- 1. The soils contest can consist of judging 4 land areas using the "FFA Land Judging Scorecard" and instructions. The information in the "FFA Land Judging Scorecard Instructions" will be the subject matter guide.
- 2. Teams will be composed of four members with the top three scores counting.
- 3. Contestants will record their answers from their soils scorecard onto a scantron form to be computer scored. Each contestant will receive multiple choice questions relating to the judged pits. The correct answers for each soil site used may be available after completion of the contest and will be posted on the FFA Web Site. The winners will be announced at the Awards Ceremony
- 4. Tiebreakers- The official judge or faculty chair shall determine the order of total pit scores that will be used to break ties.
- 5. 1st Place team or alternate may represent Minnesota at the National Soil Contest in Oklahoma.
- 6. Materials available for FFA Land Judging are posted on the FFA website- https://cde.ffa.umn.edu/
 - a. Minnesota FFA Land Judging Score Card (2017)
 - b. FFA Land Judging Instructions (2006)
 - c. Land Judging Placard (2006)

GRADING THE SCORECARD

Several general rules apply to grading the scorecard. A master scorecard is used to indicate acceptable answers. Never record a minus score for any part.

- Parts 1, 2, & 3 A. The point assignment is two points for correctly recording each depth with a range of 1" above and 1" below being correct. Where boundaries are indistinct or variable, the official judge will allow for appropriate variation in the answers.
 - B. Allow four points for correctly identifying the correct color in parts 1 & 2.
 - C. Allow 5 pts for identifying the correct texture in parts 1, 2 & 3.
 - D. Allow 2 pts for identifying the correct gravel and rock.
- Part 4 Allow 3 pts each for identifying the correct steepness and correct landscape position. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero. Judges may allow an alternative choice or award partial credit if the choice is considered difficult or borderline.
- Part 5 Allow six points if the correct class number is circled. If more than one number is circled, the score is zero. If the circle is one class from the correct answer, allow three points credit. No credit allowed between classes IV and V and between V and VI. Three points is allowed between class IV and VI.
- Part 6 A. thru D. Allow 2 pts each for identifying the correct answer. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero.
 - E. Allow 1 pt. For each correct answer in 1-a.b.c; and 2-a.b.c. Allow 4 pts. for 3 and 6 pts for 4. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero
- Part 7 Allow two points each for parts A. Amount of erosion and B. Kind of erosion. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero.
- Part 8 Allow 3 pts each for A. Water Erosion and 3 pts for B. Wind Erosion. Only one answer is allowed in each section. If the wrong box is checked, if two boxes are checked, or if a correct answer is not marked, the score for that part is zero.
- Part 9 Allow 5 pts. for identifying the correct Drainage Required. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero.
- Part 10 Allow two pts each for identifying the correct fertilizer and lime recommendations. If the wrong box is checked or if a correct answer is not marked, the score for that part is zero.

Part 11 <u>Land_Use Limitations</u>

Each USE will be scored and totaled individually as follows:

Limitations - Allow three points for correct answers.

Land Features - Allow one point for every correct answer in each column.

If the wrong box is checked or if a correct answer is not marked, the score for that part is zero.

