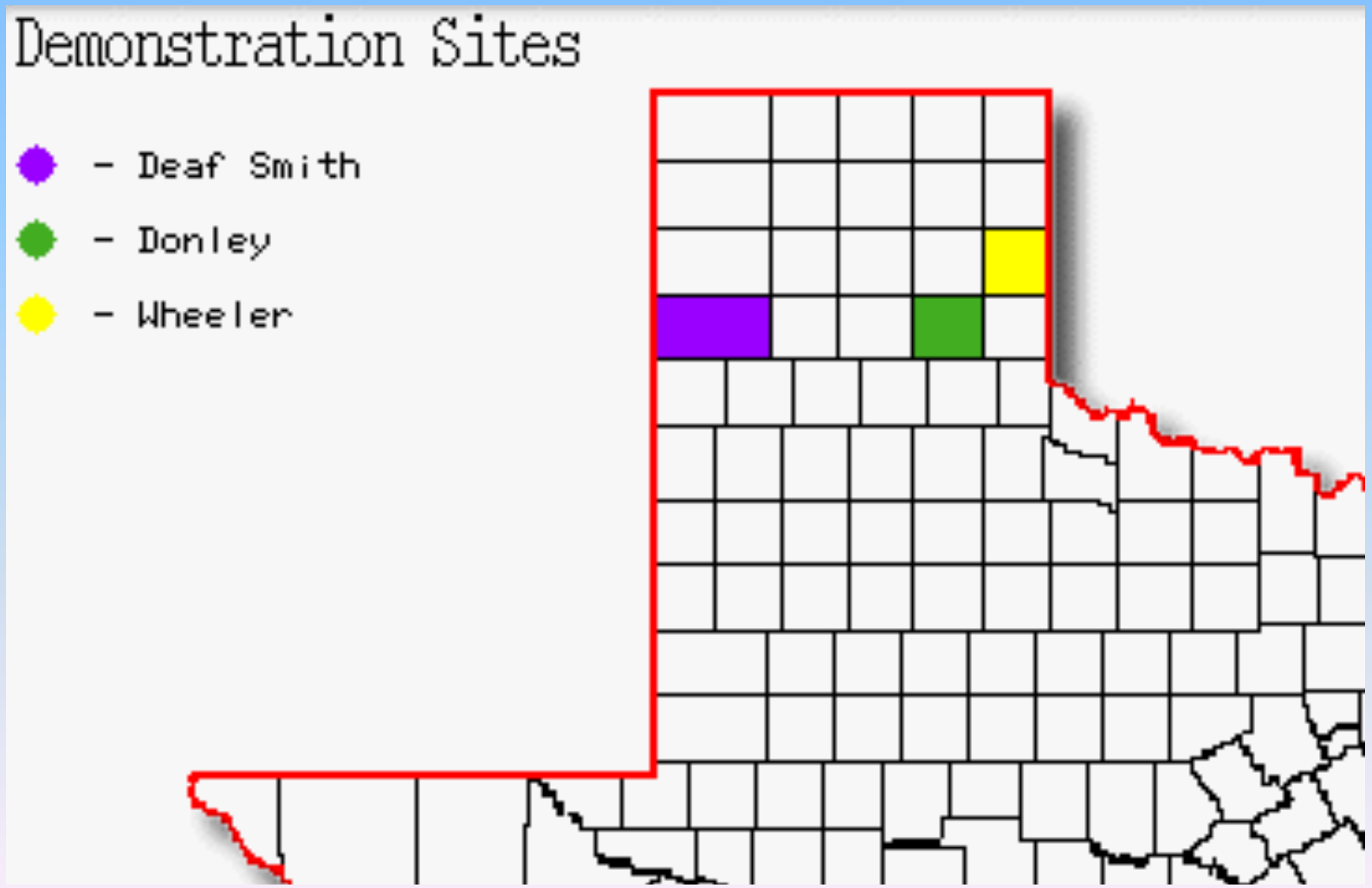
TCFA/Texas AgriLife/WTAMU Training/Demonstration Grant

Matt Davis

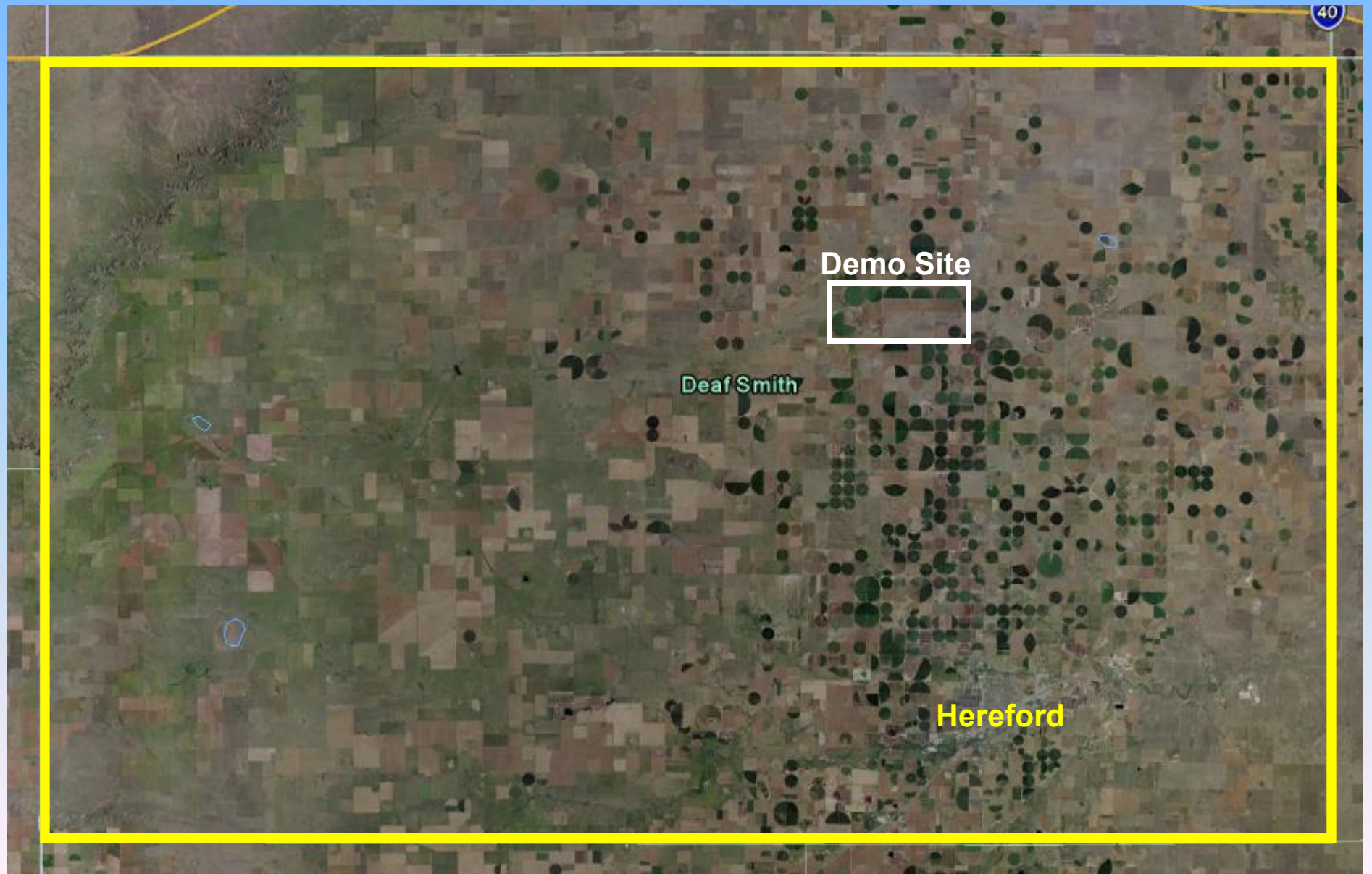
Texas Cattle Feeders Association

Demonstration Sites

Deaf Smith, Donley and Wheeler Counties



Deaf Smith County



Deaf Smith County

- **<u>Soil Sampling (fields, sub-areas, & down-gradient)</u>**
- **No. of fields:** **5**
- **Irrigation:** **Center pivots**
- **Soil types:** **Pullman clay loam**
- **Type of flow:** **Sheet**
- **Crops:** **Corn, cotton, wheat hay, sorghum silage**
- **Tillage:** **Minimum / Strip tillage / DMI**
- **Fertilizer:** **Manure and commercial**
- **Time of appl.:** **Fall and winter**

Deaf Smith County Soil Results
DSC-1

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	11	26	20
Subarea	16	21	28
Down 1	24	23	31
Down 2	14	24	37

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	8	12	33
Down 1	15	10	21
Down 2	12	11	26

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	64	56	70
Subarea	40	30	66
Down 1	27	21	34
Down 2	30	24	32

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	16	14	91
Down 1	23	12	30
Down 2	24	15	36

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	608	576	627
Subarea	589	524	619
Down 1	596	503	607
Down 2	562	549	602

Potassium 6-24" (ppm)

