

EXPLANATION

QUATERNARY

FLOODPLAIN DEPOSITS
Alluvial deposits in stream valleys; underlies present floodplain of associated streams. A mixture of fine sand, silt, and clay. Thickness variable; generally ranges from 3-8 feet.

COLLUVIAL FAN DEPOSITS
Mixed colluvial and alluvial debris; large and small, subrounded to angular boulders, cobbles, pebbles and sand derived principally from quartzite; distal margins dominated by finer constituents mixed with weathering products derived from indigenous bedrock. Thickness 0-150+ feet.

LATE PRECAMBRIAN OR CAMBRIAN

CONOCOCHEAQUE FORMATION
Lower part interbedded dark gray limestone and dolomite, weathering to banded olive gray and yellowish brown, with subordinate beds of mechanical and algal limestone and minor light gray sandy dolomite. Middle part cyclical alternations of bluish gray stromatolitic-oolitic-mechanical limestone, with interlaminae of bluish gray quartzite and dolomite characteristic. Upper part medium to dark gray micritic algal limestone and minor mechanical-oolitic limestone; contains bands and laminae of argillaceous dolomite. Yields conspicuous float of grayish orange weathering, coarsely textured chert. Thickness 2000-2500 feet.

ELBROOK FORMATION
Lower portion of formation composed of light bluish gray, finely laminated, argillaceous limestone interbedded with grayish green, calcareous shale, with dark gray, massive, pure limestone at base. Overlain by medium bluish gray, massive limestone and subordinate dolomite, and siliceous limestone that weathers to porous sandstone. Upper half of unit predominantly medium to dark gray, laminated, argillaceous limestone. Thickness 2000-3000 feet.

WAYNESBORO FORMATION
Lower part consists of pale red to grayish red or purple, thin- to medium-bedded, laminated and cross-laminated sandstone at base with interbedded dark red to purple shale; grades locally into yellowish gray to tan, laminated or mottled sandstone. Middle part buff, yellowish gray, and medium gray dolomite, sandy dolomite, and interbedded dolomite and bluish gray limestone; contains minor green and yellow shale and locally, pale orange to yellowish gray, fine-grained, laminated and cross-laminated sandstone. Upper part pale purple to grayish red or purple, fine-grained, laminated sandstone interbedded with dusky blue, medium-grained sandstone or quartzite; contains intervals of medium gray, finely crystalline limestone that weathers yellow gray to gray orange. Thickness 300-500 feet.

TOMSTOWN FORMATION
Basal portion poorly-exposed but consists of dark to light gray, finely laminated, strongly cleaved limestone that grades upward into a 20-foot thick section of light gray weathering, finely laminated dark gray limestone with discontinuous bands of grayish tan silty dolomite which weathers dusky yellow. Middle part gray to tan, thin- to thick-bedded, finely crystalline limestone and dark gray, sandy limestone that weathers to light gray, pinkish-gray, and yellowish-gray slabs. Upper part interbedded medium to dark gray limestone with small nodules of chert, white to light gray dolomite, and bluish gray, silty, dolomitic limestone. Uppermost portion includes light to bluish gray, poorly bedded to massive limestone overlain by light to medium gray, medium-bedded, dense, micritic limestone with very thin intervals of tan to brown silty limestone and calcareous shale, 2 to 6 mm thick. Thickness 1000 feet.

ANTHETAM FORMATION
Basal unit of olive gray to dark brownish gray quartz phyllite interbedded with light gray, laminated and cross-laminated quartzite. Overlain by medium gray to grayish olive, silty sandstone and light gray, fine-grained quartzite; undulating bands 1 to 3 inches thick with dark gray laminations and cross-laminations; associated with intervals of light gray, medium-bedded, dense, fine-grained quartzite in layers greater than 4 feet thick. Uppermost beds poorly exposed; in places include light olive to greenish gray, laminated to banded, silty sandstone which grades upward into greenish gray, strongly cleaved quartz-sericite schist; bedding indistinct. Thickness 300-600 feet.

LATE PRECAMBRIAN

WEVERTON FORMATION
Catoctin Mountain belt: Poorly-exposed light gray to very light gray quartzite and quartz-phyllite pebble conglomerate with thin bands of phyllite. At northern end of eastern belt, unit contains cross-laminated, coarse-grained graywacke with subequant, dusky blue to very dusky purple phyllite fragments concentrated in bands 2 to 4 inches wide; remainder of section predominantly poorly-sorted graywacke with light gray to grayish olive and dusky blue bands and lenses. Lower part only of unit exposed in Catoctin belt, 175 to 225 feet thick.

