

HYDROLOGIC SOIL GROUPS FOR IOWA SOILS

Soil properties influence the process of generation of runoff from rainfall and must be considered in methods of runoff estimation. When runoff from individual storms is the major concern, the properties can be represented by a hydrologic parameter which reflects the minimum rate of infiltration obtained for a bare soil after prolonged wetting. The influences of both the surface and the horizons of a soil are therefore included.

Four hydrologic groups are used. The soils are classified on the basis of water intake at the end of the long-duration storms occurring after prior wetting and after an opportunity for swelling, and without the protective effects of vegetation. In the definitions to follow, the infiltration rate is the rate at which water enters the soil at the surface and which is controlled by surface conditions, and the transmission rate is the rate at which the water moves in the soil and which is controlled by the horizons. The hydrologic soil groups, as defined by NRCS soil scientists, are:

- A. (Low runoff potential) Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission.
- B. Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well-to-well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.
- C. Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission.
- D. (High runoff potential) Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

The following table gives the hydrologic soil group for each soil series. Generally speaking, those series having two possible classifications are soils with relatively high water tables so that artificial drainage measurably improves their ability to absorb rainfall and thus reduce runoff.

SOIL SERIES	HYDROLOGIC SOIL GROUP
Ackmore	B
Adair	C
Adco	D
Adrian	A/D
Afton	C/D
Ainsworth	B
Albaton	D
Allamakee	B
Allendorf	B
Amana	B
Ambraw	B/D
Ames	C/D
Angus	B
Ankeny	A
Annieville	B
Ansgar	B/D
Anthon	B
Appanoose	D
Arbor	B
Aredale	B
Arenzville	B
Arispe	C
Armstrong	C
Arthur	B
Ashdale	B
Ashgrove	D
Atkinson	B
Atterberry	B
Aureola	B

Backbone	B
Bassett	B
Bauer	C
Bearpen	B/D
Beckwith	D
Belinda	D
Belmann	C
Benclare	C
Bertram	B
Bertrand	B
Billett	A
Biscay	B/D
Bixby	B
Blake	B
Blencoe	D
Blend	D
Blockton variant	C
Blue Earth	A/D
Bode	B
Bolan	B
Bolan variant	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Boone	B
Boots	A/D
Brady	B
Bremer	C
Brownton	C/D
Bucklick	C
Bucknell	C
Buckney	B
Burcham	B
Burchard	C
Burkhardt	A

Calamine	D
Calco	B/D
Calcousta	B/D
Caleb	B
Camden	B
Caneek	B
Caneek variant	B
Canisteo	B/D
Canoe	B
Canoe variant	B
Cantril	B
Carlow	D
Carr	A
Castana	B
Cerlin	D
Chariton	C
Chaseburg	B
Chelsea	A
Chequest	C
Churchtown	B
Clanton	C
Clarinda	D
Clarion	B
Clearfield	C
Clinton	B
Clyde	B/D
Coggon	B
Cokato	B
Coland	B/D
Collinwood	C
Collinwood variant	B
Colo	B/D
Cooper	B
Copaston	D
Coppock	B
Cordova	C/D
Corley	C/D
Cornell	C
Corwith	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Cosmos	C/D
Cott	B
Coyne	B
Creal	C
Cresco	C
Cresken	B
Crippin	B
Crofton	B
Curran	C
Cylinder	B
Cylinder variant	B

Danbury	B
Darfur	B/D
Darwin	D
Darwin variant	D
Davis	B
Delft	B/D
Dells	C
Deloit	B
Dempster	B
Denrock variant	D
Dickinson	A
Dickinson lacustrine substratum	A
Dickman	A
Dinsdale	B
Dinsmore	B
Dockery	C
Dodgeville	B
Dolbee	B
Donatus	B
Donnan	D
Donnan variant	C
Dorchester	B
Dorernton	B
Douds	B
Dow	B
Downs	B
Downs variant	B
Du Page	B
Dubuque	B
Dunbarton	D
Dunbarton variant	B
Dundas	B/D
Dunkerton	B

