



Soil Survey of the Tennessee Valley Substation Belle Mina, Alabama



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Information contained herein is available to all persons without regard to race, color, sex, or national origin.

Soil Survey of the Tennessee Valley Substation Belle Mina, Alabama¹

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THIS SOIL SURVEY includes a soil map, map legend, and a descriptive legend which briefly describes soils in each area delineated on the map. These delineations are called map units and are indicated by a map symbol. Three tables were used to summarize soil data. Table 1 gives the mapping unit name used to indicate the soil in each permanent tier, table 2 gives the classification of soil series used to name mapping units, and table 3 gives some physical, chemical, and mineralogical properties of soils from Decatur and Rexor map units.

Mapping units for the Tennessee Valley Substation are as follows:

<i>Map symbol</i>	<i>Map unit name</i>
ChA	Chenneby silt loam, 0 to 2 percent slopes, occasionally flooded
DeA	Decatur silt loam, 1 to 2 percent slopes
DeB	Decatur silty clay loam, 2 to 6 percent slopes, eroded
DeC	Decatur silty clay loam, 6 to 10 percent slopes, eroded
DwA	Dewey silt loam, 1 to 2 percent slopes
DwB	Dewey silty clay loam, 2 to 6 percent slopes, eroded
EmA	Emory silt loam, 0 to 2 percent slopes, ponded
EpA	Ennis-Pruitton complex, 0 to 2 percent slopes, frequently flooded
FuC	Fullerton cherty silty clay loam, 2 to 8 percent slopes, eroded
GuA	Guthrie silt loam, 0 to 2 percent slopes, frequently flooded
ReA	Rexor silt loam, 0 to 2 percent slopes, occasionally flooded

CHENNEBY SILT LOAM

Map Symbol-ChA

Chenneby silt loam, 0 to 2 percent slopes, occasionally flooded. This somewhat poorly drained to moderately well drained soil is represented by the following soil profile in a cultivated field on a 1 percent slope.

¹This was a cooperative effort of the Alabama Agricultural Experiment Station and the USDA-Soil Conservation Service.

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Profile Description

Ap—0 to 11 inches; dark reddish brown (5YR 3/3) silt loam; weak medium granular and weak medium subangular blocky structure; friable; many fine and medium roots; slightly acid; clear wavy boundary.

Bw & A—11 to 21 inches; 70 percent dark by volume of yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; 30 percent by volume of mottled dark reddish brown (5YR 3/3); and dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; common fine and medium roots; medium acid; friable; clear smooth boundary.

Bw1—21 to 31 inches; mottled brown (10YR 5/3); light grayish brown (10YR 6/2); and brown (7.5YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; 3 percent by volume of Mn concretions; strongly acid; gradual smooth boundary.

Bw2—31 to 50 inches; mottled brown (10YR 5/3); light grayish brown (10YR 6/2); and yellowish red (5YR 4/6) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; 5 percent by volume of Mn concretions; very strongly acid; abrupt wavy boundary.

Bg—50 to 62 inches; light gray (10YR 7/1) silty clay loam; common medium distinct yellowish red (5YR 5/6); and common coarse distinct pale brown (10YR 6/3) mottles; moderate coarse subangular blocky structure; firm; few fine roots; very strongly acid.

Type Location

1,000 feet north and 1,780 feet east of the southwest corner of Section 18, T.4 S., R.3 W.

Range in Characteristics

Solum thickness ranges from 50 to 70 inches. Depth to rock is more than 5 feet.

The A horizon is 8 to 15 inches thick. It has hue of 5YR or 7YR, value of 3 or 4, and chroma of 3 or 4. Texture is silt loam or silty clay loam. Reaction ranges from slightly acid to medium acid.

The Bw and A horizon is 4 to 16 inches thick. The Bw portion is 50 to 80 percent by volume and has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6. The A portion is 20 to 50 percent by volume and has hue of 5YR to 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is silt loam or silty clay loam. Reaction ranges from slightly acid to very strongly acid.

The Bw horizon is 15 to 40 inches thick. It has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6; or it is mottled in varying shades of brown, yellow, gray, and red. Texture is silt loam or silty clay loam. Reaction ranges from medium acid to very strongly acid.

The Bg horizon extends to a depth of 50 to 70 inches. It has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is silty clay loam. Reaction ranges from strongly acid to very strongly acid.

The Cg horizon, where present, consists of stratified layers of sand and gravel.

Important Soil Properties

Flooding frequency: Occasional during winter and in early spring.

Rooting depth: More than 6 feet.

Permeability: Moderately permeable.

Water table: 1.0 to 2.5 feet during winter and in early spring.

Organic matter content: Moderately low.

Shrink-swell potential: Low.

Available water capacity: Medium.

Land capability subclass: 2w.