LOUDDON FORMATION
Poorly exposed, discontinuous unit. Lower part is typically dusky reddish purple, dusky blue, or dark gray phyllite; exhibits some darker-colored laminations, ivory-colored elongate blebs, or strongly sheared grayish red to purple or dusky blue like clasts. Estimated thickness of phyllite member up to 150 feet. Upper part is pebble to coarse cobble conglomerate in places with 50 to 60 percent of the rock composed of rounded, subangular pebbles and cobbles of white to gray quartz and quartzite, dusky blue to very dusky red porphyritic rhyolite, dark red (partly), and flattened, elongated clasts of grayish purple, pale red, and light greenish gray phyllite; matrix composed of gray, grayish yellow-green, and bluish gray coarse- to very coarse-grained graywacke; also contains very coarse-grained prograde quartzite in layers 2 to 8 inches thick with olive gray to tan silty laminations and cross-laminations. Estimated thickness of conglomerate member up to 50 feet.

CATOCTIN FORMATION
Predominantly metabasalt and metarhyolite with subordinate phyllite. Several varieties of each rock type are distinguishable based on color and textural characteristics, but stratigraphic relationships within formation not established.

pCb Metabasalt: Yellowish to grayish green and dusky green rock; several textural varieties present but none comprises an individually mappable lithologic unit. All varieties contain veins and nodular masses of quartz and epidote. Thickness estimated greater than 1,000 feet.

pCb1 Uniformly aphanitic metabasalt: Fine- to medium-grained, massive to strongly cleaved rock.

pCb2 Spotted metabasalt: Dark green chlorite, yellowish green epidote, and grayish green actinolite(?) comprise mesoscopic grains in medium- to coarse-grained rock.

pCb3 Porphyroblastic metabasalt: Oriented, elongate porphyroblasts of chlorite and actinolite(?), 10 to 20 mm long, in strongly cleaved aphanitic metabasalt groundmass.

pCb4 Amygdaloidal metabasalt: Irregular to ovoid amygdaloids of epidote, quartz, feldspar, and chlorite in aphanitic metabasalt groundmass; amygdaloids range from 3 to 10 mm in diameter.

pCb5 Banded metabasalt: Bands of a few millimeters to several centimeters thickness of contrasting composition and texture in metabasalt.

pCb6 Porphyritic metabasalt: Laths of randomly oriented, white to very light bluish gray albite feldspar, locally more calcic, 2 to 6 mm long in aphanitic metabasalt groundmass; make up 3 to 5 percent of rock.

pCb7 Metabasalt breccia: Greenish gray and grayish to reddish purple, medium to large, subangular to subrounded clasts of metabasalt in reddish gray or dark green, fine-grained chloritic groundmass.

pCb8 Red porphyritic metabasalt: Greenish red to very dusky red purple, or grayish blue to grayish purple porphyritic rock; phenocrysts, 3 to 5 percent, predominantly of pale pink to light gray feldspar (albite?) and gray to dusky red quartz. Estimated thickness 200 to 300 feet.

pCb9 Blue metabasalt: Blue to gray aphanitic metabasalt that weathers medium dark gray to light grayish blue. Five separate units differentiated and mapped on basis of texture. Minimum aggregate thickness for the blue metabasalt sequence estimated 500 to 600 feet.

Unit A — Undifferentiated blue metabasalt. No single textural variety predominant.

Unit B — Flow-banded blue metabasalt. Contains nearly planar, locally convoluted, flow bands 3 to 10 mm thick, and discontinuous laminae 0.2 to 0.5 mm thick, most prominent on weathered surfaces. Phenocrysts constitute less than 2 percent of rock.

