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# 1<sup>st</sup> Bulletin of the Minnesota Agriculture Water Quality Certification Program and Assessment Tool

February 2014 -

What's in this bulletin?

- Answers to frequently asked questions regarding the Assessment Tool.
- Review of procedures for certifying a producer.



## Preface

This bulletin is the first in a series that will be published to address questions and provide clarifications regarding the Minnesota Agricultural Water Quality Certification Program (MAWQCP) assessment tool and certification process.

The information provided in these Bulletins is intended to be complementary to the handouts and Technical Guides, the first of which was published September 2013. If major modifications are made to the Assessment Tool, a new Technical Guide will be published at that time and the previous version retired. Bulletins, however, are cumulative and can be used as references going forward.

As this is a pilot program, procedural and technical positions presented in this bulletin are adapting to the findings of the program. New participants and certifiers using the MAWQCP Assessment Tool are encouraged to consult the Bulletins and latest version of Technical Guides.

## 1 Technical Positions

***How do I score the Nutrient Management questions if a producer's application rates change from year to year?***

First, determine if the producer's practices are so fundamentally different that an entirely different certification record is required for that field-crop-management scenario.

For example, in Field A under corn production, some years spring injecting of dairy slurry is completed while other years fall application of anhydrous ammonia is the norm. In this example the N and P rates, timing, source, and STIR values are so vastly different that the certification record should contain both scenarios. Depending upon weather, fertilizer prices and soil conditions both of these scenarios are in the producer's 'toolbox.'

In cases where practices are not fundamentally different, completing a separate certification record for that scenario may not be necessary. For example, situations where all management practices are the same except fertilizer rates, which change from year to year based upon soil tests. In this case, certifiers may choose to complete one certification record by comparing the range of rates to the BMP's and scoring accordingly.

Use your expertise as an agricultural professional and trained certifier to make the determination. Remember, this is an opportunity to have a conversation about management practices and the potential impact on water quality.

***If I have a tile inlet protection technology, is my inlet still considered 'open'?***

Tile inlet protection technologies that lower the flow rate of water entering the tile system to levels consistent with a closed tile system may be considered by the certifiers as 'tile drainage without open inlets' on the Assessment Tool.

Several inlet technologies are available. Some solely prevent crop debris from

plugging the inlet without any measurable impact on flow rate into the tile system. Other technologies go further. Lower flow rates are often beneficial in that they may allow more time for denitrification and plant nutrient uptake, and may help exclude sediment from the tile system. Certifiers should do the research on the particular technology, complete field visits and consult the MAWQCP staff.

***There is a conservation practice installed in the field that is not included in the Assessment Tool, can I incorporate it into the score?***

The conservation practices included in the Assessment Tool were included based upon effectiveness values reported by various studies. That is to say, there was empirical research to show the practices had measurable impacts on water quality.

Conservation practices not included in the Assessment Tool may also have measurable impacts on water quality but were not evaluated in any studies or underperformed in a particular study. Similarly, proven conservation practices that are not maintained properly may have a negligible, or even negative, impact on water quality.

Given these on-the-ground realities, certifiers should make sure to complete field visits and use their best judgment in deciding whether to include the practice in the certification record. The goal of the Tool is for conservation decisions to be made locally based on the landscape.

If a practice is not listed in the drop down menu of the Tool, work with the MAWQCP staff to evaluate the practices and choose a functionally similar practice. For example, in

the Red River Valley, field wind breaks are often used to prevent wind erosion. This becomes a water quality issue when fine sediment ends up accumulating in problematic areas, such as drainage ditches. In this particular situation, the certifier should field verify and may consider scoring the field windbreaks in the conservation cover or field border categories.

***What if I have different physical factors within one field?***

Many fields may contain different soil types but are cropped and managed similarly. Deciding which soil attributes to use in the Assessment Tool is a common question. Users have several options in this situation.

First, ask yourself if it is practical for the field to be broken into smaller management units with more uniform soil and terrain. Dividing the field into smaller management units may also come in handy if additional conservation practices need to be sited.

After completing the first determination, there are two methods available: 1) completing a weighted average calculation and 2) choosing the most erosive soil type greater than 20% of field area. Each methodology has its constraints and opportunities.

