United States Department of Agriculture
Natural Resources Conservation Service
200 N High Street, Room 522

Prepared By:

Mark A Scarpitti, CCA
NRCS State Agronomist, Ohio

In Consultation with
NRCS Conservation Partners

Soil and Water Quality System
Nutrient Management (590)

Maximum Potential Payment:

Management Level I	Maximum over Life of Contract: $ 19,200.00
Management Level II	Maximum over Life of Contract: $ 72,800.00
Management Level III	Maximum over Life of Contract: $105,200.00

This Conservation Management System (CMS) combines practices that work together to reduce energy consumption, maintain water quality, and improve soil quality. They are to be planned and contracted together as listed below. The Soil and Water Quality System, Nutrient Management (590) payment is NOT to be used in combination with any other conservation management system payment, nor is it to be used in combination with any other federal program such as CSP or CRP for the same practice on the same land. If manure is going to be applied to the contracted acres use the Waste Utilization (633) management system rather than this system.

This system assumes adequate drainage. Practices may not be feasible without adequate subsurface drainage. If soils are not adequately drained, a systematic tile system should be considered prior to contracting this conservation management system.

Base Level Activities:
To qualify for any of these payments, the participant must have:

1) All gully erosion controlled.
2) All tile breaks repaired within a year of the contract being signed.

Payment Considerations:
(See the "Definitions and Payment Considerations" section for more specific payment considerations.)

1) All supporting practices must be fully initiated prior to issuing the (590) Nutrient Management payment.
2) Fertilizer application records must be presented to the District Conservationist (DC) for review.
3) Soil test records must be presented to the DC for review.
4) If one of the Residue and Tillage Management - Controlled Traffic options is selected, a geo-referenced traffic map will be submitted to the DC for review prior to this payment being issued.
5) For Nutrient Management Level II and III, a copy of the VRT nutrient management plan developed by a Certified Crop Advisor (CCA), or a Certified Professional Agronomist (CPAg), including yield maps, grid or zone maps along with geo-referenced biennial soil reports will be submitted to the DC prior to issuing the 590 Nutrient Management payment.
6) The participant must sign the self certification form verifying that supporting practices have been adopted and that the 590 Nutrient Management practice standard and the Tri-State Fertility Guide were followed on all contracted acres.
7) Some payment rates have been rounded and may differ slightly in actual conservation program contracts.

Soil and Water Quality System, Nutrient Management Level I

Base Level Activities:
To qualify for this system payment, the participant must have:
1) All gully erosion controlled.
2) All tile breaks will be repaired within a year of the contract being signed.

In addition to the Base Level Activities described above the following supporting practices must be applied:
Practice payments can be contracted only if the participant has not previously adopted the practice on the enrolled acres.
See Definitions and Payment Considerations on pages 7-11 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
328	Conservation Crop Rotation (if applicable*)	AC	PR	$7.00	$1,400.00
	• No back to back low residue crops (unless a cover crop is established during at least one year of low residue crops) (Wheat with stubble removed (<8 inches) constitutes a low residue crop) Simply adding cover crops to an existing crop rotation would not constitute a change in rotation. *This practice does not apply, and is not needed for pastureland, hayland, orchards, vineyards or other land uses where crops are grown occasionally only to facilitate renovation or re-establishment of perennial vegetation.				
345	Option 1: Residue and Tillage Management, Mulch Tillage	AC	PR	$11.00	$2,200.00
OR	• Maintains >30% crop residue (or utilizes cover crops) necessary to keep sheet and rill erosion at or below "T" The producer must make a significant change from a more intensive tillage system to receive this payment.				
329-346	Option 2: Residue and Tillage Management, No Tillage	AC	PR	$15.00	$3,000.00
	• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practices 329 or 346) every year of the contract.				
590	Nutrient Management System, Level I	AC	PR	$10.00	$2,000.00
	This payment cannot be issued until all other supporting practices have been initiated. This is because this practice should account for the supporting practices of the conservation system. • The OH 590 Nutrient Management practice standard must be followed using the 4 Rs (See definitions Pg 9) • Continue to soil test through the life of the contract (1 composite sample per 15 ac. every 2 yrs.) • Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring. • Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations • NO fertilizer will be applied on frozen or snow covered ground • Maintains accurate fertilizer application records per field				

***** Items shown in Blue text are new practices to the Nutrient Management Level***
***** Items shown in Red text are of special importance***

Soil and Water Quality System, Nutrient Management Level II

Base Level Activities:
To qualify for this system payment, the participant must have:
1) All gully erosion controlled.
2) All tile breaks repaired within a year of the contract being signed

