST.		LP gas tanks are less than 20 feet from the fill point of the UST and/or less than 10 feet from the dispensing point of the UST. <sup>17</sup>						
<b>6.14)</b> For tanks <1,100 gallons, how far is the (non- fire-protected) tank from buildings and property lines?	More than 40 feet from a building or a structure.		<ul> <li>Located inside a building</li> <li>40 feet or less from a building, or a structure.<sup>17</sup></li> </ul>						
<b>6.15)</b> How many tanks (equal to or less than 1,100 gallons) are at each site at one facility?	3 or fewer.	More than 3.							
<b>6.16)</b> How far apart are fueling sites at the facility?	100 feet or greater.	Less than 100 feet.							
<b>6.17)</b> Are the portable fueling tank and transfer system adequate to reduce risk of environmental contamination?	UL-approved tank and adequate fueling system.	Adequate portable fueling system that reduces risks.	Inadequate portable fueling system that poses risk of environmental contamination.	Adequate portable fueling system.					
<b>6.18)</b> Do mobile fuel tanks meet the Federal Hazardous Materials Regulations (FHMR) and U. S. Department of Transportation (USDOT) specifications?	Yes, the mobile fueling systems meets the FHMR including USDOT specifications or USDOT specifications do not apply because the tank is less than 502 gallons, and only goes from farm to field and is properly secured and free from leaks.		No, the tank poses an environmental risk.	Meeting USDOT specifications includes having shipping papers, tank markings and placards. See FAS 112S.					

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
ALL PETROLEUM STO	RAGE FACILITIES (CONTINUED)							
<b>6.19)</b> Is the tank labeled according to its contents with letters 3 inches or more in height?	Yes, labeled according to contents (Gasoline or Diesel) and with the following: "FLAMMABLE" (OR "COMBUSTIBLE") and "KEEP FIRE AND FLAME AWAY". If tank is not a fire- protected type, it is also labeled: "KEEP 40 FEET FROM BUILDINGS."		Tank labeled with contents. Tanks storing gasoline not labeled: FLAMMABLE – KEEP FIRE & FLAME AWAY. Tanks storing diesel not labeled: COMBUSTIBLE – KEEP FIRE & FLAME AWAY. <sup>17</sup>					
<b>6.20)</b> Is the tank elevated off the ground to protect from corrosion?	Tank stably mounted on solid timbers, solid cement blocks, manufactured cradles or equivalent to protect the tank bottom from corrosion due to contact with ground. The tank is elevated to allow for a visible inspection of all tank surfaces.		Tank is not stably elevated in order to allow adequate visible inspection of all tank surfaces. <sup>17</sup>	Appropriate tank elevation.				
<b>6.21)</b> Are siphons, manifolds or internal pressure discharge devices present on tank(s)?	Siphons not present on tank(s). Multiple tanks not connected together (no manifold). No internal pressure discharge device present.	Manifold(s) present on tanks installed prior to 2003. After 2003, tanks that are located within diked containment, equipped with a spill bucket and audible overfill alarm may have top-only manifolds.	Siphons or internal pressure discharge device(s) present on tanks installed after 2003. <sup>17</sup>	No siphons or internal pressure discharge devices present. No manifolds present on tanks installed after 2003 unless additional protection factors are present.				
<b>6.22)</b> Is the tank dispenser (top- opening tank) or discharge connection (gravity discharge tank) made inoperable when not in use?	Yes, locked or otherwise made inoperable.		<b>No.</b> <sup>17</sup>					

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)										
RISK QUESTION	Low Risk – 3	Medium Risk – 2	High Risk – 1	RECORDS OR EVIDENCE	Your					
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	Risk					
ALL PETROLEUM STORAGE F	ALL PETROLEUM STORAGE FACILITIES (CONTINUED)									
6.23) Does the top-opening	Yes.		<b>No.</b> <sup>17</sup>							
tank pump discharge or										
gravity discharge tank have										
6.24) If a single-walled tank	Yes.		No, combustible materials							
is in a dike with rain			used or design is such							
protection, is the root or			that vapors collect under							
constructed of non-			the root of canopy.							
combustible material and										
designed so vapors don't										
collect?			47							
<b>6.25)</b> If the tank is covered,	Yes.		No. <sup>17</sup>							
are roof and canopy										
dike or outside diked area?										
<b>6.26)</b> If the tank is covered,	Yes.		<b>No.</b> <sup>17</sup>							
is the lowest elevation of the										
higher above the top of the										
tank?										
6.27) If the tank is covered,	Yes.		<b>No.</b> <sup>17</sup>							
does the normal tank vent										
extend through the root of										
canopy :										

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)								
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	High Risk – 1	RECORDS OR EVIDENCE FOR	Your			
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	RISK			
ALL ABOVEGROUND PET	ROLEUM STORAGE TANKS	>1,100 GALLON CAPACITY						
<b>6.28)</b> Is the tank registered and is valid proof of registration displayed?	The aboveground storage tank with capacity greater than 1,100 gallons is registered, and valid proof of registration is available.	For aboveground storage tanks with a capacity greater than 1,100 gallons, but less than or equal to 3,000 gallons, <b>the tank</b> <b>is not registered, or valid</b> <b>proof of registration is not</b> <b>available</b> , <sup>17</sup> but an inspection finds it meets all applicable boxed MAEAP requirements in the Petroleum Product Storage and Management section.	The tank is not registered and/or the tank does not bear a UL tag, and/or valid proof of registration is not available. <sup>17</sup>	Aboveground storage tank is registered or there are minimal environmental risks.				
<b>6.29)</b> Does tank fill pipe have spill protection?	Spill protection (catch basin) installed and maintained on tank fill pipe.		Tank fill pipe does not have spill protection. <sup>17</sup>	Catch basin installed on fuel tank.				
<b>6.30)</b> Is there an emergency control disconnect for electrically operated fuel systems?	Emergency control disconnect located 20 to 100 feet away from dispensing area.		No emergency control disconnect present. <sup>17</sup>	Appropriate disconnect control present.				
<b>6.31)</b> Are there absorbent materials, a container with lid and a non-metallic shovel to deal with a petroleum spill?	Spill kit present.		No spill kit. <sup>17</sup>	Spill kit present.				
<b>6.32)</b> Does the tank have an audible alarm?	Yes, audible alarm is present.							
<b>6.33)</b> Does the tank have secondary containment?	Double-walled tank or tank within diked area.		No secondary containment.	Appropriate secondary containment.				

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)									
<b>RISK QUESTION</b>	Low F (RECOM	Risk – 3 Mended)		Medium Risk – 2 (Potential hazard)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
ABOVEGROUND STORAGE	E TANKS (CONTINUI	ED)							
<b>6.34)</b> How far is the tank from buildings, property <u>lines and public ways?</u> In-vault tank up to 15,000 gallons:	From From <u>Bldg. lot lin</u> 0 feet 0 f	m F <u>ne puł</u> eet	<sup>-</sup> rom <u>blic way</u> 0 feet		Less than distance indicated for type of tank. <sup>17</sup>				
Protected aboveground tank (UL 2085 tank) 6,000 gallons or less:	5 feet 15	feet	5 feet						
UL 2085 tank 6,000 to 12,000 gallons or less:	15 feet 25	feet	10 feet						
UL2080 tank 0-12,000 gallons:	25 feet 50	feet	25 feet						
Other secondary containment tank up to 12,000 gallons:	50 feet 100	feet	50 feet						
<b>6.35)</b> Is there a fence to prevent unauthorized entry?	Tank or propert within vault with from unauthoriz vandalism.	y fenced n entry pr ced entry	l or tank rotected ' or		Unprotected from unauthorized entry. <sup>17</sup>				
<b>6.36)</b> Is there crash protection for the tank and piping?	Guard posts or barrier installed protection.	appropri for crasl	iate h		No crash protection. <sup>17</sup>	Crash protection present for fuel tank.			

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)										
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk					
ABOVEGROUND STORAG	E TANKS									
<b>6.37)</b> Is the tank labeled according to its contents with letters 3 inches or more in height?	Yes, labeled according to contents (Gasoline or Diesel) and with the following "FLAMMABLE (or COMBUSTIBLE) LIQUIDS" and "KEEP FIRE AWAY."		Tank not labeled. <sup>17</sup>							
<b>6.38)</b> Are there any unused fuel storage tanks on the farm?	If aboveground tank present, it has been emptied, cleaned of liquid and sludge, rendered vapor free and safeguarded from trespassing.		Aboveground tank present and not empty, clean and/or vapor free. Tank fill opening not secured to prevent trespassers from putting chemicals in tank. <sup>17</sup>							
UNDERGROUND STORAGE	E TANKS		·	•						
<b>6.39)</b> Has the underground fuel tank (installed before August 1, 2003 with a capacity of less than 1,100 gallons) been tested for leaks within the past 3 years?	No leaks detected.		No testing.	Appropriate report indicates no leaks present.						
<b>6.40)</b> Does the underground storage tank (installed after August 1, 2003 with a capacity of less than 1,100 gallons) meet Flammable Liquid Combustible Liquid (FLCL) rules?	Leak detection system in place. Tank has corrosion protection, spill bucket installed and overflow prevention in place (alarm or shutoff valve).		FLCL rules not met. <sup>17</sup>	Tank meets FLCL rules.						

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PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)							
RISK QUESTION	LOW RISK – 3	MEDIUM RISK – 2 (ROTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIEICANT HAZARD)	RECORDS OR EVIDENCE FOR			
UNDERGROUND STORAGE	TANKS (CONTINUED)				- Non		
6.41) Do tank(s) or piping that are in contact with the soil have corrosion protection on all parts?	Properly engineered, installed, maintained and inspected (every 3 years) corrosion protection provided for tank, piping or portions in contact with the soil.		Tank or piping in contact with soil without corrosion protection or unmaintained protection. Not inspected at least once every 3 years. <sup>17</sup>				
<b>6.42)</b> Are there any unused fuel storage tanks on the farm.	If tank present, it has been emptied, cleaned of liquid and sludge, rendered vapor free and safeguarded from trespassing.		Tank present and not empty, clean and/or vapor free. Tank fill opening not secured to prevent trespassers from putting chemicals in tank. <sup>17</sup>				
<b>6.43)</b> Is the underground tank registered, and is valid proof of registration available?	The underground storage tank with capacity greater than 1,100 gallons is registered and proof of registration is present.		The tank is not registered, and/or proof of registration is not present. <sup>17</sup>	Underground storage tank is registered.			
<b>6.44)</b> If there is an underground fuel storage tank greater than 1,100 gallons on the farmstead is there a State of Michigan certified operator for the farm?	Yes.		No. <sup>17</sup>				
<b>6.45)</b> Did a professional (trained and certified by the tank manufacturer) install the tank?	Professional installation.		No. <sup>17</sup>				
<b>6.46)</b> Is there insurance or demonstration of financial responsibility should there be a fuel release?	Yes, meet the \$500,000 financial responsibility level for tanks less than 10,000 gallons.		Unable to demonstrate financial responsibility for third party injury and property damage due to accidental release. <sup>17</sup>				

PETROLEUM PRODUCT STORAGE AND MANAGEMENT (CONTINUED)						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
UNDERGROUND STORAGE	TANKS (CONTINUED)					
<b>6.47)</b> Are there any unused underground fuel storage tanks on the farm?	No, tanks have been removed from the ground and the site. Excavation site checked for evidence of contamination (site assessment). Any contamination present was properly handled.	Underground tanks have been removed or filled with inert solid material. A site assessment has not been completed.	In-ground tank has been left unused for 12 months. Tanks greater than 1,100 gallons have been removed or filled with inert material but a site assessment has not been completed. <sup>17</sup>	Proper management of an unused underground fuel storage tank(s).		
OTHER PETROLEUM PRODU	JCT STORAGE		-	1		
<b>6.48)</b> Is the heating oil tank for a farm building being used as designed?	Tank is labeled and used as designed.	Tank is not labeled and used outdoors.	Tank is not being used as designed.	Heating oil storage tank is appropriate.		
<b>6.49)</b> Is a heating oil tank being used to store diesel fuel?	Yes, but tank is labeled as a UL 80 tank and is being used as designed.		Tank is not labeled or is not being used as designed.	Diesel fuel storage tank is appropriate.		
<b>6.50)</b> How far is the home heating fuel or kerosene tank from a building?	Minimum of 5 feet from the building.		Less than 5 feet.			
<b>6.51)</b> How far is the fuel tank for the emergency generator from any well?	For private and public wells: Close proximity to the well if the emergency generator provides power to the well in the event of a power outage, and the fuel is in secondary containment. If the emergency generator is not used to run the well, standard well isolation distance criteria applies.		The emergency generator does not run the well and does not meet standard well isolation distance: For private wells: Less than 50 feet for most fuel tanks. <sup>1</sup> For public wells: Less than 800 feet from the well without an approved deviation, protection features or secondary containment. <sup>3</sup>	Acceptable fuel storage isolation distance from water.		
			Less than 75 feet with fuel in secondary containment. <sup>1,3</sup>			

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WASTE MANAGEMENT						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>7.01)</b> How are household waste and waste generated at the greenhouse managed?	All waste recycled or disosed of in a licensed solid waster facility or incinerator.		Household waste burned on site (if allowed by local government). Greenhouse waster burned on site. <sup>9</sup>			
<b>7.02)</b> Is there a trash dump?	No dump or dump property cleaned up and closed.	Dump exists but is not being used.	Dump still in use.			
<b>7.03)</b> If a household trash burn barrel or incinerator exists, how are the ashes disposed?	Ashes collected and disposed at a licensed landfill.	Ashes store or disposed on the greenhouse site more than 300 feet from a well or surface water.	Ashes stored or disposed on the greenhouse site within 300 feet of a well or surface water.			
<b>7.04)</b> How are hazardous product containers (treated seed packages, fertilizer bags, chemical containers, etc.) disposed?	Recycled or reused appropriately. Or, Disposed at a licensed landfill, or hazardous waste collection service used, or returned to the dealer.		Empty and partially filled containers burned or disposed on the greenhouse site. <sup>9</sup>			
<b>7.05)</b> How is waste oil disposed?	Recycled.	Burned in approved waste oil heater or furnace.	Dumped on the greenhouse site. <sup>8</sup>	Evidence of proper oil recycling or disposal.		
<b>7.06)</b> How is antifreeze disposed?	Recycled.	Disposed of in a municipal sewer (with municipality's approval).	Dumped on the greenhouse site. <sup>8</sup>	Evidence of proper antifreeze recycling or disposal.		
<b>7.07)</b> How are scrap tires disposed?	Recycled	Dump exists but is not being used.	Disposed on the greenhouse site. <sup>12</sup>			
<b>7.08)</b> How are lead-acid batteries disposed?	Recycled.		<b>Disposed of</b> or stored <b>on the</b> greenhouse site. <sup>8</sup>	Evidence of proper battery recycling.		

WASTE MANAGEMENT (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>7.09)</b> How are paints, solvents and/or cleaners disposed?	Used up, taken to household hazardous waste collection or recycled.	Liquid evaporated in open air, sludge taken to licensed landfill.	Burned or disposed of or stored on the greenhouse site. <sup>8</sup>	Evidence of proper recycling or disposal.		
<ul> <li>7.10) How far from water wells are hazardous products stored?</li> <li>(Private wells include irrigation, livestock watering, cooling, etc.)*</li> <li>(Type IIb and Type III Public wells include that service the milkhouse, bathrooms, drinking fountains, etc. on dairy farms or farms with employees).*</li> <li>Use Table 1 in FAS107 for well type identification.*</li> </ul>	For private wells: 150 feet or greater. OR, With secondary containment, 50 feet or greater. OR, For public wells (dairy farms or farms with employees): More than 800 feet from the farm well. OR, Approved isolation distance deviation for the well. OR, Between 75 and 800 feet with approved storage and well, and protective site features.* For Type IIa public wells, refer to FAS 112S.*		For private wells: Less than 150 feet without secondary containment, or less than 50 feet with secondary containment. <sup>1</sup> For Type IIb or Type III public wells: Less than 800 feet from the farm well. <sup>3</sup>			
<b>7.11)</b> Are used motor oil, new oil and hydraulic oil stored in acceptable containers and properly isolated from drinking water wells?	Oil in acceptable containers stored on impermeable floor or in secondary containment, and with reasonable isolation from any well and does not discharge to surface water.	Oil stored in acceptable containers, but with inadequate isolation from any well and does not discharge to surface water.	Oil stored in a leaking container. Evidence of oil soaking into the soil <b>and/or</b> <b>discharges to surface water.</b> <sup>4</sup>	Acceptable oil storage demonstrated.		

\*See MAEAP water stewardship technician for additional information on criteria for reduced isolation distances.

A boxed risk level indicates the level required for environmental assurance verification.

WASTE MANAGEMENT (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>7.12)</b> Are there any storage tanks being used to store motor oil, new oil, hydraulic oil, or any other petroleum product underground?	There are no storage tanks in use underground.	Yes. The tanks meet all the applicable underground storage tank standards found in the Petroleum Product Storage and Management section of the Farm*A*Syst (FAS107)	Yes. But the tank does not meet the standards found in the Petroleum Product Storage and Management section of FAS 107. <sup>17</sup>				
<b>7.13)</b> Are floor drains present in buildings?	No floor drains, Or, All drains go to an appropriate system designed for the materials drained.	Floor drains are made inoperable except when used for appropriate materials, or materials are stored in secondary containment to prevent leaks from entering drain.	Floor drains are discharged to surface water, <sup>4</sup> are vulnerable to spills, or drain hazardous materials to inappropriate systems. <sup>4</sup>	Quantities of hazardous materials stored in secondary containment or floor drains plugged to prevent spills or major losses from entering the drain.			
<b>7.14)</b> Is there a mercury manometer on the farm?	No mercury manometer.		Mercury manometer present.	No mercury manomter gauges on the farm.			
<b>7.15)</b> Are there mercury-containing devices on the farm? (Examples include fluorescent lights, thermostats, thermometers, irrigation switches, septic lift station switches and other switches.)	No.	Some mercury-containing devices in use. Proper disposal methods when replaced.	Yes, many mercury- containing devices.	Examples: recycling centers or return to retailer.			
<b>7.16)</b> How are old or unusable plant containers and trays disposed?	Containers are recycled or reused.	Containers are disposed of in a licensed landfill or stored on site.	Waste containers are burned <sup>9</sup> or disposed on site.	Evidence of system for recycling or proper disposal of waste containers.			

WASTE MANAGEMENT (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>7.17)</b> How often is greenhouse poly changed?	Using poly or covering that will last for 3 or more years.	Price is the primary factor; purchase product that lasts only 1 to 2 years.				
<b>7.18)</b> How is greenhouse poly disposed?	Recycled through a recycling company or offered to others for reuse.	Disposed of in a licensed landfill or stored on site.	Greenhouse poly burned on site. <sup>9</sup>	Evidence of system for recycling or proper disposal of used greenhouse poly.		
<b>7.19)</b> Are biodegradable containers used?	Incorporating biodegradable containers in program.	Have not considered or studied the use of biodegradable containers.				
<b>7.20)</b> How are unwanted media and other organic wastes disposed?	Media and organic wastes are separated from containers and composted or land applied. Compost pile stored in a location protected from leaching and runoff.		Media and organic wastes stored in an unprotected site. Nutrients can leach into the groundwater or runoff into surface water. <sup>9</sup>	Environmentally safe disposal demonstrated. Note: The Food Safety Modernization Act Produce Safety Rule may apply.		
<b>7.21)</b> Are other materials recycled?	All paper, cardboard, plastic containers, aluminum and steel recycled.	Most recyclables are recycled.	Only deposit can/bottles are redeemed.			
SEPTIC SYSTEM MANAGEMENT						
<b>8.01)</b> Is the bathroom on the greenhouse site connected to a septic or municipal system to treat the waste?	Bathroom on the greenhouse site connected to septic tank and drainage field or to a municipal system, or to another system approved by the local Health Department. Or, No bathroom on the greenhouse site.		No septic system. Direct discharge of wastes to environment. <sup>4</sup>	If there is a bathroom on the greenhouse site, it must be connected to a functioning septic system.		

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

SEPTIC SYSTEM MANAGEMENT (CONTINUED)							
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK – 1	RECORDS OR EVIDENCE FOR	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)		RISK		
	NOTE: COMPLETE TH	E REMAINDER OF THIS SECTION	ONLY IF THE GREENHOUSE HAS A S				
8.02) Is the septic	Septic system designed to	Capacity just meets	Design capacity is much less				
system adequately	nandle more wastewater than	wastewater requirement.	than potential flow of				
Sizeu lo lieal	required.		Or				
denerated in the			No septic system: <b>direct</b>				
greenhouse?			discharge of wastes to				
9			environment. <sup>4</sup>				
8.03) What is the	Less than 5 years old.	6 to 20 years old.	More than 20 years old.				
age of the septic							
system?							
8.04) What	Greater than 50 feet from		Less than 50 feet from a				
distance	private wells (75 feet from		private well (less than 75				
separates the	public wells, including		teet from public wells,				
components from	that is open to the public)		employees or that is open to				
water wells?			the public.) <sup>3</sup>				
8.05) When was	Within the past 5 years.	Between 5 and 10 years.	More than 10 years ago.				
the last time the							
septic tank was							
pumped out?							
8.06) Who pumps	Licensed septage hauler.		Farmer/self or unlicensed	Satisfactory explanation of tank			
out the septic			contractor. <sup>10</sup>	pumping procedures.			
tank?							
8.07) How is the	Vehicles and other heavy		Vehicles, livestock, heavy				
orain lieid	from drain field area. No doop		permitted in area. Trees				
traffic deen-	rooted plants pavement or		planted in or directly next to				
rooted plants and	structures over the drain field.		the drain field.				
structures?							

SEPTIC SYSTEM MANAGEMENT (CONTINUED)							
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK – 1		Your		
			SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	RISK		
<b>8.08)</b> Are there any signs of trouble with the septic system?	Greenhouse sanitary drains flow normally. No sewage odors inside or outside. Soil	Greenhouse sanitary drains run slowly or soil over drain field is	Sewage odors noticed in the greenhouse or near the drain field. Drains plugged or backed	Note: The Food Safety Modernization Act Produce Safety Rule may			
	Well water tests negative for coliform bacteria.	sometimes wet.	field area. Well water tests positive for coliform bacteria.	арруу.			
<b>8.09)</b> What records are maintained on the septic system?	Good map and records of system repairs and maintenance are kept.	Some records maintained.	No map and maintenance records kept.				
<b>8.10)</b> What kinds of greenhouse cleaners, solvents and other chemicals are poured down the drain?	Moderate use of cleaning products that end up in wastewater. Hazardous chemicals never poured down the drain or toilet.	Moderate use of cleaning products. Small amounts of hazardous chemicals poured down drain or toilet.	Heavy use of cleaning products. Septic system used to dispose of hazardous chemicals (solvents, degreasers, acids, oils, paints, disinfectants, pesticides). <sup>4</sup>				
<b>8.11)</b> How is the water softener recharge handled?	Underground drainage separated at least 50 feet from well and septic systems (75 feet from the farm well for greenhouse with employees or open to the public).	Open ditch, farm field drain.	Septic system.				
<b>8.12)</b> How are discharges from footer drains, basement sumps and roof drainage handled?	Grassed area, open ditch, field drain.		Directed into the septic system.				
NUTRIENT MANAGEMENT PRACTICES							
<b>9.01)</b> How are pH and electrical conductivity (EC) meters used to manage fertilizer use?	Meters – pH and EC – are present at all times for monitoring container substrate before and after planting and during growing. Instruments are calibrated regularly.	Either a pH or an EC meter is available to do trouble-shooting when necessary.	Neither a pH nor an EC meter is available.				

Bold black print indicates a violation of state or federal regulation.

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>9.02)</b> How often is irrigation water monitored for alkalinity?	Water tested before every crop cycle to determine alkalinity.	Water tested once every 1 to 5 years to determine alkalinity.	Water never tested or tested for alkalinity only if there is a crop nutrition problem.			
<b>9.03)</b> How often is premixed medium monitored for pH and electrical conductivity (EC)?	Each shipment of premixed medium is tested for its pH and EC.	Several samples of premixed medium are tested during the season for pH and EC.	Premixed medium is not tested for pH or EC.			
<b>9.04)</b> How often is on-site- mixed medium monitored for pH and EC?	Growing medium is tested at least weekly for pH and EC.	Growing medium is tested periodically for pH and EC.	Growing medium is not tested for pH or EC Or, is tested only when there is a problem.			
<b>9.05)</b> How often is irrigation water monitored for pH and EC?	Irrigation water is tested for pH and EC weekly.	Irrigation water is tested for pH and EC periodically.	Irrigation water is not tested. Or, tested for pH and EC only when there is a growing problem.			
<b>9.06)</b> How are the fertilizer stock tanks near injectors protected from leaking into groundwater?	Stock tank on concrete floor with a curb and a catch basin installed.	Stock tank on a concrete floor, no curb, or in plastic secondary containment.	Stock tank on a permeable surface.			
<b>9.07)</b> How are aboveground ebb and flow storage tanks protected from leaking into groundwater?	Tanks in an isolated area, on a concrete floor with a curb and a catch basin installed.	Tanks in a traffic area on a concrete floor, no curb.	Tanks on a permeable surface, not barricaded.			
<b>9.08)</b> How are underground ebb and flow storage tanks protected from leaking into groundwater?	Concrete structure, treated with impermeable material on the inside and outside, with catch basin below.	Concrete structure, treated with impermeable material on one side, no catch basin.	Concrete structure, no treatment of surface.			
<b>9.09)</b> How often is nutrient testing done by a commercial laboratory or land-grant university?	Medium and tissue testing done several times a growing season through commercial laboratory or land-grant university.	Medium and tissue testing done through commercial laboratories or land-grant universities once a growing season.	Greenhouse company has rarely used the services of a commercial laboratory or land-grant university.			

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>9.10)</b> How is slow- release fertilizer used in the operation?	Slow-release fertilizer is used only in those crops that require high nutrient levels or are in hard-to-get-to places.	Slow-release fertilizer is used on crops requiring a lot of watering (leaching).	Slow-release fertilizer is used on all crops because of convenience.			
<b>9.11)</b> How are fertilizer application rates determined?	Consistent with Michigan State University (MSU) recommendations. When MSU recommendations are not available, other land-grant university or industry recommendations developed for the region may be used.	Occasionally exceed MSU or equivalent recommendations.	Often or always exceed MSU or equivalent recommendations.	Applications consistent with MSU recommendations. When MSU recommendations are not available, other land-grant university or equivalent recommendations developed for the region may be used.		
<b>9.12)</b> How are fertilizer solutions managed to prevent application to vacant crop areas?	Applications of fertilizer solutions are automated or applied manually so that vacant crop areas do not receive fertilizer solutions.	Fertilizer solutions applied to vacant crop areas, but fertilizer solutions are captured and do not discharge to the environment.	Fertilizer solutions applied to vacant crop areas. Fertilizer solutions discharge to groundwater or surface water. <sup>4</sup>	Fertilizer solutions properly managed and do not discharge to the environment.		
<b>9.13)</b> How are nitrogen fertilizer applications determined?	Nitrogen fertilizers are applied according to container substrate tests and crop requirements.	Nitrogen fertilizers are applied according to visual observation or past practices.				
<b>9.14)</b> How are phosphorus fertilization rates determined?	Based on soil tests or plant tissue analysis using Michigan State University recommended rates, other land-grant university standards or industry standards if land- grant university standards do not exist.	Crop is grown with phosphorus rates higher than recommended.	High-phosphorus fertilizers are used routinely.	Applications consistent with MSU recommendations. When MSU recommendations are not available, other land-grant university or industry recommendations developed for the region may be used.		
<b>9.15)</b> How is P management changed when phosphoric acid is used to acidify irrigation water?	Phosphoric acid credited, phosphorus fertilizer reduced.		No changes in phosphorus fertilizer applications.			

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>9.16)</b> What fertilizer records are kept?	Maintain records of fertilizer purchases.		No fertilizer records maintained.	Fertilizer records on file (fertilizer types and quantities) or plan to maintain records in the future.			
	WAT	TER MANAGEM	ENT PRACTICES				
<b>10.01)</b> What is the water source?	Municipal supply.	On-site well.	Stream, river or pond.				
<b>10.02)</b> What irrigation management records are maintained?	Maintain annual records of irrigation water used or irrigation scheduling.		No irrigation records maintained.	Irrigation records on file, or plan to maintain records in the future.			
<b>10.03)</b> How is irrigation water managed to prevent a discharge to the environment?	Water is recycled or does not leave the greenhouse or facility.	Runoff water is controlled to minimize leaching and prevent a direct discharge.	Irrigation water from greenhouse goes directly into a ditch or storm sewer, or significant leaching occurs. <sup>4</sup>	Evidence of a system that prevents direct discharge or leaching.			
	SOIL AND	WATER CONSE	ERVATION PRACT	ICES			
<b>11.01)</b> What percent of the parking lot area is covered with impervious surfaces?	Less than 5 percent.	5 to 20 percent.	More than 20 percent, and no provision to manage runoff.				
<b>11.02)</b> How is greenhouse roof runoff water handled?	A retention pond, settling basin or man-made wetland to capture greenhouse runoff water and hold it.	Plans being made to build either a retention pond, settling basin or man-made wetland to capture greenhouse roof runoff water and hold it.	No roof runoff system in place.				
<b>11.03)</b> How is the greenhouse site contoured to reduce runoff?	Site is contoured or graded to slow runoff and increase water infiltration.		No site improvements to slow runoff and increase water infiltration.				
<b>11.04)</b> Are vegetative buffer strips used to reduce runoff?	Plant material such as grass, shrubs or trees used to slow water movement to streams lakes and wetlands.		The use of a buffer strip has not been considered as a means of slowing water movement off the site.				

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	SOIL AND WATER	CONSERVATION	PRACTICES (CON	TINUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>11.05)</b> How are drainage ditches and drain tiles managed?	Annually maintained in accordance with local government regulations.	Drainage ditches or drain tiles checked and maintained every 2 to 5 years.	Drainage ditches or drain tiles have not been maintained.		
<b>11.06)</b> How is erosion minimized on roads, parking lots and traffic areas?	Built and maintained to minimize erosion.	A small amount of erosion does occur on the roads and parking lots.	Erosion from the parking lots/roads can be a problem and pose a risk to surface water.		
<b>11.07)</b> How often is the greenhouse site evaluated for runoff problems?	Site is evaluated after each renovation or addition.	Site evaluated every 3 to 5 years, after a number of renovations or additions.	Runoff occurs on a regular basis. No plan to address problem.		
	PES	r Management	PRACTICES		
<b>12.01)</b> How does the grower stay current on new pest management practices and strategies for weeds, insects and diseases?	Attends educational meetings, reads educational materials provided by the university or other reliable sources. At least one new pest management practices adopted on a trial basis each year.	Occasionally attends educational meetings and reads new pest management materials.	Relies on outdated pest management practices.		
<b>12.02)</b> Does the grower consult with a pest management consultant or service during the growing season?	Employs an independent crop consultant throughout the growing season that is knowledgeable of Integrated Pest Management (IPM). Or, Utilize public reports and services from the university, local agribusiness or other reliable providers.		Relies on outdated pest management practices.		

	Pest Mana	GEMENT PRACTIC	ES (CONTINUED)		
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>12.03)</b> Does the grower review previous growing season pest management activities and results?	Previous pest populations, pest suppression activities/pesticide usage and crop yield/injury are reviewed. Records used for future pest management plans.	No.			
<b>12.04)</b> When available are certified seed or plant material (tubers, crowns, transplants, etc.) used that are insect, weed and disease-free?	Certified or quality seed and planting materials used whenever possible.	Bin-run or uncertified planting materials that are cleaned and treated.	Use saved seed or planting materials that are untreated and potentially infected with insect, weed and/or disease pests.		
<b>12.05)</b> Are pest-resistant and tolerant varieties planted?	Pest-resistant and tolerant varieties are planted when available.	Varieties without resistance and tolerance are planted, resulting in the need for pest suppression practices.			
<b>12.06)</b> Are greenhouses scouted for pests during the growing season?	All greenhouses are scouted on a weekly schedule, by a qualified individual trained in Integrated Pest Management (IPM). Scouting reports and records are on file.	Greenhouses are scouted at critical times, but not on a weekly basis.	Greenhouses are not scouted.		
<b>12.07)</b> How are weeds outside the greenhouse controlled?	Herbicide selection and rates are based on weed species present; scouting and thresholds are used. Where appropriate, cultural and mechanical practices are used to suppress weeds and minimize weed seed survival (cultivation, cover crops, weed barrier, mowing, etc.).	Pre-emergent and post- emergent herbicides used outside of buildings are selected on the basis of past performance, weed history, cost or ease of application.	Herbicides used outside of buildings are selected primarily on the basis of price or ease of application. Little consideration is given to weed species present or runoff/leaching potential or other methods of control.		
<b>12.08)</b> How are weeds inside the greenhouse controlled?	Hand removal, weed barrier or other cultural practices.	Herbicide used with attention to a specific greenhouse use label.	Herbicide used without attention to a specific greenhouse use label.		

	Pest Man	AGEMENT PRAC		)	
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (Potential hazard)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>12.09)</b> Are sticky card traps used?	Use sticky cards at regular intervals to detect insect pests.	Sticky cards are used on some crops and read every 2 weeks.	Sticky cards are not used.		
<b>12.10)</b> Are biological control agents used?	Use biological agents to reduce or eliminate the use of pesticides.	Use biological agents in conjunction with pesticides for efficient pest control.	Not considering the use of biological agents.		
<b>12.11)</b> Are human toxicity or health risks considered when choosing pest control materials?	Use only insect growth regulators (IGRs) or other new low-risk compounds instead of more toxic pesticides.	Incorporate IGRs or low- risk compounds into the program when able.	Satisfied with current higher toxicity pesticides. Does not consider human health risk in pesticide selection.		
<b>12.12)</b> Are low restricted- entry intervals (REIs) pesticides (≤12 hours) used?	Low-REI pesticides make up 100 percent of the program.	Low-REI pesticides make up about 50 percent of the program.	Disregard REIs when selecting and applying pesticides.		
<b>12.13)</b> Are pH and alkalinity of water used with pesticides checked?	Check pH and alkalinity of water source every 6 months, realizing that both factors can affect pesticide effectiveness.	Alkalinity and pH of water source used for pesticides checked every 1 to 3 years.	Alkalinity and pH of water source not checked or checked only if the pesticide is not working.		
<b>12.14)</b> Are pest problems spot treated?	Pesticides are applied only to infested plants.	Pesticides are applied to infested plants and surrounding plants.	The entire greenhouse range is treated on a regular basis.		
Pesticide Application					
<b>12.15)</b> How are surface and groundwater protected in and near greenhouses from pesticide contamination?	Pesticide labels with groundwater and surface water advisory statements are followed.		Labeled directions are not followed. <sup>19</sup> Spray applied adjacent to or over top of surface water, tile drain inlet or well.	Pesticide labels are followed.	
<b>12.16)</b> Are the purchasers and applicators of Restricted Use Pesticides (RUP) certified applicators?	The purchaser and applicator of RUP comply with the certification requirements.		Non-certified and unsupervised applicators use RUP. <sup>6</sup>	RUP certification confirmed.	

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	PEST MANA	GEMENT PRACT	ICES (CONTINU	ED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>12.17)</b> What management practices are used to prevent the development of pest resistance to certain pesticides?	Pesticides with different modes of action are rotated within a season or from one season to the next or used in tank mix where permitted. Pesticides at highest risk of resistance are not used when alternatives are available.	Some but not all pesticide modes of action are rotated or tank mixed. Pesticides at highest risk of resistance are used sparingly.	Pest resistance is not considered when selecting pesticides.		
<b>12.18)</b> Is a spill kit immediately available to pesticide applicators in the greenhouse?	A spill kit containing a shovel, absorbent material, personal protective equipment (PPE) and a container is immediately available.		No spill kit is available 6 or no plan is in place to contain spills.	Adequate spill kit present.	
<b>12.19)</b> How is pesticide rinsate disposal handled?	Excess mixtures or rinsate is used on crop or labeled site at or below labeled rates.		No plan is in place to deal with excess mixture or rinsate.	Evidence that rinsate is properly managed.	
<b>12.20)</b> What pesticide application records are kept?	Accurate records maintained of all greenhouse crop applications of pesticides for at least 3 years.	Partial pesticide records kept. Complete pesticide application records will be kept in the future, for review at the time of reverification.	No records kept. Chemicals used are known by memory or invoices only.	Pesticide records for the past 3 years are on file (or plans to maintain records.) -Application date -Application time -Pesticide brand/product name -Pesticide formulation -EPA registration number -Active ingredient(s) -Restricted-Entry Interval (REI) -Rate per acre or unit -Crop that received the application -Total amount of pesticide applied -Treated area size -Applicator's name -Applicator's name -Application location -Application method -Weather conditions -Wind speed and direction -Target pest -Carrier volume	

	Pest Man	IAGEMENT PRACT	<b>FICES (CONTINUED</b>	)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>12.21)</b> How are agriculture pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. <i>All</i> <i>uncontained spills or</i> <i>releases should be reported</i> <i>to the MDARD Agriculture</i> <i>Pollution Emergency Hotline:</i> <i>1-800-405-0101</i> , or the EGLE Pollution Emergency Alerting System: 1-800-292-4706.		No contact to state or local authorities. Spill discharges directly to surface water. <sup>4,22</sup>	Emergency plan on file or local emergency telephone numbers are available.	
<b>12.22)</b> Are Safety Data Sheets (SDS) available on site?	SDS are available and employees know their location.	Most SDS are available; not all employees know their location.	SDS are not available.	Evidence of system for making SDS available to employees.	
<b>12.23)</b> Do pesticide applicators read and follow the pesticide label instructions?	Everyone using pesticides follows label and labeling instructions.		Label and labeling instructions are not always followed. <sup>21</sup>	No evidence of pesticide application contrary to pesticide label instructions.	
<b>12.24)</b> Is pesticide application equipment ever stored with leftover product?	Application equipment is always stored empty.	Occasionally leftover product is stored in application equipment.	Storage of leftover product in application equipment is a standard operating procedure.		
<b>12.25)</b> Is loaded pesticide application equipment ever left unattended?	Sprayer containing pesticide(s) is never left unattended.	Pesticide handlers on occasion are called away from spraying activities.	Leaving sprayers with pesticide unattended is a common occurrence.		
<b>12.27)</b> How often is pesticide application equipment tested?	Application equipment is tested annually to determine if it is working properly.	Application equipment is tested only if there is time.	Application equipment is tested only if it has been broken and repaired.		
<b>12.26)</b> How often is pesticide application equipment calibrated?	Application equipment is calibrated twice a year according to manufacturer's recommendations.	Application equipment is calibrated every year according to manufacturer's recommendations.	Application equipment is calibrated only if there is plant damage or the pesticide doesn't seem to be effective. <b>Pesticide</b> <b>application equipment is</b> <b>not properly calibrated.</b> <sup>6</sup>	Evidence of system of calibrating pesticide application equipment at least once per year.	

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		RODUCTION CONT	AINER MANAGEM Ners, please skip.)	IENT	
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>13.01)</b> What happens to runoff in production areas with containers?	Runoff is collected, filtered and reused.	Runoff does not pond and does not enter surface water.	Runoff is not collected and is allowed to enter surface water.	No evidence of significant runoff or erosion.	
<b>13.02)</b> Are runoff storage areas sized adequately?	Runoff collection areas can store an average rain event.	Runoff collection areas cannot store an average rain event but do not regularly flood into surface water.	Runoff collection areas overflow regularly and runoff enters surface water.		
<b>13.03)</b> How is the pH of irrigation water managed?	Sulfuric acid is used to lower the pH of irrigation water.	Nitric acid or phosphoric acid is used to lower the pH of irrigation water. Nutrient credits are taken for the acidified irrigation water.	Nitric acid or phosphoric acid is used to lower the pH of irrigation water. Nutrient credits are not taken for the acidified irrigation water.		
<b>13.04)</b> What type of irrigation is used?	Trickle irrigation with in-pot emitters.	Overhead irrigation with scheduled irrigation (split applications).	Overhead irrigation.		
<b>13.05)</b> What fertilizers are used to minimize nutrient loss?	Controlled-release fertilizers used or multiple applications of liquid fertilizer with minimal leaching potential.		Minimal use of controlled- release fertilizers. Use liquid fertilizer with high leaching potential.		
<b>13.06)</b> Is container stock fertigated with overhead sprinklers?	Overhead irrigation with fertigation is avoided on containers.		Overhead irrigation with fertigation is regularly used on containers.		

Отн	HER ENVIRONME	NTAL RISKS AT TH	E GREENHOUSE	OPERATION	
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>14.01)</b> Is a live species, restricted species or prohibited species on the land or in the waters on the property?	Such species is/are not known to be present.	<ul> <li>Such species is/are present:</li> <li>BUT</li> <li>It was not knowingly introduced.</li> <li>It was introduced under a permit,</li> <li>OR</li> <li>It is possessed under a permit.</li> </ul>	Such species is/are present: • It was knowingly introduced without a permit. <sup>15</sup> OR • It is possessed without a permit. <sup>15</sup>		
<b>14.02)</b> Are there other activities, products, processes/equipment, services, by-products and/or wastes at this greenhouse operation that pose contamination risks to groundwater or surface water?	No additional risk(s) identified.	Plan to mitigate the contamination risk(s).	No plan to mitigate contamination risk(s).	No other environmental risks found at the greenhouse operation.	
<b>14.03)</b> Are portable toilets located in a place that minimizes the risk for product contamination in the case of tipping, leaking, or malfunction?	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets, or other water resources, and are addressed in the Emergency Plan and spill kits are available.	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources.	A spill or leak from a portable toilet may run into nearby surface water or water wells in the event of a leak or spill.	No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.	

## **GREENHOUSE (CROPPING AND FARMSTEAD SYSTEMS) IMPROVEMENT ACTION PLAN**

Develop a Greenhouse Improvement Action Plan for risks on the farmstead beginning on the inside cover of this bulletin. Once the plan is implemented, a MAEAP Greenhouse System (Cropping and Farmstead System Verification) can be requested by calling the Michigan Department of Agriculture and Rural Development at (517) 284-5609.

A boxed risk level indicates the level required for environmental assurance verification.

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# **Well Description and Isolation Distances**

#### Table 1. Greenhouse Well Description and Isolation Distances.

Greenhouse Well	Information	Isolation Distar	nce (in feet) From:					
Description	Private or Public	Fuel Storage	Pesticide Storage	Fertilizer Storage	Mix/Load Area	Septic System	Other	Other
1								
2								
3								
4								
5								
6								
7								
8								

#### What is considered a private water supply?

A private water supply provides water to the supplier of the water (e.g., the owner) and includes water for the supplier's drinking water, household use, livestock water, irrigation, etc.

#### What is considered a public water supply?

In Michigan, wells that provide water to non-family member employees or that service a milkhouse or milkroom are considered public water supplies. Public water supplies are classified based on capacity and number of employees.

- A Type II public water supply is a non-community supply with at least 15 service connections or which serves 25 or more individuals (employees) on an average daily basis for at least 60 days out of the year.
- A Type IIa water supply has an average daily production for the maximum month of 20,000 gallons or more.

- A Type IIb water supply has an average daily production for the maximum month of less than 20,000 gallons.
- A Type III public water supply is one that does not meet the above requirements for the number of service connections or employees.