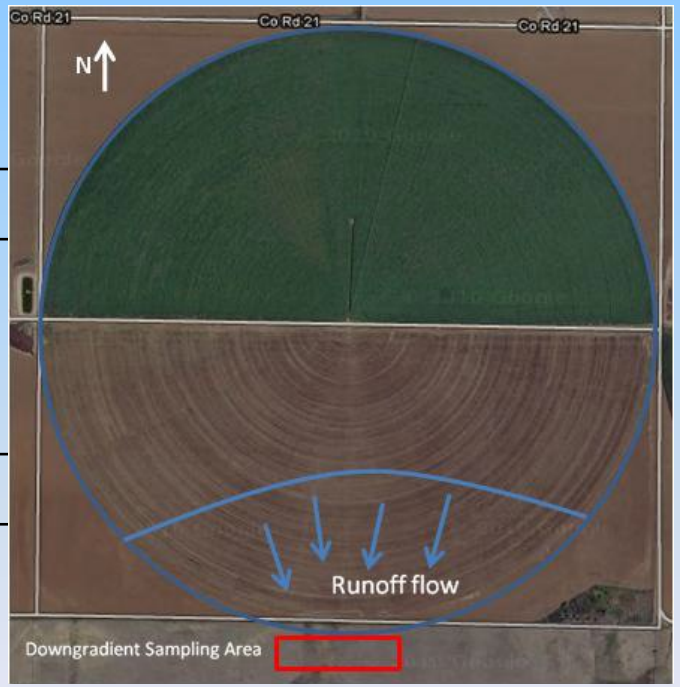
	2010	2011	2012
Subarea	370	325	556
Down 1	544	395	547
Down 2	573	570	643

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.3	2.0	1.7
Subarea	1.4	1.9	1.7
Down 1	1.3	1.6	1.8
Down 2	1.0	1.5	1.6

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.9	1.4	2.8
Down 1	1.4	1.4	1.7
Down 2	1.0	1.5	1.6



Deaf Smith County Soil Results
DSC-2 (SW Subarea)

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	28	48	32
SW Subarea	20	28	71
SW Down 1	11	25	22
SW Down 2	19	28	32

Nitrogen 6-24" (ppm)

	2010	2011	2012
SW Subarea	20	15	59
SW Down 1	13	16	16
SW Down 2	17	20	26

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	87	75	90
SW Subarea	97	29	94
SW Down 1	30	11	22
SW Down 2	26	12	27

Phosphorus 6-24" (ppm)

	2010	2011	2012
SW Subarea	54	16	91
SW Down 1	32	17	29
SW Down 2	29	18	25

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	631	649	555
SW Subarea	497	435	610
SW Down 1	474	418	507
SW Down 2	487	431	496

Potassium 6-24" (ppm)

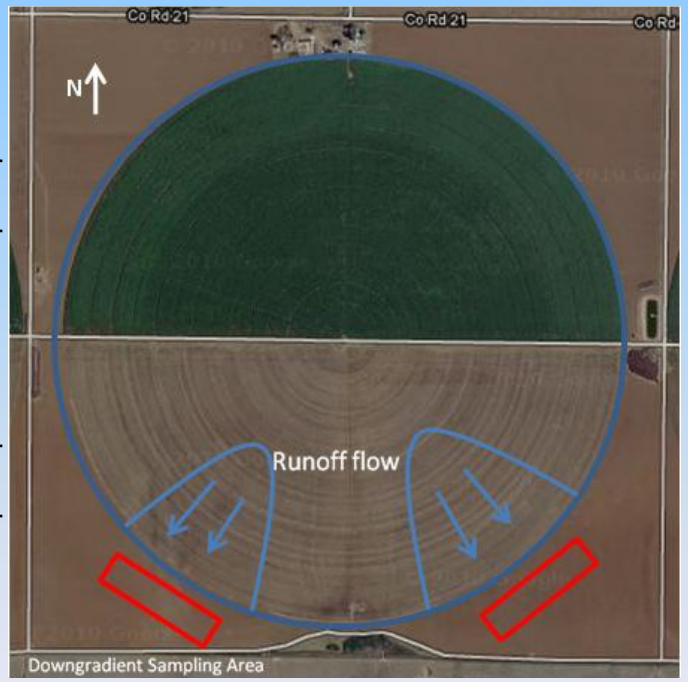
	2010	2011	2012
SW Subarea	437	278	502
SW Down 1	494	316	519
SW Down 2	499	330	552

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.7	1.9	1.8
SW Subarea	1.2	1.8	2.0
SW Down 1	0.9	1.6	1.5
SW Down 2	0.9	1.5	1.2

Organic Matter 6-24" (%)

	2010	2011	2012
SW Subarea	1.3	1.4	1.8
SW Down 1	1.2	1.4	1.4
SW Down 2	1.4	1.4	2.2



Deaf Smith County Soil Results
DSC-2 (SE Subarea)

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	28	48	32
SE Subarea	14	19	67
SE Down 1	13	20	27
SE Down 2	13	19	18

Nitrogen 6-24" (ppm)

	2010	2011	2012
SE Subarea	7	7	52
SE Down 1	14	12	29
SE Down 2	15	12	19

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	87	75	90
SE Subarea	60	35	54
SE Down 1	15	10	17
SE Down 2	16	10	13

Phosphorus 6-24" (ppm)

	2010	2011	2012
SE Subarea	48	10	60
SE Down 1	16	7	20
SE Down 2	18	10	14

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	631	649	555
SE Subarea	493	409	486
SE Down 1	372	383	420
SE Down 2	442	417	454

Potassium 6-24" (ppm)

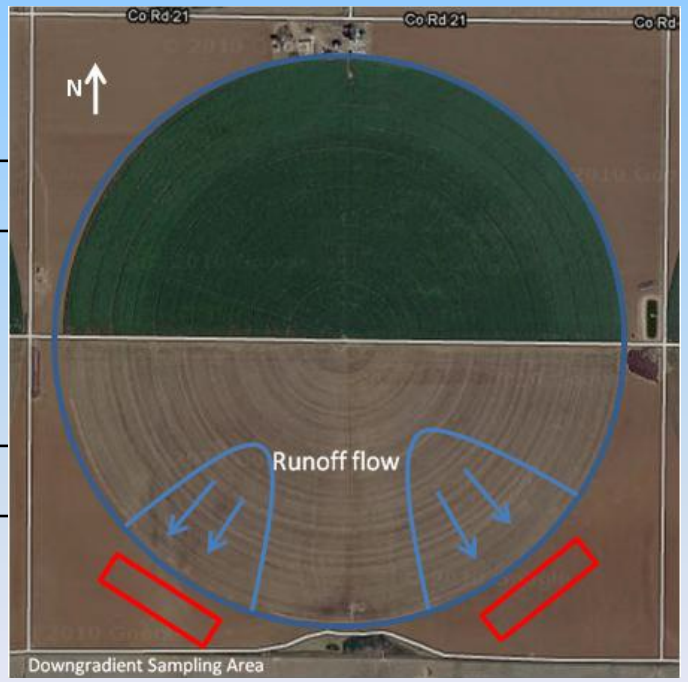
	2010	2011	2012
SE Subarea	698	257	487
SE Down 1	455	293	408
SE Down 2	478	320	457

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.7	1.9	1.8
SE Subarea	1.0	1.7	1.9
SE Down 1	0.6	1.2	2.4
SE Down 2	0.8	1.2	1.7

Organic Matter 6-24" (%)

	2010	2011	2012
SE Subarea	0.8	1.2	1.9
SE Down 1	0.8	1.4	2.3
SE Down 2	1.0	1.8	1.6



Deaf Smith County Soil Results
DSC-3

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	27	40	33
Subarea	23	22	19
Down 1	21	29	31
Down 2	24	27	27

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	19	10	23
Down 1	19	18	26
Down 2	22	15	21

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	129	67	151
Subarea	74	25	60
Down 1	38	26	31
Down 2	26	15	31

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	74	9	50
Down 1	50	9	49
Down 2	31	11	29

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	747	582	765
Subarea	588	464	483
Down 1	506	420	471
Down 2	448	388	427

Potassium 6-24" (ppm)

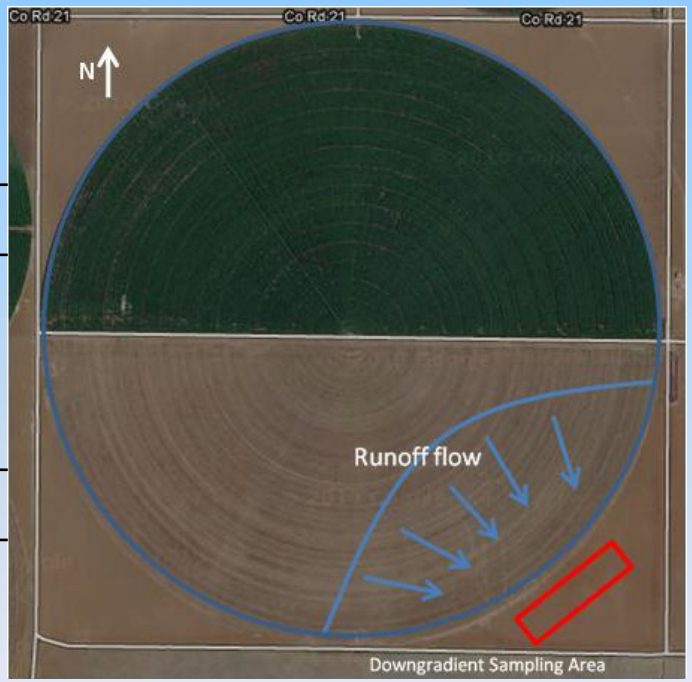
	2010	2011	2012
Subarea	575	261	477
Down 1	547	290	529
Down 2	441	264	468

