

**MISSOURI SOIL JUDGING SCORECARD**

**FORM 19**

Contestant: \_\_\_\_\_ Contestant Number: \_\_\_\_\_ Site: 1 2 3 4 5 6  
 (Circle)

School: \_\_\_\_\_ School Number: \_\_\_\_\_

Total Front	+	Total Back	=	Grand Total

<p><b>FIRST HORIZON</b> ( ____ to ____ inches)</p> <p>1. ____ Color</p> <p>2. ____ All Mottles</p> <p>3. ____ Texture</p> <p>4. ____ Structure Type</p> <p>5. ____ Total Rock     Fragments</p> <p>6. ____ Rock Fragments     (3 to 10 inches)</p> <p>7. ____ Special     Features</p> <p>8. ____ Horizon Name I</p> <p>9. ____ Horizon Name II</p>	<p align="center">*****</p> <p align="center"><b>COLOR</b></p> <p>a = Dark brown, Very dark brown, Black</p> <p>b = Light brown, Brown, Yellowish brown</p> <p>c = Red, Reddish brown</p> <p>d = Dark gray, Light gray, White</p> <p align="center">*****</p> <p align="center"><b>ALL MOTTLES</b> (Abundance)</p> <p>a = Few (0 - 1.9%)</p> <p>b = Common (2 - 19%)</p> <p>c = Many (= or &gt; 20%)</p> <p align="center">*****</p> <p align="center"><b>TEXTURE</b></p> <p>a = Sand, Loamy sand</p> <p>b = Sandy loam</p> <p>c = Loam, Silt loam</p> <p>d = Sandy clay loam, Clay loam, Silty clay loam</p> <p>e = Clay, Silty clay, Sandy clay, or N/A</p> <p align="center">*****</p> <p align="center"><b>STRUCTURE TYPE</b></p> <p>a = Granular</p> <p>b = Platy</p> <p>c = Blocky</p> <p>d = Prismatic</p> <p>e = Massive, Single grain</p> <p align="center">*****</p>	<p align="center">*****</p> <p align="center"><b>TOTAL ROCK FRAGMENTS</b> (2mm to 10 inches)</p> <p>a = &lt; 15% (no modifier)</p> <p>b = 15 to 35% (gravelly, channery, cobbly, or flaggy)</p> <p>c = 35 to 60% VERY (gravelly, channery, cobbly, or flaggy)</p> <p>d = &gt; 60% EXTREMELY (gravelly, channery, cobbly, or flaggy)</p> <p align="center">*****</p> <p align="center"><b>ROCK FRAGMENTS</b> (3 to 10 inches only)</p> <p>a = &lt; 15%</p> <p>b = 15 - 35%</p> <p>c = 35 - 60%</p> <p>d = &gt; 60%</p> <p align="center">*****</p> <p align="center"><b>SPECIAL FEATURES</b></p> <p>a = None</p> <p>b = Fragipan</p> <p>c = Abrupt textural change</p> <p align="center">*****</p> <p align="center"><b>HORIZON NAME I</b></p> <p>a = A</p> <p>b = B</p> <p>c = None of these</p> <p>d = Ap</p> <p>e = E</p> <p align="center">*****</p> <p align="center"><b>HORIZON NAME II</b></p> <p>a = R</p> <p>b = Cr</p> <p>c = C</p> <p>d = None of the above</p>	<p><b>THIRD HORIZON</b> ( ____ to ____ inches)</p> <p>19. ____ Color</p> <p>20. ____ All Mottles</p> <p>21. ____ Texture</p> <p>22. ____ Structure Type</p> <p>23. ____ Total Rock     Fragments</p> <p>24. ____ Rock Fragments     (3 to 10 inches)</p> <p>25. ____ Special     Features</p> <p>26. ____ Horizon Name I</p> <p>27. ____ Horizon Name II</p>	
<p><b>SECOND HORIZON</b> ( ____ to ____ inches)</p> <p>10. ____ Color</p> <p>11. ____ All Mottles</p> <p>12. ____ Texture</p> <p>13. ____ Structure Type</p> <p>14. ____ Total Rock     Fragments</p> <p>15. ____ Rock Fragments     (3 to 10 inches)</p> <p>16. ____ Special     Features</p> <p>17. ____ Horizon Name I</p> <p>18. ____ Horizon Name II</p>			<p><b>FOURTH HORIZON</b> ( ____ to ____ inches)</p> <p>28. ____ Color</p> <p>29. ____ All Mottles</p> <p>30. ____ Texture</p> <p>31. ____ Structure Type</p> <p>32. ____ Total Rock     Fragments</p> <p>33. ____ Rock Fragments     (3 to 10 inches)</p> <p>34. ____ Special     Features</p> <p>35. ____ Horizon Name I</p> <p>36. ____ Horizon Name II</p>	
			<p><b>TOTAL FRONT</b></p> <div style="border: 2px solid black; width: 100%; height: 30px;"></div>	