Minnesota FFA Soils Scorecard

	Name School				Number	9/18	
Part 1: Surface Soil -			Part 3 Parent Material - Continued				
	A. Thickness in Inches			B. Texture			
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18			Coarse			
2				Moderately Co	oarse		
		5		Medium			
	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36>			Fine			
				Very Fine			
	Allow 1 inch either way on thickness		C. (Gravel			
	B. Color			None to Few			
	Dark	اما		Gravelly			
4	Medium	2		Very Gravelly			
	Light			Extremely Gra	avelly		
	C. Texture	Part	4 T	opography			
	Coarse		Α.	Steepness of S	Slope		
	Moderately Coarse			Nearly level -	2% or less		
5	Medium	7.5		Gently slopin	g - 3 - 6 %		
1	Fine	3		Moderately si	oping - 7-12%		
	Very Fine			Strongly sloping - 13 to 18 %			
	D. Gravel and Rock			Steep - Great			
	None to Few	<u> </u>	В. 1	Landscape Po	sition		
2	Gravelly			Upland			
_	Very Gravelly	3		Terrace - Foo	tslope		
	Extremely Gravelly			Bottom land -	· Flood Plains		
Part	2: Subsurface Soil				Area - No Outlet		
	A. Thickness in Inches	Part	5 - 1	Land Capabilit	ty Classification		
ı	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Ų l		Class I	Land suitable	Score 6 points for	
١.				Class II	for	correct answer - 3	
2	14			Class III	Cultivated	points for 1 class off	
1	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36>	6	_	Class IV	Crops	except for class 5.	
_		4		Class V	٠.	Allow 3 points	
	Allow 1 inch either way on thickness B. Color	1		Class VI	Land suitable for Permanent	between Class IV and VI.	
	Bright		⊢	Class VII	Vegetation	¥#•	
4	Mottled			Class VIII			
-	Dult	Part		•	f Soil Features		
\vdash		<u> </u>	Α.		ial that Lim its Depth		
<u> </u>	C. Texture			1	iting materials		
	Coarse	2	<u> </u>	Bedrock - So			
_	Moderately Coarse	-	<u> </u>	Hardpan - Ce			
5	Medium		ᆫ		sand or high water to	able	
	Fine		В.	Parent Materia			
-	Very Fine D. Gravel and Rock	{	⊢	Bedrock - So			
-	None to Few	2	-		twash/Lacustrine		
	H		⊢	Till/Loess/Ae			
2	Gravelly Very Gravelly	-	느		erials - Peat or muck ble for Roots & Water	Panatastian	
	Extremely Gravelly		".	7	ole for Roots & water 30 inches or more	L GIIGU AUVII	
Pas	t 3: Underlying Material		-		ough 59 inches		
6	A. Thickness in Inches	2	\vdash		leep - 20 through 39 i	nchae	
-	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18		\vdash		s than 20 inches	1161143	
		 	D.	<u> </u>	Movement (Subsoil F	Permeability	
2			<u> </u>	Very Rapid			
1	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36>	l	-	Rapid			
1		2	Г	Moderate			
	Allow 1 inch either way on thickness	1	\vdash	Slow			

