

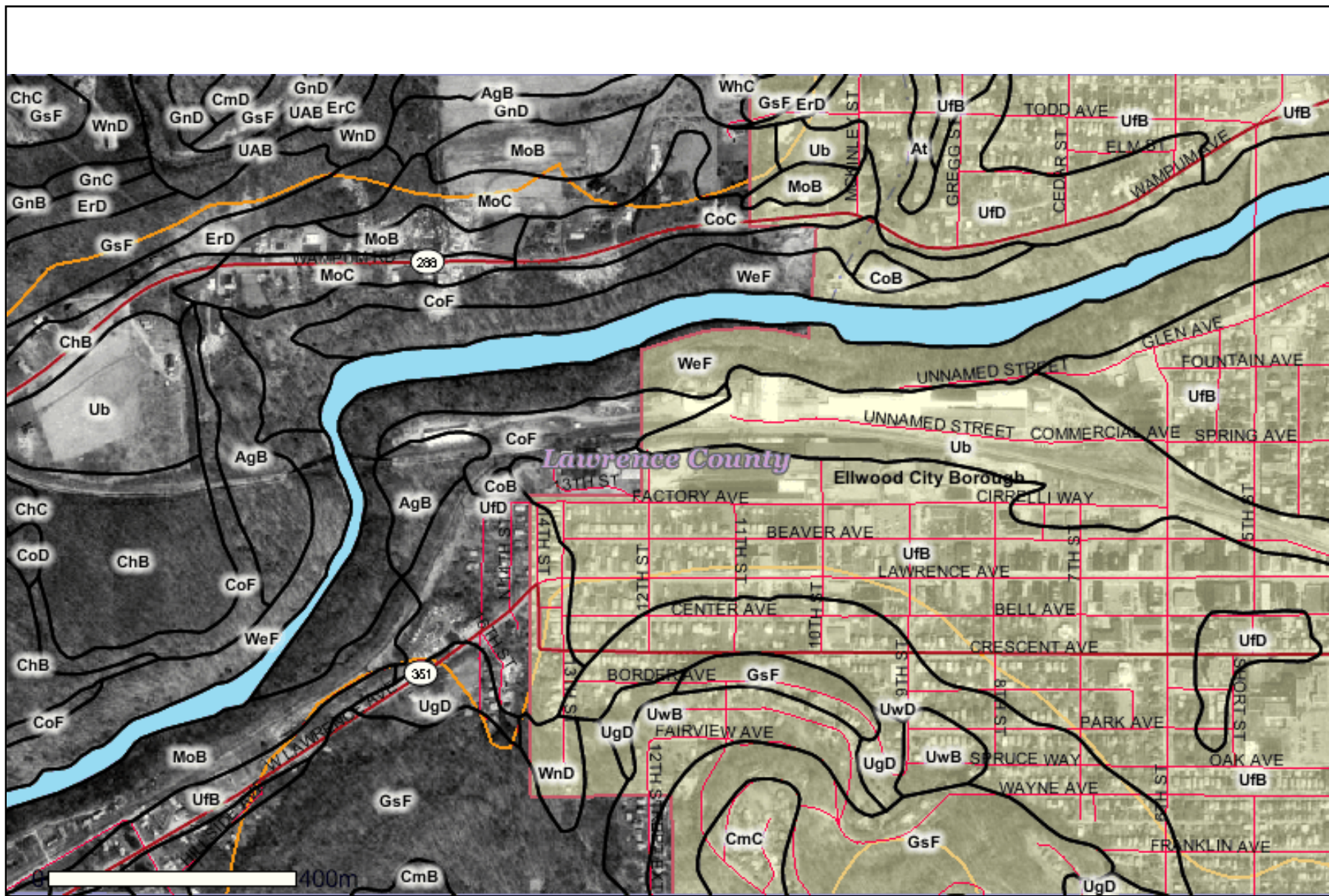
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Cooperative Extension
Geospatial Technology Program

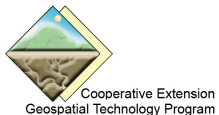


WRG4 Soil Map2



Map Scale 1:10607, 1 inch = 884 feet
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WRG4 Soil Map