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.7	1.8	2.4
Subarea	1.4	1.7	1.7
Down 1	0.9	2.3	1.4
Down 2	0.7	1.4	1.3

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	1.3	1.2	1.6
Down 1	0.8	1.1	1.4
Down 2	0.9	1.1	1.4



Deaf Smith County Soil Results
DSC-4

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	5	80	26
Subarea	5	70	54
Down 1	20	59	100
Down 2	21	52	110

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	6	40	45
Down 1	25	44	90
Down 2	30	42	120

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	105	155	170
Subarea	82	162	102
Down 1	56	56	78
Down 2	70	44	87

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	30	71	60
Down 1	69	28	81
Down 2	56	27	82

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	582	772	722
Subarea	583	742	612
Down 1	617	577	595
Down 2	681	567	617

Potassium 6-24" (ppm)

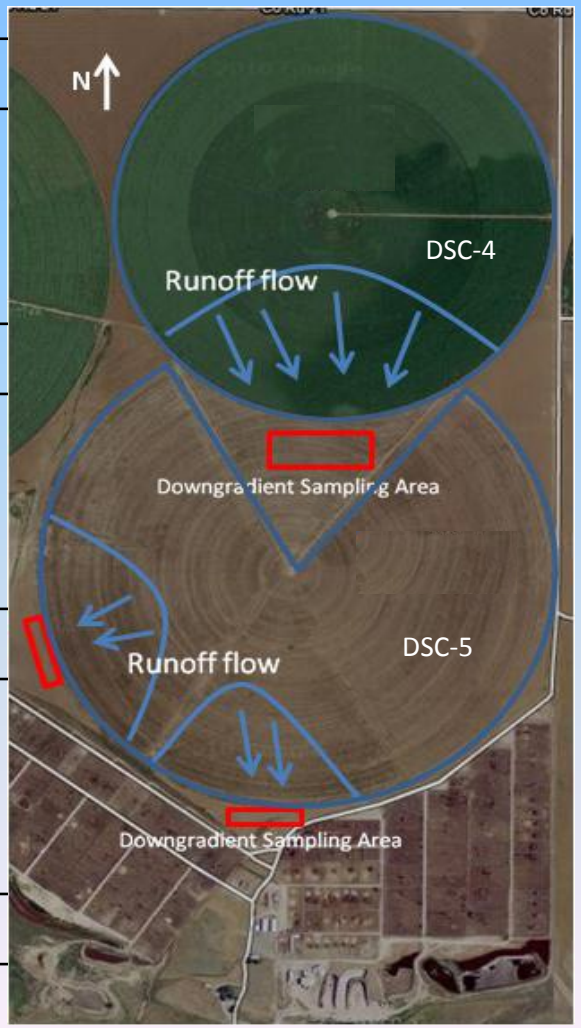
	2010	2011	2012
Subarea	416	521	575
Down 1	661	455	561
Down 2	710	498	559

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.2	2.2	2.4
Subarea	1.4	2.0	1.9
Down 1	1.1	1.7	<0.2
Down 2	1.2	1.7	1.5

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	1.2	1.8	1.8
Down 1	1.1	1.6	1.7
Down 2	1.2	1.6	1.3



Deaf Smith County Soil Results
DSC-5 (SW Subarea)

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	15	35	70
SW Subarea	22	61	59
SW Down 1	120	140	140
SW Down 2	100	140	160

Nitrogen 6-24" (ppm)

	2010	2011	2012
SW Subarea	37	47	62
SW Down 1	100	120	100
SW Down 2	110	200	170

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	42	40	52
SW Subarea	67	82	103
SW Down 1	267	154	218
SW Down 2	268	164	217

Phosphorus 6-24" (ppm)

	2010	2011	2012
SW Subarea	57	30	70
SW Down 1	257	100	348
SW Down 2	271	100	255

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	468	408	509
SW Subarea	385	464	583
SW Down 1	1056	879	1073
SW Down 2	1146	949	1178

Potassium 6-24" (ppm)

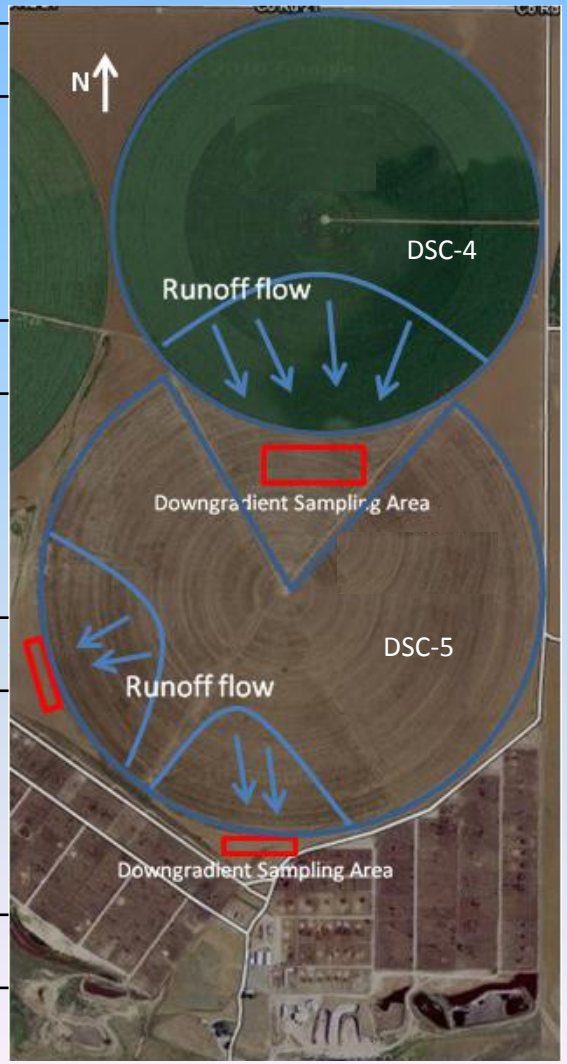
	2010	2011	2012
SW Subarea	446	327	605
SW Down 1	1088	645	1355
SW Down 2	1106	661	1178

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.1	1.8	2.0
SW Subarea	1.4	2.2	2.4
SW Down 1	1.9	2.4	2.5
SW Down 2	2.3	2.4	2.5

Organic Matter 6-24" (%)

	2010	2011	2012
SW Subarea	1.9	1.7	2.4
SW Down 1	2.3	2.1	2.6
SW Down 2	2.3	2.1	2.5



Deaf Smith County Soil Results
DSC-5 (S Subarea)

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	15	35	70
S Subarea	26	51	61
S Down 1	80	180	100
S Down 2	80	170	160

Nitrogen 6-24" (ppm)

	2010	2011	2012
S Subarea	25	37	55
S Down 1	100	150	110
S Down 2	110	130	140

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	42	40	52
S Subarea	54	62	69
S Down 1	226	238	192
S Down 2	236	199	219

Phosphorus 6-24" (ppm)

	2010	2011	2012
S Subarea	16	42	103
S Down 1	216	122	277
S Down 2	242	172	293

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	468	408	509
S Subarea	270	360	639
S Down 1	1118	1160	1075
S Down 2	1346	1143	1247

Potassium 6-24" (ppm)

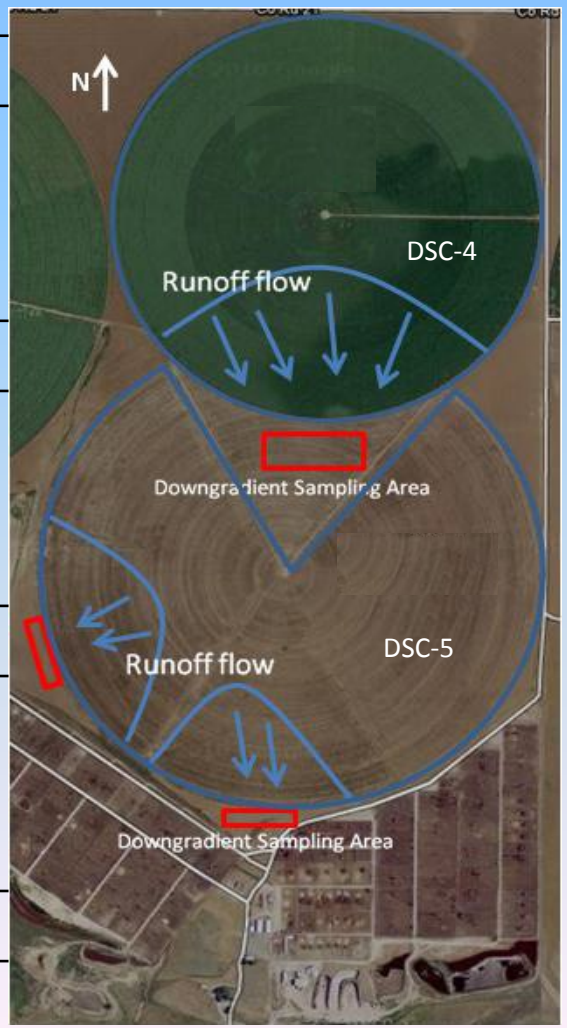
	2010	2011	2012
S Subarea	270	360	639
S Down 1	1079	816	1096
S Down 2	1229	948	1226

