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ORIGINAL
(Red)
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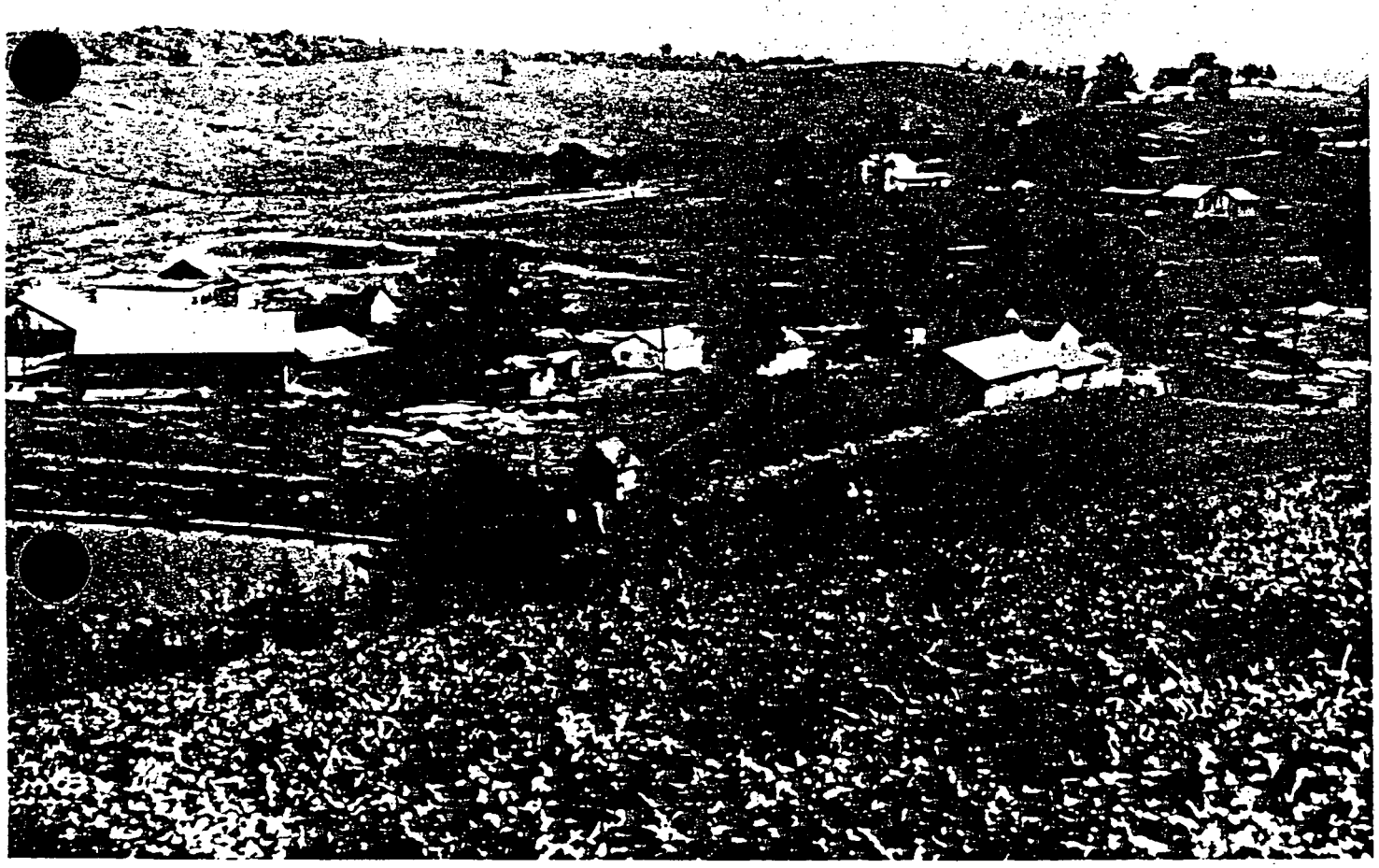
SOIL SURVEY OF

Fayette and Raleigh Counties, West Virginia



United States Department of Agriculture
Soil Conservation Service
In cooperation with
West Virginia University Agricultural Experiment Station

Issued March 1975

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Muskingum very stony silt loam, 20 to 40 percent slopes (MnE).—This soil is slightly shallower over bedrock and more droughty than the one described as representative of the series. Also, the surface is very stony. This soil commonly occurs on ridgetops and points. Included in mapping were small areas of Dekalb soils.