Acreage and Proportionate Extent of the Soils

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Acres	Percent
AgB	Allegheny silt loam, 3 to 8 percent slopes	980	0.2
AgC	Allegheny silt loam, 8 to 15 percent slopes	315	*
At	Atkins silt loam	6,370	1.2
BaF	Bethesda very channery silt loam, 25 to 75 percent slopes	104	*
BcB	Braceville loam, 3 to 8 percent slopes	2,921	0.6
BcC	Braceville loam, 8 to 15 percent slopes	1,309	0.3
BgB	Bogart loam, 2 to 6 percent slopes	8	*
BgC	Bogart loam, 6 to 12 percent slopes	1	*
BkA	Brinkerton silt loam, 0 to 3 percent slopes	356	*
BkB	Brinkerton silt loam, 3 to 8 percent slopes	861	0.2
BkC	Brinkerton silt loam, 8 to 15 percent slopes	260	*
Ca	Canadice silt loam	4,443	0.9
CdB	Canfield silt loam, 3 to 8 percent slopes	34,404	6.7
CdC	Canfield silt loam, 8 to 15 percent slopes	23,442	4.5
CdD	Canfield silt loam, 15 to 25 percent slopes	5,598	1.1
CeA	Cavode silt loam, 0 to 3 percent slopes	562	0.1
CeB	Cavode silt loam, 3 to 8 percent slopes	4,014	0.8
CeC	Cavode silt loam, 8 to 15 percent slopes	4,169	0.8
CeD	Cavode silt loam, 15 to 25 percent slopes	1,219	0.2
Cg	Chagrin silt loam	1,398	0.3
ChB	Chili silt loam, 3 to 8 percent slopes	5,941	1.2
ChC	Chili silt loam, 8 to 15 percent slopes	2,587	0.5
CmB	Clymer loam, 3 to 8 percent slopes	3,105	0.6
CmC	Clymer loam, 8 to 15 percent slopes	4,269	0.8
CmD	Clymer loam, 15 to 25 percent slopes	706	0.1
CoB	Conotton gravelly loam, 3 to 8 percent slopes	3,139	0.6
CoC	Conotton gravelly loam, 8 to 15 percent slopes	5,675	1.1
CoD	Conotton gravelly loam, 15 to 25 percent slopes	4,155	0.8
CoF	Conotton gravelly loam, 25 to 50 percent slopes	1,469	0.3
CuB	Culleoka silt loam, 3 to 8 percent slopes	1,518	0.3
CuC	Culleoka silt loam, 8 to 15 percent slopes	1,638	0.3
CuD	Culleoka silt loam, 15 to 25 percent slopes	667	0.1
DoC	Dormont silt loam, 8 to 15 percent slopes	8	*
DoD	Dormont silt loam, 15 to 25 percent slopes	27	*
DoE	Dormont silt loam, 25 to 35 percent slopes	3	*
Du	Dumps	1,744	0.3
ErB	Ernest silt loam, 3 to 8 percent slopes	1,748	0.3
ErC	Ernest silt loam, 8 to 15 percent slopes	4,594	0.9
ErD	Ernest silt loam, 15 to 25 percent slopes	1,294	0.3
EsD	Ernest very stony silt loam, 8 to 25 percent slopes	703	0.1
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	63	*
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	61	*
FaF	Fairpoint very channery silt loam, 25 to 75 percent slopes	547	0.1

Acreage and Proportionate Extent of the Soils

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Acres	Percent
FcA	Fitchville silt loam, 0 to 2 percent slopes	2	*
FnA	Frenchtown silt loam, 0 to 3 percent slopes	7,668	1.5
FnB	Frenchtown silt loam, 3 to 8 percent slopes	3,822	0.7
GnB	Gilpin silt loam, 3 to 8 percent slopes	9,159	1.8
GnC	Gilpin silt loam, 8 to 15 percent slopes	16,247	3.1
GnD	Gilpin silt loam, 15 to 25 percent slopes	13,395	2.6
GpB	Gilpin-Upshur complex, 3 to 8 percent slopes	939	0.2
GpC	Gilpin-Upshur complex, 8 to 15 percent slopes	3,361	0.7
GpD	Gilpin-Upshur complex, 15 to 25 percent slopes	7,090	1.4
GpF	Gilpin-Upshur complex, 25 to 60 percent slopes	11,452	2.2
GsB	Gilpin-Weikert complex, 3 to 8 percent slopes	2,175	0.4
GsC	Gilpin-Weikert complex, 8 to 15 percent slopes	6,519	1.3
GsD	Gilpin-Weikert complex, 15 to 25 percent slopes	14,119	2.7
GsF	Gilpin-Weikert complex, 25 to 70 percent slopes	56,390	10.9
GtB	Guernsey silt loam, 3 to 8 percent slopes	1,185	0.2
GtC	Guernsey silt loam, 8 to 15 percent slopes	2,297	0.4
GvB	Guernsey-Vandergrift complex, 3 to 8 percent slopes	1,228	0.2
GvC	Guernsey-Vandergrift complex, 8 to 15 percent slopes	4,168	0.8
GvD	Guernsey-Vandergrift complex, 15 to 25 percent slopes	3,089	0.6
HaB	Hazleton channery loam, 3 to 8 percent slopes	940	0.2
HaC	Hazleton channery loam, 8 to 15 percent slopes	2,879	0.6
HaD	Hazleton channery loam, 15 to 25 percent slopes	3,680	0.7
Ho	Holly silt loam	10,481	2.0
JtB	Jimtown loam, 2 to 6 percent slopes	4	*
JwB	Jimtown-Urban land complex	6	*
KeB	Keene silt loam, 2 to 6 percent slopes	263	*
KnC	Kensington silt loam, 6 to 15 percent slopes	11	*
KnD	Kensington silt loam, 15 to 25 percent slopes	6	*
Lb	Lobdell silt loam	5,190	1.0
LoB	Loudonville gravelly silt loam, 3 to 8 percent slopes	351	*
LoC	Loudonville gravelly silt loam, 8 to 15 percent slopes	1,332	0.3
LoD	Loudonville gravelly silt loam, 15 to 25 percent slopes	3,025	0.6
LoF	Loudonville gravelly silt loam, 25 to 50 percent slopes	6,832	1.3
McB	Mechanicsburg silt loam, 2 to 6 percent slopes	2	*
MoA	Monongahela silt loam, 0 to 3 percent slopes	517	0.1
MoB	Monongahela silt loam, 3 to 8 percent slopes	5,593	1.1
MoC	Monongahela silt loam, 8 to 15 percent slopes	1,424	0.3
Ph	Philo silt loam	2,960	0.6
Pn	Pits	1,085	0.2
Po	Pope silt loam	1,272	0.2
Pu	Purdy silt loam	685	0.1
RaA	Ravenna silt loam, 0 to 3 percent slopes	9,597	1.9
RaB	Ravenna silt loam, 3 to 8 percent slopes	36,541	7.1