Edina	D
Egan	B
Eitzen	B
Ella	B
Elon	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Elrick	B
Elrin	B
Elvers	B/D
Elvira	B/D
Ely	B
Emeline	D
Estherville	B
Everly	B
Exette	B
Exira	B

Fairhaven	B
Farrar	B
Faxon	B/D
Fayette	B
Fens	A/D
Festina	B
Fieldon	B/D
Finchford	A
Flaggy alluvial land	B/D
Flagler	A
Flagler variant	A
Floris	B
Floyd	B
Forney	D
Fort Dodge	B
Fostoria	B
Franklin	B
Frankville	B
Fruitfield	A

Gale	B
Galland	D
Galva	B
Gara	C
Garmore	B
Garwin	B/D
Gasconade	D
Gilford	B/D
Gillett Grove	B/D
Givin	C
Gorin	C
Gosport	C
Goss	B
Grable	B
Graceville	B
Granby	A/D
Grantcenter	B
Gravity	B
Grundy	C
Guckeen	C

SOIL SERIES	HYDROLOGIC SOIL GROUP
Hagener	A
Haig	C/D
Hamburg	B
Hanlon	A
Hanska	B/D
Harcot	B/D
Harps	B/D
Harpster	B/D
Havana	B
Havelock	B/D
Hawick	A
Hayden	B
Hayfield	B
Hayfield variant	B
Haynie	B
Hedrick	B
Hesch	B
Hesch variant	B
Histosols, fens	A/D
Hixton	B
Holly Springs	D
Hoopeston	A
Hoopeston variant	A
Hornick	C
Houghton	A/D
Humeston	C/D
Huntsville	B

Ida	B
Inton	B
Ion	B

Jackson	B
Jacwin	D
Jacwin variant	B
Jameston	C/D
Joliet	D
Judson	B

Kalona	C
Kamrar	B
Kanaranzi variant	B
Kandiyohi	C/D
Kasson	D
Keg	B
Kenmoor	B
Kennebec	B
Kensett	B
Kenyon	B
Keomah	B
Keosauqua	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Keswick	C
Kilkenny	B
Killduff	B
Kingston	B
Klinger	B
Klingmore	B
Klossner	A/D
Klum	A
Kniffin	C
Knoke	B/D
Knox	B
Kossuth	B/D
Koszta	B

Lacrescent	B
Ladoga	B
Lakeport	B
Lamoni	C
Landes	A
Landes variant	B
Lanyon	C/D
Larpenteur	B
Lawler	B
Lawson	B
Le Sueur	B
Lemond	B/D
Lerdal	C
Lester	B
Letri	B/D
Lilah	A
Limecreek	B
Linder	B
Lindley	C
Lineville	C
Lineville variant	C
Liscomb	B
Liston	B
Loamy alluvial land	B
Lossing	D
Lourdes	C
Luana	B
Luther	B
Luton	D
Lycurgus	B

Macksburg	B
Madelia	B/D
Mahaska	B
Malvern	C
Marcus	B/D
Marlean	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Marna	C/D
Marquis	B
Marshall	B
Marshan	B/D
Martinsburg	B
Massbach	B
Maxfield	B/D
Maxmore	B/D
May City	B
Mayberry	D
Mayer	B/D
McCreath	B
McPaul	B
Medary	D
Medary variant	D
Millington	B/D
Minden	B
Minnetonka	D
Mixed alluvial land	B
Modale	C
Modale variant	C
Moingona	B
Moingona variant	B
Moneta	B
Monona	B
Montieth	B
Moody	B
Morconick	A
Mottland	B
Moville	C
Mt. Carroll	B
Mt. Sterling	B
Muck	A/D
Mula	B
Muscatine	B
Muskego	A/D
Mystic	C
Mystic variant	D
Nira	B
Napa	D
Napier	B
Nasset	B
Nevin	B
NewGlarus	C
Newvienna	B
Nicollet	B
Niota	D
Niota variant	D
Nishna	C/D

