

Geologic Cross Sections Part 1

Exercise 1: Chester Valley

1. Examine the diagram that includes the geology of a part of southeastern PA and identify any major geologic structures including synclines, anticlines, monoclines, and faults.

2. Using what you have already learned about geology and rocks/minerals along with proven geologic principles like those presented in the Physical Geology E-Unit, describe the geologic history of the region including likely past environments, the timing of folding and faulting and approximate time frames for when these events occurred. This can largely be done with a certain amount of deductive reasoning and some problem solving skills. Look carefully at the types of rocks, how the rocks have been changed, etc. Start with the oldest event and finish with the youngest.

3. Create a stratigraphic column illustrating the various rock layers and major geologic events.

Geologic History:

Column

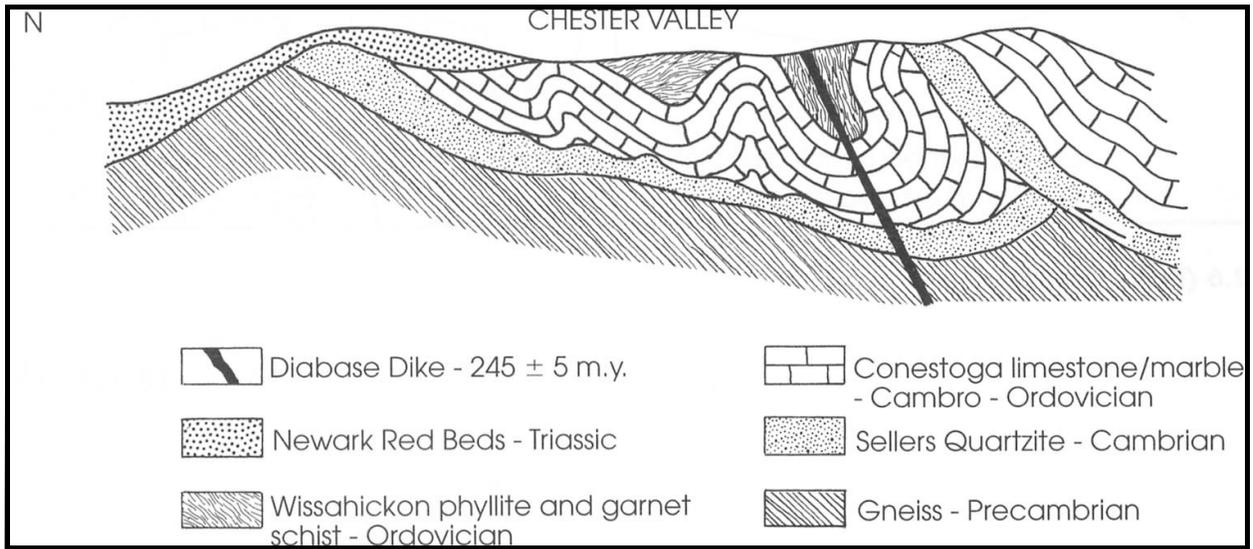
Exercise 2: Valley and Ridge Province

1. Examine the diagram that includes the geology from the Valley and Ridge province of Georgia. In spite of the fact that significant information is missing from the middle of the area due to erosion and weathering, an astute geologist should still be able to link all of the rock layers together. *On the cross section*, number each distinct rock layer matching up those layers that have become separated due to erosion. Identify the oldest rock layer as #1. Note that the wavy lines represent what are known as *unconformities*. These features show places where significant erosion has occurred between different rock layers being laid down in the stratigraphic column. Because of this reason, the rock layers above and below the unconformities are considered to be unique layers even if the rock type is the same.
2. Using what you have already learned about geology and rocks/minerals along with proven geologic principles like those presented in the Physical Geology E-Unit, describe the geologic history of the region including likely past environments, the timing of folding and faulting and approximate time frames for when these events occurred. This can largely be done with a certain amount of deductive reasoning and some problem solving skills. Look carefully at the types of rocks, how the rocks have been changed, etc. Start with the oldest event and finish with the youngest.
3. Create a geologic cross section that illustrates what the rock strata would have looked like if no deformation had occurred throughout its history.

Geologic History:

<u>Column</u>

Geologic Cross Section of the Chester Valley, PA



Geologic Cross Section of the Valley and Ridge Province, GA

