**alliance practice worksheet**

NORTH DAKOTA

NUTRIENT MANAGEMENT (590)

*The conditions and specifications below are adapted from the Natural Resources Conservation Service. Producers who are installing these practices under the Alliance will use the conditions and implementation guides below but are exempt from NRCS verification and certification. Completing the Purposes and Practice Specifications on this document is sufficient to self-verify practice installation and completion.*

# Farm Info

|  |  |
| --- | --- |
| Name | Click or tap here to enter text. |
| County | Click or tap here to enter text. |
| Alliance Contract Number | Click or tap here to enter text. |
| Field Number(s) | Click or tap here to enter text. |
| Tract Number(s) | Click or tap here to enter text. |
| Practice Area | Click or tap here to enter text. |

# PRACTICE: NUTRIENT MANAGEMENT (590)

*Definition: Manage rate, source, placement, and timing of plant nutrients and soil amendments while reducing environmental impacts.*

*Minimum Requirements for NUTRIENT MANAGEMENT (590):* [*https://efotg.sc.egov.usda.gov/api/CPSFile/23645/590\_ND\_CPS\_Nutrient\_Management\_2019*](https://efotg.sc.egov.usda.gov/api/CPSFile/23645/590_ND_CPS_Nutrient_Management_2019)

**At a minimum, producers will provide a record of the following:**

* Documentation of producer’s record of application
  + Type
  + Quantity
  + Application method
  + Timing
* Available soil test results
* Map of applicable acre(s)
  + *Please upload documents with the practice worksheet.*

# GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

* Develop a nutrient management plan for nitrogen (N), phosphorus (P), and potassium (K), which accounts for all known measurable sources and removal of these nutrients.
* Sources of nutrients include, but are not limited to, commercial fertilizers (including starter and in-furrow starter/pop-up fertilizer), animal manures, legume fixation credits, green manures, plant or crop residues, compost, organic by-products, municipal and industrial biosolids, wastewater, organic materials, estimated plant available soil nutrients, and irrigation water.
* When irrigating, apply irrigation water in a manner that reduces the risk of nutrient loss to surface and ground water.
* Follow all applicable State requirements and regulations when applying nutrients near areas prone to contamination, such as designated water quality sensitive areas, (e.g., lakes, ponds, rivers and streams, sinkholes, wellheads, classic gullies, ditches, or surface inlets) that run unmitigated to surface or groundwater.
* Base the nutrient management plan on current soil test results in accordance with land grant university (LGU) guidance, or industry practice when recognized by the LGU. Use soil tests no older than 2 years when developing new nutrient management plans.

# Additional Criteria to Reduce Emissions of Objectionable Odors, PM and PM Precursors, and GHG and Ozone Precursors

* To address air quality concerns caused by odor, N, sulfur, and particulate emissions; adjust the source, timing, amount, and placement of nutrients to reduce the negative impact of these emissions on the environment and human health.
* Do not surface apply solid nutrient sources, including commercial fertilizers, manure, or organic byproducts of similar dryness/density when there is a high probability that wind will blow the material and emissions offsite. Do not surface apply liquid nutrient sources when there is a high probability that wind will blow the liquid droplets applied from sprinklers or other applicable methods offsite.
* Reduce the potential for volatilization by applying sources subject to volatilization during cooler, higher humidity conditions or by placement that minimizes vulnerability to volatilization.

# Additional Criteria to Improve or Maintain Organic Matter

* Design the plant or crop management systems so the soil conditioning index (SCI) organic matter subfactor is positive.
* Apply manure, compost, or other organic nutrient sources at a rate and with minimal disturbance that will improve soil organic matter without exceeding acceptable risk of N or P loss.
* For low residue plant or cropping systems, apply adequate nutrients to optimize plant or crop residue production to maintain or increase soil organic matter.