	E Total Available Water cap acity					Part 7 Accelerated Erosion					
<u> </u>	1. Available water in horizo per inch of soil					A. Am ount of Erosion					
1	a. Surface Palculation Area 1 0.15 Hostrop					No erosion evident (less than 2 inches) Deposition (2 inches or greater)					
	0.20				Erosion present (2 inches or greater)						
1	0.05						B. Kind of Erosion				
'	0.15 0.20	b. Subsoil	i				Н	None Active gully			
		I I malantista m				2	Н	Wind erosion	,		
1	0.15	Underlying [7.4			Н	Sheet or rill	•		
" <u> </u>	0.10	Material				Part		Need for Eros	on Control		
	2. Available W	ater Capacity	per Horizon					Water Erosion			
	a. Surface Hor	izon						None to sligh	nt		
1	0 -1.0 1.1-2.0	2.1-3.0 3.1-4.0	4.1-5.0 5.1-6.0	6.1-7.0 7.1-8.0	8 .1>			Crop cover,	sod cover, and	conservation t	illage
<u>'</u>						3			p crop and con		e
	b. Subsoil					. "	Ш		w ays and gully		
1	0 - 1.0 1.1 - 2 .0	2.1-3.0 3.1-4.0	4.1-5.0 5.1-6.0	6 .1- 7 .0 7 .1- 8 .0	8 .1>	ļ	Н		perm anent pa	sture	
	c. Underlying	Material					H.	Wildlife or re Vind Erosion	creation		
			4 1.5 0 5 1.6 0	6.1-7.0 7.1-8.0	A 1>	 		None to sligt	nt		
1	5-11-2-10	2.7 2.3 3.7.4.0		3.1-7.0	7.1	3	Н	Mulch tillage			
	3. Total availa	ole water capa	city in five fee	t of soil	-	Part		rainage Requ			
	Very low -	Less than 3 in	nches		1			None require			
4	Low - 3.1 t	o 6.0 inches			1	5		Surface and/	or tile		
4		6.1 to 9.0 incl	nes			Part	10 -	Fertilizer and	Lim e Recom	m endations	
	High - over 4. Internal Dra	r 9.0 inches inage				2		Ni	trogen pounds	per acre	
	Well Drain Moderately	ed / w ell drained				2		PI	nosphorous poi	unds per acre	
4		it poorly drain ery poorly dra				2		Po	otassium pound	is per acre	
		,				╟╦	\vdash				
						2		ļLi	m e tons perac	cres	
Part	11 - Land use		ints are for ea	sch section)							
	i	3 Pts Each				. —		1 Point Each			
	i			1				Internal	1	Depth to	Underlying
	i i										
	Use	Limitation	% Stone	Surface Soil	Flo	oding		Drainage	Permeability	Bedrock	Material
	l Use	Limitation	% Stope	Surface Soil Texture	Flo	oding		Drainage Class	Permeability Class	Bedrock (inches)	(Shrink Swell
	Use	Limitation	% Slope	Texture	Flo	oding		Class		Bedrock	(Shrink Swell Potential)
	Use			Texture	Flo					(inches)	(Shrink Swell Potential)
		Limitation S light	% Slope	Texture	Flo	oding N o ne		Class we II dra ine d, m o d. we Ii	Class	Bedrock (inches) 	(Shrink Swell Potential)
	Dw ellings			m e dium , moderate, coarse	Flo			Class we II dra ine d,	Class	(inches)	(Shrink Swell Potential)
9	Ow ellings (law ns),	S light	0 to 6.0	medium, moderate, coarse	Flo			Class we II dra ine d, m o d. we Ii	Class	Bedrock (inches)	(Shrink Swell Potential) coarse, mod.coarse, medium
9	Ow ellings (law ns), foundations,		0 to 6.0	m e dium , moderate, coarse	Flo			Class we II dra ine d, m o d. we Ii	Class	(inches)	(Shrink Swell Potential)
9	Ow ellings (law ns),	S light	0 t o 6 .0 6 .1 t o	medium, moderate, coarse coarse, fine,	Flo			Class we II dra ine d, m o d. we Ii	Class	Bedrock (inches)	(Shrink Swell Potential) coarse, mod.coarse, medium
9	Ow ellings (law ns), foundations,	S light	0 to 6.0	medium, moderate, coarse coarse, fine,			ling	Class we II dra ine d, m o d, we it dra ine d somewhat	Class	more than 50	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations,	S light M oderate	0 t o 6 .0 	medium, moderate, coarse coarse, fine,		None	ling	class we il dra ine d, m o d, we il dra ine d somewhat po o riy t o	Class	more than	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations,	S light M oderate	0 to 6.0 5.1 to 12.0 More than	medium, moderate, coarse coarse, fine,		None	ling	class well drained, mod.welt drained somewhat poorly to poorly drained	Class	more than 50	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations,	S light M oderate	0 to 6.0 6.1 to 12.0 More than 12.0	medium, moderate, coarse coarse, fine,		None	ling	class we il dra ine d, m o d, we il dra ine d somewhat po o riy t o	Class	more than 50 40 to 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations,	S light M oderate Severe	0 to 6.0 5.1 to 12.0 More than	medium, moderate, coarse coarse, fine,		N o ne	ilng	class we il dra ine d, m o d, we il dra ine d somewhat po o riy to po orly dra ine d we il to	Class	more than 50 40 to 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations,	S light M oderate Severe	0 to 6.0 6.1 to 12.0 More than 12.0	medium, moderate, coarse coarse, fine,		N o ne	ling	class we il dra ine d, m o d. we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we ii	Class	more than 50 40 to 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