Woodland ordination symbol: 1w.

DECATUR SILT LOAM AND SILTY CLAY LOAM

Map Symbol-DeA

DeA—Decatur silt loam, 1 to 2 percent slopes. This well drained soil is represented by the following soil profile in a cultivated cotton field on a 1 percent slope.

Profile Description

Ap—0 to 10 inches; dark reddish brown (5YR 3/3) silt loam; moderate fine granular structure; friable; 1 percent by volume of ironstone nodules less than 6 millimeters in size; common fine and medium roots; slightly acid; abrupt wavy boundary.

Bt1—10 to 21 inches; dark red (10R 3/6) silty clay; moderate medium subangular blocky structure; friable; 2 percent by volume of ironstone nodules less than 6 millimeters in size; common fine and medium roots; thin patchy faint clay films on faces of peds; medium acid; gradual smooth boundary.

Bt2—21 to 72 inches; dusky red (10R 3/4) clay; moderate medium subangular blocky structure; friable; 1 percent by volume of ironstone nodules less than 1 centimeter in size; thin discontinuous clay films on faces of peds; common fine roots; strongly acid.

Type Location

200 feet south and 1,320 feet west of the northeast corner of Section 19, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 72 inches. Depth to bedrock is more than 6 feet. Percent by volume of ironstone nodules less than 1 centimeter in diameter ranges from 0 to 3 percent.

The A horizon is 8 to 14 inches thick. It has hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 3 or 4. Texture is silt loam or silty clay loam. Reaction ranges from slightly acid to medium acid.

The Bt horizon extends to a depth of 72 inches or more. It has hue of 10R or 2.5YR, value of 3, and chroma of 4 or 6. Texture is silty clay loam, silty clay, or clay. Reaction ranges from medium acid to very strongly acid.

Important Soil Properties

Flooding frequency: None.

Rooting depth: More than 6 feet.

Permeability: Moderately permeable.

Water table: None.

Organic matter content: Moderately low.

Shrink-swell potential: Moderate.

Available water capacity: Medium.

Land capability subclass: 1.

Woodland ordination symbol: 3o.

TABLE 1. SOILS IDENTIFIED IN RESEARCH TIERS ON THE TENNESSEE VALLEY SUBSTATION

Tier	Map symbol	Map unit name
1	DeA	Decatur silt loam, 1 to 2 percent slopes
2	DeA	Decatur silt loam, 1 to 2 percent slopes
3	DeA	Decatur silt loam, 1 to 2 percent slopes
4	DeA	Decatur silt loam, 1 to 2 percent slopes except for NW corner which is Emory silt loam, 0 to 2 percent slopes, ponded
5	DeA	Decatur silt loam 1 to 2 percent slopes
6	DeA	Decatur silt loam 1 to 2 percent slopes except for W edge which is Emory silt loam, 0 to 2 percent slopes, ponded
	EmA	
7	DeA	Decatur silt loam, 1 to 2 percent slopes
8	DeA	Decatur silt loam, 1 to 2 percent slopes except for SW corner which is Emory silt loam, 1 to 2 percent slopes, ponded
	EmA	
9	DeA	Decatur silt loam, 1 to 2 percent slopes
10	DeA	Decatur silt loam, 1 to 2 percent slopes
11	DeA	Decatur silt loam, 1 to 2 percent slopes
12	DeA	Decatur silt loam, 1 to 2 percent slopes
13	DeA	Decatur silt loam, 1 to 2 percent slopes
14	DeA	Decatur silt loam, 1 to 2 percent slopes
15	DeA	Decatur silt loam, 1 to 2 percent slopes
16	DeA	Decatur silt loam, 1 to 2 percent slopes except for E 1/3 which is Decatur silty clay loam, 2 to 6 percent slopes, eroded
	DeB	
17	DeA	Decatur silt loam, 1 to 2 percent slopes
18	DeA	Decatur silt loam, 1 to 2 percent slopes
19	DeA	Decatur silt loam, 1 to 2 percent slopes
20	DeA	Decatur silt loam, 1 to 2 percent slopes
21	DeA	Decatur silt loam, 1 to 2 percent slopes
22	DeA	Decatur silt loam, 1 to 2 percent slopes
23	DeA	Decatur silt loam, 1 to 2 percent slopes
24	DeA	Decatur silt loam, 1 to 2 percent slopes
25	DeA	Decatur silt loam, 1 to 2 percent slopes except for NE corner which is Emory silt loam, 0 to 2 percent slopes, ponded
	EmA	
26	DeA	Decatur silt loam, 1 to 2 percent slopes
27	EmA	Emory silt loam, 0 to 2 percent slopes, ponded except for SW 1/3 which is Dewey silt loam, 1 to 2 percent slopes
	DwA	
28	DwA	Dewey silt loam, 1 to 2 percent slopes
29	EmA	Emory silt loam, 0 to 2 percent slopes, ponded
30	DwA	Dewey silt loam, 1 to 2 percent slopes
31	EmA	Emory silt loam, 0 to 2 percent slopes, ponded except for NW corner which is Dewey silt loam, 1 to 2 percent slopes
	DwA	
32	DwA	Dewey silt loam, 1 to 2 percent slopes except for NW corner which is Chenneby silt loam, 0 to 2 percent slopes, occasionally flooded
	ChA	
33	DeA	Dewey silt loam, 1 to 2 percent slopes
35	DeA	Dewey silt loam, 1 to 2 percent slopes
36	ChA	Chenneby silt loam, 0 to 2 percent slopes, occasionally flooded except for SE corner which is Decatur silt loam, 1 to 2 percent slopes
	DeA	

