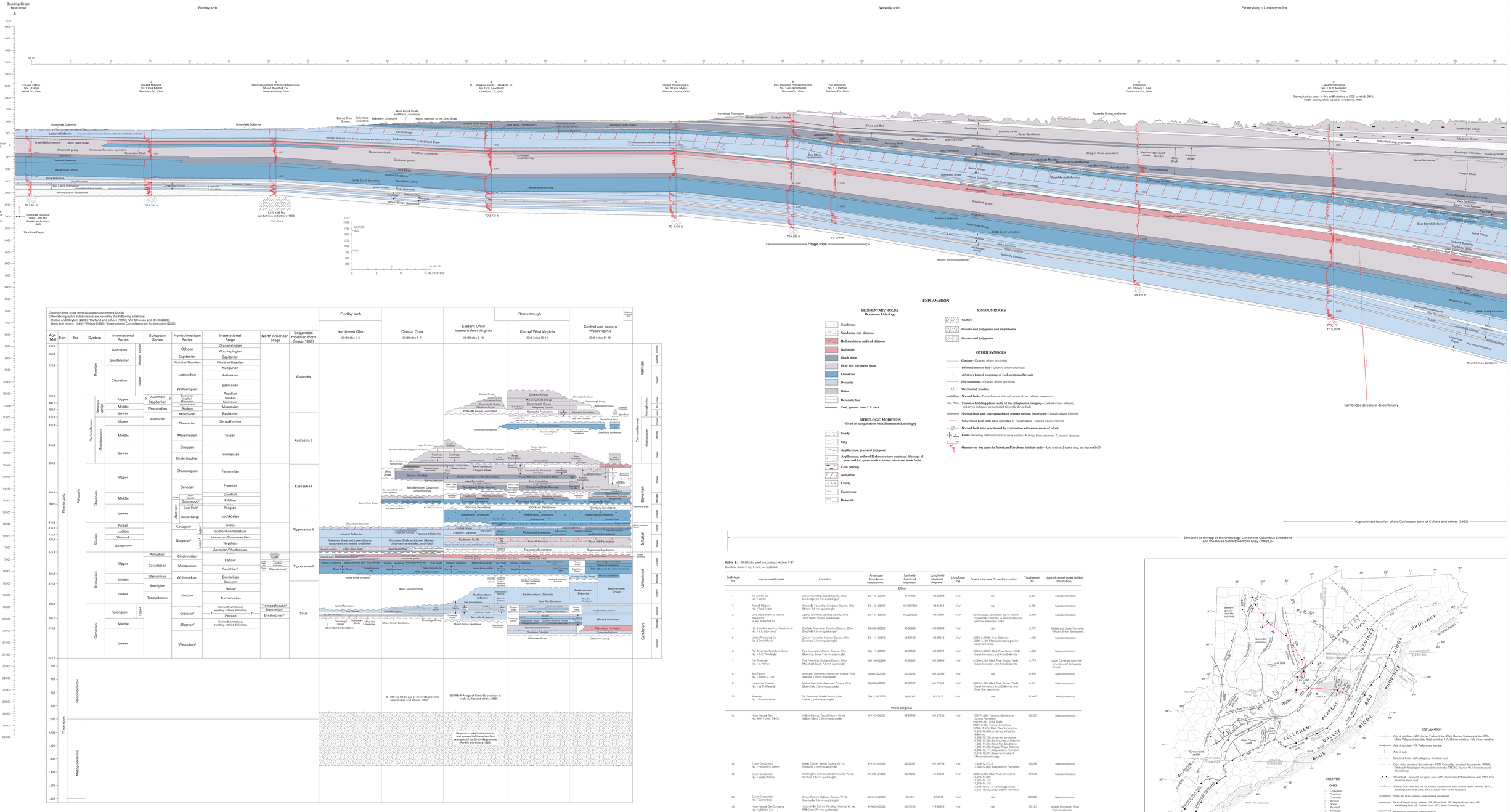


Figure 2.—Correlation of Paleozoic rocks along section *E–E′* in Ohio and West Virginia.

