



Cropping System For Nursery Crop and Christmas Tree Producers Verification Checklist

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 a specified 2017 Right to Farm (RTF) Generally Accepted Agricultural Management Practices (GAAMPs).

(Revised 9/26/17)

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	MEETS CRITERIA
1.00) 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.	YES NO N/A
1.01) How often are fields tested for nutrient levels (P, K, Ca, Mg and pH)?	<i>All fields are sampled and tested on a regular basis</i> , at 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.	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.	YES NO N/A
1.02) Do soil sampling procedures adequately represent field conditions?	One composite sample taken from uniform field areas.		One composite sample taken from areas greater than 40 acres. One composite sample taken from areas greater than 40 acres.	Soil types/soil maps demonstrating uniformity. Cropping histories. Proper soil sampling procedure.	YES NO N/A
1.04) How are all sources of nutrients considered when making fertilization decisions?	<i>Credit taken for nutrients supplied by organic matter, legumes and manure or other biological materials</i> (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.	YES NO N/A
1.05) How are fertilizer application rates determined?	<i>Consistent with Michigan State University (MSU) recommendations</i> . 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.	YES NO N/A
Comments:					

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	MEETS CRITERIA
<p>1.09) 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?</p>	<p>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.</p>		<p>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.¹</p>	<p>Map showing areas adjacent to wells where vehicles should not be parked. No evidence of vehicles left in an unsecured location.</p>	<p>YES NO N/A</p>
<p>1.10) How is manure and/or compost <u>temporarily</u> stockpiled in relation to surface water?</p>	<p><i>Manure</i> 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.</p>		<p>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 runoff and erosion losses to surface waters.⁴</p>	<p>Acceptable temporary manure and/or compost storage demonstrated. Adequate isolation from surface water.</p>	<p>YES NO N/A</p>
<p>1.11) For <u>temporarily</u> stacked manure, and/or compost, how is the site managed to protect surface water, groundwater, and/or neighboring properties?</p>	<p><i>Manure</i>, 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 composting are implemented using NRCS Composting Facility No. 317 standards.</p>	<p>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.</p>	<p>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. Runoff and/or leachate discharge directly to surface water.⁴</p>	<p>Appropriate temporary manure, and/or compost, storage demonstrated. Adequate isolation from surface water.</p>	<p>YES NO N/A</p>

Comments:

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	MEETS CRITERIA
MANURE MANAGEMENT PRACTICES (IF MANURE IS NOT USED, SKIP THIS SECTION.)					
1.19) How is the nutrient content of manure determined?	<i>Laboratory analysis for percent dry matter (solids), ammonium, and total N, P and K.</i>	Book values or standard nutrient content values used.	Manure nutrient content is unknown.	All manure analyses or book values on file.	YES NO N/A
1.20) 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.	YES NO N/A
1.21) How is manure, and/or compost, generally applied to fields?	<i>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.</i>	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 discharges directly to surface water. ⁴	Fields that receive manure, and/or compost, applications are properly managed.	YES NO N/A
1.22) How are streams, wetlands, farm ditches and other water bodies protected from manure runoff?	<i>Manure is incorporated within 48 hours or injected. Or, surface applications are not done within 150 feet of surface water.</i> 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.	YES NO N/A
1.23) 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.	YES NO N/A

Comments:

Nutrient Management Practices (continued)

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BIOSOLIDS MANAGEMENT PRACTICES (IF BIOSOLIDS ARE NOT USED, SKIP THIS SECTION)					
1.28) 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.	YES NO N/A

Soil and Water Conservation Practices

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.	YES NO N/A
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Comments:

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	MEETS CRITERIA
PESTICIDE APPLICATION					
3.11) 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. ¹⁷ 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.	YES NO N/A
3.13) Are the purchasers and applicators of Restricted Use Pesticides (RUP) certified applicators?	<i>The purchaser and applicator of RUP comply with the certification requirements.</i>		Non-certified and unsupervised applicators use RUP. ⁶	RUP certification confirmed.	YES NO N/A
3.15) 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.	YES NO N/A
3.16) How are empty pesticide containers rinsed and disposed?	<i>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.</i>	Disposal of empty containers and bags on the farm or nursery property. ^{8,17}	Disposal of partially filled containers. Burning of container on the farm or nursery property. ^{8,17}	Evidence of containers being recycled or proper disposal.	YES NO N/A
3.17) Do pesticide applicators read and follow the label instructions?	<i>Everyone using pesticides follows label and labeling instructions.</i>		Label and labeling instructions not always followed. ¹⁷	Evidence that labels are followed for environmental concerns.	YES NO N/A

