Index Map of Cross Sections Through Parts of the Appalachian Basin (Kentucky, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia)

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Chapter E.1 of Coal and Petroleum Resources in the Appalachian Basin: Distribution, Geologic Framework, and Geochemical Character
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Introduction to Cross Sections

Ten cross sections and three seismic profiles of regional extent through the subsurface of the Appalachian basin are presented in chapter E of this volume (fig. 1). These cross sections and seismic profiles are subdivided into four groups: (1) five restored cross sections through Cambrian and Ordovician rocks, (2) three restored cross sections through Lower and Upper (part) Silurian rocks, (3) two geologic (structural) cross sections through the entire preserved section of Paleozoic rocks, and (4) three seismic profiles through the entire preserved section of Paleozoic rocks.

The stratigraphic units in the restored cross sections are constructed with respect to a horizontal lithologic datum, whereas the stratigraphic units in the geologic (structural) cross sections are constructed with respect to sea level. The control points for the cross sections are exploratory wells drilled for oil and gas, and many of these wells reached igneous and metamorphic basement rocks of Mesoproterozoic age. Each cross section is illustrated in detail and discussed at length in its respective chapter.

The cross sections and seismic profiles included in this volume were previously published between 1991 and 2009 as U.S. Geological Survey publications; some of these publications were subsequently revised. The earliest cross sections (chapters E.2.1 to E.2.4) refer to an unpublished cross section (A--A’); that cross section was never published later and is not the A--A’ included here as chapter E.3.3.

The cross sections are included in this volume in their original form to provide support for assessments and research studies in the Appalachian basin. There are two additional USGS publications that are not included in this volume but may be useful for research studies: Ryder and others (1996) and Ryder and others (2012).

The appendixes in chapters E.4.1 and E.4.2 include (1) Log ASCII Standard (LAS) files, which encode gamma-ray, neutron, density, and other logs in text files that can be used by most well-logging software programs; and (2) graphic well-log traces. In the appendix to chapter E.4.1, the well-log traces are accompanied by lithologic descriptions with formation tops.

Cross Section Subchapters

The following is a list of the subchapters in chapter E. Click on the link to access each chapter.


References Cited


Figure 1.  Index map of the Appalachian basin region showing the lines of section for cross sections presented in chapter E. Location of three seismic lines are not shown on this figure.