

LAND TREATMENT PRACTICES

Land Treatment Practices Overview

Land treatment practices are to be applied to fields to limit the potential for runoff or other hazardous incidents from occurring due to land application of manure. As part of this element of the CNMP, the RUSLE2 program was run for each of the fields indicated in the plan. The results of RUSLE2 are outlined in the following RUSLE2 reports.

Current Management Practices for Fields in CNMP

All cropland utilized in this CNMP will be in a continuous corn rotation. Fields will be chiselploowed in the fall. Fields 10, 11, 12, and 14 will be utilized in a rotation every 3rd year for corn silage. For the purpose of running RUSLE2, fields were grouped according to their predominant soil type, crop, and yield goal.

Fields	Soil Type	Crop	Yield Goal (bu or t/ac)	Soil Loss T	Soil Loss RUSLE2
Triple D, Phil's Bottom, Double D, & Hach	279B Rozetta silt loam, 2-5% slopes	Corn	175	5.0	2.6
N Rob's, Phil's, Freeman's	279B Rozetta silt loam, 2-5% slopes	Corn	200	5.0	2.1
NW Field, 11 th Avenue	86B Osco silt loam, 2-5% slopes	Corn	200	5.0	1.4
Harold's 80, NW Harold's, & Keep	43A Ipava silt loam, 0- 2%	Corn	200	5.0	0.47
Silo Field, S House, E Buildings	675B Greenbush silt loam, 2-5% slopes	Corn- Silage	200 bu /34 t	5.0	2.4

All fields on which manure will be applied for this CNMP meet soil loss tolerance, "T", and thus no additional conservation practices are necessary in order to meet conservation standards.

Potential Practices to Reduce Soil Erosion

While fields on this farm meet soil loss tolerance, consideration should be given to practices that may further reduce soil erosion.

1. Residue Management – No-till, strip-till, or mulch-till is an option to reduce sheet and rill, and wind erosion, maintain or improve soil organic matter content and tilth, conserve soil moisture, manage snow to increase plant available moisture or reduce plant damage from freezing or desiccation, and provide food and escape cover for wildlife.
2. Field Borders- Field borders are effective to reduce soil erosion from wind and water, protect soil and water quality, manage harmful insect populations, and provide wildlife with food and cover.
3. Cover crop- Cover crops are effective, particularly when used as a temporary cover during winter months on silage fields, to reduce sheet and rill erosion, increase soil organic matter, manage excess nutrients in the soil profile, promote biological nitrogen fixation, increase biodiversity, suppress weed growth, provide supplemental forage, and manage soil moisture levels.
4. Contour Farming- Contour farming is most effective on slopes of 2-10%, but is effective in reducing sheet and rill erosion, and reducing the transport of sediment and other water-borne contaminants.
5. Contour buffer strips- Where soil erosion is a problem, contour buffer strips can be constructed to reduce sheet and rill erosion, reduce the transport of sediment and other water-borne contaminants downslope, on-site or off-site, and to enhance wildlife habitat.
6. Terraces - Where farmland allows, terraces can also be constructed to reduce soil erosion by water where it is a problem.

RUSLE2 Profile Erosion Calculation Record

Info: Triple D 1, 2, & 3, & Phil's Bottom

Inputs:

Location: Illinois\Fulton County

Soil: 279B Rozetta silt loam, 2 to 5 percent slopes\Rozetta silt loam 95%

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\Cont. Corn - fHID man inj, fchisel, sfcult	Corn, grain	bushels	175.00

Contouring: default

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

General yield level: Set by user

Rock cover: 0 %

Outputs:

T value: 5.0 t/ac/yr

Soil loss erod. portion: 2.6 t/ac/yr

Detachment on slope: 2.6 t/ac/yr

Soil loss for cons. plan: 2.6 t/ac/yr

Sediment delivery: 2.6 t/ac/yr

Net C factor: 0.073

Net K factor: 0.42

Crit. slope length: --

Surf. cover after planting: 54 %

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid high disturb.30 inch		62
11/1/0	Chisel, st. pt.		62
5/5/1	Cultivator, field 6-12 in sweeps		54
5/5/1	planter, double disk opnr	Corn, grain	54
10/20/1	Harvest, killing crop 50pct standing stubble		86