Map Symbol-DeB

DeB—Decatur silty clay loam, 2 to 6 percent slopes, eroded. This well drained soil is represented by the following soil profile in a cultivated cotton field on a 3 percent slope.

Profile Description

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) silty clay loam; weak medium granular and weak medium subangular blocky structure; friable; common fine and medium roots; 1 percent by volume of ironstone nodules less than 6 millimeters in size; slightly acid; abrupt wavy boundary.

Bt1—8 to 19 inches; dusky red (2.5YR 3/4) silty clay; moderate medium subangular blocky structure; friable; common fine roots; 1 percent by volume of ironstone nodules less than 1 centimeter in diameter; thin patchy faint clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—19 to 72 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; friable; few fine roots; 1 percent by volume of ironstone nodules less than 6 millimeters in size; thin discontinuous distinct clay films on faces of peds; strongly acid.

Type Location

2,540 feet south and 180 feet east of the northwest corner of Section 18, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 72 inches. Depth to bedrock is more than 6 feet. Percent by volume of ironstone nodules less than 1 centimeter in diameter ranges from 0 to 3 percent.

The A horizon is 6 to 10 inches thick. It has hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 3 or 4. Texture is silty clay loam. Reaction ranges from slightly acid to medium acid.

TABLE 2. CLASSIFICATION OF SOIL SERIES CORRELATED ON THE TENNESSEE VALLEY SUBSTATION

Series	Map symbol	Family ¹	Subgroup	Great group	Order
Chenneby	ChA	fine-silty, mixed	Fluventic Dystrachrepts	Dystrachrepts	Inceptisols
Decatur	DeA,B,C	clayey, kaolinitic	Rhodic Paleudults	Paleudults	Ultisols
Dewey	DwA,B	clayey, kaolinitic	Typic Paleudults	Paleudults	Ultisols
Emory	EmA	fine-silty, siliceous	Fluventic Umbric Dystrachrepts	Dystrachrepts	Inceptisols
Ennis	EpA	fine-loamy, siliceous	Fluventic Dystrachrepts	Dystrachrepts	Inceptisols
Fullerton	FuC	clayey, kaolinitic	Typic Paleudults	Paleudults	Ultisols
Guthrie	GuA	fine-silty, siliceous	Typic Fragiaquults	Fragiaquults	Ultisols
Pruittton	EpA	fine-loamy, siliceous	Fluventic Dystrachrepts	Dystrachrepts	Inceptisols
Rexor	ReA	fine-silty, siliceous	Ultic Hapludalfs	Hapludalfs	Ultisols

¹All in thermic temperature regime.

TABLE 3. PHYSICAL AND CHEMICAL PROPERTIES OF THE DECATUR AND REXOR SOILS ON THE TENNESSEE VALLEY SUBSTATION

Sample No.	Horizon	Depth in.	Particle size distribution			Chemical properties						
			Sand pct.	Silt pct.	Clay pct.	PH	H* meq/100g	Ca meq/100g	Mg meq/100g	K meq/100g	CEC meq/100g	Base S pct.
DECATUR SILT LOAM												
1	AP	0-10	15.50	57.62	26.88	6.20	3.60	8.80	0.87	0.53	13.80	74.00
2	BT1	10-21	9.90	46.74	43.36	5.10	6.56	4.02	.88	.09	11.55	43.30
3	BT2	21-72	8.80	34.40	56.80	4.80	6.16	1.32	1.27	.08	8.83	30.30
4		72	9.80	25.20	65.00	4.50	8.72	0.50	.75	.07	10.04	13.20
REXOR SILT LOAM												
1	AP	0-7	12.50	67.62	19.88	5.80	4.16	7.48	1.05	.45	13.14	68.40
2	BT1	7-15	5.40	62.68	31.92	6.20	4.24	5.15	1.18	.24	10.81	60.00
3	BT2	15-33	9.40	57.04	33.56	6.10	3.68	4.58	2.25	.54	11.05	66.70
4	BC	33-42	76.50	9.18	14.32	6.10	2.80	1.38	.60	.70	5.48	49.00
5	C	42-62	74.10	8.50	17.40	5.60	3.12	1.80	.51	.11	5.54	43.70

*Total acidity

The Bt horizon extends to a depth of 72 inches or more. It has hue of 10YR or 2.5YR, value of 3, and chroma of 4 or 6. Texture is silty clay loam, silty clay, or clay. Reaction ranges from medium acid to very strongly acid.