In addition to the Base Level Activities described above the following supporting practices must be applied:
Practice payments can be contracted only if the participant has not previously adopted the practice on the enrolled acres.
See Definitions and Payment Considerations on pages 7-11 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
328	Conservation Crop Rotation (if applicable*)	AC	PR	$7.00	$1,400.00
	• No back to back low residue crops (unless a cover crop is established during at least one year of the low residue crops) (Wheat with stubble removed (<8 inches) constitutes a low residue crop) Simply adding cover crops to an existing crop rotation would not constitute a change in rotation. *This practice does not apply, and is not needed for pastureland, hayland, orchards, vineyards or other land uses where crops are grown occasionally only to facilitate renovation or re-establishment of perennial vegetation.				
345	Option 1: Residue and Tillage Management, Mulch Tillage	AC	PR	$11.00	$2,200.00
OR	• Maintains >30% crop residue necessary to keep sheet and rill erosion at or below "T" The producer must make a significant change from a more intensive tillage system to receive this payment.				
329-346	Option 2: Residue and Tillage Management, No Tillage	AC	PR	$15.00	$3,000.00
OR	• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practices 329 or 346) every year of the contract.				
329-345-346	Option 3: Residue and Tillage Management with Controlled Traffic Level I *	AC	PR	$40.00	$8,000.00
OR	• Utilizes a Residue and Tillage Management Practice every year of the contract • The OH Interim Controlled Traffic Farming practice standard must be followed • Utilizes RTK automatic steering technology for high load field traffic * For all high-load wheel traffic except the combine with the small grain head and/or uses floater type combine tires that run on the row.				
329-345-346	Option 4: Residue and Tillage Management with Controlled Traffic Level II *	AC	PR	$50.00	$10,000.00
	• Utilizes a Residue and Tillage Management Practice every year of the contract • The OH Interim Controlled Traffic Farming practice standard must be followed • Utilizes RTK automatic steering technology for high load field traffic *For all high-load wheel traffic, including the combine with the small grain head and uses narrow combine tires that run between rows.				
340	Cover Crops	AC	PR	$45-*$70	$4,200.00
	• Utilizes Cover Crops (340) on a minimum of 30% of the contracted acres either ○ on yearly basis ○ or over the life of the contract *Payment is based on the type of cover crop utilized, the method of seeding and the acres of cover crops established.				
386-390-393	Field Border / Riparian Herbaceous Cover / Filter Strip See Definitions starting on page 7 for details	AC	PR	$190-$400	$8,000.00
	• A herbaceous buffer will be established along all perennial streams, ponds, lakes, wetlands.				

***** 590*** ***Nutrient Management System, Level II - is continued on the back of this page***

590	Nutrient Management System, Level II	AC	PR	$30.00	$6,000.00

This payment cannot be issued until all other supporting practices have been initiated.
This is because this practice should account for the supporting practices of the conservation system.

- The OH 590 Nutrient Management practice standard must be followed using the 4 Rs (See definitions Pg 9)
- Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring.
- Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations
- NO fertilizer will be applied on frozen or snow covered ground
- Maintains accurate fertilizer application records per field
- A geo-referenced Variable Rate Technology grid or zone nutrient management plan will be developed by a CCA or CPAg reflecting the other practices in the conservation management system above. Requires biennial soil tests.
- Biennial geo-referenced soil tests are taken using the VRT nutrient management plan developed above.
- Phosphorus fertilizer must be applied to a growing crop or cover crop. As an alternative it can be banded or lightly tilled into the top 3-5 inches of the soil using an AerWay, Phoenix, or similar implement that incorporates the fertilizer but does not destroy the soil structure below 5 inches.

Soil and Water Quality System, Nutrient Management Level III

Base Level Activities:
To qualify for this system payment, the participant must have:
1) All gully erosion controlled.
2) All tile breaks repaired within a year of the contract being signed

In addition to the Base Level Activities described above the following supporting practices must be applied:
Practice payments can be contracted only if the participant has not previously adopted the practice on the enrolled acres.
See Definitions and Payment Considerations on pages 7-11 of this document for more detailed descriptions of practices.

