

Ag. Waste Application and Excavated Ponds  
Marshall County, South Dakota

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation.)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AaA: Aastad-----	90	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slow refill	0.97
		Depth to saturated zone	0.24	Deep to water	0.38
				Cutbanks cave	0.10
AbA: Aberdeen-----	45	Very limited		Very limited	
		Restricted permeability	1.00	Cutbanks cave	1.00
		Sodium content	0.08	Deep to water	0.90
				Slow refill	0.55
				Salty water	0.01
Exline-----	30	Very limited		Very limited	
		Restricted permeability	1.00	Cutbanks cave	1.00
		Sodium content	1.00	Slow refill	1.00
		Depth to saturated zone	0.84	Salty water	0.50
		Salinity	0.50	Deep to water	0.07
		Runoff limitation	0.40		
Ar: Arveson-----	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Cutbanks cave	1.00
		Leaching limitation	0.70		
AsE: Arvilla-----	60	Very limited		Very limited	
		Slope	1.00	Deep to water	1.00
		Filtering capacity	1.00		
		Droughty	0.60		

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Sioux-----	25	Very limited Slope Depth to dense layer Filtering capacity Droughty Leaching limitation	1.00 1.00 1.00 0.78 0.45	Very limited Deep to water	1.00
Ba: Bearden-----	90	Somewhat limited Depth to saturated zone	0.84	Somewhat limited Slow refill  Cutbanks cave Deep to water	0.47  0.10 0.07
BdA: Bearden-----	50	Somewhat limited Depth to saturated zone	0.84	Somewhat limited Slow refill  Cutbanks cave Deep to water	0.47  0.10 0.07
Tonka-----	30	Very limited Restricted permeability Depth to saturated zone Ponding Leaching limitation	1.00 1.00 1.00 0.50	Somewhat limited Slow refill  Cutbanks cave	0.30  0.10
Be: Marysland-----	45	Very limited Depth to saturated zone Filtering capacity Leaching limitation Flooding	1.00 1.00 0.70 0.60	Very limited Cutbanks cave	1.00
Divide-----	40	Very limited Filtering capacity Depth to saturated zone	1.00 0.84	Very limited Cutbanks cave Deep to water	1.00 0.07

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BfA: Beotia-----	90	Not limited		Very limited Deep to water	1.00
BfB: Beotia-----	90	Not limited		Very limited Deep to water	1.00
BhA: Beotia-----	55	Not limited		Very limited Deep to water	1.00
Bearden-----	35	Somewhat limited Depth to saturated zone	0.84	Somewhat limited Slow refill  Cutbanks cave Deep to water	0.47  0.10 0.07
BkE: Buse-----	45	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Forman-----	30	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
BkF: Buse-----	55	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Forman-----	20	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
BmF: Buse-----	55	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Forman-----	25	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00

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		Rating class and limiting features	Value	Rating class and limiting features	Value
BsE: Buse-----	40	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Sioux-----	35	Very limited Slope Depth to dense layer Filtering capacity Droughty Leaching limitation	1.00 1.00 1.00 0.78 0.45	Very limited Deep to water	1.00
BtE: Buse-----	40	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Sioux-----	40	Very limited Slope Depth to dense layer Filtering capacity Droughty Leaching limitation	1.00 1.00 1.00 0.78 0.45	Very limited Deep to water	1.00
Co: Colvin-----	90	Very limited Depth to saturated zone Leaching limitation Restricted permeability	1.00 0.50 0.50	Somewhat limited Slow refill Cutbanks cave	0.55 0.10
Do: Castlewood-----	90	Very limited Restricted permeability Depth to saturated zone Flooding Leaching limitation	1.00 1.00 0.60 0.50	Very limited Slow refill Cutbanks cave	1.00 0.10

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
EdB: Edgeley-----	90	Somewhat limited Depth to bedrock Droughty	0.42 0.11	Very limited Deep to water	1.00
EdC: Edgeley-----	85	Somewhat limited Depth to bedrock Droughty	0.42 0.11	Very limited Deep to water	1.00
EdD: Edgeley-----	85	Somewhat limited Slope Depth to bedrock Droughty	0.63 0.42 0.11	Very limited Deep to water	1.00
EmA: Embden-----	90	Not limited		Somewhat limited Deep to water Cutbanks cave	0.81 0.10
EmB: Embden-----	90	Not limited		Somewhat limited Deep to water Cutbanks cave	0.81 0.10
EnC: Embden-----	60	Not limited		Somewhat limited Deep to water Cutbanks cave	0.81 0.10
Buse-----	20	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
EsA: Estelline-----	90	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
ExA: Exline-----	50	Very limited Restricted permeability Sodium content Depth to saturated zone Salinity Runoff limitation	1.00 1.00 0.84 0.50 0.40	Very limited Cutbanks cave Slow refill Salty water Deep to water	1.00 1.00 0.50 0.07