The weighted average methodology is advantageous in that it mathematically represents the field and is easy to calculate with Web Soil Survey data. Ideal sites for this option may be gently rolling hills where breaking up the field into smaller management units is impractical. This method should not be used where highly erosive problem areas are 'diluted' by the presence of less erosive areas. In this case

the second methodology should be used.

From a time and practicality standpoint, the ‘critical area’ or most erosive soil type method may be useful. In this case, the most erosive soil type that encompasses at least 20% of the field is used for scoring the field physical factors. This concept is used in some RUSLE2 technical guides as a conservative approach that allows certifiers to rapidly score fields while capturing the critical factors within the field.

***How do I score the Tillage Management section if my STIR values differ from the ‘boiler plate’ (i.e., no-till, mulch till, etc.) designations?***

The STIR values will may be more accurate than the broader designations. Most often, however, Minnesota tillage regimes will correlate with the STIR value ranges presented. The broad designations provide a common reference for most producers and other agricultural professionals to draw parallels between STIR values and common tillage regimes.

STIR values can be obtained from RUSLE2 or calculated from the table below. It is the goal to have these calculations integrated with future versions of the tool.

Table 1. STIR values for various equipment as reported in RUSLE2. Assumes operation at manufacturer’s recommended speed and depth.

Equipment	STIR values
Anhydrous knife 12-inch	6.5
Anhydrous knife 30-inch	2.6
Fertilizer applic. w/ strip till 30-inch	5.4

Manure spreader	0.2
Surface broadcast	0.061
Chisel plow, disk, st. pt.	52
Chisel, straight point	46
Chisel, sweep shovel	46
Chisel, twisted shovel	46
Cultivator, row 1-inch ridge	15
Cultivator, row 3-inch ridge	18
Cultivator, row-1 <sup>st</sup> pass, ridge-till	14
Cultivator, row-2 <sup>nd</sup> pass, ridge till	17
Cultivator, field, 6 to 12 inch shovels	31
Cultivator, field, 6 to 12 inch sweeps	26
Cultivator, field, w/ spike points	31
Disk offset, heavy 12-inch deep	78
Disk tandem, heavy – primary operation	39
Disk tandem, light to finish	20
Disk tandem, second operation	33
Flame cultivator	0.15
Harrow, coiled tine	16
Moldboard plow	65
Rodweeder	17
Roller, corrugated packer	1.5
Roller harrow	13
Rotary hoe	17
Subsoiler (in-row)	33
Subsoiler bedder (ripper/hipper)	46
Aerator, field surface, ground driven (0° offset)	7
Aerator, field surface, ground driven (5° offset)	12
Aerator, field surface, ground driven (10° offset)	23
Drill or air seeder, double disk opener	2.4
Drill or air seeder w/ double disk opener (7 to 10-inch spacer)	6.3
Harvest	0.15
Planter, double disk opener	2.4
Planter, double disk opener w/	2.4

fluted coulter	
Planter, double disk opener 18-inch row	4.1
Planter, ridge-till	4.9
Planter, strip-till	4.9
Sprayer	0.15

To determine STIR values for an individual crop-year, add all values from each equipment pass. A crop-year begins following the harvest of previous crop and ends at harvest. For example, cumulative STIR value for beans in southern Minnesota may include fall chisel with twisted shanks (46), surface broadcast fertilizer (0.061), spring cultivation (31), planter (2.4), sprayer (0.15) and harvest (0.15) = STIR value of 80.

***In the field physical factors, how do I determine my vegetation cover (low, medium or high)?***

Vegetation categories are as follows:

- Less than 30% live or dead vegetative cover= low
- 31% to 80% live or dead vegetative cover= medium
- More than 80% live or dead vegetative cover= high.

Vegetative cover can be determined by standard field-based quadrant estimation or, in the case of soybean, corn and small grains, through use of the following table as adapted from the USDA/NRCS guide *Farming with Crop Residues*.

Table 3. Guide to estimated percentage of soil covered by crop residue after field operations. Source: USDA/NRCS *Farming with Crop Residues*.

