



590 – Nutrient Management: Precision Implementation Requirements

Producer: \_\_\_\_\_

County: \_\_\_\_\_

Field #: \_\_\_\_\_

Contract #: \_\_\_\_\_

Tract #: \_\_\_\_\_

Practice Location Map (see conservation plan map)



Purpose of the Practice:

- ✓ Improve plant health and productivity
✓ Reduce excess nutrients in surface and ground water



OBJECTIVE: Precision Nutrient Management is a precision approach to nutrient management, plant nutrition and reducing potential water quality impacts. The management of all applied fertilizers will be implemented based on a written plan that addresses the 4 R's (source, placement, timing and rate) to the level of the Ohio nutrient management standard (code 590). It focuses on a precision application of commercial fertilizer only where they are needed for economic and optimal plant nutrient needs.

DESCRIPTION: Application of fertilizers and or manure is based on a written Nutrient Management Plan (NMP). The NMP will utilize a nutrient budget that incorporates current soil test results, yield goals, nutrient needs of the crops in rotation, and the site-specific risk of nutrient loss to determine the 4R's over small sub-field management units. The use of Variable Rate Application Technology (VRT) will be utilized to implement fertility prescriptions of lime, phosphorus, and potassium on the sub-field management units.

PLANNING: Nutrient Management Plans (NMP) could be developed by a consultant, Soil and Water Conservation District, a farm cooperative agronomist, CCA of the producer's choosing, or the plan may have already been developed as a CAP 104 or 102 in a previous EQIP contract. NMPs must meet NRCS 590 Statement of Work deliverables. NRCS can provide the "template" to serve as the framework for the written basic NMP.

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### PLAN SPECIFICATIONS:

#### *Soil Sampling Requirements:*

- Soil tests used in planning are to be no older than 2 years and geo-referenced using either grids or zone sampling techniques.
- For grid sampling one test cannot represent more than 6 acres
  - Interpolation of soil test values and recommendation between sample locations can be used.
- For zone sampling one test cannot represent more than 12 acres.
  - Soil fertility, soil types, cropping history, and crop management practices should be taken into consideration when delineating the zones.
  - Soil sample should represent the average for the entire zone.
  - Interpolation of soil test values and recommendation should not be used with a zone sampling system. A blanket fertilizer application rate within each zone is required.
- New soil samples will be done on a 2 years cycle; every other year new soil samples will be taken to refine the source and rate of fertilizer for each sampled area.

#### *Nutrient Management Plan and Application Requirements:*

- Commercial phosphorus and potassium applications **will NOT exceed** TRI-STATE FERTILIZER RECOMMENDATIONS (Bulletin E-974). Single applications can be made to meet the recommendation for multiple years of the rotation if the application meets all the restrictions within 590 and the years are clearly indicated on the recommendations and application records.
- Lime, phosphorus and potassium will be applied using Variable Rate Technology.
- Commercial phosphorus must be banded, injected, strip tilled, incorporated, applied to a growing crop or cover crop or surface applied to greater than 30% crop residue.
- Nitrogen rates for corn are to be based on the Maximum Return to Nitrogen (MRTN). Nitrogen rates for wheat are to be based on the likely yield expectation. The rate of Nitrogen for both corn and wheat will not exceed the rates listed in the Tri-State Fertilizer Recommendations (Bulletin E-974).
- No commercial nitrogen will be fall applied for a spring planted crop (except incidental nitrogen in fertilizer blends).
- Urease inhibitors will be applied with UAN and/or Urea when it is surface applied in the spring when losses are likely.
- **No** nutrients will be surface applied on frozen or snow-covered ground, when the top 2 inches of soil are saturated from rainfall or snow melt, and/or when there is a greater than 50% chance of rainfall of more than 1 inch within 12 hours.
- Plan shall include provisions for record keeping of all nutrient applications per field (source, rate, timing, placement).
- The supporting practices in the EQIP participants' plan must be incorporated into the NMP and the client should provide a copy of their Conservation Plan to the person(s) writing the plan.

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**IMPLEMENTATION:** Once a plan has been finalized and approved by the local NRCS planner, producers apply the nutrients following the plan’s specification for nutrient rates, timing, placement and sources/types of nutrients. Maintain records for at least 5 years to document plan implementation.

Records must include:

- All test results (soil, manure, and plant tissue sample analyses) upon which the nutrient management plan is based.
- The 4R’s (Rate, Time, Source and Placement) of all nutrient applications and the years the application is satisfying the recommendation if the application is being made for multiple years.
- Documentation of the weather conditions and soil moisture at the time of application.
- Crops planted, planting and harvest dates, and yields.
- Dates of plan review, name of reviewer, and recommended adjustments resulting from the review.

NRCS Review Only

Designed By: \_\_\_\_\_ Date \_\_\_\_\_

**590 – Nutrient Management: Precision  
Implementation Requirements**

**Operation and Maintenance Plan:**

|   |   |
|---|---|
| ✓ | Review or revise plans periodically to determine if adjustments or modifications are needed. <b>At a minimum, review and revise plans as needed with each soil test cycle, changes in crop rotation, and crop management.</b>   |
| ✓ | Calibrate application equipment to ensure accurate distribution of material at planned rates. Under field operating conditions the acceptable error rate for accurate calibration is within +/- 10%. For products too dangerous to calibrate, follow LGU or equipment manufacturer guidance on proper equipment design, plumbing, and maintenance.  |
| ✓ | Document the nutrient application rate. When the applied rate differs from the planned rate, provide appropriate documentation to explain the difference.   |
| ✓ | Protect workers from and avoid unnecessary contact with nutrient sources. Take extra caution when handling anhydrous ammonia or when managing organic wastes stored in unventilated tanks, impoundments, or other enclosures.   |
| ✓ | Maintain records for at least 5 years to document plan implementation and maintenance. If the practice is being implemented as part of a financial assistance contract the records must be maintained 5 years from the end of the contract. Records must include— <ul style="list-style-type: none"> <li>• All test results (soil, manure, and plant tissue sample analyses) upon which the nutrient management plan is based.</li> <li>• The 4R's (Rate, Time, Source and Placement) of all nutrient applications and documentation of the weather conditions and soil moisture at the time of application.</li> <li>• Crops planted, planting and harvest dates, yields, nutrient analyses of harvested biomass (if applicable), and plant or crop residues removed.</li> <li>• Dates of plan review, name of reviewer, and recommended adjustments resulting from the review.</li> </ul> |

**Certification Statement:** (certification may be documented in the conservation assistance notes)  
I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

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**Signature & Title**

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**Date**