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Aberdeen-----	40	Very limited Restricted permeability Sodium content	1.00 0.08	Very limited Cutbanks cave Deep to water Slow refill Salty water	1.00 0.90 0.55 0.01
FOA: Fordville-----	90	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
FOB: Fordville-----	90	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
FrA: Forman-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Aastad-----	25	Somewhat limited Restricted permeability Depth to saturated zone	0.50 0.24	Somewhat limited Slow refill Deep to water Cutbanks cave	0.97 0.38 0.10
FrB: Forman-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Aastad-----	25	Somewhat limited Restricted permeability Depth to saturated zone	0.50 0.24	Somewhat limited Slow refill Deep to water Cutbanks cave	0.97 0.38 0.10
FrC: Forman-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Aastad-----	25	Somewhat limited Restricted permeability Depth to saturated zone	0.50 0.24	Somewhat limited Slow refill Deep to water Cutbanks cave	0.97 0.38 0.10
FrD: Forman-----	55	Somewhat limited Slope Restricted permeability	0.63 0.50	Very limited Deep to water	1.00
Aastad-----	25	Somewhat limited Restricted permeability Depth to saturated zone	0.50 0.24	Somewhat limited Slow refill Deep to water Cutbanks cave	0.97 0.38 0.10
FsC2: Forman-----	55	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Buse-----	25	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
FsE: Forman-----	55	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Buse-----	25	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
FtD: Forman-----	55	Somewhat limited Slope Restricted permeability	0.96 0.50	Very limited Deep to water	1.00
Buse-----	25	Somewhat limited Slope Restricted permeability	0.96 0.50	Very limited Deep to water	1.00

Ag. Waste Application and Excavated Ponds -- continued  
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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FxC: Forman-----	40	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Poinsett-----	25	Not limited		Very limited Deep to water	1.00
FxD: Forman-----	40	Somewhat limited Slope Restricted permeability	0.63 0.50	Very limited Deep to water	1.00
Poinsett-----	25	Somewhat limited Slope	0.63	Very limited Deep to water	1.00
GbB: Great Bend-----	85	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
GdA: Great Bend-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Beotia-----	30	Not limited		Very limited Deep to water	1.00
GeB: Great Bend-----	70	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Zell-----	20	Not limited		Very limited Deep to water	1.00
GeC: Great Bend-----	65	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Zell-----	25	Not limited		Very limited Deep to water	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Gp: Orthents, Gravelly--	100	Very limited Slope Filtering capacity Droughty Leaching limitation	1.00 1.00 0.71 0.45	Very limited Deep to water	1.00
Ha: Hamar-----	85	Very limited Depth to saturated zone Leaching limitation Droughty	1.00 0.90 0.15	Very limited Cutbanks cave	1.00
Hd: Hamar-----	90	Very limited Depth to saturated zone Leaching limitation Droughty	1.00 0.90 0.15	Very limited Cutbanks cave	1.00
HeA: Harmony-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Aberdeen-----	25	Very limited Restricted permeability Sodium content	1.00 0.08	Very limited Cutbanks cave Deep to water Slow refill Salty water	1.00 0.90 0.55 0.01
HfA: Hecla-----	90	Somewhat limited Leaching limitation Droughty	0.45 0.08	Very limited Cutbanks cave Deep to water	1.00 0.81
HhA: Hecla-----	60	Somewhat limited Leaching limitation Droughty	0.45 0.08	Very limited Cutbanks cave Deep to water	1.00 0.81

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		Rating class and limiting features	Value	Rating class and limiting features	Value
Hamar-----	30	Very limited Depth to saturated zone Leaching limitation Droughty	1.00 0.90 0.15	Very limited Cutbanks cave	1.00
HvB2: Hecla-----	60	Somewhat limited Leaching limitation Droughty	0.45 0.08	Very limited Cutbanks cave Deep to water	1.00 0.81
Venlo-----	25	Very limited Depth to saturated zone Filtering capacity Leaching limitation Droughty	1.00 1.00 0.90 0.04	Very limited Cutbanks cave	1.00
KbE: Kloten-----	60	Very limited Slope Depth to bedrock Droughty Runoff limitation	1.00 1.00 1.00 0.40	Very limited Deep to water	1.00
Buse-----	20	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
Edgeley-----	10	Very limited Slope Depth to bedrock Droughty	1.00 0.42 0.11	Very limited Deep to water	1.00
KnA: Kranzburg-----	90	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
KnB: Kranzburg-----	85	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00