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.1	1.8	2.0
S Subarea	1.3	1.9	1.9
S Down 1	2.2	2.5	2.1
S Down 2	2.0	2.3	2.3

Organic Matter 6-24" (%)

	2010	2011	2012
S Subarea	0.7	1.6	1.9
S Down 1	2.2	2.1	2.5
S Down 2	2.1	2.1	2.5



Deaf Smith County Manure/Compost Results

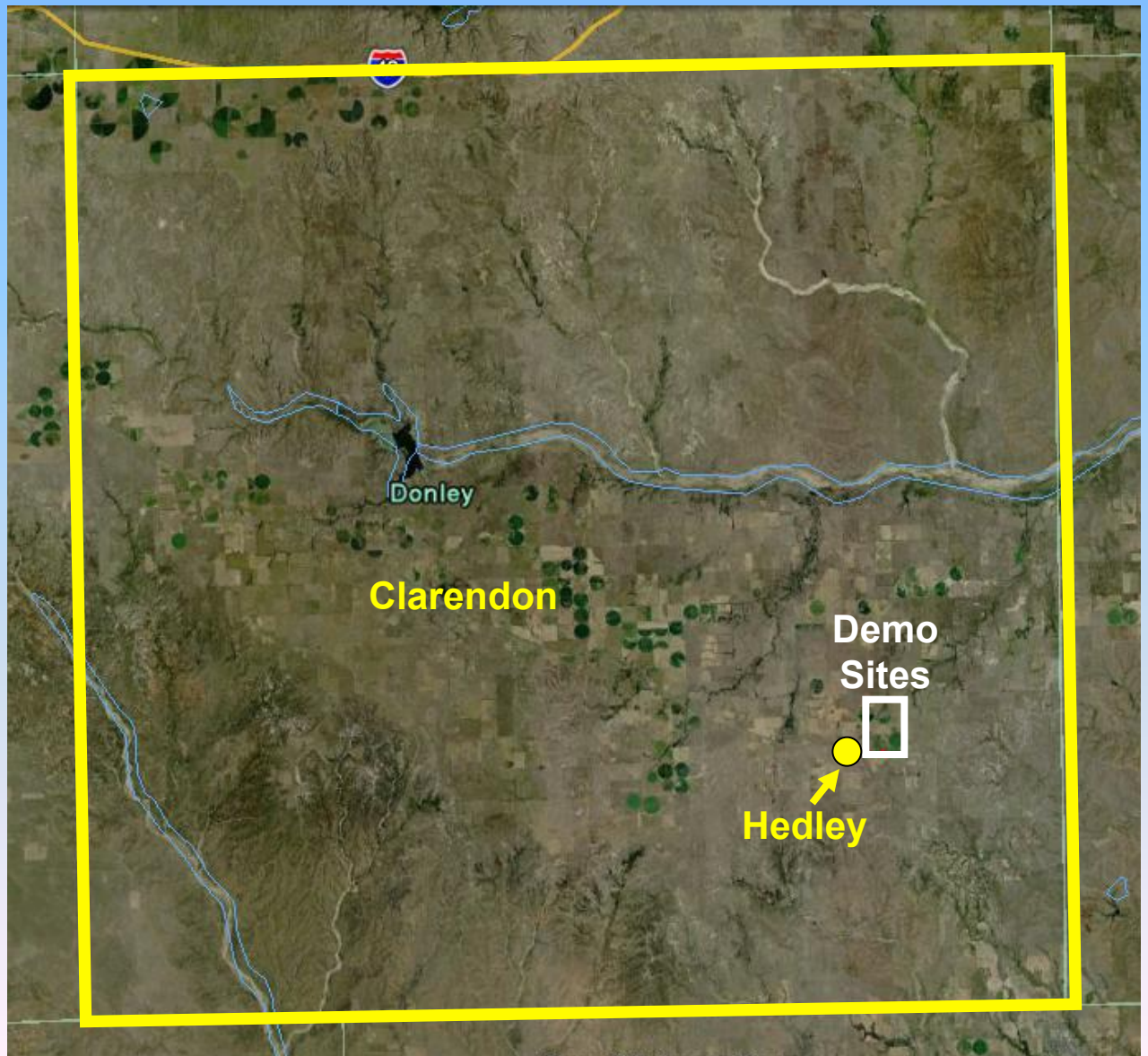
	Sample Year	N %	P %	K %	Ca %	Mg %	Na. %	Zn. ppm	Fe. ppm	Cu. ppm	Mn. ppm	%MC
DSC-1 Manure	2010	1.68	0.788	1.930	2.750	0.635	0.400	120	3060	19	140	28.4
DSC-2 Manure	2010	1.68	0.733	1.740	3.100	0.627	0.436	120	4330	21	173	20.1
	2011	2.05	0.970	2.350	3.250	0.882	0.500	222	4070	36	220	13.7
	2012	1.13	0.879	1.620	3.800	0.683	0.385	150	5120	25	206	20.2
DSC-4 Manure	2010	1.55	0.829	1.910	3.230	0.666	0.476	136	4600	23	186	15.6
Runoff Area Manure	2011	1.63	0.821	1.780	3.330	0.749	0.319	281	5150	51	328	18.6
	2012	1.45	1.430	1.870	2.500	0.495	0.411	114	3780	21	151	21.8
	2013	1.67	1.730	2.230	1.690	0.549	0.500	126	2570	22	145	33.7
Runoff Area Compost	2011	1.88	0.812	1.690	2.200	0.580	0.389	122	3390	20	144	28.6
	2012	1.64	1.470	2.190	2.610	1.170	0.304	293	5120	55	306	25.2
	2013	1.53	1.440	2.050	3.000	1.150	0.308	247	5290	45	271	19.4

Deaf Smith County Water Well Results

	Year	*E. Coli*	Total P	Sol. P	TKN	NO3	NH3
DSC-1-W-1	2011	0	0.18	0.02	0.92	6.2	0.42
	2012	0	0.22	0.07	6.11	12.32	0.17
DSC-2-W-1	2011	0	0.17	0.02	0.1	2.54	0.12
	2012	0	0.2	0.07	6.89	4.57	0.07
DSC-2-W-2	2011	0	0.01	0.01	0.96	4.47	0.08
	2012	0	0.13	0.07	8.87	8.69	0.17
DSC-2-W-3	2011	0	0.2	0.02	0.94	3.08	0.44
	2012	0	0.11	0.08	8.31	6.5	0.19
DSC-2-W-4	2011	0	0.15	0.02	0.75	2.84	0.17
	2012	0	0.2	0.08	9.64	6.12	0.2
DSC-3-W-1	2011	0	0.16	0.02	0.68	2.37	0.62
	2012	0	0.23	0.12	11.35	4.93	0.3
DSC-3-W-2	2011	0	0.16	0.02	0.89	2.03	0.07
	2012	0	0.2	0.11	6.2	4.42	0.3
DSC-4-W-1	2012	0	0.21	0.08	5.34	4.34	0.19
DSC-4-W-2	2012	0	0.21	0.08	6.9	5.26	0.14
DSC-5-W-1	2012	0	0.23	0.08	6.35	8.75	0.25
DSC-6-W-1	2012	0	0.23	0.07	6.18	8.39	0.18

*all results in mg/L

Donley County



Donley County

- **<u>Soil Sampling (fields, sub-areas, & down-gradient)</u>**
- **No. of fields: 3**
- **Irrigation: Center pivots**
- **Soil types: Veal fine sandy loam**
- **Type of flow: Channel and sheet**
- **Crops: Cotton, peanuts, wheat**
- **Tillage: Minimum tillage**
- **Fertilizer: Compost and commercial**
- **Time of appl.: Winter**

Donley County Soil Results
DC-1

4 Ton/Acre Compost 3/10

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	1	3	3
Subarea	2	2	2
Down 1	2	2	5
Down 2	1	3	6

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	2	2	1
Down 1	1	3	5
Down 2	1	3	3

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	33	38	27
Subarea	31	28	44
Down 1	26	24	29
Down 2	19	17	14

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	36	26	41
Down 1	12	16	15
Down 2	14	16	15

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	96	93	94
Subarea	93	90	68
Down 1	132	149	149
Down 2	142	129	116

Potassium 6-24" (ppm)

