

Instructions for Phase III – 2023 Annual Report

Completion of this form is required for cropped acres in the Bazile Groundwater Management Area (BGMA) of the LCNRD. Reporting requirements were established with the Rules and Regulations for the BGMA by the LCNRD Board of Directors in 2004 in response to consistently high nitrate levels detected in the region. As of 2023, average nitrate levels continue to be above the public drinking water maximum contaminant level (MCL) of 10 ppm across much of the BGMA.

If the acres you own are not cropped – or you no longer own or operate the acres please list the name of the current **owner** and/or **operator**, the current land use in the **Field name** box, and return the form to the LCNRD. If you are the owner, and the acres are farmed, but you do not make decisions about nitrogen application please indicate the name of the person who is responsible for nitrogen application in the **Operator** box and return the form to LCNRD.

If you are responsible for nitrogen application please follow the steps below to complete the annual report. Verify **Owner** and/or **Operator** information is correct. List the name of your **Crop Consultant**.

I. **Complete PART I - GENERAL FIELD INFORMATION** – most of this section is self-explanatory.

- Verify the **Legal description** and indicate a **Field name** if you use one.
- If you grow multiple crops on the acres included in the legal description, please make a copy of the form and **use one form to report each crop**. If you cannot make a copy, call LCNRD for additional copies. The form is available online at <https://lcnrd.nebraska.gov/>.
- Correct information which has been automatically generated and make changes as necessary.
- **Use an aerial photo (available from FSA or LCNRD) to delineate crop locations, field names, and acres.**

II. **Complete PART II - 2023 CROP INFORMATION:**

1. Complete **crop planted**, **acres planted**, and **2023 crop yield**. **Indicate if nitrogen was applied in 2023.**
2. **Irrigation water nitrate results** can be found on the Water Testing Results sheet provided. If the data was automatically generated on your form please verify the **well #** and **water nitrate results** are correct.
3. **Average nitrogen available from the soil** – this information should be taken from your Fall 2022 or Spring 2023 soil test results. If you do not have the average nitrogen available from your crop consultant, use the table below to calculate values.

FALL 2022 OR SPRING 2023 DEEP SOIL SAMPLE RESULTS:		Sample #1	Sample #2	Sample #3	Sample #4	Sample #5
a.	Soil sample identification number. (from lab report)					
b.	Acres represented per sample. Recommended 40 ac minimum per sample.					
c.	Nitrogen available from the soil - using weighted average to represent soil profile. See sample chart below for method.	ppm	ppm	ppm	ppm	ppm
d.	Average nitrogen available from the soil. avg line c.			ppm	Multiply this value by 8 to get lb N/ac. Place this value on line 3 under PART II	
						lb N/ac

- a. List the **soil sample identification number** from the lab report.
- b. List the **acres represented per sample**.
- c. With deep soil sampling you will calculate a weighted average of each soil sample to determine the **nitrogen available from the soil**. Following is an example of how to determine nitrogen available from the soil when using multiple sampling depths.

Depth Increment (inches)	Sample Length (in)	x	Nitrate (ppm)	=	Total Nitrates in Sample	Average ppm Nitrate in 36 inch sample	Place the calculated average on line c. of above table for each sample performed.
0-8	8	x	30.0	=	240.0	620.0 ppm ÷ 36 in = 17.2 avg ppm	
8-24	16	x	20.0	=	320.0		
24-36	12	x	5.0	=	60.0		
TOTAL					620.0 ppm		

- d. Average the samples from line c. Then multiply this value by 8 to get the answer in lb N/ac – place this value on line 3 of **PART II**.

Instructions for Phase III – 2023 Annual Report (continued)

II. Continued: Complete PART II - 2023 CROP INFORMATION:

- If the acres are irrigated, indicate the amount of **irrigation water applied**.
- List total amount of **commercial fertilizer applied** during pre-plant/pre-emerge and post-emerge/sidedress/chemigation. Please list the types of fertilizer you used (ex. 28%, 32%, NH₃, dry, liquid) and amounts applied; indicating gals, lbs of actual N, or lbs of product, use the back of the sheet if necessary.
- If you used a nitrogen inhibitor please list the **name of the inhibitor**, and the **number of acres treated**.
- If you are planting a cover crop in the same field please list the **type of crop**, the **year the crop was planted**, or if **planned for the upcoming year**.