9	Ow ellings (law ns), foundations, basem ents	S light M oderate Severe	0 to 6.0 5.1 to 12.0 More than 12.0 0 to 6.0	medium, moderate, coarse coarse, fine,		N o ne	iling	class we il dra ine d, m o d. we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we ii	Class	more than 50 40 to 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents	S light Moderate Severe Slight	0 to 6.0 6.1 to 12.0 More than 12.0	medium, moderate, coarse coarse, fine,		N o ne	ling	class we il dra ine d, m o d, we il dra ine d somewhat po o riy to po orly dra ine d we il to m o d we il dra ine d	Very rapid to rapid M oderate	more than 50 40 to 60 less than 40 more than 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight	0 to 6.0 5.1 to 12.0 More than 12.0 0 to 6.0	medium, moderate, coarse coarse, fine,		N o ne	ling	class we il dra ine d, m o d. we il dra ine d somewhat po o riy dra ine d we il t o m o d we il dra ine d	Very rapid to rapid M oderate	Bedrock (inches) more than 60 40 to 60 more than 40 40 to 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o riy to po orly dra ine d we il to m o d we il dra ine d somewhat po o riy to	Very rapid to rapid Moderate	more than 50 40 to 60 less than 40 more than 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight Moderate	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More 12.0 More	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o riy dra ine d we il t o m o d we il dra ine d	Very rapid to rapid M oderate	Bedrock (inches) more than 60 40 to 60 less than 40 to 60 less than	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewha po o rly to poorly dra ine d we il to m o d we il dra ine d somewha po o rly to poorly dra ine d we il to m o d we il dra ine d we il to m o d we il dra ine d somewha po o rly to poorly dra ine d we il to	very rapid to rapid Moderate slow to very slow	Bedrock (inches) more than 60 40 to 60 less than 40 to 60 less than	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight Moderate	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewha po orly to poorly dra ine d we il to m o d we il dra lne d somewha po orly to po orly dra ine d we il to m o d we il m o d we il to m o d we il to m o d we il to	very rapid to rapid Moderate slow to very slow	Bedrock (inches) more than 60 40to60 lessthan 40to60 40to60 lessthan 40 more than	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we il dra ine d we il to m o d we il dra ine d	very rapid to rapid Moderate slowtovery slow Slow	Bedrock (inches) more than 60 40 to 60 less than 40 to 60 less than 40	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
8	Ow ellings (law ns), foundations, basem ents Septic tank absorption fields	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 0 to 6.1	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we il dra ine d somewhat po o rly to m o d we il dra ine d we il to m o d we il dra ine d we il to m o d we il dra ine d somewhat somewhat	very rapid to rapid Moderate slow to very slow Slow	Bedrock (inches) more than 60 40 to 60 less than 40 to 60 less than 40 more than 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
	Ow ellings (law ns), foundations, basem ents Septic tank absorption fields Farm lagoons and holding	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we il dra ine d somewhat po o rly to po orly dra ine d we il to m o d we il dra ine d we il to m o d we il dra ine d	very rapid to rapid Moderate slowtovery slow Slow	Bedrock (inches) more than 60 40to60 lessthan 40to60 40to60 lessthan 40 more than	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
8	Ow ellings (law ns), foundations, basem ents Septic tank absorption fields Farm lagoons and	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 0 to 6.0 2.1- 6.0	medium, moderate, coarse coarse, fine,	Any	N o ne		class we il dra ine d, m o d. we il dra ine d somewhat po o riy to poorly dra ine d we il to m o d we il dra ine d somewhat po o riy to poorly dra ine d we il to m o d we il dra ine d we il to m o d we il dra ine d somewhat po o riy	very rapid to rapid Moderate slow to very slow Slow	Bedrock (inches) more than 60 40 to 60 less than 40 to 60 less than 40 more than 60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
8	Ow ellings (law ns), foundations, basem ents Septic tank absorption fields Farm lagoons and holding	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 0 to 6.1	medium, moderate, coarse coarse, fine,	An	None y flood None	ling	class we il dra ine d, m o d, we il dra ine d somewha po orly to poorly dra ine d we il to m o d we il dra ine d somewha po orly to porly dra ine d somewha po orly to poorly dra ine d we il to m o d we il dra ine d somewha po orly to poorly dra ine d somewha po orly dra ine d	Very rapid to rapid Moderate slowto very slow Slow t Rapid to	Bedrock (inches) more than 60 40to60 lessthan 40to60 lessthan 40to60 lessthan 60 40to60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture
8	Ow ellings (law ns), foundations, basem ents Septic tank absorption fields Farm lagoons and holding	S light Moderate Severe Slight Moderate Severe	0 to 6.0 12.0 More than 12.0 0 to 6.0 12.0 More than 12.0 More than 12.0 More than 12.0 More than 12.0	medium, moderate, coarse coarse, fine,	An	None y flood None	ling	class well drained, mod.well drained somewhat poorly drained well to mod well drained somewhat poorly drained somewhat poorly drained well to mod well drained somewhat poorly drained	Very rapid to rapid Moderate slowto very slow Slow Moderate	Bedrock (inches) more than 50 40to60 less than 40to60 less than 40to60 amore than 60 40to60	(Shrink Swell Potential) coarse, mod.coarse, medium fine texture

