

EXPLANATION

af Artificial fill
Various materials; mainly under roads, railroads and graded cut and fill areas such as airfields and landfills.

dg Disturbed ground
Mainly abandoned sand and gravel pits; includes fine-grained sediments in pond fills near gravel washing plants.

Qa1 Alluvium
Sand, gravel, silt, and clay in fairly well sorted and bedded fluvial deposits in modern flood plains and marshes; as much as 20 ft. thick.

Qc Terrace deposits
Gravel, sand, silt, and clay in areally restricted bedded fluvial deposits bordering modern flood plains; 10 to 25 ft. thick.

Qte3 Qte2 Qte1 Terrace and estuarine deposits
Silt, clay, sand, and gravel in well bedded, fairly well sorted interfingering deposits locally containing peat and shaly layers; ancestral Potomac River deposits filling large valleys cut into Cretaceous deposits; upper layers locally crop out in wave-cut cliffs and stream-cut terraces.

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Contact
Dotted where concealed. Distribution and concentration of structural symbols indicates degree of reliability.

High angle fault
Dotted where concealed

Inclined Overturned
Thrust fault and subaqueous slide
Dotted where concealed. Sawtooth on upper plate. Where overturned, sawtooth in direction of dip; barb on side of tectonically higher plate.

Small fault seen in outcrop, showing dip
Early fold showing bearing and plunge

MINOR FOLD AXES
Early fold showing bearing and plunge

Asymmetric fold, showing bearing and plunge and rotation sense as viewed in profile.

PLANAR FEATURES
Inclined Overturned Vertical
Strike and dip of beds

Ball indicates top known from sedimentary structures

Strike and dip of layering in mafic igneous rocks

Strike and dip of foliation in metamorphic rocks and schistosity of intermediate generation in metasedimentary rocks.

Strike and dip of first generation schistosity

Strike and dip of strain-slip cleavage and schistosity

Strike and dip of fracture cleavage

Strike and dip of essentially parallel bedding and schistosity

LINEAR FEATURES
Bearing and plunge of mineral lineation

Bearing and plunge of intersection of bedding and schistosity

Bearing and plunge of crenulations

Bearing and plunge of quartz rods

JOINTS
Inclined Vertical
Strike and dip of joints

QUATERNARY

TERTIARY

CRETACEOUS

TRIASSIC TO JURASSIC (?)

DEVONIAN (?)