Important Soil Properties

Flooding frequency: None.
Rooting depth: More than 6 feet.
Permeability: Moderately permeable.
Water table: None.
Organic matter content: Low.
Shrink-swell potential: Moderate.
Available water content: Medium.
Land capability subclass: 3e.
Woodland ordination symbol: 3o.

Map Symbol-DeC

DeC—Decatur silty clay loam, 6 to 10 percent slopes, eroded. This well drained soil is represented by the following soil profile in a fescue and clover pasture on a 7 percent slope.

Profile Description

Ap—0 to 3 inches; dark reddish brown (5 YR 3/3) silty clay loam; moderate medium granular and subangular blocky structure; friable; common fine and medium roots; common fine pores; slightly acid; abrupt wavy boundary.

Bt1—3 to 9 inches; dark red (10R 3/6) silty clay; moderate medium and fine subangular blocky structure; friable; thin continuous distinct clay films on faces of most peds; common fine and medium roots; common fine pores; medium acid; clear smooth boundary.

Bt2—9 to 72 inches; dusky red (10YR 3/4) clay; moderate medium and fine subangular blocky structure; friable; thin continuous distinct clay films on faces of most peds; common fine roots; very strongly acid.

Type Location

50 feet south and 700 feet west of the northeast corner of Section 19, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 72 inches. Depth to rock is more than 6 feet.

The A horizon is 2 to 6 inches thick. It has hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 3 or 4. Texture is silty clay loam. Reaction ranges from slightly acid to medium acid.

The Bt horizon extends to a depth of 72 inches or more. It has hue of 10YR or 2.5YR, value of 3, and chroma of 4 or 6. Texture is silty clay or clay. Reaction ranges from medium acid to very strongly acid.

Important Soil Properties

Flooding frequency: None.
Rooting depth: More than 6 feet.
Permeability: Moderately permeable.
Drainage: Well drained.
Water table: None.
Organic matter content: Moderately low.
Shrink-swell potential: Moderate.
Available water capacity: Medium.
Land capability subclass: 4e.
Woodland ordination symbol: 3o.

DEWEY SILT LOAM AND SILTY CLAY LOAM

Map Symbol-DwA

DwA—Dewey silt loam, 1 to 2 percent slopes. This well drained soil is represented by the following soil profile in an alfalfa field on a 1 percent slope.

Profile Description

Ap—0 to 7 inches; dark reddish brown (5YR 3/4) silt loam; moderate fine subangular blocky structure; friable; common fine and medium roots; slightly acid; clear wavy boundary.

Bt1—7 to 15 inches; dark red (2.5YR 3/6) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; thin patchy faint clay films on faces of peds; medium acid; clear wavy boundary.

Bt2—15 to 65 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable; few fine and medium roots; thin discontinuous distinct clay films on faces of peds; very strongly acid.

Type Location

1,900 feet south and 100 feet east of the northwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 60 inches. Depth to bed-rock is more than 6 feet.

The A horizon is 6 to 12 inches thick. It has hue of 5YR, value of 3 or 4, and chroma of 3 or 4. Texture is silt loam or silty clay loam. Reaction ranges from slightly acid to medium acid.

The upper part of the Bt horizon is 4 to 17 inches thick. It has hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 4 or 6. Texture is silty clay loam or silty clay. Reaction ranges from medium acid to strongly acid.

The lower part of the Bt horizon extends to a depth of 60 inches or more. It has hue of 2.5YR or 5YR, value of 4 or 6, and chroma of 6 or 8. Texture is clay. Reaction ranges from strongly acid to very strongly acid.

Important Soil Properties

Flooding frequency: None.
Rooting depth: More than 6 feet.
Permeability: Moderately permeable.
Water table: None.
Organic matter content: Low.
Shrink-swell potential: Moderate.
Available water capacity: Medium.
Land capability subclass: 1.
Woodland ordination symbol: 3o.

Map Symbol-DwB

DwB—Dewey silty clay loam, 2 to 6 percent slopes, eroded. This well drained soil is represented by the following soil profile in a sudan-fescue pasture on a 3 percent slope.