Slopes and stoniness limit the use of this Muskingum soil to trees. Capability unit VIIs–2.

Muskingum very stony silt loam, 40 to 75 percent slopes (MnF).—This soil is deeper and contains more coarse fragments than the one described as representative of the series. It is on rugged mountains and generally covers large areas. Included in mapping were small areas of Dekalb and Shelocta soils and areas of Steep rock land.

Because of very steep slopes this soil is used only for wooded areas, as wildlife habitat, and for recreation. Some areas have been strip mined (fig. 5). Most of the acreage is wooded. Capability unit VIIs–2.

Philo Series

The Philo series consists of deep, moderately well drained soils on flood plains along the smaller streams throughout the survey area, but mostly in the central and eastern parts of the survey area. Slopes are 0 to 3 percent. These soils formed in acid alluvial material washed from soils on uplands that are underlain by sandstone, siltstone, and shale. They are flooded at occasional to frequent intervals.

In a representative profile in a pasture the surface layer is thin, very dark grayish-brown silt loam about 3 inches thick underlain by very friable dark-brown silt loam about 7 inches thick. The subsoil is about 18 inches thick. The upper 10 inches is dark yellowish-brown silt loam and light silt loam mottled with grayish brown. The lower part is friable, dark grayish-brown loam mottled with gray and strong brown. Below the subsoil is friable, gray loam that contains thin, discontinuous layers or pockets of sandy loam and is mottled with dark brown and yellowish red.

Philo soils have high available moisture capacity and moderate to moderately slow permeability. The water table is moderately high in winter and early in spring. Natural fertility is moderate.

These soils are easy to work and are suited to crops, hay, and pasture. Deep-rooted legumes may not last long on this moderately wet soil.

Representative profile of Philo silt loam in a pasture field along Paint Creek near Sweeneysburg, in Raleigh County:

Ap1—0 to 3 inches, very dark grayish-brown (10YR 3/2 silt loam, weak, very fine, granular structure; very friable; many roots; strongly acid; clear, wavy boundary.

Ap2—3 to 10 inches, dark-brown (10YR 4/3) silt loam; weak, fine, subangular blocky structure; very friable; many roots; very strongly acid; abrupt, wavy boundary.

B21—10 to 15 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine and medium, subangular blocky structure; friable; common roots; very strongly acid; clear, wavy boundary.

B22—15 to 20 inches, dark yellowish-brown (10YR 4/4) light silt loam; few, fine, grayish-brown (2.5Y 5/2) mottles; weak, fine and medium, subangular blocky structure; friable; few roots; very strongly acid; clear, wavy boundary.

B3—20 to 28 inches, dark grayish-brown (2.5Y 4/2) loam; common, fine and medium, gray (10YR 5/1) and strong-brown (7.5YR 5/6) mottles; weak, fine, subangular blocky structure; friable; few roots; very strongly acid; clear, wavy boundary.

Cg—28 to 50 inches, gray (5Y 5/1) loam; many, fine, dark-brown (7.5YR 3/2) and yellowish-red (5YR 4/8) mottles; massive; friable; few, thin, discontinuous layers or pockets of sandy loam; few, fine, black concretions; very strongly acid.

Depth to bedrock is more than 4 feet. Depth to low-chroma mottles ranges from 15 to 22 inches. Natural reaction is strongly acid to very strongly acid throughout the profile.