#### Table 2. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline — 1-800-662-9278, MDARD information — 1-800-292-3939.

Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Private pesticide applicator certification	Any persons using or supervising the use of Restricted Use Pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/Pesticide and Plant Pest Management Division	
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/PPPM	
NPDES permit CAFO	National Pollutant Discharge Elimination System (NPDES) permit for large concentrated animal feeding operations (CAFOs).	5 years or as noted on permit	EGLE/Water Bureau	
Farm motor vehicle fuel storage tanks greater than 1,100-gallon capacity (aboveground and belowground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Air use permit	Permit to install and operate equipment or processes which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged), and any livestock facility over 5,000 animal units.	5 years	EGLE/Water Resources Division	
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulations, ordinances and codes.	Before construction	Local health department	N.A.
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, and under water.	Before construction	EGLE/Water Resources Division	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or groundwater that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	
Identification guides for some species regulated by Part 413.	http://mnfi.anr.msu.edu/invasive-species/aquaticsfieldguide.pdf https://mnfi.anr.msu.edu/invasive-species/InvasivePlantsFieldGuide.pdf			50

#### Table 2. Federal, state and local environmental requirements for operation of this farm business.

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Environmental Regulatory requirements	Description	Frequency	Administering Agency	Your Expiration Date
Water Withdrawal Assessment – new or increased large quantity	The Water Withdrawal Assessment Tool (WWAT) is designed to estimate the likely impact of a water withdrawal on nearby streams and rivers. Use of the WWAT is required of anyone proposing to make a new or increased large quantity withdrawal (over 70 gallons per minute) from the waters of the state, including all groundwater and surface water sources, prior to beginning the withdrawal. The WWAT and registration site is: <a href="https://www.egle.state.mi.us/wwat/">www.egle.state.mi.us/wwat/</a>	Before Water Withdrawal	EGLE Water Resources Division	The registration is valid for 18 months
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulations and ordinances and codes.	Before construction	Local health department	
Other Environmental Guidelines	Description		Administering Agency	Your Expiration Date
Manure management and utilization	The Michigan Right to Farm Act (Act 93 of 1981) requires the establishment of Generally Accepted Agricultural andManagement Practices (GAAMPs). Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation. The GAAMPs are reviewed annually. The latest GAAMPs can be accessed at: www.michigan.gov/mdard.		MDARD	
Pesticide utilization and pest control				
Nutrient utilization				
Site selection and odor control for new and expanding livestock production facilities				
Irrigation water use				
Farm market				
MAEAP verification: Livestock, Farmstead, Cropping and the Forest, Wetlands and Habitat Systems.	MAEAP systems verification is valid (P.A. 1 & 2, 2011) for 5 years. MAEAP verification is dependent on following the practice specific to each system, being in with the applicable GAAMPs, an annual plan review and update (livestock updates as necessary as conditions change on the farm.	ication in good a conformance a system) and	MDARD	

Table 3. L	egal Citations for Environmental Risks in Greenhouse+A+S	yst.	
Footnote	Michigan Law	Description	
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems	
2		Part 138: Medical Waste Regulatory Act	
3	Safe Drinking Water Act, Public Act 399 of 1976		
4	Natural Resources and Environmental Protection Act 451 of 1994	Part 31: Water Resources Protection	
5		Part 55: Air Pollution Control	
6		Part 83: Pesticide Control	
7		Part 85: Fertilizers	
8		Part 111: Hazardous Waste Management	
9		Part 115: Solid Waste Management	
10		Part 117: Septic Waste Servicers	
11		Part 121: Liquid Industrial Waste	
12		Part 169: Scrap Tires	
13		Part 201: Environmental Response	
14		Part 327: Great Lakes Preservation	
15		Part 413: Wildlife Conservation	
16	Bodies of Dead Animals Act, Public Act 239 of 1982 as amended		
17	Fire Prevention Code Public Act 207 of 1941	Storage and Handling of Flammable and Combustible Liquids	
18	Grade A Milk Law, Public Act 266 of 2001		
19	Michigan Department of Agriculture and Rural Development Pesticide Regulation 637	Pesticide Use	
20	Michigan Department of Agriculture and Rural Development Regulation 642	On Farm Fertilizer Bulk Storage	
	Federal Law		
21	Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)		
22	Title III of the Superfund Amendments and Reauthorization Act of 1986, als Community Right-to-Know Act	o known as the Emergency Planning and	
23	Worker Protection Standard for Agricultural Pesticides		
24	Clean Water Act, Oil Pollution Regulation		52
25	Food Safety Modernization Act Food Safety Rule		-92

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		ADDITIONAL NOTES:
	ange, <u>and</u> Latitude and Longitude) MGITUDE: RANGE: place that receives mail.)	FARM INFORMATION         FARM NAME:         (If no physical address, please use Section, Township, I         FARM SITE STREET ADDRESS:         FARM SITE CITY:         STATE: MICHIGAN (ONLY) (Mailing Address I         FARM SITE COUNTY:         FARM SITE TOWNSHIP:         LATITUDE:         If there is no mailbox at the farm site location or not a         FARM MAILING) STREET:         (MAILING) P.O. BOX:         (MAILING) STATE:         (MAILING) STATE:         (MAILING) ZIP CODE:
	(MAILING) STATE: (MAILING) ZIP CODE: HOME PHONE NUMBER:	EARM MANAGER CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
	HOME PHONE NUMBER: MOBILE/CELL NUMBER: (MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY:	OWNERS CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME:
	ce or Home Address)	BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION: MAILING) STREET: (MAILING) STREET: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:
55		BUSINESS NAME: BUSINESS OWNER NAME:

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Is there Evidence of Discharge: Yes Ŷ No

CROPPING         NMP (Acres):         Fertilizer Applied (Acres):         Fertilizer Applied (Acres):         Pesticide Applied (Acres):         Irrigation (Acres):         Cover Crops (Acres):         Grade Stabilization (Each):         Conservation Tillage (Acres):         Manure Applied (Gallons/Year):         Manure Purchased (Covered In CNMP:         Name of Farm(s) Covered In CNMP:         No Till (Acres):         Irrigation (Acres):         Irrigation (Acres):         No Till (Acres):         Conservation Tillage (Acres):         Irrigation (Each):         Irrigation (Acres):         Manure Applied (Acres):         Manure Applied (Acres):         Irrigation (Each):         Irrigation (Linear Feet):         Silage Pad (Acres):         Manure Sold (Gallons/Year):	FARMSTEAD         Fuel Storage: (Gallons) (Pounds)         Fertilizer Storage: (Gallons) (Pounds)         Pesticide Storage: (Gallons) (Pounds)         Farmstead Wells (each):         EHS Threshold: Yes or No
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NMP (Square Feet):         Manure Applied (Square Feet):         Fertilizer Applied (Square Feet):         Pesticide Applied (Square Feet):         Irrigation (Square Feet):         Buffer/Filter Strips (Square Feet):         Annual Cover Crop (Square Feet):         Annual Cover Crop (Square Feet):         Grade Stabilization (Square Feet):         Greenhouse Size (Square Feet):         Fuel Storage: (Gallons)         (Pounds)         Fertilizer Capacity: (Gallons)         (Pounds)         EHS Threshold:       Yes         Yes       or	GREENHOUSE
--	------------

Land Management Plan (Acres)	FOREST, WETLANDS, AND HABITAT
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			Notes:

Animal Unit (AU) Conversion	Factors by Animal	Type and Class	
ANIMAL TYPE	CLASS	Average Animal Weight	QUANTITY
	CALF	450	
	HIGH FORAGE	750	
1 000 Reaf nattle or now/nalf naire = I arne CAFO	HIGH ENERGY	750	
	HIGH FORAGE	1100	
	HIGH ENERGY	1100	
	COW	1000	
	CALF	150	
	CALF	250	
700 Mature dainy cattle (whether milked or dry cows), or	HEIFER	750	
1,000 Veal calves = Large CAFO	HEIFER	1000	
	LACTATING COW	1400	
	DRY COW	1400	
	VEAL	250	
30,000 Laying hens or broilers liquid, or	DRY SYSTEM		
82,000 Laying hens dry = Large CAFO	LIQUID SYSTEM		
	PULLETS		
55,000 turkeys = Large CAFO	ALL		
500 horses = Large CAFO	ALL	1000	
	NURSERY PIG	25	
	GROW-FINISH	150	
2,500 swine each weighing over 55 pounds, or 10,000 swine weighing less than 55 pounds = Large	GESTATING	275	
CAFO	LACTATING	375	
	BOAR	350	
	OTHER		
10,000 sheep or lambs	ALL	100	
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	Y:
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	Y:

Crop Commodities					
CROP NAME	ACRES	CROP NAME	ACRES	CROP NAME	ACRES
Alfalfa		Cucumbers, Fresh		Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots		Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries		Grapes, Juice		Rye	
Carrots		Grapes, Wine		Small Grain, Other	
Cherries, Sweet		Green Beans		Soybeans	
Cherries, Tart		Greenhouse, Annual		Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed		Greens, Herbs		Sunflower	
Corn, Grain		Hay/Pasture		Vegetable, Other	
Corn, Seed		Норѕ		Wheat	
Corn, Silage		Mixed Garden		Other:	
Corn, Sweet		Nursery		Other:	

Note: Express acres to the closest quarter acre.

Notes:

# $\mathsf{MICHICANSTATE} \left| \mathsf{Extension} \right|$

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#### Michigan Agriculture Environmental Assurance Program

Cropping Systems Subcommittee <u>Summary of Proposed Amendments for 2022 Cropping – Fruit</u> (Unified Assessment)

Number	Approval Date	Reason for Change
		No
		NO
		Recommended
		Changes
		Changes

# **FOR MICHIGAN PRODUCERS**

FAS 104 · October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609



MICHIGAN STATE | Extension

		Fruit	+A+Syst		
Cropping System Improvement Action Plan					
Risk question	List high-risk practice(s) from Fruit∙A∙Syst as well as medium- risk practices that do not meet MAEAP requirements.	Required for MAEAP verification?	Alternative low-risk practice (include potential sources of technical and financial assistance).	Action Planned completion date	n plan Indicate date when completed
3.14	(Example) Pesticide spill clean-up kit not available in the orchard.	Yes	Acquire pesticide spill clean-up kit from water stewardship technician for pesticide application area.	March, 2021	<b>(√)</b> Completed March 1, 2021
(continued on next page) 2					

# Cropping System Improvement Action Plan

	List high-risk practice(s) from		Alternative low-risk practice	Action	plan
Risk question	Fruit+A+Syst as well as medium- risk practices that do not meet MAEAP requirements.	Required for MAEAP verification?	(include potential sources of technical and financial assistance).	Planned completion date	Indicate date when completed
		·		(continued on next	page) 3

# Cropping System Improvement Action Plan (continued)

	List high-risk practice(s) from				Actio	n Plan
Risk uestion	Fruit+A+Syst as well as medium-risk practices that do not meet MAEAP requirements.	Required for MAEAP verification?	(include potential sources of technical and financial assistance).		Planned completion date	Indicate da when completed
ave discl	osed, to the best of my knowledge, all informati	ion pertaining to m	pping System Improvement Action P y cropping operations.		eloped on the bas	sis that I
Farmstead	d address:	ion pertaining to m	Producer's signature		Date_	sis that I
Farmstead	d address: MI, Zip code	ion pertaining to m	Producer's signature Fruit+A+Syst conducted by: Name		Date_	sis that I
Farmstead Street City Watershee	d address: MI, Zip codeMI, Zip code	ion pertaining to m	Producer's signature Fruit+A+Syst conducted by: Name Organization	Titl	Date	sis that I
Farmstead Street City Watershee	d address: MI, Zip codeMI, Zip code	ion pertaining to m	Producer's signature Fruit+A+Syst conducted by: Name Organization	Titl	eloped on the bas Date_ Date Date	sis that I
Farmstead Street City Watershed	d address: MI, Zip codeMI, Zi	System	<pre>pping System Improvement Action P y cropping operations. Producer's signature Fruit+A+Syst conducted by: Name Organization</pre>	Titl	eloped on the bas Date Date Date	sis that I
Farmstead Street City Watershed Ta Ta	d address: MI, Zip codeMI, Zip codeJI, Zip codeMI, Zip codeJI, Zip codeJI	System	<pre>pping System Improvement Action P y cropping operations.  Producer's signature Fruit+A+Syst conducted by: Name Organization</pre>	Titl	eloped on the bas Date Date Date	sis that I
Farmstead Street City Watershed Ta Ta	d address: MI, Zip codeMI, Zip codeNI, Zip code	System System System	Producer's signature Fruit+A+Syst conducted by: Name Organization	Titl	eloped on the bas Date Date Date	sis that I

#### Introduction

Fruit•A•Syst will assist growers in developing and implementing a management plan and site improvements that prevent contamination of groundwater and surface water and maintain economic crop production. Plans will be consistent with the Michigan Right to Farm identified current Generally Accepted Agricultural and Management Practices (GAAMPs) as well as applicable state and federal environmental regulations.

Nutrients used in fruit production come from chemical fertilizers and naturally occurring sources such as manure, legumes and biosolids (sewage sludge). Synthetic or naturally occurring nutrients can become mixed with surface water or groundwater by natural processes such as runoff and leaching. Nitrate contamination of groundwater and phosphorus contamination of surface water are problems in some areas of Michigan. Fruit+A+Syst will assess current nutrient management practices and identify alternative management practices to reduce nutrient losses to the environment.

Virtually all crops produced in Michigan may be threatened by serious pest problems – disease-producing organisms, insects and weeds. Producers are encouraged to adopt pest management practices that achieve the desired crop quality and yield while minimizing any adverse effects on nontarget organisms, humans, and soil and water resources. Fruit•A•Syst will assess current pest management practices and identify alternative management strategies to reduce negative impacts to the environment.

# The Michigan Agriculture Environmental Assurance Program (MAEAP) is a

comprehensive, proactive and voluntary agricultural pollution prevention program.

Producers who complete Fruit•A•Syst will be able to determine what structural, management practices or record-keeping changes (if any) that will be needed for their businesses to be environmentally assured through MAEAP. After addressing the risks indicated by the Cropping System Improvement Action Plan, the producer can contact the Michigan Department of Agriculture and Rural Development (MDARD) to request Cropping System verification at (517) 284-5609. An MDARD verifier will schedule a site inspection.

P.A. 451, Part 82, ensures the confidentiality of the producer information provided to the MDARD for verification. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

The owner of a MAEAP verified Cropping System will be eligible for various incentives and can enjoy the peace of mind that comes with knowing that Cropping System practices are consistent with the identified current Right to Farm GAAMPs. Verified Cropping Systems are positioned to achieve regulatory compliance with state and federal environmental laws.

For a list of currently available incentives and information on how to get started, contact a local conservation district, MSU Extension or Natural Resources Conservation Services (NRCS) representative.

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the Michigan Department of Agriculture and Rural Development Web site:

www.michigan.gov/mdard.

# What is the Crop Assessment System for Fruit Producers?

The Crop+A+Syst for Fruit Producers (Fruit+A+Syst) is a series of risk questions that will help assess how effectively a producer's crop management practices protect groundwater and surface water resources. The risk questions are grouped in the following sections:

Cover Photos: Mirjana Bulatovic-Danilovich, Rufus Isaacs and Mark Longstroth.

	Cropping System Improvement Action Plan
1	Nutrient Management Practices
2	Soil and Water Conservation Practices
3	Pest Management Practices
4	Water Use
5	Irrigation Management Practices
-	

6 Other Environmental Risks in the Cropping System

The answers to the risk questions indicate whether current management practices have a low, medium, or high risk of contamination. Growers are generally recommended to adopt the low-risk management practice. MAEAP local conservation district technicians or horticultural advisors can assist to make the appropriate management changes.

Responses to risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**. The numbered footnotes will indicate which regulation is violated (refer to Table 2).

Responses to risk questions that address management practices covered by the GAAMPs indicate a management practice consistent with a specific GAAMPs with *blue bold italic print*. A bold box indicates the management level(s) required for MAEAP verification.

MAEAP management requirements are aligned with state and federal environmental regulations. The GAAMPs and environmentally based horticultural management practices are supported by research. The records and/or evidence that indicate the approved management practices have been implemented on the farm are listed in the farright column. This evidence will provide the basis for awarding environmental assurance through MAEAP.

#### How Does Crop+A+Syst Work?

- 1) Select all relevant risk question sections for the fruit operation.
- Answer the risk questions by selecting the answer that best describes management practices used on the operation. Indicate the risk level in the column to the right. Skip any questions that don't apply to the Cropping System.

Note: for MAEAP verification, complete the risk questions with a Fruit+A+Syst trained individual. Locate a local MAEAP conservation district technician through the county conservation district, MSU Extension, or NRCS office, or at www.maeap.org.

- 3) After completing each section of risk questions, list the practices that present a high risk of contaminating groundwater and surface water resources in the Cropping System Improvement Action Plan (printed inside the front cover of the bulletin). Also include any medium-risk practices that do not meet MAEAP verification requirements.
- 4) In the Cropping System Improvement Action Plan, list:
  - Management practices or site improvements to be implemented that will reduce the identified risk.
  - Sources of technical and financial assistance.
  - Target dates for accomplishing the changes.
  - Target date for MAEAP Cropping System verification.

### A Few Final Words

The key to Fruit•A•Syst is that, once environmental risks to groundwater and surface water resources are identified, the plan is implemented to reduce the risks. Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow. Once the plan is developed and changes are implemented to address the risks, the farm is ready for MAEAP Cropping System verification.

NUTRIENT MANAGEMENT PRACTICES						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>1.00)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint, or the concern was not verified, or the concern was resolved.		There was a formal Right to Farm complaint and the concern has not resolved.	Producer's verbal indication of complaint history.		
<b>1.01)</b> How often are fields tested for nutrient levels (P, K, Ca, Mg) and pH?	All fields are sampled and tested (both tissue and soil) on a regular basis, at least every 4 years.	All fields are sampled and tested (either tissue or soil) every 4 years or producer plans to bring tests up to date.	Fields have not been soil or tissue tested within the past 4 years.	Field names or map. Acres in the cropped portions of the field. Up-to-date soil test and tissue analysis reports, or schedule to bring all tests up to date.		
<b>1.02)</b> Do soil sampling procedures adequately represent field conditions?	One composite sample is taken from uniform field areas of less than 40 acres. For tree fruit, samples are taken from under trees (weed sprayed, cultivated or mulched areas).		One composite sample taken from areas greater than 40 acres.			
<b>1.03)</b> Is the soil pH maintained in the desirable range for the crop(s) being grown?	The pH is adjusted to desirable range before planting and maintained for current crop.	Soil pH is maintained and/or adjusted for current crop on the basis of soil analysis after planting.	Soil pH is not maintained in the desirable range.			
<b>1.04)</b> How are all sources of nutrients considered when making fertilization decisions?	Credit taken for nutrients supplied by organic matter, legumes and manure or other biological materials (biosolids). Fertilizer rates are reduced accordingly.	When organic matter, legumes, manure or other biological materials (biosolids) are used, fertilizer rates are sometimes reduced.	When organic matter, legumes, manure or other biological materials (biosolids) are used, rates are not reduced.	Written records available, showing nutrient credits utilized.		

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>1.05)</b> How are fertilizer application rates determined?	Consistent with Michigan State University (MSU) recommendations. When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used. (Based on site- specific, block-by-block soil and tissue analysis.)	Consistent with Michigan State University (MSU) recommendations, based on composite analysis representing the whole farm.	Fertilizer rates are not based on tissue or soil analysis.	Applications consistent with MSU recommendations (MSU soil test printout or calculated MSU recommendations on file). When MSU recommendations are not available, applications are consistent with industry standards.			
<b>1.06)</b> How are nutrient management plans for each field annually developed and followed?	Annual nutrient plan is developed on a block-by-block basis to meet crop nutrient needs and minimize loss of nutrients to the environment.	A nutrient plan is developed each year for each crop species. Soil or tissue tests are up-to-date.	Nutrient plan is not developed, or the same plan is used for more than four years.	Annual nutrient plan by field or crop grown.			
<b>1.07)</b> Is fertilizer application equipment checked for proper adjustment?	Application equipment is checked for rate of application and placement. Over- and under-applications are monitored and corrected.		Application equipment is not checked.	Name of person responsible for fertilizer applicator adjustments and the dates of adjustments.			

Bold Black print indicates a violation of state or federal regulation.

Bold blue italic print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>1.08)</b> What soil nutrient management records are kept?	Records of soil tests and tissue analysis reports and quantities of nutrients applied to individual fields or blocks are maintained.	Partial nutrient management records are kept. Complete nutrient management records will be kept in the future, for review at time of reverification.	Minimal or no nutrient management records kept.	Three years of records – or five years, if applying manure, - or plans to begin keeping records. - Soil fertility tests and/or plant analysis results. - Previous crop grown and yield harvested. - Date(s) of nutrient application(s). - Nutrient composition of fertilizer or other material used. - Amount of nutrient- supplying material applied per acre. - Method of application and placement of applied nutrients. - The name of the individual responsible for fertilizer applicator. calibrating and the dates of calibration. - Vegetative growth and cropping history of perennial crops.		
<b>1.09)</b> When not in use, where are loaded planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle is returned to a secure location when not in use. Fertilizer and pesticides are properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide (including treated seed) supply vehicle is left in an unsecured location. Or, Fertilizer and pesticides are stored less than 150 feet from any well. <sup>1</sup>	Map showing where vehicle(s) should not be parked adjacent to any well. No evidence vehicles left in an unsecured location.		

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>1.10)</b> Are poly tanks used as intended?	Yes, Vertical (upright) tanks are used for stationary fertilizer storage, and horizontal tanks with tie-down features are used for stationary storage and/or transportation application.		Vertical tanks are used as mobile nurse tanks or other transportation applications. Vertical tanks are designed for stationary storage.				
<b>1.11)</b> Are poly tanks inspected periodically for structural soundness?	Poly tanks are inspected for crazing (spider webbing) and cracking in the spring and again at the end of the season. Damaged tanks are replaced or used for water.	Poly tanks are inspected and periodically replaced as necessary	Tanks are not inspected regularly. High potential for tank failure is present.				
<b>1.12)</b> How are Nitrogen (N) fertilizer applications matched to the demand of the crop and the conditions of the soil?	N rates are based on tree/plant vigor, production quality, pruning practices and periodic tissue analysis, and do not exceed MSU recommendations.	N rates are based on previous practices that match inputs with plant needs, but sometimes exceed MSU recommendations.	N rates are not based on nitrogen monitoring or plant assessment and often exceed MSU recommendations.				
<b>1.13)</b> How are commercial Phosphorus (P) fertilization rates determined?	Based on soil tests or plant tissue analysis using MSU recommended rates. If soil test exceeds 150 ppm Bray P1 (300 lb/A), P is discontinued.		P is applied without regard to soil or tissue analysis.	Commercial P management consistent with Nutrient GAAMPs.			
<b>1.14)</b> How often is commercial Phosphorus (P) fertilizer applied on frozen or snow-covered fields?	P fertilizer is never broadcast on frozen or snow-covered fields.	Broadcast applications are avoided on frozen or snow-covered fields and are not part of the nutrient management plan.	P fertilizer is often broadcast on frozen or snow-covered fields.	Date(s) of application(s) of P fertilizers.			

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
MANURE MANAGEMENT	PRACTICES (IF MANURE IS NOT USE	D, SKIP THIS SECTION.)				
<b>1.15)</b> What manure management records are maintained?	Complete application records of manure analysis, soil test results and rates of manure application for individual fields are maintained.	A minimum of one season of manure application records, or partial application records have been kept. Complete manure application records will be kept immediately and will be available for review at the time of reverification.	Minimal or no records are maintained.	Additional nutrient management records that are needed if manure is used in the cropping system: - Dates(s) of manure application and incorporation, when applicable - Rate of manure application - Weather conditions during application of manure - Field conditions during application of manure - Manure/wastewater quantities produced and nutrient analysis results - Records of rental or other agreements for application of manure/wastewater on land not owned by the producer - Records of manure/wastewater sold or given away to other landowners		
<b>1.16)</b> How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium N, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown or not considered.	All manure analysis or book values on file.		
<b>1.17)</b> How are desired manure application rates achieved?	Manure analysis (book value, manure test or mass balance) and <i>field application rates are</i> <i>known.</i>		Manure application rate is not known.	Rate of manure applied known for all spreaders. Records indicate date of calibration.		

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
MANURE MANAGEN	IENT PRACTICES (IF MANURE IS NOT USE	ED, SKIP THIS SECTION.)			
<b>1.18)</b> How is manure, and/or compost, generally applied to fields?	Manure, and/or compost, is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, perennial crops, cover crops, etc.) are used to protect against runoff and erosion losses to surface waters.	Manure, and/or compost, is generally surface applied and conservation practices are employed to reduce the risk of runoff.	Manure, and/or compost, is applied in a manner that results in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or <b>discharge directly to</b> <b>surface water.</b> <sup>4</sup>	Manure, and/or compost, application records.	
<b>1.19)</b> How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	Manure is incorporated within 48 hours or injected. Or, surface applications are not done within 150 feet of surface water. Or, filter strips, riparian buffer strips, and other conservation practices are maintained between fields and surface waters on the farm and around surface water inlets.	Conservation practices are maintained on some fields.	Manure is applied within 150 feet of surface waters and not incorporated without conservation practices. And/or manure occasionally reaches neighbor's property.	Field maps with setbacks identified. Records of manure incorporation.	
<b>1.20)</b> How are manure Nitrogen (N) application rates managed?	Manure and N fertilizer are applied at rates that do not exceed the N requirements of the crop and are credited toward fertilizer needs.	Manure N credits are considered but not to their full extent.	Commercial N is not reduced to account for manure nitrogen credits.	Manure rates do not exceed crop N needs, consistent with GAAMPs.	
<b>1.21)</b> How are manure Phosphorus (P) application rates managed?	High testing fields (>150 ppm Bray P1) do not receive manure, and fields between 75 and 150 ppm P receive no more than four years, crop P removal, if one-year application is impractical.	High testing fields (>150 ppm Bray P1) removed from spreading plan, but crop removal rates are not followed.	Manure application rates are not based on soil tests and/or crop removal rates.	Manure rates do not exceed crop P needs. If developing a Crop Nutrient Management Plan (CNMP), refer to USDA- NRCS 590 Standard.	
<b>1.22)</b> How is manure, and/or compost, <u>temporarily</u> stockpiled in relation to surface water?	Manure stockpiles are kept at least 150 feet from surface waters or areas subject to flooding unless conservation practices are used to protect against runoff and erosion losses to surface waters.		Manure stockpiles closer than 150 feet to surface waters or areas subject to flooding, and conservation practices are not used to protect against <b>runoff</b> and erosion losses to surface waters <sup>4</sup>	Appropriate temporary manure stockpiling management demonstrated.	

**Bold Black print** indicates a violation of state or federal regulation.

Bold blue italic print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

NUTRIENT MANAGEMENT PRACTICES (CONTINUED)						
<b>RISK QUESTION</b>	Low Risk – 3	Medium Risk – 2	HIGH RISK - 1	RECORDS OR EVIDENCE FOR	Your	
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk	
MANURE MANAGEMENT	PRACTICES (IF MANURE IS NOT US	SED, SKIP THIS SECTION.)				
<b>1.23)</b> In the field, what management practices are used to reduce odors and pests from manure temporarily stockpiled?	Stockpiled manure is at least 150 feet away from non-farm homes and stockpiled manure is covered with a tarp, straw, woodchips or other materials or additives are used to reduce odors and pests.	<i>Stockpiled manure is at least 150 feet away from non-farm homes.</i>	Stockpiled manure is closer than 150 feet to non-farm homes.	Appropriate temporary manure stacking management demonstrated.		
<b>1.24)</b> How long is manure stockpiled in the field?	Manure is spread as soon as field and weather conditions allow, and does not exceed six months; or twelve months if covered with an impermeable cover.		Manure stockpiled for more than six months without a cover, or more than twelve months with an impermeable cover.	Appropriate temporary stockpiling management demonstrated.		
<b>1.25)</b> How are fields selected for spreading on frozen and snow-covered ground?	No applications on frozen or snow-covered ground without injection or incorporation.	Manure application risks index (MARI) has been completed for each field receiving manure on frozen or snow-covered ground. Frozen or snow-covered fields receiving manure have met MARI criteria for Low or Very Low rating and <i>no liquid manure is</i> <i>applied on slopes greater</i> <i>than 3%, and no solid</i> <i>manure is applied to</i> <i>slopes over 6%.</i>	Applications are made to fields where runoff to water resources may occur.	MARI completed for each field receiving winter manure application, or spreading plan does not include winter spreading.		
<b>1.26)</b> How are field tiles managed to prevent manure discharge to surface water?	Liquid manure is prevented from reaching tile lines. Management practices are in place to prevent runoff to surface inlets. Tile line outlets are monitored.		Tile outlets are not monitored for manure discharge.	Tiled fields identified on map. Records of tile flow before and after application (flow, rate, color and odor).		

	NUTRIENT MANAGEMENT PRACTICES (CONTINUED)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
MANURE MANAGE	MENT PRACTICES (IF MANURE	IS NOT USED, SKIP THIS SECTION.)		•		
<b>1.27)</b> How are manure applications managed to prevent any food safety risk(s)?	Manure application records document manure is incorporated and applied 270 or more days prior to harvest.	Manure application records document manure is incorporated and applied 120 or more days prior to harvest.	Manure is applied less than 120 days prior to harvest.	Note: USDA Good Agricultural Practices ≥120 days before harvest. The Food Safety Modernization Act currently recommends using the National Organic Program guidelines for raw manure pre- harvest application interval.		
<b>1.28)</b> How are biosolids with pathogens prevented from contacting crops grown for human consumption?	Biosolids are not used on crops grown for human consumption or biosolids with pathogens present (Class B biosolids) are applied only to non-bearing trees and plant areas, or harvest restrictions are followed. (Class A biosolids are essentially pathogens free with no restrictions for land application. Class B biosolids have low levels of pathogens and have restrictions and harvest intervals when land applied.)		Biosolids with pathogens present (Class B biosolids) are applied to active fruit production areas without regard to harvest restrictions.	Application records kept for Biosolids applications and can be compared with fruit production records.		
<b>1.29)</b> Has nutrient content information on the biosolids applied to the farm been received?	Received laboratory analysis for percent dry matter (solids), ammonium N (NH4- N), and total N, P and K, and utilize nutrient credits when planning nutrient program.		Have not received any biosolids analysis information.	Biosolids analyses on file.		
<b>1.30)</b> How are the rates of biosolids (in gallons or dry tons per acre) and applied biosolids nutrients known?	Received actual biosolids application rates from the biosolids generator or its land application contractor. Nutrient rates are consistent with MSU recommendations.		Have not received any biosolids rate or nutrient application information.	Biosolids application rates on file.		

	Soil and Water Conservation Practices							
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
2.01) Have environmentally sensitive areas been identified (land near surface water, highly erodible soils, soils with high leaching or runoff potentials, wells, surface drains and inlets) that require additional management when applying nutrients and pesticides?	Environmentally sensitive areas are identified. Family members, employees, and contractors are aware of and understand the management practices to protect these areas.	Some environmentally sensitive areas are identified.	Environmentally sensitive areas are not considered.	Areas identified on field maps with appropriate management or setbacks. -Next to surface waters -Fields with shallow groundwater -Fields with water wells -Areas near surface water inlets -Fields with highly erodible soils -Fields with highly leachable soils -Fields with high runoff potential Training/communications plan to inform workers and contractors of appropriate management or setbacks.				
<b>2.02)</b> Is soil erosion under control on the farm fields?	Soil erosion losses are within tolerances as documented by the revised universal soil loss equation (RUSLE2) and the Wind Erosion Prediction System (WEPS). Minimal evidence of erosion and no evidence of erosion of concentrated water flows. Cover crop may be in place.	RUSLE2 and WEPS are run on fields that are not: In pasture or hay ground, or no-till planting systems. Receiving fall tillage, with >30% residue on less than 12% slopes. Receiving more than one pass fall tillage that leaves fields rough with >40% residue and less than 8% slopes. And regardless of fall tillage, spring tillage leaves > 20% residue. And for all of the above there is no evidence of sheet, rill or gully erosion.	Excessive soil erosion is occurring on the farm.	RUSLE2 and WEPS calculations completed and on file.				
SOIL AND WATER CONSERVATION PRACTICES (CONTINUED)								
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RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>2.03)</b> Are all streams, wetlands, farm ditches, and other bodies of water on the farm protected from polluted runoff and sediment with conservation practices?	Filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained between fields and all surface waters on the farm.	Conservation practices are maintained on some fields.	No conservation practices are maintained. Farm is immediately next to surface waters, drainage ditches and roads.					
<b>2.04)</b> Are cover crops planted to prevent soil erosion, trap nutrients and pesticides, and improve soil quality?	Cover crops are included in the crop rotation to protect soil and water resources and control erosion.	Cover crops are used occasionally.	Cover crops are not used.					
<b>2.05)</b> Are soil quality indicators evaluated?	Soil quality indicators (e.g., earthworm populations, water infiltration rates, soil compaction, percent plant and residue cover, pH, cation exchange capacity [CEC] and percent organic matter) are evaluated on all fields.	Some soil quality indicators are evaluated.	No soil quality indicators are evaluated.					
<b>2.06)</b> Are conservation and management practices routinely inspected and evaluated?	Owner or trained individual routinely inspects and evaluates conservation and management practices.	Conservation and management practices are informally evaluated during field operations.	Practices are not inspected nor evaluated.					
	Pest N	IANAGEMENT PI	RACTICES					
CONTINUING EDUCATION AND	KNOWLEDGE							
<b>3.01)</b> How does the grower stay current on new pest management practices and strategies for weeds, insects and diseases?	Attend educational meetings, read educational materials provided by the university or other reliable sources. At least one new pest management practices adopted on a trial basis each year.	Occasionally attend educational meetings and read new pest management materials.	Rely on outdated pest management practices.					

<b>PEST MANAGEMENT PRACTICES (CONTINUED)</b>							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (Potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
PEST PREVENTION AND AVOID	DANCE						
<b>3.02)</b> Does the grower consult with a pest management consultant or service during the growing season?	Employs and independent crop consultant throughout the growing season that is knowledgeable of IPM. OR, Utilizes public reports and services from the university, local agribusiness or other reliable providers.		Relies on outdated pest management practices.				
<b>3.03)</b> Does the grower review previous growing season pest management activities and results?	Previous pest populations, pest suppression activities/pesticide usage and crop yield/injury are reviewed. Records used for future pest management plans.	No.					
<b>3.04)</b> When available, are certified seed or plant materials (tubers, crowns, transplants, etc.) used that are insect, weed and disease-free?	Certified or quality seed and planting materials used whenever possible.	Bin-run or uncertified planting material that is cleaned and treated.	Use saved seed or planting materials that is untreated and potentially infected with insects, weed and/or disease pests.				
<b>3.05)</b> Are crops (and plant families) rotated to break pest cycles and to maximize crop yields?	Three year or longer rotations are utilized to break pest cycles and to reduce the need for pest suppression practices.	Short (< 3 year) rotations are utilized because of intensive cropping systems. Cover crops utilized whenever possible to improve system.	No rotation followed. Continuous cropping system results in increased pest pressures and reduced yields.				
<b>3.06)</b> Are pest resistant and tolerant varieties planted?	Pest resistant and tolerant varieties are planted when available.	Varieties without resistance and tolerance are planted, resulting in the need for pest suppression practices.					
MONITORING							
<b>3.07)</b> Are fields scouted for pests during the growing season?	All fields are scouted on a weekly schedule, by a qualified individual trained in IPM. Scouting reports and records are filed.	Fields are scouted at critical times, but not on a weekly basis.	Fields are not scouted.				

PEST MANAGEMENT PRACTICES (CONTINUED)								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
MONITORING (CONTINUED)								
<b>3.08)</b> Are weather conditions relevant to pest management monitored? (i.e. air and soil temperature, precipitation, soil moisture, wind speed and direction, leave wetness, etc.)	On-farm weather station(s) provide data to assist with crop and pest management decisions. OR, MSU Enviro-weather ( <u>www.enviroweather.msu.edu</u> ) or other weather-based models are used to assist with crop and pest management decisions.	Consumer weather information used for crop and pest management decisions.	Weather conditions are not considered when making crop and pest management decisions.					
PEST APPLICATION								
<b>3.09</b> Are soil characteristics and field conditions considered when making pesticide applications?	Soil characteristics (texture and organic matter) and field conditions (wind speed and direction, slope and moisture) are assessed when deciding on pesticide application practices. Site-specific or variable- rate technology may be used.	Whole-field application rates are based on the most vulnerable soil type in the field and field conditions.	Pesticides are applied at full labeled rates without regard to vulnerable soil characteristics or field conditions.					
<b>3.10)</b> How are surface and groundwater protected in and near fields from pesticide contamination?	Pesticide labels with groundwater and surface water advisory statements are followed.		Labeled directions are not followed <sup>18</sup> Spray is applied adjacent to or over the top of surface water, tile drain inlet or well. Other field restrictions are ignored.	Field maps indicating pesticide label setbacks and other restrictions are followed. Plan identifies sensitive areas and how they are treated. Drift management plan available.				
<b>3.11)</b> Are leaching/runoff and toxicity potentials considered when making pesticide decisions?	Pesticides with the lowest potentials for leaching, runoff and non-target toxicity are always selected for use in fields. Some spray applications delayed to non- rainy periods. Mulches and ground covers used under trees to prevent leaching.	Leaching/runoff and toxicity potentials are occasionally considered when selecting soil-applied pesticides.	Pesticide choice is not based on leaching/runoff and toxicity potentials. Only cost and effectiveness are considered.					

PEST MANAGEMENT PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
PEST APPLICATION (C	ONTINUED)						
<b>3.12)</b> Are the purchasers and applicators of restricted-use pesticides (RUP) certified applicators?	The purchaser and applicator of RUP comply with certification requirements.		Non-certified and unsupervised applicators use RUP. <sup>6</sup>	RUP certification confirmed.			
<b>3.13)</b> How are workers and pesticide handlers protected from exposure to pesticides?	Workers and handlers: -Follow specific label requirements. -Are provided decontamination supplies. -Are trained or certified applicators. -Are informed of pesticide applications. -Are provided personal protective equipment. -Are provided emergency assistance, if needed.	Worker Protection Standard requirements are partially met. <sup>20</sup>	Worker Protection Standard requirements are ignored. <sup>20</sup>				
<b>3.14)</b> If pesticides are mixed and loaded in the field, how are they handled?	A mixing and loading pad is used. Mixing and loading is done more than 150 feet from any well and more than 50 feet from surface waters.	Mixing and loading are done in different locations in the field, more than 150 feet from a private well, more than 800 feet from a public well* and more than 50 feet from surface waters. A mixing and loading pad is not used.	Pesticides are mixed and loaded at the same spot in the field year after year without a pad.	Proper pesticide mixing and loading demonstrated.			

PEST MANAGEMENT PRACTICES (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	YOUR RISK			
PESTICIDE APPLICATIO	N (CONTINUED)							
<b>3.15)</b> How are empty pesticide containers rinsed and disposed?	<b>Containers are triple-rinsed or</b> <b>power rinsed, punctured</b> and returned to dealer, properly recycled, or disposed of in a licensed landfill. Bags are returned to dealer or taken to licensed landfill. Properly rinsed containers can be disposed in a dumpster that is taken to a licensed landfill.	Disposal of empty containers and bags on the farm property. <sup>8,18</sup>	Disposal of partially filled containers. Burning of containers on the farm property. <sup>8,18</sup>	Evidence of containers being recycled.				
<b>3.16)</b> Do pesticide applicators read and follow the label instructions?	Everyone using pesticides follows label and labeling instructions.		Label and labeling instructions are not always followed. <sup>18</sup>	Evidence that labels are followed.				
<b>3.17)</b> What management practices are used to prevent the development of pest resistance to certain pesticides.	Pesticides with different modes of action are rotated within a season or from one season to the next or used in tank mixes where permitted. Pesticides at highest risk of resistance are not used when alternatives are available. Refuge requirements for transgenic seed are followed.	Some but not all pesticide modes of action are rotated or tank mixed. Pesticides at highest risk of resistance are used sparingly.	Pest resistance is not considered when selecting pesticides. Refuge requirements for transgenic seed are ignored.					
<b>3.18)</b> Is a spill kit immediately available to pesticide applicators in the field?	A spill kit containing a shovel, absorbent material, PPE and a container is immediately available.		<b>No spill kit is available</b> or no plan is in place to contain spills. <sup>6</sup>	Adequate spill kit present.				
<b>3.19)</b> How is excess spray mixture or rinse water from the interior of the spray system disposed?	Spray mixture is applied to labeled site at or below labeled rate of application or appropriately stored for later use.		Spray mixture dumped at farmstead or in nearby field or pond. <sup>4</sup>	Satisfactory explanation of procedures for excess spray mixtures.				

PEST MANAGEMENT PRACTICES (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
PESTICIDE APPLICATION	I (CONTINUED)							
<b>3.20</b> ) Where is the exterior of the spray equipment and tractor washed if there is accumulated residue?	Washed in containment or washed in the field in different locations >200' from surface water, catch basins, or tile inlets and >150' from a well.		Washed in the same location without collection, or in the field <200' from surface water, catch basins or tile inlets or <150' from a well.	Satisfactory explanation of procedures for washing spray equipment.				
<b>3.21)</b> How is accumulated spray building wastewater or other comingled rinsates that cannot be directly applied to growing crops disposed?	Applied to a site where there is growing vegetation or where a crop will be planted following labeled setbacks at or below labeled rates. Application areas are rotated and records of contents of material and application site are kept. Or taken to a hazardous waste landfill.		Dumped at the farmstead, in the field, or direct discharge to surface water. <sup>4</sup>	Records of application provided.				
<b>3.22)</b> How is the proper and safe operation of pesticide application equipment ensured?	Equipment is correctly calibrated at least annually, and leaks are minimized to apply intended rate and distribution pattern.		Pesticide application equipment is not properly calibrated. <sup>6</sup>	Date of annual equipment calibration recorded.				
<b>3.23)</b> How are pesticide applications assured to remain on-target and minimize off-target pesticide spray drift?	A written drift management plan is utilized that minimizes off- target drift.	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential of off- target drift. <sup>7</sup>	Written drift management plan on file.				
<b>3.24)</b> How is pesticide spray drift minimized when using an air blast sprayer?	Do not spray when the wind speed is greater than 10 mph. Do not spray during thermal inversions. Cut off spray for missing trees in the row.	r	Drift minimization is not considered when using an air blast sprayer.					