Profile Description

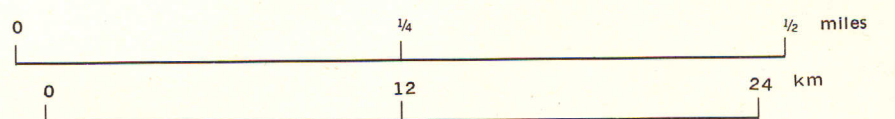
Ap—0 to 4 inches; dark reddish brown (5YR 3/3) silty clay loam; moderate medium granular and subangular blocky structure; friable; common fine and medium roots;

SOIL LEGEND

Map Symbol	Map Unit Name
ChA	Chenney silt loam, 0 to 2 percent slopes, occasionally flooded
DeA	Decatur silt loam, 1 to 2 percent slopes
DeB	Decatur silty clay loam, 2 to 6 percent slopes, eroded
DeC	Decatur silty clay loam, 6 to 10 percent slopes, eroded
DwA	Dewey silt loam, 1 to 2 percent slopes
DwB	Dewey silty clay loam, 2 to 6 percent slopes, eroded
EmA	Emory silt loam, 0 to 2 percent slopes, ponded
EpA	Ennis-Pruitt complex, 0 to 2 percent slopes, frequently flooded
FuC	Fullerton cherty silty clay loam, 2 to 8 percent slopes, eroded
GuA	Guthrie silt loam, 0 to 2 percent slopes, frequently flooded
ReA	Rexor silt loam, 0 to 2 percent slopes, occasionally flooded



**TENNESSEE VALLEY SUBSTATION
LIMESTONE COUNTY
ALABAMA**



Scale 1:7,920

3 percent by volume of chert and quartz pebbles less than 1 inch in size; slightly acid; abrupt wavy boundary.

Bt1—4 to 17 inches; red (2.5YR 4/6) silty clay; moderate medium subangular blocky structure; friable; common fine and medium roots; 7 percent by volume of chert and quartz pebbles less than 1 inch in size; thin patchy distinct clay films on faces of ped; medium acid; clear smooth boundary.

Bt2—17 to 62 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable; common fine roots; 12 percent by volume of chert and quartz pebbles less than 2 inches in size; thin discontinuous distinct clay films on faces of ped; very strongly acid.

Type Location

500 feet south and 400 feet east of the northwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 60 inches. Depth to bedrock is more than 6 feet. Percent by volume of chert and quartz pebbles less than 3 inches in size ranges from 0 to 15 percent.

The A horizon is 3 to 8 inches thick. It has hue of 5YR, value of 3 or 4, and chroma of 3 or 4. Texture is silty clay loam. Reaction ranges from slightly acid to medium acid.

The upper part of the Bt horizon is 7 to 23 inches thick. It has hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 4 or 6. Texture is silty clay loam, silty clay, or clay. Reaction ranges from medium acid to very strongly acid.

The lower part of the Bt horizon extends to a depth of more than 60 inches. It has hue of 2.5YR or 5YR, value of 4 or 6, and chroma of 6 or 8. Texture is silty clay or clay. Reaction ranges from strongly acid to very strongly acid.

Important Soil Properties

Flooding frequency: None.
Rooting depth: More than 6 feet.
Shrink-swell potential; Moderate.
Permeability: Moderately permeable.
Water table: None.
Organic matter content; Low.
Available water capacity: Medium.
Land capability subclass: 3e.
Woodland ordination symbol: 3o.

EMORY SILT LOAM

Map Symbol-EmA

EmA—Emory silt loam, 0 to 2 percent slopes, ponded. This well drained soil is represented by the following soil profile in a cultivated soybean field on a 0 percent slope.

Profile Description

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) silt loam; moderate medium granular structure; friable; common fine and medium roots; slightly acid; clear wavy boundary.

Bw—8 to 24 inches; dark reddish brown (5YR 3/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; medium acid; abrupt smooth boundary.

Ab—24 to 31 inches; dark reddish brown (5YR 3/2) silt loam; weak medium subangular blocky structure; friable; common fine roots; strongly acid; clear wavy boundary.

BtB—31 to 60 inches; dark red (2.5YR 3/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; thin discontinuous distinct clay films on faces of ped; strongly acid.

Type Location

900 feet south and 1,250 feet east of the northeast corner of Section 19, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 60 inches. Depth to bedrock is more than 6 feet.

The A horizon is 6 to 12 inches thick. It has hue of 2.5YR or 5YR, value of 3, and chroma of 2 to 4. Texture is silt loam or silty clay loam. Reaction ranges from slightly acid to medium acid.

The Bw horizon is 10 to 20 inches thick. It has hue of 2.5YR or 5YR, value of 3 or 4, and chroma of 3 or 4. Texture is silty clay loam. Reaction ranges from medium acid to strongly acid.

The Ab horizon is 4 to 10 inches thick. It has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. Texture is silt loam or silty clay loam. Reaction ranges from medium acid to strongly acid.