The B horizon is dominantly light silt loam in the upper part and loam to fine sandy loam in the lower part. It ranges from dark yellowish brown to yellowish brown and dark grayish brown. The C horizon in places contains stratified sandy loam, loamy sand, sand, and fine gravel.

Philo soils are next to the well-drained Pope soils and the poorly drained Atkins soils. They are less well drained than Pope soils and better drained than Atkins soils.

Philo silt loam (Ph).—This nearly level soil is the only Philo soil mapped in the survey area. The water table is within 1 to 2 feet of the surface during winter and early spring. Included in mapping were small areas of Pope and Atkins soils, small areas of somewhat poorly drained soils, and areas of soils having a surface layer of loam.

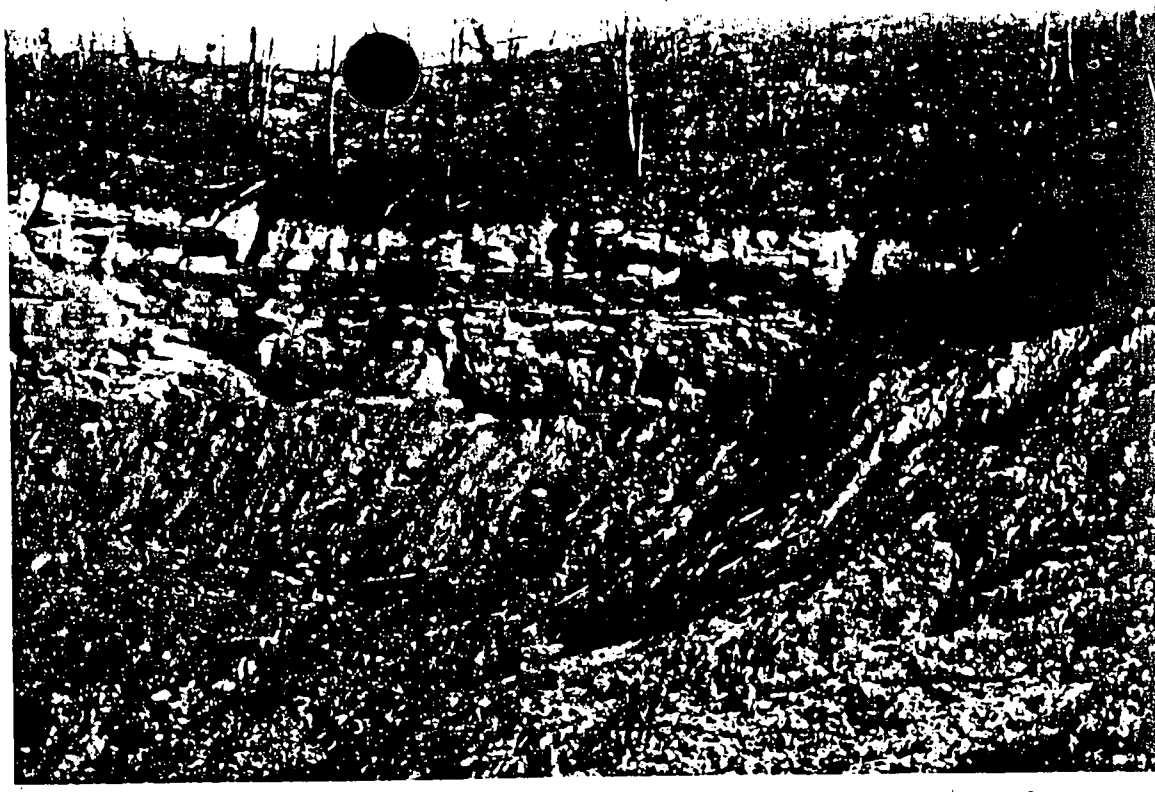


Figure 5.—Strip mining of coal from a ridge of Muskingum very stony silt loam, 40 to 75 percent slopes.