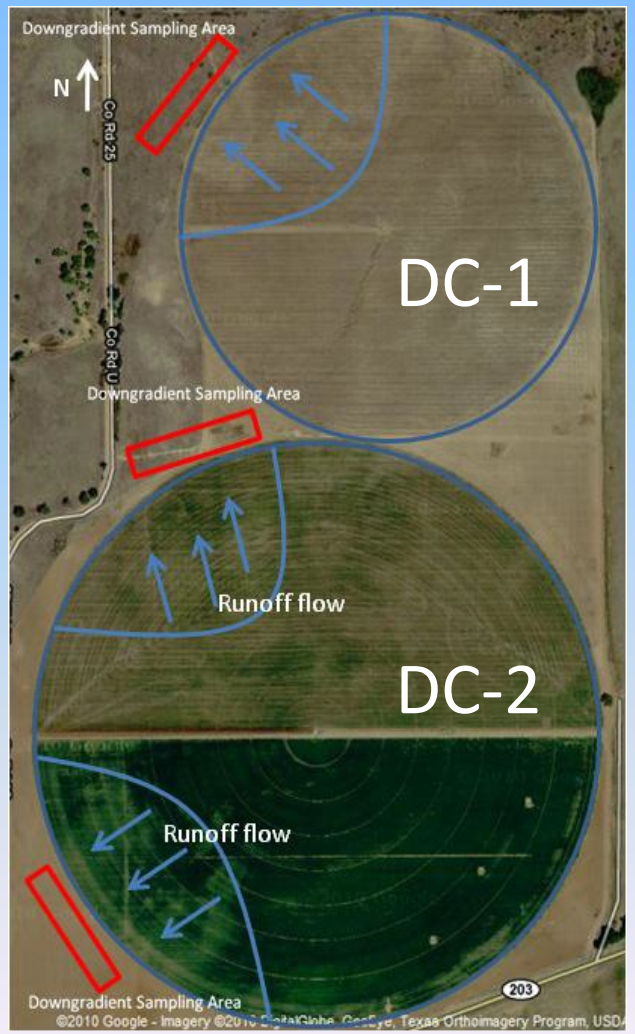
	2010	2011	2012
Subarea	85	84	67
Down 1	89	104	104
Down 2	108	93	117

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.5	0.3	0.3
Subarea	0.3	0.2	<.02
Down 1	0.8	0.4	0.8
Down 2	0.7	0.4	0.4

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.3	0.2	<.02
Down 1	0.3	0.2	0.7
Down 2	0.5	0.2	0.5



Donley County Soil Results
DC-2 (NW Subarea)

North 1/2:
4 Ton/Acre Compost 4/12

South 1/2:
4 Ton/Acre Compost 3/11

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	3	4	7
NW Subarea	5	4	5
NW Down 1	2	2	2
NW Down 2	1	1	3

Nitrogen 6-24" (ppm)

	2010	2011	2012
NW Subarea	8	6	9
NW Down 1	2	2	2
NW Down 2	<1	1	2

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	47	52	58
NW Subarea	73	75	85
NW Down 1	54	45	36
NW Down 2	24	19	26

Phosphorus 6-24" (ppm)

	2010	2011	2012
NW Subarea	26	55	59
NW Down 1	21	30	16
NW Down 2	13	15	10

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	99	97	147
NW Subarea	137	147	155
NW Down 1	154	158	119
NW Down 2	131	120	257

Potassium 6-24" (ppm)

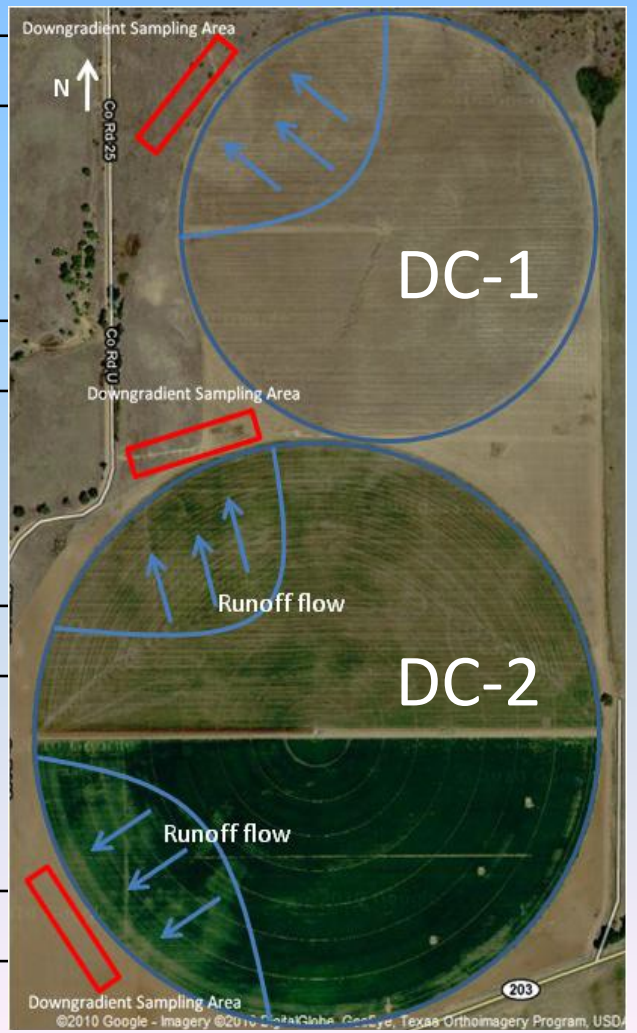
	2010	2011	2012
NW Subarea	163	163	166
NW Down 1	101	107	195
NW Down 2	84	106	195

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.4	0.2	0.3
NW Subarea	0.6	0.4	0.4
NW Down 1	0.7	0.5	0.4
NW Down 2	0.6	0.4	1.5

Organic Matter 6-24" (%)

	2010	2011	2012
NW Subarea	0.5	0.4	0.4
NW Down 1	0.3	<0.2	0.9
NW Down 2	0.4	0.3	1.2



Donley County Soil Results
DC-2 (SW Subarea)

North 1/2:
4 Ton/Acre Compost 4/12

South 1/2:
4 Ton/Acre Compost 3/11

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	3	4	7
SW Subarea	3	5	2
SW Down 1	1	<1	3
SW Down 2	1	<0.2	3

Nitrogen 6-24" (ppm)

	2010	2011	2012
SW Subarea	2	4	3
SW Down 1	3	1	3
SW Down 2	2	<0.2	2

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	47	52	58
SW Subarea	24	19	26
SW Down 1	82	48	15
SW Down 2	70	53	51

Phosphorus 6-24" (ppm)

	2010	2011	2012
SW Subarea	41	32	33
SW Down 1	65	35	48
SW Down 2	45	36	47

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	99	97	147
SW Subarea	131	120	257
SW Down 1	107	125	224
SW Down 2	120	108	131

Potassium 6-24" (ppm)

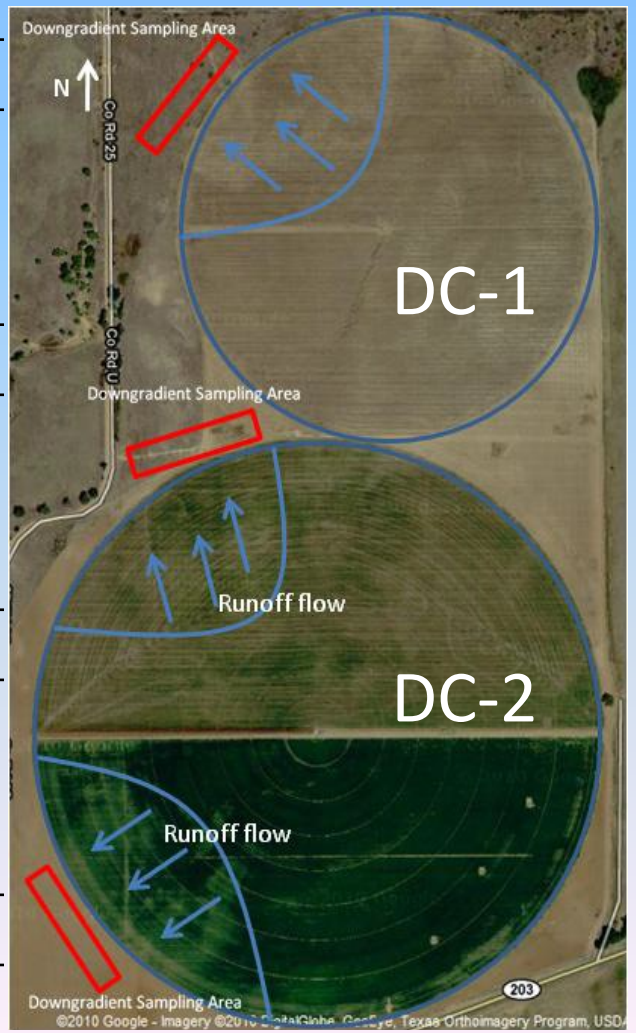
	2010	2011	2012
SW Subarea	114	109	112
SW Down 1	120	104	151
SW Down 2	112	99	97

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.4	0.2	0.3
SW Subarea	0.3	<0.2	0.2
SW Down 1	0.3	0.2	1.4
SW Down 2	0.3	<0.2	0.3