The Btb horizon extends to a depth of 60 inches or more. It has hue of 2.5YR to 7.5YR, value of 3 to 5, and chroma of 4 to 6. Texture is silty clay loam or silty clay. Reaction ranges from medium acid to strongly acid.

Important Soil Properties

Flooding frequency: None. The soil is ponded during the winter and in early spring.
Rooting depth: More than 6 feet.
Permeability: Moderately permeable.
Water table: + 2 feet during winter and in early spring.
Organic matter content: Moderate.
Shrink-swell potential: Low.
Available water capacity: High.
Land capability subclass: 2w.
Woodland ordination symbol: 2o.

ENNIS-PRUITTON COMPLEX

Map Symbol-EpA

EpA—Ennis-Pruitt complex, 0 to 2 percent slopes, frequently flooded.

Profile Description-Ennis

Ennis soils make up about 50 percent of the map unit. These well drained soils are represented by the following soil profile in a fescue-clover pasture on a 1 percent slope.

Ap—0 to 7 inches; dark brown (7.5YR 4/4) cherty silt loam; weak medium granular structure; friable; 20 percent by volume of chert pebbles less than 2 inches in size; common medium and fine roots, medium acid; clear wavy boundary.

Bw1—7 to 27 inches; strong brown (7.5YR 5/6) cherty silty clay loam; moderate medium subangular blocky structure; friable; 25 percent by volume of chert pebbles less than 3 inches in size; common fine roots; strongly acid; clear wavy boundary.

Bw2—27 to 37 inches; brownish yellow (10YR 6/8) cherty silty clay loam; moderate medium subangular blocky structure; friable; 20 percent by volume of chert pebbles less than 2 inches in size; common fine roots; strongly acid; abrupt wavy boundary.

C—37 to 60 inches; brown (10YR 4/3) very cherty silt loam; massive; friable; 50 percent by volume of chert and quartz pebbles less than 2 inches in size; very strongly acid.

Type Location

400 feet north and 600 feet east of the southwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is 25 to 50 inches thick. Depth to bedrock is more than 6 feet.

The A horizon is 4 to 9 inches thick. It has hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is cherty silt loam with 15 to 35 percent by volume of chert fragments less than 3 inches in size. Reaction ranges from slightly acid to strongly acid.

The Bw horizon is 21 to 44 inches thick. It has hue of 7.5YR to 10YR, value of 4 or 5, and chroma of 4 to 6. Texture is cherty silt loam or cherty loam with 15 to 35 percent by volume of chert fragments less than 3 inches in size. Reaction ranges from medium acid to very strongly acid.

The C horizon extends to a depth of more than 60 inches. It has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is very cherty silt loam, very cherty loam, or very cherty sandy loam with 35 to 55 percent by volume of chert and quartz pebbles less than 3 inches in size.

Important Soil Properties

Flooding frequency: Frequently flooded during winter and in early spring.

Rooting depth: Restricted at 25 to 50 inches.

Permeability: Moderately rapidly permeable.

Water table: None.

Organic matter content: Moderately low.

Shrink-swell potential: Low.

Available water capacity: Low.

Land capability subclass: 3w.

Woodland ordination symbol: 2w.

Profile Description—Pruitton

Pruitton soils make up about 40 percent of the map unit. These well drained soils are represented by the following soil profile in a fescue-clover pasture on a 0 percent slope.

Ap—0 to 6 inches; dark brown (10YR 4/3) silty clay loam; moderate medium granular structure; friable; common fine and medium roots; slightly acid; abrupt wavy boundary.

Bw—6 to 22 inches; brown (7.5YR 4/4) silt loam; moderate medium subangular blocky structure; friable common fine roots; strongly acid; clear wavy boundary.

Ab—22 to 29 inches; dark brown (10YR 4/3) silt loam; weak medium granular structure; very friable; common fine roots; strongly acid; abrupt wavy boundary.

Bwb—29 to 34 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable;

common fine roots; 10 percent by volume of chert fragments less than 2 inches in size; strongly acid; abrupt wavy boundary.

C—34 to 60 inches; brown (10YR 4/3) very cherty sandy loam; massive; friable; 50 percent by volume of chert and quartz pebbles less than 3 inches in size; strongly acid.

Type Location

2,240 feet north and 280 feet east of the southwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is 25 to 50 inches. Depth to bedrock is more than 6 feet.

Important Soil Properties

Flooding frequency: Frequently flooded during winter and in early spring.

Rooting depth: Restricted at 25 to 50 inches.

Permeability: Moderately rapidly permeable.

Water table: None, but water moves laterally from uplands to drainageways in the C horizon during winter and in early spring.

Organic matter content: Moderately low.

Shrink-swell potential: Low.

Available water capacity: Medium.

Land capability subclass: 3w.