Practice Code	Supporting Practice Name	Payment Unit	Payment Type	Rate	Payment Cap
328	Conservation Crop Rotation (if applicable*)	AC	PR	$7.00	$1,400.00
	• No back to back low residue crops (unless a cover crop is established during at least one year of the low residue crops) (Wheat with stubble removed (<8 inches) constitutes a low residue crop) Simply adding cover crops to an existing crop rotation would not constitute a change in rotation. *This practice does not apply, and is not needed for pastureland, hayland, orchards, vineyards or other land uses where crops are grown occasionally only to facilitate renovation or re-establishment of perennial vegetation.				
345	Option 1: Residue and Tillage Management, Mulch Tillage	AC	PR	$11.00	$2,200.00
OR	• Maintains >30% crop residue (or utilizes cover crops) necessary to keep sheet and rill erosion at or below "T" The producer must make a significant change from a more intensive tillage system to receive this payment.				
329-346	Option 2: Residue and Tillage Management	AC	PR	$15.00	$3,000.00
OR	• Utilizes a non-inversion tillage practice such as NoTill, StripTill, Direct Seed, or RidgeTill (Residue and Tillage Management Practices 329 or 346) every year of the contract.				
329-345-346	Option 3: Residue and Tillage Management with Controlled Traffic Level I *	AC	PR	$40.00	$8,000.00
OR	• Utilizes a Residue and Tillage Management Practice every year of the contract • The OH Interim Controlled Traffic Farming practice standard must be followed • Utilizes RTK automatic steering technology for high load field traffic * For all high-load wheel traffic except the combine with the small grain head and/or uses floater type combine tires that run on the row				
329-345-346	Option 4: Residue and Tillage Management with Controlled Traffic Level II *	AC	PR	$50.00	$10,000.00
	• Utilizes a Residue and Tillage Management Practice every year of the contract • The OH Interim Controlled Traffic Farming practice standard must be followed • Utilizes RTK automatic steering technology for high load field traffic *For all high-load wheel traffic, including the combine with the small grain head and uses narrow combine tires that run between rows				
340	Cover Crops	AC	PR	$45-*$70	$7,000.00
	• Utilizes Cover Crops (340) on a minimum of 50% of the contracted acres either ○ on yearly basis ○ or over the life of the contract *Payment is based on the type of cover crop utilized, the method of seeding and the acres of cover crops established.				
386-390-393	Field Border / Riparian Herbaceous Cover / Filter Strip See Definitions starting on page 7 for details	AC	PR	$190-$400	$8,000.00
	• A herbaceous buffer will be established along all perennial streams, ponds, lakes, wetlands.				
587	Structure for Water Control (where feasible)	NUM	PR	$792-$1500	$15,000.00
	• Mandatory (where technically feasible as determined by an NRCS or ODNR engineer) on all tile outlets • Constructed Wetland standard (656) can be used as an alternative to (587)				
554	Drainage Water Management (required if 587 is installed)	NUM	PR	$100	$1,000.00
	• Follow the 554 Drainage Water Management practice standard				

***** 590*** ***Nutrient Management System, Level III - is continued on the back of this page***

590	Nutrient Management System, Level III	AC	PR	$40.00	$8,000.00

This payment cannot be issued until all other supporting practices have been initiated.
This is because this practice should account for the supporting practices of the conservation system.

- The OH 590 Nutrient Management practice standard must be followed using the 4 Rs (See definitions Pg 9)
- Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring.
- Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations
- NO fertilizer will be applied on frozen or snow covered ground
- Maintains accurate fertilizer application records per field
- A geo-referenced Variable Rate Technology grid or zone nutrient management plan will be developed by a CCA reflecting the other practices in the conservation management system above. Requires biennial soil tests.
- Biennial geo-referenced soil tests are taken and lime/ P & K fertilizer are applied according to the VRT nutrient management plan developed above.
- Phosphorus fertilizer must be applied to a growing crop or cover crop. As an alternative it can be banded or lightly tilled into the top 3-5 inches of the soil using an AerWay, Phoenix, or similar implement that incorporates the fertilizer but does not destroy the soil structure below 5 inches.

Soil and Water Quality System
Nutrient Management (590)

328 - Conservation Crop Rotation

Definition: Growing crops in a recurring sequence on the same field.

In order to receive a payment for this supporting practice, there needs to be a significant change from the rotation the producer is currently using. Examples of change would be 1) Changing from a corn-soybean rotation to a corn-soybean-wheat rotation 2) Substituting high residue crops for low residue crops. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. This practice does not apply, and is not needed for pastureland, hayland, orchards, vineyards or other land uses where crops are grown occasionally only to facilitate renovation or re-establishment of perennial vegetation. The conservation crop rotation will be considered initiated and payment can be made when the first crop of the rotation is planted. If weather or other factors dictate a back to back low residue crop, a cover crop must be established. The producer will self certify the fields and crops used each year of the contract on an aerial photo. This is subject to spot checks.

329 / 345 / 346 - Residue and Tillage Management, NoTill, StripTill, RidgeTill, Mulch Till

Definition: Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities to only those necessary to place nutrients, condition residue and plant crops.

The producer has options under this practice. The producer can utilize NoTill, StripTill, RidgeTill or MulchTill as a stand alone practice, or can combine it with Controlled Traffic Farming (CTF). If one of the controlled traffic options is chosen, a geo-referenced map of each field must be developed showing the traffic pattern for all high load traffic. RTK / GPS self steer technology must be utilized throughout the life of the contract. RTK systems only will be considered. The producer must submit a copy of the bills to the DC showing purchase or rental of RTK equipment.

In order to receive a payment for this supporting practice, there needs to be a significant change from the type of tillage the producer is currently using. Examples would be 1) converting from a chisel / disk system to NoTill or 2) converting from rotational NoTill to continuous NoTill. To qualify for payment under this practice, the tillage system must be NoTill, StripTill, RidgeTill, or Mulch Till every year for the life of the contract. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The payment for Controlled Traffic Farming (CTF) includes payment for the Residue and Tillage Management practice 329, 345 or 346, so no additional payment should be issued. The producer will self certify that NoTill, StripTill, RidgeTill or Mulch Till was used each year of the contract. The proposed traffic pattern can be planned using the Ohio Controlled Traffic Design Tool or similar method. The Ohio Interim Controlled Traffic Farming practice standard must be followed to receive a payment for CTF.