<b>PEST MANAGEMENT PRACTICES (CONTINUED)</b>						
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1 (SIGNIFICANT HAZARD)		Your Risk	
PEST MANAGEMENT PRAC		(CONTINUED)	(SIGNIFICANT HAZARD)	MALAF VERIFICATION		
3.25) What pesticide application records are kept?	Accurate records are maintained of all agricultural crop applications of pesticides for at least three years.	Partial pesticide records are kept. Complete pesticide application records will be kept in the future, for review at the time of reverification.	No pesticide records kept. Chemicals used are known by memory or invoices only.	Pesticide records for the past three years on file (or plans to maintain records). - Date of application - Time of application - Pesticide brand/product name - Pesticide formulation - EPA registration number - Active ingredient(s) - Restricted-entry interval - Rate per acre or unit - Crop, commodity, stored product, or site that received the application - Total amount of pesticide applied - Size of area treated - Applicator's name - Applicator's certification number - Location of the application - Target pest - Carrier volume per acre Additional optional records: - Full or alternate-row application - Weather conditions - Pest monitoring records and predictive model timing used - Follow-up evaluation of action taken		

PEST MANAGEMENT PRACTICES (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>PESTICIDE APPLICATION (</b>	CONTINUED)							
<b>3.26)</b> Are pesticides selected and applications timed to minimize impact on beneficial insects (natural enemies and pollinators)?	Pesticide toxicity to beneficial insects is considered. Pesticide applications timed to avoid injury to beneficial insect populations.		Broad spectrum pesticides used on a calendar schedule and not timed to avoid beneficial insects.					
<b>3.27)</b> Are areas of the farm set aside as habitat for pollinators?	At least two acres is devoted to conservation of native bees and other pollinators by providing flowers through the season, and this is planted with a specific mix of wildflowers for this purpose.	Some areas of the farm are set aside to provide flowers for bees and other pollinators.	No habitat is provided for pollinators.	Note: Cost share is available through enrollment in the USDA pollinator conservation programs (E.g., USDA's Farm Service Agency [FSA] Conservation Reserve Program-State Areas for Wildlife Enhancement [CRP-SAFE] pollinator program).				
<b>3.28)</b> Is habitat provided to enhance populations of natural enemies and beneficial organisms?	Ground cover plantings/mulches used under plants and in drive rows for alternative nutrient management and beneficials. Flowering plants provide for season-long nectar and pollen, and habitat provided to enhance natural enemy populations.	Ground covers/mulches used under plants.	Management of beneficial organism is not considered.					
<b>3.29)</b> Are cultural practices managed to enhance populations of beneficial natural enemies (NE)?	Use alternate-row mowing method for insect control, NE enhancement and pollinator preservation. Maintain mow-free strips around planting perimeter for natural enemy and pollinator preservation.	Maintain mow-free strips around planting perimeter for natural enemy and pollinator preservation.	Beneficial insect management is not considered.					

PEST MANAGEMENT PRACTICES (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
PEST MANAGEMENT PRAC	TICES - PESTICIDE APPLICATION (	CONTINUED)						
<b>3.30)</b> If a soil fumigant pesticide is used on the farm, is a fumigation management plan (FMP) utilized?	A written, site-specific fumigation management plan that meets US EPA requirements is prepared and utilized before fumigation begins.		A FMP is not prepared. <sup>18</sup>					
<b>3.31)</b> How are agricultural pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. <i>All uncontained</i> <i>spills or releases should be</i> <i>reported to the MDARD</i> <i>Agriculture Pollution</i> <i>Emergency Hotline: 1-800-405-</i> <i>0101</i> , or the EGLE Pollution Emergency Alerting System: 1- 800-292-4706.		No contact to state or local authorities. Spill discharges directly to surface water. <sup>4</sup>	Farm emergency plan on file, or local emergency telephone numbers immediately available.				
		WATER US	E					
<b>4.01)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 100,000 gallons per day (70 gallons per minute) for agricultural purposes, has water use been registered and reported to the State of Michigan?	Pump capacity is less than 100,000 gallons per day (70 gallons per minute). Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development by April 1.		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan. <sup>13</sup>	Farm records indicate compliance.				

WATER USE (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>4.02)</b> Have new or increased large quantity water withdrawals been registered (pumping capacity greater than 70 gpm or 100,000 gallons per day for systems established after July 9, 2009)?	The Water Withdrawal Assessment Tool (WWAT) was used to determine if a proposed withdrawal or expansion is likely to cause an Adverse Resource Impact, and to register the water withdrawal with EGLE, prior to beginning the withdrawal. The WWAT and registration site is: www.egle.state.mi.us/wwat/		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan. <sup>13</sup>	Producer's verbal indication of compliance with regulation.				
<b>4.03)</b> Is there an unused well located in the cropping area?	No unused well, or abandoned well properly sealed.	Unused well temporarily abandoned properly: -Meets minimum isolation distances -Is disconnected from any water distribution piping. -Has the top of the casing securely capped.	Unused, unsealed well in cropping area. <sup>1</sup>	Unused well(s) properly sealed or temporarily abandoned.				
IRRIGATION MANAGEMENT PRACTICES (IF Irrigation is not used, skip this section.)								
SYSTEM MANAGEM	ENT							
<b>5.01)</b> Are all sprinkler systems operated to minimize drift and off-target application?	All sprinkler systems are operated to minimize drift and off-target application. No off-target irrigation application present.	Most sprinkler systems operated to minimize drift and off-target application. Few off-target irrigation applications occur.	Sprinkler systems are often operated under windy conditions. Water is sprayed over roads, adjacent property or structures.	No field evidence of off-target applications.				

IRRIGATION MANAGEMENT PRACTICES (CONTINUED)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
SYSTEM MANAGEN	/ENT					
<b>5.02)</b> Is noise control provided when needed?	<i>Noise control is provided</i> when needed.	In most areas of concern, noise control is provided when needed.	Noise control is not provided when needed.			
<b>RECORD KEEPING</b>						
<b>5.03)</b> Are proper irrigation system management records collected and retained for use in decision- making and for reference in case of complaints?	<ul> <li>Irrigation system management records are collected and retained, including:</li> <li>Crop type and location.</li> <li>Source of the water used.</li> <li>Date, method and amount of each irrigation water application.</li> <li>All system inspections and repairs that influence uniformity and leaks.</li> <li>Calibration of fertigation and chemigation equipment, if used.</li> <li>Records on system uniformity evaluation.</li> </ul>	Most of irrigation system management records are collected and retained. Plan to maintain complete irrigation records.	Few or no irrigation system management records are collected or retained.	Irrigation records on file, or plans to maintain records.		
IRRIGATION SCHE	DULING					
<b>5.04)</b> How is irrigation scheduling used to determine when it is necessary to irrigate and how much water should be applied during each irrigation event?	<ul> <li>Irrigation water is scheduled on the basis of:</li> <li>Available soil water for each unit scheduled.</li> <li>Depth of rooting for each crop irrigated.</li> <li>Allowable soil moisture depletion at each stage of crop growth.</li> <li>Measured, estimated or published evapotrans-piration data to determine crop water use.</li> <li>Measured rainfall in each field irrigated.</li> </ul>	Irrigation water is scheduled on the basis of observed soil moisture content and/or daily water crop usage.	Irrigation water is applied at a set rate per week if no precipitation is received.	Scheduling system evident by records.		

Bold Black print indicates a violation of state or federal regulation.

Bold blue italic print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

IRRIGATION MANAGEMENT PRACTICES (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
APPLICATION PRACTICE	S TO AVOID RUNOFF AND LEA	CHING						
<b>5.05)</b> Is there a rain gauge in every irrigated field?	<i>Every field is being managed for irrigation has a rain gauge in the field.</i> Rain events are observed and used in conjunction with irrigation scheduling.	Most fields have a rain gauge; plan to have gauge in all fields.	No rain gauges OR only one rain gauge at the farmstead.	Rain gauges in all irrigated fields, or plan to maintain in all fields.				
<b>5.06)</b> Is irrigation water runoff and ponding minimized?	Sprinkler application rates are below the soil infiltration rate. Nutrient leaching is minimized.	Most sprinkler application rates are below the soil infiltration rate. Some runoff and ponding is present.	Sprinkler application rates exceed the soil infiltration rate. Runoff and ponding is commonly visible.	No indication of significant runoff or ponding in irrigated fields.				
<b>5.07)</b> Have all irrigation systems been evaluated for application uniformity?	All irrigation systems have been evaluated for uniformity. Corrections are made to the system to improve uniformity.	Some irrigation systems have been evaluated for uniformity. Remainder of systems scheduled to be evaluated.	Irrigation system uniformity has not been evaluated.	Uniformity tests on file. Schedule for evaluating systems that have not been evaluated.				
<b>5.08)</b> How is the amount of irrigation water delivered accurately determined?	All water applications are accurately determined: -by knowing actual flow delivered (GPM) and time of application. -or, by using a flow meter. -or, by average output caught with system evaluation.	Water applications are estimated or based on rates given by the irrigation vendor or installation company.	Water application amounts not determined. Excess application occurs.	Irrigation water delivered by irrigation system is accurately determined.				
<b>5.09)</b> Are split applications of nitrogen fertilizer used when nitrogen is applied in an irrigated field?	Split applications of nitrogen fertilizer are made when nitrogen is used in an irrigated field. N application does not exceed MSU recommendations.	T	Nitrogen fertilizers are applied through irrigation on the basis of visual crop symptoms. Total N applied exceeds MSU recommendation.					

<b>IRRIGATION MANAGEMENT PRACTICES (CONTINUED)</b>					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
APPLICATION PRACTICE	ES TO AVOID RUNOFF AND LEA	CHING (CONTINUED)			
<b>5.10)</b> How far is the fertilizer/pesticide chemigation storage or fertigation/chemigation system located from surface water (ponds, streams, rivers, drains, etc.)?	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate chemigation storage or fertigation/chemigation system isolation from surface water.	
<b>5.11)</b> Is excess irrigation avoided?	Irrigation water applications in excess of the quantity of water needed to replace the soil/substrate moisture deficit are avoided.	Excess irrigation water applications may occur occasionally.	Excess irrigation water applications are common.		
WELLHEAD PROTECTIO	N				
<b>5.12)</b> Is the irrigation well adequately protected from contamination from pesticides and fertilizers when fertigation and chemigation are used?	Anti-backflow device is installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and agricultural chemical/fertilizer storage and preparation areas are at least 150 feet from the well, or at least 150 feet from the well, or at least 50 feet from the well, with secondary containment. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Anti-backflow device is installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and agricultural chemical/fertilizer storage and preparation areas have secondary containment, but storage and preparation areas are less than 50 feet from the well. <sup>1</sup> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	No anti-backflow device, <sup>1</sup> no secondary containment and less than 150 feet isolation distance from irrigation well. <sup>1</sup>	Adequate protection of the well provided.	

IRRIGATION MANAGEMENT PRACTICES (CONTINUED)						
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
WELLHEAD PROTECTION (CONTINUED)						
<b>5.13)</b> If the irrigation well is interconnected with a surface water source, is the well protected from backflow (back- pressure and back- siphonage) from the surface water into the well?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap that protects the well from back- pressure and back-siphonage into the well. Air gap is twice the diameter of the fill pipe or six inches, whichever is greater.	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve double check valve assembly, or chemigation valve with an internal air gap, to protect some irrigation water sources. Air gap is twice the diameter of the fill pipe or six inches, whichever is greater.	No anti-backflow device installed. <sup>1</sup>	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap.		
<b>5.14)</b> How far is the irrigation fuel tank from a storm drain, surface water or designated wetland?	Tank is more than 50 feet away or has some other engineering control present that would control or divert a spill from reaching a storm drain, surface water or designated wetland.		Tank is 50 feet or less away from surface water <sup>16</sup> and without an engineering control in place.	Appropriate fuel storage isolation distance from surface water. Engineering control, such as double- walled tank or dike.		

<b>IRRIGATION MANAGEMENT PRACTICES (CONTINUED)</b>						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	YOUR RISK	
WELLHEAD PROTEC	TION					
<b>5.15)</b> Is a horizontal sock well (HSW) present in the cropping system?	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meets isolation distance requirements the entire horizontal length of the HSW -Both ends of the HSW are identified.	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meets isolation distance requirements the entire horizontal length of the HSW, except for chemigation/fertigation systems during active use season that have <i>backflow prevention</i> <i>device installed</i> , including a reduced pressure zone (RPZ), double check valve assembly, or chemigation valve with an internal air gap installed and secondary containment. -Both ends of the HSW are identified	HSW is being used for human consumption, shares common piping with a potable water supply, does not have both ends clearly identified, or does not meet State of Michigan, for isolation distances, or MAEAP Standard, for its entire horizontal length. <sup>1,3</sup>	Low or medium risk criteria are present or demonstrated.		

A boxed risk level indicates the level required for environmental assurance verification.

OTHER ENVIRONMENTAL RISKS IN THE CROPPING SYSTEM						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>6.01)</b> Is a live, restricted, or prohibited species on the land or in the waters owned by producer?	Such species is not known to be present.	Such species is present, but was not knowingly introduced, It was introduced under a permit, OR It is possessed under a permit.	Such species is present because it was knowingly introduced without a permit, OR It is possessed without a permit. <sup>14</sup>			
<b>6.02)</b> Does the farm business have a food safety plan that is followed to reduce the risk of foodborne illness?	A written food safety plan exists and is being implemented.	Food safety practices are generally followed, but not documented in a written plan.	A food safety program is not available.	Note: This is a GAP (Good Agricultural Practices) requirement. USDA will not certify the farm without a documented food safety program. Not required by Food Safety modernization Act but is recommended.		
<b>6.03)</b> Does the farm business have a person designated to implement and oversee a food safety plan?	The farm business has a designated food safety person(s) and they have gone through the Produce Safety Alliance grower training or equivalent.	The farm business has a designated food safety person(s).	There is no designated food safety person.	Note: This is a GAP (Good Agricultural Practices) requirement. USDA will not certify the farm without a food safety designee.		
<b>6.04)</b> Are there other activities, products, processes/equipment, services, byproducts and/or wastes in the cropping areas that pose contamination risks to groundwater or surface water?	No risk(s) identified.	Risk(s) identified and plan to mitigate the contamination risk(s).	No plan to mitigate contamination risk(s).	No other environmental risks found in cropping areas.		
<b>6.05)</b> Are portable toilets located in a place that minimizes the risk for product contamination in the case of tipping, leaking, or malfunction?	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets, or other water resources, and are addressed in the Emergency Plan and spill kits are available.	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources.	A spill or leak from a portable toilet may run into nearby surface water or water wells in the event of a leak or spill.	No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.		

### Table 1. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: Environmental Assistance Hotline —1-800-622-9278, and MDARD Information — 1-800-292-3939.

Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Air use permit	Permit to install and operate equipment or processes which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Farm motor vehicle fuel storage tanks greater than 1,100 gallon capacity (above- and below-ground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged) and any livestock facility over 5,000 animal units.	5 years	EGLE Water Resources Division	
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, under water.	Before construction	EGLE/Water Resources Division	N.A.
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/Pesticide and Plant Pest Management Division (PPPM)	
Private pesticide applicator certification	Any persons using or supervising the use of restricted-use pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/PPPM	
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or ground- water that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	
Identification guides for some species regulated by Part 413.	http://mnfi.anr.msu.edu/invasive-species/aquaticsfieldguide.pdf https://mnfi.anr.msu.edu/invasive-species/InvasivePlantsFieldGuide.pdf			

Table 1. Federal, state and local environmental requirements for operation of this farm business (continued).						
Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date		
Water Withdrawal Assessment – new or increased large quantity withdrawal	The Water Withdrawal Assessment Tool (WWAT) is designed to estimate the likely impact of a water withdrawal on nearby streams and rivers. Use of the WWAT is required of anyone proposing to make a new or increased large quantity withdrawal (over 70 gallons per minute) from the waters of the state, including all groundwater and surface water sources, prior to beginning the withdrawal. The WWAT and registration site is <u>www.egle.state.mi.us/wwat/</u>	Before construction	EGLE Water Resources Division	The registration is valid for 18 months.		
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulation, ordinances and codes.	Before construction	Local health department			
Environmental Guidelines	Description	Frequency	Administering Agency	Your Expiration Date		
Cranberry production	The Michigan Right to Farm Act (Act 93 of 1981) requires the	Guidelines	MDARD	N.A.		
Irrigation water use	practices (GAAMPs). Agricultural producers who voluntarily follow these	annually				
Farm market	litigation. The GAAMPs are reviewed annually. The latest GAAMPs can					
Manure management and utilization	be decessed al. www.mongan.gov/matra.					
Nutrient utilization						
Pesticide utilization and pest control						
Site selection and odor control for new and expanding livestock production facilities						
MAEAP verification: livestock, farmstead, and cropping systems	MAEAP systems information and requests for verification available at <b>www.maeap.org</b> or by calling MDARD <b>517-284-5609</b> .	Five years	MDARD			

Table 2. Legal cita	Table 2. Legal citations for environmental risks in Crop+A+Syst for Orchards and Fruit Producers				
Footnote	Michigan Law	Description			
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems			
2		Part 138 Medical Waste Regulatory Act			
3	Safe Drinking Water Act, Public Act 399 of 1976				
4	Natural Resources and Environmental Protection Act, Act 451 of 1994	Part 31: Water Resources Protection			
5		Part 55: Air Pollution Control			
6		Part 83: Pesticide Control			
7		Part 111: Hazardous Waste Management			
8		Part 115: Solid Waste Management			
9		Part 117: Septic Waste Servicers			
10		Part 121: Liquid Industrial Waste			
11		Part 169: Scrap Tires			
12		Part 201: Environmental Response			
13		Part 327: Great Lakes Preservation			
14		Part 413: Wildlife Conservation			
15	Bodies of Dead Animals Act, Public Act 239 of 1982 as amended				
16	Fire Prevention Code Public Act 207 of 1941	Storage and Handling of Flammable and Combustible Liquids			
17	Grade A Milk Law, Public Act 266 of 2001				
	Federal Law				
18	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)				
19	Title III of the Superfund Amendments and Reauthorization Act of 1986, also known as the Emergency Planning and Community Right-to-Know Act				
20	Worker Protection Standard for Agricultural Pesticides				
21	Clean Water Act				
22	Food Safety Modernization Act Food Safety Rule				

		ADDITIONAL NOTES:
	IGITUDE: RANGE: lace that receives mail.)	STATE: MICHIGAN (ONLY) (Mailing Address Ma FARM SITE ZIP CODE: FARM SITE COUNTY: FARM SITE TOWNSHIP: LATITUDE: LON SECTION: TIER: LON (If there is no mailbox at the farm site location or not a p FARM MAILING ADDRESS: TIER: (MAILING) STREET: (MAILING) CITY: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:
	nge, <u>and</u> Latitude and Longitude)	FARM INFORMATION FARM NAME: (If no physical address, please use Section, Township, Rai FARM SITE STREET ADDRESS: FARM SITE CITY:
	HOME PHONE NUMBER:	OWNERS CONTACT INFORMATION         SALUTATION: (Circle one)         MR or MRS or MS         FIRST NAME:         LAST NAME:         CONTACT ROLE:         CONTACT ROLE:         MR or MRS or MS         FIRST NAME:         MR or MRS or MS         FIRST NAME:         MR or MRS or MS         FIRST NAME:         LAST NAME:         MR or MRS or MS         FIRST NAME:         CONTACT ROLE:         EMAIL ADDRESS:
35	e or Home Address)	BUSINESS NAME: BUSINESS OWNER NAME: BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION: MAILING) STREET: (MAILING) STREET: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:

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aRMSTEAD Jel Storage: (Gallons)	(Pounds)
ertilizer Storage: (Gallons)	(Pounds)
esticide Storage: (Gallons)	(Pounds)
armstead Wells (each):	I
HS Threshold: Yes or No	
ROPPING MP (Acres)	
lanure Applied (Acres):	1
ertilizer Applied (Acres):	I
esticide Applied (Acres):	
uffer Strips (Linear Feet):	
over Crops (Acres):	
o Till (Acres):	
rade Stabilization (Each):	
lanure Applied (Gallons/Year):	
lanure Purchased (Gallons/Year)	
lanure N (Lbs/Year):	
lanure P (Lbs/Year):	
lanure K (Lbs/Year):	
VESTOCK VMP (Acres):	
VMP Written By:	
VMP Reviewed By:	
ame of Farm(s) Covered In CNMI	
lanure Applied (Acres):	
ertilizer Applied (Acres):	
esticide Applied (Acres):	ļ
rigation (Acres):	
uffer Strips (Linear Feet):	

GREENHOUSE         NMP (Square Feet):	
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# FOREST, WETLANDS, AND HABITAT

Managed as Buffers (Acres):	Management for Invasive Species (Acres):	Restored Non-Wetland Habitat (Acres):	Restored/Improved Wetland Habitat (Acres):	Wetland (Acres)	Grassland (Acres)	Forestland (Acres):	Date Plan Expires:	Date Plan Written:	Plan Writer:	Plan Type: Forest Wetland Habitat All Thre	Land Management Plan (Acres)
										nree	

						Notes:

Milkhouse Discharge (Gallons/year): Livestock Exclusion (Linear Feet):

Silage Pad (Acres):

Manure K (Lbs/Year): Manure P (Lbs/Year): Manure Manifested (Gallons/Year): Manure Produced (Gallons/Year): Manure Sold (Gallons/Year):

Manure N (Lbs/Year):

Grade Stabilization (Each):

Conservation Tillage (Acres):

No Till (Acres):

Cover Crops (Acres):

Farm Name:

Animal Unit (AU) Conversion	Factors by Animal	Type and Class	
ANIMAL TYPE	CLASS	Average Animal Weight	QUANTITY
	CALF	450	
	HIGH FORAGE	750	
1 000 Reef cattle or cow/calf pairs = 1 arge CAFO	HIGH ENERGY	750	
	HIGH FORAGE	1100	
	HIGH ENERGY	1100	
	COW	1000	
	CALF	150	
	CALF	250	
700 Mature dairy cattle (whether milked or dry cows), or	HEIFER	750	
1,000 Veal calves = Large CAFO	HEIFER	1000	
	LACTATING COW	1400	
	DRY COW	1400	
	VEAL	250	
30,000 Laying hens or broilers liquid, or	DRY SYSTEM		
82,000 Laying hens dry = Large CAFO	LIQUID SYSTEM		
	PULLETS		
55,000 turkeys = Large CAFO	ALL		
500 horses = Large CAFO	ALL	1000	
	NURSERY PIG	25	
	GROW-FINISH	150	
2,500 swine each weighing over 55 pounds, or 10,000 swine weighing less than 55 pounds = Large	GESTATING	275	
CAFO	LACTATING	375	
	BOAR	350	
	OTHER		
10,000 sheep or lambs	ALL	100	
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	·:-
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	

		Crop Comn	nodities		
CROP NAME	ACRES	CROP NAME	Acres	CROP NAME	Acres
Alfalfa		Cucumbers, Fresh		Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots		Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries	-	Grapes, Juice		Rye	
Carrots		Grapes, Wine		Small Grain, Other	<del>.</del> .
Cherries, Sweet		Green Beans	5	Soybeans	-
Cherries, Tart		Greenhouse, Annual		Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed		Greens, Herbs		Sunflower	20
Corn, Grain		Hay/Pasture		Vegetable, Other	
Corn, Seed	N N	Hops		Wheat	N 9
Corn, Silage		Mixed Garden		Other:	-
Corn, Sweet		Nursery		Other:	
	in and a second s				
Notes:		Note: Express acres to th	e closest quarter a	cre.	
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### MICHICAN STATE WICHICAN STATE X T I R S A J V I N U

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# Michigan Agriculture Environmental Assurance Program

Cropping Systems Subcommittee <u>Summary of Proposed Amendments for 2022 Cropping – Field Crop and Vegetables</u> (Unified Assessment)

Number	Approval Date	Reason for Change
		No
		Recommended
		Changes
		Changes

# **CROP+A+SYST** FOR FIELD CROP AND VEGETABLE PRODUCERS EAS 110 • October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609







		Crop	+A+Syst		
	Cropping S	ystem Im	provement Action Plan		
Risk question	List high-risk practice(s) from Crop+A+Syst and medium-risk practices that do not meet MAEAP	Required for MAEAP verification?	Management practice to reduce risk. (Include potential sources of	Actio Planned completion	n plan Indicate date when
_	requirements		technical and financial assistance.)	date	completed
1.04	(example) Realistic yield goals not calculated for all fields.	Yes	Summarize yield histories by field to establish realistic yield goals for corn, soybeans and wheat.	Feb. 2021	<b>(√)</b> Completed Feb. 20, 2021
	·			(continued	on next page)

# Crop+A+ Syst

# Cropping System Improvement Action Plan (continued)

	List high-risk practice(s) from	Required for		Actior	n plan
Risk question	Crop+A+Syst and medium-risk practices that do not meet MAEAP requirements	MAEAP verification?	Management practice to reduce risk. (Include potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed
				(continued on	next page)

# Crop+A+ Syst

# Cropping System Improvement Action Plan (continued)

Risk	List high-risk practice(s) from	Required for		Actio	n plan		
question	Crop+A+Syst and medium-risk practices that do not meet MAEAP requirements	MAEAP verification?	Management practice to reduce risk. (Include potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed		
l understar basis that l	nd that this cropping system assessment (Crop• have disclosed, to the best of my knowledge, a	A+Syst) and cor all information pe	responding Cropping System Improvement Acti rtaining to my cropping operations.	on Plan were deve	loped on the		
Street	aduress.						
		Crone A + Syst conducted by:					
Stata	Zin	Nome					
Watorshop			Titlo				
Watershet							
			Organization	Date			
MAI	EAP Verification Action Plan			Date			
Tarc	et date for MAEAP verification of Croppin	g System					
Tarc	et date for MAEAP verification of Farmste	ad System					
Tarc	et date for MAEAP verification of Liveston	- ck System					
Tarc	et date for MAEAP verification of <b>Forest</b>	Wetlands. & H	abitat System				
		,					

For MAEAP verification, contact MAEAP office at the Michigan Department of Agriculture and Rural Development: 517-284-5609.

# Crop+A+ Syst

### Introduction

In 2011, the Michigan Agriculture Environmental Assurance Program (MAEAP) was codified in law as set forth in P.A. 451, Part 82 of the Natural Resources & Environmental Protection Act (NREPA). The Crop+A+Syst tool is updated annually to incorporate the current MAEAP Standards for this system. The tool also includes applicable Generally Accepted Agricultural and Management Practices (GAAMPs) established under Michigan Right to Farm. The completed A Syst tool and associated plan and practices meet the requirement of a Conservation Plan, as defined in Part 82 of NREPA and referenced in Part 87 of NREPA. This statute also ensures producer confidentiality for any information provided in connection with the development, implementation or verification of a conservation plan or associated practices and is exempt from disclosure under the Freedom of Information Act.

Crop+A+Syst will assist a producer to develop and implement a management plan that prevents contamination of groundwater and surface water resources and maintains economic crop production. Practices will be consistent with identified Michigan Right to Farm guidelines and applicable state and federal environmental regulations.

Nutrients used in agricultural production come from chemical fertilizers and natural sources such as manure, legumes and biosolids (sewage sludge). All nutrients, whether synthetic or naturally occurring, can become mixed with surface water or groundwater by natural processes such as runoff and leaching. Nitrate contamination of groundwater and phosphorus contamination of surface water can be problems in Michigan. Crop+A+Syst will assess current nutrient management practices and identify alternative management practices that, when implemented, will reduce nutrient losses to the environment.

Virtually all crops produced in Michigan may be threatened by serious pest problems – weeds, insects and disease-producing organisms. Producers are encouraged to adopt pest management practices that achieve the desired commodity quality and yield while minimizing any adverse effects on non-target organisms, humans, and soil and water resources.

Crop+A+Syst will assess current pest management practices and identify alternative management practices that, when implemented, will reduce negative impacts to the environment.

### The Michigan Agriculture Environmental

Assurance Program is a comprehensive, proactive and voluntary agricultural pollution prevention program. It takes a systems approach to assist producers in evaluating their farms for environmental risks. Environmentally assured farms are eligible for various incentives and recognitions.

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the Michigan Department of Agriculture and Rural Development (MDARD) Web site: www.michigan.gov/mdard. Producers who complete the Crop+A+Syst assessment will be able to determine what management and record-keeping changes (if any) will be needed for their Cropping System to be environmentally assured through MAEAP. Once a producer develops and implements a Cropping System Improvement Action Plan to address the risks indicated by the Crop+A+Syst assessment, he or she can contact MDARD at 517-284-5609 to request a MAEAP Cropping System verification inspection. An MDARD inspector will schedule a site visit to complete the verification process.

P.A. 451, Part 82, ensures the confidentiality of the producer information provided to the MDARD for verification. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

The owner of a MAEAP verified Cropping System will be eligible for various incentives and can enjoy the peace of mind that comes with knowing that Cropping System practices are consistent with the identified current Right to Farm GAAMPs. Verified Cropping Systems are positioned to achieve regulatory compliance with state and federal environmental laws.

Similar incentives are available for producers who have environmentally assured their other systems. Contact the local conservation district, MSU Extension or Natural Resources Conservation Service (NRCS) representative for a list of currently available incentives and information on how to get started.

# Crop+A+Syst

# What is the Crop Assessment System?

The Crop Assessment System (Crop •A•Syst) is a series of risk questions that will help assess how effectively crop management practices protect groundwater and surface water resources. The risk questions are grouped in the following sections:

Cropping System Improvement Action Plan Nutrient Management Practices – General 1 2 Soil and Water Conservation Practices 3 Pest Management Practices 4 Water Use Reporting 5 **Crop-specific Management Practices Pasture Management Practices** 6 7 **Irrigation Management Practices** 8 Other Environmental Risks in the Cropping

Each risk question assesses the impact of cropping practices on groundwater and surface water resources. The risk question answers indicate whether management practices have a low, medium or high risk of contamination. Producers are generally recommended to adopt the low-risk management practice.

System

Risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**. The numbered footnotes indicate what regulation(s) is (are) violated (refer to Table 2, page 40). Risk questions that address management practices covered by the GAAMPs indicate a management practice consistent with a specific GAAMP with *blue bold italic print*.

Finally, a blue box indicates the management level(s) required for MAEAP verification.

MAEAP management requirements are aligned with state and federal environmental regulations. The GAAMPs and environmentally based agronomic management practices are supported by research. The records or evidence that indicate the approved management practices have been implemented on the farm are listed in the far-right column. This evidence will provide the basis for awarding environmental assurance through MAEAP.

Agricultural representatives (both public and private) can assist farmers to make the appropriate management changes to become environmentally assured through MAEAP.

# How Does Crop+A+Syst Work?

- 1) Select all relevant risk question sections for the farm.
- 2) Answer the risk questions by selecting the answer that best describes management practices used on the farm. Indicate the risk level in the column to the right. Skip any questions that don't apply to the Cropping System.

Note: for MAEAP verification, complete the risk questions with a Crop+A+Syst trained individual. MAEAP technicians are located in the conservation district offices.

- 3) After completing each section of risk questions, list the practices that present a high risk of contaminating groundwater and surface water resources in the Cropping System Improvement Action Plan (printed inside the front cover of the bulletin). Also include any medium-risk practices that do not meet MAEAP verification requirements.
- 4) In the Cropping System Improvement Action Plan, list:
  - Management practice(s) that are planned for implementation that will reduce the identified risk.
  - Sources of technical and financial assistance.
  - Target dates for accomplishing the changes.
  - Target date for MAEAP verification of the Cropping System.

# **A Few Final Words**

The key to Crop+A+Syst is that, once environmental risks are identified, the plan is implemented to reduce the risk(s). Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow. Once a plan is developed and changes are implemented to address the risks, the farm is ready for MAEAP Cropping System verification.

	NUTRIENT N	IANAGEMENT PR	ACTICES - GENE	RAL	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.00)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint or the concern was not verified or the concern was resolved.		There was a formal Right to Farm Complaint and the concern was not resolved.	Producer's verbal indication of compliant history.	
<b>1.01)</b> How often are fields tested for nutrient levels (P, K, Ca, Mg and pH)?	All fields are sampled and tested on a regular basis, at 1 to 4 years, depending on crops being grown, and the cropping system.	Most fields are sampled and tested every 1 to 4 years. Producer plans to bring all field soil tests up to date. Manure is not applied to fields without a current soil test.	Fields have not been tested within the past 4 years.	Field names or map. Acres in the cropped portions of the field. Up- to-date soil test reports, or schedule to bring all test us to date.	
<b>1.02)</b> Do soil sampling procedures adequately represent field conditions?	One composite sample is taken from uniform field areas of 15 to 20 acres or from uniform management areas.	One composite sample is taken from uniform field areas of 20 to 40 acres.	One composite sample is taken from areas greater than 40 acres.	Predominant soil types/soil maps. Cropping histories. Proper soil sampling procedure.	
<b>1.03)</b> Is the soil pH maintained in the desirable range for the crop(s) being grown?	When crops with different target pHs are being grown in rotation, soil pH is maintained for the crop with the highest target pH. OR, For perennial crops, soil pH is maintained in desirable range.	The soil pH is adjusted for the current crop. Rotational crops are not considered.	Soil pH is not maintained in the desirable range.		
<b>1.04)</b> How are crop yield goals established?	Realistic yield goals (achieved 50% of the time) are established based on soil potential and level of crop management.	No yield goals are established.	Excessively high yield goals that have never been achieved.	Previous crops grown over the past three to five years. Actual harvest yields or estimated yields. Running average yield for each of the crops commonly grown in the field. Realistic yield goals for each crop.	

**Bold black print** indicates a violation of state or federal regulation.

Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

Nu	TRIENT MANAGE	EMENT PRACTICE	e <mark>s – GENERAL</mark> (o	CONTINUED)	
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.05)</b> How are all sources of nutrients considered when making fertilization decisions?	Credit taken for nutrients supplied by organic matter, legumes and manure or other biological materials (biosolids). Fertilizer rates are reduced accordingly.	When organic matter, legumes manure or other biological materials (biosolids) are used, fertilizer rates are sometimes reduced.	When organic matter, legumes, manure or other biological materials (biosolids) are used, rates are not reduced.	Written records indicate nutrient credits utilized.	
<b>1.06)</b> How are fertilizer application rates determined?	Consistent with Michigan State University (MSU) recommendations. When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used.	Fertilizer rates are based on soil testing lab recommendations but not consistent with MSU recommendations.	Fertilizer application rates not based on soil testing. Application rates often or always exceed MSU recommendations or crop removal rates.	Applications consistent with MSU recommendations (MSU soil test printout or calculated MSU recommendations on file.) When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used.	
<b>1.07)</b> How are nutrient management plans for each field annually developed and followed?	Annual nutrient plan is developed for each field that meets crop nutrient needs and minimizes loss of nutrients to the environment.	A nutrient plan is developed each year for each crop species with like yield goal and crop rotation. Soil tests are up to date.	Nutrient plan is not developed, or the same plan is used for more than four years.	Annual nutrient plan by field or by crop grown.	
<b>1.08)</b> Is fertilizer application equipment checked for proper adjustment?	Application equipment is checked for rate of application and placement. Over, and under applications are monitored and corrected.		Application equipment is not checked.	Name of person responsible for fertilizer applicator adjustments and the dates of adjustments.	

**Bold black print** indicates a violation of state or federal regulation.

Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

Nu	TRIENT MANAGE	MENT PRACTIC	es – GENERA	L (CONTINUED)	
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.09)</b> What soil nutrient management records are kept?	Records of soil test reports and quantities of nutrients applied to individual fields are maintained. Also crop yields are recorded for evaluating performance and setting future yield goals.	Partial nutrient management records are kept. Complete nutrient management records will be kept in the future, for review at time of reverification.	Minimal or no nutrient management records kept.	Three years of records – or five years, if applying manure - or plans to begin keeping records. Soil fertility tests and/or plant analysis results. Previous crop grown and a yield harvested. Date(s) of application(s). Nutrient composition of fertilizer or other material used. Amount of nutrient-supplying material applied per acre. Method of application and placement of applied nutrients. Vegetative growth and cropping history of perennial crops.	
<b>1.10)</b> When not in use, where are loaded planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle is returned to a secure location when not in use. Fertilizer and pesticides (including treated seed) are properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide (including treated seed) supply vehicle is left in an unsecured location. Or, Fertilizer and pesticides are stored less than 150 feet from any well. <sup>1</sup>	Map showing where vehicle should not be parked adjacent to any well. No evidence vehicles left in an unsecured location.	
<b>1.11)</b> Are poly tanks used as intended?	Yes, Vertical (upright) tanks are used for stationary fertilizer storage, and horizontal tanks with tie- down features are used for stationary storage and/or transportation application.		Vertical tanks are used as mobile nurse tanks or other transportation applications. Vertical tanks are designed for stationary storage.		

Nu	TRIENT MANAGE	MENT PRACTICE	es – GENERAL (	(CONTINUED)	
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
<b>1.12)</b> Are poly tanks inspected periodically for structural soundness?	Poly tanks are inspected for crazing (spider webbing) and cracking in the spring and again at the end of the season. Damaged tanks are replaced or used for water.	Poly tanks are inspected and periodically replaced as necessary	Tanks are not inspected regularly. High potential for tank failure is present.		
NITROGEN MANAGEMENT	PRACTICES				
<b>1.13)</b> How are Nitrogen (N) fertilizer applications matched to the demand of the crop and the conditions of the soil?	Split or multiple nitrogen fertilizer applications are based on pre-sidedress nitrate tests (PSNT) or N credits for manure, legumes and other biological materials.	Split or multiple nitrogen fertilizer applications are based on past practices.	Single application is made where leaching or runoff potential is high.		
PHOSPHORUS MANAGEME	INT PRACTICES			I	
<b>1.14)</b> How are Phosphorus (P) fertilization rates determined?	Based on soil tests or plant tissue analysis using Michigan State University recommended rates.	P fertilization is based on past practices, without regard to soil test P levels.	P fertilization is based on applying as much as is affordable to ensure the best possible yields.	P management consistent with Nutrient Management GAAMPs. Note: When soils have a Bray P1 test of 80- 100 lbs./acre (40 to 50 ppm), fertilizer recommendations for P205 will likely be zero for most crops and yields grown in Michigan.	

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).
NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>1.15)</b> If there are instances where dilute wastewater (≤1% solids) is applied to fields testing over 150 ppm P soil test, can the farmer document appropriate conditions for application?	-Growing plants in the application area. -Wastewater application rate supplies ≤ 75% of P crop removal. -Annual sampling of wastewater P content. -Soil P test levels decline over time. -No other P applied to field. -Tile drained fields monitored for manure flow.	Appropriate conditions are partially met.	Appropriate conditions for dilute wastewater application are not present.	Appropriate dilute wastewater management demonstrated. The CNMP guidelines and NRCS Nutrient Management Practice Standard 590 require the use of the Michigan Phosphorus Index (PI) when wastewater is applied to fields testing over 150 ppm P soil test. A PI of 17 or lower is needed.			
<b>1.16)</b> Where is the Phosphorus (P) fertilizer placed?	For row crops, all P is banded as a starter fertilizer at planting time. For other crops, P is surface broadcast but incorporated when possible to prevent runoff.	P fertilizer is surface applied and not incorporated where runoff potentials are limited.	P fertilizer is surface applied and not incorporated where runoff potentials are high.				
<b>1.17)</b> How often is commercial Phosphorus (P) fertilizer applied on frozen or snow-covered fields?	P fertilizer is never broadcast on frozen or snow-covered fields.	Broadcast applications are avoided on frozen or snow-covered fields and are not part of the nutrient management plan.	P fertilizer is often broadcast on frozen or snow-covered fields.	Date(s) of application(s) of P fertilizers.			

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)									
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk				
MANURE MANAGEMENT	PRACTICES (IF YOU DO NOT U	SE MANURE, SKIP THIS SECTION.	)						
<b>1.18)</b> What manure management records are maintained?	Complete application records of manure analysis, soil test results and rates of manure application for individual fields are maintained.	A minimum of one season of manure application records, or partial application records have been kept. Complete manure application records will be kept immediately and will be available for review at the time of re- verification.	Minimal or no records are maintained.	<ul> <li>Additional nutrient management records that are needed.</li> <li>Date(s) of manure application and incorporation when applicable.</li> <li>Rate of manure application.</li> <li>Weather conditions during application of manure (e.g., sunny, 70°F).</li> <li>Field conditions during application of manure (wet, dry, frozen, etc.)</li> <li>Manure/wastewater quantities produced and nutrient analysis results.</li> <li>Records of rental or other agreements for application of manure/wastewater on land not owned by the producer.</li> <li>Records of manure/wastewater sold or given away to other landowners.</li> </ul>					
<b>1.19)</b> How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium N, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown or not considered.	All manure analyses or book values on file.					
<b>1.20)</b> How are desired manure application rates achieved?	Manure analysis (book value, manure test or mass balance) and <i>field</i> <i>application rates are</i> <i>known.</i>		Manure application rate is not known.	Rate of manure applied known for all spreaders. Records indicate date of calibration.					

NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
MANURE MANAGEMENT	PRACTICES (IF YOU DO NOT U	SE MANURE, SKIP THIS SECTION.						
<b>1.21)</b> How is manure, and/or compost, generally applied to fields?	Manure, and or compost, is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, cover crops, perennial crops etc.) are used to protect against runoff and erosion losses to surface waters.	Manure, and/or compost, is generally surface applied and conservation practices are employed to reduce the risk of runoff.	Manure, and/or compost, is applied in a manner that results in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches or <b>discharge directly to</b> <b>surface water.</b> <sup>4</sup>	Manure, and/or compost, application records.				
<b>1.22)</b> How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	Manure is incorporated within 48 hours or injected. Or, surface applications are not done within 150 feet of surface water. Or, filter strips, riparian buffer strips, and other conservation practices are maintained between fields and surface waters on the farm and around surface water inlets.	Conservation practices are maintained on some fields.	Manure is applied within 150 feet of surface waters and not incorporated without conservation practices. And/or manure occasionally reaches neighbor's property.	Field maps with setbacks and conservation practices identified. Records of manure incorporation.				
<b>1.23)</b> In the field, how is manure <u>temporarily</u> stockpiled in relation to surface water?	Manure stockpiles are kept at least 150 feet from surface waters or areas subject to flooding unless conservation practices are used to protect against runoff and erosion losses to surface waters.		Manure stockpiles are closer than 150 feet to surface waters or areas subject to flooding, and conservation practices are not used to protect against <b>runoff and erosion losses</b> <b>to surface waters.</b> <sup>4</sup>	Appropriate temporary manure stacking demonstrated in the field for surface water protection.				

NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
MANURE MANAGEMENT	PRACTICES (IF YOU DO NOT USE	MANURE, SKIP THIS SECTION.)						
<b>1.24)</b> In the field, what management practices are used to reduce odors and pests from manure <u>temporarily</u> stockpiled?	Stockpiled manure is at least 150 feet away from non-farm homes and stockpiled manure is covered with a tarp, straw, woodchips, or other materials, or additives are used to reduce odors and pests.	<i>Stockpiled manure is at least 150 feet away from non-farm homes.</i>	Stockpiled manure is closer than 150 feet to non-farm homes.	Appropriate manure stacking demonstrated for odor and pest control.				
<b>1.25)</b> In the field, how long is manure <u>temporarily</u> stockpiled?	Manure is spread as soon as field and weather conditions allow, and does not exceed six month, or if covered with an impermeable cover, twelve months.		Manure stockpiled for more than six months without a cover, or more than twelve months with an impermeable cover.	Manure not stockpiled for more than 365 days. Refer to manure application records. For CNMP's manure may be stockpiled in the field for 20 days on soils with a High N Leaching index and 90 days on soils with a Medium N Leaching index. NRCS Standard 634.				
<b>1.26)</b> How are manure nitrogen (N) application rates managed?	Manure and N fertilizer are applied at rates that do not exceed the N requirements of the crop and are credited toward fertilizer needs. Presidedress nitrate test (PSNT) may be part of the program.	Manure nitrogen credits are considered but not to their full extent.	Commercial nitrogen is not reduced to account for manure nitrogen credits.	Manure rates do not exceed crop N needs, consistent with GAAMPs.				