Organic Matter 6-24" (%)

	2010	2011	2012
SW Subarea	0.3	0.3	0.3
SW Down 1	<0.2	<0.2	0.3
SW Down 2	<0.2	<0.2	0.2



Donley County Soil Results
DC-3

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	2	4	2
Subarea	4	3	2
Down 1	9	3	2
Down 2	6	2	2

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	4	6	4
Down 1	7	1	1
Down 2	4	2	2

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	24	17	24
Subarea	20	17	22
Down 1	30	11	52
Down 2	18	10	25

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	16	7	14
Down 1	15	9	13
Down 2	9	8	16

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	128	136	165
Subarea	144	132	185
Down 1	246	195	91
Down 2	213	206	94

Potassium 6-24" (ppm)

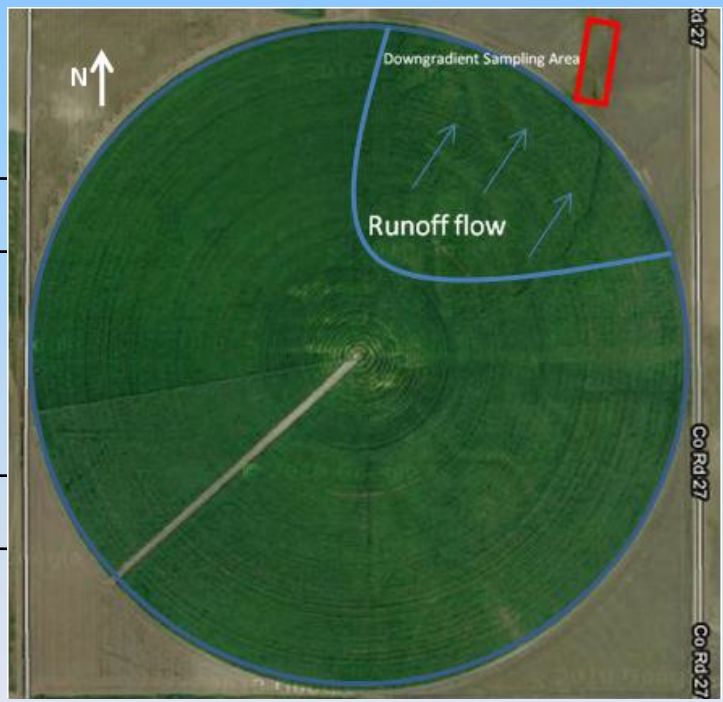
	2010	2011	2012
Subarea	117	111	185
Down 1	181	168	90
Down 2	129	165	112

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.8	0.7	0.7
Subarea	0.8	0.7	0.8
Down 1	1.3	0.1	0.2
Down 2	1.1	0.1	0.3

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.6	0.7	0.9
Down 1	0.8	0.1	0.3
Down 2	0.9	0.2	0.5



Donley County Compost Results

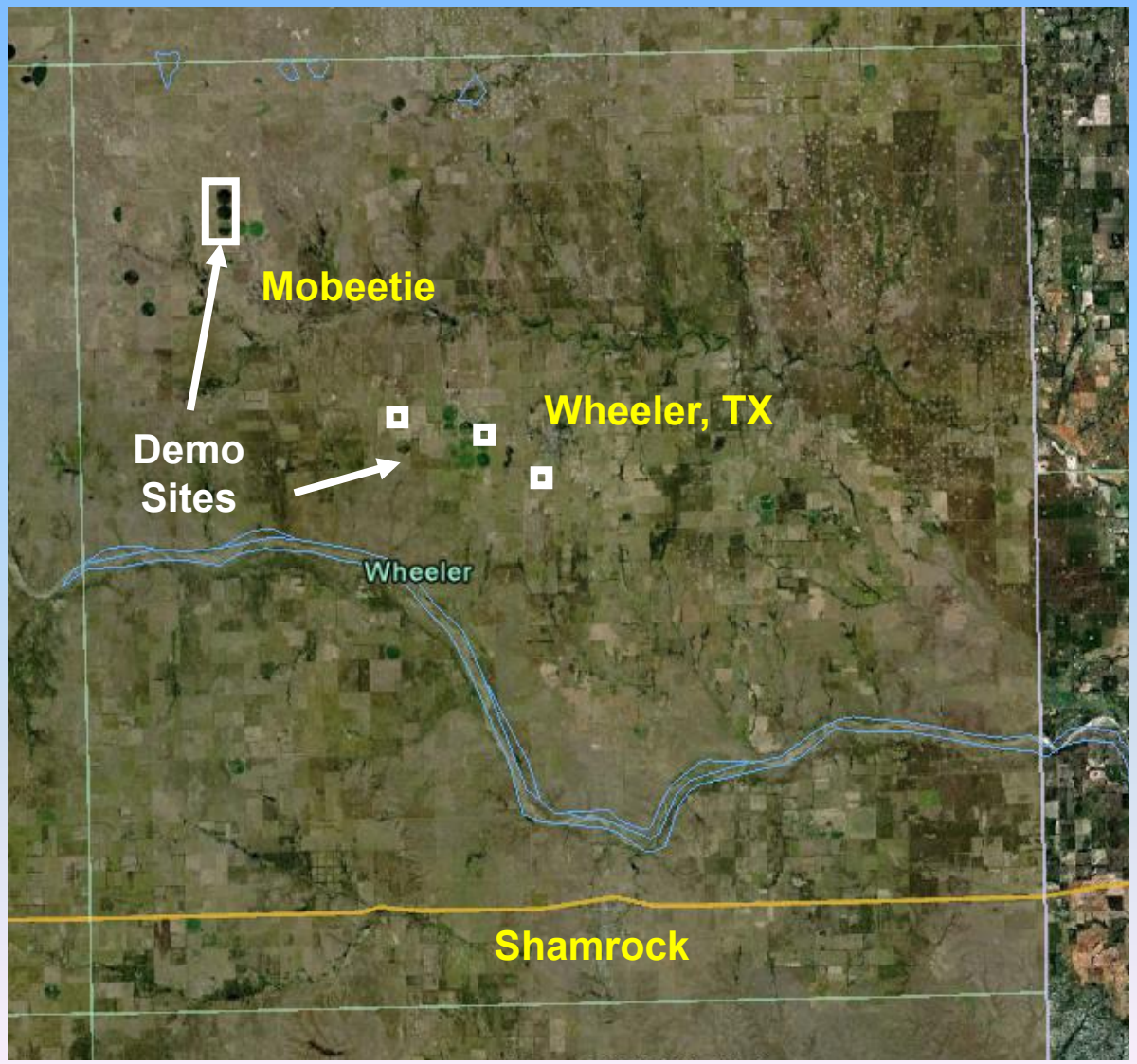
	Sample Year	N %	P %	K %	Ca %	Mg %	Na. %	Zn. ppm	Fe. ppm	Cu. ppm	Mn. ppm	%MC
DC2 Compost	2010	0.778	0.632	1.340	2.310	0.494	0.330	244	3000	33	153	20.8
	2012	0.686	0.575	0.883	2.590	0.469	0.206	225	4880	32	191	8.2

Donley County Water Well Results

	Year	*E. coli*	Total P	Sol. P	TKN	NO3	NH3
DC-1-W-1	2012	0	0.19	0.08	6.77	14.43	0.22
DC-2-W-1	2012	0	0.18	0.09	3.67	14.19	0.33
DC-3-W-1	2012	0	0.26	0.09	3.93	11.09	0.21

*all results in mg/L

Wheeler County



Wheeler County

- **Soil Sampling (fields, sub-areas, & down-gradient)**
- **No. of fields: 6**
- **Irrigation: Center pivots**
- **Soil types: Devol loamy fine sand and**
- **Mobeetie fine sandy loam**
- **Type of flow: Channel**
- **Crops: Corn, corn silage, cotton, wheat,**
- **triticale silage, peanuts**
- **Tillage: Minimum / single pass disk**
- **Fertilizer: Manure, compost and commercial**
- **Time of appl.: Early spring**

Wheeler County
Down Gradient Mapping

Wheeler County
Down Gradient Layout

Wheeler County
Down Gradient Layout

Wheeler County Soil Results
WC-1

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	2	3	11
Subarea	2	1	6
Down 1	2	4	5
Down 2	3	3	3

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	3	6	10
Down 1	4	5	7
Down 2	4	5	6

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	30	25	33
Subarea	27	30	31
Down 1	60	29	5
Down 2	65	53	3

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	23	9	29
Down 1	26	21	7
Down 2	38	18	6

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	76	77	84
Subarea	67	50	100
Down 1	47	90	51
Down 2	39	83	69

Potassium 6-24" (ppm)