For the purposes of this Soil and Water Quality System: Fertilizer must be applied to a growing crop or cover crop. As an alternative, light surface tillage using an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less), can be used to lightly incorporate fertilizer. For Residue and Tillage Management NoTill, StripTill, or RidgeTill, full width tillage is not authorized for anything but nutrient incorporation. If surface tillage is used, the STIR value must be kept below 20.

345 – Residue and Tillage Management, MulchTill can be can be utilized to participate with this management system. It can be utilized with controlled traffic to allow for vertical tillage. If utilizing mulch tillage, the surface crop residue must be greater than 30%, must be adequate to maintain sheet / rill erosion at or below “T” and must have a STIR value below 30. Percent residue is calculated at the time of planting the subsequent crop.

340 - Cover Crops

Definition: Crops including grasses, legumes and brassicas for seasonal cover and other conservation purposes.

In order to receive a payment for this supporting practice, there needs to be a significant change from system the producer is currently using. If the producer has a history of utilizing cover crops successfully in a conservation system, then payment cannot be authorized. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. Cover Crops must be utilized on 30%-50% of the contracted acres either on yearly basis or over the life of the contract.

Payment is based on the type of cover crop utilized, the method of seeding and the acres of cover crops established. The producer is responsible for making sure the cover crop is successfully established. The producer will self certify each year the location, acres and type of cover crops established. This is subject to spot checks.

386 / 390 / 393 - Field Border / Riparian Herbaceous Cover / Filter Strip

Definition: In order to receive payment for this supporting practice, a herbaceous buffer must be newly established as per the 386, 390 or 393 practice standards along all perennial streams, ponds, lakes, wetlands. See standards for width requirements. Payments cannot be made for existing buffers. This is a one time payment to establish the practice. As an alternative, these buffers can be enrolled in CRP; however the producer cannot receive payment under both CRP and EQIP for the same practice on the same land. Existing buffers are credited but cannot receive a payment for establishment.

587 - Structure for Water Control

Definition: A structure at the end of a tile or subsurface drain. It is utilized to control the water elevation or temporarily block water flow. It must have an inspection port for monitoring and pumping water if needed to maintain water quality.

These are installed if feasible as determined by an NRCS or ODNRengineer. This *Soil and Water Quality System* was developed for up to ten structures. Payment will vary depending on the size of the structure needed. This is a one time payment for installing the structure. Structures must be managed according to practice standard 554 Drainage Water Management.

554 - Drainage Water Management

Definition: The process of managing water discharges from 587 Structures for Water Control subsurface agricultural drainage systems.

In order to receive a payment for this supporting practice, a 587 Structure for Water Control must have been newly installed as part of this same contract. If no structure was installed then payment is not authorized. Payment can be made for up to ten structures. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. Management will be recorded on the 555 Drainage Water Management job sheet following the guidance of the Purdue University publication WQ-44 “Questions and Answers - Drainage Water Management for the Mid-West”. The producer will self certify that the structure was managed as designated. This is subject to spot checks.

590 - Nutrient Management

Definition: Managing the **right source,** the **right rate**, the **right timing** and the **right placement** (4R's of nutrient management) of nutrients and soil amendments. **This payment cannot be issued until all other supporting practices have been initiated. This is because this practice should account for the supporting practices of the conservation system.** In order to receive a payment for this practice, the 590 Nutrient Management practice standard must be followed. In addition, there are other requirements under each level of nutrient management that must be followed as listed below:

Management Level I	Management Level II	Management Level III
• Biennial soil tests will be taken (every 2 years) through the life of the contract (one sample per 15 acres). • Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring. • Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations • NO fertilizer will be applied on frozen or snow covered ground • Maintains accurate fertilizer application records per field	• Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring. • Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations • NO fertilizer will be applied on frozen or snow covered ground • Maintains accurate fertilizer application records per field • A geo-reference grid or zone nutrient management plan will be developed by a CCA or CPAg, incorporating the other practices in this conservation management system. • Geo-referenced biennial soil tests are taken using the Variable Rate Technology (VRT) nutrient management plan developed above. • Phosphorus fertilizer must be applied to a growing crop or cover crop. As an alternative it can be banded or lightly tilled into the top 3-5 inches of the soil using an AerWay, Phoenix, or similar implement that incorporates the fertilizer but does not destroy the soil structure below 5 inches.	• Urease Inhibitors will be applied with UAN or Urea that is surface applied in the spring. • Fertilizer application will not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations • NO fertilizer will be applied on frozen or snow covered ground • Maintains accurate fertilizer application records per field • A geo-referenced grid or zone nutrient management plan will be developed by a CCA or CPAg, incorporating the other practices in this conservation management system. • Geo-referenced biennial soil tests are taken and lime / P & K fertilizer are applied using Variable Rate Technology (VRT) according to the nutrient management plan above. • Phosphorus fertilizer must be applied to a growing crop or cover crop. As an alternative it can be banded or lightly tilled into the top 3-5 inches of the soil using an AerWay, Phoenix, or similar implement that incorporates the fertilizer but does not destroy the soil structure below 5 inches.