This Philo soil is suited to all crops commonly in the two counties. Continuous row crops can be A cover crop protects them from scouring during flooding. Working crop residue into the soil impr tilth and fertility. In places, small wet areas nee cial drainage. Diversion terraces are needed in p divert runoff from adjacent slopes. Capability unit

Pope Series

The Pope series consists of deep, well-drained flood plains along the smaller streams through survey area, but mostly in the central and eastern the survey area. These soils formed in acid alluvi rial washed from soils on uplands that are under sandstone, siltstone, and shale. They are flooded sional to frequent intervals. Slopes range from percent.

In a representative profile in a pasture the layer is dark-brown fine sandy loam about 7 inch The subsoil, about 25 inches thick, is very fria sandy loam. The upper 8 inches is dark yellowish and the lower 17 inches is dark brown. Below the is brown fine sandy loam that contains thin, dis ous layers of silty and sandy material and a few

Appendix A: Hydrologic soil groups

ORIGINAL (Red)

Soils are classified into hydrologic soil groups (HSG's) to indicate the minimum rate of infiltration obtained for bare soil after prolonged wetting. The HSG's, which are A, B, C, and D, are one element used in determining runoff curve numbers (see chapter 2). For the convenience of TR-55 users, exhibit A-1 lists the HSG classification of United States soils.

The infiltration rate is the rate at which water enters the soil at the soil surface. It is controlled by surface conditions. HSG also indicates the transmission rate—the rate at which the water moves within the soil. This rate is controlled by the soil profile. Approximate numerical ranges for transmission rates shown in the HSG definitions were first published by Musgrave (USDA 1955). The four groups are defined by SCS soil scientists as follows:

Group A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission (greater than 0.30 in/hr).

Group B soils have moderate infiltration rates when thoroughly wetted and consist 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 (0.15-0.30 in/hr).

Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission (0.05-0.15 in/hr).

Group D soils have high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr).

In exhibit A-1, some of the listed soils have an added modifier; for example, "Abrazo, gravelly." This refers to a gravelly phase of the Abrazo series that is found in SCS soil map legends.

Disturbed soil profiles

As a result of urbanization, the soil profile may be considerably altered and the listed group classification may no longer apply. In these circumstances, use the following to determine HSG according to the texture of the new surface soil, provided that significant compaction has not occurred (Brakensiek and Rawls 1983):

HSG	*Soil textures*
A	Sand, loamy sand, or sandy loam
B	Silt loam or loam
C	Sandy clay loam
D	Clay loam, silty clay loam, sandy clay, silty clay, or clay

Drainage and group D soils

Some soils in the list are in group D because of a high water table that creates a drainage problem. Once these soils are effectively drained, they are placed in a different group. For example, Ackerman soil is classified as A/D. This indicates that the drained Ackerman soil is in group A and the undrained soil is in group D.

