



CONSERVATION ENHANCEMENT ACTIVITY

E590B

CONSERVATION STEWARDSHIP PROGRAM

Reduce risks of nutrient loss to surface water by utilizing precision agriculture technologies

Conservation Practice 590: Nutrient Management

APPLICABLE LAND USE: Crop (annual & mixed); Crop (perennial)

RESOURCE CONCERN ADDRESSED: Water

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Precision application technology and techniques are utilized to plan and apply nutrients to improve nutrient use efficiency and reduce risk of nutrient losses.

Criteria

- Documentation of producer’s record of nutrient management meeting all NRCS Conservation Practice Standard Nutrient Management (CPS 590) general criteria and additional criteria to minimize agricultural nonpoint source pollution of surface and groundwater.
- Minimize soil surface disturbance during fertilizer placement.
- Development of site-specific yield maps using soils data, current soil test results, and a yield monitoring system with GPS receiver to correlate field location with yield. Data is used to diagnose low, medium, and high productivity areas (management zones).
- Nutrient rates of application (minimum N-P-K) are planned and applied according to management zone.

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- Utilize variable rate technology for nutrient application to reduce nutrient loss risk and improve nutrient use efficiency; variable rate technology may be map-based, sensor-based (crop canopy sensors), or manual.

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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide documentation for review by NRCS showing a record of implementing nutrient management meeting all NRCS Conservation Practice Standard Nutrient Management (CPS 590) general criteria and additional criteria to minimize agricultural nonpoint source pollution of surface and groundwater.
- Prior to implementation, develop site-specific yield maps and use them to develop management zones within the field.
- Prior to implementation, develop and document a planned nutrient budget, yield goal, and applications by management zone (pounds/acre active ingredient nutrients, must include at a minimum N-P-K). Develop planned variable and flat rate application layers (maps and/or tabular statistics).
- During implementation, utilize variable rate technology. Variable rate technology may be map-based, sensor-based (crop canopy sensors), or manual.
- During implementation, keep records to document as applied records of actual variable rate applications (maps and/or tabular statistics).
- During implementation, minimize soil surface disturbance during fertilizer placement.
- During implementation, notify NRCS of any planned changes to verify the planned system meets the enhancement criteria.
- After implementation, make documentation and records available for review by NRCS to verify implementation of the enhancement.

NRCS will:

- As needed, provide technical assistance to meet the criteria of the enhancement.
- Prior to implementation, provide and explain NRCS Conservation Practice Standard Nutrient Management (CPS 590) as it relates to implementing this enhancement.

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- Prior to implementation, review documentation to verify a record of implementing nutrient management meeting all NRCS Conservation Practice Standard Nutrient Management (CPS 590) general criteria and additional criteria to minimize agricultural nonpoint source pollution of surface and groundwater.
- Prior to implementation, verify the development of site-specific yield maps used to develop management zones within the field.
- Prior to implementation, verify the development of a planned nutrient budget, yield goal, and planned nutrient applications by management zone.
- During implementation, evaluate any planned changes to verify the planned system meets the enhancement criteria.
- After implementation, review documentation and records to verify implementation of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date

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SOUTH DAKOTA (SD) SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E590B

Additional Criteria for SD:

In addition to the criteria specified in the national job sheet E590B, the following additional criteria apply in SD:

- Application rates must follow South Dakota State University (SDSU) recommendations and SD Natural Resources Conservation Service (NRCS) Practice Specification guidelines.
- Must use variable rate technologies (VRT) for nitrogen (N) and phosphorus (P).
- Starter fertilizer containing no more than 30 pounds (lbs of P) does not require VRT application.
- Variable rate technologies will NOT be required for Potassium (K) application.
- Prior to certification the participant will complete the SD-JS-590, Implementation Guide, on at least 2 of the fields (if applicable) for each crop receiving fertilizer and selected for this enhancement. Records can be hand written or electronic. All data used to develop the nutrient budget by management zone must be available for review.

Example of a Completed SD-JS-590 Implmentation Guide:

Print	Producer Name	Joe Farmer		Crop Year	2019				
	Field ID	Home Place		Crop Planted	Corn				
				No Till ? Y/N	Yes				
				Use year 2 in P&K calculations	Yes				
Video Demo	<i>If data is copied and pasted into the sheet click "Check Crop Names" See instructions in cell A7.</i>								
Check Crop Names	Soil Tests				0-6"	6-24"	ppm	ppm	
	Zone/Grid	Previous Crop	Date Sampled	Acres	N1 lb	N2 lb	Olsen P	Bray P	K ppm
	1	Soybeans	10/4/2018	19.08	6	6	11		160
	2	Soybeans	10/4/2018	44.63	5	3	8		132
	3	Soybeans	10/4/2018	9.38	9	3	4		149
	4	Soybeans	10/4/2018	2.73	9	3	4		149
	5	Soybeans	10/4/2018	0.22	9	3	4		149



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Add Custom Blends

Data for Consultant
Producer use only

Use Paste (values) if data is pasted into the sheet.

Custom Blends

Applied		Fertilizer Products Applied (Lbs or Gallons / acre)					8-0-38	
Zone/Grid	Product →	28-0-0	10-34-0	11-52-0	82-0-0		Blend1	
	Date Applied →	7/1/19	4/20/19	5/5/19	11/1/18		5/5/19	
	Yield Goal bu /ac	gal/ac	gal/ac	lbs/ac	lbs/ac		lbs/ac	
1	180	15.0	4.5	130.0	100.0		135.0	
2	160	15.0	4.5	140.0	70.0		170.0	
3	140	15.0	4.5	80.0	55.0		140.0	
4	110	15.0	4.5	75.0	30.0		130.0	
5	90	15.0	4.5	50.0	30.0		90.0	

Done

Print

Consultant or Producer use only

Done

Producer Name: Crop Year:

Field ID: Crop Planned:

Zone/Grid	Yield Goal
1	40
2	35
3	32
4	30
5	25