Nutrient Management Plan

Definition: A plan that documents the **right source**, the **right rate**, the **right timing** and the **right placement** of nutrients and soil amendments. The 590 Nutrient Management practice standard is the guidance to be used in developing the plan. I**n Ohio, the Purdue Manure Management Planner (MMP) will be used to develop CNMPs, Nutrient Management Plans and Precision Nutrient Management Plans utilizing the Ohio templates.** The purposes of a nutrient management plan are: 1) To adequately supply nutrients for plant production; 2) To properly utilize manure or organic by-products as a plant nutrient source; 3) To minimize agricultural nonpoint source pollution of surface and ground water resources; 4) To improve chemical and biological condition of soil.

NOTE: The nutrient management plan should incorporate the supporting practices of this conservation system. Under Levels II and III of this *Soil and Water Quality System*, a Variable Rate Technology (VRT) Grid or Zone nutrient management plan must be developed by a CCA or CPAg. Fertilizer rates calculated for the rotation can be made in one application as long as the 1) Nutrient Management Plan is being followed 2) The application rate does not exceed the limits set forth in the 590 Nutrient Management practice standard and 3) The fertilizer is applied to a growing drop, or incorporated. The Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued. As a management practice in EQIP, payment can be made for up to 3 years if needed to adopt the practice. The producer and the CCA or CPAg will certify annually that the nutrient management plan is being followed. This is subject to spot checks.

Tri-State Fertility Guide:

Definition: The Tri-State Fertility Guide (Extension Bulletin E-2567), is a publication developed by Ohio, Indiana, and Michigan. Among other things, it provides lime and fertilizer recommendations for corn, soybean, small grain, and meadow crops. The Tri-State Fertility Guide should be used to set the **maximum** rate of fertilizer to be used based on soil test values and crop removal rates.

Soil Testing

Definition: A soil test is the analysis of a soil sample to determine nutrient content, composition and other characteristics. Tests are usually performed to measure pH, fertility and indicate deficiencies that need to be remedied.

A **regular soil test** is a composite of 15-20 soil samples that are combined and mixed thoroughly. A sample is then sent for analysis. The report from the analysis is used to determine the rate of lime and nutrients based on the soil test values and the crop to be grown. The composite sample must represent 15 acres or less.

Precision Nutrient Management Plan using VRT – or Variable Rate Technology

A **Grid Sampling** divides the field into square grids representing 2 - 6 acres. Several soil samples are pulled from each square in the grid and combined to form a composite sample representing that square. Lime, phosphorus and potassium fertilizer can then be varied across the grid applying just the nutrients needed in each square. The grids cannot represent more than 6 acres. **If a grid sampling method is utilized, the Precision Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued.**

Management Zones is a system of dividing up the field to try and group similar soil characteristics as well as other factors of interest. For example, a common system of management zones overlays soils maps with crop yield maps. Polygons are then drawn around areas of the field that have similar soils and crop yield characteristics. Several soil samples are pulled from each zone and combined to form a composite sample representing that zone. Each zone must represent 12 acres or less. These zones are located using GPS technology. Lime, phosphorus and potassium fertilizer can then be varied across the zones applying just the nutrients needed in each zone. **If a management zone method of sampling is utilized, the Precision Nutrient Management Plan, as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC prior to the 590 Nutrient Management payment being issued.**

Controlled Traffic Farming (CTF):

Definition: Controlled Traffic Farming is confining all high wheel load traffic in the farming system to the same set of wheel tracks year after year. The result limits compaction to the wheel tracks and reduces soil compaction outside of the tracks for improved water infiltration and crop growth. The OH Interim Controlled Traffic Farming practice standard must be followed keeping traffic lanes to less than 50% of the surface area.