Exhibit A-1, continued: Hydrologic soil groups for United States soils

PERIDGE	B
PERILLA	B
PERINOS	C
PERITSA	C
PERKINS	C
PERKS	A
PERLA	C
PERLOR	D
PERMA	B
PERN	B
PERNITAS	C
PERNOG	D
PERNTY	D
PERQUIMANS	D
PERREAU	B
PERRIN	B
PERRINE	D
PERRINTON	C
PERRY	D
PERRYPARK	B
PERRYVILLE	B
PERSANTI	C
PERSAYO	D
PERSHING	C
PERSIS	B
PERT	D
PERU	C
PERVINA	B
PERWICK	C
PESCADERO	D
PESCAR	C
PESHASTIN	B
PESHEKEE	D
PESHO	C
PESHORE	C
PESO	C
PESOWYO	C
PETACA	D
PETAL	C
PETAN	D
PETEETNEET	D
PETERMAN	D
PETERMAN, SANDY SUBSTRATUM, ALKALI	C
PETERS	
PETERSON	D
PETESCREEK, STONY	B
PETESCREEK, GRAVELLY	B
PETRIE	C
PETPOLIA	D
PETROS	C/D
PETSPRING	D
PETTICOAT	D
PETTIGREW	B
PETTUS	B/D
PETTY	C
PEVETO	B
PEWAMO	A
PEYTON	C/D
PFEIFFER	B
PHAGE	B
PHALANX	B
PHANTOM	B
PHARO	C
PHARR	B
PHEBA	B
PHEENEY	B
PHELAN	C
PHELPS	C
PHERSON	D
PHIFERSON	B
PHILBON	B
PHILDER	C
PHILIPPA	D
PHILIPSBURG	C
PHILLCHER	B
PHILLIPS	B
PHILO	B
PHILOMATH	B
PHING	C
PHIPPS	C
PHLISS	C
PHOEBE	A
PHOENIX	C
PHYS	D
PIANKESHAW	B
PIASA	B
PIBLER	C
PICABO	D
PICACHO	D
PICANTE	D
PICAYUNE	B
PICEANCE	B
PICKAWAY	D
PICKENS	C
PICKETT	D
PICKFORD	B
PICKNEY	B
PICKNEY, FLOODED	C
PICKRELL	D
PICKTON	C
PICKUP	B
PICKWICK	D
PICO	C
PICOSA	B
PIDCOKE	C
PIDINEEN	D
PIE CREEK	C
PIEGON	B
PIERIAN	D
PIERKING	C
PIERPONT	C
PIERRE	C
PIERSONTE	C
PIERZ	D
PIETOWN	C
PIGTAIL	D
PIIHONUA	D
PIKE	D
PIKEVILLE	C
PILABO	
PILCHUCK	
PILCHUCK, PROTECTED	D
PILINE	B
PILLIKEN	C
PILLOT	
PILLSBURY	D
PILOT PEAK	C/D
PILOT ROCK	D
PILOTPEAK	D
PILTDOWN	B
PILTZ	B/D
PIMA	C
PIMER	B
PINAL	A
PINALENO	C/D
PINANT	B
PINATA	B
PINAVETES	B
PINBIT	B
PINCHER	C
PINCHOT	B
PINCKNEY	B
PINCONNING	C
PINE FLAT	C
PINEAL	D
PINEBUTTE	B
PINECREEK	B
PINEDA	C
PINEDA, DEPRESSIONAL	D
PINEDALE	D
PINEGUEST	C
PINEHURST	B
PINEISLE	B
PINELLAS	B
PINELLI	D
PINETOP	D
PINETUCKY	C
PINETUCKY, GRADED	D
PINEVAL	B
PINEVILLE	D
PINEZ	B
PINGREE	B
PINHOOK	D
PINICON	D
PINITOS	C
PINKEL	C
PINKHAM	D
PINKSTON	B
PINNACLES	C
PINNEBOG	C
PINNOBIE	D
PINO	C
PINOLE	D
PINON	A/D
PINONES	D
PINRIDGE	D
PINSPRING	A
PINTAS	C
PINTLAR	B
PINTO	B
PINTURA	C
PINTWATER	D
PIOCHE	D
PIOPOLIS	D
PIPELINE	B
PIPER	B
PIPESTONE	D
PIPPIN	C
PIRO	D
PIPOGEL	A
PIROUETTE	B
PIRUM	B
PISGAH	C
PISHKUN	A