A boxed risk level indicates the level required for environmental assurance verification. Bold black print indicates a violation of state or federal regulation. Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
MANURE MANAGEMENT	PRACTICES (IF YOU DO NOT USE	MANURE, SKIP THIS SECTION.)						
<b>1.27)</b> How are manure phosphorus (P) application rates managed?	High testing fields (>150 ppm Bray P1) do not receive manure, and fields between 75 and 150 ppm P receive no more than four years, crop P205 removal if one-year application, is impractical.	High testing fields (>150 ppm Bray P1) removed from spreading plan, but crop removal rates are not followed.	Manure application rates are not based on soil tests and/or crop removal rates.	Manure rates do not exceed crop P needs. If developing a CNMP, refer to USDA-NRCS 590 Standard.				
<b>1.28)</b> How are fields selected for spreading on frozen and snow-covered ground?	No applications on frozen or snow-covered ground without injection or incorporation.	Manure Application Risks Index (MARI) has been completed for each field receiving manure on frozen or snow-covered ground. Frozen or snow-covered fields receiving manure have met MARI criteria for Low or Very Low rating and <i>no liquid</i> <i>manure is applied on slopes</i> <i>greater than 3%, and no</i> <i>solid manure is applied to</i> <i>slopes over 6%.</i>	Applications are made to fields where runoff to water resources may occur.	MARI completed for each field receiving winter manure application, or spreading plan does not include winter spreading.				
<b>1.29)</b> How are field tiles managed to prevent manure discharge to surface water?	Liquid manure is prevented from reaching tile lines. Management practices are in place to prevent runoff to surface inlets. Tile line outlets are monitored.		Tile outlets are not monitored for manure discharge.	Tiled field identified on map. Record of tile flow before and after application (flow, rate, color and odor).				

A boxed risk level indicates the level required for environmental assurance verification.

NUTRIENT MANAGEMENT PRACTICES – GENERAL (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>BIOSOLIDS MANAGE</b>	MENT PRACTICES (IF YOU DO N	NOT USE BIOSOLIDS, SKI	P THIS SECTION)				
<b>1.30)</b> Does the farm have an odor management plan?	An odor management plan has been developed and implemented. <i>Farm is</i> <i>managed to minimize odor</i> <i>impacts upon neighbors.</i>	A partial odor management plan has been developed and implemented.	No odor management plan has been developed.				
<b>1.31)</b> Has nutrient content information on the biosolids applied to the farm been received?	Received laboratory analysis for percent dry matter (solids) ammonium N (NH <sub>4</sub> -N) and total N, P and K, and utilize nutrient credits when planning nutrient program.		Have not received any biosolids analysis information.	Biosolids analyses on file.			
<b>1.32)</b> How are the rates of biosolids (in gallons or dry tons per acre) and applied biosolids nutrients known?	Received actual biosolids application rates from the biosolids generator or its land application contractor. Nutrient rates are consistent with MSU recommendations.		Have not received any biosolids rate or nutrient application information.	Biosolids application rates on file.			
	SOIL AND	O WATER COM	NSERVATION PR	ACTICES			
2.01) Have environmentally sensitive areas been identified (land near surface water, highly erodible soils, soils with high leaching or runoff potentials, wells, surface drains and inlets) that require additional management when applying nutrients and pesticides?	Environmentally sensitive areas are identified. Family members, employees, and contractors are aware of and understand the management practices to protect these areas.	Some environmentally sensitive areas are identified.	Environmentally sensitive areas are not considered.	Areas identified on field maps with appropriate management or setbacks. - Areas next to surface waters. -Fields with shallow groundwater. -Fields with water wells. -Areas near surface water inlets. -Fields with highly erodible soils. -Fields with highly leachable soils. -Fields with high runoff potential. Training/communications plan to inform workers and contractors of appropriate management or setbacks.			

SOIL AND WATER CONSERVATION PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>2.02)</b> Is soil erosion under control on the farm fields?	Soil erosion losses are within tolerances as documented by the Revised Universal Soil Loss Equation (RUSLE2) and the Wind Erosion Prediction System (WEPS). Minimal evidence of erosion and no evidence of erosion of concentrated water flows. Cover crop may be in place.	RUSLE2 and WEPS are run on fields that are not: In pasture or hay ground, or no-till planting systems. Receiving fall tillage, with >30% residue on less than 12% slopes. Receiving more than one pass fall tillage that leaves fields rough with >40% residue and less than 8% slopes. And regardless of fall tillage, spring tillage leaves > 20% residue. And for all of the above there is no evidence of sheet, rill or gully erosion.	Excessive soil erosion is occurring on the farm.	RUSLE2 and WEPS calculations completed and on file.			
<b>2.03)</b> Are all streams, wetlands, farm ditches, and other bodies of water on the farm protected from polluted runoff and sediment with conservation practices?	Filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained between fields and all surface waters on the farm.	Conservation practices are maintained on some fields.	No conservation practices are maintained. Farm is immediately next to surface waters, drainage ditches and roads.				
<b>2.04)</b> Are cover crops planted to prevent soil erosion, trap nutrients and pesticides, and improve soil quality?	Cover crops are included in the crop rotation to protect soil and water resources and control erosion.	Cover crops are used occasionally.	Cover crops are not used.				

SOIL AND WATER CONSERVATION PRACTICES (CONTINUED)								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
<b>2.05)</b> Are soil quality indicators evaluated?	Soil quality indicators (e.g., earthworm populations, water infiltration rates, soil compaction, percent plant and residue cover, pH, cation exchange capacity [CEC] and percent organic matter) are evaluated on all fields.	Some soil quality indicators are evaluated.	No soil quality indicators are evaluated.					
<b>2.06)</b> Are conservation and management practices routinely inspected and evaluated?	Owner or trained individual routinely inspects and evaluates conservation and management practices.	Conservation and management practices are informally evaluated during field operations.	Practices are not inspected nor evaluated.					
	P	EST MANAGEMENT	PRACTICES					
CONTINUING EDUCAT	ION AND KNOWLEDGE							
<b>3.01)</b> How does the grower stay current on new pest management practices and strategies for weeds, insects and diseases?	Attend educational meetings, read educational materials provided by the university or other reliable sources. At least one new pest management practices adopted on a trial basis each year.	Occasionally attend educational meetings and read new pest management materials.	Rely on outdated pest management practices.					

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PEST MANAGEMENT PRACTICES								
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE	Your			
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	RISK			
CONTINUING EDUCATION	AND KNOWLEDGE							
3.02) Does the grower	Employs and independent crop	Occasionally attends	Relies on outdated pest					
consult with a pest	consultant throughout the growing	educational meetings	management practices.					
management consultant	season that is knowledgeable of	and reads new pest						
or service during the	IPM.	management materials.						
growing season?	OR,							
	Utilizes public reports and services							
	from the university, local							
	agribusiness or other reliable							
PEST PREVENTION AND P		[						
<b>3.03)</b> Does the grower	Previous pest populations, pest	No.						
review previous growing	suppression activities/pesticide							
season pest	usage and crop yield/injury are							
management activities	reviewed. Records used for future							
and results?	pest management plans.	<b>D</b> :						
<b>3.04)</b> when available,	Certified or quality seed and	Bin-run or uncertified	Use saved seed or					
are certified seed or	planting materials used whenever	planting material that is	planting materials that is					
plant materials (tubers,	possible.	cleaned and treated.	untreated and potentially					
used that are insect			mected with insects,					
weed and disease-free?			nests					
3 05) Are gropp (and	Three year or langer retations are	Short (22 year)	No rotation followed					
plant families) rotated to	utilized to break pest cycles and to	rotations are utilized	Continuous cropping					
break pest cycles and to	reduce the need for nest	because of intensive	system results in					
maximize crop vields?	suppression practices	cropping systems Cover	increased pest pressures					
		crops utilized whenever	and reduced vields.					
		possible to improve						
		system.						

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PEST MANAGEMENT PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORDS OR EVIDENCE	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	Risk		
PEST PREVENTION AND	AVOIDANCE (CONTINUED)						
3.06) Are pest resistant	Pest resistant and tolerant	Varieties without resistance					
and tolerant varieties	varieties are planted when	and tolerance are planted,					
planted?	available.	resulting in the need for pest					
		suppression practices.					
<b>3.07)</b> Are planting	Planting dates are adjusted to	Planting dates are not based					
early and late season	avoiu pest damage.	on the need to manage pests.					
pests? (Example fly-							
free date for wheat							
planting and early							
sweet corn for earworm							
avoidance.)							
PEST MONITORING							
<b>3.08)</b> Are fields scouted	All fields are scouted on a	Fields are scouted at critical	Fields are not scouted.				
for pests during the	weekly schedule, by a qualified	times, but not on a weekly					
growing season?	Scouting reports and records are	Dasis.					
	filed.						
3.09) Are weather	On-farm weather station(s)	Consumer weather	Weather conditions are				
conditions relevant to	provide data to assist with crop	information used for crop and	not considered when				
pest management	and pest management	pest management decisions.	making crop and pest				
monitored (i.e., air and	decisions.		management decisions.				
soil temperature,	OR, MOLL Facility was the a						
precipitation, soil	MSU Enviro-weather						
and direction leaf	or other weather-based models						
wetness, etc.)?	are used to assist with crop and						
,	pest management decisions.						
PESTICIDE APPLICATION	N Contraction of the second se						
3.10) Are soil	Soil characteristics (texture and	Whole-field application rates	Pesticides are applied				
characteristics and field	organic matter) and field	are based on the most	at full labeled rates				
conditions considered	conditions (slope and moisture)	vulnerable soil type in the	without regard to				
when making pesticide	are assessed when deciding on	TIEIO.	vuinerable soil				
applications?	Site-specific or variable-rate		conditions				
	technology may be used						
L	toomology may be doed.	I	1				

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PEST MANAGEMENT PRACTICES (CONTINUED)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
PESTICIDE APPLICATION	CONTINUED)						
<b>3.11)</b> How are surface water and groundwater protected in and near fields from pesticide contamination?	Pesticide labels with groundwater and surface water advisory statements are followed.		Labeled directions are not followed. <sup>18</sup> Spray is applied adjacent to, or over the top of, surface water, tile drain inlet or well. Field restrictions for shallow groundwater are ignored.	Field maps indicating pesticide label setbacks (2.01) and shallow groundwater restrictions are followed.			
<b>3.12)</b> Are leaching/runoff and toxicity potentials considered when making pesticide decisions?	Pesticides with the lowest potentials for leaching, runoff and non-target toxicity are always selected for use in fields.	Leaching/runoff and toxicity potentials are occasionally considered when selecting soil-applied pesticides.	Pesticide choice is not based on leaching/runoff and toxicity potentials. Only cost and effectiveness are considered.				
<b>3.13)</b> Are the purchasers and applicators of restricted-use pesticides (RUP) certified applicators?	The purchaser and applicator of RUP comply with certification requirements.		Non-certified and unsupervised applicators use RUP. <sup>6</sup>	RUP certification confirmed.			
<b>3.14)</b> How are workers and pesticide handlers protected from exposure to pesticides?	Workers and handlers: -Follow specific label requirements. -Are provided decontamination supplies. -Are trained or certified applicators. -Are informed of pesticide applications. -Are provided personal protective equipment. -Are provided emergency assistance, if needed.	Worker Protection Standard requirements are partially met. <sup>20</sup>	Worker Protection Standard requirements are ignored. <sup>20</sup>	Complete list of worker protection standards can be found at: www.epa.gov/pesticides/heal th/worker.htm.			

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	Pest Management Practices (Continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
PESTICIDE APPLICATION	I (CONTINUED)							
<b>3.15)</b> If pesticides are mixed and loaded in the field, how are they handled?	A mixing and loading pad is used. Mixing and loading is done more than 150 feet from any well and more than 50 feet from surface waters.	Mixing and loading is done in different locations in the field, more than 150 feet from a private well, more than 800 feet from a public well* and more than 50 feet from surface waters. A mixing and loading pad is not used.	Pesticides are mixed and loaded at the same spot in the field year after year without a mixing and loading pad.	Proper pesticide mixing and loading demonstrated.				
<b>3.16)</b> How are empty pesticide containers rinsed and disposed?	Containers are triple- rinsed or power rinsed, punctured and returned to dealer, properly recycled, or disposed of in a licensed landfill. Bags are returned to dealer or taken to licensed landfill. Properly rinsed containers can be disposed in a dumpster that is taken to a licensed landfill.	Disposal of empty containers and bags on the farm property. <sup>8,18</sup>	Disposal of partially filled containers. Burning of containers on the farm property. <sup>8,18</sup>	Evidence of containers being recycled or properly disposed.				
<b>3.17)</b> Do pesticide applicators read and follow the label instructions?	Everyone using pesticides follows label and labeling instructions.		Label and labeling instructions are not always followed. <sup>18</sup>	Evidence that labels are followed for environmental concerns.				
<b>3.18)</b> Is a spill kit immediately available to pesticide applicators in the field?	A spill kit containing a shovel, absorbent material, Personal Protective Equipment (PPE) and a container is immediately available.		No spill kit is available <sup>6</sup> or no plan is in place to contain spills.	Adequate spill kit present.				

\* See groundwater technician for additional information on criteria for reduced isolation distances.

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PEST MANAGEMENT PRACTICES (CONTINUED)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
PESTICIDE APPLICATION	I (CONTINUED)						
<b>3.19)</b> How is excess spray mixture or rinse water from the interior of the spray system disposed?	Spray mixture is applied to labeled site at or below labeled rate of application or appropriately stored for later use.		Spray mixture dumped at farmstead or in nearby field or pond. <sup>4</sup>	Satisfactory explanation of procedures for excess spray mixtures.			
<b>3.20)</b> Where is the exterior of the spray equipment and tractor washed if there is accumulated residue?	Washed in containment or washed in the field in different locations >200' from surface water, catch basins or tile inlets and >150' from a well.		Washed in the same location without collection, or in the field <200' from surface water, catch basins, or tile inlets or <150' from a well.	Satisfactory explanation of procedures for washing spray equipment.			
<b>3.21)</b> How is accumulated spray building wastewater or other comingled rinsates that cannot be directly applied to growing crops disposed?	Applied to a site where there is growing vegetation or where a crop will be planted following labeled setbacks at or below labeled rates. Application areas are rotated and records of contents of material and application site are kept. Or taken to a hazardous waste landfill.		Dumped at the farmstead, in the field, or a direct discharge to surface water. <sup>4</sup>				
<b>3.22)</b> How is the proper and safe operation of pesticide application equipment ensured?	Equipment is correctly calibrated at least annually and leaks are minimized to apply intended rate and distribution pattern.		Pesticide application equipment is not properly calibrated. <sup>6</sup>	Date equipment calibrated annually.			
<b>3.23)</b> How are pesticide applications assured to remain on-target and minimize off-target pesticide spray drift?	A written drift management plan is utilized that minimizes off-target drift.	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of the potential of off-target drift. <sup>7</sup>	Written draft management plan on file.			

	PEST MANAGEMENT PRACTICES (CONTINUED)									
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk					
PESTICIDE APPL	ICATION (CONTINUED)	· · ·								
<b>3.24)</b> What pesticide application records are kept?	Accurate records are maintained of all agricultural crop applications of pesticides for at least three years.	Partial pesticide records are kept. Complete pesticide application records will be kept in the future, for review at the time of reverification.	No records are kept. Chemicals used are known by memory or invoices only.	Pesticide records for the past three years on file (or plans for records). -Date of application -Time of application -Pesticide brand/product name -Pesticide formulation -EPA registration number -Active ingredient(s) -Restricted-entry interval (REI) -Rate per acre or unit -Crop, commodity, stored product, or site that received the application -Total amount of pesticide applied -Size of area treated -Applicator's name -Applicator's certification number -Application location -Application method -Weather conditions -Wind speed and direction -Target pest -Carrier volume per acre						

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PEST MANAGEMENT PRACTICES (CONTINUED)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (Potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
PESTICIDE APPLICATI	ON (CONTINUED)							
<b>3.25)</b> How are beneficial insect populations encouraged?	Field borders and boundaries are managed to encourage beneficial insects.	Beneficial insect management is not considered.						
<b>3.26)</b> Are pesticides selected and applications timed to minimize impact on beneficial insects (natural enemies and pollinators)?	Pesticide toxicity to beneficial insects is considered. Pesticide applications timed to avoid injury to beneficial insect populations.		Broad spectrum pesticides used on a calendar schedule and not timed to avoid beneficial insects.					
<b>3.27)</b> What management practices are used to prevent the development of pesticide resistance (including glyphosate-resistant weeds)?	Pesticides with different modes of action are rotated within a season or from one season to the next or used in tank mixes, where permitted. Pesticides at highest risk of resistance are not used when alternatives are available. Refuge requirements for transgenic seed are followed.	Some but not all pesticide modes of action are rotated or tank mixed. Pesticides at highest risk or resistance are used sparingly.	Pest resistance is not considered when selecting pesticides. Refuge requirements for transgenic seed are ignored.					
<b>3.28)</b> How are agricultural pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. <i>All</i> <i>uncontained spills or releases</i> <i>should be reported to the</i> <i>MDARD Agriculture Pollution</i> <i>Emergency Hotline: 1-800-405-</i> <i>0101</i> , or the EGLE Pollution Emergency Alerting System: 1-800-292-4706.		No contact to state or local authorities. Spill discharges directly to surface water. <sup>4</sup>	Farm emergency plan on file, or local emergency telephone numbers immediately available.				

WATER USE REPORTING							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
<b>4.01)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 100,000 gallons per day (70 gallons per minute) for agricultural purposes, has water use been registered and reported to the State of Michigan?	Pump capacity is less than 100,000 gallons per day (70 gallons per minute). Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development by April 1.		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan. <sup>13</sup>	Farm records indicate compliance.			
<b>4.02)</b> Is there an unused well located in the cropping area?	No unused well or abandoned well properly sealed.	Unused well temporarily abandoned properly: - Meets minimum isolation distances -Is disconnected from any water distribution piping -Has the top of the casing securely capped.	Unused, unsealed well in cropping area. <sup>1</sup>	Unused well(s) properly sealed.			
<b>4.03)</b> Have new or increased large quantity water withdrawals been registered (pumping capacity greater than 70 gallons per minute (gpm), or 100,000 gallons per day for systems established after July 9, 2009)?	The Water Withdrawal Assessment Tool (WWAT) was used to determine if a proposed withdrawal or expansion is likely to cause an Adverse Resource Impact, and to register the water withdrawal with EGLE, prior to beginning the withdrawal. The WWAT and registration site is: www.egle.state.mi.us/wwat/		No, a new water withdrawal exceeding 70 GPM has been established without the use of the WWAT. <sup>13</sup>	Producer's verbal indication of compliance with regulation.			

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CROP-SPECIFIC MANAGEMENT PRACTICES								
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
CORN MANAGEMEN	r Practices	<u> </u>	• • •		•			
<b>5.01)</b> Is commercial nitrogen applied in the fall for spring-planted corn?	Nitrogen fertilizer is not applied in the fall.		Nitrogen fertilizer is applied in the fall that may be leached from the soil profile.					
<b>5.02)</b> Are label- required setbacks maintained for herbicides with surface water protection advisory statements?	The label-required setbacks from perennial and intermittent streams and rivers are maintained.		The required setbacks are not maintained on all fields. <sup>18</sup>	Field maps (2.01) indicating areas requiring setbacks.				
<b>5.03)</b> Is corn rotated with other crops for rootworm control?	Corn is rotated annually without the use of rootworm insecticides.	Corn is rotated annually without overuse of rootworm insecticides.	Continuous corn is grown with the use of a rootworm insecticide.					
SOYBEAN AND ALFALFA MANAGEMENT PRACTICES								
<b>5.04)</b> Is commercial nitrogen applied when planting soybeans, or alfalfa?	No nitrogen is applied because soybeans and alfalfa use nitrogen fixed from the air by soil bacteria.	Nitrogen fertilizer is applied to soybeans or alfalfa.						

CROP-SPECIFIC MANAGEMENT PRACTICES							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
WHEAT MANAGEMENT	PRACTICES						
<b>5.05)</b> Are more than 25 pounds of nitrogen per acre applied when planting fall-seeded wheat?	No more than 25 pounds of N fertilizer are applied in the fall.	More than 25 pounds of N fertilizer are applied in the fall.					
POTATO MANAGEMEN	<b>PRACTICES</b>				1		
<b>5.06)</b> Is a cover crop planted after potato harvest?	Cover crop is established to take up any residual nitrogen and to protect against wind erosion.	No cover crop is established.					
SUGAR BEET MANAGE	MENT PRACTICES						
<b>5.07)</b> Is commercial nitrogen applied in the fall for spring-planted sugar beets?	No nitrogen fertilizer is applied in the fall.		Nitrogen fertilizer is applied in the fall that may be leached from the soil profile.				
VEGETABLE CROP MA	NAGEMENT PRACTICES		-		-		
<b>5.08)</b> How are manure applications managed to prevent any food safety risk?	Manure application record document manure is incorporated and applied 270 or more days prior to harvest.	Manure application records document manure is incorporated and applied 120 or more days prior to harvest.	Manure is applied less than 120 days prior to harvest.	Note: USDA Good Agricultural Practices ≥120 days before harvest. The Food Safety Modernization Act currently recommends using the National Organic Program guidelines for raw manure pre- harvest application interval.			
<b>5.09)</b> Does the farm business have a food safety plan that is followed to reduce the risk of foodborne illness?	A written food safety plan exists and is being implemented.	Food safety practices are generally followed, but not documented in a written plan.	A food safety plan is not available.	Note: This is a GAP (Good Agricultural Practices) requirement. USDA will not certify the farm without a documented food safety plan.			

CROP-SPECIFIC MANAGEMENT PRACTICES							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORD OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk		
VEGETABLE CROP MAN	NAGEMENT PRACTICES (CONT	rinued)	· · ·				
<b>5.10)</b> Does the farm business have a person designated to implement and oversee a food safety program?	The designated food safety person is documented in the food safety manual.		There is no designated food safety person.	Note: This is a GAP requirement. USDA will not certify the farm without a documented food safety designee.			
<b>5.11)</b> If a soil fumigant pesticide is used on the farm, is a fumigation management plan (FMP) utilized?	A written, site-specific fumigation management plan that meets US-EPA requirements is prepared and utilized before fumigation begins.		A FMP is not prepared. <sup>18</sup>				
<b>5.12)</b> Are areas of the farm set aside as habitat for pollinators?	At least two acres are devoted to conservation of native bees and other pollinators by providing flowers through the season, and this is planted with a specific mix of wildflowers for this purpose.	Some areas of the farm are set aside to provide flowers for bees and other pollinators.	No habitat is provided for pollinators.	Note: Cost share is available through enrollment in the USDA pollinator conservation programs (e.g. USDA's FSA CRP-Save pollinator program).			
PASTURE MANAGEMENT PRACTICES (IF YOU DO NOT HAVE PASTURE, SKIP THIS SECTION.)							
<b>6.01)</b> Are there current soil tests on the pastures?	All fields are sampled and tested on a regular basis, at 1 to 4 years, depending on crops being grown and the cropping system.	Most fields are sampled and tested every 1 to 4 years. Producer plans to bring all field soil tests up to date within the next three years. (See also 1.01)	Fields have not been tested within the past four years.	Field names or map. Acres in the cropped portions of the field. Up-to-date soil test reports, or schedule to bring all tests up to date.			

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Pas	PASTURE MANAGEMENT PRACTICES (IF YOU DO NOT HAVE PASTURE, SKIP THIS SECTION.)						
RISK QUESTION	Low Risk – 3	MEDIUM RISK – 2	HIGH RISK - 1	RECORD OR EVIDENCE FOR	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	MAEAP VERIFICATION	Risk		
<b>6.02)</b> Is the area managed as a pasture?	Pasture plants are the only significant feed source. Area is covered with pasture plant species. Manure nutrients are removed by growing vegetation and animal grazing.	Pasture plants are the major feed source. Area is covered with predominantly pasture plant species. Manure nutrients are removed by animal grazing and some scrape and haul from areas where pasture plants do not exist.	Significant sources of additional feed are brought to the area. Area is not covered with predominantly pasture plant species. Manure nutrients are not removed by animal grazing or some scrape and haul from areas where pasture plants do not exist. (These areas are not considered pasture and should be managed as dirt lots. See Farm*A*Syst Livestock Lot Management.)				
<b>6.03)</b> How is the pasture managed to protect surface water?	Livestock are excluded from actual contact with streams or watercourses except for controlled crossings and accesses. Flash grazing may be implemented to control vegetation between fenced-in areas.	Herd density in the pasture is such that the stream bank remains vegetated with no eroded areas. Animals are not allowed to congregate under trees close to the waterway causing bare areas. And/or the practice of flash grazing is being implemented to control vegetation between fenced-in areas.	Runoff results in <b>direct</b> <b>discharge to surface waters.</b> <sup>4</sup> Livestock have free access to streams or watercourses, causing erosion.	Pasture managed to protect surface water from erosion and contamination demonstrated.			
<b>6.04)</b> What is the condition of pasture vegetation?	Pasture is well managed with all areas vegetated. <i>Runoff from pasture</i> <i>feeding and watering</i> <i>areas travels through a</i> <i>vegetated filter area to</i> <i>protect surface and</i> <i>groundwater.</i> Or no contaminated runoff is noted.	Pasture is well managed and vegetated except in feeding and watering areas, which are scraped. <i>Runoff from pasture</i> <i>feeding and watering areas</i> <i>travels through a vegetated</i> <i>filter area to protect surface</i> <i>and groundwater.</i> Or, no contaminated runoff is noted.	Pasture is over-grazed with bare spots. Erosion may be present <b>Runoff from</b> <b>pastures is carrying</b> <b>sediment and nutrients to</b> <b>surface waters</b> <sup>4</sup> or neighboring property.	No direct discharge from pasture(s).			

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<b>PASTURE MANAGEMENT PRACTICES</b> (IF YOU DO NOT HAVE PASTURE, SKIP THIS SECTION.)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>6.05)</b> What is being done to reduce manure concentration around watering tanks/feeders in pasture areas?	Water tank/feeding areas are rotated to different areas of pasture. Or, watering/ feeding areas are permanent, but manure is removed frequently to prevent concentration of nutrients. Runoff from pasture feeding and watering areas should travel through a vegetated filter area to protect surface and groundwater.	Watering and/or feeding areas are permanent, but manure is removed at least annually to prevent concentration of nutrients. <i>Runoff from pasture</i> <i>feeding and watering</i> <i>areas should travel</i> <i>through a vegetated filter</i> <i>area to protect surface</i> <i>and groundwater.</i>	Watering/feeding areas are permanent with infrequent or no manure removal. There is evidence of <b>direct</b> <b>discharge to surface</b> <b>water</b> <sup>4</sup> or ponding in low areas.	Proper manure management around water and feed demonstrated.		
IRRIG	ATION MANAGEME		IF YOU DO NOT USE IRRI	GATION, SKIP THIS SECTION	۱.)	
SYSTEM MANAGEN	/IENT				T	
<b>7.01)</b> Have all irrigation systems been evaluated for application uniformity?	All irrigation systems have been evaluated for uniformity. Corrections are made to the system to improve uniformity.	Some irrigation systems have been evaluated for uniformity. Remainder of systems scheduled to be evaluated.	Irrigation system uniformity has not been evaluated.	Uniformity tests on file. Schedule for evaluating systems that have not been evaluated.		
<b>7.02)</b> How is the amount of irrigation water delivered accurately determined?	All water applications are accurately determined: -by knowing actual flow delivered (GPM) and time of application. -or, by using a flow meter. -or, by average output caught with system evaluation.	Water applications are estimated or based on rates given by irrigation vendor or installation company.	Water application amounts not determined. Excess application occurs.	Irrigation water delivered by irrigation is accurately determined.		

<b>IRRIGATION MANAGEMENT PRACTICES</b> (IF YOU DO NOT HAVE IRRIGATION, SKIP THIS SECTION.)						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
SYSTEM MANAGEME	NT (CONTINUED)					
<b>7.03)</b> Are all sprinkler systems operated to minimize drift and off-target application?	All sprinkler systems are operated to minimize drift and off-target application. No off-target irrigation application present.	Most sprinkler systems operated to minimize drift and off-target application. Few off-target irrigation applications occur.	Sprinkler systems are often operated under windy conditions. Water is sprayed over roads, adjacent property or structures.	No field evidence of off- target applications.		
<b>7.04)</b> Is noise control provided when needed?	Noise control is provided when needed.	In most areas of concern, noise control is provided when needed.	Noise control is not provided when needed.			
RECORD KEEPING						
<b>7.05)</b> Are proper irrigation system management records collected and retained for use in decision-making and for reference in case of complaints?	<ul> <li>Irrigation system management records are collected and retained, including: <ul> <li>Crop type and location.</li> <li>Source of the water used.</li> <li>Date, method and amount of each irrigation water application.</li> <li>All system inspections and repairs that influence uniformity and leaks.</li> <li>Calibration of fertigation and chemigation equipment, if used.</li> <li>Records on system uniformity evaluation.</li> </ul> </li> </ul>	Most of irrigation system management records are collected and retained. Plan to maintain complete irrigation records.	Few or no irrigation system management records are collected or retained.	Irrigation records on file, or plans to maintain records.		

A boxed risk level indicates the level required for environmental assurance verification.

IRRIGA	<b>IRRIGATION MANAGEMENT PRACTICES</b> (IF YOU DO NOT HAVE IRRIGATION, SKIP THIS SECTION.)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
<b>IRRIGATION SCHED</b>	ULING					
<b>7.06)</b> How is irrigation scheduling used to determine when it is necessary to irrigate and how much water should be applied during each irrigation event?	<ul> <li>Irrigation water is scheduled on the basis of:</li> <li>Available soil water for each unit scheduled.</li> <li>Depth of rooting for each crop irrigated.</li> <li>Allowable soil moisture depletion at each stage of crop growth.</li> <li>Measured, estimated or published evapotrans- piration data to determine crop water use.</li> <li>Measured rainfall in each field irrigated.</li> </ul>	Irrigation water is scheduled on the basis of observed soil moisture content and/or daily water crop usage.	Irrigation water is applied at a set rate per week if no precipitation is received, or amounts of water applied through irrigation are not adjusted for crop stages	Scheduling system evident by records.		
APPLICATION PRAC	TICES TO AVOID RUNOFF AN	D LEACHING				
<b>7.07)</b> Is there a rain gauge in every irrigated field?	<i>Every field being managed</i> <i>for irrigation has a rain</i> <i>gauge in the field.</i> Rain events are observed and used in conjunction with irrigation scheduling.	Most fields have a rain gauge; plan to have gauge in all fields.	No rain gauges or only one rain gauge at the farmstead.	Rain gauges in all irrigated fields, or plan to maintain in all fields.		
<b>7.08)</b> Is irrigation water runoff and ponding minimized?	Sprinkler application rates are below the soil infiltration rate. Nutrient leaching is minimized.	Most sprinkler application rates are below the soil infiltration rate. Some runoff and ponding is present.	Sprinkler application rates exceed the soil infiltration rate. Runoff and ponding is commonly visible.	No indication of significant runoff or ponding in irrigated fields.		

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Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP).

IRRIGATI	ON MANAGEMENT	PRACTICES (IF YO	DU DO NOT HAVE IRRIG	GATION, SKIP THIS SECTIC	N.)
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
APPLICATION PRACT	ICES TO AVOID RUNOFF AND L	EACHING (CONTINUED)			
<b>7.09)</b> Are split applications of nitrogen fertilizer (fertigation and land applied) used when nitrogen is used in an irrigated field?	After planting, <i>split</i> <i>applications are used to</i> <i>ensure that N is available</i> <i>when plants need it most and</i> <i>to minimize the amount that</i> <i>can be leached.</i> N application does not exceed MSU recommendations.		Majority of nitrogen is applied before or at planting, increasing risk of N leaching.		
<b>7.10)</b> Do moving irrigation systems that use chemigation have adequate interlock and safety systems to prevent over application of pesticides, fertilizer, and water?	An adequate interlock and safety system prevents over application of pesticides, fertilizer, and water when pumps continue to run and the distribution system stops moving.		No.	Chemigation interlock system present.	
<b>7.11)</b> How far is the fertilizer/pesticide chemigation storage or fertigation/ chemigation system located from surface water (ponds, streams, rivers, drains, etc.)?	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate chemigation storage or fertigation/chemigation system isolation from surface water.	
<b>7.12)</b> Is excess irrigation avoided?	Irrigation water applications in excess of the quantity of water needed to replace the soil/substrate moisture deficit are avoided.	Excess irrigation water applications may occur occasionally.	Excess irrigation water applications are common.		

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IRRIGAT	ION MANAGEMENT	PRACTICES (IF YOU DO I	NOT HAVE IRRIGATIC	N, SKIP THIS SECTION.	)
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
WELLHEAD PROTEC	TION				
<b>7.13)</b> Is the irrigation well adequately protected from contamination from pesticides and fertilizers when fertigation or chemigation is used?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and agricultural chemical/fertilizer storage and preparation areas are at least 150 feet from the well or at least 50 feet from the well with secondary containment. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Anti-backflow device is installed, including a reduced pressure zone (RPZ) valve double check valve assembly, or chemigation valve with an internal air gap, and agricultural chemical/fertilizer storage and preparation areas have secondary containment, but storage and preparation areas are less than 50 feet from the well. <sup>1</sup> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	No anti-backflow device, no secondary containment and less than 150 feet isolation distance from irrigation well. <sup>1</sup>	Adequate protection of the well provided.	
<b>7.14)</b> If the irrigation well is inter- connected with a surface water source, is the well protected from backflow (back pressure and back siphonage) from the surface water into the well?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, that protects the well from back pressure and back siphonage into the well. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve double check valve assembly, or chemigation valve with an internal air gap, to protect some irrigation water sources. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	No anti-backflow device installed. <sup>1</sup>	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap.	
7.15) If manure or wastewater is applied through the irrigation system, are appropriate backflow prevention devices in place and properly maintained for all irrigation water sources?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve double check valve assembly, or chemigation valve with an internal air gap, to protect all irrigation water sources. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve double check valve assembly, or chemigation valve with an internal air gap, to protect some irrigation water sources. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	No anti-backflow device is installed. <sup>1,4</sup>	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, protects both groundwater and surface water sources.	

RRIGATION MANAGEMENT PRACTICES (IF YOU DO NOT HAVE IRRIGATION, SKIP THIS SECTION.)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
WELLHEAD PROTECTION (CO	ONTINUED)							
<b>7.16)</b> Is a Horizontal Sock Well (HSW) present in the cropping system?	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meets isolation distance requirements the entire horizontal length of the HSW -Both ends of the HSW are identified.	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meets isolation distance requirements the entire horizontal length of the HSW, except for chemigation/fertigation systems during active use season that have an <i>anti-backflow</i> <i>prevention device installed,</i> including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, and secondary containment. -Both ends of the HSW are identified.	HSW is being used for human consumption, shares common piping with a potable water supply, does not have both ends clearly identified OR Does not meet State of Michigan isolation distances or MAEAP Standard for its entire horizontal length. 1,3	Low or medium risk criteria are present or demonstrated.				
<b>7.17)</b> How far is the irrigation fuel tank from a storm drain, surface water or designated wetland?	Tank is more than 50 feet away or has some other engineering control present that would control or divert a spill from reaching a storm drain, surface water or designated wetland.		Tank is 50 feet or less away from surface water <sup>16</sup> and without an engineering control in place.	Appropriate fuel storage isolation distance from surface water. Engineering control, such as double-walled tank or dike.				

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OTHER ENVIRONMENTAL RISKS IN THE CROPPING SYSTEM								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk			
OTHER ENVIRONMENTAL RISK	S IN THE CROPPING SYSTEM							
<b>8.01)</b> Is a live, restricted, or prohibited species on the land or in the waters owned by producer?	Such species is not known to be present.	Such species is present, but was not knowingly introduced, It was introduced under a permit, OR It is possessed under a permit.	Such species is present because it was knowingly introduced without a permit, OR It is possessed without a permit.					
<b>8.02)</b> Are there other activities, products, processes/ equipment services, byproducts and/or wastes in the cropping areas that pose contamination risks to groundwater or surface water?	No risk(s) identified.	Risk(s) identified and plan to mitigate the contamination risk(s).	No plan to mitigate contamination risk(s).	No other environmental risks found at farmstead.				
<b>8.03)</b> Are portable toilets located in a place that minimizes the risk for product contamination in the case of tipping, leaking, or malfunction?	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets, or other water resources, and are addressed in the Emergency Plan and spill kits are available.	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources.	A spill or leak from a portable toilet may run into nearby surface water or water wells in the event of a leak or spill.	No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.				

## **CROPPING SYSTEM IMPROVEMENT ACTION PLAN**

Develop the Cropping System Improvement Action Plan for risks beginning on the inside cover of this bulletin. Once the plan has been implemented, call 517-284-5609 for a MAEAP Cropping System verification visit.

Bold Italic blue print indicates a management practice consistent with a specified 2021 Right to Farm (RTF) Generally Accepted Agricultural and Management Practice (GAAMP)

A boxed risk level indicates the level required for environmental assurance verification.

**Bold black print** indicates a violation of state or federal regulation.

### Table 1. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements due to the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline-1-800-662-9278, MDARD information-1-800-292-3939.

Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Private pesticide applicator certification	Any persons using or supervising the use of restricted-use pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be a certified pesticide applicator.	3 years	MDARD/Pesticide and Plant Pest Management Division	
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/PPPM	
NPDES permit CAFO	National Pollutant Discharge Elimination System permit for large concentrated animal feeding operations (CAFOs).	5 years or as noted on permit	EGLE/Water Bureau	
Farm motor vehicle fuel storage tanks greater than 1,100 gallon capacity (above- and below-ground tanks)	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Air use permit	Permit to install and operate equipment or processes which may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged), and any livestock facility over 5,000 animal units.	5 years	EGLE/Water Resources Division	
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulations, ordinances and codes.	Before construction	Local health department	N.A.
Septic permit (house and farm operation)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on-site septic system.	Before construction	Local health department	N.A.
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across, and under water.	Before construction	EGLE/Water Resources Division	N.A.
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency	
Water use reporting	Agricultural water users with the capacity to withdraw surface or groundwater that exceeds 100,000 gallons per day (70 gallons per minute) are required to report actual water withdrawals annually.	Annual	MDARD	
Identification guides for some species regulated by Part 413.	http://mnfi.anr.msu.edu/invasive-species/aquaticsfieldguide.pdf https://mnfi.anr.msu.edu/invasive-species/InvasivePlantsFieldGuide.pdf			

Table 1. Federal, state and loca	l environmental	requirements fo	r operation of	f this farm business	(continued).
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Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Water Withdrawal Assessment – new or increased large quantity	The Water Withdrawal Assessment Tool (WWAT) is designed to estimate the likely impact of a water withdrawal on nearby streams and rivers. Use of the WWAT is required of anyone proposing to make a new or increased large quantity withdrawal (over 70 gallons per minute) from the waters of the state, including all groundwater and surface water sources, prior to beginning the withdrawal. The WWAT and registration site is: www.egle.state.mi.us/wwat/		EGLE Water Resources Division	The registration is valid for 18 months
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulations and ordinances and codes.		Local health department	
Other Environmental Guidelines	Description	Administering Agency	Your Expiration Date	
Manure management and utilization	The Michigan Right to Farm Act (Act 93 of 1981) requires the establishment of a agricultural and management practices (GAAMPs). Agricultural producers who these practices are provided protection from public or private nuisance litigation are reviewed annually. The latest GAAMPs can be accessed at:	MDARD		
Pesticide utilization and pest control	www.mongan.gov/ndard.			
Nutrient utilization				
Site selection and odor control for new and expanding livestock production facilities				
Irrigation water use				
Farm market				
MAEAP verification: Livestock, Farmstead, Cropping and the Forest, Wetlands and Habitat Systems.	MAEAP systems verification is valid (P.A. 1 & 2, 2011) for five years. MAEAP version standing is dependent on following the practice specific to each system, being with the applicable GAAMPs, an annual plan review and update (livestock systems necessary as conditions change on the farm.	erification in good g in conformance tem) and updates	MDARD	

## Table 2. Legal citations for environmental risks in Crop+A+Syst.

Footnote	Michigan Law	Description				
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems				
2		Part 138: Medical Waste Regulatory Act				
3	Safe Drinking Water Act, Public Act 399 of 1976					
4	Natural Resources and Environmental Protection Act 451 of 1994	Part 31: Water Resources Protection				
5		Part 55: Air Pollution Control				
6		Part 83: Pesticide Control				
7		Part 111: Hazardous Waste Management				
8		Part 115: Solid Waste Management				
9		Part 117: Septic Waste Servicers				
10		Part 121: Liquid Industrial Waste				
11		Part 169: Scrap Tires				
12		Part 201: Environmental Response				
13		Part 327: Great Lakes Preservation				
14		Part 413: Wildlife Conservation				
15	Bodies of Dead Animals Act, Public Act 239 of 1982 as amended					
16	Fire Prevention Code Public Act 207 of 1941	Storage and Handling of Flammable and Combustible Liquids				
17	Grade A Milk Law, Public Act 266 of 2001					
	Federal Law					
18	Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)					
19	Title III of the Superfund Amendments and Reauthorization Act of 1986, also know as the Emergency Planning and Community         Right-to-Know Act					
20	Worker Protection Standard for Agricultural Pesticides					
21	Clean Water Act					
22	Food Safety Modernization Act (FSMA) Food Safety Rule					

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	ADDITIONAL NOTES:
ship, Range, <u>and</u> Latitude and Longitude) ess May Vary) LONGITUDE: RANGE: not a place that receives mail.)	FARM INFORMATION FARM NAME: (If no physical address, please use Section, Townsh FARM SITE STREET ADDRESS: FARM SITE CITY: FARM SITE COUNTY: FARM SITE COUNTY: FARM SITE TOWNSHIP: LATITUDE: SECTION: (If there is no mailbox at the farm site location or n FARM MAILING STREET: (MAILING) STREET: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:
HOME PHONE NUMBER:	FARM MANAGER CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
HOME PHONE NUMBER:	OWNERS CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
n Office or Home Address)	BUSINESS NAME: BUSINESS OWNER NAME: BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION: MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:

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Is there Evidence of Discharge: Yes q No

FARMSTEAD	
Fuel Storage: (Gallons)	(Pounds)
Fertilizer Storage: (Gallons)	(Pounds)
Pesticide Storage: (Gallons)	(Pounds)
Farmstead Wells (each):	
EHS Threshold: Yes or No	
CROPPING	

# 

Manure K (Lbs/Year):
Manure P (Lbs/Year):
Manure N (Lbs/Year):
Manure Manifested (Gallons/Year):
Manure Sold (Gallons/Year):
Manure Produced (Gallons/Year):
Silage Pad (Acres):
Livestock Exclusion (Linear Feet):
Milkhouse Discharge (Gallons/year):
Grade Stabilization (Each):
Conservation Tillage (Acres):
No Till (Acres):
Cover Crops (Acres):
Buffer Strips (Linear Feet):
Irrigation (Acres):
Pesticide Applied (Acres):
Fertilizer Applied (Acres):
Manure Applied (Acres):
Name of Farm(s) Covered In CNMP:
CNMP Reviewed By:
Date of CNMP Approval:
CNMP Written By:
CNMP (Acres):
LIVESTOCK
manu c n (1203) 1 can ).
Manura V (1 bc/Voar):
Manure P (Lbs/Year):
Manure N (Lbs/Year):
Manure Purchased (Gallons/Year):
Manure Applied (Gallons/Year):
Grade Stabilization (Each):
Conservation Tillage (Acres):
No Till (Acres):
Cover Crops (Acres):
Buffer Strips (Linear Feet):
Irrigation (Acres):
Pesticide Applied (Acres):
Fertilizer Applied (Acres):
Manure Applied (Acres):
NMP (Acres):
CROPPING

Fuel Storage: (Gallons)(Pounds) Fertilizer Capacity: (Gallons)(Pounds) Pesticide Capacity: (Gallons)(Pounds) Greenhouse Wells (Each) EHS Threshold: Yes or No	Annual Cover Crop (Square Feet): No Till (Square Feet): Conservation Tillage (Square Feet): Grade Stabilization (Square Feet): Greenhouse Size (Square Feet):	GREENHOUSE         NMP (Square Feet):
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						Notes:

Animal Unit (AU) Conversion	Factors by Animal	Type and Class	
ANIMAL TYPE	CLASS	Average Animal Weight	QUANTITY
	CALF	450	
	HIGH FORAGE	750	
1 000 Reef rattle or row/ralf nairs = 1 arre CAFO	HIGH ENERGY	750	
nyoor boor vanie of som/vall pails - taige one o	HIGH FORAGE	1100	
	HIGH ENERGY	1100	
	COW	1000	
	CALF	150	
	CALF	250	
700 Mature dairy cattle (whether milked or dry cows), or	HEIFER	750	
1,000 Veal calves = Large CAFO	HEIFER	1000	
	LACTATING COW	1400	
	DRY COW	1400	
	VEAL	250	
30,000 Laying hens or broilers liquid, or	DRY SYSTEM		
1.25,000 Chicker's dry (other trian laying heris), of 82,000 Laying heris dry = Large CAFO	LIQUID SYSTEM		
	PULLETS		
55,000 turkeys = Large CAFO	ALL		
500 horses = Large CAFO	ALL	1000	
	NURSERY PIG	25	
	GROW-FINISH	150	
2,500 swine each weighing over 55 pounds, or 10,000 swine weighing less than 55 pounds = Large	GESTATING	275	
CAFO	LACTATING	375	
	BOAR	350	
	OTHER		
10,000 sheep or lambs	ALL	100	
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	ſ:
OTHER LIVESTOCK TYPE:	OTHER LIVES	STOCK QUANTITY	

CROP NAME	ACRES	CROP NAME	ACRES	CROP NAME	ACRES
Alfalfa	-	Cucumbers, Fresh		Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots		Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries		Grapes, Juice		Rye	1.2
Carrots		Grapes, Wine		Small Grain, Other	
Cherries, Sweet	85	Green Beans		Soybeans	20
Cherries, Tart	1	Greenhouse, Annual	- 1 	Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed		Greens, Herbs		Sunflower	
Corn, Grain		Hay/Pasture		Vegetable, Other	
Corn, Seed		Hops		Wheat	
Corn, Silage		Mixed Garden		Other:	
Corn, Sweet		Nursery		Other:	

Notes:

46

Farm Name:
# MICHICAN STATE EXtension

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#### Michigan Agriculture Environmental Assurance Program

Cropping Systems Subcommittee Summary of Proposed Amendments for 2022 Cropping – Nursery and Christmas Tree (Unified Assessment)

Number	Approval Date	Reason for Change
		NO
		Recommended
		Changes
		Changes

# **CROP**+A+SYST For Nursery Crop and Christmas tree producers

FAS 114 · October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609



 $\frac{\text{MICHIGAN STATE}}{U N I V E R S I T Y} | \text{Extension}$ 

## Nursery Crop and Christmas Tree System Improvement Action Plan

	List high-risk practice(s) from	Required for		Actio	on plan			
Risk question	Crop+A+Syst and medium-risk practices that do not meet MAEAP requirements	MAEAP verification?	Management practice to reduce risk (include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed			
1.01	Example: Soil nutrient tests not up-to-date for all fields.	Yes	Perform soil tests on all fields going into new crops.	Feb. 2021	<b>(√)</b> Completed March 18, 2021			
	(continued on next page) 2							

# Nursery Crop and Christmas Tree System Improvement Action Plan (continued)

	List high-risk practice(s) from			Action plan				
Risk question	Crop+A+Syst and medium-risk practices that do not meet MAEAP requirements	Required for MAEAP verification?	Management practice to reduce risk (include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed			
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	(continued on next page) 3							

## Nursery Crop and Christmas Tree System Improvement Action Plan (continued)

Risk question	List high-risk practice(s) from			Actio	Action plan	
	Crop+A+Syst and medium-risk practices that do not meet MAEAP requirements	Required for MAEAP verification?	Management practice to reduce risk (include potential sources of technical and financial assistance)	Planned completion date	Indicate date when completed	
l understand disclosed, to	I that this cropping system assessment (Crop+ the best of my knowledge, all information per	A+ Syst) and corre taining to my nurse	esponding Improvement Action Plan were de ery crop and Christmas tree cropping operat	veloped on the basi ions.	is that I have	
Farm addres	SS:		Producer's signature			
Street			Date			
City			Crop+A+Syst conducted by:			
State	Zip		Name	Title		
Watershed n	name:		Organization	Date		
	MAEAP Verification Action Plan			Di	ate	
	Target date for MAEAP verification of C	ropping Systen	n			
	Target date for MAEAP verification of F	armstead Syste	m			
	Target date for MAEAP verification of L	ivestock Syster	n			
	Target date for MAEAP verification of F	orest, Wetlands	s, and Habitat System			

### Introduction

Crop+A+Syst for Nursery Crop and Christmas Tree Producers will assist growers in developing and implementing a management plan that prevents contamination of groundwater and surface water resources and maintains economic crop production. Plans will be consistent with applicable Michigan Right to Farm Generally Accepted Agricultural and Management Practices (GAAMPs) and state and federal environmental regulations.