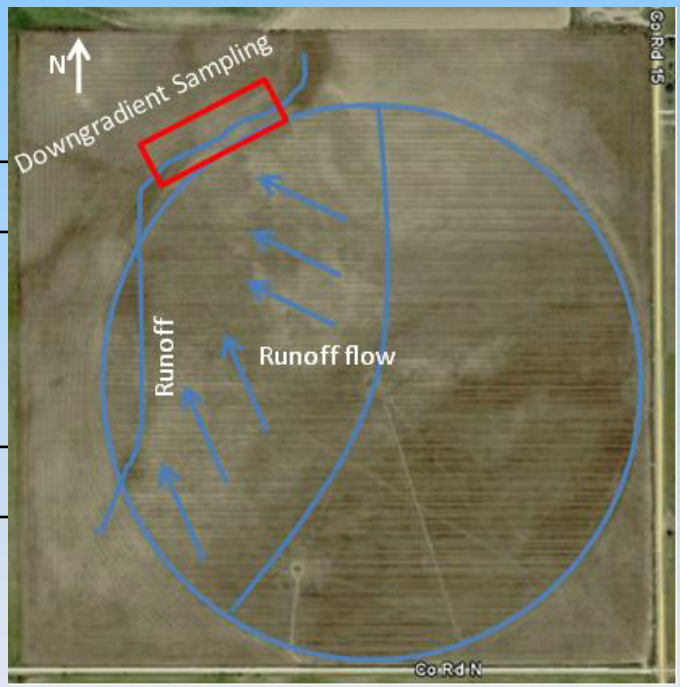
	2010	2011	2012
Subarea	77	65	97
Down 1	60	96	32
Down 2	51	73	45

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.4	0.4	0.9
Subarea	0.4	0.4	0.6
Down 1	<0.2	0.2	0.2
Down 2	<0.2	<0.2	0.2

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.5	0.4	0.6
Down 1	<0.2	<0.2	0.2
Down 2	<0.2	<0.2	0.3



Wheeler County Soil Results
WC-2

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	7	4	11
Subarea	5	7	7
Down 1	8	32	5
Down 2	14	38	30

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	7	12	5
Down 1	8	34	4
Down 2	12	38	19

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	52	32	43
Subarea	54	49	52
Down 1	46	110	63
Down 2	112	133	127

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	29	28	48
Down 1	30	50	36
Down 2	65	87	109

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	176	161	160
Subarea	180	160	143
Down 1	152	290	179
Down 2	307	330	388

Potassium 6-24" (ppm)

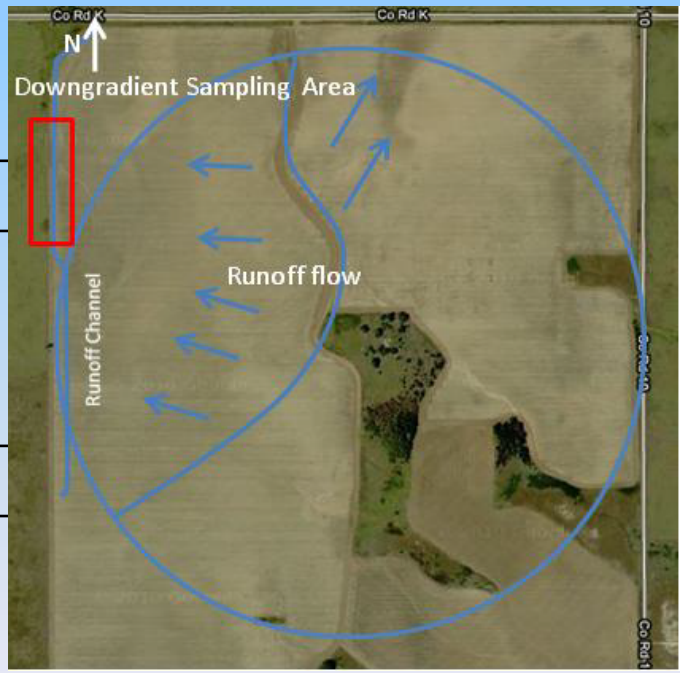
	2010	2011	2012
Subarea	127	137	158
Down 1	150	373	228
Down 2	400	397	415

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	0.3	0.3	0.7
Subarea	0.4	0.6	0.5
Down 1	0.3	0.8	0.5
Down 2	1.2	1.1	1.2

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.4	0.2	0.6
Down 1	0.3	0.9	0.7
Down 2	1.3	1.5	1.3



Wheeler County Soil Results
WC-3 (Field #1)

2 T/ac compost in 4/11 and 4/12

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	12	23	10
Subarea	17	27	17
Down 1	14	40	9
Down 2	18	54	11

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	17	26	26
Down 1	4	13	5
Down 2	4	18	9

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	23	27	18
Subarea	72	47	32
Down 1	81	77	88
Down 2	76	56	55

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	39	17	73
Down 1	25	18	36
Down 2	18	13	30

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	210	176	134
Subarea	329	290	338
Down 1	711	736	761
Down 2	742	816	827

Potassium 6-24" (ppm)

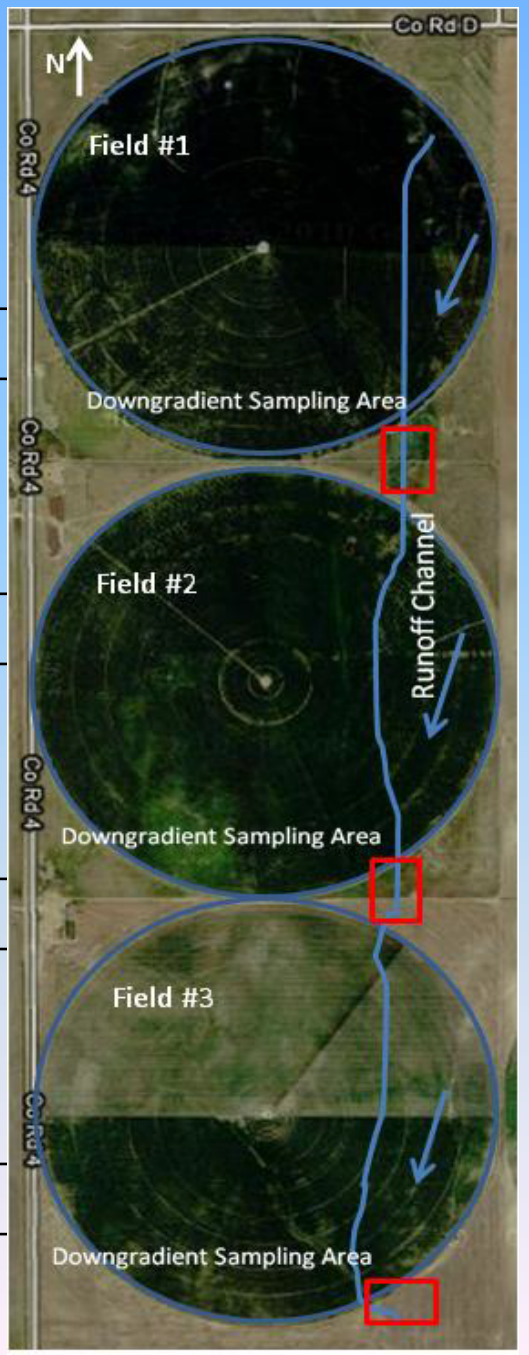
	2010	2011	2012
Subarea	239	229	376
Down 1	351	471	513
Down 2	501	554	561

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.3	1.3	1.5
Subarea	1.5	1.6	1.6
Down 1	2.7	3.8	3.8
Down 2	3.2	4.3	4.0

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	1.2	1.5	1.7
Down 1	1.2	1.4	1.7
Down 2	1.2	1.8	2.3



Wheeler County Soil Results
WC-4 (Field #2)

10 T/ac manure 3/10
2 T/ac compost 4/12

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	11	26	20
Subarea	13	15	11
Down 1	8	17	6
Down 2	10	14	8
Down 3	24	27	36
Down 4	22	31	44

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	9	18	11
Down 1	2	6	5
Down 2	3	5	6
Down 3	24	24	19
Down 4	17	33	22

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	77	44	58
Subarea	81	42	52
Down 1	41	25	42
Down 2	50	31	38
Down 3	87	72	74
Down 4	44	25	55

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	49	20	49
Down 1	14	8	33
Down 2	18	10	31
Down 3	45	14	66
Down 4	34	15	58

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	264	233	320
Subarea	233	214	254
Down 1	628	581	607
Down 2	569	613	650
Down 3	569	463	539
Down 4	490	292	476

Potassium 6-24" (ppm)