**NOTE: Whenever any answers overlap mark the answer that is most limiting.**

**Directions:** Use Interpretation Help Sheet; then darken in the correct responses (Example: (a) (b) (c) )

**PROPERTIES OF THE WHOLE SOIL**

37. **Effective Rooting Depth**  
 (a) Very deep (>60 inches)  
 (b) Deep (40-60 inches)  
 (c) Moderately deep (20-40 inches)  
 (d) Shallow (10-20 inches)  
 (e) Very shallow (<10 inches)
38. **Available Water Capacity (AWC)**  
 (a) Very high (> 12 inches)  
 (b) High (9 < 12 inches)  
 (c) Moderate (6 < 9 inches)  
 (d) Low (3 < 6 inches)  
 (e) Very low (< 3 inches)
39. **Surface Soil Permeability**  
 (a) Rapid to very rapid (>6.0 in./hr.)  
 (b) Moderately rapid (2.0-6.0 in./hr.)  
 (c) Moderate (0.6-2.0 in./hr.)  
 (d) Moderately slow (0.2-0.6 in./hr.)  
 (e) Slow to extremely slow (<0.2 in./hr.)
40. **Subsoil Permeability**  
 (a) Rapid to very rapid (>6.0 in./hr.)  
 (b) Moderately rapid (2.0-6.0 in./hr.)  
 (c) Moderate (0.6-2.0 in./hr.)  
 (d) Moderately slow (0.2-0.6 in./hr.)  
 (e) Slow to extremely slow (<0.2 in./hr.)
41. **Internal Drainage**  
 (a) Excessive/somewhat excessive  
 (b) Well  
 (c) Moderately well  
 (d) Somewhat poorly drained  
 (e) Poorly drained/very poorly drained
42. **Depth to High Water Table (WT)**  
 (a) >60 inches  
 (b) 42-60 inches  
 (c) 24-42 inches  
 (d) 12-24 inches  
 (e) <12 inches
43. **Shrink-Swell Potential**  
 (a) Low  
 (b) Moderate  
 (c) High

**TOTAL BACK**

**SITE CHARACTERISTICS**

44. **Landform**  
 (a) Upland  
 (b) Foot slopes or alluvial fans  
 (c) Flood plain  
 (d) Stream terrace  
 (e) Sinkholes
45. **Slope I**  
 (a) 0 - 1.99%  
 (b) 2 - 4.99%  
 (c) 5 - 8.99%  
 (d) 9 - 13.99%  
 (e) None of the above
46. **Slope II**  
 (a) 14 - 24.99%  
 (b) = or >25%  
 (c) None of the above
47. **Aspect**  
 (a) Northerly  
 (b) Southerly  
 (c) Easterly  
 (d) Westerly  
 (e) None of the above (<2% slope)
48. **Parent Material I**  
 (a) Loess  
 (b) Glacial till  
 (c) Residuum or colluvium  
 (d) Alluvium  
 (e) None of the above
49. **Parent Material II**  
 (a) Loess over glacial till  
 (b) Loess over residuum or colluvium  
 (c) Colluvial sediments over residuum or glacial till  
 (d) Loess over alluvium  
 (e) None of the above
50. **Stoniness (area 100x100 ft. sq.)**  
 (a) None (>100 feet apart)  
 (b) Stony (30-100 feet apart)  
 (c) Very stony (5-30 feet apart)  
 (d) Extremely stony (2.5-5 feet apart)  
 (e) Rubbly (<2.5 feet apart)
51. **Rockiness**  
 (a) Not rocky (<10 sq. ft./area)  
 (b) Rocky (10-200 sq. ft./area)  
 (c) Very rocky (200-1000 sq. ft./area)  
 (d) Rock outcrop complex (>1000 sq. ft./area)

**MANAGEMENT INTERPRETATIONS**

52. **Surface Drainage**  
 (a) Not needed  
 (b) Needed

**Irrigation Suitability (a=Asset, b=Liability)**

53. (a) (b) Surface soil texture  
 54. (a) (b) Slope  
 55. (a) (b) AWC  
 56. (a) (b) Depth to High Water Table  
 57. (a) (b) Permeability  
 58. (a) (b) Rock fragments (>3 in.)  
 59. (a) (b) Depth to bedrock

**Hazards and Limitations for Cropping (a=Yes, b=No)**

60. (a) (b) Slope or erosion  
 61. (a) (b) Available water capacity  
 62. (a) (b) Surface drainage  
 63. (a) (b) Internal drainage  
 64. (a) (b) Rock fragments  
 65. (a) (b) Stoniness  
 66. (a) (b) Rockiness

**Pond Reservoir Area (a=Slight, b=Moderate, c=Severe)**

67. (a) (b) (c) Permeability  
 68. (a) (b) (c) Depth to hard bedrock  
 69. (a) (b) (c) Depth to soft bedrock  
 70. (a) (b) (c) Slope

**Limitations for Dwellings with Basements (a=Slight, b=Moderate, c=Severe)**

71. (a) (b) (c) Depth to High Water Table  
 72. (a) (b) (c) Flooding  
 73. (a) (b) (c) Shrink-Swell potential  
 74. (a) (b) (c) Slope  
 75. (a) (b) (c) Rock fragments (>3 in.)  
 76. (a) (b) (c) Depth to bedrock

**Limits for Septic Tank Absorption Fields (a=Slight, b=Moderate, c=Severe)**

77. (a) (b) (c) Permeability  
 78. (a) (b) (c) Depth to High Water Table  
 79. (a) (b) (c) Depth to bedrock  
 80. (a) (b) (c) Slope  
 81. (a) (b) (c) Flooding  
 82. (a) (b) (c) Rock fragments (>3 in.)

**Limitations for Sewage Lagoons (a=Slight, b=Moderate, c=Severe)**

83. (a) (b) (c) Permeability  
 84. (a) (b) (c) Slope  
 85. (a) (b) (c) Flooding  
 86. (a) (b) (c) Depth to High Water Table  
 87. (a) (b) (c) Depth to bedrock  
 88. (a) (b) (c) Rock fragments (>3 in.)