Nutrients used in nursery production come from chemical fertilizers and natural sources such as manure, compost, legumes and biosolids (sewage sludge). All nutrients, whether synthetic or naturally occurring, can become mixed with surface water or groundwater by natural processes such as runoff and leaching. Nitrate contamination of groundwater and phosphorus contamination of surface water are problems in Michigan. Crop+A+Syst for Nursery Crop and Christmas Tree Producers will assess current nutrient management practices and identify alternative management practices that, when implemented, will reduce nutrient losses to the environment.

Virtually all crops produced in Michigan may be threatened by serious pest problems – weeds, insects, mites and disease-producing organisms. Producers are encouraged to adopt pest management practices that achieve the desired quality while minimizing any adverse effects on non-target organisms, humans, and soil and water resources. Crop+A+Syst for Nursery Crop and Christmas Tree Producers will assess current pest management practices and identify alternative management practices that, when implemented, will reduce negative impacts to the environment.

# The Michigan Agriculture Environmental Assurance Program (MAEAP) is a

comprehensive, proactive and voluntary agricultural pollution prevention program. It takes a systems approach to assist producers in evaluating their farms for environmental risks. The on-farm risk evaluation uses specific tools for each system. Environmentally assured farms are eligible for various incentives and recognitions.

The Michigan Right to Farm Act authorizes the Michigan Commission of Agriculture and Rural Development to develop and adopt GAAMPs for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The current Right to Farm GAAMPs are posted on the Michigan Department of Agriculture and Rural Development (MDARD) Web site: www.michigan.gov/mdard.

Producers who complete the Crop+A+Syst for Nursery Crop and Christmas Tree Production will be able to determine what management and record-keeping changes (if any) will be needed for their Cropping System to be environmentally assured through MAEAP. Once a producer develops and implements a Nursery Crop and Christmas Tree System Improvement Action Plan to address the risks indicated by the Crop+A+Syst assessment, he or she can contact the Michigan Department of Agriculture and Rural Development (MDARD) at (517) 284-5609 to request a MAEAP Cropping System verification inspection. An MDARD inspector will schedule a site visit to complete the verification process.

P.A. 451, Part 82, ensures the confidentiality of the producer information provided to MDARD for verification. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

The owner of a MAEAP verified Cropping System will be eligible for various incentives and can enjoy the peace of mind that comes from knowing that Cropping System practices are consistent with the identified current Right to Farm GAAMPs. Verified Cropping Systems are positioned to achieve regulatory compliance with state and federal environmental laws.

Similar incentives are available for producers who have environmentally assured their Livestock and Farmstead Systems. Contact a local conservation district, MSU Extension or Natural Resources Conservation Service (NRCS) representative for a list of currently available incentives and information on how to get started.

## What is the Crop Assessment System for Nursery Crop and Christmas Tree Producers?

The Crop A Syst for Nursery Crop and Christmas Tree Producers (Crop A Syst) is a series of risk questions that will help assess how effectively crop management practices protect groundwater and surface water resources. The risk questions are grouped in the following sections:

	Nursery Crop and Christmas Tree System Improvement Action Plan
1	Nutrient Management Practices
2	Soil and Water Conservation Practices
3	Pest Management Practices
4	Irrigation Management Practices
5	Water Use
6	Nursery Container Management
7	Other Environmental Risks in the
	Cropping System

Each risk question assesses the impact of production practices on groundwater and surface water resources. The risk question answers indicate whether management practices have a low, medium or high risk of contamination. Producers are generally recommended to adopt the low-risk management practices. Risk questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print**.

Risk questions that address management practices covered by the GAAMPs indicate a management practice consistent with a specific GAAMPs with *blue bold italic print*.

Finally, a blue box indicates the management level(s) required for MAEAP verification.

## Crop+A+Syst

MAEAP management requirements are aligned with state and federal environmental regulations. The GAAMPs and environmentally based agronomic management practices are supported by research. The records or evidence that indicate the approved management practices have been implemented on the farm are listed in the far right column. This evidence will provide the basis for awarding environmental assurance through MAEAP. Agricultural representatives (both public and private) can assist growers to make the appropriate management changes to become environmentally assured through MAEAP.

### How Does Crop+A+Syst Work?

- 1) Select all relevant risk question sections for the farm or nursery.
- Answer the risk questions by selecting the answer that best describes management practices used on the farm. Indicate the risk level in the column to the right. Skip any questions that don't apply.

Note: for MAEAP verification, complete the risk questions with a Crop+A+Syst trained individual. A MAEAP technician is located in the conservation district office.

 After completing each section of risk questions, list the practices that present a high risk of contaminating groundwater and surface water resources in the Nursery Crop and Christmas Tree System Improvement Action Plan (printed inside the front cover of the bulletin). Also include any medium-risk practices that do not meet MAEAP verification requirements.

- 4) In the Cropping System Improvement Plan, list:
  - Management practice(s) that are planned for implementation that will reduce the identified risk.
  - Sources of technical assistance.
  - Target dates for accomplishing the changes.
  - Target date for MAEAP Cropping System verification.

## **A Few Final Words**

The key to Crop+A+Syst is that once environmental risks are identified, the plan is implemented to reduce the risk(s). Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional cost and may not be implemented for a few years. It is important, however, to have a plan to follow.

After a plan is developed and changes are implemented to address the risks, the farm is ready for MAEAP Cropping System verification.

Nutrient Management Practices								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk			
<b>1.00)</b> Has there ever been a formal Right to Farm complaint against the farm?	There has never been a Right to Farm complaint, or the concern was not verified, or the concern was resolved.		There was a formal Right to Farm complaint and the concern was not resolved.	Producer's verbal indication of complaint history.				
<b>1.01)</b> How often are fields tested for nutrient levels (P, K, Ca, Mg and pH)?	All fields are sampled and tested on a regular basis, at 1 to 4 years, depending on crops being grown, and the cropping system.	Most fields are sampled and tested every 1 to 4 years. Producer plans to bring all field soil tests up to date.	Fields have not been tested within the past 4 years.	Field names or map. Acres in the cropped portions of the field. Up-to-date soil test reports, or schedule to bring all tests up-to-date.				
<b>1.02)</b> Do soil sampling procedures adequately represent field conditions?	One composite sample taken from uniform field areas.		One composite sample taken from areas greater One composite sample taken from areas greater than 40 acres.	Soil types/soil maps demonstrating uniformity. Cropping histories. Proper soil sampling procedure.				
<b>1.03)</b> Is the soil pH maintained in the desirable range for the crop(s) being grown?	The soil pH maintained in the desirable range to enhance nutrient availability.		The soil pH is not monitored or maintained in the desirable range.					
<b>1.04)</b> How are all sources of nutrients considered when making fertilization decisions?	Credit taken for nutrients supplied by organic matter, legumes and manure or other biological materials (biosolids). Fertilizer rates are reduced accordingly.	When organic matter, legumes, manure or other biological materials (biosolids, compost) are used, fertilizer rates are sometimes reduced.	When organic matter, legumes, manure or other biological materials (biosolids, compost) are used, rates are not reduced.	Written records indicate nutrient credits utilized.				
<b>1.05)</b> How are fertilizer application rates determined?	Consistent with Michigan State University (MSU) recommendations. When MSU recommendations are not available, other land-grant university recommendations developed for the region may be used.	Occasionally exceed MSU or equivalent recommendations.	Often or always exceed MSU or equivalent recommendations.	Applications consistent with MSU recommendations. When MSU recommendations are not available, other land-grant university or equivalent recommendations developed for the region may be used.				

**Bold Black print** indicates a violation of state or federal regulation.

Bold Blue Italic print indicates a management practice consistent with 2021 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

7

Nutrient Management Practices (continued)								
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk			
<b>1.06)</b> How are nutrient management plans for each field annually developed and followed?	Annual nutrient plan is developed for each field that meets crop nutrient needs and minimizes loss of nutrients to the environment.	A nutrient plan is developed each year, for each crop management block. Soil tests are up-to- date.	Nutrient plan not developed or the same plan used for more than 4 years.	Annual nutrient plan by field or by crop grown.				
<b>1.07)</b> Is fertilizer application equipment checked for proper adjustment?	Application equipment checked annually for rate of application and placement. Over and under applications monitored and corrected.		Application equipment not checked.	Name of person responsible for fertilizer applicator adjustments and the dates of adjustments.				
<b>1.08)</b> What soil nutrient management records are kept?	Records of soil test reports and quantities of nutrients applied to individual fields are maintained. Also, crop performance evaluated.	Partial nutrient management records are kept. Complete nutrient management records will be kept in the future, for review at time of reverification.	Minimal or no nutrient management records kept.	Three years of records, or five years if applying. manure, or plans to begin keeping records. -Soil fertility tests and/or plant analysis results. -Previous crop grown and yield harvested. -Date(s) of application(s). -Nutrient composition of fertilizer or other material used. -Amount of nutrient-supplying material applied per acre. -Method of application and placement of applied nutrients. -Vegetative growth and cropping history of perennial crops.				

Bold Black print indicates a violation of state or federal regulation.

	Nutrient Mai	nagement Pr	actices (continue	ed)	
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
<b>1.09)</b> When not in use, where are loaded planting and spray supply vehicles (trailers and trucks) parked to protect water resources from accidental fertilizer and pesticide spills and mischievous activities?	Supply vehicle is returned to a secure location when not in use. Fertilizer and pesticides (including treated seed) properly stored more than 150 feet down gradient from any well.		Fertilizer and pesticide (including treated seed) supply vehicle is left in an unsecured location or fertilizer and pesticides stored less than 150 feet from any well. <sup>1</sup>	Map showing areas adjacent to wells where vehicles should not be parked. No evidence of vehicles left in an unsecured location.	
<b>1.10)</b> How is manure and/or compost <u>temporarily</u> stockpiled in relation to surface water?	Manure and/or compost stockpiles are kept a least 150 feet from surface waters or areas subject to flooding unless conservation practices are used to protect against runoff and erosion losses to surface waters.		Manure and/or compost stockpiles are closer than 150 feet to surface waters or areas subject to flooding, and conservation practices are not used to protect against <b>runoff and erosion</b> <b>losses to surface waters</b> . <sup>4</sup>	Acceptable temporary manure and/or compost storage demonstrated. Adequate isolation from surface water.	
<b>1.11)</b> For <u>temporarily</u> stacked manure, and/or compost, how is the site managed to protect surface water, groundwater, and/or neighboring properties?	Manure, and/or compost, is managed in a manner to prevent runoff and/or leaching of nutrients to surface water or groundwater and to minimize odor impacts upon neighbors. Manure is stacked on impermeable surfaces (concrete, etc.) or compacted soils, and storage area contains a well-maintained barrier such as a wooden or concrete wall or earthen berm to trap runoff. Construction and management practices for composing are implemented using NRCS Composting Facility No. 317 standards.	Manure, and/or compost, is stacked on somewhat permeable, medium-textured soils. Partial or no barrier is used to trap runoff. However, runoff is diverted and passes through a vegetated filter strip or other treatment process.	Manure, and/or compost, is stacked on course-textured soils or above tile drains. No means of runoff or leachate control. Slope is toward surface water. Signs of runoff past perimeter of vegetated area or storage site, with runoff reaching surface water. <b>Runoff and/or leachate</b> <b>discharge directly to</b> <b>surface water.</b> <sup>4</sup>	Appropriate temporary manure, and/or compost, storage demonstrated. Adequate isolation from surface water.	

Nutrient Management Practices (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
<b>1.12)</b> How long is manure and/or compost stockpiled in the field?	Manure is spread as soon as field and weather conditions allow, and does not exceed six months; or if covered with an impermeable cover, twelve months.		Manure stockpiled for more than six months without a cover, or more than twelve months with an impermeable cover.	Manure and/or compost not stockpiled for more than 365 days.			
<b>1.13)</b> Is clean water (i.e. roof and surface runoff) diverted away from the manure and/or compost storage facility?	Clean runoff is diverted.	Clean water is not diverted but is captured, treated, or stored.	Runoff is not diverted and is contaminated. Runoff water is not captured, treated or stored and <b>discharges</b> <b>directly to surface water.</b>	Visual inspection of storage site(s).			
NITROGEN MANAGEMENT	PRACTICES	-					
<b>1.14)</b> How are nitrogen (N) fertilizer applications matched to the demand of the crop and the conditions of the soil?	Controlled-release or split nitrogen fertilizer applications.	Single application where leaching or runoff potentials are low.	Single application where leaching or runoff potentials are high.				
FIELD PHOSPHORUS MANA	GEMENT PRACTICES						
<b>1.15)</b> How are phosphorus (P) fertilization rates determined?	Based on soil tests or plant tissue analysis using Michigan State University or equivalent recommended rates.	P fertilization based on past practices, without regard to soil test P levels.	P fertilization based on applying as much as is affordable.	P management consistent with Nutrient Management GAAMPs.			
<b>1.16)</b> Where is the phosphorus (P) fertilizer placed?	All nursery crops P is banded as a starter fertilizer at planting time, or P fertilizer is surface broadcast but incorporated when possible to prevent runoff or applied as a controlled- release fertilizer in container production.	P fertilizer is surface applied and not incorporated where runoff potentials are limited.	P fertilizer is surface applied and not incorporated where runoff potentials are high.				

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Nutrient Management Practices (continued)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
FIELD PHOSPHORUS M	ANAGEMENT PRACTICE	S (CONTINUED)					
<b>1.17)</b> How often is commercial Phosphorus (P) fertilizer applied on frozen or snow covered fields?	P fertilizer is never broadcast on frozen or snow-covered fields.	Broadcast applications avoided on frozen or snow-covered fields and are not part of the nutrient management plan.	P fertilizer is often broadcast on frozen or snow-covered fields.	Date(s) of application(s) of P fertilizers.			
MANURE MANAGEMEN	T PRACTICES (IF MANUF	RE IS NOT USED, SKIP THIS	SECTION.)		1		
<b>1.18)</b> What manure management records are maintained?	Complete application records of manure analysis, soil test results and rates of manure application for individual fields are maintained.	A minimum of one season of manure application records, or partial application records have been kept. Complete manure application records will be kept immediately and will be available for review at the time of re- verification.	Minimal or no records maintained.	Additional records that are needed if manure is used in the nursery cropping system: -Date(s) of manure/wastewater application(s) (calendar) -Source, rate, and form of manure/wastewater applied -Date, rate(s), and form of other nutrients applied -Date(s) of incorporation -Method of application (e.g., surface-applied, injected, irrigated) -Acres and area of field nutrients applied -Weather and field conditions during application of manure (e.g., sunny, 70°F) -Recommended nutrient application rates -Previous crops grown and yields -Plant tissue sampling and testing reports (where applicable) -Complete N, P, K nutrient budget by field -Manure/wastewater quantities produced and nutrient analysis results -Inspection and maintenance records -Records of rental agreements or other agreements for application of manure/wastewater on land not owned by the producer -Record of manure/wastewater sold or given away to other landowners			

Nutrient Management Practices (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
MANURE MANAGEMENT	PRACTICES (IF MANURE IS NOT US	ED, SKIP THIS SECTION.)					
<b>1.19)</b> How is the nutrient content of manure determined?	Laboratory analysis for percent dry matter (solids), ammonium, and total N, P and K.	Book values or standard nutrient content values used.	Manure nutrient content is unknown.	All manure analyses or book values on file.			
<b>1.20)</b> How are desired manure application rates achieved?	Manure analysis (book value, manure test, or mass balance) and <i>field application rates are known.</i>		Manure application rate is not known.	Rate of manure applied is known for all spreaders. Records indicate date of calibration.			
<b>1.21)</b> How is manure, and/or compost, generally applied to fields?	Manure, and/or compost, is incorporated within 48 hours or injected into the soil, and/or conservation practices (residue management, cover crops, perennial crops etc.) are used to protect against runoff and erosion losses to surface waters.	Manure, and/or compost, is generally surface-applied, and conservation practices are employed to reduce the risk of runoff.	Manure, and/or compost, is applied in a manner that results in ponding, soil erosion losses, or manure runoff to adjacent property, drainage ditches, or <b>discharges directly to</b> <b>surface water.</b> <sup>4</sup>	Fields that receive manure, and/or compost, applications are properly managed.			
<b>1.22)</b> How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	Manure is incorporated within 48 hours or injected. Or, surface applications are not done within 150 feet of surface water. Or, filter strips, riparian buffer strips, and other conservation practices are maintained between fields and surface waters on the farm and around surface water inlets.	Conservation practices are maintained on some fields.	Manure is applied within 150 feet of surface waters and not incorporated without conservation practices. And/or, manure occasionally reaches neighbor's property.	Field maps with setbacks and conservation practices identified. Records of manure incorporation.			
<b>1.23)</b> How are manure phosphorus application rates managed?	<i>If Bray P1 reaches 150 ppm, manure applications discontinued.</i>		Manure application rates not based on soil test.	Manure rates do not exceed crop P needs.			

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Nutrient Management Practices (continued)									
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk				
MANURE MANAGEMENT	MANURE MANAGEMENT PRACTICES (IF MANURE IS NOT USED, SKIP THIS SECTION.)								
<b>1.24)</b> How are fields selected for manure spreading on frozen and snow-covered ground?	No applications on frozen or snow-covered ground without injection or incorporation.	Manure application risks index (MARI) has been completed for each field receiving manure on frozen or snow-covered ground. Frozen or snow-covered fields receiving manure have met MARI criteria for Low or Very Low rating and <i>no liquid</i> <i>manure is applied on slopes</i> <i>greater than 3%, and no solid</i> <i>manure is applied to slopes</i> <i>over 6%.</i>	Applications are made to fields where runoff to water resources may occur.	Completed MARI for each field receiving winter manure application, or spreading plan that does not include winter spreading.					
<b>1.25)</b> How are field tiles managed to prevent manure discharge to surface water?	Liquid manure is prevented from reaching tile lines. Management practices are in place to prevent runoff to surface inlets. Tile line outlets are monitored.		Tile outlets are not monitored for manure discharge.	Tiled fields identified on map. Record of tile flow before and after application (flow, rate, color and odor).					
<b>1.26)</b> Is manure managed to minimize odor?	The cropping system is managed to reduce the frequency and intensity of manure odors.		Manure odors are not minimized.						
BIOSOLIDS MANAGEMEN	T PRACTICES (If biosolids ar	e not used, skip this section.)	-						
<b>1.27)</b> Has nutrient content information on the biosolids applied to the farm or nursery been received?	Received laboratory analysis for percent dry matter (solids), ammonium N (NH4-N), and total N,P and K and utilize nutrient credits when planning nutrient program.		Have not received any biosolids analysis information.	Biosolids analyses on file.					

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Nutrient Management Practices (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
<b>BIOSOLIDS MANAGEMENT</b>	PRACTICES (IF BIOSOLIDS AR	E NOT USED, SKIP THIS SECTION)					
<b>1.28)</b> How are the rates of biosolids (in gallons or dry tons per acre) and applied biosolids nutrients known?	Received actual application rated from the biosolids generator or its land application contractor. Nutrient rates are consistent with MSU or equivalent recommendations.		Have not received any biosolids rate or nutrient application information.	Biosolids application records.			
	Soil an	d Water Conserv	vation Practice	es			
2.01) Have environmentally sensitive areas been identified (land near surface water, highly erodible soils, soils with high leaching or runoff potentials, wells, surface drains and inlets) that require additional management when applying nutrients and pesticides?	Environmentally sensitive areas are identified. Family members, employees and contractors are aware of and understand the management practices to protect these areas.	Some environmentally sensitive areas are identified.	Environmentally sensitive areas are not considered.	Areas identified on field maps with appropriate management or setbacks. Areas: -Next to surface waters. -Fields with shallow groundwater. -Fields with water wells. -Areas near surface water inlets. -Fields with highly erodible soils. -Fields with highly leachable soils. -Surface drains. -Fields with high runoff potential. Training/communications plan to inform workers and contractors of appropriate management or setbacks.			

	Soil and Water Conservation Practices (continued)						
RISK QUESTION	Low Risk – 3 (Recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
2.02) Is soil erosion under control on the nursery fields?	Soil erosion losses are within tolerances as documented by the revised universal soil loss equation (RUSLE2) and the wind erosion prediction system (WEPS). Minimal evidence of erosion and no evidence of concentrated water flows. Cover crop may be in place.	RUSLE2 and WEPS are run on fields that are not: In pasture or hay ground, or no-till planting systems. Receiving fall tillage, with >30% residue on less than 12% slopes. Receiving more than one pass fall tillage that leaves fields rough with >40% residue and less than 8% slopes. And regardless of fall tillage, spring tillage leaves > 20% residue. And for all of the above there is no evidence of sheet, rill or gully erosion.	Excessive soil erosion is occurring on the farm.	RUSLE2 and WEPS calculations completed for worst-case fields on the basis of soils, slopes, rotation, etc.			
<b>2.03)</b> Are all streams, wetlands, farm ditches, and other bodies of water in the nursery protected from polluted runoff and sediment with conservation practices?	Filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained between fields and all surface waters at the nursery.	Conservation practices are maintained on some fields.	No conservation practices are maintained. Nursery stock grown immediately next to surface waters, drainage ditches and roads.				
<b>2.04)</b> Are cover crops planted in fields and driving lanes to prevent soil erosion, trap nutrients and pesticides, and improve soil quality?	Cover crops are included in the crop rotation to protect soil and water resources and control erosion.	Cover crops are used occasionally.	Cover crops are not used.				

	Soil and Water C	onservation F	Practices (conti	nued)	
RISK QUESTION	Low Risk – 3 (recommended)	Medium Risk – 2 (Potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
<b>2.05)</b> Are soil quality indicators evaluated?	Soil quality indicators (e.g., earthworm populations, water infiltration rates, soil compaction, percent plant and residue cover, pH, cation exchange capacity [CEC] and percent organic matter) are evaluated on all fields.	Some soil quality indicators are evaluated.	No soil quality indicators are evaluated.		
<b>2.06)</b> Are conservation and management practices routinely inspected and evaluated?	Owner or trained individual routinely inspects and evaluates conservation and management practices.	Conservation and management practices are informally evaluated during field operations.	Practices are not inspected nor evaluated.		
	Pest M	anagement P	ractices		
<b>3.01)</b> Are pesticides stored in the field?	Pesticides are not stored in the field.	Pesticides are stored in the field meeting all of the pesticide storage requirements from the FAS Section 3, Pesticide Storage and Handling.	Pesticides are stored throughout the year and do not meet all of the pesticide storage requirements from the FAS 107: Section 3, Pesticide Storage and Handling.	Appropriate pesticide storage demonstrated.	
<b>3.02)</b> How does the grower stay current on new pest management practices and strategies for weeds, insects and diseases?	Attends educational meetings, reads educational materials provided by the university or other reliable sources. Adopts at least one new pest management practices adopted on a trial basis each year.	Occasionally attends educational meetings and read new pest management materials.	Relies on outdated pest management practices.		
<b>3.03)</b> Does the grower consult with a pest management consultant or service during the growing season?	Employs and independent crop consultant throughout the growing season that is knowledgeable of Integrated Pest Management (IPM) OR, Utilizes public reports and services from the university, local agribusiness or other reliable providers.		Relies on outdated pest management practices.		

Bold Black print indicates a violation of state or federal regulation.

Pest Management Practices (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
PEST PREVENTION AND AV	OIDANCE						
<b>3.04)</b> Does the grower review previous growing season pest management activities and results?	Previous pest populations, pest suppression activities/pesticide usage and crop yield/injury are reviewed. Records used for future pest management plans.	No.					
<b>3.05)</b> When available, are certified seed or plant materials (tubers, crowns, transplants, etc.) used that are insect, weed and disease-free?	Certified or quality seed and planting materials used whenever possible.	Bin-run or uncertified planting material that is cleaned and treated.	Use saved seed or planting materials that is untreated and potentially infected with insects, weed and/or disease pests.				
<b>3.06)</b> Are pest resistant and tolerant varieties planted?	Pest resistant and tolerant varieties are planted when available.	Varieties without resistance and tolerance are planted, resulting in the need for pest suppression practices.					
MONITORING							
<b>3.07)</b> Are fields scouted for pests during the growing season?	All fields are scouted on a weekly schedule, by a qualified individual trained in IPM. Scouting reports and records are filed.	Fields are scouted at critical times, but not on a weekly basis.	Fields are not scouted.				
<b>3.08)</b> Are weather conditions relevant to pest management monitored? (i.e. air and soil temperature, precipitation, soil moisture, wind speed and direction, leave wetness, etc.)	On-farm weather station(s) provide data to assist with crop and pest management decisions. OR, MSU Enviro-weather (www.enviroweather.msu.edu) or other weather-based models are used to assist with crop and pest management decisions.	Consumer weather information used for crop and pest management decisions.	Weather conditions are not considered when making crop and pest management decisions.				

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Pest Management Practices (continued)							
RISK QUESTION	Low Risk – 3	Medium Risk – 2	HIGH RISK - 1	RECORDS OR EVIDENCE	Your		
	(RECOMMENDED)	(POTENTIAL HAZARD)	(SIGNIFICANT HAZARD)	FOR MAEAP VERIFICATION	RISK		
MONITORING (CONTINUED)							
<b>3.09)</b> Does the farm or nursery comply with all Michigan Department of Agriculture and Rural Development (MDARD) nursery inspection requirements?	Farm or nursery works to comply with all MDARD nursery inspection requirements.		Nursery does not work to comply with all MDARD nursery inspection requirements.				
PESTICIDE APPLICATION							
<b>3.10)</b> Are soil characteristics and field conditions considered when making pesticide applications?	Soil characteristics (texture and organic matter) and field conditions (slope and moisture) are assessed when deciding on pesticide application practices. Site-specific or variable-rate technology may be used.	Whole-field application rates are based on the most vulnerable soil type in the field.	Pesticides are applied at full labeled rates without regard to vulnerable soil characteristics or field conditions.				
<b>3.11)</b> How are surface water and groundwater protected in and near fields from pesticide contamination?	Pesticide labels with groundwater and surface water advisory statements are followed.		Labeled directions are not followed. <sup>17</sup> Spray applied adjacent to or over top of surface water, tile drain inlet or well. Field restrictions for shallow groundwater are ignored.	Field maps (risk question 2.01) indicating pesticide label setbacks and shallow groundwater restrictions are followed.			
<b>3.12)</b> Are leaching/runoff and toxicity potentials considered when making pesticide decisions?	Pesticides with the lowest potentials for leaching, runoff and non-target toxicity are always selected for use in fields.	Leaching/runoff and toxicity potentials are occasionally considered when selecting soil- applied pesticides.	Pesticide choice is not based on leaching/runoff and toxicity potentials. Only cost and effectiveness are considered.				
<b>3.13)</b> Are the purchasers and applicators of Restricted Use Pesticides (RUP) certified applicators?	The purchaser and applicator of RUP comply with the certification requirements.		Non-certified and unsupervised applicators use RUP. <sup>6</sup>	RUP certification confirmed.			

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Pest Management Practices (continued)						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
PESTICIDE APPLICATIO	ON (CONTINUED)	,,	· · · · · · · ·			
<b>3.14)</b> How are workers and pesticide handlers protected from exposure to pesticides?	Workers and handlers: -Follow specific label requirements. -Are provided decontamination supplies. -Are trained or certified applicators. -Are informed of pesticide applications. -Are provided personal protective equipment. -Are provided emergency assistance, if needed.		Worker Protection Standard requirements are partially met or ignored. <sup>19</sup>	Complete list of worker protection standards can be found at: www.epa.gov/pesticides/ health/worker.htm.		
<b>3.15)</b> If pesticides are mixed and loaded in the field, how are they handled?	A mixing and loading pad is used. Mixing and loading are done more than 150 feet from any well and more than 50 feet from surface waters.	Mixing and loading are done in different locations in the field, more than 150 feet from a private well, more than 800 feet from a public well, and more than 50 feet from surface waters. A mixing and loading pad is not used.	Pesticides are mixed and loaded at the same spot in the field year after year without a mixing and loading pad.	Proper pesticide mixing and loading demonstrated.		
<b>3.16)</b> How are empty pesticide containers rinsed and disposed?	Containers are triple rinsed or power rinsed, punctured and returned to dealer, recycled, or taken to licensed landfill. Bags are returned to dealer or taken to licensed landfill. Properly rinsed containers can be disposed of in a dumpster that is taken to a licensed landfill.	Disposal of empty containers and bags on the farm or nursery property. <sup>8,17</sup>	Disposal of partially filled containers. Burning of container on the farm or nursery property. <sup>8,17</sup>	Evidence of containers being recycled or proper disposal.		
<b>3.17)</b> Do pesticide applicators read and follow the label instructions?	Everyone using pesticides follows label and labeling instructions.		Label and labeling instructions not always followed. <sup>17</sup>	Evidence that labels are followed for environmental concerns.		

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Pest Management Practices (continued)							
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
PESTICIDE APPLICATION	(CONTINUED)						
<b>3.18)</b> What management practices are used to prevent the development of pest resistance to certain pesticides.	Pesticides with different modes of action are rotated within a season or from one season to the next or used in tank mixes where permitted. Pesticides at highest risk of resistance are not used when alternatives are available.	Some but not all pesticide modes of action are rotated or tank mixed. Pesticides at highest risk of resistance are used sparingly.	Pest resistance is not considered when selecting pesticides. Refuge requirements for transgenic seed are ignored.				
<b>3.19)</b> Is a spill kit immediately available to pesticide applicators in the field?	<i>A spill kit</i> , containing a shovel, absorbent material, PPE, and a container <i>is immediately available</i> .		<b>No spill kit is available</b> <sup>6</sup> or no plan is in place to contain spills.	Adequate spill kit present.			
<b>3.20)</b> How is excess spray mixture or rinse water from the interior of the spray system disposed?	Spray mixture is applied to labeled site at or below labeled rate of application or appropriately stored for later use.		Spray mixture dumped at farmstead or in nearby field or pond. <sup>4</sup>	Evidence that excess mixtures and rinsates are properly managed.			
<b>3.21)</b> Where is the exterior of the spray equipment and tractor washed if there is accumulated residue?	Washed in containment or washed in the field in different locations >200' from surface water, catch basins or tile inlets and >150' from a well.		Washed in the same location without collection, or in the field <200' from the surface water, catch basins or tile inlets or <150' from a well.	Satisfactory explanation of procedures for washing spray equipment.			
<b>3.22)</b> How is accumulated spray building wastewater or other comingled rinsates that cannot be directly applied to growing crops disposed?	Applied to a site where there is growing vegetation or where a crop will be planted following labeled setbacks at or below labeled rates. Application areas are rotated and records of contents of material and application site are kept. Or taken to a hazardous waste landfill.		Dumped at the farmstead, in the field or a direct discharge to surface water. <sup>4</sup>	Records of application are provided.			

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	Pest Management Practices (continued)							
RISK QUESTION	Low Risk – 3 (Recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk			
PESTICIDE APPLICA	TION (CONTINUED)							
<b>3.23)</b> How is the proper and safe operation of pesticide application equipment ensured?	Equipment is correctly calibrated at least annually and leaks minimized to apply intended rate and distribution pattern.		Pesticide application equipment not properly calibrated. <sup>6</sup>	Date equipment calibrated annually.				
<b>3.24)</b> How are pesticide applications assured to remain on-target and minimize off target pesticide spray drift?	A written drift management plan is utilized that minimizes off target drift.	Pesticide applications follow labeled instructions for target pests, but no drift management plan is utilized.	Spraying operations are completed regardless of weather conditions or forecast, and regardless of potential for off-target drift. <sup>6</sup>	Written drift management plan on file.				
<b>3.25)</b> What pesticide application records are kept?	Accurate records maintained of all agricultural crop applications of pesticides for at least three years.	Partial pesticide records kept. Plan to maintain complete pesticide application records.	No record is kept. Chemicals used are known by memory or invoices only.	<ul> <li>Pesticide records for the past three years on file (or plans to maintain records).</li> <li>Date of application</li> <li>Time of application</li> <li>Pesticide brand/product name</li> <li>Pesticide formulation</li> <li>EPA registration number</li> <li>Active ingredient(s)</li> <li>Restricted-entry interval</li> <li>Rate per acre or unit</li> <li>Crop, commodity, stored product, or site that received the application</li> <li>Total amount of pesticide applied</li> <li>Size of area treated</li> <li>Applicator's name</li> <li>Applicator's certification number</li> <li>Location of the application</li> <li>Target pest</li> <li>Carrier volume/acre</li> </ul>				

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	Pest Management Practices (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
PESTICIDE APPLICATIO	N (CONTINUED)						
<b>3.26)</b> Are areas of the nursery set aside as habitat for pollinators?	At least two acres are devoted to conservation of native bees and other pollinators by providing flowers through the season, and this is planted with a specific mix of wildflowers for this purpose.	Some areas of the nursery are set aside to provide flowers for bees and other pollinators.	No habitat is provided for pollinators.	Note: Cost share is available through enrollment in the USDA pollinator conservation programs (e.g., USDA's FSA CRP-SAFE pollinator program).			
<b>3.27)</b> How are beneficial insect populations encouraged?	Field borders and boundaries are managed to encourage beneficial insects. Pesticides are chosen to minimize damage to beneficial insects.	Beneficial insect management is not considered.					
<b>3.28)</b> If a soil fumigant pesticide is used on the farm, is a fumigation management plan (FMP) utilized?	A written, site-specific fumigation management plan that meets US EPA requirements is prepared and utilized before fumigation begins?		A FMP is not prepared. <sup>17</sup>				
<b>3.29)</b> How are agriculture pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. All uncontained spills or releases should be reported to the MDARD Agriculture Pollution Emergency Hotline: 1-800-405-0101, or the EGLE Pollution Emergency Alerting System: 1-800-292-4706.		No contact to state or local authorities. Spill discharges directly to surface water. <sup>4</sup>	Farm emergency plan on file, or local emergency telephone numbers immediately available.			

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22

Irrigation Management Practices (If Irrigation is not used, skip this section.)								
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk			
SYSTEM MANAGEMENT								
<b>4.01)</b> Have all irrigation systems been evaluated for application uniformity?	All irrigation systems have been evaluated for uniformity. Corrections are made to the system to improve uniformity.	Some irrigation systems have been evaluated for uniformity. Remainder of systems scheduled to be evaluated.	Irrigation system uniformity has not been evaluated.	Uniformity tests on file. Schedule for evaluating systems that have not been evaluated.				
<b>4.02)</b> How is the amount of irrigation water delivered accurately determined.	All water applications are accurately determined – -by knowing actual flow delivered (GPM) and time of application. -or, by using a flow meter -or, by average output caught with system evaluation.	Water applications are estimated or based on rates given by irrigation vendor or installation company.	Water application amounts not determined. Excess application occurs.	Irrigation water delivered by irrigation is accurately determined.				
<b>4.03)</b> Are all sprinkler systems operated to minimize drift and off-target application?	All sprinkler systems operated to minimize drift and off-target application. No off- target irrigation application present.	Most sprinkler systems operated to minimize drift and off-target application. Few off-target irrigation applications occur.	Sprinkler systems often operated under windy conditions. Water sprayed over roads, adjacent property or structures.	No field evidence of off-target applications.				
<b>4.04)</b> Is noise control provided when needed?	Noise control provided when needed.	In most areas of concern, noise control is provided when needed.	Noise control is not provided where needed.					

Irrigation Management Practices (If Irrigation is not used, skip this section.)								
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk			
RECORD KEEPING								
<b>4.05)</b> Are proper irrigation system management records collected and retained for use in decision-making and for reference in case of complaints?	The following irrigation system management records are collected and retained: -Crop type and location -Source of the water used -Date, method and amount of each irrigation water application -All system inspections and repairs that influence uniformity and leaks -Calibration of fertigation and chemigation equipment if used -Records on system uniformity evaluation	Most of irrigation system management records are collected and retained. Plan to maintain complete irrigation records.	Few or no irrigation system management records are collected and retained.	Irrigation records on file, or plans to maintain.				
IRRIGATION SCHEDULI	NG							
<b>4.06)</b> How is irrigation scheduling used to determine when it is necessary to irrigate and how much water should be applied during each irrigation event?	Irrigation water is scheduled on the basis of: -Available soil water for each unit scheduled -Depth of rooting for each crop irrigated - Container capacity for container- grown nursery crops -Allowable soil moisture depletion at each stage of crop growth -Measured, estimated, or published evapotranspiration data to determine crop water use -Measure rainfall in each field irrigated	Irrigation water is scheduled on the basis of observed soil moisture content and/or daily water crop usage.	Irrigation water applied at a set rate per week if no precipitation is received, or amounts of water applied through irrigation are not adjusted for crop stages.	Scheduling system evident by records.				

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Irrigation Management Practices (If Irrigation is not used, skip this section.)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk		
IRRIGATION SCHEDULIN	G (CONTINUED)						
<b>4.07)</b> Is there a rain gauge in every irrigated field?	Every field being managed for irrigation has a rain gauge in the field. Rain events are observed and used in conjunction with irrigation scheduling.	Most fields have a rain gauge; plan to have gauge in all fields.	No rain gauges or only one rain gauge at the farmstead.	Rain gauges in all irrigated fields, or plan to maintain in all fields.			
IRRIGATION PRACTICES	TO AVOID RUNOFF AND LEAC	HING					
<b>4.08)</b> Is irrigation water runoff and ponding minimized?	Sprinkler application rates are below the soil infiltration rate. Nutrient leaching is minimized.	Most sprinkler application rates are below the soil infiltration rate. Some runoff and/or ponding is present.	Sprinkler application rates exceed the soil infiltration rate. Runoff and/or ponding is commonly visible.	No indication of significant runoff or ponding in irrigated fields.			
<b>4.09)</b> How far is the fertilizer/ pesticide chemigation storage, or fertigation/chemigation system located from surface water (pond, streams, rivers, drains, etc.)?	200 feet or greater.	Less than 200 feet with appropriate security measures.	Less than 200 feet.	Appropriate chemigation storage, or fertigation/chemigation system isolation from surface water.			
<b>4.10)</b> Is excess irrigation avoided?	Irrigation water applications in excess of the quantity of water needed to replace the soil/substrate moisture deficit are avoided.	Excess irrigation water applications may occur occasionally.	Excess irrigation water applications are common.				

