

LEGEND SYMBOLS

- 13 Gravel, sandy, with 20% low to medium plastic fines, 30-40% well graded gravel, brown, the strata may contain up to 30% cobbles and boulders of sub-rounded sandstone and shale. Flow count from the standard penetration test varies from 57 to 225 blows per foot with a numerical average of 125 blows per foot. Permeability Test data follows: DH-1 7.8-8.5 GM @ 27 ft. head in 5 minutes @ 2.5 ft. head 9.5-11. No take @ 27 ft. head DH-5 3.0-4.5 GM @ 15 ft. head k=1.3 ft./day 11.0-12.5 GM @ 10 ft. head k=1.5 ft./day DH-102 11.5-11.8 GM @ 14 ft. head k=1.1 ft./day DH-303 1.5-2.5 GM @ 8 ft. head k=0.5 ft./day Loss in 5 minutes
- 14 Wisconsin (?) Drift - Well graded sand, gravelly with 10-20% low plastic fines; (20-30) well graded gravel and 10% or more cobbles and boulders of sandstone and shale red brown to gray; very compact, standard penetration tests range from 16 to 270 blows per foot with a numerical average of 120 blows per foot. Permeability rates from moderate to rapid varying on the percentage of the fine grained component in the soil. Permeability testing results are as follows: DH-1 17.5-19.2 Less than 1 quart per minute DH-5 12.0-12.5 No loss in 5 minutes 11.3-14.5 0.19 GM @ 20 ft. head k=0.26 ft./day DH-1 17.0-17.5 0.13 GM @ 17.8 ft. head k=1.5 ft./day DH-2 21.0-21.5 0.5 GM @ 18.8 ft. head k= 1.1 ft./day DH-102 10.0-10.5 GM @ 17.3 ft. head k=1.6 ft./day DH-102 10.0-20.5 1.1 GM @ 8 ft. head k=8.5 ft./day
- 15 Clay, sandy with gravels; Illinois till; 10% well graded sand, 20% well graded gravel, occasional cobbles. Coarse sand and gravel portions consist of both sub-angular sand particles and sub-rounded quartz grains. Shale fragments are both gray and red, occasional coal inclusions. Soil color is general red brown, moist, speedy moisture test results in 11.5, 15.7, and 30% moisture for 3 samples range from grade 10 to 15. Flow count for the horizon varies from 21 to 27 blows per foot with a numerical average of 23 blows per foot. This strata correlation can vary to a 10 with 10% medium plastic fines and a gray color. Field test indicate that the strata is generally impermeable.

- 16 Very weathered and decomposed shale, Hamilton group, basically clay shale with fractures filled with clay. The strata will excavate as an 80-100 lb after correction would break down further into a CL soil. Some bedding is indicated in spoon samples. Material is moist and frequently has a water table on top of the material. Some portions of the material have zones which are very permeable, the speedy moisture samples show low moisture. Detailed standard penetration test data should be obtained from the logs of this horizon.
- 17 Gray shale, black when wet, some calcareous sections, soft to moderate soil, broken; clay shale, fossiliferous in part. See water testing report sheet for strata permeabilities.

- 18 Tonoloway Limestone Formation, Gray limestone ranging from a shaly limestone to a limestone breccia. Calcite deposition fills most of the seams and shows evidence of breaks and re-orientation; Other seams are open or clay filled. Permeability or pressure testing results are not obtained in this strata as the holes could not be filled with water. Attempts at filling the various tests intervals in the limestone were made with pumps having a discharge up to 30 gallons per minute.
- 19 Chert, partially sandy, broken to very broken, gray, very permeable. Permeability rates are well in excess of 100 feet per day.

