

## 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

The cropland utilized in this CNMP will be in a continuous corn rotation. Continuous corn fields are chisel plowed in the fall. Fields are field cultivated in the spring prior to planting corn on 30” rows. All fields were run using RUSLE2 as outlined below. More comprehensive RUSLE2 reports can also be found in the printed reports on the following pages.

Field Name	Soil Type	Crop	Yield Goal Bu/Acre	Soil Loss T	RUSLE 2 Soil Loss
R/C 116	675B Greenbush silt loam	Continuous Corn	200	5.0	1.4
R/C 19.1	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
R/C 40	735D2 Casco Rodman Fox Complex	Continuous Corn	200	3.0	2.2
R/C 8.1	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
R/C 2.5	8451A Lawosn silt loam	Continuous Corn	200	5.0	0.4
R/C 24.2	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
R/C 4.9	429C2 Palsgrove silt loam	Continuous Corn	200	3.0	2.4
Schuldt	675B Greenbush silt loam	Continuous Corn	200	5.0	1.4
Todd S 76.1	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
Todd S 56.4	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
Todd S 4.9	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
Dales 2	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
Todd S 35.7 & 24.5	8451A Lawosn silt loam	Continuous Corn	200	5.0	0.4
R/C 135.3	280C2 Fayette silt loam	Continuous Corn	200	5.0	2.4
Wenzel 40	279B Rozetta silt loam	Continuous Corn	200	5.0	1.7
Wenzel 120	675C2 Greenbush silt loam	Continuous Corn	200	5.0	3.1
Wenzel 80	675B Greenbush silt loam	Continuous Corn	200	5.0	1.4
Wenzel 80 South	675C2 Greenbush silt loam	Continuous Corn	200	5.0	3.1
Wenzel 25	8451A Lawosn silt loam	Continuous Corn	200	5.0	0.4
Wenzel 15	279B Rozetta silt loam	Continuous Corn	200	5.0	1.7
Wenzel 90	419C2 Flagg silt loam	Continuous Corn	200	5.0	3.6
Molitor 50	419C2 Flagg silt loam	Continuous Corn	200	5.0	3.6
Smittal 160	419C2 Flagg silt loam	Continuous Corn	200	5.0	3.6
Molitor 40	279B Rozetta silt loam	Continuous Corn	200	5.0	1.7
Kleckner 160	61B Atterberry silt loam	Continuous Corn	200	5.0	1.4
Dan Hughes 95	279B Rozetta silt loam	Continuous Corn	200	5.0	1.7

All fields meet T with current and planned management & rotations.

## Land Treatment Practices Current & Planned

Nutrient Management – Code 590 – Animal manures and commercial fertilizer will be applied to land to help meet crop nutrient needs. Soil testing, manure analysis, and record keeping will be performed. (*current & planned- All Fields*)

Waste Utilization – Code 633 - Animal manures will be applied to land in an environmentally acceptable manner to maintain or improve soil, air, water, and plant resources. (*current & planned – All Fields*)

Manure Transfer – Code 634 – Manure will be conveyed using structures, conduit, or equipment in order to transfer manure through a hopper, reception pit, pump, conduit, or hauling equipment to a manure storage facility, loading area, or to agricultural land for final utilization. (*current –& planned – Liquid application via broadcast*)

Grass Waterway – Code 412 – A natural or constructed channel that is shaped and graded to required dimensions and established with suitable vegetation to convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding, to reduce gully erosion, or to protect and/or improve water quality in areas where added water conveyance capacity and vegetative protection are needed to control erosion resulting from concentrated runoff. (*current –R/C 116, R/C 40, Wenzel 80 South, Todd S 76.1, Todd S 56.4, R/C 135.3; none planned*)



## RUSLE2 Profile Erosion Calculation Record

**Fields:** Kleckner 160

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 61B Atterberry silt loam, 2 to 5 percent slopes\Atterberry silt loam 98&per;

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T 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: 0.058

Net K factor: 0.36

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.64

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** *Wenzel 40, Wenzel 15, Molitor 40, Dan Hughes 95*

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 279B Rozetta silt loam, 2 to 5 percent slopes\Rozetta silt loam 91&per;

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17\c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 5.0 t/ac/yr

Soil loss erod. portion: 1.7 t/ac/yr

Detachment on slope: 1.7 t/ac/yr

Soil loss for cons. plan: 1.7 t/ac/yr

Sediment delivery: 1.7 t/ac/yr

Net C factor: 0.057

Net K factor: 0.41

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.62

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** R/C 19.1, R/C 8.1, R/C 24.2, Todd S 76.1, Todd S 56.4, Todd S 4.9, Dales 2, R/C 135.3