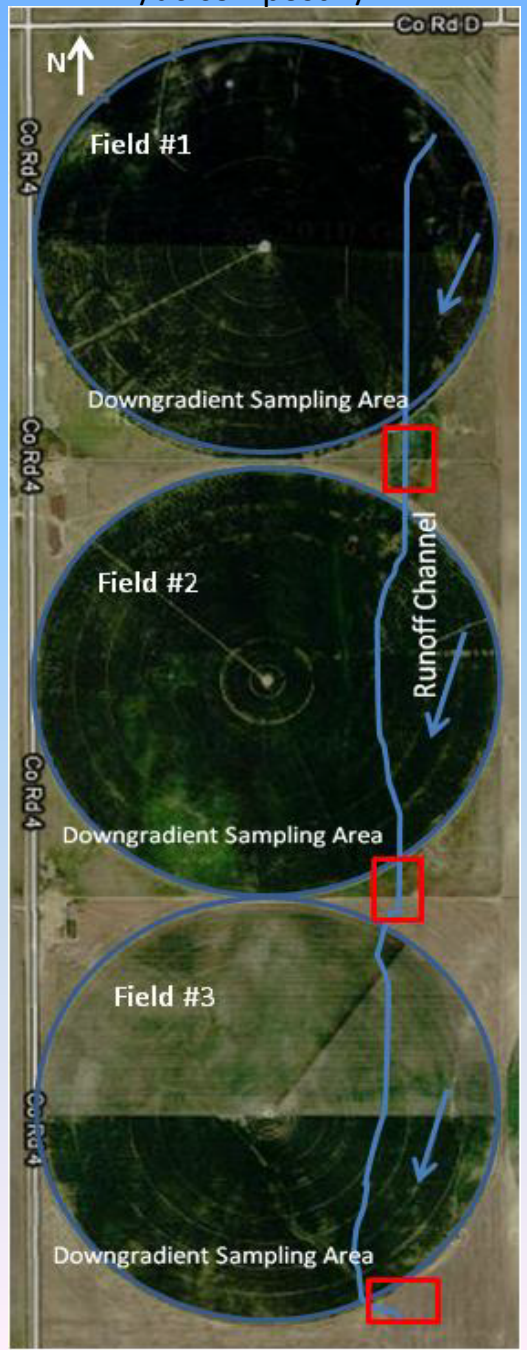
	2010	2011	2012
Subarea	180	171	250
Down 1	258	340	426
Down 2	349	411	518
Down 3	569	463	539
Down 4	490	292	476

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.3	1.4	1.9
Subarea	1.0	1.0	1.0
Down 1	1.9	2.5	2.6
Down 2	2.1	2.4	2.8
Down 3	2.0	2.0	1.9
Down 4	1.6	1.7	1.8

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.8	1.0	1.2
Down 1	1.3	1.8	2.6
Down 2	1.3	1.6	2.3
Down 3	1.5	2.1	2.4
Down 4	1.7	2.0	2.3



Wheeler County Soil Results
WC-5 (Field #3)

North ½: 2 T/ac compost 4/11
South ½: 10 T/ac manure 3/10
2 T/ac compost 4/12

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	10	9	14
Subarea	10	3	12
Down 1	19	16	9
Down 2	30	23	4

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	14	11	11
Down 1	18	25	7
Down 2	27	37	4

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	46	41	62
Subarea	39	74	48
Down 1	72	63	65
Down 2	87	75	74

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	37	25	40
Down 1	66	56	65
Down 2	71	58	65

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	273	235	282
Subarea	216	265	236
Down 1	223	188	235
Down 2	204	196	205

Potassium 6-24" (ppm)

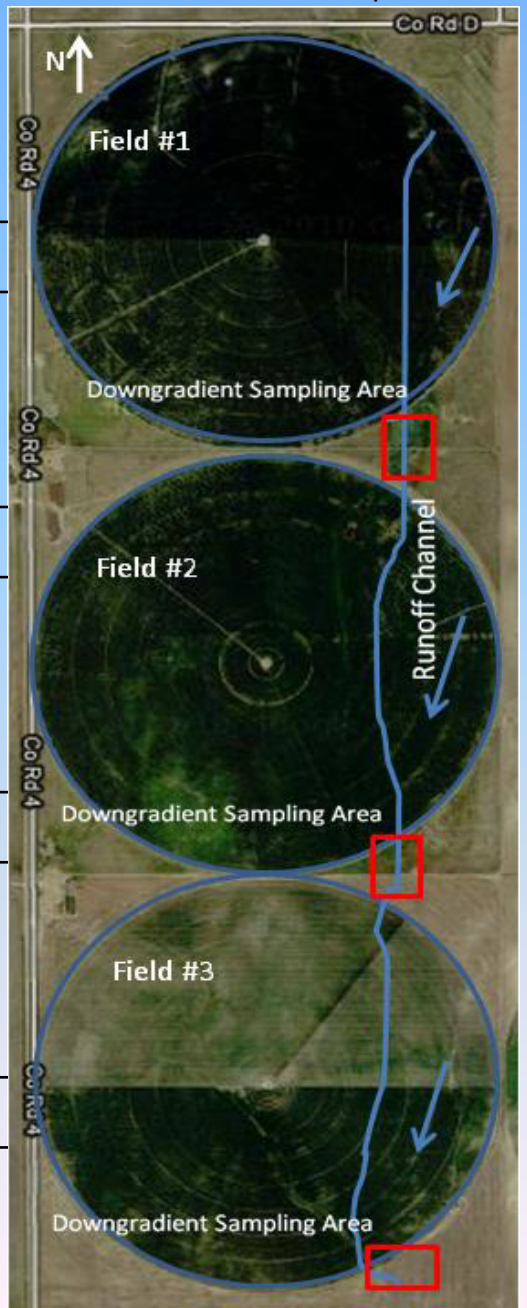
	2010	2011	2012
Subarea	206	186	224
Down 1	210	231	267
Down 2	228	209	240

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.0	1.7	1.7
Subarea	0.7	0.8	1.2
Down 1	0.8	0.5	0.8
Down 2	0.7	0.6	0.7

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.8	0.4	1.1
Down 1	0.7	0.6	0.9
Down 2	0.7	0.8	0.7



Wheeler County Soil Results
WC-6

Nitrogen 0-6" (ppm)

	2010	2011	2012
Circle	6	19	36
Subarea	4	18	20
Down 1	7	6	5
Down 2	2	6	3

Nitrogen 6-24" (ppm)

	2010	2011	2012
Subarea	4	26	37
Down 1	4	5	2
Down 2	<1	3	2

Phosphorus 0-6" (ppm)

	2010	2011	2012
Circle	127	96	97
Subarea	134	121	110
Down 1	186	129	209
Down 2	168	136	185

Phosphorus 6-24" (ppm)

	2010	2011	2012
Subarea	77	82	91
Down 1	131	110	174
Down 2	82	94	112

Potassium 0-6" (ppm)

	2010	2011	2012
Circle	148	111	132
Subarea	143	122	136
Down 1	194	236	272
Down 2	218	226	231

Potassium 6-24" (ppm)

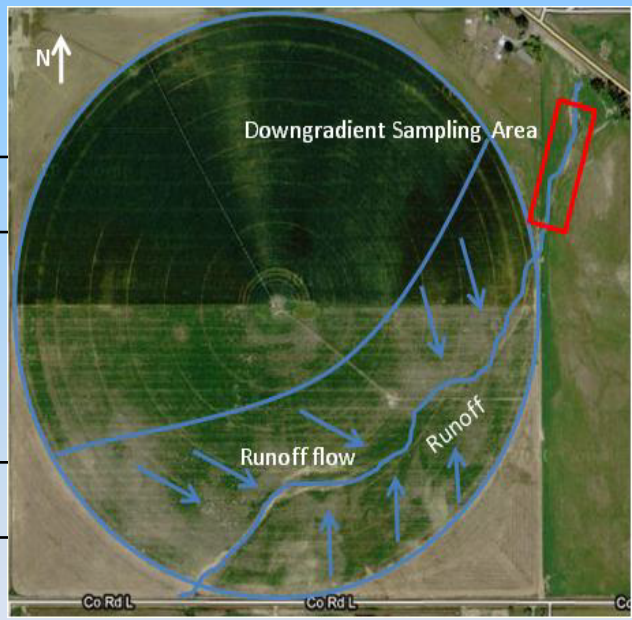
	2010	2011	2012
Subarea	145	147	168
Down 1	210	286	266
Down 2	165	223	221

Organic Matter 0-6" (%)

	2010	2011	2012
Circle	1.1	0.8	0.9
Subarea	0.7	0.8	0.9
Down 1	0.8	0.5	1.1
Down 2	0.7	0.8	0.9

Organic Matter 6-24" (%)

	2010	2011	2012
Subarea	0.4	0.5	0.9
Down 1	0.6	0.7	1.0
Down 2	0.3	0.6	0.9



Wheeler County Manure/Compost Results

	Sample Year	N %	P %	K %	Ca %	Mg %	Na. %	Zn. ppm	Fe. ppm	Cu. ppm	Mn. ppm	%MC
WC-3 Manure	2011	1.05	0.637	0.599	2.73	0.401	0.89	317	1940	42	173	29.2
WC-3 Compost	2012	1.98	0.086	1.62	2.19	0.796	0.333	333	5610	54	337	15.1
WC-4 Compost	2012	1.93	0.768	1.57	2.17	0.765	0.39	323	5990	52	343	15.7

Wheeler County Water Well Results

	Year	*E. coli*	Total P	Soluble P	TKN	NO3	NH3
WC-1-W-1	2012	0	0.21	0.08	2.66	16.79	0.18
WC-2-W-1	2012	0	0.18	0.1	8.28	13.94	0.19
WC-2-W-2	2012	0	0.19	0.06	4.64	3.18	0.18
WC-3-W-1	2012	0	0.19	0.08	3.77	1.88	0.19
WC-5-W-1	2012	0	0.17	0.09	3.21	2.84	0.18
WC-6-W-1	2012	0	0.2	0.07	8.16	4.41	0.26

*all results in mg/L