# Practice Certification Documentation

*The practice can be certified complete following the final nutrient application for the growing season of the target crop or pasture.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Field** | **Acre** | **Crop/Pasture Planted** | **Date of Application** Month/Year | **Timing Relative to Crop Planting or Plant Growth** | **Nutrient Ratio** | **Application Rate** |
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***For split applications on the same field, enter each application on a separate line.***

**SCI Value (as determined by RUSLE2):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

# ADDITIONAL CRITERIA

*Each of these statements must be answered Yes.*

|  |  |  |
| --- | --- | --- |
| Used a current soil test as recommended by Land Grant University (LGU) – for initial planning one not more than 2 years old. | Yes | No |
| Maintain soil pH as required by state LGU for the planted crop or pasture. | Yes | No |
| If organics/manure/biosolids are used – they must be tested according to LGU guidance. | Yes | No |
| Utilized the local NRCS risk assessment tool. | Yes | No |
| Utilized the 4-Rs, the right source, right rate, right time, and right place. | Yes | No |
| For soil test analyses, used laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program under the auspices of the Soil Science Society of America and NRCS or use an alternative NRCS- or State-approved certification program that considers laboratory performance and proficiency to assure accuracy of soil test results. | Yes | No |

# REQUIRED CLIMATE-SMART ENHANCEMENTS

*Only one of these practices needs to be utilized to receive payment. Circle all that were utilized during the growing season. Note: at least one must have been utilized to be eligible for payment.*

1. Reduce the potential for volatilization by applying sources subject to volatilization during cooler, higher humidity conditions or by placement that minimizes vulnerability to volatilization.
   1. Inorganic and organic sources containing urea and ammonium.
   2. Subsurface application
   3. Irrigate after application with at least 0.5-inches per acre in less than 2 days if weather conditions are hotter than 80°F for a high and humidity is greater than 70%.
2. Use application methods, timing, technologies, or strategies to reduce the risk of nutrient movement or loss, such as—
   1. Soil and plant tissue testing for N rate applications:
      1. Small grains: Split nitrogen applications (3 per crop) with N rates based on fall soil nitrate tests (FSNT), tiller counts [Zadok's growth stage (GS) 25] and tissue tests (GS30).
      2. Corn: Pre-sidedress nitrate test (PSNT) to reduce or justify N applications in conjunction with yield goals.
      3. Cotton, tomato, potato: Petiole nitrate testing to adjust last split of N applications for optimal N rate.
   2. Banded applications
      1. Subsurface (knifing-in) on second split application for crop.
      2. Streamer jets reduce N contact with residue on small grains and pastures.
   3. Enhanced efficiency fertilizers
      1. Slow or controlled release fertilizers to match crop uptake patterns.
      2. Urease inhibitors applied at rates per LGU guidelines for optimal active ingredient ratios.
   4. Sensor based technologies.
      1. Chlorophyll meters or real-time sensors to adjust N rates across the landscape.
      2. On-farm adaptive N management based on on-farm research.
      3. Using CC-NCALC to calculate cover crop contribution and reduce inorganic/organic fertilizer applications.
      4. GreenSeeker, Crop Circle, and other NDVI type sensors to variably apply N rates across the landscape.

|  |
| --- |
| **Notes:**  Click or tap here to enter text. |

# PRODUCER SELF-CERTIFICATION

By signing below, I certify that I have reviewed all required documentation and have implemented the practice and met all criteria and requirements as defined in the Natural Resources Conservation Service **NUTRIENT MANAGEMENT (590)** standard and specifications for the identified acres or animal units.

Further, I agree that:

The acres and/or animal units and the practice(s) requested are not currently enrolled in a USDA Conservation program or other program associated with the USDA’s Partnerships for Climate Smart Commodities sponsored grant program;

The acres and/or animal units and the practice(s) requested will not be dually enrolled in a cost-share program;

I will retain all practice documentation to support this certification for up to 12 months following practice adoption and will provide this documentation to the Alliance if selected for a spot check. *(Up to 10% of enrolled Alliance participants will be randomly selected for spot checks).*

|  |  |
| --- | --- |
| ***Participant Name:*** | Click or tap here to enter text. |

|  |  |
| --- | --- |
| ***Participant Signature:*** | Click or tap here to enter text. |

|  |  |
| --- | --- |
| ***Date:*** | Click or tap to enter a date. |