III. Complete PART III – 2024 CROP GOALS: If your crop consultant provided you all the information required for this section on one page, you may submit that information in place of completing PART III.

- The equation used in this report to determine nitrogen requirement is based on the Nebraska Extension publication EC117 – Fertilizer Suggestions for Corn <https://extensionpublications.unl.edu/assets/pdf/ec117.pdf>. To access the UNL nitrogen calculator go to: [2021-unl-n-calculator.xls \(live.com\)](https://2021-unl-n-calculator.xls)
- Yield goal** is calculated by averaging the crop yield from the past 5 years and multiplying that number by 1.05.
 - For **total pounds of nitrogen per acre needed to meet yield goal** for corn, multiply line 8 by 1.2 and add 35.
 - If you do not irrigate enter 0 on this line. If you irrigate take the ppm nitrate value from line 2 of **PART II** and multiply it by 1.3. The result is the **lbs/ac nitrogen available from 6 inches of irrigation water**.
 - If you grew corn last year and will be planting corn or a non-legume crop again this year, you should have a soil test done to accurately determine soil nitrate availability. If you grew a legume crop in 2023, the credit you should use for soybeans or alfalfa is as follows:

	Med/Fine Soil	Sandy Soil
Soybeans*	45 lbs/ac	35 lbs/ac
Alfalfa, 70 – 100% stand (> 4 plants/ft²)	150 lbs/ac	100 lbs/ac
Alfalfa, 30 – 69% stand (1.5 to 4 plants/ft²)	120 lbs/ac	70 lbs/ac
Alfalfa, 0 – 29% stand (< 1.5 plants/ft²)	90 lbs/ac	40 lbs/ac

* If soybean yield is less than 30 bu/ac credit is equal to 1 lb of N per bushel

- Manure is a slow-release nitrogen source and there are many variables to accurately calculate manure N credits. If you apply manure ask your crop consultant, soil lab, or fertilizer dealer to calculate the amount of **nitrogen available from manure** to credit.
- List the **type of manure applied** - i.e. hog, cattle, chicken; and the method of manure application – i.e. Spread dry, spread liquid, injected liquid etc.
- To determine the **soil nitrate available to crop**, complete **PART IV – DEEP SOIL SAMPLE RESULTS**. * **Send results with report to LCNRD*** To calculate, multiply the value from line D by 8 (example 5 ppm x 8 = 40 N lb/ac.)
- To determine the **Organic matter N available to crop**, complete **PART IV – DEEP SOIL SAMPLE RESULTS**. By multiplying the values from line F, line 8 and 0.14.
- To calculate the **UNL nitrogen recommendation**, subtract lines 10, 11, 12, 14, and 15 from line 9. This will tell you the recommended nitrogen needed to achieve your yield goal (line 8) after accounting for nitrogen available through other means.
 - It is recommended to apply most of the recommended nitrogen as sidedress and/or with irrigation water after corn is at least one foot tall and prior to tasseling.

IV. Complete PART IV – FALL 2023 OR SPRING 2024 DEEP SOIL SAMPLE RESULTS:

- List the **soil sample identification number** from the lab report.
- List the **acres represented per sample**.
- With deep soil sampling you will need to do a weighted average of each soil sample to determine the **nitrogen available from the soil**. See **PART II 3. C.** for an example of how to determine nitrogen available from the soil when using multiple sampling depths.
- Average the samples from line C – this value will be used to calculate line 13 of **PART III**.
- List **% organic matter** from the soil test results. If the results show <1.0% enter 1.0. If the results show >3.0% enter 3.0. Use actual % for values between 1.0% and 3.0%
- Average the % organic matter** entries from line E – This value will be used to calculate line 15 of **PART III**.

Return the form with lab results from soil sampling to LCNRD

Due April 1, 2024

Call if you have questions 402-254-6758

For blank forms go to: <https://lcnrd.nebraska.gov/water-resources/water-quality>