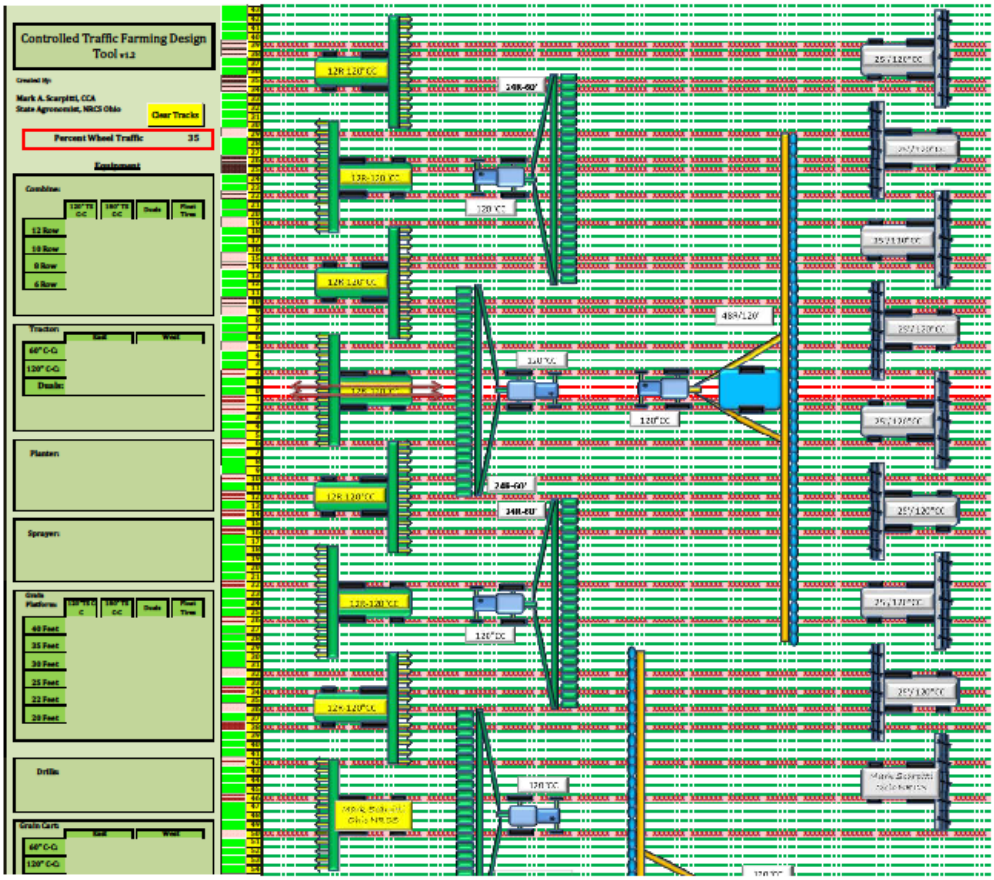
High wheel load traffic is defined as any tire or track that bears a higher load than 6000 pounds at 30 psi (equivalent to 6 tons per axle). Equipment with duals would need to reduce the load to 3000 pounds per tire to maintain the 6 tons per axle.

Keep in mind that compaction is greatly impacted by soil texture and soil moisture. A trip across the field in a pickup truck on a coarse textured soil under dry conditions would suffer very little by compaction. Whereas that same truck across a heavy moist soil can cause a great deal of compaction. It is best to use the permanent wheel tracks for all field operations if you are serious about controlling compaction. Studies have shown that in conventional farming, up to 85% of the field becomes compacted from heavy machinery. Compaction causes a decreased soil infiltration, a decrease in the air and water holding capacity in the soil, higher water runoff and soil erosion, and decreased yields.

Controlled Traffic Farming requires modifying equipment so that tire spacing center to center match, allowing tires to run on the same permanent wheel tracks. Operators must commit to driving down the same tramlines for each field operation year after year. The most effective way is to use a RTK satellite guided, or autosteer system that ensures accuracy. All high load traffic must utilize the established tramlines. Once the tracks are established and clearly visible, some field operations such as broadcasting fertilizer, won't need the RTK accuracy. Other field operations such as fertilizer banding, strip tillage, side dressing, planting, spraying and harvesting will benefit from that accuracy.

Custom fertilizer applicators using flotation tires may not be able to run between the rows using the established traffic patterns. This is permissible as long as they run half loads.

NOTE: If a controlled traffic option is chosen as part of this Soil and Water Quality System, a GIS map showing the traffic pattern, as well as bills showing the rental or purchase of RTK auto steer equipment must be presented to the DC before payment will be issued. RTK / GPS auto steer technology must be utilized throughout the life of the contract. RTK systems only will be considered. The producer will self certify that the controlled traffic plan was followed. This is subject to spot checks.



Self Certification Form

Soil and Water Quality System
Nutrient Management (590)

Nutrient Management Level I:

This form is intended to be signed by the producer prior to practice payment. The producer certifies that the practices were installed or adopted as planned. This certification is subject to review and spot checks.

ALL PRACTICES THAT ARE SELF CERTIFIED FOR PAYMENT ARE SUBJECT TO SPOT CHECKS

Participant:	EQIP Contract Number:	Year:
328 Conservation Crop Rotation:		
A. The crops grown in rotation produced sufficient residue to keep soil erosion within acceptable soil loss levels B. No back to back low residue crops (such as soybeans) were grown without a cover crop (Wheat with stubble removed (<8 inches) constitutes a low residue crop) C. Crops were sufficiently rotated to break pest cycle On an aerial photo of the contracted acres, write the crops planted in each field.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
345 Option 1: Residue and Tillage Management, MulchTill:		
A. Crop residue was uniformly distributed on the soil surface The combination of crop rotation and tillage were reviewed by the DC and found to be within tolerable rates of soil loss. On an aerial photo of the contracted acres, indicate the tillage used in each field.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date	
329 / 346 Option 2: Residue and Tillage Management, NoTill, StripTill, RidgeTill:		
A. Crop residue was uniformly distributed on the soil surface B. No full width tillage was performed accept to incorporate fertilizer C. If surface tillage was used to incorporate fertilizer, an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue On an aerial photo of the contracted acres, write the tillage used in each field.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form::		
Signature of Participant:	Date	:
590 Nutrient Management System, Level I		
A. The OH 590 Nutrient Management practice standard was followed using the 4 Rs (right source, right rate, right timing, right placement) B. Soil test through the life of the contract (1 composite sample per 15 ac. every 2 yrs.) C. Urease Inhibitors were used with UAN or Urea that was surface applied in the spring (if applicable) D. Fertilizer application did not exceed Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations E. NO fertilizer was applied on frozen or snow covered ground Must submit copies of the soil test reports.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	