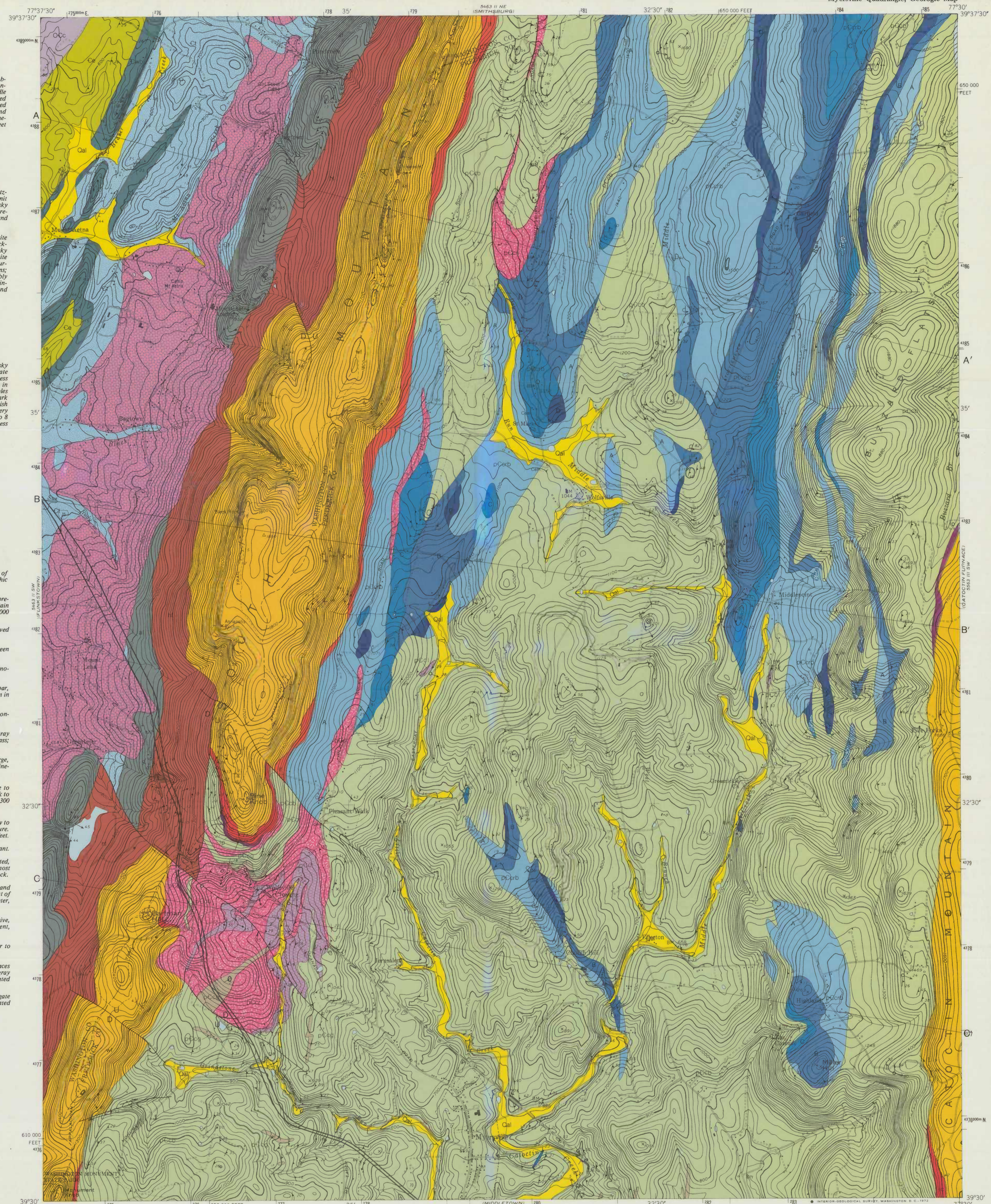
Unit C — Porphyritic blue metabasalt. Conspicuous white, very pale orange, and pinkish gray, randomly oriented feldspar laths 1 to 6 mm long comprise 2 to 5 percent of the rock; light to medium gray ovoid phenocrysts of quartz, 0.5 to 1.5 mm in diameter, make up less than 1 percent.

Unit D — Uniformly aphanitic metabasalt. Dusky blue to medium gray, massive, dense metabasalt with characteristic conchoidal fracture; phenocrysts, if present, comprise less than 1 percent of the rock; weathers bone white to very light gray.

Unit E — Metabasalt breccia. Dusky blue to grayish blue, dense, with angular to subangular clasts which weather to a lighter color than the felsic matrix.

pC10 Lavender phyllite: Pale purple to grayish red purple or very light gray phyllite, in places mottled; with red quartz grains 0.3 to 1.0 mm in diameter, and ivory to yellowish gray elongate blebs (sheared feldspar laths?) common. Unit poorly exposed; estimated thickness 30 to 50 feet, locally to 100 feet.

pC11 Gray phyllite: Medium light gray to dark gray phyllite with very light gray to ivory elongate and flattened blebs; may be finely banded or laminated. Unit poorly exposed; estimated thickness 50 to 100 feet.



GEOLOGIC MAP OF THE MYERSVILLE QUADRANGLE, MARYLAND

By
John L. Fauth
1981

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY
Kenneth N. Weaver, Director

SCALE 1:24,000
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

contact between geologic units
Distribution and concentration of structural symbols provides an approximate measure of the reliability of the contact between adjacent consolidated rocks.

fault
U — normal fault
U — upthrown side
D — downthrown side
S — strike-slip fault
arrows indicate movement direction

linear elements
(bearing and plunge)
— 12 — intersection of bedding (banding) and regional flow cleavage
— 16 — intersection of bedding (banding) and slip cleavage
— 9 — intersection of regional flow cleavage and slip cleavage
— 32 — mineral elongation
— 8 — axis of minor bedding fold

Planar Elements
(strike and dip)
bedding in sedimentary rocks
horizontal inclined overturned
banding in volcanic rocks
inclined overturned
regional flow cleavage
slip cleavage