Soil conditioning index (SCI): 0.4

Avg. annual slope STIR: 79.29

RUSLE2 Profile Erosion Calculation Record

Info: N Rob's, Phil's, Freeman's

Inputs:

Location: Illinois\Fulton County

Soil: 279B Rozetta silt loam, 2 to 5 percent slopes\Rozetta silt loam 95%

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\Cont. Corn - fHiD man inj, fchisel, sfcult	Corn, grain	bushels	200.00

Contouring: default

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

General yield level: Set by user

Rock cover: 0 %

Outputs:

T value: 5.0 t/ac/yr

Soil loss erod. portion: 2.1 t/ac/yr

Detachment on slope: 2.1 t/ac/yr

Soil loss for cons. plan: 2.1 t/ac/yr

Sediment delivery: 2.1 t/ac/yr

Net C factor: 0.061

Net K factor: 0.42

Crit. slope length: --

Surf. cover after planting: 59 %

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid high disturb.30 inch		66
11/1/0	Chisel, st. pt.		66
5/5/1	Cultivator, field 6-12 in sweeps		59
5/5/1	planter, double disk opnr	Corn, grain	59
10/20/1	Harvest, killing crop 50pct standing stubble		89

Soil conditioning index (SCI): 0.6

Avg. annual slope STIR: 79.29



RUSLE2 Profile Erosion Calculation Record

Info: NW Field, 11th Avenue

Inputs:

Location: Illinois\Fulton County
 Soil: 86B Osco silt loam, 2 to 5 percent slopes\Osco silt loam 90%
 Slope length (horiz): 150 ft
 Avg. slope steepness: 3.5 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\Cont. Corn - fHID man inj, fchisel, sfcult	Corn, grain	bushels	200.00

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial
 General yield level: Set by user
 Rock cover: 0 %

Outputs:

Value: 5.0 t/ac/yr
 Soil loss erod. portion: 1.4 t/ac/yr
 Detachment on slope: 1.4 t/ac/yr
 Soil loss for cons. plan: 1.4 t/ac/yr
 Sediment delivery: 1.4 t/ac/yr
 Net C factor: 0.059
 Net K factor: 0.27

Crit. slope length: --
 Surf. cover after planting: 59 %

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid high disturb.30 inch		66
11/1/0	Chisel, st. pt.		66
5/5/1	Cultivator, field 6-12 in sweeps		59
5/5/1	planter, double disk opnr	Corn, grain	59
10/20/1	Harvest, killing crop 50pct standing stubble		89

Soil conditioning index (SCI): 0.6
 Avg. annual slope STIR: 79.29

RUSLE2 Profile Erosion Calculation Record

Info: Harold's 80 & NW Harold's

Inputs:

Location: Illinois\Fulton County
 Soil: 43A lpava silt loam, 0 to 2 percent slopes\lpava silt loam 88%
 Slope length (horiz): 150 ft
 Avg. slope steepness: 1.0 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\Cont. Corn - fHID man inj, fchisel, sfcult	Corn, grain	bushels	200.00

Contouring: default
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial
 General yield level: Set by user
 Rock cover: 0 %

Outputs:

T value: 5.0 t/ac/yr
 Soil loss erod. portion: 0.47 t/ac/yr
 Detachment on slope: 0.47 t/ac/yr
 Soil loss for cons. plan: 0.47 t/ac/yr
 Sediment delivery: 0.47 t/ac/yr
 Net C factor: 0.067
 Net K factor: 0.27

Crit. slope length: —
 Surf. cover after planting: 59 %

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid high disturb.30 inch		66
11/1/0	Chisel, st. pt.		66
5/5/1	Cultivator, field 6-12 in sweeps		59
5/5/1	planter, double disk opnr	Corn, grain	59
10/20/1	Harvest, killing crop 50pct standing stubble		89

Soil conditioning index (SCI): 0.7
 Avg. annual slope STIR: 79.29



RUSLE2 Profile Erosion Calculation Record

Info: Silo Field, S House, E Bldgs

Inputs:

Location: Illinois\Fulton County

Soil: 675B Greenbush silt loam, 2 to 5 percent slopes\Greenbush silt loam 95%

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\C-C-CS, HiDfman, fchisel, sfcult	Corn, grain	bushels	200.00
CMZ 16\c.Other Local Mgt Records\C-C-CS, HiDfman, fchisel, sfcult	Corn, grain	bushels	200.00
CMZ 16\c.Other Local Mgt Records\C-C-CS, HiDfman, fchisel, sfcult	Corn, silage	tons	34.000

Contouring: default

Diversion/terrace, sediment basin: (none)

Adjust res. burial level: Normal res. burial

Rock cover: 0 %

Strips/barriers: (none)

Subsurface drainage: (none)

General yield level: Set by user

Outputs:

T value: 5.0 t/ac/yr

Soil loss erod. portion: 2.4 t/ac/yr

Detachment on slope: 2.4 t/ac/yr

Soil loss for cons. plan: 2.4 t/ac/yr

Sediment delivery: 2.4 t/ac/yr

Net C factor: 0.10

Net K factor: 0.27

Crit. slope length: --

Surf. cover after planting: --

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid high disturb.30 inch		20
11/1/0	Chisel, st. pt.		20
5/5/1	Cultivator, field 6-12 in sweeps		16
5/5/1	planter, double disk opnr	Corn, grain	16
10/20/1	Harvest, killing crop 50pct standing stubble		87
11/1/1	Manure injector, liquid high disturb.30 inch		64
11/1/1	Chisel, st. pt.		64
5/5/2	Cultivator, field 6-12 in sweeps		57
5/5/2	Planter, double disk opnr	Corn, grain	57
10/20/2	Harvest, killing crop 50pct standing stubble		89
11/1/2	Manure injector, liquid high disturb.30 inch		66
11/1/2	Chisel, st. pt.		66
5/5/3	Cultivator, field 6-12 in sweeps		58
5/5/3	Planter, double disk opnr	Corn, silage	58
10/20/3	Harvest, silage		38

Soil conditioning index (SCI): 0.4

annual slope STIR: 79.29

Acreage and Proportionate Extent of the Soils

Fulton County, Illinois

Map symbol	Map unit name	Acres	Percent
17A	Keomah silt loam, 0 to 2 percent slopes	20,683	3.7
43A	Ipava silt loam, 0 to 2 percent slopes	46,563	8.2
86B	Osco silt loam, 2 to 5 percent slopes	17,276	3.1
257A	Clarksdale silt loam, 0 to 2 percent slopes	16,785	3.0
279B	Rozetta silt loam, 2 to 5 percent slopes	76,474	13.5
675B	Greenbush silt loam, 2 to 5 percent slopes	9,679	1.7
Total		187,460	33.2

* Less than 0.1 percent.

Water Features

Fulton County, Illinois

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>	<i>Ft</i>				
17A:										
Keomah	C	Very high	January	0.5-2.0	>6.0	---	---	None	---	None
			February	0.5-2.0	>6.0	---	---	None	---	None
			March	0.5-2.0	>6.0	---	---	None	---	None
			April	0.5-2.0	>6.0	---	---	None	---	None
			May	0.5-2.0	>6.0	---	---	None	---	None
43A:										
Ipava	B	Low	January	1.0-2.0	>6.0	---	---	None	---	None
			February	1.0-2.0	>6.0	---	---	None	---	None
			March	1.0-2.0	>6.0	---	---	None	---	None
			April	1.0-2.0	>6.0	---	---	None	---	None
			May	1.0-2.0	>6.0	---	---	None	---	None
86B:										
Osco	B	Low	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None
257A:										
Clarksdale	C	Very high	January	0.5-2.0	>6.0	---	---	None	---	None
			February	0.5-2.0	>6.0	---	---	None	---	None
			March	0.5-2.0	>6.0	---	---	None	---	None
			April	0.5-2.0	>6.0	---	---	None	---	None
			May	0.5-2.0	>6.0	---	---	None	---	None
279B:										
Rozetta	B	Low	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None

Water Features

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Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>	<i>Ft</i>				
675B:										
Greenbush	B	Low	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None