Acreage and Proportionate Extent of the Soils

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Acres	Percent
RaC	Ravenna silt loam, 8 to 15 percent slopes	8,084	1.6
ReB	Rexford silt loam, 3 to 8 percent slopes	1,473	0.3
Sn	Sloan silt loam	2,327	0.5
TeB	Teegarden silt loam, 2 to 6 percent slopes	2	*
TeC	Teegarden silt loam, 6 to 15 percent slopes	14	*
TsB	Tilsit silt loam, 3 to 8 percent slopes	5,732	1.1
TsC	Tilsit silt loam, 8 to 15 percent slopes	2,266	0.4
TyA	Tyler silt loam, 0 to 3 percent slopes	1,508	0.3
TyB	Tyler silt loam, 3 to 8 percent slopes	1,935	0.4
UAB	Udorthents, strip mine, gently sloping	4,645	0.9
UAD	Udorthents, strip mine, moderately steep	6,739	1.3
UAE	Udorthents, strip mine, steep	12,246	2.4
Ub	Urban land-Arents complex	6,401	1.2
UcB	Urban land-Canfield complex, 0 to 8 percent slopes	1,986	0.4
UcD	Urban land-Canfield complex, 8 to 25 percent slopes	459	*
UfB	Urban land-Conotton complex, 0 to 8 percent slopes	7,400	1.4
UfD	Urban land-Conotton complex, 8 to 25 percent slopes	1,302	0.3
UgB	Urban land-Gilpin complex, 0 to 8 percent slopes	853	0.2
UgD	Urban land-Gilpin complex, 8 to 25 percent slopes	1,510	0.3
UwB	Urban land-Wharton complex, 0 to 8 percent slopes	1,235	0.2
UwD	Urban land-Wharton complex, 8 to 25 percent slopes	547	0.1
VgD	Vandergrift-Gilpin complex, 15 to 35 percent slopes	1,905	0.4
W	Water	9,344	1.8
WeF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	7,476	1.4
WhA	Wharton silt loam, 0 to 3 percent slopes	414	*
WhB	Wharton silt loam, 3 to 8 percent slopes	7,403	1.4
WhC	Wharton silt loam, 8 to 15 percent slopes	10,570	2.0
WnD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	4,855	0.9
WoB	Wooster gravelly silt loam, 3 to 8 percent slopes	1,810	0.4
WoC	Wooster gravelly silt loam, 8 to 15 percent slopes	3,210	0.6
WoD	Wooster gravelly silt loam, 15 to 25 percent slopes	3,306	0.6
Total		516,333	100.0

* Less than 0.1 percent.

Acreage and Proportionate Extent of the Soils by County

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Lawrence, PA			Total	
					Area	Extent
		Acres			Acres	Pct
AgB	Allegheny silt loam, 3 to 8 percent slopes	42			42	*
AgC	Allegheny silt loam, 8 to 15 percent slopes	8			8	*
At	Atkins silt loam	372			372	*
BaF	Bethesda very channery silt loam, 25 to 75 percent slopes	---			---	---
BcB	Braceville loam, 3 to 8 percent slopes	1,927			1,927	0.4
BcC	Braceville loam, 8 to 15 percent slopes	1,014			1,014	0.2
BgB	Bogart loam, 2 to 6 percent slopes	---			---	---
BgC	Bogart loam, 6 to 12 percent slopes	---			---	---
BkA	Brinkerton silt loam, 0 to 3 percent slopes	---			---	---
BkB	Brinkerton silt loam, 3 to 8 percent slopes	55			55	*
BkC	Brinkerton silt loam, 8 to 15 percent slopes	11			11	*
Ca	Canadice silt loam	3,497			3,497	0.7
CdB	Canfield silt loam, 3 to 8 percent slopes	32,026			32,026	6.2
CdC	Canfield silt loam, 8 to 15 percent slopes	21,073			21,073	4.1
CdD	Canfield silt loam, 15 to 25 percent slopes	5,376			5,376	1.0
CeA	Cavode silt loam, 0 to 3 percent slopes	0			0	---
CeB	Cavode silt loam, 3 to 8 percent slopes	364			364	*
CeC	Cavode silt loam, 8 to 15 percent slopes	655			655	0.1
CeD	Cavode silt loam, 15 to 25 percent slopes	189			189	*
Cg	Chagrin silt loam	1,284			1,284	0.2
ChB	Chili silt loam, 3 to 8 percent slopes	5,724			5,724	1.1
ChC	Chili silt loam, 8 to 15 percent slopes	2,481			2,481	0.5
CmB	Clymer loam, 3 to 8 percent slopes	240			240	*
CmC	Clymer loam, 8 to 15 percent slopes	198			198	*
CmD	Clymer loam, 15 to 25 percent slopes	84			84	*
CoB	Conotton gravelly loam, 3 to 8 percent slopes	1,985			1,985	0.4
CoC	Conotton gravelly loam, 8 to 15 percent slopes	5,149			5,149	1.0
CoD	Conotton gravelly loam, 15 to 25 percent slopes	3,885			3,885	0.8
CoF	Conotton gravelly loam, 25 to 50 percent slopes	1,547			1,547	0.3
CuB	Culleoka silt loam, 3 to 8 percent slopes	1			1	*
CuC	Culleoka silt loam, 8 to 15 percent slopes	19			19	*
CuD	Culleoka silt loam, 15 to 25 percent slopes	64			64	*
DoC	Dormont silt loam, 8 to 15 percent slopes	---			---	---
DoD	Dormont silt loam, 15 to 25 percent slopes	---			---	---
DoE	Dormont silt loam, 25 to 35 percent slopes	---			---	---
Du	Dumps	505			505	*
ErB	Ernest silt loam, 3 to 8 percent slopes	134			134	*
ErC	Ernest silt loam, 8 to 15 percent slopes	573			573	0.1
ErD	Ernest silt loam, 15 to 25 percent slopes	466			466	*
EsD	Ernest very stony silt loam, 8 to 25 percent slopes	48			48	*
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	---			---	---