FFA LAND JUDGING PLACARD – MINNESOTA – FFA

Pit Number	
	Flooding
pH SMP Buffer Index	Assumed Field Size Acres
P Test	lb./acres available phosphorus
Subsoil Phosphorus Level	
K Testl	b./acres exchangeable potassium
Subsoil Potassium Level	Manure Applied Tons/Acre
Corn Yield Goal	bu./acres
Crop to be planted	
Past Crop	
Original Surface Soil Depth	inches
Slope Length	feet
Depth to permanent water table	

Minnesota Soils Scorecard Questions for Pits 1 - 4 Scantron # 105481 Use your soils scorecard to fill out the answers on your scantron Bubble in the front side of the sheet for Pit 1 (# 1-45) and Pit 2 (#51-95) and Bubble in the back side of the sheet for Pit 3 (# 1-45) and Pit 4 (51-95)

Pits 1 & 3 Questions

–			
Part 1: Surface soil		7. Subsurface: Texture A. Coarse	(5 pts)
1. Surface Soil: Thickness in i	nches (2 pts)	B. Moderately course	
A.		C. Medium	
B. Answers to be determine	d		
C. by pit and placard	_	D. Fine	
D. with a 3 inch range.		E. Very Fine	
•			
E.		8. Subsurface: Gravel and Rock	2 pts)
		A. None to Few	
2. Surface Soil Color (4 pts)		B. Gravelly	
A. Dark		C. Very Gravelly	
B. Medium		D. Extremely Gravelly	
C. Light		D. Extremely Graveny	
		Part 3: Underlying Material	
3. Surface: Soil Texture	(5 pts)	9. Parent Material: Thickness in inc	has (2nts)
A. Coarse			iles (zhrs)
B. Moderately Coarse		A.	
C. Medium		B. Answers to be determined	
D. Fine		C. by pit and placard	
E. Very Fine		D. with a 3 inch range	
c. very fille		E.	
4. Surface: Gravel and Rock	(2 pts)		4
A. None to Few	(2 6 0)	10. Underlying Material: Texture	(5 pts)
B. Gravelly		A. Coarse	
•		B. Moderately course	
C. Very Gravelly		C. Medium	
D. Extremely Gravelly		D. Fine	
		E. Very Fine	
Part 2: Subsurface Soil		•	
5. Subsurface Soil: Thickness	in inches (2 pts)	11. Underlying Material: Gravel	(2 pts)
Α.		A. None to Few	(~ pcs/
B. Answers to be determine	d	B. Gravelly	
C. by pit and placard		•	
D. with a 3 inch range		C. Very Gravelly	
E.		D. Extremely Gravelly	
		Dank A. Tanaguay by	
6. Subsurface: Soil Color	(4 pts)	Part 4: Topography	
A. Bright	() [2 - 2]	12. Steepness of slope (3 pts)	
B. Mottled		A. Nearly level – 2% or less	
		B. Gently sloping - 3 – 6 %	
C. Dull		C. Moderately sloping - 7 - 12 %	
		D. Strongly sloping - 13 - 18 %	