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Irrigation Management Practices (If Irrigation is not used, skip this section.)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	Medium Risk – 2 (potential hazard)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
WELLHEAD PROTECTION	N				
<b>4.11)</b> Is the irrigation well adequately protected from contamination from pesticides and fertilizers when fertigation or chemigation is used?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap and agricultural chemical/fertilizer storage and preparation areas are at least 150 feet from the well, or at least 50 feet from the well containment. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap, agricultural chemical/fertilizer storage and preparation areas have secondary containment, but storage and preparation areas are less than 50 feet from the well. <sup>1</sup> Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.	No anti-backflow device, <sup>1</sup> no secondary containment and less than 150 feet isolation distance from irrigation well.	Isolation distances field confirmed.	
<b>4.12)</b> If the irrigation well is inter-connected with a surface water source, is the well protected from backflow (back pressure and back siphonage) from the surface water into the well?	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap that protects the well from back pressure and back siphonage into the well. Air gap is twice the diameter of the fill pipe or 6 inches, whichever is greater.		No anti-backflow device installed. <sup>1</sup>	Anti-backflow device installed, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap.	

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Irrigation Management Practices (If Irrigation is not used, skip this section.)						
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk	
WELLHEAD PROTECT	ON (CONTINUED)					
<b>4.13)</b> How far is the irrigation fuel tank from a storm drain, surface water, or designated wetland?	Tank is more than 50 feet away or has some other engineering control present that would control or divert a spill from reaching a storm drain, surface water, or designated wetland.		Tank is 50 feet or less away from surface water <sup>15</sup> and without an engineering control in place.	Appropriate fuel storage isolation distance from surface water.		
<b>4.14)</b> Is a horizontal sock well (HSW) present in the cropping system?	-HSW outlets are clearly identified as not being suitable for human consumption. -HSW is completely separated (no common piping) from any potable water supply system. -HSW meets isolation distance requirements the entire horizontal length of the HSW -Both ends of the HSW are identified.	<ul> <li>-HSW outlets are clearly identified as not being suitable for human consumption.</li> <li>-HSW is completely separated (no common piping) from any potable water supply system.</li> <li>-HSW meets isolation distance requirements the entire horizontal length of the HSW, except for chemigation/fertigation systems during active use season that have <i>backflow prevention device installed</i>, including a reduced pressure zone (RPZ) valve, double check valve assembly, or chemigation valve with an internal air gap and secondary containment.</li> <li>-Both ends of the HSW are identified.</li> </ul>	HSW is being used for human consumption, shares common piping with a potable water supply, does not have both ends clearly identified, or does not meet State of Michigan isolation distances or MAEAP standard for its entire horizontal length. <sup>1,3</sup>	Low or medium risk criteria are present or demonstrated.		

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Water Use					
<b>RISK QUESTION</b>	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
WATER USE REPORTING					
<b>5.01)</b> If the groundwater and surface water pumps have a combined capacity to pump more than 100.000 gallons per day (70 gallons per minute) for agricultural purposes, has water use been registered and reported to the State of Michigan?	Pump capacity is less than 100,000 gallons per day (70 gallons per minute). Or, Register and report annual water use to Michigan Department of Agriculture and Rural Development by April 1.		Pump capacity is greater than 100,000 gallons per day (70 gallons per minute) and water use is not reported to the State of Michigan. <sup>13</sup>	Records indicate compliance.	
<b>5.02)</b> Is there an unused well located in the cropping area?	No unused well, or abandoned well properly sealed.	Unused well temporarily abandoned properly. -Meets minimum isolation distances -Is disconnected from any water distribution piping. -Has the top of the casing securely capped.	Unused, unsealed well in cropping area. <sup>1</sup>	Unused well(s) properly sealed.	
<b>5.03)</b> Have new or increased large quantity water withdrawals been registered (pumping capacity greater than 70 gallons per minute, or 100,000 gallons per day, for systems established after July 9, 2009)?	The Water Withdrawal Assessment Tool (WWAT) was used to determine if a proposed withdrawal or expansion is likely to cause an Adverse Resource Impact, and to register the water withdrawal with EGLE, prior to beginning the withdrawal. The WWAT and registration site is: www.egle.state.mi.us/wwat/		No, a new water withdrawal exceeding 70 gallons per minute has been established without the use of the WWAT. <sup>13</sup>	Producer's verbal indication of compliance with regulation.	

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Nursery Container Management (If containers are not used, skip this section.)					
<b>RISK QUESTION</b>	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	Your Risk
IRRIGATION	· · · · ·	· · ·	· · · · · · · · · · · · · · · · · · ·		
<b>6.01)</b> What happens to runoff in areas with containers?	Runoff is collected, filtered and/or treated and reused.	Runoff does not pond and does not enter surface water.	Runoff is not collected and directly discharges to surface water. <sup>4</sup>	No evidence of runoff or erosion.	
<b>6.02)</b> Are runoff storage areas sized adequately?	Runoff collection areas can store an average rain event.	Runoff collection areas cannot store an average rain event but do not regularly flood into surface water.	Runoff collection areas overflow regularly and runoff enters surface water.		
<b>6.03)</b> What type of irrigation is used?	Trickle irrigation with in-pot emitters.	Scheduled overhead irrigation based on crop or substrate monitoring.	Overhead irrigation applied at a set rate without regard to crop need.		
NUTRIENTS	•	•	•		
<b>6.04)</b> What fertilizers are used to minimize nutrient loss?	Controlled-release fertilizers or fertigation for in-pot emitters.		Quick-release fertilizers used exclusively. No split applications.		
<b>6.05)</b> Is container stock fertigated with overhead sprinklers?	Overhead irrigation with fertigation is avoided on containers.		Overhead irrigation with fertigation is regularly used on containers.		
SUBSTRATES					
<b>6.06)</b> Is there regular testing of incoming new container media?	Each new load of container media is regularly tested to ensure that physical and chemical properties are correct.	Container media are often tested to ensure that physical and chemical properties are correct.	Container media are not tested.		
<b>6.07</b> ) How are unwanted media and other organic wastes disposed?	Media and organic wastes are separated from containers and composted or land applied. Compost pile stored in a location protected from leaching and runoff.		Media and organic wastes stored in an unprotected site. Nutrients can leach into the ground water or runoff into surface water. <sup>4</sup>	Environmentally safe disposal demonstrated.	

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Nursery Container Management (If containers are not used, skip this section.)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk
SUBSTRATES (CONTINUED					
6.08) Does the nursery conduct in-house pH and soluble salts testing of container-grown plants?	The nursery regularly does in-house pH and soluble salts testing of container- grown plants.	The nursery occasionally does in-house pH and soluble salts testing of container-grown plants.	The nursery does not do in- house pH and soluble salts testing of container-grown plants.		
6.09) Is the site designed to minimize runoff?	Site is graded to minimize runoff. Drainage areas collect additional runoff for reuse as irrigation. Impervious surfaces are minimized or drain to collection areas.	Some slopes on site. Impervious surfaces and fields drain toward buffer strips or runoff collection areas.	Site has extensive sloping. No collection areas for runoff. Extensive impervious areas that drain toward surface water.		
<b>6.10)</b> How are old or unusable plant containers and trays disposed?	Containers are recycled or reused appropriately.	Containers are disposed at a licensed landfill or stored on site.	Empty and partially filled containers burned <sup>8</sup> or disposed of on the farm.	Evidence that containers are being managed properly.	
<b>6.11)</b> How is used poly from overwintering houses disposed?	Poly is recycled through a recycling company or offered to others for reuse.	Poly is disposed of in a licensed land fill or stored on site.	Poly is burned on site. <sup>8</sup>	Evidence of system for recycling or proper disposal of used poly.	

Other Environmental Risks in the Cropping System						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE FOR MAEAP VERIFICATION	Your Risk	
OTHER ENVIRONMENTAL	RISKS IN THE CROPPING SYST	ГЕМ				
<b>7.01)</b> Is a live, restricted, or prohibited species on the land or in the waters owned by producer?	Such species is not known to be present.	Such species is present, but was not knowingly introduced, It was introduced under a permit, OR It is possessed under a permit.	Such species is present because it was knowingly introduced without a permit, OR It is possessed without a permit. <sup>14</sup>			
<b>7.02)</b> Are there other activities, products, processes/equipment, services, byproducts, and/or wastes in the cropping areas that pose contamination risks to groundwater or surface water?	No risk(s) identified.	Risk(s) identified and plan to mitigate the contamination risk(s).	No plan to mitigate contamination risk(s).	No other environmental risks found at farmstead.		
<b>7.03)</b> Are portable toilets located in a place that minimizes the risk for product contamination in the case of tipping, leaking, or malfunction?	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets, or other water resources, and are addressed in the Emergency Plan and spill kits are available.	Portable toilets are properly located to prevent or minimize risk of contamination to water wells, surface water, tile inlets or other water sources.	A spill or leak from a portable toilet may run into nearby surface water or water wells in the event of a leak or spill.	No sign of spill or discharge reaching surface water, sanitation units located a safe distance from sensitive areas.		

## Nursery Crop and Christmas Tree System Improvement Action Plan

Develop the Nursery Crop and Christmas Tree System Improvement Action Plan for risks beginning on the inside cover of this bulletin. Once the plan has been implemented, you can request MAEAP verification of your Cropping System. Please call the Michigan Department of Agriculture and Rural Development, MAEAP office at 517-284-5609.

A boxed risk level indicates the level required for environmental assurance verification.

Bold Black print indicates a violation of state or federal regulation.

#### Table 1. Federal, state and local environmental requirements for operation of this farm business.

This table contains the typical requirements for a farm business. There may be additional environmental requirements because of the type of operation and location. Contact the local or state permitting agencies for further information: EGLE Environmental Assistance Hotline —1-800-662-9278, and MDARD Information — 1-800-292-3939.

Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date
Private pesticide applicator certification	Any persons using or supervising the use of Restricted-Use Pesticides (RUP) in the production of an agricultural commodity on their own or their employer's land must be certified pesticide applicators.	3 years	MDARD/Pesticide and Plant Pest Management Division (PPPM)	
Pesticide safety training for pesticide workers	The federal Worker Protection Standard for agricultural pesticides requires employers of pesticide handlers and workers to train employees on pesticide safety. Agricultural employers must be able to verify compliance.	Each employee must be trained every 5 years	MDARD/PPPM	
Farm motor vehicle fuel storage tanks greater than 1,100-gallon capacity (above and belowground tanks).	Fuel storage tanks have to be certified (aboveground) or registered (underground); a site plan has to have been submitted to the LARA before the installation is placed into service. Smaller tanks have other requirements to be met.	Annual	Department of Licensing and Regulatory Affairs (LARA)	
Air use permit	Permit to install and operate equipment or processes that may emit air contaminants (incinerators for burning animal carcasses or manure, and biodigesters and associated equipment are examples).	Before construction	EGLE/Air Quality Division	N.A.
Groundwater discharge permit	Any discharge of waste or waste effluent into or onto the ground (e.g., egg wash water and milk cooling water [over 10,000 gallons/day] that is discharged) and any livestock facility over 5,000 animal units.	5 years	EGLE/Water Resources Division	
Water Withdrawal Assessment – new or increased large quantity withdrawal	The Water Withdrawal Assessment Tool (WWAT) is designed to estimate the likely impact of a water withdrawal on nearby streams and rivers. Use of the WWAT is required of anyone proposing to make a new or increased large quantity withdrawal (over 70 gallons per minute) from the waters of the state, including all groundwater and surface water sources, prior to beginning the withdrawal. The WWAT and registration site is www.egle.state.mi.us/wwat/	Before water withdrawal	EGLE/Water Resources Division	The registration is valid for 18 months.
Well permit	A person who installs a well, pump or pumping equipment shall comply with applicable laws, regulations, ordinances and codes.	Before construction	Local health department	N.A.
Septic permit (house and farm operations)	The first step in the process of determining if a piece of land that does not have municipal wastewater services available can be considered for an on- site septic system.	Before construction	Local health department	N.A.

Table 1. Federal, state and local environmental requirements for operation of this farm business. (continued)								
Environmental Regulatory Requirements	Description	Frequency	Administering Agency	Your Expiration Date				
Land and water interface construction permits	Construction activities (dredging, filling, draining, construction, structure placement) in, across or under water.	Before construction	EGLE/Land and Water Management Division	N.A.				
Soil erosion and sedimentation control permit	Earth change activities within 500 feet of a lake or a stream, or such activities that will disturb an area greater than 1 acre in size.	Before construction	County soil erosion permitting agency					
Water use reporting	Agricultural water users with the capacity to withdraw surface or groundwater that exceeds 100,000 gallons per day (70 gallons/minute) are required to report actual water withdrawals annually.	Annual	MDARD					
Identification guides for some species regulated by Part 413.	http://mnfi.anr.msu.edu/invasive-species/aquaticsfieldguide.pdf https://mnfi.anr.msu.edu/invasive-species/InvasivePlantsFieldGuide.pdf							
Environmental Guidelines	Description		Administering Agency	Your Expiration Date				
Manure management	The Michigan Right-to-Farm Act (Act 93 of 1981) requires the establishment Accepted Agricultural and Management Practices (GAAMPs). Agricultural provoluntarily follow these practices are provided protection from public or priva- litigation. The GAAMPs are reviewed annually. The latest GAAMPs can be	The Michigan Right-to-Farm Act (Act 93 of 1981) requires the establishment of Generally Accepted Agricultural and Management Practices (GAAMPs). Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance						
Pesticide utilization and pest control	www.michigan.gov/mdard.							
Nutrient utilization								
Site selection and odor control for new and expanding livestock production facilities								
Irrigation water use								
Farm market								
MAEAP verification: Livestock, Farmstead, Cropping and Forest, Wetlands and Habitat Systems	MAEAP systems verification is valid (P.A. 1 & 2, 2011) for five years. MAEA good standing is dependent on following the practices specific to each syste consistent with the applicable GAAMPs, an annual plan review and update system), and updates as necessary as conditions change on the farm.	AP verification in em, being (livestock	MDARD	33				
Table 2. Legal citat	Fable 2. Legal citations for environmental risks in Crop+A+Syst Nursery Crop and Christmas Tree Producers							
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Footnote	Michigan Law	Description						
1	Public Health Code, Public Act 368 of 1978	Part 127: Water Supply and Sewer Systems						
3	Safe Drinking Water Act, Public Act 399, of 1976							
4	Natural Resources and Environmental Protection Act, Act 451 of 1994	Part 31: Water Resources Protection						
6		Part 83: Pesticide Control						
8		Part 115: Solid Waste Management						
13		Part 327: Great Lakes Preservation						
14		Part 413: Wildlife Conservation						
15	Insect Pest and Plant Disease Act, Act 189 of 1931							
16	Fire Prevention Code PA 207 of 1941	Storage and handling of Flammable and Combustible Liquids						
	Federal Law							
17	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)							
19	Worker Protection Standard for Agricultural Pesticides							

	ADDITIONAL NOTES:
GITUDE: RANGE: ace that receives mail.)	FARM SITE TOWNSHIP:       LONO         LATITUDE:       TIER:         SECTION:       TIER:         (If there is no mailbox at the farm site location or not a pla         FARM MAILING ADDRESS:         (MAILING) STREET:         (MAILING) P.O. BOX:         (MAILING) CITY:         (MAILING) STATE:         (MAILING) ZIP CODE:
ge, <u>and</u> Latitude and Longitude) y Vary)	FARM INFORMATION FARM NAME: (If no physical address, please use Section, Township, Ran FARM SITE STREET ADDRESS: FARM SITE CITY: STATE: MICHIGAN (ONLY) (Mailing Address Ma FARM SITE ZIP CODE: FARM SITE COUNTY:
HOME PHONE NUMBER:	FARM MANAGER CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
HOME PHONE NUMBER:	OWNERS CONTACT INFORMATION SALUTATION: (Circle one) MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
or Home Address)	BUSINESS NAME: BUSINESS OWNER NAME: BUSINESS PHONE: EXTENSION: BUSINESS WEB SITE: DESCRIPTION: MAILING) STREET: (MAILING) STREET: (MAILING) P.O. BOX: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE:

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Is there Evidence of Discharge: Yes q No

NVESTOCK         NMP (Acres):         NMP Written By:         ate of CNMP Approval:         ame of Farm(s) Covered In CNMP:         name of Farm(s) Covered In CNMP:         name of Farm(s) Covered In CNMP:         anure Applied (Acres):         rigation (Acres):         esticide Applied (Acres):         rigation (Acres):         uffer Strips (Linear Feet):         over Crops (Acres):         uffer Strips (Linear Feet):         oover Crops (Acres):         nure Sold (Gallons/Year):         liage Pad (Acres):         'vestock Exclusion (Linear Feet):         'lanure Produced (Gallons/Year):         'lanure Manifested (Gallons/Year):         'lanure N (Lbs/Year):         'lanure N (Lbs/Year):         'lanure K (Lbs/Year):	LIVEST CNMP ( CNMP ) Date of CNMP ) Date of CNMP   Namure Fertilize Pesticic Pesticic Pesticic Pesticic Pesticic Irrigatic Buffer ( Cover ( No Till ) Cover ( No Till ) Conser Grade ( Milkho) Livesto Silage F Manure Manure Manure
ROPPING         IMP (Acres):	<b>CROPP</b> NMP ( <i>A</i> Manure Fertilize Pesticic Irrigatic Irrigatic Buffer ( Cover C Cover C Cover C Conser Grade ( Manure Manure Manure
ARMSTEAD         uel Storage: (Gallons) (Pounds)         ertilizer Storage: (Gallons) (Pounds)         esticide Storage: (Gallons) (Pounds)         armstead Wells (each):         HS Threshold: Yes or No	<b>FARMS</b> Fuel Str Fertilize Pesticic Farmstr EHS Thu

# GREENHOUSE

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FOREST, WETLANDS, AND HABITAT
Land Management Plan (Acres)
Plan Type: Forest Wetland Habitat All Three
Plan Writer:
Date Plan Written:
Date Plan Expires:
Forestland (Acres):
Grassland (Acres)
Wetland (Acres)
Restored/Improved Wetland Habitat (Acres):
Restored Non-Wetland Habitat (Acres):
Management for Invasive Species (Acres):
Managed as Buffers (Acres):
Length of Streambanks/Shorelines (Feet):

			Notes:

	ACRES		dities		ACRES
Alfalfa		Cucumbers, Fresh		Oats	
Apples		Cucumbers, Pickling		Peaches	
Apricots		Dry Beans		Pears	
Asparagus		Fruit, Other		Potatoes	
Blueberries		Grapes, Juice		Rye	
Carrots		Grapes, Wine		Small Grain, Other	2 K
Cherries, Sweet		Green Beans		Soybeans	
Cherries, Tart		Greenhouse, Annual	7.2	Squash/Pumpkin	
Christmas Trees		Greenhouse, Perennial		Sugar Beets	
Clover, Seed	<u><u></u></u>	Greens, Herbs		Sunflower	
Corn, Grain		Hay/Pasture		Vegetable, Other	- 10 -
Corn, Seed	a 54	Hops	5	Wheat	. v
Corn, Silage		Mixed Garden		Other:	20
Corn, Sweet		Nursery	2 2	Other:	
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# Notes:


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Michigan Agriculture Environmental Assurance Program Forest, Wetland and Habitat Systems Subcommittee Summary of Proposed Amendments for 2022 Forest, Wetland and Habitat (Forest, Wetland and Habitat will remain an independent Assessment)

Number	Approval Date	Reason for Change
		No
		NO
		Recommended
		Changes
		Changes

# FOREST, WETLANDS, AND HABITAT A SYST

# FOR FOREST, WETLANDS AND HABITAT LANDOWNERS

FAS 115 · October 2021



For MAEAP Verification: Contact the MAEAP Office at the Michigan Department of Agriculture & Rural Development

(517) 284-5609



 $\frac{\text{MICHIGAN STATE}}{U N I V E R S I T Y} | \text{Extension}$ 

# **FWH System Improvement Action Plan**

	List high-risk practice(s) from	Pequired for	Management practice to reduce risk (Include	Management practice to reduce risk. (Include	n plan
Risk Question	FWH+A+Syst and medium-risk practices that do not meet MAEAP requirements	MAEAP verification?	potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed
1.01	Example: Landowner does not have a Land Management Plan.	Yes	Work with a natural resource professional to develop a Land Management Plan.	Feb. 2021	<b>(√)</b> Completed March 18, 2021
				(continued o	n next page) 1

# **FWH System Improvement Action Plan**

D'-1	List high-risk practice(s) from	Required for	Management practice to reduce risk (Include	Action	ı plan
Risk Question	FWH+A+Syst and medium-risk practices that do not meet MAEAP requirements	MAEAP verification?	potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed
	·	·	·	(continued o	n next page) 2

# **FWH System Improvement Action Plan**

Diele	List high-risk practice(s) from	Required	Management practice to reduce risk.	Action plan	
RISK Question	FWH+A+Syst and medium- risk practices that do not meet MAEAP requirements	for MAEAP verification?	(Include potential sources of technical and financial assistance.)	Planned completion date	Indicate date when completed
I understand th basis that I hav Property Addre	at this management system assessment (I ve disclosed, to the best of my knowledge, ess: Latitude: Longitude:	FWH◆A◆Syst) an all information p	d corresponding FWH System Improvement Act ertaining to my forest, wetlands and/or habitat o _ Producer's Signature	tion Plan were dev perations.	veloped on the
Street			Date		
City			FWH+A+Syst conducted by:		
State	Zip		Name		
Watershed Na	me		Title		
			Organization	Date	
MAEAF	P Verification Action Plan			Date	
Target o	date for MAEAP verification of Croppin	ig System			
Target o	date for MAEAP verification of Farmste	ad System			
Target o	date for MAEAP verification of Livesto	ck System			
Target o	date for MAEAP verification of Forest.	Wetlands & H	abitat System		
	,		• **		

For MAEAP verification, contact MAEAP office at the Michigan Department of Agriculture and Rural Development: 517-284-5609

#### Introduction

The Forest, Wetlands and Habitat+A+Syst (FWH+A+Syst) tool will assist you in developing and implementing a management plan that prevents contamination of groundwater and surface water resources and maintains your forest, wetlands and/or habitat. The FWH+A+Syst will assess your current management practices and identify alternative management practices that, when implemented, will ensure that you are following Michigan Forestry Best Management Practices for Soil and Water Quality on Forest Land and the American Forest Foundation Standards of Sustainability.

## The Michigan Agriculture Environmental Assurance Program (MAEAP) is a

comprehensive, proactive and voluntary environmental pollution prevention program. It takes a systems approach to assist landowners in evaluating their farms for environmental risks. The systems include Forest, Wetlands and Habitat: Livestock: Farmstead; and Cropping. The on-site risk evaluation uses specific tools for each system: The FWH+A+Syst for forests, wetlands and habitat; the comprehensive nutrient management plan (CNMP) or Livestock A Syst for the livestock system; the Farm+A+ Syst for the farmstead system and the Crop+A+ Syst for the cropping system. Environmentally assured systems are eligible for various incentives and recognitions.

The Michigan Right to Farm Act authorized the Michigan Commission of Agriculture and Rural

Development to develop and adopt Generally Accepted Agricultural and Management Practices (GAAMPs) for farms and farm operations in Michigan. These voluntary practices are based on available technology and scientific research to promote sound environmental stewardship. The FWH•A•Syst is consistent with the identified practices.

The Michigan Right to Forest Act, Public Act 676 of 2002, was enacted to protect those who practice forestry from nuisance lawsuits if their practices conform to Generally Accepted Forest Management Practices (GAFMPs). These GAFMPs were developed by a 19-member Forest Management Advisory Committee whose charge was to assist the Michigan Department of Natural Resources (MDNR) in "balancing the environmental, social and economic issues surrounding forest management." The GAFMPs are organized into the categories of visual change, noise, removal of vegetation and the use of chemicals. The current Right to Forest GAFMPs are posted on the MDNR Forest Management Advisory Committee website: www.michigan.gov/dnr/0,4570,7-153-65134\_65140---,00.html

Landowners who complete the FWH+A+Syst will be able to determine what management and recordkeeping changes (if any) will be needed for their forest management systems to be environmentally assured through MAEAP. Once a landowner develops and implements a Forest Management Plan (FMP) to address the risks indicated by the FWH+A+Syst assessment, they can contact the Michigan Department of Agriculture and Rural Development (MDARD) to request a MAEAP FWH System verification (517-284-5609). An MDARD verifier will schedule a site visit to complete the verification process.

Public Act 451 of 1994, Part 82 "Conservation Practices" ensures the confidentiality of the producer information you provide to MDARD for system verification. Any information connected with the development, implementation or verification of a conservation plan or conservation practice is confidential.

The owner of a MAEAP-verified system will be eligible for incentives and can enjoy the peace of mind that comes from knowing that their forest management system is sustainable. Verified systems are positioned to achieve regulatory compliance with state and federal environmental laws.

Similar incentives are available for landowners who have environmentally assured their Cropping, Livestock and Farmstead Systems. Contact your local Conservation District, Michigan State University Extension or Natural Resources Conservation Service representative for a list of currently available incentives and information on how to get started.

#### What is the Forest, Wetlands and Habitat Assessment System?

The Forest, Wetlands and Habitat\*A\*Syst (FWH\*A\*Syst) is a series of risk questions that help you assess how effectively your management protects the environment and incorporates Best Management Practices.

Finally, a blue box indicates the management level(s) required for MAEAP verification.

The risk questions are grouped into five sections:

	FWH System Improvement Action Plan
1	Sustainable Non-Agriculture Land Management
2	Forestry
3	Wetlands (Forest and Non-Forested) and Water Management
4	Non-Forested Upland Habitat
5	Other Environmental Risks in the FWH System

The risk questions in each section correspond to the principles for each standard. The risk question answers indicate whether management practices have a low, medium or high risk of contributing to unsustainable or environmentally harmful management. Landowners are generally recommended to adopt the low-risk management practices. The questions that address management practices that are regulated by state or federal law indicate **illegal practices with black bold print.** 

Risk questions that address management practices covered by the Michigan Right to Forest Act indicate the risk level required for consistency with the identified practices with **bold blue italic print**.

MAEAP verification requirements are aligned with state and federal environmental regulations, the Michigan Right to Forest GAFMPs, the MDNR and Michigan Department of Environment, Great Lakes, and Energy, Michigan Forestry Best Management Practices for Soil and Water Quality and the American Forest Foundation Tree Farm System Standards of Sustainability. Reference information for the risk question is provided in the far-right column. The letters represent the guidance found in Table 2. This will provide the basis for awarding environmental assurance through MAEAP. Your forest and natural resource representative, both public and private, can assist you to make the appropriate management changes to become environmentally assured through MAEAP.

#### How Does FWH+A+Syst Work?

Answer the risk questions by selecting the answer that best describes management practices used on your property. Indicate your risk level in the column to the right. All answers are confidential.

Skip any questions that do not apply to your land management system. After completing each section of risk questions, list the practices that present a high risk in the FWH System Improvement Action Plan, which is printed inside the front cover of this bulletin. Also include any medium-risk practices that do not meet MAEAP verification requirements. In the FWH System Improvement Action Plan List:

- Management practice(s) that you plan to implement that will reduce the identified risk.
- Sources of technical and financial assistance.
- Target date for accomplishing the changes.

#### American Tree Farm System

The FWH+A+Syst builds upon the American Tree Farm System's Standards of Sustainability (American Forest Foundation, 2015) and adapts it for Michigan landowners. MAEAP encourages forestland owners to also enroll separately in the American Tree Farm System as it provides third-party certification and other services for forestland owners, at no additional cost. Interested landowners can learn more about the American Tree Farm System and their Standards of Sustainability at www.treefarmsystem.org.

#### **A Few Final Words**

The key to FWH+A+Syst is that you implement the actions you have identified to reduce the environmental risks. Some of the stewardship practices that will reduce risks may cost very little and take very little time to implement. Other practices may involve additional costs and may not be implemented for a few years. It is important, however, to have a plan to follow. Once you have developed a plan and have implemented changes to address the risks, you are ready for MAEAP verification for your FWH System.

Sustainable Non-Agriculture Land Management						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk	
SUSTAINABLE MANAGEMENT						
<b>1.00)</b> Has there ever been a formal Right to Farm or Right to Forest complaint at this property?	There has never been a Right to Farm or Right to Forest complaint or the complaint was not verified or the concern was resolved.		There was a formal Right to Farm or Right to Forest complaint and the concern was not resolved. <sup>12,20</sup>	Producer's verbal indication of complaint history.		
<b>1.01)</b> Is the landowner implementing a Land Management Plan (LMP)?	Landowner has an up-to-date LMP and is making a reasonable effort to follow the implementation schedule.	Landowner has an up-to-date LMP but has not implemented the plan.	Landowner does not have an up-to-date LMP.			
<b>1.02)</b> Does the Land Management Plan (LMP) adequately address the landowner's objectives and priorities relating to forests and wetlands, as well as wildlife and associated habitats?	Landowner objectives are in writing and outlined in the LMP.	Landowner has objectives, but not in writing.	Landowner has not considered objectives.			
<b>1.03)</b> Does the Land Management Plan (LMP) address specific desired future conditions, and is it adaptive in response to future events or changing objectives?	LMP addresses specific desired future conditions and is adaptive in response to future events or changing objectives.	LMP addresses active and adaptive management and/or general guidance about desired future conditions but they are not specific to each management unit.	No information about desired future conditions is in the LMP.			
<b>1.04)</b> Is the Land Management Plan (LMP) based on professional guidance and science?	Yes, LMP is based on professional guidance and science.		Landowner does not have an LMP.	Table 2: W		
<b>1.05)</b> Does the landowner regularly monitor for changes that could affect resources on the site or goals?	The landowner (or their agent) monitors the property at least annually for changes that could affect resources or landowner goals.	The landowner (or their agent) monitors less than annually.	The landowner (or their agent) does not do any monitoring.			

A boxed risk level indicates the level required for environmental assurance verification (MAEAP verification).

Bold black print indicates a violation of state or federal regulation. Bold italic blue print indicates a management practice consistent with a specified Right to Forest Act Generally Accepted Forest Management Practices (GAFMPs).

Sustainable Non-Agriculture Land Management (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk	
SUSTAINABLE MANAGEMENT (CONTINU	ED)					
<b>1.06)</b> Are property boundaries known and marked?	Property boundaries are known and were established by a licensed surveyor.	Property boundaries have been agreed upon by landowner and neighbors, but no official survey has been conducted.	Property boundaries are not known.			
PROTECT SPECIAL SITES						
<b>1.07)</b> Has the State Historic Preservation Office (SHPO) been contacted and the database checked for property covered under this land management plan (LMP)?	SHPO has been checked, results are found in the LMP and, if applicable, the landowner minimizes impact to the site.	SHPO has been checked, results are found in the LMP, however, the landowner does not minimize impact to the site.	SHPO has not been checked. <sup>1</sup>	Table 2: M & D		
<b>1.08)</b> Are any special sites designated by the landowner on this property?	If yes, the special site(s) has been identified, documented in the LMP and the landowner minimizes impact to the site.		If yes, the special sites(s) has been identified, but not documented in the LMP and landowner minimizes impact to the site.			
AIR, WATER AND SOIL PROTECTION			•			
<b>1.09)</b> Does the landowner follow the Michigan Forestry Best Management Practices for Soil and Water Quality?	Yes.		No.	Table 2: C		
<b>1.10)</b> Have streams, lakes, ponds, and wetlands; including but not limited to: bogs, fens, swamps, marshes, or vernal pools, been noted or mapped in the Land Management Plan (LMP)?	If present, streams, lakes, ponds and wetlands have been noted or mapped in the LMP. Riparian Management Zones (RMZs) are described in the LMP and implemented. Prior to any management activities, a plan that follows Michigan Forestry Best Management Practices for Soil and Water Quality is developed and communicated.	Streams, lakes and ponds have been identified on the property. No management plan has been developed. Qualified logging professionals are used for timber harvests.	Streams, lakes, ponds have not been identified.	Map in Land Management Plan. And/or Supplemental MI EGLE Wetland Mapper Documentation And/or Written Documentation within LMP. Table 2: B		

Bold black print indicates a violation of state or federal regulation. Bold italic blue print indicates a management practice consistent with a specified Right to Forest Act Generally Accepted Forest Management Practices (GAFMPs).

Sustainable Non-Agriculture Land Management (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk		
AIR, WATER AND SOIL PRO	DTECTION (CONTINUED)				-		
<b>1.11)</b> Have designated trout streams, natural rivers, wild and scenic rivers discussed and mapped in the Land Management Plan (LMP)?	If present, designated trout streams, natural rivers, and wild and scenic rivers have been discussed and mapped in the LMP. Riparian Management Zones (RMZs) are discussed and/or mapped in the LMP. RMZ's have been implemented.	Landowner is aware that designated trout streams, natural rivers, wild and scenic rivers exist on the property, but no management plan has been developed or implemented.	Designated trout streams, natural rivers, and wild and scenic rivers exist on the property, but landowner was not aware of the designation. <sup>7, 13, 14</sup>	Documentation and map in LMP. Table 2: B, G, and H			
<b>1.12)</b> Is there an unused well located on the property?	No unused well or abandoned well properly sealed.	-Unused well temporarily abandoned properly: Meets minimum isolation distances. -Is disconnected from any water distribution piping. -Has the top of the casing securely capped.	Unused, unsealed well located on site. <sup>21</sup>	Unused well(s) properly sealed.			
<b>1.13)</b> If required, have soil erosion and sedimentation control permits been obtained?	Required permits have been obtained. No erosion or sedimentation is apparent.	Required permits have been obtained. Minimal erosion or sedimentation is apparent.	Required permits have not been obtained, or there is evidence of significant erosion or sedimentation. <sup>15</sup>				
<b>1.14)</b> Are roads and trails established and maintained to avoid soil erosion?	Roads show minimal gullying or resulting sedimentation. Construction and maintenance has been done in accordance with Michigan Forestry Best Management for Soil and Water Quality.	Some construction and maintenance have been done in accordance with some Michigan Forestry Best Management Practices for Soil and Water Quality.	Soil erosion, gullying or sedimentation is occurring, and road needs to be relocated.	Table 2: B and C			

Bold black print indicates a violation of state or federal regulation.

Sustainable Non-Agriculture Land Management (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	<b>REFERENCE INFORMATION</b>	Your Risk		
AIR, WATER AND SOIL F	ROTECTION (CONTINUED)						
<b>1.15)</b> If used on the property, how is prescribed burning performed?	Prescribed burning is done according to the approved Land Management Plan (LMP) and with pre-fire planning, which conforms to the Michigan Forestry Best Management Practices for Soil and Water Quality and a burning permit is obtained if required.	Prescribed burning is done with pre-fire planning but does not conform to the Michigan Forestry Best Management Practices for Soil and Water Quality and no burning permit was obtained if required.	Prescribed burning is done without an approved LMP or pre-fire planning and does not conform to the Michigan Forestry Best Management Practices for Soil and Water Quality and <b>no burning</b> <b>permit was obtained</b> . <sup>16</sup>	Table 2: C and H			
<b>1.16)</b> If used on the property, how are pesticides applied?	Pesticides are applied in accordance with Michigan Forest Best Management Practices for Soil and Water Quality and with Environmental Protection Agency (EPA)-approved labels and by persons appropriately trained, certified, licensed and supervised, etc. Accurate records are maintained of all applicable applications of pesticides for at least three years.	Pesticides are EPA- approved, but not used in accordance to Michigan Forest Best Management Practices for Soil and Water Quality or State Law.	Pesticides are not applied in accordance with EPA or State regulations and Michigan Forestry Best Management Practices for Soil and Water Quality. <sup>5</sup>	Pesticide records for the past three years on file (or plans for records). -Date of application -Time of application -Pesticide brand/product name -Pesticide formulation -EPA registration number -Active ingredient(s) -Restricted-entry interval (REI) -Rate per acre or unit -Crop, commodity, stored product, or site that received the application -Total amount of pesticide applied -Size of area treated -Applicator's name -Applicator's certification number -Location of the application -Target pest -Carrier volume per acre MDARD Pesticide Certification and Licensing Requirements MDARD pesticide Laws and Regulations Table 2: J and K			

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Sustainable Non-Agriculture Land Management (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk		
AIR, WATER AND SOIL PRO	TECTION (CONTINUED)				-		
<b>1.17)</b> If fertilizer or other nutrients are applied, what soil nutrient management records are kept?	Records of soil test reports and quantities of nutrients applied to individual areas are maintained.	Partial nutrient management records are kept. Complete nutrient management records will be kept in the future, for review at the time of reverification.	Minimal or no nutrient management records kept.	Three years of records – or five years, if applying manure – or plans to begin keeping records. Soil fertility tests and/or plant analysis results. Date(s) of application(s). Nutrient composition of fertilizer or other material used. Amount of nutrient-supplying material applied per acre. Method of application and placement of applied nutrients. Vegetative growth and cropping history of perennial crops.			
<b>1.18)</b> Have soil types been identified and mapped for the property covered under this land management plan (LMP)?	Yes, they have been identified and mapped.		No, they have not been identified or mapped.	Table 2: MM			
<b>1.19)</b> Have resource concerns been identified in the Land Management Plan (LMP)?	A site assessment occurred, and no resource concerns were found, or resource concerns and actions are being taken according to LMP recommendations.	Yes, resource concerns have been identified and there is intention to follow up.	A site assessment has not been conducted to search for resource concerns OR Yes, resource concerns have been identified, but there is no intention to follow up.				
<b>1.20)</b> How are habitat priorities determined?	Within the context of federal and state law, landowner's interest in and goals for specific wildlife species are outlined in a Land Management Plan (LMP) and actions are included in the plan to achieve those goals.	The landowner's species and/or habitat priorities are identified but are not addressed or not fully addressed in an LMP.	Species and habitat priorities are not identified.				

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Sustainable Non-Agriculture Land Management (continued)						
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk	
AIR, WATER AND SOIL	PROTECTION (CONTINUED)					
<b>1.21)</b> Does the land management plan (LMP) provide management strategies for addressing unwanted pests, pathogens and vegetation?	Management strategies for integrated pest management to address unwanted pests, pathogens and vegetation is addressed in the LMP and is being implemented.	Management strategies for integrated pest management to address unwanted pests, pathogens and vegetation is addressed in the LMP but not yet being implemented.	The LMP does not provide management strategies for addressing unwanted pests, pathogens and vegetation.	Table 2: L, D and NN		
HABITAT RESTORATION	AND DEVELOPMENT					
<b>1.22)</b> How are adverse impacts to federal- or state- listed threatened and endangered species avoided?	A database assessment and/or on-site inventory are completed. If listed species are thought to be present, then Best Management Practices (BMPs) are included in a Land Management Plan (LMP) and are properly implemented on the property.	A database assessment and/or on-site inventory are completed. If listed species are thought to be present, then BMPs are included in an LMP. At a minimum, no action is taken that will adversely impact the species or habitat.	No assessment has been completed, potential status of listed species on the property is unknown and no consideration of listed species is made when habitat is altered on the property. OR Action is knowingly being taken that adversely impacts listed species. <sup>2, 3</sup>	Table 2: A, D, N, LL & NN		
<b>1.23)</b> How are rare or sensitive habitats addressed on the property?	A database assessment and/or on-site inventory are complete. If rare or sensitive habitats are thought to be present, especially Michigan Natural Features Inventory S1 and S2 types, then applicable management practices are included in a Land Management Plan (LMP) and are properly implemented on the property.	A database assessment and/or on-site inventory are complete. If rare or sensitive habitats are thought to be present, then Best Management Practices are included in an LMP. At a minimum, no action is taken that will adversely impact the habitat.	No assessment exists, potential status rare or sensitive habitats on the property are unknown and no consideration of these habitats are made when habitat is altered on the property. OR Action is knowingly being taken that adversely impacts the habitats.	Table 2: A, D, N, LL & NN		
<b>1.24)</b> Is the land managed with consideration for migratory birds?	Land is managed to maintain and enhance migratory bird populations and habitat.	Land is managed without harm to migratory bird populations and habitat.	Land is managed in a manner that is detrimental to migratory bird populations and habitat. <sup>4</sup>	Table 2: A, D, N, LL & NN		

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Sustainable Non-Ad	priculture Land Mana	gement (continued)
	griouriuro Euria maria	gement (continued)

RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk
HABITAT RESTORATION	AND DEVELOPMENT (CONTINUED)				-
<b>1.25)</b> How are nuisance non-native and invasive terrestrial and aquatic species on forestlands, wetlands, and other non-agricultural areas addressed on the property?	Nuisance non-native and invasive terrestrial and aquatic species are identified, mapped, or described for each cover type or management unit on the property. All areas are actively being treated as described in the Land Management Plan (LMP). Invasive terrestrial and aquatic species occurrence and location is being reported to the Midwest Invasive Species Information Network (MISIN). Nuisance non- native and invasive terrestrial and aquatic species are not being moved in violation of State law.	Nuisance non-native and invasive terrestrial and aquatic species are identified, mapped, or described for each cover type or management unit. Treatment activities outlined in the LMP are being appropriately implemented. Nuisance non-native and invasive terrestrial and aquatic species are not being moved in violation of State law.	No effort has been made to identify and map invasive species and no treatment action is being taken. Nuisance non-native and invasive terrestrial and aquatic species are being moved in violation of State law.11,17	Table 2: O and P	

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Sustainable Non-Agriculture Land Management (continued)							
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk		
HABITAT RESTORATION AND D	EVELOPMENT (CONTINUED)						
<b>1.26)</b> Are the condition and health of forestlands, grasslands, wetlands and all other habitat types being addressed on the property in relationship to the landowner's priority wildlife species?	Successional stages, restoration potential, resource health and long- term management are outlined in a Land Management Plan (LMP) and actions are included in the plan to achieve those goals.	Successional stages, restoration potential, resource health and long- term management are not outlined in an LMP or actions are not included in the plan to achieve those goals.	Successional stages, restoration potential, resource health and long-term management are not being addressed.	Table 2: B			
<b>1.27)</b> Have all cover types/ecosystems/habitat types (lakes, streams, wetlands, grasslands, shrubland, forestland, etc.) been correctly identified and mapped as part of the Land Management Plan?	Yes, all have been identified and mapped.		No, they have not been correctly identified.	Map in Land Management Plan. Table 2: B, R, S, T, U & V			
<b>1.28)</b> Is the landowner aware of programs that may assist with wildlife habitat improvement (e.g., Partners for Fish and Wildlife, Wildlife Habitat Grant Program, Forests for Fish, Farm Bill financial and technical assistance)?	Yes, the landowner is aware of all programs and is utilizing those that fit goals or conducting similar practices on their own.	Yes, the Land Management Plan identifies potential programs, but none have been put into practice.	No, the landowner is not aware of programs that could help reach objectives.	Table 2: B, Q, R, S, T, U,V & W			

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Sustainable Non-Agriculture Land Management (continued)						
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk	
CONTRACTING						
<b>1.29)</b> Does landowner engage qualified natural resource professionals and qualified contractors that carry appropriate insurance and comply with appropriate federal, state, and local regulations?	Landowner engages qualified natural resource professionals and qualified contractors that carry appropriate insurance and comply with appropriate federal, state and local regulations.		Landowner does not engage qualified natural resource professionals and qualified contractors that carry appropriate insurance and comply with appropriate federal, state and local regulations.	Table 2: W		
<b>1.30)</b> Does the landowner retain appropriate records for forest product harvests and other management activities?	Landowner retains appropriate records for forest product harvests and other management activities.	Landowner has no records but plans to retain appropriate records for future activities.	Landowner retains no records for forest product harvests and other management activities.			
<b>1.31)</b> Does landowner or a designated qualified natural resource professional ensure that forest product harvests and other management activities conform to the management plan?	Landowner or a designated qualified natural resource professional ensures that forest product harvests and other management activities conform to the management plan objectives.		Landowner does not ensure that forest product harvests and other management activities conform to the management plan objectives.			
		Forestry				
<b>2.01)</b> Is the forestland enrolled in a sustainable forest certification program (e.g., Tree Farm, Sustainable Forestry Initiative, Forest Stewardship Council)?	Forestland is enrolled in a sustainable forest certification program.	Forestland is not enrolled in a forest certification program.	Forestland owner is not aware of certification programs.	Table 2: X, Y, and Z		
<b>2.02)</b> Is the forestland owner aware of available forestland tax incentive programs (e.g., Commercial Forest Program, Qualified Forest Program) or financial assistance programs such as Environmental Quality Incentives Program?	Forestland owner is enrolled in programs appropriate to their objectives.	Forestland owner is knowledgeable about some available programs, but is not enrolled in programs that fit management objectives.	Forestland owner is not aware of any available programs.	Table 2: T, AA, and BB		

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Forestry (continued)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk
<b>REFORESTATION AND AFFORESTA</b>	TION				
<b>2.03)</b> Do understocked areas exist where productive forest is the desired future condition?	No.	Yes.			
<b>2.04)</b> Is reforestation or afforestation achieved by a suitable process that ensures desired future conditions?	Forestland or potential forestland has achieved a planned, adequate stocking of desired species reflecting the landowner's objectives and appropriate to the site and resource conditions.	Forestland or potential forestland is in the process of achieving adequate stocking of desired species that reflect the landowner's objectives, and are appropriate to the site and resource conditions.	No plan is in place to achieve desired future conditions. AND There is inadequate stocking.	Table 2: DD	
OTHER FORESTRY			•		
<b>2.05)</b> What is the visual sensitivity of the site?	Least sensitive (by Michigan's Right to Forest Act Generally Accepted Forest Management Practices [GAFMPs] definition).	Moderately sensitive (by GAFMPs definition).	Most sensitive (by GAFMPs definition).	Table 2: CC	
<b>2.06)</b> Does forestland owner manage the visual impacts of forest management activities consistent with the size of the forest, the scale and intensity of forest management activities, and the location of the property?	Forest management activities apply visual quality measures compatible with appropriate silvicultural practices and meeting Visual Quality Criteria in Michigan's Right to Forest Act Generally Accepted Forest Management Practices (GAFMPs).	Forest management activities apply some visual quality measures compatible with appropriate silvicultural practices and GAFMPs.	Forest management, activities do not apply visual quality measures compatible with appropriate silvicultural practices and GAFMPs.	Table 2: CC	
<b>2.07)</b> Is timber harvesting conducted in compliance with Forest Management Plan and does it maintain the potential of the property to produce forest products and other benefits sustainably?	Yes.		No.		