Acreage and Proportionate Extent of the Soils by County

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Lawrence, PA			Total	
					Area	Extent
		Acres			Acres	Pct
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	---			---	---
FaF	Fairpoint very channery silt loam, 25 to 75 percent slopes	---			---	---
FcA	Fitchville silt loam, 0 to 2 percent slopes	---			---	---
FnA	Frenchtown silt loam, 0 to 3 percent slopes	7,865			7,865	1.5
FnB	Frenchtown silt loam, 3 to 8 percent slopes	3,858			3,858	0.7
GnB	Gilpin silt loam, 3 to 8 percent slopes	523			523	0.1
GnC	Gilpin silt loam, 8 to 15 percent slopes	1,214			1,214	0.2
GnD	Gilpin silt loam, 15 to 25 percent slopes	1,963			1,963	0.4
GpB	Gilpin-Upshur complex, 3 to 8 percent slopes	0			0	---
GpC	Gilpin-Upshur complex, 8 to 15 percent slopes	0			0	---
GpD	Gilpin-Upshur complex, 15 to 25 percent slopes	0			0	---
GpF	Gilpin-Upshur complex, 25 to 60 percent slopes	0			0	---
GsB	Gilpin-Weikert complex, 3 to 8 percent slopes	78			78	*
GsC	Gilpin-Weikert complex, 8 to 15 percent slopes	174			174	*
GsD	Gilpin-Weikert complex, 15 to 25 percent slopes	916			916	0.2
GsF	Gilpin-Weikert complex, 25 to 70 percent slopes	5,685			5,685	1.1
GtB	Guernsey silt loam, 3 to 8 percent slopes	6			6	*
GtC	Guernsey silt loam, 8 to 15 percent slopes	16			16	*
GvB	Guernsey-Vandergrift complex, 3 to 8 percent slopes	0			0	---
GvC	Guernsey-Vandergrift complex, 8 to 15 percent slopes	2			2	*
GvD	Guernsey-Vandergrift complex, 15 to 25 percent slopes	0			0	---
HaB	Hazleton channery loam, 3 to 8 percent slopes	43			43	*
HaC	Hazleton channery loam, 8 to 15 percent slopes	130			130	*
HaD	Hazleton channery loam, 15 to 25 percent slopes	296			296	*
Ho	Holly silt loam	8,721			8,721	1.7
JtB	Jimtown loam, 2 to 6 percent slopes	---			---	---
JwB	Jimtown-Urban land complex	---			---	---
KeB	Keene silt loam, 2 to 6 percent slopes	---			---	---
KnC	Kensington silt loam, 6 to 15 percent slopes	---			---	---
KnD	Kensington silt loam, 15 to 25 percent slopes	---			---	---
Lb	Lobdell silt loam	4,404			4,404	0.9
LoB	Loudonville gravelly silt loam, 3 to 8 percent slopes	260			260	*
LoC	Loudonville gravelly silt loam, 8 to 15 percent slopes	790			790	0.2
LoD	Loudonville gravelly silt loam, 15 to 25 percent slopes	2,260			2,260	0.4
LoF	Loudonville gravelly silt loam, 25 to 50 percent slopes	6,304			6,304	1.2
McB	Mechanicsburg silt loam, 2 to 6 percent slopes	---			---	---
MoA	Monongahela silt loam, 0 to 3 percent slopes	57			57	*
MoB	Monongahela silt loam, 3 to 8 percent slopes	870			870	0.2
MoC	Monongahela silt loam, 8 to 15 percent slopes	123			123	*
Ph	Philo silt loam	221			221	*
Pn	Pits	787			787	0.2