E. Steep – Greater than 18 %

13. Landscape position (3 pts)	21. c. Underlying material Horizon (1 pt)
A. Upland	A. 0.05
B. Terrace – Footslope	B. 0.15
C. Bottom land – Flood Plains	C. 0.20
D. Depressional Area – No outlet	
·	Available Water Capacity per Horizon
Part 5: Land Classification	22. a. Surface Horizon (1 pt)
14. Land Capability Classification (6 pts)	A. 0.0- 2.0
A. Class I or II	B. 2.1 – 4.0
B. Class III	C. 4.1 – 6.0
C. Class IV	D. 6.1 – 8.0
D. Class V	E. over 8.0
E. Class VI, VII, or VIII	2. 070. 0.0
E. Glass VI, VII, G. VIII	23. b. Subsoil Horizon (1 pt)
Part 6: Interpretation of Soils Features	A. 0.0- 2.0
15. Type of Material that Limits Depth (2 pts)	B. 2.1 – 4.0
A. None- No limiting materials	C. 4.1 – 6.0
B. Bedrock – Soft or hard	D. 6.1 – 8.0
C. Hardpan – Cemented	E. over 8.0
D. Very gravelly sand or high water table	E. Over 5.5
D. Very graverry saile of filgh water table	24. c. Underlying material (1 pt)
16. Parent Material (2 pts)	A. 0.0- 2.0
A. Bedrock – Soft or hard	B. 2.1 – 4.0
B. Alluvium/ Outwash/ Lacustrine	C. 4.1 – 6.0
C. Till/ Loess/ Aeolian Sand	D. 6.1 – 8.0
D. Organic Materials – Peat or Muck	E. over 8.0
D. Organic Materials – Feat of Muck	E. Over 8.0
17. Depth favorable for roots & water (2 pts)	25. 3. Total available water capacity
A. Very deep- 60 inches or more	(5 ft. of soil) (4 pts.)
B. Deep- 40 – 59 inches	A. Very low – less than 3 inches
C. Moderately Deep- 20 – 39 inches	B. Low – 3.1 to 6 inches
D. Shallow- less than 20 inches	C. Moderate – 6.1 to 9 inches
D. Stidilow- less than 20 inches	
18. Air and water movement (2 pts)	D. High – Over 9 inches
A. Very Rapid	26 4 Internal durings (4 nts)
B. Rapid	26. 4. Internal drainage (4 pts.) A. Well drained
C. Moderate	
D. Slow	B. Moderately well drained
	C. Somewhat poorly drained
E. Total Available Water Capacity	D. Poorly or very poorly drained
Available water in horizon/ inch of soil	
19. a. Surface Horizon (1 pt)	Part 7 – Accelerated erosion
A. 0.05	27. Amount of erosion (2 pt.)
B. 0.15	A. No erosion evident (less than 2 inches)
C. 0.20	B. Deposition (2 inches or greater)
	C. Erosion present (2 inches or greater)
20. b. Subsoil Horizon (1 pt)	
A. 0.05	
B. 0.15	
C. 0.20	

28. Kind of erosion (2 pts.) Part 11 - Land Use limitation A. None 36. Dwellings (lawns), foundations, basements (3 B. Active gully pts) C. Wind erosion A. Slight D. Sheet or rill B. Moderate C. Severe Part 8 - Need for erosion control 29. Water erosion (3 pts.) **Use limitation** A. None to slight 37 Septic tank absorption fields (3 pts.) B. Crop cover, sod cover and conservation tillage A. Slight C. Contour, strip crop and conservation tillage B. Moderate C. Severe D. Grass waterways and gully control E. Woodland/perm. pasture, wildlife or recreation Use limitation 30. Wind erosion (3 pts.) 38. Farm lagoons and holding basins (3 pts.) A. None to slight A. Slight B. Mulch tillage, cover crop B. Moderate C. Severe Part 9 31. Drainage required (5 pts.) **39.** % Slope (3 pts.) A. None required A. Zero to 2.0 B. Surface and/or tile B. 2.1 to 6.0 C. 6.1 to 12.0 Part 10 - Fertilizer and lime recommendations D. More than 12.0 **32.** Nitrogen pounds per acre (2 pts) A. Over 161 40. Surface Soil Texture (1 pt.) B. 121- 160 A. Medium, moderate, coarse C. 81-120 B. Coarse, fine, very fine D. 41-80 **41.** Flooding (3 pts.) E. 0-20 A. None 33. Phosphorous pounds per acre (2 pts.) B. Any flooding A. Over 81 42. Internal Drainage Class (3 pts.) B. 61-80 A. Well drained, moderate well drained C. 41-60. B. Somewhat poorly drained D. 21-40 C. Poorly drained E. 0-20 43. Permeability Class (2 pts) 34. Potassium pounds per acre (2 pts.) A. Vary rapid to rapid A. Over 181 B. Moderate B. 136-180 C. Slow to Very slow C. 96-135 D. 46-90 44. Depth to Bedrock (Inches) (3 pts) E. 0-45 A. More than 60 B. 40 to 60 35. Lime tons per acre (2 pts.) C. Less than 60 A. 8.5 or more B. 6.5-8.0 45. Underlying Material (Shrink swell) (1pt) C. 4.5-6.0 A. Coarse, mod. coarse, medium texture D. 2.5-4.5 B. Fine texture E. 0.0- 2.0 C. Very fine texture