Woodland ordination symbol: 2w.

FULLERTON CHERTY SILTY CLAY LOAM

Map Symbol-FuC

FuC—Fullerton cherty silty clay loam, 2 to 8 percent slopes, eroded. This well drained soil is represented by the following soil profile in a cultivated corn field on a 4 percent slope.

Profile Description

Ap—0 to 8 inches; reddish brown (5YR 4/4) cherty silty clay loam; moderate fine granular and subangular blocky structure; friable; common fine and medium roots; 30 percent by volume of chert pebbles 2 to 70 millimeters in size; slightly acid; clear wavy boundary.

Bt1—8 to 17 inches; red (2.5YR 4/8) cherty silty clay; moderate medium and fine subangular blocky structure; friable; common fine roots; 30 percent by volume of chert pebbles 2 to 70 millimeters in size; thin patchy faint clay films on faces of most peds; strongly acid; gradual smooth boundary.

Bt2—17 to 62 inches; red (2.5YR 4/6) cherty clay; moderate medium subangular blocky structure; firm; common fine roots; 20 percent by volume of chert pebbles 2 to 100 millimeters in size; thin discontinuous distinct clay films on faces of peds; strongly acid.

Type Location

1,500 feet south and 800 feet east of the northwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 60 inches. Depth to bedrock is more than 6 feet.

The A horizon is 4 to 10 inches thick. It has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 3 to 6.

Texture is cherty silty clay loam with 20 to 35 percent by volume of chert fragments less than 5 inches in size. Reaction ranges from slightly acid to strongly acid.

The Bt horizon extends to a depth of 60 inches or more. It has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. Texture is cherty silty clay loam, cherty silty clay, or cherty clay with 15 to 35 percent by volume of chert fragments less than 5 inches in size. Reaction is strongly acid or very strongly acid.

Soils with as much as 50 percent by volume of chert fragments in the A horizon and the upper part of the B horizon were considered Fullerton soils when naming this map unit.

Important Soil Properties

Flooding frequency: None.

Rooting depth: More than 6 feet.

Permeability: Moderately permeable.

Water table: None.

Organic matter content: Low.

Shrink-swell potential: Moderate.

Available water capacity: Medium.

Land capability subclass: 3e.

Woodland ordination symbol: 3o.

GUTHRIE SILT LOAM

Map Symbol-GuA

GuA—Guthrie silt loam, 0 to 2 percent slopes, frequently flooded. This poorly drained soil is represented by the following soil profile in a woodland pasture on a 0 percent slope.

Profile Description

A—0 to 4 inches; dark brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; common fine and medium roots; medium acid; abrupt smooth boundary.

Bg—4 to 23 inches; light grayish brown (10YR 6/2) silt loam; common medium distinct light yellowish brown (2.5YR 6/4) mottles; moderate fine subangular blocky structure; friable; common fine and medium roots; strongly acid; clear wavy boundary.

Bxg—23 to 60 inches; light grayish brown (10YR 6/2) silty clay loam on prismatic ped faces; broken prismatic peds are mottled yellowish red (5YR 5/6); yellowish brown (10YR 5/6); and light brownish gray (10YR 6/2); weak coarse prismatic parting to moderate thin platy and moderate medium subangular blocky structure; firm; brittle and cemented in 70 percent of mass; few fine roots; common fine pores; very strongly acid.

Type Location

1,320 feet north and 1,780 feet east of the southwest corner of Section 18, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is more than 60 inches. Depth to bedrock is more than 6 feet and depth to the fragipan is 20 to 40 inches.

The A horizon is 3 to 7 inches thick. It has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 to 4. Texture is silt loam. Reaction ranges from medium acid to very strongly acid.

The Bg horizon is 14 to 29 inches thick. It has hue of 10YR or 2.5YR, value of 5 or 6, and chroma of 1 or 2. Reaction ranges from strongly acid to very strongly acid.

The Bx horizon extends to a depth of more than 60 inches. It has a matrix hue of 10YR or 2.5YR, value of 5 to 7, and chroma of 1 or 2. Structure is weak or moderate coarse to very coarse prismatic. Broken prisms have moderate medium to coarse subangular blocky or platy structure and are mottled in varying shades of red, brown, and gray. The Bx horizon is brittle and cemented in 60 to 80 percent of its mass. Texture is silt loam or silty clay loam. Reaction ranges from strongly acid to very strongly acid.

Important Soil Properties

Flooding frequency: Frequently flooded during winter and in early spring.

Rooting depth: More than 60 inches, but restricted in the Bx horizon.

Permeability: Slowly permeable.

Water table: 0.5 to 1.0 foot during winter and in early spring.

Organic matter content: Moderately low.

Shrink-swell potential: Low.

Available water capacity: Low.

Land capability subclass: 4w.