Acreage and Proportionate Extent of the Soils by County

Beaver and Lawrence Counties, Pennsylvania

Map symbol	Map unit name	Lawrence, PA			Total	
					Area	Extent
		Acres			Acres	Pct
Po	Pope silt loam	25			25	*
Pu	Purdy silt loam	0			0	---
RaA	Ravenna silt loam, 0 to 3 percent slopes	9,859			9,859	1.9
RaB	Ravenna silt loam, 3 to 8 percent slopes	37,464			37,464	7.3
RaC	Ravenna silt loam, 8 to 15 percent slopes	7,956			7,956	1.5
ReB	Rexford silt loam, 3 to 8 percent slopes	544			544	0.1
Sn	Sloan silt loam	2,436			2,436	0.5
TeB	Teegarden silt loam, 2 to 6 percent slopes	---			---	---
TeC	Teegarden silt loam, 6 to 15 percent slopes	---			---	---
TsB	Tilsit silt loam, 3 to 8 percent slopes	7			7	*
TsC	Tilsit silt loam, 8 to 15 percent slopes	20			20	*
TyA	Tyler silt loam, 0 to 3 percent slopes	154			154	*
TyB	Tyler silt loam, 3 to 8 percent slopes	236			236	*
UAB	Udorthents, strip mine, gently sloping	3,663			3,663	0.7
UAD	Udorthents, strip mine, moderately steep	5,735			5,735	1.1
UAE	Udorthents, strip mine, steep	8,144			8,144	1.6
Ub	Urban land-Arents complex	3,843			3,843	0.7
UcB	Urban land-Canfield complex, 0 to 8 percent slopes	1,451			1,451	0.3
UcD	Urban land-Canfield complex, 8 to 25 percent slopes	431			431	*
UfB	Urban land-Conotton complex, 0 to 8 percent slopes	906			906	0.2
UfD	Urban land-Conotton complex, 8 to 25 percent slopes	441			441	*
UgB	Urban land-Gilpin complex, 0 to 8 percent slopes	34			34	*
UgD	Urban land-Gilpin complex, 8 to 25 percent slopes	179			179	*
UwB	Urban land-Wharton complex, 0 to 8 percent slopes	47			47	*
UwD	Urban land-Wharton complex, 8 to 25 percent slopes	81			81	*
VgD	Vandergrift-Gilpin complex, 15 to 35 percent slopes	0			0	---
W	Water	0			0	---
WeF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	2,031			2,031	0.4
WhA	Wharton silt loam, 0 to 3 percent slopes	12			12	*
WhB	Wharton silt loam, 3 to 8 percent slopes	706			706	0.1
WhC	Wharton silt loam, 8 to 15 percent slopes	1,616			1,616	0.3
WnD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	1,479			1,479	0.3
WoB	Wooster gravelly silt loam, 3 to 8 percent slopes	1,316			1,316	0.3
WoC	Wooster gravelly silt loam, 8 to 15 percent slopes	2,859			2,859	0.6
WoD	Wooster gravelly silt loam, 15 to 25 percent slopes	2,643			2,643	0.5
Total		234,880			234,880	45.5

* Less than 0.1 percent.

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: AgB - Allegheny silt loam, 3 to 8 percent slopes

Description Category: AGR

Allegheny soils make up 90 percent of the map unit. This map unit is Prime Farmland. The runoff class is medium. It is well drained. The slowest permeability within 60 inches is moderate. Available water capacity is moderate and shrink swell potential is low. This soil is not subject to flooding and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 2e.

Description Category: SO5

THE ALLEGHENY SERIES CONSISTS OF VERY DEEP, WELL DRAINED SOILS ON TERRACES, FOOTSLOPES, AND ALLUVIAL FANS. THEY FORMED IN OLD ALLUVIAL MATERIAL. TYPICALLY THESE SOILS HAVE A DARK YELLOWISH BROWN LOAM SURFACE LAYER 9 INCHES THICK. THE SUBSOIL FROM 9 TO 28 INCHES IS STRONG BROWN CLAY LOAM AND FROM 28 TO 52 INCHES IS YELLOWISH BROWN LOAM. THE SUBSTRATUM FROM 52 TO 65 INCHES IS YELLOWISH BROWN LOAM.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: AgB - Allegheny silt loam, 3 to 8 percent slopes

Component: Allegheny

Text kind/Category: SOI5 description

THE ALLEGHENY SERIES CONSISTS OF VERY DEEP, WELL DRAINED SOILS ON TERRACES, FOOTSLOPES, AND ALLUVIAL FANS. THEY FORMED IN OLD ALLUVIAL MATERIAL. TYPICALLY THESE SOILS HAVE A DARK YELLOWISH BROWN LOAM SURFACE LAYER 9 INCHES THICK. THE SUBSOIL FROM 9 TO 28 INCHES IS STRONG BROWN CLAY LOAM AND FROM 28 TO 52 INCHES IS YELLOWISH BROWN LOAM. THE SUBSTRATUM FROM 52 TO 65 INCHES IS YELLOWISH BROWN LOAM. SLOPES RANGE FROM 0 TO 25 PERCENT.

Component: Purdy

Text kind/Category: SOI5 description

THE PURDY SERIES CONSISTS OF VERY DEEP, POORLY TO VERY POORLY DRAINED SOILS ON TERRACES. THEY FORMED IN SLACK WATER ALLUVIAL DEPOSITS. TYPICALLY THESE SOILS HAVE A MOTTLED DARK GRAYISH BROWN SILT LOAM SURFACE LAYER 9 INCHES THICK. THE MOTTLED SUBSOIL FROM 9 TO 19 INCHES IS GRAY SILTY CLAY LOAM AND FROM 19 TO 42 INCHES IS DARK GRAY SILTY CLAY. THE SUBSTRATUM FROM 42 TO 60 INCHES IS GRAY SILTY CLAY.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
AgB:												
Allegheny	0-7	Silt loam	CL, ML	A-4	0	0	90-100	80-100	65-100	55-95	15-35	NP-10
	7-30	Clay loam, Loam, Silt loam	CL, ML, SC, SM	A-4, A-6	0	0	90-100	80-100	65-95	35-80	15-35	NP-15
	30-60	Clay loam, Gravelly sandy loam, Very gravelly sandy loam	CL, GC, ML, SM	A-1, A-2, A-4, A-6	0	0-5	65-100	55-100	35-95	20-75	15-35	NP-15
Purdy	0-8	Silt loam	CL, ML	A-4, A-6, A-7	0	0	95-100	90-100	90-100	90-100	25-50	7-20
	8-36	Clay, Clay loam, Silty clay	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	75-85	30-65	11-30
	36-60	Clay, Clay loam, Silty clay	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	70-95	30-65	11-30