Operation	Corn/small grain	soybeans
After harvest	90-95	60-80
Over-winter decomposition	80-95	70-80
Moldboard plow	0-10	0-5
Paraplow	80-90	75-85
Combination secondary tillage	50-75	30-60
Chisel- twisted	50-70	30-40
Chisel (straight points)	60-80	40-60
Disk (off-set, primary >9" spacing)	40-70	25-40
Disk (tandem finishing 7"-9" spacing)	30-60	20-40
Anhydrous applicator	75-85	45-75
Field cultivator (as secondary application)	60-90	35-75
Row planter	85-95	75-95
No-till drill	55-75	40-60

Multiply each percentage to estimate how much cover will be left at each point in time. For example, to estimate how much cover is present in the spring after a corn harvest consider what is present after harvest, fall tillage and over winter decomposition. The calculation is made as follows: 90% (after harvest) x 50% (fall chisel) x 80% (over winter decomposition)= 36% cover.

***In the Drainage section, there is an option for drainage water management, what practices are included here?***

Drainage water management refers to four conservation practices: drainage controlled with gates, saturated buffers, bioreactors and treatment wetlands. Drainage controlled with gates is a practice where a control structure is installed on tile outlets to vary the level of water held and released from tile system. Saturated buffers are a practice that uses lateral lines at the point of tile discharge to intercept and move nutrient-laden water into riparian buffers. Bioreactors are pits filled with a carbon source, usually wood chips, to intercept and denitrify tile water before it empties into a water body. Treatment wetlands are engineered wetlands that hold and treat nutrient-laden water before it is discharged into a water body.

***Can I account for conservation practices that are already on the landscape? Do I have to go through a conservation program, such as EQIP?***

Conservation practices that are already on the landscape are eligible for inclusion in the certification record provided that they function properly. This determination should be made through a site visit by a certifier. The EQIP engineering guidelines are excellent resources to assist in these determinations.

While dedicated funding is made available in the pilot watersheds through EQIP, it is not required for participation in the certification program. Irrespective of the funding, NRCS/SWCD staff can provide conservation technical assistance to help design and implement practices.

***If a producer is using a 'surface water pesticide of concern', including atrazine, acetochlor, chlorpyrifos, metolachlor or***

***metribuzin, can they score greater than 'Low Risk Pest Control'?***

If a producer is employing Basic, Low Risk or Advanced IPM practices as defined in the Technical Guide, including following the legal and BMP requirements for these specific pesticides, they are eligible for these designations even if they are using a surface water pesticide of concern.

***I am in a watershed near a state border where fertilizer recommendations from other states, such as Iowa and North Dakota, are often used. How can I score them?***

The Assessment Tool is based on Minnesota best management practices and therefore the Minnesota recommendations should be used when scoring. While there is no doubt that the surrounding state's recommendations are relevant and accurate, Minnesota recommendations are based on local climate, soil, field conditions and prices and therefore more applicable when dealing with production within our boundaries. Run the rates through Minnesota's calculations and score accordingly. This may be a good opportunity to introduce Minnesota best management practices to producers.

## 2 Procedural Positions

### *What is the procedure for certifying a producer?*

1. - Sign Application Form signifying formal intent to pursue certification.
  - A. - Designates signatory as having MAWQCP Applicant status and eligible to receive technical and financial assistance from Certification-dedicated sources (NRCS EQIP, BWSR, local incentives, etc.)
  - B. - Provides for self-certification of compliance with all applicable current law and regulations. Where producer identifies compliance is not known or not in place, producer is to be provided assistance in establishing compliance via technical assistance from applicable agencies and their representatives, and/or any potential financial assistance that may also be accessible. Applicant has until the time of the final certification to confirm self- certification of compliance.
  - C. - Producer signs two originals; one for producer and the other for MDA.
  
2. - Conduct assessments with assessment tool for each parcel/each crop within producer's operation.<sup>1</sup>
  - A. - May constitute some or all of:
    - 1) - Determination of, or adjustment in, parcel designations (i.e. combine multiple fields, sub-divide single fields, etc.) for purposes of assessing all land within a producer's operation and control.
    - 2) - Determine if existing or preferred management and practices on each parcel achieve 8.5 or higher with assessment tool for each crop anticipated on the parcel in a 10 year time frame.
    - 3) - Determine management and practices that producer will commit to on each parcel for each crop.
    - 4) - Determination to include site visit verification for appropriateness of management and practices committed to (i.e. not approving grassed waterway on parcel with 1% slope, etc.) and for problematic conditions not previously identified (e.g. presence of eroded gully.)
  