Woodland ordination symbol: 2w.

REXOR SILT LOAM

Map Symbol-ReA

ReA—Rexor silt loam, 0 to 2 percent slopes, occasionally flooded. This well drained soil is represented by the following soil profile in a fescue-clover pasture on a 1 percent slope.

Profile Description

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common fine and medium roots; medium acid; clear wavy boundary.

Bt1—7 to 17 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; sand grains coated and bridged with clay; silt coatings on faces of peds; slightly acid; abrupt smooth boundary.

Bt2—15 to 33 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; few thin patchy faint clay films on faces of peds and in pores; silty coating on faces of peds; slightly acid; clear wavy boundary.

BC—33 to 42 inches; dark brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; friable; 5 percent by volume of quartz pebbles less than 1 inch in size; slightly acid; gradual smooth boundary.

C—42 to 62 inches; dark brown (10YR 4/3) gravelly sandy loam; massive; friable; 20 percent by volume of quartz and chert pebbles less than 2 inches in size; medium acid.

Type Location

780 feet north and 2,340 feet east of the southwest corner of Section 17, T.4 S., R.3 W.

Range in Characteristics

Solum thickness is 50 to 60 inches. Depth to bedrock is more than 5 feet.

The A horizon is 5 to 10 inches thick. It has hue of 5YR to 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is loam or silt loam. Reaction ranges from slightly acid to very strongly acid. Percent by volume of quartz or chert pebbles less than 3 inches in size ranges from 0 to 10 percent.

The Bt horizon is 20 to 40 inches thick. It has hue of 5YR or 7.5YR in the upper part and 7.5YR or 10YR in the lower part, value of 4 or 5, and chroma of 4 to 6. Texture is loam, sandy clay loam, silty loam, or silty clay loam. Reaction ranges from medium acid to very strongly acid. Percent by volume of quartz or chert pebbles less than 2 inches in size is less than 5 percent.

The BC horizon is 7 to 16 inches thick. It has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is loam or sandy loam. Reaction ranges from strongly acid to very strongly acid. Percent by volume of quartz or chert pebbles less than 2 inches in size ranges from 0 to 14 percent.

The C horizon extends to a depth of more than 60 inches. It has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. Texture is gravelly loam, or gravelly sandy loam. Reaction ranges from strongly acid to very strongly acid. Percent by volume of quartz or chert pebbles ranges from 15 to 20 percent within a depth of 60 inches and from 15 to 50 percent below that depth.

Important Soil Properties

Flooding frequency: Occasionally flooded during winter and in early spring.

Rooting depth: More than 6 feet.

Permeability: Moderately permeable.

Water table: None.

Organic matter content: Low.

Shrink-swell potential: Low.

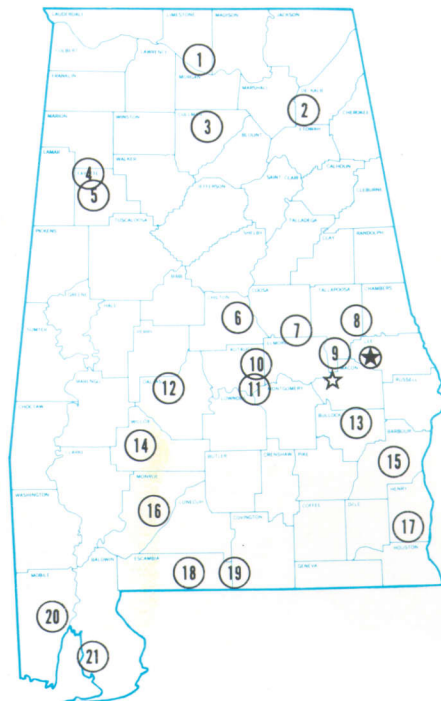
Available water content: Medium.

Land capability subclass: 2w.

Woodland ordination symbol: 2o.

Alabama's Agricultural Experiment Station System AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

- ★ Main Agricultural Experiment Station, Auburn.
- ☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Chilton Area Horticulture Substation, Clanton.
7. Forestry Unit, Coosa County.
8. Piedmont Substation, Camp Hill.
9. Plant Breeding Unit, Tallassee.
10. Forestry Unit, Autauga County.
11. Prattville Experiment Field, Prattville.
12. Black Belt Substation, Marion Junction.
13. The Turnipseed-Ikenberry Place, Union Springs.
14. Lower Coastal Plain Substation, Camden.
15. Forestry Unit, Barbour County.
16. Monroeville Experiment Field, Monroeville.
17. Wiregrass Substation, Headland.
18. Brewton Experiment Field, Brewton.
19. Solon Dixon Forestry Education Center,
Covington and Escambia counties.
20. Ornamental Horticulture Substation, Spring Hill.
21. Gulf Coast Substation, Fairhope.