Soil and Water Quality System, Nutrient Management (590) - Self Certification Form

Nutrient Management Level II:

ALL PRACTICES THAT ARE SELF CERTIFIED FOR PAYMENT ARE SUBJECT TO SPOT CHECKS

Participant:	EQIP Contract Number:	Year:

328 Conservation Crop Rotation:

A. The crops grown in rotation produced sufficient residue to keep soil erosion within acceptable soil loss levels
B. No back to back low residue crops (such as soybeans) were grown without a cover crop
(Wheat with stubble removed (<8 inches) constitutes a low residue crop)
C. Crops were sufficiently rotated to break pest cycle
On an aerial photo of the contracted acres, write the crops planted in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

345 Option 1: Residue and Tillage Management, MulchTill:

A. Crop residue was uniformly distributed on the soil surface
The combination of crop rotation and tillage were reviewed by the DC and found to be within tolerable rates of soil loss.
On an aerial photo of the contracted acres, indicate the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-346 Option 2: Residue and Tillage Management, NoTill, StripTill, RidgeTill:

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue
On an aerial photo of the contracted acres, write the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-345-346 Option 3: Residue and Tillage Management, NoTill, StripTill, MulchTill, RidgeTill: With CTF Level I
(For all high-load wheel traffic except the combine with the small grain head and/or uses floater type combine tires that run on the crop row)

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer (vertical tillage allowed under 345)
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue
D. The Ohio Interim Controlled Traffic Farming (CTF) practice standard was followed and RTK automatic steering technology was utilized for high load field traffic except the small grain combine head and/or used floater type combine tires that run on the row.
Submit bills showing the purchase or rental of RTK equipment.
Submit a GIS map showing the controlled traffic pattern on an aerial photo with the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-345-346 Option 4: Residue and Tillage Management, NoTill, StripTill, MulchTill, RidgeTill: With CTF Level II
(For all high-load wheel traffic including the combine with the small grain head and uses narrow combine tires that run between the crop row)

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer (vertical tillage allowed under 345)
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue
D. The Ohio Interim Controlled Traffic Farming (CTF) practice standard was followed and RTK automatic steering technology was utilized for high load field traffic, including small grain combine head and used narrow combine tires that run between crop rows.
Submit bills showing the purchase or rental of RTK equipment.
Submit a GIS map showing the controlled traffic pattern on an aerial photo with the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

Nutrient Management Level II (continued):

ALL PRACTICES THAT ARE SELF CERTIFIED FOR PAYMENT ARE SUBJECT TO SPOT CHECKS

Participant:	EQIP Contract Number:	Year:
340 Cover Crops:		
A. Cover Crops (340) were utilized on a minimum of 30% of the contracted acres either • on yearly basis • or over the life of the contract Payment is based on the type of cover crop utilized, the method of seeding and the acres of cover crops established. On an aerial photo of the contracted acres, indicate the location and type of cover crops planted in each field.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
386 / 390 / 393 Field Border / Riparian Herbaceous Cover / Filter Strip:		
A. A herbaceous buffer has been established along all perennial streams, ponds, lakes, wetlands. This is a one time payment based on acres planted. On an aerial photo of the contracted acres, indicate the width and location of buffer.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
590 Nutrient Management System, Level II		
This nutrient management plan should account for the supporting practices of the conservation system. F. The OH 590 Nutrient Management practice standard was followed using the 4 Rs (right source, right rate, right timing, right placement) G. Urease Inhibitors were used with UAN or Urea that was surface applied in the spring (if applicable) H. Fertilizer application did not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations I. NO fertilizer was applied on frozen or snow covered ground J. Fertilizer application records were maintained per field K. A geo-referenced Variable Rate Technology grid or zone nutrient management plan was developed by a CCA or CPAg reflecting the other practices in the conservation management system above L. Biennial geo-referenced soil tests were taken using the Variable Rate Technology (VRT) nutrient mgt plan above M. Fertilizer was applied to a growing crop (includes cover crops) or fertilizer was injected or incorporated into the top 3-5 inches of the soil using an AerWay, Phoenix or similar implement that incorporated the fertilizer but did not destroy the soil structure A Variable Rate Technology (VRT) grid or zone nutrient management plan, developed by a CCA or CPAg as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC. This payment cannot be issued until all other supporting practices have been implemented.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
Signature of CCA:	CCA Number:	Date:

Ohio Soil and Water Quality System, Nutrient Management (590) - Self Certification Form