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		Rating class and limiting features	Value	Rating class and limiting features	Value
KnC2: Kranzburg-----	85	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
KrA: Kranzburg-----	60	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Aberdeen-----	30	Very limited Restricted permeability Sodium content	1.00 0.08	Very limited Cutbanks cave Deep to water Slow refill Salty water	1.00 0.90 0.55 0.01
KrB: Kranzburg-----	65	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Aberdeen-----	25	Very limited Restricted permeability Sodium content	1.00 0.08	Very limited Cutbanks cave Deep to water Slow refill Salty water	1.00 0.90 0.55 0.01
La: Lamoure-----	85	Very limited Depth to saturated zone Flooding	1.00 0.60	Somewhat limited Slow refill Cutbanks cave	0.47 0.10
Lo: Lamoure-----	85	Very limited Depth to saturated zone Flooding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.47 0.10
Lu: Ludden-----	90	Very limited Restricted permeability Flooding Runoff limitation	1.00 1.00 0.40	Very limited Deep to water	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
M-W: Miscellaneous Water-	100	Not rated		Not rated	
MaB: Maddock-----	85	Very limited Filtering capacity Leaching limitation	1.00 0.45	Very limited Deep to water	1.00
MaD: Maddock-----	90	Very limited Filtering capacity Leaching limitation Slope	1.00 0.45 0.37	Very limited Deep to water	1.00
Mr: Southam-----	100	Very limited Restricted permeability Ponding Depth to saturated zone Runoff limitation Salinity	1.00 1.00 1.00 0.40 0.01	Somewhat limited Slow refill Cutbanks cave Salty water	0.97 0.10 0.01
Od: Oldham-----	90	Very limited Depth to saturated zone Restricted permeability Leaching limitation	1.00 0.81 0.50	Somewhat limited Slow refill Cutbanks cave	0.98 0.10
Oh: Oldham-----	90	Very limited Depth to saturated zone Restricted permeability Leaching limitation	1.00 0.81 0.50	Somewhat limited Slow refill Cutbanks cave	0.98 0.10

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Or: Orthents, Loamy-----	100	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
Pa: Parnell-----	85	Very limited Restricted permeability	1.00	Somewhat limited Slow refill	0.97
		Ponding	1.00	Cutbanks cave	0.10
		Depth to saturated zone	1.00		
		Leaching limitation	0.50		
PeA: Peever-----	90	Somewhat limited Restricted permeability	0.89	Very limited Deep to water	1.00
		Sodium content	0.08		
PeB: Peever-----	90	Somewhat limited Restricted permeability	0.89	Very limited Deep to water	1.00
		Sodium content	0.08		
PeC: Peever-----	90	Somewhat limited Restricted permeability	0.89	Very limited Deep to water	1.00
		Sodium content	0.08		
PhA: Peever-----	50	Somewhat limited Restricted permeability	0.89	Very limited Deep to water	1.00
		Sodium content	0.08		
Hamerly-----	25	Somewhat limited Depth to saturated zone	0.84	Somewhat limited Slow refill	0.30
		Restricted permeability	0.50	Cutbanks cave	0.10
				Deep to water	0.07