3. - Achieve assessment score of 8.5 or higher for each parcel/each crop with satisfactory on-site verification.
  - A. - Is financial assistance (NRCS EQIP, BWSR, local incentives, etc.) sought for any commitments made?

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<sup>1</sup> MINNESOTA STATUTES 2013 17.9894 Subd. 4. Effective control. "Effective control" means possession of land by ownership, written lease, or other legal agreement and authority to act as decision-maker for the day-to-day management of the operation at the time the producer achieves certification and for the required certification period.

NO: Proceed to formal Certification agreement process Item #5

YES: Proceed to financial assistance process Item #4

4. - Develop contract(s) with financial assistance-provider personnel (NRCS EQIP, BWSR, local incentives, etc.) for producer to fulfill commitments made in assessment process.
5. - Conduct formal Certification agreement process.
  - A. - Designee of MDA serves as official Certifying Agent<sup>2</sup> to record producer commitments on the assessment tool for each parcel/each crop in the producer's entire operation (assessment tool saves final records and produces print-out for signature on each parcel/each crop in producer's entire operation).
  - B. - Certifying Agent performs a review of the assessment and on-site verification of all parcels in the producer's operation, confirming appropriateness of management and practices committed to and the absence of any other problematic conditions.
  - C. - Certifying Agent completes formal certification Producer Agreement:
    - 1) Attach assessment tool reports for each parcel/each crop.
    - 2) Attach application form verifying self-certification of compliance with all applicable current law and regulations, or materials verifying subsequent compliance to all applicable current law and regulations producer was not in compliance with at time of initial application.
    - 3) - If producer sought financial assistance for any commitments made, Certifying Agent will:
      - a) - Document that EQIP or other adequately-detailed financial assistance contracts have been entered into between producer and NRCS or other public or private entity. Attach to Certification agreement.
      - b) - In the case of financial assistance contract(s) supporting structural practices, flag the Certification agreement for a scheduled audit<sup>3</sup> of completion of the structural practice.
    - 4) - For structural practices that are being implemented without financial assistance (i.e. no EQIP or other public or private contract), Certifying Agent will:
      - a) - Record a scheduled completion date on the assessment tool report for the applicable parcel.
      - b) Flag the Certification agreement for scheduled audit of completion of the structural practice(s).

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<sup>2</sup> MINNESOTA STATUTES 2013 17.9894 CERTIFYING AGENT LICENSE. Subdivision 1. License. A person who offers certification services to producers as part of the program must satisfy all criteria in subdivision 2 and be licensed by the commissioner. A certifying agent is ineligible to provide certification services to any producer to whom the certifying agent has also provided technical assistance.

<sup>3</sup> MINNESOTA STATUTES 2013 17.9898 AUDITS. The commissioner shall perform random audits of producers and certifying agents to ensure compliance with the program. All producers and certifying agents shall cooperate with the commissioner during these audits, and provide all relevant documents to the commissioner for inspection and copying. Any delay, obstruction, or refusal to cooperate with the commissioner's audit or falsification of or failure to provide required data or information is a violation subject to the provisions of section 17.9895, subdivision 2, or 17.9896, subdivision 4.

6. - Inform producer that all data is private by law and that status of the producer as MAWQCP-certified cannot be publicly revealed unless Informed Consent form is signed for MDA.
  - A. - Producer may sign Informed Consent form and MDA and local personnel may legally identify the producer by name or location as MAWQCP certified, or
  - B. - Producer may choose to not sign Informed Consent form and no one--other than the producer—may ever identify the producer as MAWQCP certified or provide any identity or location data obtained through the certification process to anyone at any time.
  
7. - Provide entire packet in hard copy and as final electronic records<sup>4</sup> to Minnesota Commissioner of Agriculture for signature and official designation of producer as MAWQCP certified.

Send entire packet to:

Minnesota Department of Agriculture  
Pesticide and Fertilizer Management Division  
C/O MAWQCP  
625 Robert Street North  
St Paul, MN 55155-2538

Upon receipt, the MDA will review the application, and if satisfactory, obtain the Commissioner's signature. A copy of the completed agreement will be mailed directly to the applicant and the certifier will be notified.

The electronic copy of the complete certification record from the Assessment Tool should be only transferred to the Department of Agriculture via the encrypted flash drive. Please don't send via email due to the privacy status of the information.