LOWER PALEOZOIC

LOWER PALEOZOIC

LOWER PALEOZOIC

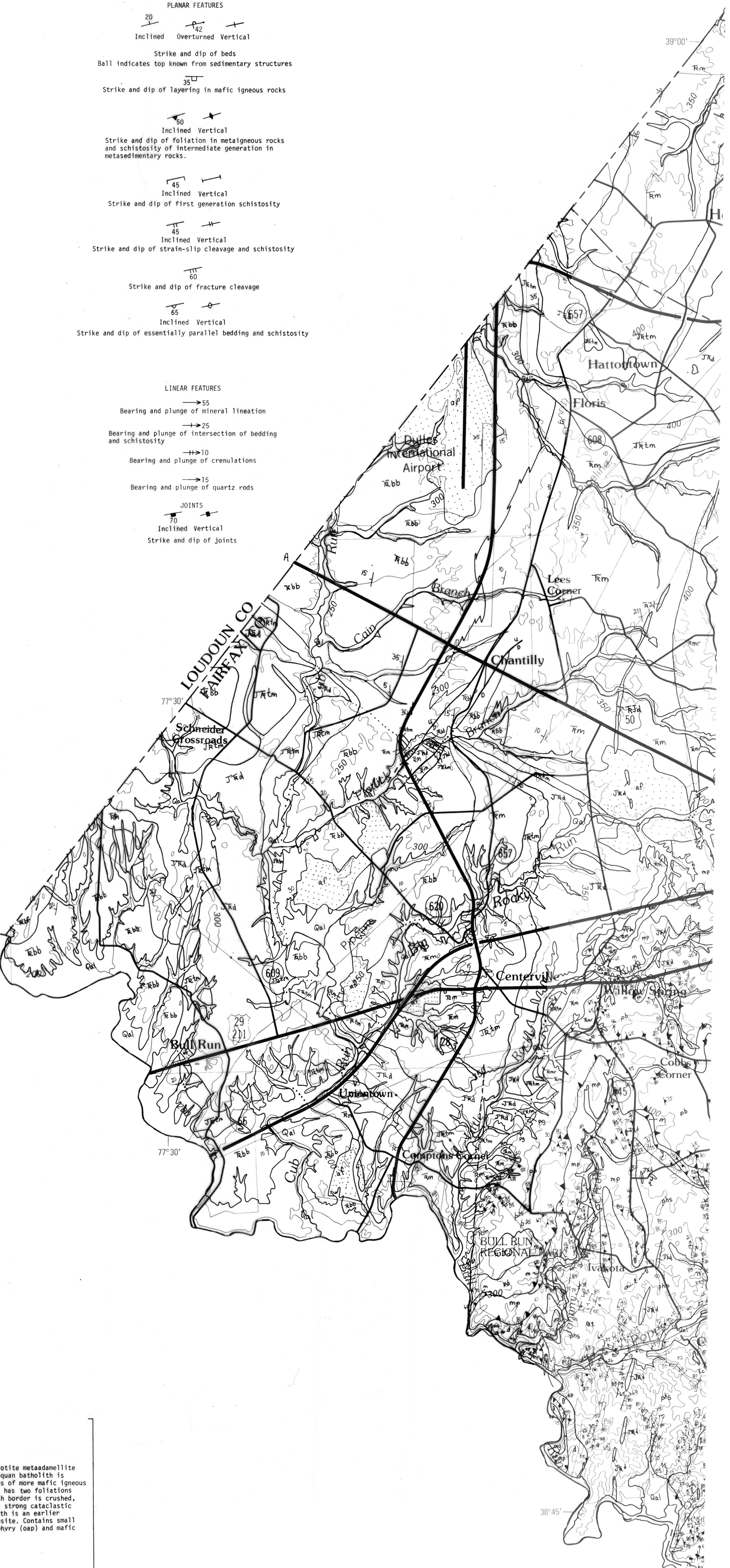
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These rocks occur in six different lithotectonic units that are separated by either a tectonic contact, an igneous body, or an unconformity. Therefore, the relative ages of the units cannot be directly established other than that the metasiltstone-phylite is younger than the Piney Branch allochthon, the Potomac River allochthon, the Skyesville Formation, and the Eastern Fairfax (Autochthonous?) Sequence.

Metasiltstone-Phyllite Sequence

Piney Branch Allochthon

Potomac River Allochthon

Skyesville Formation

Eastern Fairfax (Autochthonous?) Sequence

INTRUSIVE ROCKS
The relative ages of these rocks are uncertain

q Lenticular bodies or irregular masses of quartz, some bodies are foliated or polyfoliated, whereas others are massive. The quartz is likely of more than one age.

t Fine-grained, dark-greenish-gray, biotite quartz-plagioclase lamprophyre.

ton Tonalite and related rocks

ma Muscovite adamellite

Very light-gray to pink, foliated, brown-grained muscovite metadamellite. Rock locally has a pegmatite phase. Unit clearly intrudes pelitic schist (as) and one small body appears to have chilled contacts against Skyesville Formation (d).

BP Bear Island granulite

Fine-grained, very light-gray, biotite-muscovite adamellite to granulite (spite) (ap) and lesser related pegmatite. Rock forms small- to moderate-sized sheets and cross-cutting bodies. Found only within the Peters Creek schist.

Metasiltstone, METAVOLCANIC, and TRANSPORTED INTRUSIVE ROCKS

Metasiltstone and phyllite

Medium- to very fine-grained, light-gray, brown-weathering, micaceous metasiltstone (phs) and light-gray, brown-weathering phyllite (php). These two units are interbedded and contain the typical mineral assemblage magnetite-biotite-muscovite-plagioclase-quartz (chlorite-epidote). Both units contain fairly abundant felsic and mafic dikes. Common graded bedding in metasiltstone (phs), in addition to other sedimentary features, suggest deposition as a distal turbidite. These two units have a prominent, and cleavage related to isoclinal folding. Later refolding rarely has produced a second cleavage. Both units have undergone a single low grade metamorphism and the only evidence of retrogression is slight chloritization of some biotite.