Pest Management Practices (continued)

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PESTICIDE APPLICATION (CONTINUED)					
3.23) How is the proper and safe operation of pesticide application equipment ensured?	<i>Equipment is correctly calibrated at least annually and leaks minimized to apply intended rate and distribution pattern.</i>		Pesticide application equipment not properly calibrated.⁶	Date equipment calibrated annually.	YES NO N/A
3.24) How are pesticide applications assured to remain on-target and minimize off target pesticide spray drift?	<i>A written drift management plan is utilized that minimizes off target drift.</i>	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.⁶	Written drift management plan on file.	YES NO N/A
3.25) What pesticide application records are kept?	<i>Accurate records maintained of all agricultural crop applications of pesticides for at least three years.</i>	Partial pesticide records kept. Plan to maintain complete pesticide application records.	No record is 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 - Method of application - Target pest - Carrier volume/acre	YES NO N/A

Comments:

Pest Management Practices (continued)

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PESTICIDE APPLICATION (CONTINUED)					
3.29) How are agriculture pollution emergencies handled?	Call 911, sheriff, fire or emergency services department for personal safety issues. <i>All uncontained spills or releases should be reported to the MDARD Agriculture Pollution Emergency Hotline: 1-800-405-0101, or the MDEQ Pollution Emergency Alerting System: 1-800-292-4706.</i>		No contact to state or local authorities. Spill discharges directly to surface water. ⁴	Farm emergency plan on file, or local emergency telephone numbers immediately available.	YES NO N/A

Irrigation Management Practices (If Irrigation is not used, skip this section.)

SYSTEM MANAGEMENT					
4.01) Have all irrigation systems been evaluated for application uniformity?	<i>All irrigation systems have been evaluated for uniformity.</i> 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.	YES NO N/A
4.02) How is the amount of irrigation water delivered accurately determined.	<i>All water applications are accurately determined –</i> -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.	YES NO N/A
4.03) Are all sprinkler systems operated to minimize drift and off-target application?	<i>All sprinkler systems operated to minimize drift and off-target application.</i> 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.	YES NO N/A

Comments:

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RECORD KEEPING					
4.05) 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: <i>-Crop type and location</i> <i>-Source of the water used</i> <i>-Date, method and amount of each irrigation water application</i> <i>-All system inspections and repairs that influence uniformity and leaks</i> <i>-Calibration of fertigation and chemigation equipment if used</i> <i>-Records on system uniformity evaluation</i>	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.	YES NO N/A
IRRIGATION SCHEDULING					
4.06) 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: <i>-Available soil water for each unit scheduled</i> <i>-Depth of rooting for each crop irrigated</i> <i>- Container capacity for container-grown nursery crops</i> <i>-Allowable soil moisture depletion at each stage of crop growth</i> <i>-Measured, estimated, or published evapotranspiration data to determine crop water use</i> <i>-Measure rainfall in each field irrigated</i>	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.	YES NO N/A
Comments:					

Water Use

RISK QUESTION	LOW RISK – 3 (RECOMMENDED)	MEDIUM RISK – 2 (POTENTIAL HAZARD)	HIGH RISK - 1 (SIGNIFICANT HAZARD)	RECORDS OR EVIDENCE OF MAEAP VERIFICATION	MEETS CRITERIA
WATER USE REPORTING					
5.01) 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. ¹³	Records indicate compliance.	YES NO N/A
5.02) 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. ¹	Unused well(s) properly sealed.	YES NO N/A
5.03) 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 MDEQ, prior to beginning the withdrawal. The WWAT and registration site is www.deq.state.mi.us/wwat		No, a new water withdrawal exceeding 70 gallons per minute has been established without the use of the WWAT. ¹³	Producer's verbal indication of compliance with regulation.	YES NO N/A

Comments:

Nursery Container Management (If containers are not used, skip this section.)

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IRRIGATION					
6.01) 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. ⁴	No evidence of runoff or erosion.	YES NO N/A
SUBSTRATES					
6.07) 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. ⁴	Environmentally safe disposal demonstrated.	YES NO N/A
SITE					
6.10) 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 ⁸ or disposed of on the farm.	Evidence that containers are being managed properly.	YES NO N/A
6.11) 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. ⁸	Evidence of system for recycling or proper disposal of used poly.	YES NO N/A

Other Environmental Risks in the Cropping System

OTHER ENVIRONMENTAL RISKS IN THE CROPPING SYSTEM

7.02) 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.	YES NO N/A
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Comments:

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