SOIL SERIES	HYDROLOGIC SOIL GROUP
Nodaway	B
Nordness	B
Northboro	C
Norville	B
Oakton	B
Ocheda	C
Ocheyedan	B
Ocheyedan lacustrine substratum	C
Okaw	D
Okoboji	B/D
Olin	B
Olin variant	B
Olmitz	B
Olmitz variant	B
Omadi	B
Omsrud	B
Onawa	D
Oran	B
Orion	C
Orwood	B
Ossian	B/D
Ostrander	B
Otley	B
Otter	B/D
Ottosen	B
Owego	D
Paintcreek	C
Palms	A/D
Peaty muck	A/D
Percival	C
Perks	A
Perks variant	A
Pershing	C
Pillot	B
Pinicon	B
Port Byron	B
Primghar	B
Primghar variant	B
Protivin	C
Quiver	B/D
Racine	B
Racine	D
Racoon	C/D
Raddle	B
Radford	B
Ransom	B

SOIL SERIES	HYDROLOGIC SOIL GROUP
Rathbun	D
Rawles	B
Readlyn	B
Reeds creek	B
Renova	B
Revere	B/D
Riceville	C
Richwood	B
Richwood variant	B
Ridgeport	A
Ridgeton	B
Rinda	D
Ripon	B
Riverwash	A
Rocksan	C
Rockton	B
Rodney	D
Roine	B
Rolfe	C
Rollingstone	C
Roseville	B
Rossfield	B
Rossfield variant	B
Rowley	B
Rozetta	B
Rubio	C/D
Rushmore	B/D
Rushville	D
Russell	B

Sable	B/D
Sac	B
Sac variant	B
Salida	A
Salix	B
Salix variant	B
Sarpy	A
Sattre	B
Saude	B
Sawmill	B/D
Schapville	C
Schley	B
Schley variant	B
Scroll	C
Seaton	B
Seymour	C
Shaffton	B
Shandep	B/D
Sharpsburg	B
Shelby	C

SOIL SERIES	HYDROLOGIC SOIL GROUP
Shellwood	B
Shullsburg	C
Sigglekov	A
Smithland	B/D
Snider	C
Sogn	D
Solomon	D
Sparta	A
Sperry	C/D
Spicer	B/D
Spillco	B
Spillville	B/D
Steinauer	B
Storden	B
Strahan	B
Stronghurst	B
Sunburg	B

Taintor	C/D
Talcot	B/D
Tallula	B
Tama	B
Tama variant	B
Tell	B
Terril	B
Thebes	B
Thorp	C/D
Ticonic	A
Tieville	D
Tilfer	B/D
Timula	B
Titus	B/D
Toolesboro	B
Traer	B/D
Trent	B
Tripoli	B/D
Truman	B
Turlin	B
Turlin variant	B
Tuskeego	C/D

Udolpho	B/D
Udorthents	
Uturin	C/D

Vanmeter	C
Vesser	C
Village	B
Vinje	B
Volney	A

SOIL SERIES	HYDROLOGIC SOIL GROUP
Vore	B
Wabash	D
Wacousta	B/D
Wacousta variant	B/D
Wadena	B
Wadena variant	B
Waldorf	C/D
Walford	B/D
Wapsie	B
Wapsie variant	B
Watkins	B
Watseka	B
Waubeek	B
Waubonsie	B
Waucoma	B
Waukee	B
Waukee variant	B
Waukegan	B
Webster	B/D
Weller	C
Wentworth	B
Whalan	C
Whittier	B
Wilmonton	B
Wilsey	B
Winneshiek	B
Winneshiek variant	B
Winterset	C
Wiota	B
Woodbury	D
Worthen	B
Yellowriver	B
Zenor	B
Zook	C/D
Zwingle	D
Zwingle variant	D