ABBREVIATIONS

aq	aquifer	fr	fracture	DH	DRILL HOLE
cav.	cavities	lam	laminated	TP	TEST PIT
cl	centerline	mas	massive		
con	concretions	TD	total depth		
US	undisturbed samples	v	very		
DS	disturbed samples	w/	with		
dip	dipping	wea	weathered		
frac	fractured	WL	(date) groundwater level on a specified date		

TEST HOLE NUMBERING SYSTEM

Centerline of dam	1-99
Borrow area	101-199
Emergency spillway	201-299
Centerline of outlet structure	301-399
Stream channel	401-499
Relief wells	501-599
CORRELATION OF FORMATION	601-699
	701-799

***UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOLS**

GW	Well graded gravels; gravel-sand mixtures
GP	Poorly graded gravels
GM	Silty gravels; gravel-sand-silt mixtures
GC	Clayey gravels; gravel-sand-clay mixtures
SW	Well graded sands; sand-gravel mixtures
SP	Poorly graded sands
SM-1	Silty coarse sand
SM-2	Silty fine sand
SC	Clayey sands; sand-clay mixtures
ML	Silts; silty, v. fine sands; sandy or clayey silts
CL-1	Clays of low plasticity; silty, sandy or gravelly clays
CL-2	Clays of medium plasticity; silty, sandy or gravelly clays
CH	Clays of high plasticity; fat clays
MH	Elastic silts, micaceous or diatomaceous silts
OL	Organic silts and organic silty clays of low plasticity
OH	Organic clays or silts of medium to high plasticity

***CLASSIFICATION BY VISUAL FIELD METHODS**

**PLAN AND PROFILES FOR GEOLOGIC INVESTIGATIONS
PA-497
BRIAR CREEK WATERSHED
COLUMBIA COUNTY, PENNA.
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE**

Investigator by	Date	Approved by	Title
T. A. DUMPER		T. A. DUMPER	Geologist
Checked by		G. C. JOHNSON	
Drawn by		F. D. DIODATO	
Sheet	No. 2	Drawing No.	No. 4

- 4 Alluvium - Silt, fine sandy 20% etc. sand, moist wet, brown to gray. Standard penetration test gives 3-10 blows per foot, corral siltion includes gray CL strata and old channels with cobbles and boulders. One speedy moisture test sample shows 26% moisture content.
- 5 Unland soil - Clay, silty, with 20% well graded sand, (ML-CL) occasional shale fragments, yellow brown to red brown, impermeable, moist, one speedy moisture test of 18%. Blowcount ranged from 3-12 blows per foot with an average of 10 blows per foot.
- 10 Deposits of limited extent varying from SM to ML in gradation. Related to water sorting of glacial till or terraces. Located at both slope - floodplain intersections of the centerline.

- 11 Old Alluvium or drift, Well graded sand and gravel with 10-20% low to medium plastic fines, (SC) permeability rates vary from slow to rapid with the decrease in the percentage of fine grained components. The strata contains up to 10% cobbles and boulders. Coarse grained portions are sub-rounded to sub-angular in shape and are composed of sandstone, shale, and chert. The flowcount for the strata varies from 22 to 111 blows per foot. The color is red brown. Permeability Test: DH-302 1.0-3.0 water heads level in casing DH-4 4.5-6.0 No water intake in 5 minutes DH-5 3.0-4.5 1.1 GM @ 3 ft. head k=1.1 ft./day
- 12 Wisconsin (?) Drift - Well graded sand, gravelly with 20-30% medium plastic fines (20-30) well graded gravel, 10% cobbles and boulders, red brown, very compact, blow count varies from 22 to 165 blows per foot with an average of 113 blows per foot, permeability data: DH-302 1.0-3.3 No take DH-303 5.0-12.0 0.65 GM @ 2.9 ft. head k=3 ft./day 12.0-16.5 Present checks show less than 1 qt. in 5 minutes @ 2.9 ft. head k=0.6 ft./day

- 13 Coarse grained fraction is composed of both sandstone and shale, moist to wet. Standard penetration test shows 16 to 86 blows per foot. Permeability test data follows: DH-303 1.0-4.5 1.2 GM @ 1.1 ft. head k=1.1 ft./day 4.5-6.0 0.8 GM @ 1.9 ft. head k=1.1 ft./day
- 14 Wisconsin (?) Drift - Well graded sand, gravelly with 20-30% medium plastic fines (20-30) well graded gravel, 10% cobbles and boulders, red brown, very compact, blow count varies from 22 to 165 blows per foot with an average of 113 blows per foot, permeability data: DH-302 1.0-3.3 No take DH-303 5.0-12.0 0.65 GM @ 2.9 ft. head k=3 ft./day 12.0-16.5 Present checks show less than 1 qt. in 5 minutes @ 2.9 ft. head k=0.6 ft./day