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

"Depth" to the upper and lower boundaries of each layer is indicated.

"Texture" is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

"Classification" of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

"Rock fragments" larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

"Percentage (of soil particles) passing designated sieves" is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

"Liquid limit" and "plasticity index" (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition. American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: CoB - Conotton gravelly loam, 3 to 8 percent slopes

Description Category: AGR

Conotton soils make up 85 percent of the map unit. This map unit is Prime Farmland. The runoff class is low. It is well drained. The slowest permeability within 60 inches is moderately rapid. Available water capacity is low and shrink swell potential is low. This soil is not subject to flooding and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 3s.

Description Category: SO5

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: CoB - Conotton gravelly loam, 3 to 8 percent slopes

Component: Conotton

Text kind/Category: SOI5 description

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. SLOPES RANGE FROM 0 TO 50 PERCENT. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component: Rexford,pd

Text kind/Category: SOI5 description

THE REXFORD SERIES CONSISTS OF DEEP, SOMEWHAT POORLY AND POORLY DRAINED SOILS ON TERRACES AND MORAINES. THEY FORMED IN GLACIAL OUTWASH DERIVED MAINLY FROM SANDSTONE AND SHALE. TYPICALLY THESE SOILS HAVE A DARK GRAYISH BROWN SILT LOAM SURFACE LAYER 8 INCHES THICK. THE UPPER LAYERS OF SUBSOIL FROM 8 TO 17 INCHES ARE YELLOWISH BROWN AND GRAYISH BROWN LOAM. A VERY FIRM FRAGIPAN BETWEEN 17 AND 38 INCHES IS BROWN AND DARK BROWN GRAVELLY LOAM. THE SUBSTRATUM FROM 38 TO 44 INCHES IS BROWN GRAVELLY SANDY LOAM AND FROM 44 TO 60 INCHES IS OLIVE BROWN STRATIFIED SAND AND GRAVEL. SLOPES*0-15%.

Component: Canadice

Text kind/Category: SOI5 description

THE CANADICE SERIES CONSISTS OF DEEP, POORLY DRAINED SOILS ON LAKE PLAINS. THEY FORMED IN LAKE LAID DEPOSITS. TYPICALLY THESE SOILS HAVE A VERY DARK GRAY SILTY CLAY LOAM SURFACE LAYER 9 INCHES THICK. THE MOTTLED SUBSOIL LAYERS FROM 9 TO 40 INCHES ARE GRAYISH-BROWN AND GRAY SILTY CLAY. THE MOTTLED SUBSTRATUM FROM 40 TO 60 INCHES IS GRAYISH-BROWN SILTY CLAY. SLOPES RANGE FROM 0 TO 3 PERCENT.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
CoB:												
Conotton	0-11	Gravelly loam	GM, ML, SM	A-2, A-4	0	0-5	65-90	45-80	40-70	25-55	15-30	NP-6
	11-56	Gravelly coarse sandy loam, Very gravelly loam, Very gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-2	0	0-10	35-70	25-50	25-40	25-30	15-25	NP-6
	56-60	Stratified very gravelly sand to very gravelly loamy coarse sand	GM, GW-GM, SM, SW-SM	A-1	0	0-10	25-65	15-60	15-40	10-20	0-22	NP
Rexford,pd	0-18	Silt loam	CL, ML, SC, SM	A-2, A-4	0	0-5	95-100	80-100	75-95	30-90	15-35	NP-10
	18-44	Gravelly sandy loam, Loam, Silt loam	GM, ML, SM	A-2, A-4	0	0-10	60-100	50-100	40-85	25-70	20-35	NP-5
	44-60	Gravelly sandy loam, Loam, Silt loam	GM, ML, SM	A-2, A-4	0	0-15	60-90	50-80	35-65	25-55	15-30	NP

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
In					Pct	Pct					Pct	
CoB:												
Canadice	0-11	Silt loam	MH, ML, OH, OL	A-7	0	0	100	95-100	85-100	65-95	40-65	10-25
	11-42	Clay, Silty clay, Silty clay loam	CH, CL, MH, ML	A-7	0	0	100	95-100	85-100	70-95	45-65	20-30
	42-68	Clay, Silty clay, Silty clay loam	CH, CL, MH, ML	A-7	0	0	100	95-100	85-100	70-95	45-65	20-30

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: CoF - Conotton gravelly loam, 25 to 50 percent slopes

Description Category: AGR

Conotton soils make up 95 percent of the map unit. Not classified as Prime or Statewide Important Farmland. The runoff class is medium. It is well drained. The slowest permeability within 60 inches is moderately rapid. Available water capacity is low and shrink swell potential is low. This soil is not subject to flooding and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 7e.