Minnesota Soils Scorecard Questions for Pits 1 - 4 Scantron # 105481 Use your soils scorecard to fill out the answers on your scantron Bubble in the front side of the sheet for Pit 1 (# 1-45) and Pit 2 (#51-95) and Bubble in the back side of the sheet for Pit 3 (# 1-45) and Pit 4 (51-95)

Pits 2 & 4 Questions

Part 1: Surface soil		57. Subsurface: Texture	(5 pts)
51. Surface Soil: Thickness in	n inches (2 pts)	A. Coarse	
A.		B. Moderately course	
B. Answers to be determine	ed	C. Medium	
C. by pit and placard	5	D. Fine	
D. with a 3 inch range.		E. Very Fine	
E.			
	*	58. Subsurface: Gravel and Rock	(2 pts)
52. Surface Soil Color	(4 pts)	A. None to Few	
A. Dark		B. Gravelly	
B. Medium		C. Very Gravelly	
C. Light		D. Extremely Gravelly	
53. Surface: Soil Texture	(5 pts)	Part 3: Underlying Material	
A. Coarse	, , ,	59. Parent Material: Thickness in i	inches (2pts)
B. Moderately Coarse		Α	
C. Medium		B. Answers to be determined	
D. Fine		C. by pit and placard	
E. Very Fine		D. with a 3 inch range	
,		E.	
54. Surface: Gravel and Roc	k (2 pts)		
A. None to Few		60. Underlying Material: Texture	(5 pts)
B. Gravelly		A. Coarse	
C. Very Gravelly		B. Moderately course	
D. Extremely Gravelly		C. Medium	
,		D. Fine	
Part 2: Subsurface Soil		E. Very Fine	
55. Subsurface Soil: Thickne	ess in inches (2 pts)	·	
Α.		61. Underlying Material: Gravel	(2 pts)
B. Answers to be determine	ed	A. None to Few	, i= ,
C. by pit and placard		B. Gravelly	
D. with a 3 inch range		C. Very Gravelly	
E.		D. Extremely Gravelly	
		•	
56. Subsurface: Soil Color	(4 pts)	Part 4: Topography	
A. Bright		62. Steepness of slope (3 pts)	
B. Mottled		A. Nearly level – 2% or less	
C. Dull		B. Gently sloping - 3 – 6 %	
		C. Moderately sloping - 7 – 12 %	
		D. Strongly sloping - 13 - 18 %	