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 280C2 Fayette silt loam, 4 to 7 percent slopes, eroded\Fayette silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 6.0 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 17\c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**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: 0.057

Net K factor: 0.36

Crit. slope length: -- ft

Surf. cover after planting: 32 %

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.56

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** *Wenzel 90, Molitor 50, Smittal 160*

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 419C2 Flagg silt loam, 5 to 10 percent slopes, eroded\Flagg silt loam 95&per;

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 5.0 t/ac/yr

Soil loss erod. portion: 3.6 t/ac/yr

Detachment on slope: 3.6 t/ac/yr

Soil loss for cons. plan: 3.6 t/ac/yr

Sediment delivery: 3.6 t/ac/yr

Net C factor: 0.055

Net K factor: 0.41

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.47

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** R/C 4.9

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 429C2 Palsgrove silt loam, 5 to 10 percent slopes, eroded\Palsgrove silt loam 90%

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17\c.Other Local Mgt Records\RC Cont Corn no fall chisel	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 3.0 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: 0.039

Net K factor: 0.41

Crit. slope length: -- ft

Surf. cover after planting: 68 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		87
4/1/1	Cultivator, field 6-12 in sweeps		74
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	68
10/10/1	Harvest, killing crop 50pct standing stubble		90

Soil conditioning index (SCI): 0.86

Avg. annual slope STIR: 29

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** R/C 4.9, Schuldt, Wenzel 80

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson 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 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17\c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T 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: 0.058

Net K factor: 0.36

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.64

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr





## RUSLE2 Profile Erosion Calculation Record

**Fields:** *Wenzel 80 South, Wenzel 120*

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 675C2 Greenbush silt loam, 5 to 10 percent slopes, eroded\Greenbush silt loam 91&per;

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 5.0 t/ac/yr

Soil loss erod. portion: 3.1 t/ac/yr

Detachment on slope: 3.1 t/ac/yr

Soil loss for cons. plan: 3.1 t/ac/yr

Sediment delivery: 3.1 t/ac/yr

Net C factor: 0.055

Net K factor: 0.36

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.51

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** R/C 40

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 735D2 Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded\Casco silt loam 35%

Slope length (horiz): 150 ft

Avg. slope steepness: 9.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17c.Other Local Mgt Records\RC Cont Corn no fall chisel	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 3.0 t/ac/yr

Soil loss erod. portion: 2.2 t/ac/yr

Detachment on slope: 2.2 t/ac/yr

Soil loss for cons. plan: 2.2 t/ac/yr

Sediment delivery: 2.2 t/ac/yr

Net C factor: 0.041

Net K factor: 0.31

Crit. slope length: -- ft

Surf. cover after planting: 68 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		87
4/1/1	Cultivator, field 6-12 in sweeps		74
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	68
10/10/1	Harvest, killing crop 50pct standing stubble		90

Soil conditioning index (SCI): 0.87

Avg. annual slope STIR: 29

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr



## RUSLE2 Profile Erosion Calculation Record

**Fields:** R/C 2.5, Todd S 35.7 & 24.5, Wenzel 25

**File:** Plan: Profile (Temp. scenario[1]) of Rancho Cantera\*

**Access Group:** R2\_NRCS\_Fld\_Office

**Inputs:**

Location: Illinois\Stephenson County

Soil: 8451A Lawson silt loam, 0 to 2 percent slopes, occasionally flooded\Lawson silt loam 90%

Slope length (horiz): 150 ft

Avg. slope steepness: 1.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 17c.Other Local Mgt Records\RC Cont Corn	Corn, grain	bushels	195.00

Contouring: a. rows up-and-down hill

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: bury 20% more than normal

General yield level: Set by user

Rock cover: 0 %

**Outputs:**

T value: 5.0 t/ac/yr

Soil loss erod. portion: 0.40 t/ac/yr

Detachment on slope: 0.40 t/ac/yr

Soil loss for cons. plan: 0.40 t/ac/yr

Sediment delivery: 0.40 t/ac/yr

Net C factor: 0.062

Net K factor: 0.31

Crit. slope length: -- ft

Surf. cover after planting: 32 %

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/10/0	Manure spreader, liquid		84
11/11/0	Chisel plow, disk, st. pts., cover disks		36
4/1/1	Cultivator, field 6-12 in sweeps		37
4/3/1	Planter, double disk opnr w/fluted coulter	Corn, grain	32
10/10/1	Harvest, killing crop 50pct standing stubble		87

Soil conditioning index (SCI): 0.72

Avg. annual slope STIR: 96

Wind & irrigation-induced erosion for SCI: 0 t/ac/yr