Description Category: SO5

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: CoF - Conotton gravelly loam, 25 to 50 percent slopes

Component: Conotton

Text kind/Category: SOI5 description

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. SLOPES RANGE FROM 0 TO 50 PERCENT. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component: Hazleton

Text kind/Category: SOI5 description

THE HAZLETON SERIES CONSISTS OF VERY DEEP AND DEEP, WELL DRAINED SOILS ON UPLANDS. THEY FORMED IN MATERIAL WEATHERED FROM SANDSTONE. TYPICALLY, THESE SOILS HAVE A DARK BROWN SANDY LOAM SURFACE LAYER, 6 INCHES THICK. THE SUBSOIL BETWEEN 6 AND 32 INCHES IS REDDISH-YELLOW TO STRONG BROWN CHANNERY AND VERY CHANNERY SANDY LOAM. THE SUBSTRATUM FROM 32 TO 56 INCHES IS REDDISH-YELLOW VERY CHANNERY SANDY LOAM. SANDSTONE BEDROCK IS AT A DEPTH OF 56 INCHES. SLOPES RANGE FROM 0 TO 80 PERCENT.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
CoF:												
Conotton	0-11	Gravelly loam	GM, ML, SM	A-2, A-4	0	0-5	65-90	45-80	40-70	25-55	15-30	NP-6
	11-56	Gravelly coarse sandy loam, Very gravelly loam, Very gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-2	0	0-10	35-70	25-50	25-40	25-30	15-25	NP-6
	56-60	Stratified very gravelly sand to very gravelly loamy coarse sand	GM, GW-GM, SM, SW-SM	A-1	0	0-10	25-65	15-60	15-40	10-20	0-22	NP
Hazleton	0-7	Channery loam	GM, ML, SM	A-2, A-4	0	0-15	60-85	60-80	60-75	35-55	15-25	NP-8
	7-26	Channery sandy loam, Very channery loam, Loam	GM, ML, SC, SM	A-1, A-2, A-4	0	0-50	60-95	45-90	35-70	20-55	15-30	NP-8
	26-55	Channery loam, Very channery loamy sand, Very channery sandy loam	GC, GM, SC, SM	A-1, A-2, A-4	0	0-60	55-80	35-75	25-65	15-50	15-30	NP-8
	55-59	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: Ub - Urban land-Arents complex

Description Category: AGR

These map units are miscellaneous areas with variable soil properties. Onsite investigations are needed to determine soil properties and suitability for most uses.

Description Category: SO5

URBAN LAND IS LAND MOSTLY COVERED BY STREETS, PARKING LOTS, BUILDINGS, AND OTHER STRUCTURES OF URBAN AREAS.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: Ub - Urban land-Arents complex

Component: Atkins

Text kind/Category: SOI5 description

THE ATKINS SERIES CONSISTS OF DEEP, POORLY DRAINED SOILS ON FLOODPLAINS. THEY FORMED IN ALLUVIAL MATERIAL. TYPICALLY THESE SOILS IN A WOODED AREA HAVE A DARK GRAY SILT LOAM SURFACE LAYER 2 INCHES THICK UNDERLAIN BY 8 INCHES OF GRAY SILT LOAM. THE SUBSOIL FROM 10 TO 20 INCHES IS GRAY HEAVY SILT LOAM MOTTLED WITH STRONG BROWN. FROM 20 TO 34 INCHES, THE SUBSOIL IS MIXED GRAY AND STRONG BROWN SILTY CLAY LOAM. THE SUBSTRATUM FROM 34 TO 60 INCHES IS MIXED GRAY AND STRONG BROWN SILT LOAM. SLOPES RANGE FROM 0 TO 3 PERCENT.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ub:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Arents	---	---	---	---	---	---	---	---	---	---	---	---
Atkins	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	75-100	60-95	20-40	3-20
	6-32	Silty clay loam, Silt loam, Sandy loam	CL, ML, SC, SM	A-4, A-6	0	0-5	90-100	85-100	65-100	45-85	20-40	3-20
	32-60	Stratified silty clay loam to gravelly sandy loam	CL, GM, ML, SM	A-2, A-4, A-6	0	0-15	60-100	60-100	50-95	30-85	20-40	1-15

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: UfB - Urban land-Conotton complex, 0 to 8 percent slopes

Description Category: AGR

These map units are miscellaneous areas with variable soil properties. Onsite investigations are needed to determine soil properties and suitability for most uses.

Description Category: AGR

Soil CONOTTON is >60 - inches to bedrock. Permeability is MODERATELY RAPID and available water holding capacity is LOW. A water table when present is >6 - feet. The soil productivity is LOW and the capability subclass is 3S.

Description Category: SO5

URBAN LAND IS LAND MOSTLY COVERED BY STREETS, PARKING LOTS, BUILDINGS, AND OTHER STRUCTURES OF URBAN AREAS.

Description Category: SO5

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: UfB - Urban land-Conotton complex, 0 to 8 percent slopes

Component: Conotton

Text kind/Category: SOI5 description

THE CONOTTON SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN SANDY AND GRAVELLY SEDIMENTS ON OUTWASH PLAINS TERRACES AND KAMES. THE SURFACE LAYER IS BROWN GRAVELLY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY COARSE SANDY LOAM AND GRAVELLY SANDY LOAM 53 INCHES THICK. THE SUBSTRATUM IS VERY GRAVELLY LOAMY COARSE SAND. SLOPES RANGE FROM 0 TO 50 PERCENT. AREAS ARE USED AS CROPLAND, PASTURELAND AND WOODLAND.