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Forestry (continued)					
RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk
OTHER FORESTRY (CONTINUED)					
<b>2.08)</b> Is a timber sale contract used when harvesting timber?	A timber sale contract was prepared by a professional forester.	A timber buyer or the forest owner prepared a timber sale contract.	Timber harvests are conducted without a written timber sale contract.		
<b>2.09)</b> If timber harvesting is done, is a harvest plan map prepared that details harvest boundaries, exclusion areas, sensitive sites, roads and landings?	A harvest plan map is prepared that contains all pertinent information.	Written plan not in place. Oral harvesting plan discussed with contractor.	Harvests are done without a harvest plan map.		
<b>2.10)</b> Is the landowner aware of logger credentialing programs?	Yes.		No specific qualifications are required of logging contractors.	Table 2: EE	
<b>2.11)</b> Do all management activities, including timber harvesting conform to Michigan Forestry Best Management Practices for Soil and Water Quality (a.k.a. Best Management Practices [BMPs])?	All management is done in accordance to Forest Land BMPs.	Some, but not all, BMPs are addressed.	Management activities are conducted without regard to BMPs.	Table 2: C	
<b>2.12)</b> Do all management activities conform to Michigan's Right to Forest Generally Accepted Forest Management Practices (GAFMPs)?	All management activities conform to GAFMPs.	Some, but not all management activities conform to GAFMPs.	Management is done without regard to GAFMPs.	Table 2: CC	
<b>2.13)</b> Are silviculturally appropriate techniques used for the removal of vegetation or timber?	Adheres to Right to Forest Act GAFMPs or other system as recommended by natural resource professional.		Silviculture is not considered when harvesting.	Table 2: CC	
<b>2.14)</b> If conducting biomass harvesting, does it comply with Department of Natural Resources Biomass Harvesting Guidance?	Yes, it complies.		No, it does not comply.	Table 2: FF	

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### Wetlands (Forested and Non-Forested) and Water Management

RISK QUESTION	Low Risk – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk
<b>3.01</b> Are any recent or proposed land management activities that, to the best of your knowledge, require a permit, taking place in wetlands, 100-year floodplains, Great Lakes shorelines, or inland lakes and streams?	No activities that, to the best of your knowledge, require a permit, are taking place in these areas.	A permit was obtained and/or proper agencies were contact.	Activities that require a permit are taking place in these areas, but no permit was obtained. <sup>18</sup>		
<b>3.02)</b> Has the quality of the wetlands been assessed and any resource concerns been noted/documented in the Land Management Plan (LMP)?	If impairments are found, landowner has been provided information and resources to contact proper agency personnel trained in wetland restoration.	Wetlands have been partially assessed.	No.	Table 2: A, C, E, F, G, I, Q, R, T and GG	
<b>3.03)</b> Are all wetlands, streams, farm ditches and other water bodies on the property protected from polluted runoff and sediment with conservation practices?	Where applicable, filter strips, riparian buffer strips, grassed waterways and other conservation practices are maintained. No direct discharges of harmful substances into water have been observed. <sup>10</sup>	Where applicable, conservation practices are maintained on some fields.	No conservation practices are maintained. Direct discharges of harmful substances into waters of the state have been observed. <sup>10</sup>	Table 2: A, C, Q, T, and GG	

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## Wetlands (Forested and Non-Forested) and Water Management (continued)

RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	<b>REFERENCE INFORMATION</b>	Your Risk
<b>3.04)</b> Are wetlands (hydrologically, vegetatively) assessed for restoration potential by agency personnel or others trained in wetlands restoration?	Restoration potential is assessed on all wetland basins. OR A wetlands survey has been completed and no wetlands exist on the property.	Restoration potential is assessed for some wetland basins.	No assessment of wetland basins has been started.	Table 2: F	
<b>3.05)</b> Are wetlands (hydrologically, vegetatively) being restored by or following a plan from agency personnel or other trained in wetlands restoration?	Restoration is being implemented on all wetlands.	Restoration is being implemented on some wetlands.	No restoration has been started on any wetland.	Table 2: B, C, Q, T, and GG	
<b>3.06)</b> Are restored and/or natural wetlands enrolled in a conservation program that offers long-term (10 years or longer) or permanent protection?	All wetland areas and appropriate buffers are enrolled in a conservation program.	Some wetland areas and appropriate buffers are enrolled in a conservation program.	No wetland areas are enrolled in a conservation program.	Table 2: Q, R, U, V, and GG	
<b>3.07)</b> How is aquatic resource management addressed on the property?	Aquatic resource options are identified as well as actions within the plan for all the waters on the property.	Aquatic resource options are identified as well as actions within the plan for most of the waters on the property.	There are no aquatic resource options, or they are not addressed in the plan or if addressed no actions are identified.	Table 2: S, GG, HH, II, JJ, KK, and LL	

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A boxed risk level indicates the level required for environmental assurance verification (MAEAP verification).

Non-Forested Upland Habitat					
RISK QUESTION	Low Risk – 3 (recommended)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK – 1 (SIGNIFICANT HAZARD)	REFERENCE INFORMATION	Your Risk
<b>4.01)</b> Does the land management plan (LMP) address the health and current conditions of non- forested upland habitat? If restoration of forested upland habitat is needed, does the LMP provide guidance?	The LMP properly addresses the health and current conditions of non-forested upland habitats and, if needed, provides guidance for restoration activities.		Health and current conditions of non-forested upland habitats are not addressed and no guidance for restoration activities is provided.	Table 2: Q, R, T, and W	
<b>4.02)</b> Are any recent or proposed activities that require a permit occurring in critical dune areas?	There are no critical dunes OR Critical dunes are present BUT no recent activities requiring a permit have, or will, take place.	Habitats are part of a critical dune area, activities requiring a permit have taken place, and a permit was obtained.	Non-forested upland habitats are part of a critical dune area, activities requiring a permit have taken place, and a permit was not obtained. <sup>19</sup>		
<b>4.03)</b> Are non-forested upland habitats being restored by or according to a plan from agency personnel or others trained in habitat restoration or improvement?	Restoration is being implemented on all non- forested upland habitats on the property.	Restoration is being implemented on some habitats on the property.	No restoration has been started on other habitats on the property.	Table 2: Q, R, T, and W	
<b>4.04)</b> Are restored and/or natural habitats enrolled in a conservation program that offers long-term (10 years or longer) or permanent protection?	All non-forested upland habitat areas are enrolled in a conservation program.	Some habitat areas are enrolled in a conservation program.	No habitat areas are enrolled in a conservation program.	Table 2: Q, U, and V	
Other Environmental Risks in the FWH System					
<b>5.00)</b> Are there other activities, products, processes/equipment, services, by-products, and/or waste at this property that pose contamination risk to groundwater or surface water?	No additional risk(s) identified.	Plan to mitigate the identified contamination risk(s).	No plan to mitigate identified contamination risk(s).		

A boxed risk level indicates the level required for environmental assurance verification (MAEAP verification). **Bold black print** indicates a violation of state or federal regulation.

Table 1. Legal citations for environmental risks in Forest, Wetlands and Habitat+A+Syst				
Footnote	Law	Description		
1	National Historic Preservation Act, NHPA of 1996	State Historic Preservation Office		
2	Federal Endangered Species Act, Public Act 93-205 of 1973	U.S. Fish and Wildlife Service		
3	Michigan Threatened and Endangered Species	Natural Resources and Environmental Protection Act Part 365		
4	Migratory Bird Treaty Act (1918)	U.S. Fish and Wildlife Service		
5	Federal Insecticide, Fungicide, and Rodenticide Act (1947)	U.S. EPA MDARD		
6	Wild and Scenic Rivers Act (1968)	DNR, Fish and Wildlife Service		
7	National Environmental Policy Act (1969)	U.S. EPA		
8	Clean Air Act (1970)	Natural Resources and Environmental Protection Act Part 31		
9	Clean Water Act (1972)	Natural Resources and Environmental Protection Act Part 31		
10	Plant Protection Act (2000)	U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS)		
11	Right to Forest Act	MDNR		
12	Michigan Natural Rivers	Natural Resources and Environmental Protection Act Part 305		
13	Michigan Designated Trout Streams	Natural Resources and Environmental Protection Act Part 487		
14	Soil Erosion and Sedimentation Control	Natural Resources and Environmental Protection Act Part 91		
15	Prevention and Suppression of Forest Fires	Natural Resources and Environmental Protection Act Part 515		
16	State regulation on moving non-native plants and pests	Natural Resources and Environmental Protection Act Part 324		
17	Michigan Wetlands Protection, Michigan Floodplain Regulatory Authority, Michigan Inland Lakes and Streams and Michigan Shorelands Protection and Management	Natural Resources and Environmental Protection Act Part 303, 31, 301, 323 and 325		
18	Sand Dunes Protection Law	Natural Resources and Environmental Protection Act Part 353		
19	Right to Farm Act	MDARD		
20	Public Health Code, Act 368 of 1978	Part 127: Water Supply and Sewer Systems		

#### **Definition Section**

Land Management Plan: A customized, written document that reviews, analyzes and describes all non-agriculture land including but not limited to: forests, grasslands, shrublands, and all types of wetlands and water bodies including but not limited to: streams, lakes, ponds, bogs, fens, swamps, marshes and vernal pools.

Table 2. Additional Resources				
Footnote	Resources	Description		
А	U.S. Fish and Wildlife Service	U.S Fish and Wildlife Service		
В	EGLE Wetlands Map Viewer and U.S. Fish and Wildlife Service National Wetlands Inventory.	Michigan Department of Environment, Great Lakes and Energy (EGLE) Wetlands Map Viewer		
С	Michigan Forestry Best Management Practices for Soil and Water Quality	BMP Manual		
D	Michigan Department of Natural Resources (DNR) Service Forester	Michigan DNR Forest Stewardship Program		
E	Wild and Scenic Rivers	Michigan DNR. & U.S. Fish and Wildlife Service		
F	Designated Trout Streams	Michigan DNR. & U.S. Fish and Wildlife Service		
G	Inland Trout and Salmon Regulation Maps	Michigan DNR. & U.S. Fish and Wildlife Service		
Н	Michigan DNR Burn Permits	Michigan DNR		
I	Michigan DNR Natural Rivers Database	Michigan DNR		
J	Michigan Department of Agriculture and Rural Development (MDARD) Pesticide Certification and Licensing Requirements	MDARD		
К	Michigan Department of Agriculture and Rural Development (MDARD) Pesticide laws and Regulations	MDARD		
L	Michigan Department of Agriculture and Rural Development (MDARD) Integrated Pest Management (IPM)	MDARD		
М	State Archaeologist, State Historic Preservation Office of Michigan	State Historic Preservation Office of Michigan		
Ν	Michigan Natural Features Inventory	Michigan State University Extension		
0	Midwest Invasive Species Network	Michigan State University, Detection, Identification and reporting of invasive species.		
Р	Cooperative Invasive Species Management Area	A partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species (or weeds) in a defined area.		
Q	U.S. Fish and Wildlife Service Partners for Fish and Wildlife	Technical expertise and financial assistance to help private landowners with habitat restoration.		

(Continued)

Table 2. Additional	Resources (continued)	
Footnote	Resources	Description
R	Michigan DNR Wildlife Habitat Grant Program	The primary goal of this program is to enhance and improve the quality and quantity of game species habitat in support of specific goals from the Wildlife Division's strategic plan.
S	Michigan DNR Forests for Fish	Michigan DNR
Т	Natural Resources Conservation Service (NRCS)	USDA NRCS
U	MDARD Conservation Easements	MDARD
V	The Nature Conservancy (TNC) Conservation Easements	The Nature Conservancy
W	MDARD List of Qualified Foresters by County, USDA NRCS Technical Service Provider Registry, Society of American Foresters Certified Forester, Association of Consulting Foresters, Certified ESP plan writer, Certified Wildlife Biologist, Michigan DNR Registered Forester. An individual recognized by MDARD to write LMPs.	MDARD, USDA NRCS, Society of American Foresters, Association of Consulting Foresters, The Wildlife Society, Michigan DNR
Х	American Tree Farm System	
Y	Sustainable Forestry Initiative	
Z	Forest Stewardship Council	
AA	Qualified Forest Program	MDARD
BB	Commercial Forest Program	Michigan DNR
CC	Right to Forest Generally Accepted Forest Management Practices (GAFMPs)	Michigan DNR
DD	Michigan DNR Forest Regeneration Survey Manual	Michigan DNR
EE	Qualified Logging Professionals and Michigan Association of Timbermen, Master Logger Certification	Sustainable Forestry Education. Michigan Association of Timbermen
FF	Michigan DNR Biomass Harvesting Guidance	Michigan DNR
GG	Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Resources Division	EGLE
НН	Michigan DNR Fisheries Habitat Grant Program	Michigan DNR
11	Michigan Clean Water Corps	
JJ	Michigan Trout Unlimited	
KK	Michigan Lake Stewardship Association	

(Continued)

Table 2. Additional Resources (continued)				
Footnote	Resources	Description		
LL	Information for Planning and Consultation (IPaC)	U.S. Fish and Wildlife Service, provides a great resource to see if any listed species, critical habitat, migratory birds or other natural resources may be impacted by a project in a specified area.		
MM	USDA NRCS Web Soil Survey	USDA, User can create a soil map and generate soil reports here.		
NN	Michigan State University Extension	Michigan State University, MSUE, features programming and resource for Agriculture, Business and Community, Family, Food & Health, Lawn & Garden, Natural Resources and 4-H and Youth		

		ADDITIONAL NOTES:
	Ind Latitude and Longitude)	FARM INFORMATION         FARM NAME:         (If no physical address, please use Section, Township, Range, <u>a</u> FARM SITE STREET ADDRESS:         FARM SITE CITY:         STATE: MICHIGAN (ONLY) (Mailing Address May Va         FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE COUNTY:         FARM SITE TOWNSHIP:         LATITUDE:       LONGITU         SECTION:       TIER:         (If there is no mailbox at the farm site location or not a place t         FARM MAILING) STREET:       (MAILING) STREET:         (MAILING) P.O. BOX:       (MAILING) STATE:         (MAILING) STATE:       (MAILING) ZIP CODE:
	(MAILING) STREET: (MAILING) CITY: (MAILING) CITY: (MAILING) STATE: (MAILING) ZIP CODE: HOME PHONE NUMBER: 	MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS: MR or MRS or MS FIRST NAME: LAST NAME: CONTACT ROLE: EMAIL ADDRESS:
24	Home Address) HOME PHONE NUMBER:	BUSINESS NAME:         BUSINESS OWNER NAME:         BUSINESS PHONE:         EXTENSION:         BUSINESS WEB SITE:         DESCRIPTION:         DESCRIPTION:         MAILING) STREET:         (MAILING) CITY:         (MAILING) STATE:         (MAILING) ZIP CODE:         OWNERS CONTACT INFORMATION         SALUTATION: (Circle one)

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there
Evidenc
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Discharge:
Yes
or
No

# FARMSTEAD

Fuel Storage: (Gallons)	(Pounds)
Fertilizer Storage: (Gallons)	(Pounds)
Pesticide Storage: (Gallons)	(Pounds)
Farmstead Wells (each):	
EHS Threshold: Yes or No	
CROPPING	
NMP (Acres):	
Manure Applied (Acres):	
Fertilizer Applied (Acres):	
Pesticide Applied (Acres):	
Irrigation (Acres):	

# Conservation Tillage (Acres): \_\_\_\_\_ Grade Stabilization (Each): \_\_\_\_\_ Manure Applied (Gallons/Year): Manure Purchased (Gallons/Year):

No Till (Acres): Cover Crops (Acres): Buffer Strips (Linear Feet):

Manirok	Manure P	Manure N
I be /Vaar).	(Lbs/Year):	(Lbs/Year):

Manure K (Lbs/Year):
LIVESTOCK CNMP (Acres):
CNMP Written By:
Date of CNMP Approval:
CNMP Reviewed By:
Name of Farm(s) Covered In CNMP:
Manure Applied (Acres):
Fertilizer Applied (Acres):
Pesticide Applied (Acres):
Irrigation (Acres):
Buffer Strips (Linear Feet):
Cover Crops (Acres):
No Till (Acres):
Conservation Tillage (Acres):
Grade Stabilization (Each):
Milkhouse Discharge (Gallons/year):
Livestock Exclusion (Linear Feet):
Silage Pad (Acres):
Manure Produced (Gallons/Year):
Manure Sold (Gallons/Year):
Manure Manifested (Gallons/Year):
Manure N (Lbs/Year):
Manure P (Lbs/Year):
Manure K (Lbs/Year):

# GREENHOUSE NMP (Square Feet):

# FOREST, WETLANDS, AND HABITAT

Land Management Plan (Acres)		
Plan Type: Forest Wetland	Habitat	All Three
Plan Writer:		
Date Plan Written:		
Date Plan Expires:		
Forestland (Acres):		
Grassland (Acres)		
Wetland (Acres)		
Restored/Improved Wetland Habit	at (Acres):	
Restored Non-Wetland Habitat (Ac	res):	
Management for Invasive Species (	Acres):	
Managed as Buffers (Acres):		
Length of Streambanks/Shorelines	(Feet):	

# Notes:

Factors by Animal	Type and Class					
CLASS	Average Animal Weight	QUANTITY				
CALF	450					
HIGH FORAGE	750					
HIGH ENERGY	750					
HIGH FORAGE	1100					
HIGH ENERGY	1100					
COW	1000					
CALF	150					
CALF	250					
HEIFER	750					
HEIFER	1000					
LACTATING COW	1400					
DRY COW	1400					
VEAL	250					
DRY SYSTEM						
LIQUID SYSTEM						
PULLETS						
ALL						
ALL	1000					
NURSERY PIG	25					
GROW-FINISH	150					
GESTATING	275					
LACTATING	375					
BOAR	350					
OTHER						
ALL	100					
OTHER LIVES	STOCK QUANTIT					
	STOCK QUANTIT					
	Factors by Animal         CALF         CALF         HIGH FORAGE         HIGH FORAGE         HIGH ENERGY         HIGH ENERGY         HIGH ENERGY         HIGH ENERGY         COW         CALF         CALF         CALF         CALF         CALF         DRY SYSTEM         LACTATING COW         DRY SYSTEM         LACTATING         DRY SYSTEM         LQUID SYSTEM         DRY COW         DRY COW <td>Factors by Aniimat UsesCLASAverage AnimatCALF450HIGH FORAGE750HIGH FORAGE750HIGH FORAGE1100HIGH FORAGE1100COW1000COW1000CALF250CALF150CALF1000DRY COW1400DRY COW1400DRY COW150QULETS150ALL150DRY SYSTEM150QESTATING25BOAR350OTHER100DTHER LIVESTOCK QUANTIT</td>	Factors by Aniimat UsesCLASAverage AnimatCALF450HIGH FORAGE750HIGH FORAGE750HIGH FORAGE1100HIGH FORAGE1100COW1000COW1000CALF250CALF150CALF1000DRY COW1400DRY COW1400DRY COW150QULETS150ALL150DRY SYSTEM150QESTATING25BOAR350OTHER100DTHER LIVESTOCK QUANTIT				
CROP NAME	Acres	CROP NAME	ACRES	CROP NAME	ACRES	
-----------------	------------	-----------------------	-------	--------------------	-------	--
Alfalfa	-	Cucumbers, Fresh		Oats		
Apples		Cucumbers, Pickling		Peaches		
Apricots		Dry Beans		Pears		
Asparagus		Fruit, Other		Potatoes		
Blueberries		Grapes, Juice		Rye		
Carrots		Grapes, Wine		Small Grain, Other		
Cherries, Sweet	15	Green Beans		Soybeans		
Cherries, Tart	15	Greenhouse, Annual	-1	Squash/Pumpkin	-	
Christmas Trees		Greenhouse, Perennial		Sugar Beets		
Clover, Seed	¥.	Greens, Herbs		Sunflower		
Corn, Grain		Hay/Pasture		Vegetable, Other		
Corn, Seed	. s ( z	Hops		Wheat		
Corn, Silage		Mixed Garden		Other:		
Corn, Sweet		Nursery		Other:		

Note: Express acres to the closest quarter acre.

Notes:

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### MICHICAN STATE EXtension

### Generally Accepted Fruit, Vegetables, Dairy, Meat, and Grain Processing Practices For Noise and Odor









DRAFT 2023-2024 P.O. Box 30017 Lansing, MI 48909 Phone: (844) 424-7762 www.michigan.gov/gapps

#### TABLE OF CONTENTS

3
4
6
6
7
8
9
10
11
11
11
11
12

#### PREFACE

The Michigan legislature passed into law the Michigan Agricultural Processing Act, (1998 PA 381), which requires the establishment of Generally Accepted Fruit, Vegetable, Dairy, Meat and Grain Processing Practices. These Generally Accepted Processing Practices (GAPPs) are written to provide uniform, statewide standards and acceptable management practices based on standard industry practices. These practices can serve processors in the various sectors of the industry for comparison or improvement of their own managerial routines. New scientific discoveries and changing economic conditions may require necessary revision of the GAPPs.

These practices were developed with industry, university, and multi-governmental agency input. As agricultural processing operations continue to change, new practices or technologies may become available to address the concerns of the neighboring community. Agricultural processors who voluntarily follow these practices are provided protection from public or private nuisance litigation under the Michigan Agricultural Processing Act.

Adherence to these GAPPS does not affect the application of other state and federal statutes.

The Michigan Department of Agriculture and Rural Development (MDARD) website for GAPPs is <u>http://www.michigan.gov/gapps.</u>

#### I. INTRODUCTION

Like all other segments of our economy, agriculture has changed significantly during the past 50 years and will continue to change in the future. Agricultural processing has also experienced these same economic, technical, and competitive changes, as land use changes around these operations. As a result, processing facilities must have the flexibility and opportunity to change and adopt newer technology to remain economically viable and competitive in the marketplace while being protective of the environment. If a healthy, growing processing industry in Michigan is to be assured, efforts must continue to address concerns of processors and their neighbors, particularly in two areas: (1) processors who use GAPPs in their operations should be protected from harassment and nuisance complaints and (2) persons living near processing operations, who do not follow GAPPs, need to have concerns addressed when nuisance problems occur.

No two processing operations in Michigan can be expected to be the same, due to a large variety of variables, which together determine the nature of a particular operation. Record keeping is an important part of any processing operation. A GAPPs Management and Monitoring Plan is recommended for all processors. This plan will help the processor show conformance with the GAPPs. Processors may request a proactive inspection from MDARD for a GAPPs determination. Upon receipt of a nuisance complaint to MDARD, or as result of a proactive inspection, the processor may be required to develop a management and record keeping plan to verify conformance with the GAPPs. In addition to the information contained in this document, conformance with GAPPs requires that the management, storage, transport, utilization, and land application of fruit, vegetable, dairy product, meat, and grain processing by-products be in a manner consistent with Generally Accepted Agricultural and Management Practices as established under the Michigan Right to Farm Act, 1981 PA 93, MCL 286.471 to 286.474.

#### **About This Document**

For quick reference, management standards are first presented as a **bold text** statement. This list is not meant to convey all the information regarding GAPPs. Rather, it is intended to be a useful tool to assist individuals in determining what management practices exist and in what section of this document further information can be found. The remainder of the document provides additional information on each of these management practices. The un-bolded text provides supplemental information to help clarify the intent of the recommended management practices.

Appendix A provides an outline for development of a GAPPs Management Plan.

#### **II. DEFINITIONS**

- (a) "Dairy product" means all of the following:
  - (i) Dairy product as that term is defined in section 12 of the manufacturing milk law of 2001, 2001 PA 267, MCL 288.572.
  - (ii) Milk product as that term is defined in section 4 of the grade A milk law of 2001, 2001 PA 266, MCL 288.474.
- (b) "Fruit and vegetable product" means those plant items used by human beings for human food consumption including, but not limited to, field crops, root crops, berries, herbs, fruits, vegetables, flowers, seeds, grasses, tree products, mushrooms, and other similar products, or any other fruit and vegetable product processed for human consumption as determined by the Michigan Commission of Agriculture and Rural Development.
- (c) "Generally accepted fruit, vegetable, dairy product, meat, and grain processing practices" means those practices as defined by the Michigan Commission of Agriculture and Rural Development. The Michigan Commission of Agriculture and Rural Development shall give due consideration to available Michigan Department of Agriculture and Rural Development information and written recommendations from the Michigan State University College of Agriculture and Natural Resources Extension and the Agricultural Experiment Station in cooperation with the United States Department of Agriculture, the United States Food and Drug Administration, the Michigan Department of Environment, Great Lakes and Energy, and other professional and industry organizations.
- (d) "Grain" means dry edible beans, soy beans, small grains, cereal grains, corn, grass seeds, hay, and legume seeds in a raw or natural state.
- (e) "Person" means an individual, corporation, partnership, association, limited liability company, or other legal entity.
  - (f) "Processing" means the commercial processing or handling of fruit, vegetable, dairy, meat, and grain products for human food consumption and animal feed, which includes but not limited to the following:
  - (i) The generation of noise, odors, waste water, dust, fumes, and other associated conditions.
  - (ii) The operation of machinery and equipment necessary for a processing operation including, but not limited to, irrigation and drainage systems and pumps and the movement of vehicles, machinery, equipment, and fruit and vegetable products, dairy products, meat, and grain products (cont'd page 5...)

and associated inputs necessary for fruit and vegetable, dairy, and grain, food, meat, or feed processing operations on the roadway as authorized by the Michigan vehicle code, 1949 PA 300, MCL 257.1 to 257.923.

- (iii) The management, storage, transport, utilization, and land application of fruit, vegetable, dairy product, meat, and grain processing by-products consistent with generally accepted agricultural and management practices as established under the Michigan Right to Farm Act, 1981 PA 93, MCL 286.471 to 286.474.
- (iv) The conversion from one processing operation activity to another processing operation activity.
- (v) The employment and use of labor engaged in a processing operation.
- (g) "Processing operation" means the operation and management of a business engaged in processing.
- (h) "State statutes" includes, but is not limited to, any of the following:
- () The county zoning act, 1943 PA 183, MCL 125.201 to 125.240.
  - (ii) The township zoning act, 1943 PA 184, MCL 125.271 to 125.310.
  - (iii) The city and village zoning act, 1921 PA 207, MCL 125.581 to 125.600.
  - (iv) The Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, MCL 324.101 to 324.90106
- (i) "Unverified nuisance complaint" means a nuisance complaint in which the director of the Department of Agriculture and Rural Development, or his or her designee, determines that the processing operation is using generally accepted fruit, vegetable, dairy product, meat, and grain processing.

#### III. NOISE

### Noise that arises from the normal and necessary operation of an agricultural processing operation should be managed to the extent practical to avoid creating a nuisance condition for neighboring properties.

The goal with outdoor noise levels is to reduce the intensity, frequency and duration of the noise and to manage the operation in a way that tends to create a positive attitude towards the operation. Because of the subjective nature of human responses to noise levels, recommendations for appropriate technology and management practices are not an exact science. A variety of practices can be used based upon the type of noise, proximity of neighbors and populated areas, and the time of day the noise levels are at their greatest. Maintaining a noise level of no greater than 75 decibels (dB), based upon an eight-hour time weighted average, measured at the property line is below the established standard for workers inside a building and should prevent creating health concerns for neighbors. Standard operations should be at a minimum maintained below this level to avoid creating nuisance concerns. In addition, the following conditions should be considered:

- 1. Some common contributors of noise coming from a processing facility include fan motors, evaporators, heating and ventilation systems, and loading/unloading areas. Sound reduction barriers may be utilized to reduce noise from these areas. Sound reduction barriers can take on a variety of forms. They can include the installation of noise reducing materials around the system, earthen berms, or the planting of tree and hedge barriers. The practices installed at a particular facility will vary depending upon the equipment used and the site specific conditions.
- 2. Assuring source equipment is in good repair and management consistent with industry practices and manufacturers recommendations is essential to maintaining reasonable facility noise levels.
- 3. Conformance with this GAPP does not relieve the processor of the obligation to comply with lawful and regulatory limits.

#### Exceptions

Certain events at a processing facility will create noise levels distinct from normal operations. These events create acceptable exceptions to this GAPP. Three classes of such events are especially relevant.

1. <u>Seasonal Variation</u>. Most food processors use raw agriculture products that have well defined harvesting times which result in peak processing needs for in-plant operation and input logistics (trucks, storage equipment, etc.). During these peak seasonal events, noise levels may exceed those of more normal operations but remain necessary for the effective operation of the processor.

Noise levels exceeding the 75 dB, or normal operation levels, but necessary to temporary peak operations are considered to be in conformance with this GAPP.

- 2. <u>Maintaining Worker Safety.</u> Due to worker safety concerns and compliance with worker safety requirements, vehicles and equipment may be equipped with safety devices such as back-up beepers or audible warning alarms. This equipment is considered essential to protecting worker safety. Operation and use of these alarms shall be considered to be in conformance with these GAPPs.
- 3. <u>Construction, Maintenance, and Site Modifications.</u> There may also be unique temporary circumstances which will affect the noise level of a processing site. During time periods where there are temporary disruptions to normal operations, processors should be encouraged to alert neighboring property owners of the circumstances and the duration of the project. Standard practices shall be utilized and the noise associated with those practices should be considered to be in conformance with this GAPP.

#### **Documentation and Conformance**

Processing facilities should monitor noise levels outside of their buildings and at the property line. Records should be maintained to show the noise levels detected at various times throughout the operational day and year in order to determine seasonal variations. The records should be maintained on site to show conformance with this GAPP.

Depending on the perceived noise, it may be possible to estimate the noise level without instrumentation. There are various charts available of the noise levels at some distance of common noise generators. If various background noises such as insects, nearby highways, etc. can be used for comparison, be sure to include them in the documentation.

If a noise survey has been performed in the work spaces, it may be possible to conduct a comparison between the various determined zones of noise levels and those outside of the building for an estimate.

Instrument measurements are beneficial when the decibel level is questionable. When instrumentation is used, be aware that noise can originate from multiple sources. Measurements at different distances may be useful to determine if off-site sources are contributing. Building walls, hills, and other structures may reduce noise levels. The drop-in noise levels resulting from the implementation of these practices is highly variable and should be measured on-site to determine actual effectiveness. Alternatively, they can be left out of any measured values and referenced as an additional factor, not included in the measurement, rendering the result as a conservative estimate.

#### IV. ODOR

### Odor that arises from the normal and necessary operation of an agricultural processing operation should be managed to the extent practical to avoid creating a nuisance condition for neighboring properties.

The goal for effective odor management is to reduce the frequency, intensity, duration, and offensiveness of odors, and to manage the operation in a way that tends to create a positive attitude toward the operation. Because of the range of human sensitivities to certain odors, odor management should consider that some people will be more adversely affected by a given odor than others. Selection of appropriate technologies and odor management practices must be determined on a case-by-case basis considering the source and nature of the odors as well as varying human sensitivity. The recommendations in this section are intended to provide a variety of responses that can be used to address odor concerns. The following management practices provide guidance on how to minimize potential odors from processing operations.

The principles upon which the most common and effective techniques for odor control are based include (1) reducing the formation of odor-causing gases and (2) reducing the release of odorous gases into the atmosphere. The degree to which these principles can be applied to the various odor sources depends on the level of technology and management that can be utilized.

One main source of odors are those associated with the anaerobic (in the absence of oxygen) decomposition of organic material by microorganisms. The intensity of odors depends upon the biological reactions that take place within the material, the nature of the material, and the surface area of the odor source. Sources of decomposition can include organic materials stored on-site prior to removal.

Processors should select and implement those practices which are applicable, appropriate, and practical for their operations. Odors may indicate an inefficient or improperly operated activity and opportunities may exist to increase operational efficiencies. The following are several practices that can be considered in reducing odor concerns:

- Avoid storage of materials which will create odor-forming gases to the extent possible. Alternatives should be considered for reducing storage of these materials or reusing them in a beneficial manner.
- Use available weather information to your best advantage. Temperature inversions and hot, humid weather tends to concentrate and intensify odors, particularly in the absence of breezes, while turbulent breezes will dissipate and dilute odors.
- Take advantage of natural vegetation barriers, such as woodlots or windbreaks, to help filter and dissipate odors.

Establish vegetated air filters by planting conifers and shrubs as windbreaks and visual screens between odor sources and residential area.

- The odor of fermented processing materials, such as waste products or products headed to a secondary market, can be minimized by storing them at the appropriate dry matter content (generally no greater than 33 percent moisture). Keeping excessive moisture out of the material will reduce the presence of anaerobic bacteria. Use covered storage if technically and economically feasible and evaluate ventilation systems to prevent buildup of gases, moisture, and heat that may intensify odors.
- Design operate and maintain by-product and waste handling and treatment systems per established good engineering practices and standards.
- Establish operating procedures for handling and treatment of by-products and wastes. Ensure employees are properly trained in these operational procedures.
- Frequent removal of spilled materials from outside spaces, coupled with appropriate storage will reduce odor potential.
- Avoid disturbing odor sources (such as dredging storage ponds) during times such as holidays and community events to the extent possible. Take advantage of cold weather seasons to complete these activities when feasible. Communicating with landowners as to when these events will occur and the duration of the event can help reduce odor concerns.
- Clean exhaust fans and shutters regularly of dust and debris to maximize warm season ventilation.
- Maintain equipment in good working order and in accordance with normal management practices.
- Maintaining positive community relations will also prevent the occurrence of nuisance complaints. Keeping the facility area esthetically pleasing and participation in community events helps to build positive community relations.

#### Exceptions

Due to the nature of processing, certain odors may increase in intensity for a limited period of time during process start-up, shut-down, or product changeover. Other activities integral to agricultural processing, such as agitation, cleaning, and maintenance of storage structures or ponds, can occur at various times of the year, depending upon the operational needs of the facility. These temporary changes are acceptable under this GAPP provided they are normal and necessary to the operation. These activities may increase the intensity of the odors but should be relatively short in duration. Some larger facilities, or those with unique circumstances, may require a greater period of time for completing these activities in an appropriate manner. When possible, proper planning should occur prior to the event. Processors should maintain records of when these events occur and evaluate improvements to reduce odors and incorporate those improvements into their Odor Management Plan. Care should be taken to minimize off-site odor impacts to avoid creating a violation under the Natural Resources and Environmental Protection Act, Public Act 451 of 1994.

#### **Documentation and Conformance**

Documenting conformance with odor reduction should include routine olfactory observations made around the facility. A processor should evaluate their facility for potential odor sources and determine what practices are appropriate for addressing the concerns. Keeping records of odor events noted by employees, service providers, and neighbors, and determining the source of the concern will help the processor in addressing future concerns and create awareness by the processor of the activities creating potential odor concerns.

The development of an Odor Management Plan can also assist the processor in identification of odor sources and implementation of odor reduction practices. The goal of an effective Odor Management Plan is to identify opportunities and propose practices and actions to reduce the frequency, intensity, duration, and offensiveness of odors that neighbors may experience in such a way that tends to minimize impact on neighbors and create a positive attitude toward the processor. A processor experiencing odor concerns from a neighboring property should develop an Odor Management Plan in order to attempt to avoid neighbor conflicts. Some aspects of an Odor Management Plan include working with employees or routine service providers and asking them to report noticeable offensive odor events as they come and go from the facility and travel the community. The intent is to establish and maintain an effective, open line of communication with immediate neighbors so that they too will be comfortable reporting odor events to the facility.

#### V. APPENDIX A - GAPP Management Plan

Description of Facility:

- Indicate facility type, location and operational times
- Identify times of year where increases in noise and odor levels are expected to be greatest due to operational changes
- Schedule for plan review and evaluation

Noise Monitoring:

- Identify any areas of noise generation that may create a concern for neighboring properties
- Determine what practices may be utilized to reduce or eliminate noise level concerns
- Determine frequency of noise to determine appropriate monitoring schedule
- Document schedule that will be followed
- Document methodology that will be used to determine noise levels (i.e. comparison to common noise generators, monitoring equipment)
- Keep records

Odor Monitoring

- Identify any areas of odor generation that may create a concern for neighboring properties
- Determine what practices may be utilized to reduce or eliminate odor concerns
- Determine frequency and quantify intensity of odor to determine appropriate monitoring schedule
- Document schedule that will be followed
- Document methodology that will be used to determine odor levels (i.e. complaints from neighbors, employees, or regular service providers)
- Keep records

#### VI. APPENDIX B - REVIEW COMMITTEE

Listed below are the Food Processing GAPP Committee members that developed these Generally Accepted Fruit, Vegetable, Dairy, Meat, and Grain Processing Practices for Noise and Odor for agricultural processing operations.