PISMO	B
PIT	B
PITCHER	B
PITCO	C
PITNEY	A
PITTMAN	
PITTSFIELD	D
PITTSTOWN	B
PITZER	B
PIUTE	C
PIVOT	D
PIXLEY	C
PIZENE	D
PLACEDO	B
PLACENTIA	C
PLACERITOS, SALINE, DRAINED	B
PLACERITOS, SALINE-ALKALI	D
PLACERITOS, MODERATELY WET	B
PLACERITOS, WET	C
PLACERITOS, DRAINED	A
PLACID	B
PLACID, DEPRESSIONAL	C
PLACID, FREQUENTLY FLOODED	B
PLACITAS	D
PLACK	B
PLAINBO	B
PLAINFIELD	B/D
PLAISTED	D
PLANK	B
PLANKINTON	B
PLANO	B
PLANTATION	B
PLASKETT	B/D
PLATA	B
PLATEA	C
PLATNER	B
PLATO	C
PLATORO	B
PLATTE	B
PLATTE, WET	B
PLATTE, CHANNELED	D
PLATTVILLE	B/D
PLAYCO	B
PLAYER	B
PLAYMOOR	C
PLAZA	A
PLEASANT	B
PLEASANT, PONDED	C
PLEASANT GROVE	A/D
PLEASANT VALE	B
PLEASANT VIEW	C
PLEASANTON	B
PLEDGER	D
PLEGONIA	C
PLEINE	B
PLEIOVILLE	C
PLEITO	B
PLEVNA	B
PLINCO	C
PLITE	A
PLOME	D
PLOVER	D
PLUCK	C/D
PLUMAS	D
PLUMMER	C
PLUSH	B
PLUTOS	A
PLYMOUTH	B
POALL	B
POARCH	D
POBER	B
POCALLA	C
POCAN	B
POCASSET	D
POCATELLO	D
POCATY	B
POCKER	D
POCOLA	C
POCOMOKE, PONDED	C
POCOMOKE, DRAINED	B
POCONO	C
POCOSIN	C
PODMOR	D
PODO	A
PODUNK	D
PODUS	B
POE	D
POGAL	D
POGANEAB	B
POGANEAB, CLAYEY SUBSTRATUM	C
POGANEAB, SALINE	
POGANEAB, HIGH RAINFALL	B
POGANEAB, STRONGLY SALINE	C
POGANEAB, FREQUENTLY FLOODED	B
POGANEAB, SALINE-ALKALI	B/D
POGUE	D
POHAKUPU	C
POIN	D
POINDEXTER	A
POINSETT	A
POINT	C
POINT ISABEL	D
POISONCREEK	D
POJO	B
POJOAQUE	B/D
POKEGEMA	D
POKEMAN	B
POKER	C
POKERGAP	C
POKEY	C
POLACCA	B
POLALLIE	B
POLAR	D
POLATIS	D
POLAWANA	B
POLE	B
POLFCREEK	D
POLELINE	C/D
POLEPATCH	C
POLEY	C
POLEY, COBBLY	D
POLICH	B
POLKING	B
POLLARD	B
POLLASKY	B
POLLUX	D
POLLY	D
POLO, MODERATELY SLOW PERM	D
POLO, MODERATE PERMEABILITY	C
POLONIO	C
POLSON	B
POLUM	B
POMADE	B
POMAN	C
POMAT	C
POMAT, DRY	B/D
POMELLO	B
POMERENE	B
POMFRET	A
POMO	C
POMONA	B
POMONA, DEPRESSIONAL	C
POMPANO	A
POMPANO, DEPRESSIONAL	B
POMPANO, FLOODED	B
POMPEII	D
POMPONIO	C
POMPTON	B/D
POMROY	B
PONCA	B
PONCENA	B
PONCHA	C
PONCIANO	C
PONO	B
POND CREEK	C
PONDER	C
PONIL	C
PONINA	C
PONOZZO	D
PONTO	
PONTOTOC	D
PONZER	D
POOCHAM	
POOKU	
POOLER	
POOLEVILLE	D
POORCAL	
POORMA	
POOSE	D
POOTATUCK	
POPASH	B
POPE	B
POPHERS	D
POPLE	B
POPLIMENTO	B
POPOSHIA	C
POPOTOSA	C
POPPLETON	D
POQUETTE	C
POQUITA	B