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<sup>4</sup> MINNESOTA STATUTES 2013 17.9899 DATA. All data collected under the program that identifies a producer or a producer's location are considered nonpublic data as defined in section 13.02, subdivision 9, or private data on individuals as defined in section 13.02, subdivision 12. The commissioner shall make available summary data of program outcomes on data classified as private or nonpublic under this section.

***Can a producer be certified if the conservation practices required for certification are not yet installed?***

In some circumstances the conservation practices are unable to be installed at the time of certification due to, for instance, contractor scheduling or frozen soil conditions. Certification can still go forward with the understanding that a date at which the structural practice will be completed is required. These records will be flagged and an audit will be scheduled upon completion.

***How do I update or amend certification records after a Producer Agreement is signed?***

Farming practices are constantly evolving as prices, technology and management evolves. As changes occur, the certification records that accompany the Producer Agreement will need to be updated. Until online record-submittal systems are established, the pilots will take a more manual approach. The MDA will manage the official repository of Producer Agreements and electronic certification records. Any changes need to be physically submitted to and reviewed by MDA for verification.

To **add** a certification record, both the electronic copy and hardcopy will need to be updated. In the Assessment Tool, complete and finalize the certification record and submit to MDA via flash drive during the next scheduled data transfer. Send the signed and dated certification record to the MDA for inclusion in the official Producer Agreement record.

To **remove** a certification record, print the certification record to be removed, mark 'remove', initial and date. Send to the MDA for inclusion in the official Producer Agreement record. The MDA electronic certification record will be updated by the MDA to reflect the removal.

To **amend** a certification record, update both the electronic and hardcopies. In the Assessment Tool, complete and finalize the certification record and submit to MDA via flash drive during the next scheduled data transfer. Send the new signed and dated certification record to the MDA for inclusion in the official Producer Agreement record along with the old record marked 'remove'.

During the pilot stage, certifiers should consult the official records housed at MDA before completing any audits, amendments or inquiries. This type of centralized data housing system will ensure that there is no mistaking 'in-progress' or outdated certification records with the official records. More importantly, this will reduce the risk of private data being released, lost or stolen by eliminating secondary caches of private data.

**What should I do if a producer adds or removes cropland throughout the certification contract period?**

The following table will also assist you in determining what, if any, action needs to be taken. The definition of ‘effective control’ may be helpful. ‘Effective control’ means possession of land by ownership, written lease, or other legal agreement and authority to act as decision-maker for the day-today management of the operation at the time the producer achieves certification and for the required certification period.

Table 4. Decision table for adding or removing land after the start of Producer Agreement.

A certified producer <b>adds</b> land after the start of this agreement...				
Land is <b>owned</b> by certified producer....		Land is <b>leased</b> by certified producer....		
	Certified producer <b>has</b> effective control...	Certified producer <b>has no</b> effective control...	Certified producer <b>has</b> effective control...	Certified producer <b>has no</b> effective control...
Action	Notify certifying agent and obtain certification within one year.	Not applicable- land that is not being farmed by the certified producer is not covered in certification.	Notify certifying agent and obtain certification before performing any farming practices on the additional land.	Producer is not required to implement practices that permanently alter the landscape. Producer must demonstrate sufficient crop management practices (nutrient, tillage, pest, non-structural and non-permanently, landscape altering conservation practices) consistent with agreement.
Example	A producer buys and farms new acreage.	A producer buys new acreage and leases to neighbor.	A producer leases and farms new land.	A producer leases and farms new land but is prohibited from putting in structural practices by landowner.
A certified producer <b>removes</b> land after the start of this agreement...				
Land is <b>owned</b> by certified producer....		Land is <b>leased</b> by certified producer....		
	Certified producer <b>has</b> effective control...	Certified producer <b>has no</b> effective control...	Certified producer <b>has</b> effective control...	Certified producer <b>has no</b> effective control...
Action	Notify certifying agent, remove from record.	Not applicable- land that is not being farmed by the certified producer is not covered in certification.	Notify certifying agent, remove from record.	Notify certifying agent, remove from record.
Example	A producer sells, and no longer farms, a field.	A producer sells a field that they never farmed within the certification period.	A producer no longer farms some leased land.	A producer no longer farms some leased land