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Pm: Playmoor-----	85	Very limited Depth to saturated zone Flooding Salinity Leaching limitation Sodium content	1.00  1.00 0.50 0.50 0.08	Very limited Cutbanks cave  Salty water Slow refill	1.00  0.50 0.47
PoB: Poinsett-----	50	Not limited		Very limited Deep to water	1.00
Forman-----	30	Somewhat limited Restricted permeability	0.50	Very limited Deep to water	1.00
PwA: Poinsett-----	55	Not limited		Very limited Deep to water	1.00
Waubay-----	35	Not limited		Somewhat limited Deep to water Slow refill Cutbanks cave	0.90 0.30 0.10
PwB: Poinsett-----	60	Not limited		Very limited Deep to water	1.00
Waubay-----	25	Not limited		Somewhat limited Deep to water Slow refill Cutbanks cave	0.90 0.30 0.10
RfA: Renshaw-----	55	Very limited Filtering capacity Droughty	1.00  0.20	Very limited Deep to water	1.00
Fordville-----	35	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
RfB: Renshaw-----	65	Very limited Filtering capacity Droughty	1.00  0.20	Very limited Deep to water	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Fordville-----	25	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
RfC: Renshaw-----	65	Very limited Filtering capacity Droughty	1.00 0.20	Very limited Deep to water	1.00
Fordville-----	20	Very limited Filtering capacity	1.00	Very limited Deep to water	1.00
Sa: Minnewaukan-----	90	Very limited Depth to saturated zone Ponding Filtering capacity Leaching limitation Flooding	1.00 1.00 1.00 0.90 0.60	Very limited Cutbanks cave	1.00
SdD2: Serden-----	90	Very limited Filtering capacity Slope Droughty Leaching limitation	1.00 0.96 0.83 0.45	Very limited Deep to water	1.00
SeB: Serden-----	50	Very limited Filtering capacity Droughty Leaching limitation	1.00 0.83 0.45	Very limited Deep to water	1.00
Venlo-----	35	Very limited Depth to saturated zone Filtering capacity Leaching limitation Droughty	1.00 1.00 0.90 0.04	Very limited Cutbanks cave	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ShD: Sieche-----	85	Somewhat limited Restricted permeability Slope	0.50 0.37	Very limited Deep to water	1.00
ShF: Sieche-----	85	Very limited Slope Restricted permeability	1.00 0.50	Very limited Deep to water	1.00
SkA: Sinai-----	95	Very limited Restricted permeability	1.00	Very limited Deep to water	1.00
SkB: Sinai-----	90	Very limited Restricted permeability	1.00	Very limited Deep to water	1.00
SkC: Sinai-----	90	Very limited Restricted permeability	1.00	Very limited Deep to water	1.00
SmE: Sioux-----	75	Very limited Slope Depth to dense layer Filtering capacity Droughty Leaching limitation	1.00 1.00 1.00 0.78 0.45	Very limited Deep to water	1.00
Arvilla-----	20	Very limited Slope Filtering capacity Droughty	1.00 1.00 0.60	Very limited Deep to water	1.00

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Su: Stirum-----	65	Very limited Depth to saturated zone Ponding Sodium content Restricted permeability Runoff limitation	1.00 1.00 0.82 0.50 0.40	Very limited Cutbanks cave Salty water	1.00 0.35
Ulen-----	25	Very limited Filtering capacity Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave Deep to water	1.00 0.01
SwA: Swenoda-----	90	Somewhat limited Depth to saturated zone	0.24	Very limited Deep to water	1.00
SwB: Swenoda-----	90	Somewhat limited Depth to saturated zone	0.24	Very limited Deep to water	1.00
SxA: Swenoda-----	65	Somewhat limited Depth to saturated zone	0.24	Very limited Deep to water	1.00
Larson-----	25	Very limited Restricted permeability Sodium content Salinity Runoff limitation	1.00 0.82 0.50 0.40	Somewhat limited Deep to water Salty water Slow refill Cutbanks cave	0.81 0.50 0.47 0.10
To: Tonka-----	90	Very limited Restricted permeability Depth to saturated zone Ponding Leaching limitation	1.00 1.00 1.00 0.50	Somewhat limited Slow refill Cutbanks cave	0.30 0.10

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Map symbol and soil name	Pct. of map unit	Application of manure and food- processing waste		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Uf: Ulen-----	85	Very limited Filtering capacity Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave Deep to water	1.00 0.01
Us: Ulen-----	50	Very limited Filtering capacity Depth to saturated zone	1.00 1.00	Very limited Cutbanks cave Deep to water	1.00 0.01
Stirum-----	30	Very limited Depth to saturated zone Ponding Sodium content Restricted permeability Runoff limitation	1.00 1.00 0.82 0.50 0.40	Very limited Cutbanks cave Salty water	1.00 0.35
Va: Vallars-----	80	Very limited Depth to saturated zone Restricted permeability	1.00 0.50	Somewhat limited Slow refill Cutbanks cave	0.97 0.10
W: Water-----	100	Not rated		Not rated	
Wa: Rauville-----	95	Very limited Depth to saturated zone Flooding Runoff limitation	1.00 1.00 0.40	Very limited Cutbanks cave	1.00