Nutrient Management Level III:

ALL PRACTICES THAT ARE SELF CERTIFIED FOR PAYMENT ARE SUBJECT TO SPOT CHECKS

Participant:	EQIP Contract Number:	Year:

328 Conservation Crop Rotation:

A. The crops grown in rotation produced sufficient residue to keep soil erosion within acceptable soil loss levels
B. No back to back low residue crops (such as soybeans) were grown without a cover crop
(Wheat with stubble removed (<8 inches) constitutes a low residue crop)
C. Crops were sufficiently rotated to break pest cycle

On an aerial photo of the contracted acres, write the crops planted in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

345 Option 1: Residue and Tillage Management, MulchTill:

A. Crop residue was uniformly distributed on the soil surface

The combination of crop rotation and tillage were reviewed by the DC and found to be within tolerable rates of soil loss.
On an aerial photo of the contracted acres, indicate the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-346 Option 2: Residue and Tillage Management, NoTill, StripTill, RidgeTill:

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue

On an aerial photo of the contracted acres, write the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-345-346 Option 3: Residue and Tillage Management, NoTill, StripTill, MulchTill, RidgeTill: With Controlled Traffic Level I
(For all high-load wheel traffic except the combine with the small grain head and/or uses floater type combine tires that run on the crop row)

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer (vertical tillage allowed under 345)
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue
D. The Ohio Interim Controlled Traffic Farming (CTF) practice standard was followed and RTK automatic steering technology was utilized for high load field traffic except the small grain combine head and/or uses floater type combine tires that run on the row.

Submit bills showing the purchase or rental of RTK equipment.
Submit a GIS map showing the controlled traffic pattern on an aerial photo with the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

329-345-346 Option 4: Residue and Tillage Management, NoTill, StripTill, MulchTill, RidgeTill: With Controlled Traffic Level II
(For all high-load wheel traffic including the combine with the small grain head and uses narrow combine tires that run between the crop row)

A. Crop residue was uniformly distributed on the soil surface
B. No full width tillage was performed accept to incorporate fertilizer (vertical tillage allowed under 345)
C. If surface tillage was used (to incorporate fertilizer only), an AerWay, Phoenix, or similar implement, set at a shallow depth (3-5 inches), and at a low angle of attack (5 degrees or less) was used to minimize burial of surface residue
D. The Ohio Interim Controlled Traffic Farming (CTF) practice standard was followed and RTK automatic steering technology was utilized for high load field traffic, including small grain combine head and uses narrow combine tires that run between crop rows.

Submit bills showing the purchase or rental of RTK equipment.
Submit a GIS map showing the controlled traffic pattern on an aerial photo with the tillage used in each field.

By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:

Signature of Participant:	Date:	

Nutrient Management Level III (continued):

ALL PRACTICES THAT ARE SELF CERTIFIED FOR PAYMENT ARE SUBJECT TO SPOT CHECKS

Participant:	EQIP Contract Number:	Year:
340 Cover Crops:		
A. Cover Crops (340) were utilized on a minimum of 50% of the contracted acres either ○ on yearly basis ○ or over the life of the contract Payment is based on the type of cover crop utilized, the method of seeding and the acres of cover crops established. On an aerial photo of the contracted acres, indicate the location and type of cover crops planted in each field.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
386 / 390 / 393 Field Border / Riparian Herbaceous Cover / Filter Strip:		
A. A herbaceous buffer has been established along all perennial streams, ponds, lakes, wetlands. This is a one time payment based on acres planted. On an aerial photo of the contracted acres, indicate the width and location of buffer.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
590 Nutrient Management System, Level III		
This nutrient management plan should account for the supporting practices of the conservation system. N. The OH 590 Nutrient Management practice standard was followed using the 4 Rs (right source, right rate, right timing, right placement) O. Urease Inhibitors were used with UAN or Urea that was surface applied in the spring (if applicable) P. Fertilizer application did not exceed the Tri-State Fertility Guide (Ext. Bulletin E-2567) recommendations Q. NO fertilizer was applied on frozen or snow covered ground R. Fertilizer application records were maintained per field S. A geo-referenced Variable Rate Technology grid or zone nutrient management plan was developed by a CCA or CPAg reflecting the other practices in the conservation management system above T. Biennial geo-referenced soil tests were taken and lime and fertilizer were applied using the Variable Rate Technology (VRT) nutrient mgt plan above U. Fertilizer was applied to a growing crop (includes cover crops) or fertilizer was injected or incorporated into the top 3-5 inches of the soil using an AerWay, Phoenix or similar implement that incorporated the fertilizer but did not destroy the soil structure A Variable Rate Technology (VRT) grid or zone nutrient management plan, developed by a CCA or CPAg as well as GIS maps with geo-referenced biennial soil test reports must be submitted to the DC. This payment cannot be issued until all other supporting practices have been implemented.		
By signing below, I certify that I followed the criteria above on the contracted acres for the year listed on the top of this form:		
Signature of Participant:	Date:	
Signature of CCA:	CCA Number:	Date: