

## Section III – Field Office Technical Guide

### Comprehensive Nutrient Management Plan Criteria Practice/Activity Code (102) (No.)

#### 1. Definitions

- A. A Comprehensive Nutrient Management Plan (CNMP) is a conservation plan for an animal feeding operation (AFO) that:
- (1) Must include the following two components:
    - (i) The production area, including the animal confinement, feed, and other raw materials storage areas, animal mortality facilities, and the manure handling containment or storage areas; and
    - (ii) The land treatment area, including any land under control of the AFO owner or operator, whether it is owned, rented, or leased, and to which manure or process wastewater is, or might be, applied for crop, hay, pasture production, or other uses.
  - (2) Meets Natural Resources Conservation Service (NRCS) quality criteria for water quality (nutrients, organics, and sediments in surface and groundwater) and soil erosion (sheet and rill, wind, ephemeral gully, classic gully, and irrigation induced natural resource concerns on the production area and land treatment area).
  - (3) Mitigates, if feasible, any excessive air emissions and/or negative impacts to air quality resource concerns that may result from practices identified in the CNMP or from existing on-farm areas/activities.
  - (4) Complies with Federal, Tribal, State, and local laws, regulations, and permit requirements.
  - (5) Satisfies the owner/operators production objectives.
- Note: If it is probable that the producer will forward the CNMP to the State regulatory agency in pursuit of a National Pollutant Discharge Elimination System (NPDES) permit, the planner should include all farm acreage that could foreseeably receive manure. This additional acreage, when included in the CNMP, will increase planning options should the plan need to be altered after it becomes a regulatory plan. Planning flexibility makes it less likely that the NPDES permit will need to be revised.
- B. Miscellaneous Definitions:  
Internal transfers. These are on-the-farm relocations (transfers) of manure, litter, wastewater, by-products, etc.

#### 2. CNMP Criteria

This section establishes the minimum criteria the planner shall address in the development and implementation of CNMPs.

- A. General Criteria
- (1) A CNMP shall be designed to assist owners/operators in taking voluntary actions to minimize potential pollutants from animal confinement facilities and land application of manure and organic by-products.
  - (2) Information in the CNMP shall document the landowner(s) decisions.
  - (3) The CNMP shall be developed in accordance with all applicable Federal, Tribal, State and local water quality goals or regulations.
  - (4) The CNMP shall require evaluation and documentation of compliance with the National Environmental Policy Act (NEPA), the Endangered Species Act, the National Historic

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Preservation Act, and other effects on the environment. This evaluation and documentation process will be completed by NRCS. Information on evaluation and documentation is found in the NRCS National Environmental Compliance Handbook and the NRCS Cultural Resources Procedures Handbook. The NRCS National Environmental Compliance Handbook is available at [http://directives.sc.egov.usda.gov/media/pdf/H\\_190\\_610.pdf](http://directives.sc.egov.usda.gov/media/pdf/H_190_610.pdf). Virginia policy and procedures for compliance with the NEPA is found in Virginia Instruction 190-380. Completing the National Environmental Evaluation form (NRCS-CPA-52) and the Virginia guide sheets contained in the NRCS-CPA-52 form will evaluate and document our environmental concerns and satisfy Virginia specific policies and guidelines in meeting NEPA requirements. The NRCS National Cultural Resources Procedures Handbook is available at [http://directives.sc.egov.usda.gov/media/pdf/H\\_190\\_601\\_a.pdf](http://directives.sc.egov.usda.gov/media/pdf/H_190_601_a.pdf). Use the key words “evaluation” or “documentation” to search for information. Virginia policy and procedures for completing Cultural Resources can be found in Amendment VA1 of the National Cultural Resources Procedures Handbook.

Note: Environmental compliance activities must be coordinated with the NRCS designated agency representative since all findings and interagency consultation are the responsibility of the lead Federal agency.

- (5) A CNMP shall be developed by persons who meet NRCS certification requirements. The specific criteria for certification of NRCS employees and conservation partners can be found in NRCS General Manual 180 Part 409. Virginia planner certification policy is found in NRCS General Manual 180 Part VA409. The specific criteria for certification for Technical Service Providers (TSP) is available via the TechReg Web site: <http://techreg.usda.gov/>.
- (6) All CNMPs shall be developed through utilization of the national CNMP development templates or approved CNMP plan format for Virginia according to Virginia Instruction 190-381.
- (7) A CNMP shall be developed in accordance with the State nutrient management conservation practice standard (code 590).
- (8) The NRCS review and approval process for CNMPs shall be followed.
  - (i) Submit the CNMP. (An NRCS Customer Service Toolkit (CST) Customer Folder will be required.)
  - (ii) The CNMP planner submits the following to NRCS if for review and signatures:
    - Printed copy of the CNMP document;
    - CNMP document file;
    - Nutrient Management plan;
    - Ag Waste Management System Plan (if not included with the CNMP document);
    - Revised Universal Soil Loss Equation (RUSLE2) database file (.gdb extension);
    - Conservation plan xml file from Customer Service Toolkit (.consplan.xml extension);
    - Geographic Information Systems (GIS) shapefiles created for the operation; and
    - Completed VA CNMP Checklist and Signature Page.
- (9) Delivery of the CNMP

A CNMP shall be signed by the producer, certified planner, and appropriate specialist(s), and include other signatures as required. Once the CNMP has been reviewed and signed by the planner(s) and reviewer(s), copies of the CNMP are delivered to the producer for signature. The private consultant or TSP returns one copy of the finalized and signed documents to the NRCS Field Service Center, the producer retains a signed copy, as well.
- (10) Archiving of the CNMP document and associated data.

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- (i) Once the CNMP has been completed and delivered to the producer, the NRCS archives the signed hard copy and sufficient electronic documentation (see “Submit the CNMP” list above), technical references, software versioning, etc., to facilitate recreation of the CNMP documents for future reference as part of the CNMP review/revision cycle.
  - (ii) Before TSPs can check conservation practice information back into the NRCS National Conservation Practice Database (NCPdb), the data will need to be reviewed and accepted by NRCS designated Field Service Center staff.
- (11) In most situations, addressing these elements will require a combination of conservation practices and management activities to meet the production needs of the AFO owner/operator, and resource concerns associated with the production and land treatment areas. The Field Office Technical Guide (FOTG) Section III and National Planning Procedures Handbook contain additional information and guidance.

### 3. CNMP

#### A. Specific CNMP Elements.

(1) Minimum specific elements for a CNMP include:

- (i) Background and Site Information;
- (ii) Manure and Wastewater Handling and Storage;
- (iii) Farmstead Safety and Security;
- (iv) Land Treatment Practices;
- (v) Soil and Risk Assessment Analyses;
- (vi) Nutrient Management according to the criteria in the Nutrient Management Conservation Practice (Code 590);
- (vii) Feed Management (Optional);
- (viii) Recordkeeping; and
- (ix) References.

Note: “Feed Management” and “Other Utilization Options” are not required elements of a CNMP. However, the “Feed Management Element” and/or “Other Utilization Options” should be included in the CNMP, if needed, to help manage the farm nutrient balance.

Note: Where air quality has been identified as a resource concern due to agricultural operations, an air quality element may be needed.

#### B. Specific CNMP Element Criteria.

Note: Each of the CNMP elements shall address specific criteria. The degree to which these elements are addressed in the development and implementation of a site-specific CNMP is determined by General Criteria in Section 304.1A and the specific criteria provided for each element of the CNMP below:

(1) **Background and Site Information Element** – This element provides a brief description of:

- (i) Name of owner/operator in control of the site;
- (ii) Facility location and mailing address;
- (iii) Latitude and longitude of the production area entrance;
- (iv) The type and size of the AFO (reference farm and tract information pertaining to the production facilities and all spreadable acreage);
- (v) Resource concerns, including those that may arise from the implementation of the CNMP such as air quality (documented on the NRCS-CPA-52 or other appropriate method); and

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- (vi) The producer's manure management objectives.
- (2) **Manure and Wastewater Handling and Storage Element:**
- (i) This element shall address the components and activities associated with the production facility, including feed management decisions made to reduce the nutrient content of manure, feedlot or animal loafing facilities, manure and wastewater storage and treatment structures and areas, animal mortality facilities, feed and other raw material storage areas, and any areas used to facilitate transfer of manure and wastewater.
  - (ii) The manure and wastewater handling and storage facilities shall provide for adequate collection, handling, storage, and/or treatment of manure and organic by-products that facilitate application during favorable weather conditions and is compatible with crop management strategies, including the application of nutrients at agronomic rates.
  - (iii) Practices planned for the collection, storage, treatment, and/or transfer practices shall meet the minimum criteria and documentation as addressed in the NRCS conservation practice standards, contained in Section IV of the NRCS FOTG. Existing structures shall function in accordance with the planned manure and waste water handling system.
  - (iv) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned production activities identified in the CNMP, then air quality impact mitigation is required in the CNMP.
  - (v) The Manure and Wastewater Handling and Storage element shall include:
    - Map(s) of production area: Accurate scaled drawing or aerial photo of the confinement areas, production buildings, manure storage, and treatment locations, and feed storage areas;
    - Production area conservation practices (including air quality impact mitigation [if required]): document the conservation practice decisions and operation and maintenance (O&M) requirements;
    - Manure collection, transfer, storage, and treatment: type, operational capacity, annual requirement, maximum days of storage, manure on-hand at start of the plan, management of silage leachate, scraping lots, etc;
    - Animal inventory: group name, type, number, weight, confinement period, percentage of manure collected ( $\text{days of confinement}/365 \times 100$ ), additional bedding or washwater, facility identification where manure will be stored (pad, house/building/barn, lagoon);
    - Mortality Management: description of how the normal mortality will be managed in an environmentally acceptable manner (burial requirements, incineration, composting, hauled away to rendering);
    - Planned Manure Exports off the Farm: month/year, amount;
    - Planned Manure Imports onto the Farm: month/year, manure type, amount, source; and
    - Planned Internal Transfers of Manure: month/year, manure source, amount, and manure destination.
- (3) **Farmstead Safety and Security element** – This element shall address the need for onsite guidance and procedures to be followed in the event of a leak or spill emergency, catastrophic mortality, or other biosecurity concern.
- (i) General emergency procedures to follow in response to leaks or spills of manure, chemical, fuel, or other substance that may pose a threat to the environment, and appropriate contact information.

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- (ii) Procedures for biosecurity, including protocol for farm visitors, and disposal of animal veterinary waste.
  - (iii) Procedures to follow in the event of catastrophic mortalities.
  - (iv) The Chemical Handling Checklist shall be included in the CNMP document when the CNMP will be utilized for an NPDES permit.
- (4) **Land Treatment Practices Element** – This element shall address the need for and implementation of appropriate conservation practices for land treatment areas. On fields where manure and organic by-products are applied, it is essential that runoff and soil erosion be reduced to acceptable levels, and that plant uptake of applied nutrients be maximized to prevent manure nutrients from reaching surface and/or groundwater or being volatilized to the air. Therefore, the planner must develop a conservation system that will reduce runoff and control soil erosion from the field to the level specified in Section III of the FOTG. Criteria for land treatment practices element:
- (i) Map(s) documenting fields and conservation practices (a GIS-developed map product is preferred):
    - Aerial maps of land application areas including soil maps;
    - Fields delineated to show setbacks, buffers, waterways, conservation practices planned or other site specific features important to nutrient management planning (risers, inlets, wells);
    - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
    - Other site information features of significance, such as property boundaries or occupied dwellings.
  - (ii) Land treatment conservation practices planned or applied to meet the quality criteria for soil erosion, air and water quality. Include the practice narrative and the O&M requirements for each practice. Design specifications (job sheets, engineering plans) and information associated with planning and implementation of the included conservation practices shall be maintained.
  - (iii) To achieve the desired soil erosion, water and air quality improvements on land treatment areas, adjacent fields may also require conservation treatment. Additional natural resource concerns may need to be addressed to meet an acceptable treatment level for erosion, water and air quality, for example, managing the plant resource on pasture lands.
  - (iv) Additional natural resource concerns may need to be addressed to meet an acceptable treatment level for erosion, water and air quality, for example, managing the plant resource on pasture lands.
  - (v) If it is determined that excessive negative impacts to air quality resource concerns arise from existing or planned land treatment activities, identified in the CNMP, then air quality impact mitigation is required in the CNMP.
- (5) **Soil and Risk Assessment Analyses Element** – This element shall document the results of the predicted average annual soil erosion from wind and/or water as a result of the planned treatment(s) and nitrogen and/or phosphorus risk assessments as required by Virginia Regulations. Refer to the Virginia Nutrient Management conservation practice standard (code 590) for further guidance.
- (6) **Nutrient Management Element** – This element shall meet the technical criteria for the Nutrient Management conservation practice (code 590) standard. VA nutrient management plans shall be developed by individuals certified by the Commonwealth of Virginia as

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Certified Nutrient Management Planners under 4 VAC 5-15-10 to 5-15-150 of the Virginia Administrative Code. These certified plans will address the use and management of all nutrients applied on cropland, hayland, or pastureland (animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, organic by-products). Planners shall document the rationale when using custom recommendations in the CNMP.

- (i) Some data necessary to develop a CNMP will come from chemical analyses of soils, plant tissue, manure, water, and feed. Soil test analyses shall be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program (NAPT) Proficiency Assessment Program (PAP) <http://www.naptprogram.org/pap/> under the auspices of the Soil Science Society of America or State-recognized program that considers laboratory performance and proficiency to assure accuracy of test results.
- (ii) Manure analyses shall be performed by laboratories successfully meeting the requirements and performance standards of the Manure Testing Laboratory Certification Program (MTLCP) <http://www.mda.state.mn.us/licensing/pestfert/manurelabs.htm> under the auspices of the Minnesota Department of Agriculture, or State-recognized program that considers laboratory performance and proficiency to assure accuracy of test results. States are encouraged to adopt the MTLCP or State Conservationists can establish State proficiency criteria that meet or exceed the MTLCP program criteria.
- (iii) Nutrients from biosolids must be included in nutrient management planning when applied on farms for which CNMPs are being developed. Biosolids (sewage sludge) applications are regulated by the U.S. Environmental Protection Agency (EPA) and, therefore, shall be applied in accordance with EPA regulations (40 C.F.R. Parts 403 Pretreatment and 503 Biosolids) and other State and/or local regulations regarding the use of biosolids as a nutrient source.
- (iv) Criteria for the CNMP Nutrient Management Element shall include all proposed applications of manure and other needed nutrients to meet the Nutrient Management conservation practice standard (code 590). This would include all fields that may receive manure applications from any manure source. The plans and specifications shall include the following tables:
  - (a) Field information—identify field names, total acres, and spreadable acres in a table format;
  - (b) Manure application setback distances—identify setbacks for each field on the map and in a table format;
  - (c) Soil test data—soil test data for each field displayed in a table;
  - (d) Irrigation water test data (if applicable);
  - (e) Manure nutrient analysis—document most recent manure analysis in a table;
  - (f) Planned crops and fertilizer recommendations—list fields, crops, yield goals, and fertilizer recommended;
  - (g) Manure application planning calendar—display manure applications planned, when crops are grown, and restrictions that would prevent nutrient/manure applications, for example, winter spreading or high potential for nitrate leaching;
  - (h) Planned nutrient applications—the timing, rate, source(s), and methods of application by field;
  - (i) Field nutrient balance—the recommended nutrient amounts, nutrients applied, and balance after recommendation, and balance after crop removal;

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- (j) Manure inventory annual summary—annual manure production by source and storage facility; and
- (k) Farm nutrient balance (acres planned for nutrient application) – summary of primary nutrients applied from all nutrient sources, by crop, year, and field. The net excess or shortage of nitrogen, phosphorus, and potassium shall be displayed by crop year and field.

Note: The fertilizer material annual summary documents the amount of commercial fertilizer needed each crop year. While not required, it can be very useful to the producer for planning purposes.

- (7) **Feed Management Element (optional)** – Include only if a Feed Management Plan is required to reduce the total nutrients excreted by the livestock on the farm. Do not include discussions of optional feed management.

When Feed Management conservation practice (code 592) is included in the CNMP, diets and feed management strategies shall be developed by professional animal scientists, independent professional nutritionists, or other comparably qualified individuals. When required by State policy or regulation, animal nutritionists shall be certified through any certification program recognized within the State.

- (8) **Other Utilization Options Element (optional)** – Include only if utilization options other than land application are planned.

Note: Criteria are not offered for Feed Management and for Other Utilization Options because they are not always required CNMP elements. Technical criteria used to implement these elements are found in Section IV of the Field Office Technical Guide (FOTG).

- (9) **Recordkeeping Element** – It is important that accurate records are kept to effectively document and demonstrate implementation activities associated with the CNMP, and to meet the documentation requirements of regulatory agencies. Recordkeeping includes appropriate management and maintenance of practices and structures. AFO owners/operators have responsibilities to maintain records that document the implementation of CNMPs in accordance with conservation practice standards, including the State nutrient management conservation practice (code 590), including:

- (i) Producer activity checklist;
- (ii) Inspection/monitoring records (taken from the O&M requirements contained in each conservation practice under CNMP Elements 2 and 4);
- (iii) Annual crop records—crop, yield by field;
- (iv) Manure application records—date, rate, timing, weather, setbacks, by manure type, manure source, storage facility, by fields receiving manure, etc.;
- (v) Other nutrient applications (e.g. commercial fertilizer and irrigation water application) records—nutrient content analysis, application rate/acre, amount of water applied, nutrient content of irrigation water, etc.;
- (vi) Manure exports off the farm—date(s) and amount(s);
- (vii) Manure imports onto the farm—date(s), amount(s), and analysis (prior to application);
- (viii) Internal transfers of manure—date(s), amount(s), initial location(s) and final location(s); and
- (ix) Other records required by State and/or local regulations: manure analysis—by date, type, and storage facility, soil testing—by field or conservation management unit, etc.
  - Recordkeeping responsibilities are reviewed with producers when the CNMP is planned and during the implementation follow-up visits. Electronic copies of the

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CNMP shall be maintained at the operation headquarters for future review and potential revision.

- When Federal funds are used (i.e. Environmental Quality Incentives Program) to develop the CNMP, follow-up for implementation and O&M of the CNMP is the responsibility of NRCS employees or United States Department of Agriculture (USDA)-authorized third party vendors. When the CNMP is used for regulatory purposes (i.e. NPDES permit), the farmer is responsible for follow-up and O&M of the CNMP, including recordkeeping. NRCS employees or other USDA-authorized providers of technical assistance will provide guidance to farmers that ensure the farmer knows which records they need to keep and how to maintain those records.

(12) **References Element** – This element shall document all technical sources important to understanding the contents or implementation of the CNMP. This element should include reference sites where useful information pertinent to the CNMP can be obtained. To avoid unnecessary expansion of the CNMP document, planners shall minimize inclusion of hard copies of supporting documentation.

### 4. CNMP Format and Template

- A. The CNMP national template provides a basic format and content framework that is consistent across all States. The elements and information contained in the national template shall be required for a CNMP. See Virginia Instruction 190-381 for state specific guidance on the required format.
- B. The CNMP is an important part of the conservation system for the AFO. The CNMP documents the planning decisions and O&M activities for the AFO. In addition, the CNMP includes background information and guidance, and reference Web sites where up-to-date information can be obtained. Electronic copies of both the CNMP shall remain in the possession of the producer/landowner to facilitate future revision(s).
- C. The CNMP elements are represented in the national template as sections.

### 5. CNMP National Template

- C. At a minimum, the following sections and format will be required in the template:
  - (1) **Cover and Signature Page:**
    - (i) Name of owner/operator;
    - (ii) Facility location (physical address) and mailing address;
    - (iii) Latitude and longitude of the production area entrance;
    - (iv) Type and size of the AFO (reference farm and tract information pertaining to the production facilities and all spreadable acreage);
    - (v) Plan period; and
    - (vi) All required signatures for acceptance of a CNMP in the State.
  - (2) **Section 1 – Background and Site Information:**
    - (i) 1.1 General description of the operation;
    - (ii) 1.2 Sampling, calibration, and other statements; and
    - (iii) 1.3 Natural Resource Concerns (documented on the NRCS-CPA-52 or other appropriate documentation).
  - (3) **Section 2 – Manure and Wastewater Handling and Storage:**
    - (i) 2.1 Map(s) of Production Area;
    - (ii) 2.2 Production Area Conservation Practices (Including air quality impact mitigation, if required);

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- (iii) 2.3 Manure Storage;
  - (iv) 2.4 Animal Inventory;
  - (v) 2.5 Normal Animal Mortality Management;
  - (vi) 2.6 Planned Manure Exports off the Farm;
  - (vii) 2.7 Planned Manure Imports onto the Farm; and
  - (viii) 2.8 Planned Internal Transfers of Manure.
- (4) **Section 3 – Farmstead Safety and Security:**
- (i) 3.1 Emergency Response Plan;
  - (ii) 3.2 Biosecurity Measures, including Biosecurity Protocol for Farm Visitors and Disposal of Animal Veterinary Waste;
  - (iii) 3.3 Catastrophic Animal Mortality Management; and
  - (iv) 3.4 The EPA agreed-to Chemical Handling Check List shall be included when the CNMP will be utilized for an NPDES permit.
- (5) **Section 4 – Land Treatment:**
- (i) 4.1 Map(s) of fields and conservation practices
    - Aerial maps of land application areas;
    - Fields delineated with setbacks, buffers, waterways, conservation practices planned or other site-specific features important to nutrient management planning, (risers, inlets, wells, etc.);
    - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources; and
    - Other site information or features of significance to nutrient management planning, such as property boundaries and occupied dwellings.
  - (ii) 4.2 Land Treatment Conservation Practices:
    - Land treatment conservation practices are planned and installed to the land treatment area and shall be in accordance with NRCS conservation practice standards. The objective of these practices is to prevent, minimize, or mitigate the impact of potential contaminants to water and air resources near agricultural fields.
    - Design specifications information associated with planning and implementation of the conservation practices, job sheets, engineering plans, if essential, shall be placed in the customer's file to minimize the content of the CNMP. When job sheets are used, they must not conflict with information automatically generated by MMP and content must be agreed-to by State-based partners.
- (6) **Section 5 – Soil and Risk Assessment Analyses:**
- (i) 5.1 Soil information;
  - (ii) 5.2 Predicted soil erosion;
  - (iii) 5.3 Nitrogen and phosphorus risk analyses; and
  - (iv) 5.4 Additional field data required by risk assessment procedure(s).
- (7) **Section 6 – Nutrient Management:**
- Meets the Nutrient Management Conservation Practice (Code 590):
- 6.1 Field information;
  - 6.2 Manure application setback distances;
  - 6.3 Soil test data;
  - 6.4 Manure nutrient analyses;
  - 6.5 Planned crops and fertilizer recommendations;
  - 6.6 Manure application planning calendar;
  - 6.7 Planned nutrient applications;

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- 6.8 Field nutrient balance;
- 6.9 Manure inventory annual summary;
- 6.10 Fertilizer material annual summary; and
- 6.11 Farm nutrient balance.

**(8) Section 7 – Feed Management:**

- (ii) Include only if a Feed Management Plan is required to reduce the total nutrients excreted by the livestock on the farm. Do not include discussions of optional feed management strategies.
- (iii) When Feed Management conservation practice (code 592) is included in the CNMP, diets and feed management strategies shall be developed by professional animal scientists, independent professional nutritionists, or other comparably qualified individuals. When required by State policy or regulation, animal nutritionists shall be certified through any certification program recognized within the State.

**(9) Section 8 – Other Utilization Options:**

Include only if utilization options other than land application are planned.

**(10) Section 9 – Recordkeeping:**

Planners shall work with the producer and provide guidance regarding recordkeeping. At a minimum, recordkeeping shall include: inspection/monitoring records, annual crop records, manure application records, other nutrient applications (commercial fertilizer), manure exports and imports to the farm and internal transfers of manure. As well as any other records required by State and/or local regulations.

**(11) Section 10 – References:**

- (iv) 10.1 Publications.
- (v) 10.2 Software and Data Sources, including pertinent version information.