Component: Purdy

Text kind/Category: SOI5 description

THE PURDY SERIES CONSISTS OF VERY DEEP, POORLY TO VERY POORLY DRAINED SOILS ON TERRACES. THEY FORMED IN SLACK WATER ALLUVIAL DEPOSITS. TYPICALLY THESE SOILS HAVE A MOTTLED DARK GRAYISH BROWN SILT LOAM SURFACE LAYER 9 INCHES THICK. THE MOTTLED SUBSOIL FROM 9 TO 19 INCHES IS GRAY SILTY CLAY LOAM AND FROM 19 TO 42 INCHES IS DARK GRAY SILTY CLAY. THE SUBSTRATUM FROM 42 TO 60 INCHES IS GRAY SILTY CLAY.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
UfB:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
Conotton	0-11	Gravelly loam	GM, ML, SM	A-2, A-4	0	0-5	65-90	45-80	40-70	25-55	15-30	NP-6
	11-56	Gravelly coarse sandy loam, Very gravelly loam, Very gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-2	0	0-10	35-70	25-50	25-40	25-30	15-25	NP-6
	56-60	Stratified very gravelly sand to very gravelly loamy coarse sand	GM, GW-GM, SM, SW-SM	A-1	0	0-10	25-65	15-60	15-40	10-20	0-22	NP
Purdy	0-8	Silt loam	CL, ML	A-4, A-6, A-7	0	0	95-100	90-100	90-100	90-100	25-50	7-20
	8-36	Clay, Clay loam, Silty clay	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	75-85	30-65	11-30
	36-60	Clay, Clay loam, Silty clay	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	70-95	30-65	11-30

Map Unit Description (Brief)

Beaver and Lawrence Counties, Pennsylvania

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: WeF - Weikert-Rock outcrop complex, 25 to 80 percent slopes

Description Category: AGR

Weikert soils make up 65 percent of the map unit. Not classified as Prime or Statewide Farmland. The runoff class is medium. The depth to a restrictive feature is 10 to 20 inches to bedrock. It is somewhat excessively drained. The slowest permeability within 60 inches is moderately rapid. Available water capacity is very low and shrink swell potential is low. This soil is not subject to flooding and is not ponded. The seasonal high water table is at a depth of more than 6 feet. Major component is not a hydric soil. Land capability class 7e.

Description Category: SO5

ROCK OUTCROP CONSISTS OF EXPOSURES OF BARE, HARD BEDROCK AND ROCK-LINED PITS. THEY CONSIST MAINLY OF UNWEATHERED METAMORPHIC ROCK OR SEDIMENTARY ROCK SUCH AS CONSOLIDATED LIMESTONE, SANDSTONE AND CONGLOMERATE.

Description Category: SO5

THE WEIKERT SERIES CONSISTS OF SHALLOW, SOMEWHAT EXCESSIVELY DRAINED SOILS ON UPLANDS. THEY FORMED IN MATERIAL WEATHERED FROM SHALE, SILTSTONE, AND SANDSTONE. TYPICALLY THESE SOILS HAVE A DARK BROWN CHANNERY SILT LOAM SURFACE LAYER 7 INCHES THICK. THE SUBSOIL FROM 7 TO 14 INCHES IS YELLOWISH BROWN VERY CHANNERY SILT LOAM. THE SUBSTRATUM FROM 7 TO 18 INCHES IS YELLOWISH BROWN VERY CHANNERY SILT LOAM. BEDROCK IS AT 18 INCHES.

Component Text

Beaver and Lawrence Counties, Pennsylvania

Map unit: WeF - Weikert-Rock outcrop complex, 25 to 80 percent slopes

Component: Weikert

Text kind/Category: SOI5 description

THE WEIKERT SERIES CONSISTS OF SHALLOW, SOMEWHAT EXCESSIVELY DRAINED SOILS ON UPLANDS. THEY FORMED IN MATERIAL WEATHERED FROM SHALE, SILTSTONE, AND SANDSTONE. TYPICALLY THESE SOILS HAVE A DARK BROWN CHANNERY SILT LOAM SURFACE LAYER 7 INCHES THICK. THE SUBSOIL FROM 7 TO 14 INCHES IS YELLOWISH BROWN VERY CHANNERY SILT LOAM. THE SUBSTRATUM FROM 7 TO 18 INCHES IS YELLOWISH BROWN VERY CHANNERY SILT LOAM. BEDROCK IS AT 18 INCHES. SLOPES RANGE FROM 0 TO 80 PERCENT.

Engineering Properties

Beaver and Lawrence Counties, Pennsylvania

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				Pct	Pct					Pct	
WeF:												
Weikert	0-7	Channery silt loam	GM, ML, SM	A-1, A-2, A-4	0	0-10	35-70	35-70	25-65	20-55	30-40	4-10
	7-18	Channery loam, Very channery silt loam, Gravelly loam	GM, GP-GM	A-1, A-2	0	0-20	15-60	10-55	5-45	5-35	28-36	3-9
	18-22	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop	---	---	---	---	---	---	---	---	---	---	---	---