NOTES: TWO HYDROLOGIC SOIL GROUPS SUCH AS B/C INDICATES THE DRAINED/UNDRAINED SITUATION. MODIFIERS SHOWN, E.G., BEDROCK SUBSTRATUM, REFER TO A SPECIFIC SOIL SERIES PHASE FOUND IN SOIL MAP LEGEND.

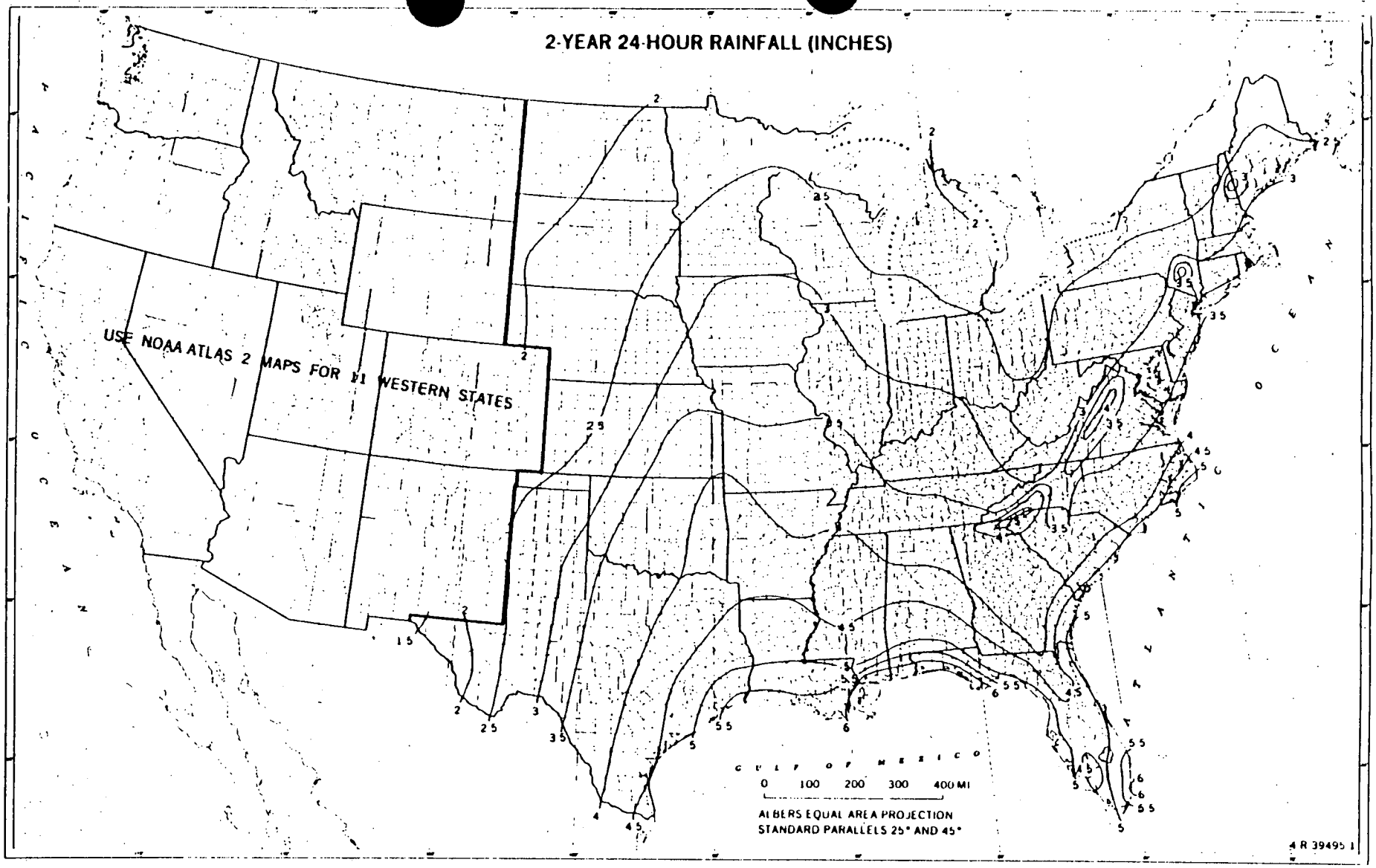
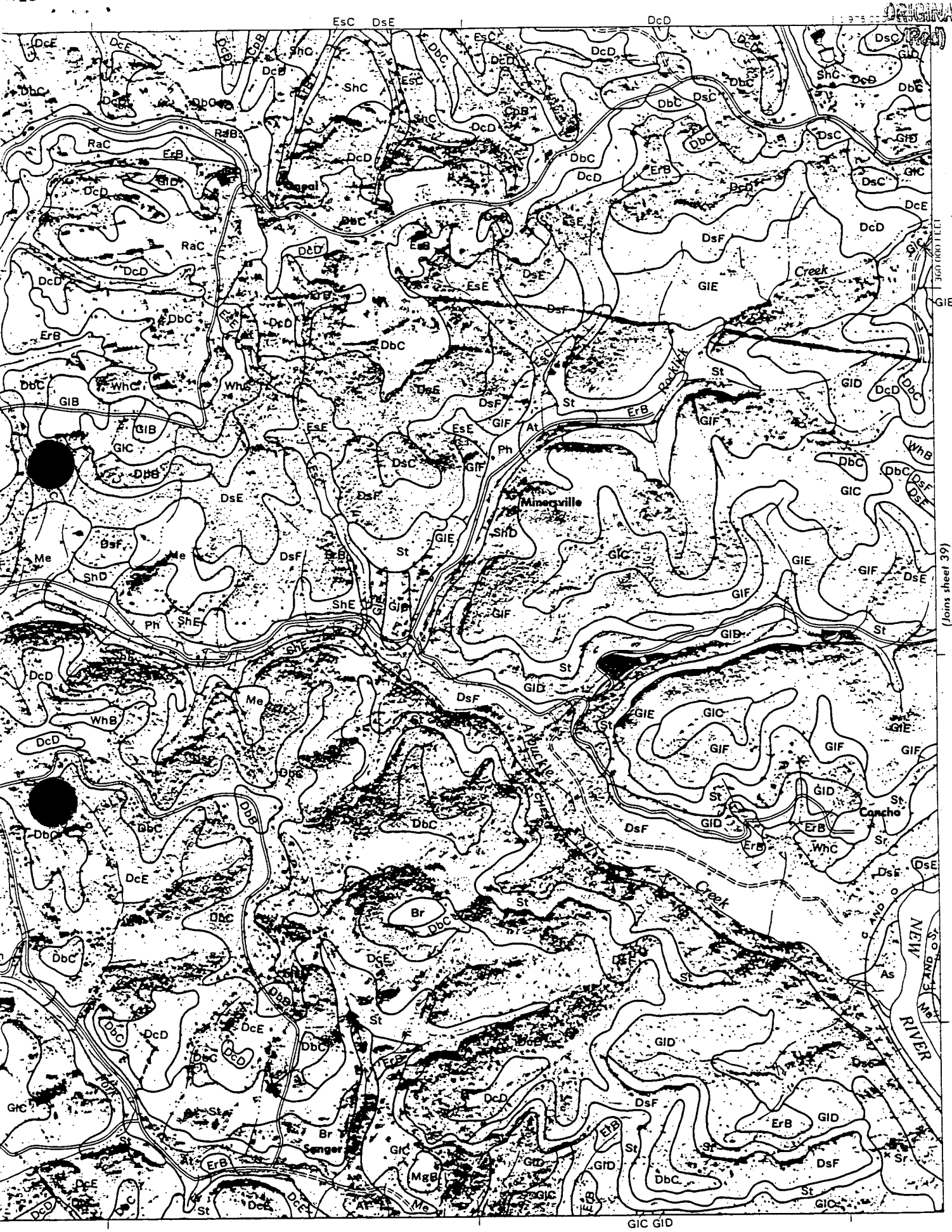


Figure B-3.—Two-year, 24-hour rainfall.

ORIGINAL PAGE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