E. Steep - Greater than 18 %

63. Landscape position (3 pts)	71. c. Underlying material Horizon (1 pt)
A. Upland	A. 0.05
B. Terrace – Footslope	B. 0.15
C. Bottom land – Flood Plains	C. 0.20
D. Depressional Area – No outlet	
	Available Water Capacity per Horizon
Part 5: Land Classification	72. a. Surface Horizon (1 pt)
64. Land Capability Classification (6 pts)	A. 0.0- 2.0
A. Class I or II	B. 2.1 – 4.0
B. Class III	C. 4.1 – 6.0
C. Class IV	D. 6.1 – 8.0
D. Class V	E. over 8.0
E. Class VI, VII, or VIII	
	73. b. Subsoil Horizon (1 pt)
Part 6: Interpretation of Soils Features	A. 0.0- 2.0
65. Type of Material that Limits Depth (2 pts)	B. 2.1 – 4.0
A. None- No limiting materials	C. 4.1 – 6.0
B. Bedrock – Soft or hard	D. 6.1 – 8.0
C. Hardpan – Cemented	E. over 8.0
D. Very gravelly sand or high water table	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
and a superior make the superi	74. c. Underlying material (1 pt)
66. Parent Material (2 pts)	A. 0.0- 2.0
A. Bedrock – Soft or hard	B. 2.1 – 4.0
B. Alluvium/ Outwash/ Lacustrine	C. 4.1 – 6.0
C. Till/ Loess/ Aeolian Sand	D. 6.1 – 8.0
D. Organic Materials – Peat or Muck	E. over 8.0
·	
67. Depth favorable for roots & water (2 pts)	75. 3. Total available water capacity
A. Very deep- 60 inches or more	(5 ft. of soil) (4 pts.)
B. Deep- 40 – 59 inches	A. Very low – less than 3 inches
C. Moderately Deep- 20 – 39 inches	B. Low – 3.1 to 6 inches
D. Shallow- less than 20 inches	C. Moderate – 6.1 to 9 inches
D. Silanow less than 20 menes	D. High – Over 9 inches
68. Air and water movement (2 pts)	D. High – Over 9 mettes
A. Very Rapid	76. 4. Internal drainage (4 pts.)
B. Rapid	A. Well drained
C. Moderate	
D. Slow	B. Moderately well drained C. Somewhat poorly drained
E. Total Available Water Capacity	D. Poorly or very poorly drained
Available water in horizon/ inch of soil	Part 7 – Accelerated erosion
69. a. Surface Horizon (1 pt)	
A. 0.05	77. Amount of erosion (2 pt.)
B. 0.15	A. No erosion evident (less than 2 inches)
C. 0.20	B. Deposition (2 inches or greater)
TO be Colored Hardy (4.13)	C. Erosion present (2 inches or greater)
70. b. Subsoil Horizon (1 pt)	
A. 0.05	
B. 0.15	
C. 0.20	

78. Kind of erosion (2 pts.) Part 11 – Land Use limitation A. None 86. Dwellings (lawns), foundations, basements B. Active gully (3 pts) C. Wind erosion A. Slight D. Sheet or rill B. Moderate C. Severe Part 8 - Need for erosion control 79. Water erosion (3 pts.) Use limitation A. None to slight 87 Septic tank absorption fields (3 pts.) B. Crop cover, sod cover and conservation tillage A. Slight B. Moderate C. Contour, strip crop and conservation tillage D. Grass waterways and gully control C. Severe E. Woodland/perm. pasture, wildlife or recreation Use limitation 80. Wind erosion (3 pts.) 88. Farm lagoons and holding basins (3 pts.) A. None to slight A. Slight B. Moderate B. Mulch tillage, cover crop C. Severe 81. Drainage required (5 pts.) 89. % Slope (3 pts.) A. None required A. Zero to 2.0 B. Surface and/or tile B. 2.1 to 6.0 C. 6.1 to 12.0 Part 10 – Fertilizer and lime recommendations D. More than 12.0 82. Nitrogen pounds per acre (2 pts) A. Over 161 90. Surface Soil Texture (1 pt.) B. 121-160 A. Medium, moderate, coarse C. 81-120 B. Coarse, fine, very fine D. 41-80 **91.** Flooding (3 pts.) E. 0-20 A. None 83. Phosphorous pounds per acre (2 pts.) B. Any flooding A. Over 81 **92.** Internal Drainage Class (3 pts.) B. 61-80 A. Well drained, moderate well drained C. 41-60. B. Somewhat poorly drained D. 21-40 C. Poorly drained E. 0-20 93. Permeability Class (2 pts) 84. Potassium pounds per acre (2 pts.) A. Vary rapid to rapid A. Over 181 B. Moderate B. 136-180 C. Slow to Very slow C. 96-135 D. 46-90 94. Depth to Bedrock (Inches) (3 pts) E. 0-45 A. More than 60 B. 40 to 60 85. Lime tons per acre (2 pts.) C. Less than 60 A. 8.5 or more B. 6.5-8.0 95. Underlying Material (Shrink swell) (1pt) C. 4.5-6.0 A. Coarse, mod. coarse, medium texture D. 2.5-4.5 B. Fine texture E. 0.0-2.0 C. Very fine texture