#### Dr. H. Christopher Peterson, Chair

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Sylvia Renteria, Director of Finance and Budget September 14, 2022



### Fiscal Year 2022 Next Steps

September 2022

Department Year End Closing Statewide Year End Closing Annual Comprehensive Financial Reports

Fiscal Year = October 1, 2021 to September 30, 2022



### **Fiscal Year 2023 Next Steps**



Fiscal Year = October 1, 2022 to September 30, 2023



### **Fiscal Year 2024 Next Steps**

September 2022

Kick Off with SBO Department Budget Development Statewide Budget Development

Fiscal Year = October 1, 2023 to September 30, 2024





## **Supplementals**

• SB 885 for agriculture and rural development is before the legislature for consideration





# Thank you!





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		MDARD Summary of 2019-2020 Michigan	Legislature (Prepared 1/12/20201)				
Туре	Bill #	Subject	Date of Last Action	Last Action	Primary Sponsor	Position (if applicable)	
Senate Bill	<u>174</u>	Animals; other; animal industry act; modify. Amends title & secs. 1, 3, 7, 9, 11b, 12, 14, 19, 20, 22, 31, 39, 40, 43 & 44 of 1988 PA 466 (MCL 287.701 et seq.); adds secs. 3a, 3b, 12a, 12b, 14a, 17b, 17c, 17d, 40a, 40b & 43a & repeals secs. 4, 5, 6, 8, 10, 13, 13a, 15, 16, 17a, 23, 24, 24a, 26a, 27, 28, 29, 29a, 30, 30a, 30b, 30c, 30d, 32, 33, 35, 41 & 46 of 1988 PA 466 (MCL 287.704 et seq.).	12/3/19	PA 132 '19	Kevin Daley	Support	
Senate Bill	<u>179</u>	Animals; other; definition of livestock in agricultural commodities marketing act; modify citations. Amends sec. 2 of 1965 PA 232 (MCL 290.652). <b>TIE BAR WITH: SB 0174'19</b>	12/3/19	PA 133 '19	Roger Victory	Support	
Senate Bill	<u>180</u>	Criminal procedure; sentencing guidelines; sentencing guidelines for violations of animal industry act; modify citations. Amends sec. 12m, ch. XVII of 1927 PA 175 (MCL 777.12m). <b>TIE BAR WITH: SB 0174'19</b>	12/3/19	PA 134 '19	Dan Lauwers	Support	
Senate Bill	<u>181</u>	Animals; other; definition of livestock and reference to animal industry act in Michigan penal code; modify citations. Amends secs. 50 & 50b of 1931 PA 328 (MCL 750.50 & 750.50b). <b>TIE BAR WITH: SB 0174'19</b>	12/3/19	PA 135 '19	Dan Lauwers	Support	
Senate Bill	<u>182</u>	Animals; other; definition of livestock and reference to animal industry act in wildlife depredations act; modify citations. Amends secs. 2 & 3 of 2012 PA 487 (MCL 285.362 & 285.363). <b>TIE BAR WITH: SB 0174'19</b>	12/3/19	PA 136 '19	Ed McBroom	Support	
Senate Bill	<u>183</u>	Animals; other; definition of livestock in wolf-dog cross act; modify citations. Amends sec. 2 of 2000 PA 246 (MCL 287.1002). <b>TIE BAR WITH: SB</b> 0174'19	12/3/19	PA 137 '19	Ed McBroom	Support	
Senate Bill	<u>361</u>	Animals; other; definition of livestock in the Michigan fireworks safety act; modify citation. Amends sec. 12 of 2011 PA 256 (MCL 28.462).	11/21/19	PA 138 '19	Jim Ananich	Support	
Senate Bill	<u>450</u>	Agriculture; animals; amount charged for livestock dealer license fee; extend sunset. Amends sec. 3 of 1937 PA 284 (MCL 287.123).	10/2/19	PA 86 '19	Curtis Hertel	Support	
House Bill	<u>4035</u>	Animals; dogs; local government regulating a dog based on breed or perceived breed; prohibit. Creates new act.	12/2/20	Reported from the Committee on Local Government	Jim Ellison	Support	
House Bill	<u>4496</u>	Animals; research facilities; certain research facilities to offer certain laboratory animals for adoption before euthanization; require. Creates new act.	11/5/19	Referred to the Committee of Agriculture	Kevin Hertel		
Senate Bill	<u>175</u>	Animals; other; reference to animal industry act in act governing ferrets; modify citations. Amends sec. 1 of 1994 PA 358 (MCL 287.891).	3/7/19	Referred to the Committee of Agriculture	Kevin Daley	Support	
Senate Bill	<u>176</u>	Animals; other; reference to animal industry act in act governing the licensing of livestock dealers; modify citations. Amends secs. 4 & 7 of 1937 PA 284 (MCL 287.124 & 287.127).	3/7/19	Referred to the Committee of Agriculture	Kevin Daley	Support	
Senate Bill	<u>177</u>	Animals; other; reference to animal industry act in Michigan aquaculture act; modify citations. Amends secs. 6 & 8 of 1996 PA 199 (MCL 286.876 & 286.878).	3/7/19	Referred to the Committee of Agriculture	Jim Ananich	Support	
Senate Bill	<u>178</u>	Animals; other; reference to animal industry act in general property tax act; modify citations. Amends secs. 7dd & 34c of 1893 PA 206 (MCL 211.7dd & 211.34c).	3/7/19	Referred to the Committee of Agriculture	Roger Victory	Support	

House Bill	<u>5203</u>	Agriculture; other; office of the small farms coordinator; create. Creates new act.	11/6/2019	Referred to the Committee of Agriculture	Angela Witwer	
House Bill	<u>4593</u>	Animals; care and treatment; devocalization procedure on an animal; prohibit, except for a therapeutic purpose. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding sec. 18830.	5/15/19	Referred to the Committee of Agriculture	Tim Sneller	
House Bill	<u>4594</u>	Crimes; animals; ownership, possession, breeding, sale, and importing of nonhuman primates; prohibit with certain exceptions and provide penalty. Amends 1931 PA 328 (MCL 750.1 - 750.568) by adding sec. 70b.	5/15/19	Referred to the Committee of Agriculture	Jim Ellison	
House Bill	<u>4595</u>	Animals; birds; issuance of carrier pigeon permits; require compliance with local ordinances and regulations, and prohibit the enactment of local ordinances that prohibit the keeping of carrier pigeons. Amends sec. 2 of 1974 PA 57 (MCL 433.352).	5/15/19	Referred to the Committee of Agriculture	Frank Liberati	
House Bill	<u>4596</u>	Animals; cats; establishment and promotion of community cat programs; provide for. Creates new act.	5/15/19	Referred to the Committee of Agriculture	Laurie Pohutsky	
House Bill	<u>4641</u>	Crimes; animals; penalties for performing or allowing a devocalization procedure to be performed if no therapeutic purpose; provide for. Amends sec. 50 of 1931 PA 328 (MCL 750.50).	5/21/19	Referred to the Committee of Agriculture	Sherry Gay-Dagnogo	
House Bill	<u>4947</u>	Food; other; labeling as meat a laboratory-grown meat substitute; prohibit. Amends sec. 7129 of 2000 PA 92 (MCL 289.7129).	9/11/19	Referred to the Committee of Agriculture	Beau LaFave	
House Bill	<u>4833</u>	Agriculture; animals; import or transfer live Cervidae from a region that has tested positive for chronic wasting disease; prohibit. Amends sec. 30a of 1988 PA 466 (MCL 287.730a).	8/29/19	Referred to the Committee of Agriculture	Thomas Albert	
House Bill	<u>5085</u>	Health occupations; veterinarians; consulting with animal owner on the use of marihuana and CBD oil; allow under certain circumstances. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding sec. 18817.	9/15/2020	Referred to the Committee on Agriculture	Douglas Markkanen	
House Bill	<u>5090</u>	Animals; care and treatment; experimentation on dogs in a manner that causes pain or distress, and certain related activities, by an affiliate of a public body; prohibit. Creates new act.	10/8/2019	Referred to the Committee of Agriculture	Sara Cambensy	
Senate Bill	<u>185</u>	Drains; maintenance and improvement; frequency of maintenance; limit based on period since most recent maintenance assessment. Amends secs. 196 & 201 of 1956 PA 40 (MCL 280.196 & 280.201).	3/7/19	Referred to the Committee of Local Government	Jim Stamas	
House Bill	<u>5060</u>	Drains; maintenance and improvement; expenditures and assessments without petition; increase maximum amounts. Amends sec. 196 of 1956 PA 40 (MCL 280.196).	6/3/2020	Referred to the Committee of Ways and Means	Alex Garza	Support
House Bill	<u>5126</u>	Drains; other; petition to add or remove lands and notice of receipt of bids and review of apportionments; revise requirements. Amends secs. 135 & 154 of 1956 PA 40 (MCL 280.135 & 280.154).	12/31/2020	PA 281 '20	Steven Johnson	Support
House Bill	<u>5508</u>	Animals; cats; certain medical procedures for declawing a cat; prohibit. Creates new act.	2/20/2020	Referred to the Committee on Agriculture	Nate Shannon	
House Bill	<u>5577</u>	Animals; care and treatment; adequate shelter for dogs; clarify. Amends sec. 50 of 1931 PA 328 (MCL 750.50).	3/4/2020	Referred to the Committee on Agriculture	Darrin Camolleri	
Senate Bill	<u>823</u>	Cemeteries and funerals; other; pet cemetery regulation act; create. Creates new act.	3/5/2020	Referred to the Committee on Agriculture	Paul Wojno	
Senate Bill	<u>850</u>	Agriculture; industrial hemp; regulations for growing industrial hemp; create. Creates new act.	6/30/2020	PA 137 '20	Dan Lauwers	Support

Senate Bill	<u>851</u>	Criminal procedure; sentencing guidelines; allowing a falsified preharvest sample to be tested; provide for. Amends sec. 12m, ch. XVII of 1927 PA 175 (MCL 777.12m).	3/17/2020	Referred to the Committee on Agriculture	Dan Lauwers	Support
Senate Bill	<u>852</u>	Agriculture; industrial hemp; regulations for growing industrial hemp; create. Creates new act.	10/21/2020	PA 220 '20	Dan Lauwers	Support
Senate Bill	<u>853</u>	Criminal procedure; sentencing guidelines; allowing a falsified preharvest sample to be tested; provide for. Amends sec. 12m, ch. XVII of 1927 PA 175 (MCL 777.12m).	3/17/2020	Referred to the Committee on Agriculture	Dan Lauwers	Support
Senate Bill	<u>869</u>	Occupations; individual licensing and registration; pesticide applicator licensing; extend during a declared emergency. Amends secs. 8312 & 8317 of 1994 PA 451 (MCL 324.8312 & 324.8317).	5/6/2020	Referred to the Committee on Agriculture	Wayne Schmidt	
Senate Bill	<u>870</u>	relationship; require and provide for other amendments to the regulation of veterinary medicine.	5/6/2020	Referred to the Committee on Agriculture	Wayne Schmidt	
House Bill	<u>5903</u>	Food; other; regulations regarding peppers, cloves, and nutmeg; repeal. Repeals 1919 PA 418 (MCL 289.521 - 289.526).	6/24/2020	Referred to the Committee on Agriculture	Matt Maddock	
Senate Bill	<u>419</u>	Animals; other; registration and regulation of animal rescues; provide for. Amends title & secs. 1, 2, 5a, 6, 7, 8, 8a, 8b, 8c, 9a & 9b of 1969 PA 287 (MCL 287.331 et seq.) & adds sec. 8d.	7/22/20	Reported from the Committee on Agriculture	Peter Lucido	Opposed
House Bill	<u>5239</u>	Agriculture; animals; Michigan equine commission; create. Creates new act.	1/16/2020	Referred to the Committee on Agriculture (Testimony taken)	Hank Vaupel	Neutral
Senate Bill	<u>728</u>	Appropriations; zero budget; department of agriculture and rural development; provide for fiscal year 2020-2021. Creates appropriation act.	1/22/2020	Referred to the Committee on Appropriations	Roger Victory	
House Bill	<u>5381</u>	Appropriations; zero budget; department of agriculture and rural development; provide for fiscal year 2020-2021. Creates appropriation act.	1/23/2020	Referred to the Committee on Appropriations	Greg VanWoerkom	
House Bill	<u>4806</u>	Public utilities; public service commission; licensing of electric vehicle charging station operators; provide for. Amends title & secs. 10g, 10h & 10q of 1939 PA 3 (MCL 460.10g et seq.).	2/19/20	Referred to the Committee on Ways and Means	Andrea Schroeder	Opposed
House Bill	<u>4807</u>	Agriculture; weights and measures; pricing for charging of electric vehicles; standardize price displays. Amends 1964 PA 283 (MCL 290.601 - 290.635) by adding sec. 28g.	7/10/19	Referred to the Committee on Energy	Padma Kuppa	Opposed
House Bill	<u>5574</u>	State; symbol; cherry; designate as official state fruit. Creates new	2/27/2020	Referred to the Committee on Government Operations	Rebekah Warren	
House Bill	<u>5730</u>	Occupations; individual licensing and registration; pesticide applicator licensing; extend during a declared emergency. Amends secs. 8312 & 8317 of 1994 PA 451 (MCL 324.8312 & 324.8317).	4/24/2020	Referred to the Committee on Government Operations	Brant Iden	
House Bill	<u>5808</u>	forfeited animals, restruction of care and deatment of certain forfeited animals; impose penalty on ownership of animal to person convicted of certain crimes against animal. Amends sec. 50b of 1931 PA 328 (MCL 750.50b).	5/20/2020	Referred to the Committee on Judiciary	Douglas Wozniak	
House Bill	<u>5809</u>	certain forfeited animals; impose penalties upon owner. Amends sec. 50 of 1931 PA 328 (MCL 750.50).	5/20/2020	Referred to the Committee on Judiciary	Douglas Wozniak	

House Bill	<u>5504</u>	Drains; financing; assessment periods for projects and maintenance on drains; extend. Amends secs. 196 & 434 of 1956	12/31/2020	PA 291 '20	James Lower	Support
House Bill	<u>5905</u>	Animais; bras; regulations regarding the sport of racing and carrier pigeons; repeal. Repeals 1974 PA 57 (MCL 433.351 - 433.355).	6/24/2020	Referred to the Committee on Regulatory Reform	Matt Maddock	
House Bill	<u>4860</u>	Animals; exotic; applicability of certain provisions of the large carnivore act based on residency; modify. Amends sec. 22 of 2000 PA 274 (MCL 287.1122).	1/15/20	Referred to the Committee on Ways and Means	Thomas Albert	
Senate Bill	<u>971</u>	Animals; care and treatment; conducting of research or training activities on dogs in a manner that causes pain or distress, and certain related activities, by an affiliate of a public body; prohibit. Creates new act.	6/17/2020	Referred to the Committee on Judiciary	Michael McDonald	
House Bill	<u>5445</u>	Public utilities; public service commission; registration procedure for electric vehicle charging stations; provide for. Creates new act.	2/19/2020	Referred to Ways and Means	Andrea Schroeder	Opposed
House Bill	<u>4585</u>	Agriculture; other; fair and festival carnival safety partners program; provide for. Creates new act.	6/18/19	Reported from Regulatory Reform to the Committee of Ways and Means	Thomas Albert	Opposed
Senate Bill	<u>982</u>	Occupations; individual licensing and registration; registration and training of seasonal registered pesticide applicator; provide for. Amends secs. 8306 & 8314 of 1994 PA 451 (MCL 324.8306 & 324.8314).	6/24/2020	Referred to the Committee on Agriculture	Kim LaSata	
House Bill	<u>5126</u>	receipt of bids and review of apportionments; revise requirements. Amends secs. 135 & 154 of 1956 PA 40 (MCL 280.135 & 280.154).	12/31/2020	PA 281 '20	Steven Johnson	Support
House Bill	<u>5890</u>	Food; meats; guidelines for meat cutting facilities; modify. Amends sec. 28a of 1964 PA 283 (MCL 290.628a)	6/24/2020	Referred to the Committee on Agriculture	Scott VanSingel	
House Bill	<u>6009</u>	Animals: dogs; certain unnecessary medical procedures for dogs; prohibit. Creates new act.	8/9/2020	Referred to the Committee on Agriculture	Mari Manoogian	
House Bill	<u>6044</u>	Labor: hours and wages; hazard pay for certain agriculture, farm, and seasonal workers during a declared emergency; provide for	8/12/2020	Referred to the Committee on Commerce and Tourism	Brian Elder	
House Bill	<u>6054</u>	farmland and open space; certain references in the farmland and open space preservation statute; make gender neutral. Amends sec. 36109 of 1994 PA 451 (MCL 324.36109).	8/12/2020	Referred to the Committee on Government Operations	Rebekah Warren	
House Bill	<u>6068</u>	Agriculture: associations and commissions; certain references in the agricultural commodities marketing act; make gender neutral.	8/12/2020	Referred to the Committee on Government Operations	Sheryl Kennedy	
Senate Bill	<u>1067</u>	fund; provide for. Amends sec. 303a of 1998 PA 58 (MCL 436.1303a).	10/21/2020	PA 200 '20	Kevin Hertel	
House Bill	<u>6155</u>	Labor: health and safety; additional personal protective equipment for agricultural and food processing employees; require employers to provide during certain states of emergency. Amends 1974 PA 154 (MCL 408.1001 - 408.1094) by adding sec. 60	9/2/2020	Referred to the Committee on Regulatory Reform	Alex Garza	

House Bill	<u>6156</u>	Highways: bridges; tractors and farm equipment to cross the Mackinac Bridge; allow under certain conditions. Amends sec. 12 of 1952 PA 214 (MCL 254.322).	9/2/2020	Referred to the Committee on Transportation	Steven Johnson	
Senate Bill	<u>1072</u>	Food: other; use of PFAS in food packaging; prohibit. Amends 2000 PA (MCL 289.1101 - 289.8111) by adding sec. 5106.	9/1/2020	Referred to the Committee on environmental quality	Jeff Irwin	
Senate Bill	<u>1133</u>	Energy: gas and oil; propane commission; provide for. Creates new act.	12/30/2020	PA 332 '20	Ed McBroom	Support
Senate Bill	<u>6298</u>	Traffic control: driver license; waiver of knowledge test for an individual with military commercial motor vehicle experience;	12/8/2020	Referred to the Committee on Ways and Means	Greg Markkanen	Support
House Bill	<u>6280</u>	Food: other; third-party delivery food safety training; require. Amends sec. 1111 of 2000 PA 92 (MCL 289.1111) & adds secs. 6171, 6173 & 6175.	9/30/2020	Referred to the Committee on Regulatory Reform	Julie Alexander	
House Bill	<u>6317</u>	for crimes involving the ownership of a dangerous animal or a vicious dog; modify. Amends sec. 12m of 1927 PA 175 (MCL 777.12m).	11/10/2020	Referred to Judiciary	Mark Huizenga	
House Bill	<u>6318</u>	regulate. Amends title & secs. 1, 2 & 3 of 1988 PA 426 (MCL 287.321 et seq.) & adds secs. 4, 5, 6, 7 & 8.	11/10/2020	Referred to Judiciary	Mark Huizenga	
House Bill	<u>6323</u>	State: symbol; wild rice; designate as the official native grain. Creates new act.	11/12/2020	Referred to Government Operations	Ronnie Peterson	
House Bill	<u>6446</u>	Food: other; representation of food items to be gluten-free; regulate. Creates new act. TIE BAR WITH: HB 6447'20	12/1/2020	Referred to Regulatory Reform	Matt Koleszar	
House Bill	<u>6447</u>	that do not conform to a posted basis for that representation; prohibit. Amends 1931 PA 328 (MCL 750.1 - 750.568) by adding sec. 297g.	12/1/2020	Referred to Regulatory Reform	Matt Koleszar	
House Bill	<u>6455</u>	Animals: exotic; ownership, possession, transfer, and importing of certain reptiles; regulate. Creates new act.	12/2/2020	Referred to Agriculture	Jim Ellison	
Senate Bill	<u>1231</u>	for crimes involving the ownership of potentially dangerous and dangerous dogs; create. Amends sec. 12m of 1927 PA 175 (MCL 777.12m). TIE BAR WITH: SB 1232'20	11/18/2020	Referred to Agriculture	Sean McCann	
Senate Bill	<u>1232</u>	potentially dangerous dogs and dangerous dogs. Amend to provide for secs.1, 2 & 3 of 1988 PA 426 (MCL 287.321 et seq.) & adds secs. 2a, 2b, 2c, 2d, 2e, 3a & 3b.	11/18/2020	Referred to Agriculture	Sean McCann	

MDARD Summary of 2021-2022 Michigan Legislature (Prepared 9/4/2022)							
Туре	Bill #	Subject	Date of Last Action	Last Action	Primary Sponsor	Position (if applicable)	Notes
	4842	Liquor: spirits; markup on spirits; revise based on					
House Bill		distillate.	7/1/2022	Referred to Reg Reform	Outman	MDARD/LARA worked on sub	Assigned PA 135
House Bill	<u>6317</u>	Drains: water management districts; chapter 22 of drain code: revise	7/1/2022	Referred to Local Government	Calley	Pending	EGLE/MDARD co-
	0040	Drains: water management	THILOLL		Guildy	r chung	
House Bill	<u>6318</u>	code; revise.	7/1/2022	Referred to Local Government	Morse	Pending	EGLE/MDARD co- leads
Senate Bill	<u>1018</u>	Property: land sales; notification method for sale of certain real estate: modify	6/30/2022	Referred to Sepate Agriculture	Zorn	Neutral	Passed Senate Ag 5-0
	<u>1019</u>	Agriculture: associations and commissions; local agricultural or horticultural societies; modify stockholder	0,00,2022		2011		
Senate Bill		requirements. Individual income tax: credit:	6/30/2022	Referred to Senate Agriculture	Zorn	Neutral	Passed Senate Ag 5-0
	<u>6334</u>	tax incentive for certain motor fuel retail dealers that offer grades of biodiesel; provide					
House Bill		for.	6/30/2022	Referred to Tax Policy	Bellino	Met with Treasury in August	Treasury is Lead
House Bill	<u>6218</u>	I axation: specific tax; funding for nonferrous mining research and development projects; provide for	6/30/2022	Referred to Natural Resources	Cambensy	N/A	Treasury/EGLE leads
	<u>5589</u>	Animals: dogs; provision related to tattooing of	6/20/2022	Deferred to House Judiciany	Duri	Support	Assigned DA 120
House Bill	<u>5588</u>	Animals: dogs; repeal. Animals: dogs; provision related to tattooing of certain dogs under the dog law of 1919; repeal.	6/29/2022	Referred to House Judiciary	TC Clements	Support	Assigned PA 121
Sonato Bill	<u>1058</u>	Agriculture: diseases and pests; issuance of certificates of free sale in insect pest and plant disease act: provide for	6/20/2022	Peferred to Senate Agriculture	Dalay	Support	Assigned PA 130
	<u>5742</u>	Agriculture: pesticides; issuance of certificates of free	0/20/2022				Assigned FA 130
House Bill	<u>5743</u>	Agriculture: fertilizer; issuance of certificates of free sale for	6/29/2022	Referred to Agriculture	Cambensy	Support	Assigned PA 124
House Bill		fertilizer; provide for.	6/29/2022	Referred to Agriculture	Steenland	Support	Assigned PA 125

		Food: other; issuance of					
	5744	certificates of free sale in food					
House Bill		law: provide for.	6/29/2022	Referred to Agriculture	Alexander	Support	Assigned PA 126
		Agriculture: other: issuance of		5			Ŭ
	5745	certificates of free sale in feed					
House Bill	<u>01 10</u>	law: provide for.	6/29/2022	Referred to Agriculture	Borton	Support	Assigned PA 127
		Food: milk: issuance of	0,_0,_0				
		certificates of free sale in					
	<u>5747</u>	manufacturing milk law of					
House Bill		2001: provide for	6/29/2022	Referred to Agriculture	Posthumus	Support	Assigned PA 128
THOUGO DI		Food: milk; issuance of	0/20/2022			Capport	7.60.g.104.171.120
	5748	certificates of free sale in					
House Bill		grade A milk law; provide for.	6/29/2022	Referred to Agriculture	Filler	Support	Assigned PA 129
		Agriculture: associations and		ŭ			
		commissions: growth					
	<u>977</u>	assessments audit					
Senate Bill		requirements: modify.	6/15/2022	Senate Agriculture Committee	Dalev	Neutral	Passed Senate 37-0
		Agriculture: diseases and			,		
		pests: notification to legislature					
	6199	of dangerous insects or					
	0100	infectious diseases found to					EOG is lead on larger
House Bill		exist: require	6/14/2022	Referred to House Oversight	Alexander	N/A	nackade
		Agriculture: marketing:	0/14/2022	Referred to House Oversight	Alexander		puokugo
	1087	program referendum					
Senate Bill	1007	requirements: eliminate	6/13/2022	Referred to Senate Adriculture	Lauwers	Pending	MDARD lead
		State: symbol: wild rice:	0/10/2022	Referred to benate Agriculture	Lauwers	T chung	MB/ (IXB load
	802	designate as the official native					
Senate Bill	002	designate as the official native	6/0/2022	Referred to Senate Agriculture	Hollier	Support	
			0/9/2022	Releffed to Sellate Agriculture	TIOIIICI	Support	
		Agriculture: weights and					
	1050	Agriculture, weights and					
	1039	amendments to the weights					
Sonato Rill		and measures act: provide for	5/26/2022	Poforrad to Sanata Agricultura	Dolov	Support	Formerly Witwer's hill
		A recelution to ungo Congress	5/20/2022	Referred to Seriate Agriculture	Daley	Support	Formeny witwers bill
		A resolution to urge Congress					
		to pass legislation that would					
		allow farmers, along with					
		coalitions and trade					
		associations representing					
	139	farmers, to petition the U.S.					
		International I rade					
		Commission to temporarily					
		waive tariffs on imports of					
		tertilizer and tertilizer					Dept. does not take
		ingredients imported from					positions on
SR		Morocco.	5/11/2022	Referred to Senate Agriculture	VanderWall	N/A	Resolutions
	_	Agriculture: weights and					
	<u>5893</u>	measures; general					
		amendments to the weights					
House Bill		and measures act; provide for.	5/4/2022	Referred to House Agriculture	Witwer	Support	MDARD initiated

		A resolution to urge Congress to pass legislation that would					
		allow farmers to petition the					
	<u>289</u>	Commission to temporarily					
		waive tariffs on imports of					Dant da canattala
		ingredients imported from					Dept. does not take
House Resolution		Morocco.	5/4/2022	Referred to House Agriculture	Meerman	N/A	Resolutions
		Agriculture: diseases and					Desced Hames 405.0
	<u>5746</u>	of free sale in insect pest and					(replaced with SB
House Bill		plant disease act;	3/23/2022	Referred to Agriculture	Bezotte	Support	1058 in package)
	5704	Food: cottage food operation;					
	<u> 3704</u>	cottage food operations and					
House Bill		cottage food products; modify.	3/23/2022	Referred to House Agriculture	Glenn	Neutral	Passed House 61-44
		cottage food operations: allow					
	<u>5671</u>	to sell, offer for sale, and					
		accept payment for cottage		Referred to Committee on			
House Bill		food products over the internet.	3/23/2022	Agriculture	Julie Alexander	Neutral	Passed House 61-44
		Health occupations:					
	5804	client-patient relationship:					
		require under certain		Referred to Rules and			
House Bill		circumstances.	2/23/2022	Competitiveness	Alexander	N/A	LARA most likely lead
	5059	Food: adulterated; adulteration					Passed House, Referred to Senate
House Bill	<u>5056</u>	hemp:	2/17/2022	Referred to Regulatory Reform	TC Clements	Neutral	Reg Reform
Tiodoo Biii		Agriculture: industrial hemp;	LITILOLL	referred to regulatory referre		liteardi	. tog i toroni
		certain activities under a					
	<u>5061</u>	processor-handler license and					Passed House,
House Bill		commodity and product:	2/17/2022	Referred to Regulatory Reform	Postumus	Neutral	Red Reform
		,	_,,_0				
	<u>5617</u>	Agriculture: industrial hemp:					
		requirements for industrial					Passed House,
		hemp added to food or dietary		Referred to House Regulatory			Referred to Senate
House Bill		supplement; modify.	2/17/2022	Reform	Pat Outman	Neutral	Reg Reform
	864	Drains: other; provision related					
Senate Bill		to drain inspections; modify.	2/9/2022	Referred to Local Government	Kevin Daley	In progress	
		Drains: other; definition of per					
Sonato Rill	<u>865</u>	diem and compensation for	2/0/2022	Poterrad to Local Covernment	loromy Moco		
Senale Bill		urainage boards	21912022	Referred to Focal Government	Jerenny Moss	in progress	<u> </u>

		Drains: districts; drainage					
	866	district boundaries; revise					
Senate Bill		under certain circumstances.	2/9/2022	Referred to Local Government	Rick Outman	In progress	
		Agriculture: pesticides;					
	5700	inspection requirements for					
	5700	aerial applicators; modify for					Hearing on 2/2 in
House Bill		out-of-state aircraft.	1/27/2022	Referred to House Agriculture	Lightner	Still formulating position	House Ag
		Appropriations: supplemental;			-		
	5504	general; provide for 2021-					Passed House 96-6 on
	<u>5524</u>	2022. Creates appropriation					1/27. \$5 million
House Bill		act.	1/27/2022	Appropriations	Albert	N/A	included for FDD
		Food: other; labeling as meat a					
	4982	laboratory-grown meat					
House Bill		substitute; prohibit.	1/26/2022	Referred to Agriculture	Beau LaFave	No Position-written testimony provided	Hearing on 1/26/2022
		Labor: health and safety;		5		<b>,</b>	Ŭ
Senate Bill	4031	violations of reports of injuries					Passed Senate 29-9
		and death; modify	1/18/2022	Referred to Agriculture	Kahle	MIOSHA is opposed	on 1/18/2022
		A resolution urging the U.S.					
		Congress, federal agencies,					
		and state departments to					
	205	address the ongoing fertilizer					
		price increases and shortages					
		that are impacting Michigan		Referred to Committee on		N/A-Dept, does not take positions on	
House Resolution		farmers.	1/18/2022	Agriculture	Steve Carra	Resolutions	
		A resolution urging the U.S.					
		Congress, federal agencies,					
		and state departments to					
	205	address the ongoing fertilizer					
		price increases and shortages					
		that are impacting Michigan					
House Resolution		farmers.	1/18/2022	Referred to House Agriculture	Carra	N/A	
		Individual income tax: credit;					
		credit for certain motor fuel					
	<u>814</u>	retail dealers; provide for.					
Senate Bill		Amends 1967 PA 281	1/11/2022	Referred to Senate Agriculture	Kevin Daley	N/A	Treasury lead-opposed
				<u> </u>			
		Agriculture: other; certain					
		reporting requirements for					
Conoto Dill	404	environmental assurance					
Senate Bill	<u>494</u>	advisory council and funding					
		and standards for the MAEAP;		Referred to Senate Agriculture.			
		modify, and eliminate water		Re-referred to Senate			Assigned PA 123 of
		quality protection fee sunset.	12/16/2021	Appropriations	Daley	Support with Budget Deal	2021
		A concurrent resolution to					
Sonata Bill	7	approve a designated open					Adopted by Full House
Senale Bill	<u>/</u>	space land application for		Referred to the Committee on			and Senate-referred to
		property in Kent County.	12/15/2021	Agriculture	Thomas Albert	Support	the Clerk for record
	5505	Liquor: licenses; license to sell					
	5585	spirits or mixed spirit drink at a		Referred to Committee on			
House Bill		farmer's market; provide for.	12/2/2021	Regulatory Reform	Pauline Wendzel	N/A	LARA is lead agency

	<u>4703</u>	Crimes: animals; restitution for care and treatment of certain forfeited animals; impose penalty on ownership of animal					Passed House 91/14
		to person convicted of certain					on 11/10-Referred to
House Bill		crimes against animal.	11/10/2021	Referred to Judiciary	Wozniak	Neutral	Senate Judiciary
		Animals: care and treatment;					
		restitution for care and					
	<u>4704</u>	treatment of certain forfeited					Passed House 91/14
		animals; impose penalties					on 11/10-Referred to
House Bill		upon owner.	11/10/2021	Referred to Judiciary	Wozniak	Neutral	Senate Judiciary
	607	Individual Income tax: credit;					Tracourt is load
Sonata Bill	<u>697</u>	provide for	10/21/2021	Referred to Senate Finance	LaSata	NI/A	reasury is lead-
		Public utilities: public service	10/21/2021	Referred to Seriate Finance	LaSala	IN/A	opposed
		commission: registration					Passed the House 85
House Bill	<u>4801</u>	procedure for electric vehicle				No stance in committee/MDARD opposed	18- Sent to Senate
		charging stations: provide for	10/19/2021	Referred to House Energy	Schroeder	doing forward	Energy
		Public utilities: public service	10/10/2021		00111000001		
		commission; licensing of					Passed the House 88-
House Bill	<u>4802</u>	electric vehicle charging					15 - Sent to Senate
		station operators; provide for.	10/19/2021	Referred to House Energy	Kuppa	No stance in Committee from MPSC	Energy
		Housing: landlord and tenants;					
		allocation of responsibilities;					
	<u>5412</u>	provide for with respect to					MSHDA/Legal are
		prevention and management		Referred to House Regulatory			leads, MDARD 3PM
House Bill		of bedbug infestation.	10/19/2021	Reform	Alex Garza	N/A	provided comments
House Bill	<u>5406</u>	Creates the office of Rural Development	10/14/2021	Referred to House Gov Ops	Witwer	Support with changes	Companion bill to McBroom's
Senate Bill	<u>682</u>	Creates the office of Rural Development	10/7/2021	Referred to Senate Appropriations	McBroom	Support with changes	Pending hearing-Office was created via ED 2022-1
		Food: licensing; licensing fees					
House Bill	4561	for certain food					Passed House 97-10
Tiouse Dill	4301	establishments; make		Referred to Committee on			on 6/17, Passed
		refundable.	10/6/2021	Regulatory Reform	Roth	Opposed	Senate Reg Reform
House Bill	<u>5374</u>	Food: other; lead leachate levels for dinnerware; regulate. Amends sec. 6101 of 2000 PA 92	10/6/2021	Referred to House Health Policy	Julie Rogers	Analysis to be completed with movement	MDARD is lead
		Communications: newspapers					
		and magazines; publication of					
	258	public notices in newspapers;					
	200	include requirements for					
		publication by electronic	10/5/555	Referred to Senate Local	.,		
Senate Bill		means.	10/5/2021	Government	VanderWall	Gov. Legal is lead/watching for CDs	Gov Legal is lead
	<u>5059</u>	Agriculture: industrial hemp; restrictions under the industrial	0/00/0001	Defensed to Demoletance C. (	Marallan	Dellad	
House Bill		Inemp growers act; modify.	9/20/2021	Referred to Regulatory Reform	Mueller	Pulled	

		Natural resources: nonnative					
		species; advisory council to					
	5285	combat the online sale of					EGLE/DNR leads
		aquatic invasive species:		Referred to Natural Resources			(MDARD contributed
House Bill		establish.	8/18/2021	and Outdoor Recreation	Sarah Anthony	N/A	to analysis)
		Food: other: use of PEAS	0/10/2021		calair, alaiong		
	591	bisphenols and phthalates in		Referred to Environmental			
Senate Bill	<u></u>	food packaging, prohibit	7/15/2021	Quality	.leff Irwin	Analysis to be completed with movement	MDARD is lead
Condio Dim		Civil rights: open meetings:	1/10/2021				
		circumstances permitting					
		public meetings of certain					Signed by the
	<u>4603</u>	public bodies to be held					Governor on 7/13/21-
		electronically by telephonic or		Referred to the Committee on			PA 54'21 with
House Bill		video conferencing: modify	7/13/2021	Agriculture	Joe Bellino	l egal took over as lead	immediate effect
TIOUSE BIII		Maribuana: liability: sale of	1110/2021	, ignoaltare	UCC Domino		
		marihuana to an individual who					
		is younger than 21 years of					
	4516	age or visibly intovicated:					
	4310	prohibit and create cause of					Signed by the
		action for harm that the		Poforrad to the Committee on			Coverner on 7/12/21
House Bill		individual causes	7/12/2021	Referred to the Committee of	Housk		DA 55'21
		Individual causes.	1/13/2021	Reg Relolli	пацск	LARA/IVIRA	Signed by the
Sonoto Bill	4517	Maribuana: other: definition of		Poforrad to the Committee on			Governer on 7/13/21
Seriale Dill	4317	inductrial home: modify	7/12/2021	Referred to the Committee of	Dahhi		
		Food, other: use of DEAS	1/13/2021	Reg Relolli	Raphi	LARA/IVIRA	MDARD is load other
	5050	Food: other, use of PFAS,					MDARD is lead, other
Lisus Dill	<u>5250</u>	bisphenois, and phinalales in	7/4/0004		Dabbi	Developer	
House Bill		Tood packaging; prohibit.	7/1/2021	Referred to House Agriculture	Rabhi	Pending	DeEGLE
	5050	Food: other, use of PFAS,					
Lisus Dill	<u>5250</u>	bisphenois, and phinalales in	7/4/0004		Vaura f Dahki		
House Bill		lood packaging; pronibit.	7/1/2021	Referred to House Agriculture	Youser Rabhi		
		Animais: care and treatment;					
		conducting of research or					
		training activities on dogs in a					
	582	manner that causes pain or					
		distress, and certain related					
		activities, by an affiliate of a					
0 / 5		public body; prohibit. Creates	0/00/000		B 114		
Senate Bill		new act.	6/30/2021	Referred to Agriculture	Paul Wojno		
		iviedical marinuana: otner;					
	5405	smoking medical marihuana in					
House Bill	<u>5128</u>	public places; expand					
		prohibition against to include	0/00/2020		<b>.</b>		
		tood service establishments.	6/29/2021	Reterred to Reg Reform	Calley	N/A	LARA/MRA is lead
		Marihuana: other; smoking					
		marihuana in public places;					
House Bill	<u>5129</u>	expand prohibition against to					
		include food service			_		
		establishments.	6/29/2021	Referred to Reg Reform	Calley	N/A	LARA/MRA is lead

		Appropriations: supplemental; drinking water and water					Multiple agencies are included in this
House Bill	<u>565</u>	infrastructure improvements					supplemental which
		Creates appropriation act	6/24/2021	Referred to Appropriations	Bumstead	N/A	Eederal relief
		Health occupations:	0/24/2021	Referred to Appropriations	Dumstead	N/A	r cuciui relier
		veterinarians; veterinarian-					
House Bill	4012	client-patient relationship;					LARA is lead agency,
House bill	4912	require and provide for other					MDARD is watching,
		amendments to the regulation			<b>D</b> <i>U</i>		hearing on 6/16 in
		of veterinary medicine.	6/16/2021	Referred to House Agriculture	Bezotte	N/A	House Ag
		cap under the lawful internet					
House Bill	4823	daming act to the Michigan					Passed House Ad 8-3
Tiodoo Biii	1020	agriculture equine industry					on 5/19-on third
		development fund.	5/27/2021	Referred to Agriculture	Alexander	Unclear of lead agency	reading
		Removes allocation of revenue		-			
		cap under the lawful sports					
House Bill	<u>4824</u>	betting act to the Michigan					Passed House Ag 8-3
		agriculture equine industry	E 107 1000 4				on 5/19-on third
		Trado: business regulation:	5/27/2021	Referred to Agriculture	Hertei	Unclear of lead agency	reading
		requirements for advertising of					
	<u>493</u>	reduced gasoline prices:		Referred to Economic and			
Senate Bill		modify.	5/27/2021	Small Business Development	Jim Stamas		
		Agriculture: pesticides; use of					
Senate Bill	<u>4895</u>	neonicotinoid pesticides;					
		regulate.	5/25/2021	Referred to House Agriculture	Kuppa	N/A	Not moving
		Agriculture: plants;					
Senate Bill	<u>4896</u>	novious or evotic weed by local					
		governments: prohibit.	5/25/2021	Referred to House Agriculture	Steckloff	N/A	Not moving
		Environmental protection:	0/20/2021		0.000.000		
		permits; denial or imposition of					
	130	additional conditions on;					
	400	provide for when projects are					
Lisus Dill		located in environmentally	E/0E/0004	Re-referred to Transportation	Dumantad	N1/A	
		Gaming: horse racing:	5/25/2021		Runestad	IN/A	WDUT/SEU are leads
		breeders' awards: increase					
	<u>4599</u>	Amends secs. 8, 19 & 20					Passed House 106-1
House Bill		of 1995 PA 279	5/11/2021	Referred to Agriculture	Alexander	Neutral	on 5/11
		Gaming: horse racing;					
HCR	<u>4600</u>	reterences to horse racing law					Depend House 400.4
		01 1995 IN 1951 PA 90; update.	5/11/2021	Referred to Agriculture	Chorny	Noutral	Passed House 106-1
		Appropriations: zero budget:	3/11/2021	Referred to Agriculture	Cherry		011 3/ 1 1
		department of agriculture and					
	<u>4394</u>	rural development; provide for					Passed House 57-50
House Bill		fiscal year 2021-2022.	5/11/2021	Appropriations	Allor	Opposed	on 5/11

Senate Bill	<u>77</u>	Appropriations: zero budget; department of agriculture and rural development; provide for fiscal year 2021-2022. Creates appropriation act.	5/11/2021	Referred to the Committee on Appropriations	Roger Victory	N/A	Passed the Senate 20- 15 on 5/11
House Bill	<u>353</u>	Food: licensing; waiver for licensing and registration fees for certain food establishments, water bottlers, and water dispensing machine owners for the 2021 to 2022 licensing year; provide for.	5/6/2021	Referred to the Committee on Regulatory Reform	Curtis VanderWall	Opposed	Passed out of the Senate 20-16 on 5/6. Referred to House Reg Reform
House Bill	<u>354</u>	Health: local health departments; waiver for licensing fees for certain food establishments for the 2021 to 2022 licensing year; provide for.	5/6/2021	Referred to the Committee on Regulatory Reform	Curtis VanderWall	Opposed	Passed out the Senate 20-16 on 5/6. Referred to house Reg Reform
House Bill	<u>4784</u>	Animals: care and treatment; definition of shelter for animals; modify.	5/5/2021	Referred to the Committee on Judiciary	Brann	Pendina	No hearing
Senate Bill	<u>4785</u>	Crimes: animals; cross- reference in revised judicature act; update.	5/5/2021	Referred to Agriculture	Brann	Pending	No hearing
House Bill	<u>4786</u>	Crimes: animals; cross- reference in animal welfare fund act; update	5/5/2021	Referred to Agriculture	Brann	Pending	No hearing
House Bill	<u>4874</u>	Animals: care and treatment; definition of shelter for animals; modify.	5/4/2021	Referred to House Judiciary	Brann	N/A	MSP/Legal leads. MDARD providing care comments
House Bill	<u>4420</u>	Appropriations: zero budget; multi-department supplemental appropriations; provide for fiscal vear 2021-2022.	4/29/2021	Appropriations	Albert	N/A	Reported from Full Appropriations on 4/29/21
House Bill	<u>370</u>	Environmental protection: hazardous products; glyphosate herbicide; prohibit certain residential uses of.	4/21/2021	Referred to the Committee on Environmental Quality	Rosemary Bayer	N/A	MDARD is lead agency, won't likely move
Senate Bill	<u>4611</u>	Animals: birds; issuance of carrier pigeon permits; require compliance with local ordinances and regulations, and prohibit the enactment of local ordinances that prohibit the keeping of carrier pigeons.	4/13/2021	Referred to Committee on Agriculture	Tulio Liberati	N/A	Watching: Probably won't move
House Bill	<u>5477</u>	Food: other; sale of food items represented to be kratom products; regulate. Creates new act.	4/13/2021	Referred to House Regulatory Reform	Laurie Stone	Not engaging per EOG/Federal issue	The H-2 removed MDARD as regulating agency.
House Bill	<u>186</u>	Agriculture: industrial hemp; regulations for growing	3/25/2021	Referred to the Committee on	Dan Lauwers	Support	PA 4 of 2021 signed
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		industrial hemp; modify.		Agriculture			on 3/25/2021
House Bill	4550	Courts: juries; postponement					
Tiouse Dill	4000	of jury service; allow for		Referred to the Committee on			
		farmers during certain months.	3/23/2021	Agriculture	Postumus	SCAO/Legal are lead agencies	Awaiting first hearing
		food: licensing; licensing fees					
House Bill	<u>229</u>	for food establishments;	3/11/2021	Referred to the Committee on	Curtic VandarWall	NI/A	
		provide waiver for 2021 to	5/11/2021	Regulatory Reform		N/A	Replaced with SB
		2022 licensing year.					353&354
		Health; other; aerial spraying of					
		pesticides to prevent and					
		control diseases and					
	4.407	environmental health hazards;					
House Bill	4497	require department of health					
		and human services to provide					Watching: DHHS is
		notice to the public before		Referred to Committee on			lead agency and is
		implementation.	3/11/2021	Health Policy	Brad Paquette	N/A	opposed
		Animals: research facilities:		,			
		certain research facilities to					
House Bill	4881	offer certain laboratory animals					
i iouoo Diii		for adoption before					Hearing on 2/22 in
		euthanization: require.	2/22/2021	Regulatory Reform	Hertel	No Position	Reg. Reform
		Animals: research facilities;					ŭ
	1000	reporting requirements and					
	4882	penalties for noncompliance;					Hearing on 2/22 in
House Bill		provide for.	2/22/2021	Regulatory Reform	Brann	No Position	Reg. Reform
		Trade: business practices; gas					Ů
	4246	tax rates posted at gas pumps;	2/16/2021	Referred to the Committee on	Beau LaFave	Opposed	
Senate Bill		require.		Iransportation			
		Agriculture: pesticides; registry					
		of individuals seeking to be					
		notified in the event of the					The Department
	<u>136</u>	emergency use or application	2/16/2021	Referred to the Committee on	Rick Outman	N/A	worked with Sen.
		of pesticides on or adjacent to		Environmental Quality			Outman to create an
		their property; provide for.					alert system outside of
Senate Bill		Amends					the legislative process.
		Animals: exotic; applicability of					
	<u>4186</u>	certain provisions of the large	2/9/2021	Referred to the Committee on Agriculture	Thomas Albert	Opposed	
		carnivore act based on					
House Bill		residency; modify.					No hearing
		Highways: bridges; tractors					
		and farm equipment to cross					
	4165	the Mackinac Bridge; allow	2/9/2021	Referred to the Committee on	Steven Johnson	N/A	
	<u>+105</u>	under certain conditions.	2/0/2021	Transportation		DVA	
		Amends sec. 12 of 1952 PA					MDARD/MDOT are co-
House Bill		214 (MCL 254.322).					leads