UNCONFORMITY

POTOMAC RIVER ALLOCHTHON

Peters Creek Schist

Light- to medium-gray, medium-grained chlorite-biotite-muscovite-plagioclase-quartz (phs) and light-gray, brown-weathering phyllite (php). These two units are interbedded and contain the typical mineral assemblage magnetite-biotite-muscovite-plagioclase-quartz (chlorite-epidote). Both units contain fairly abundant felsic and mafic dikes. Common graded bedding in metasiltstone (phs), in addition to other sedimentary features, suggest deposition as a distal turbidite. These two units have a prominent, and cleavage related to isoclinal folding. Later refolding rarely has produced a second cleavage. Both units have undergone a single low grade metamorphism and the only evidence of retrogression is slight chloritization of some biotite.

UNCONFORMITY

Piney Branch Allochthon

Intervened complex of subequal parts of peridotite, pyroxenite, and gabbro now represented by serpentinite, soapstone, actinolite schist, and amphibolite. Contains small dikes and sheets of plagiogranite.

Yorkshire Formation

Dark-colored, quartz-plagioclase-chlorite granofels containing chips, fragments, and small blocks of quartz, serpentinite, amphibolite, plagiogranite, mafic volcanic, and other exotic rock types. The mélange is characterized by abundant light-colored felsic grains that contrast markedly with the dark-colored phyllosilicate component, and by a scaly foliation.

EASTERN FAIRFAX (AUTOCHTHONOUS ?) SEQUENCE
These rocks are considered to be possibly autochthonous because they appear to underlie the Skyesville Formation

Metagraywacke and pelitic schist

Light- to medium-gray, fine- to medium-grained metagraywacke (bg). Part of the unit is either well-bedded and graded or laminated. The remainder is a quartz-feldspathic granofels, which contains a high percentage of light-colored volcaniclastic material. Unit contains interbeds of pelitic schist (as). A typical mineral assemblage is biotite-muscovite-plagioclase-quartz (garnet-chlorite-epidote-magnetite). Unit appears to underlie the Skyesville Formation (d), but does not grade into it.

Light-gray, brown-weathering, fine- to medium-grained biotite-chlorite-quartz-muscovite schist (as). Rock differs from more pelitic rock (ap) of Peters Creek Schist in that it contains much less quartz. Has quartz distributed uniformly throughout, the phyllosilicates rather than concentrated in rhythmic layers, and lacks segregation veins which are common in the Peters Creek. A typical mineral assemblage in the unit is biotite-chlorite-quartz-muscovite (garnet-plagioclase-epidote-magnetite). Garnet is sporadic. The schist, which appears to underlie the metagraywacke unit (bg), is the same metamorphic grade throughout its area and shows the effect of a single prograde (garnet) metamorphism.

QUANTICO SYNCLINE SEQUENCE

Quantico Slate

Dark-gray to black, carbonaceous slate containing thin to thick graded beds of metamorphosed quartz sandstone and siltstone (ssu) grading down into dark-gray to black slate having abundant interbeds of light- to medium-gray volcaniclastic metamorphosed mudstone and medium-gray volcaniclastic phyllite (qsl). Unit has many mesoscopic inclined beds.

Chopawamsic Formation

Grayish-green, fine- to medium-grained, chlorite-epidote-biotite-muscovite-quartz plagioclase gneiss grading into greenschist. These rocks are probably mixtures of intermediate and mafic volcaniclastic material with material of terrigenous origin. Upper part of formation contains beds of felsic, intermediate, and mafic tuff as well as some mafic flow rock and volcanic breccia. Unit grades up into the Quantico Slate, the contact being placed at the first appearance of dark-gray to black, carbonaceous slate.

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