EXPLANATION

SEDIMENTARY ROCKS
Dominant Lithology

- Sandstone
- Sandstone and siltstone
- Red sandstone and red siltstone
- Red shale
- Black shale
- Gray and (or) green shale
- Limestone
- Dolomite
- Halite
- Bentonite bed
- Coal, greater than 1 ft thick

LITHOLOGIC MODIFIERS
(Used in conjunction with Dominant Lithology)

- Sandy
- Silty
- Argillaceous, gray and (or) green
- Argillaceous, red (red R shown where dominant lithology of gray and (or) green shale contains minor red shale beds)
- Coal bearing
- Anhydritic
- Cherty
- Calcareous
- Dolomitic

IGNEOUS ROCKS

- Gabbro
- Granite and (or) gneiss and amphibolite
- Granite and (or) gneiss

OTHER SYMBOLS

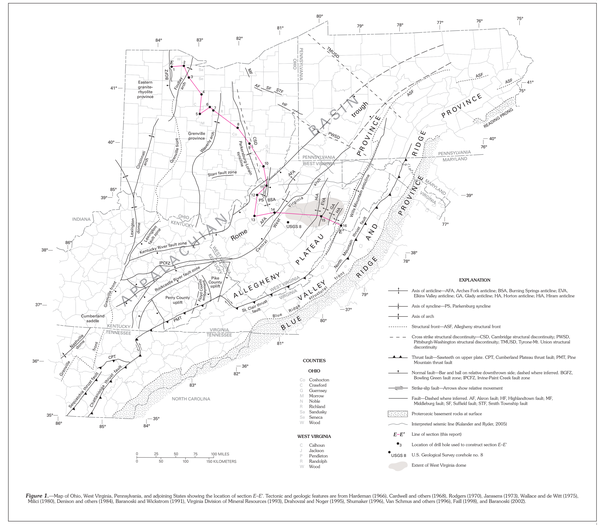
- **Contact**—Queried where uncertain
- **Informal marker bed**—Queried where uncertain
- **Arbitrary lateral boundary of rock-stratigraphic unit**
- **Unconformity**—Queried where uncertain
- **Overturned syncline**
- **Normal fault**—Dashed where inferred; arrow shows relative movement
- **Thrust or bedding plane faults of the Allegheny orogeny**—Dashed where inferred; red arrow indicates a reactivated Grenville thrust fault
- **Normal fault with later episodes of reverse motion (inversion)**—Dashed where inferred
- **Subvertical fault with later episodes of reactivation**—Dashed where inferred
- **Normal fault later reactivated by contraction with same sense of offset**
- **Fault**—Showing relative motion in cross section. A, away from observer; T, toward observer
- **Gamma-ray log curve in American Petroleum Institute units**—Log units and scales vary, see Appendix B

Table 1.—Drill holes used to construct section *E–E′*.
[Locations shown in fig. 1. n/a, not applicable]

Drill-hole no.	Name used in text	Location	American Petroleum Institute no.	Latitude (decimal degrees)	Longitude (decimal degrees)	Lithologic log	Cored intervals (ft) and formation	Total depth (ft)	Age of oldest rocks drilled (formation)
			Ohio						
1	Kin-Ark Oil Co. No. 1 Carter	Center Township, Wood County, Ohio (Cloverdale 7.5-min quadrangle)	34–173–20237	41.41492	-83.60698	Yes[1]	n/a	2,601	Mesoproterozoic.
2	Russell Maguire No. 1 Paul Kerbel	Woodville Township, Sandusky County, Ohio (Elmore 7.5-min quadrangle)	34–143–20147	41.4377026	-83.31452	Yes[1]	n/a	2,765	Mesoproterozoic.
3	Ohio Department of Natural Resources M and B Asphalt Co.	Liberty Township, Seneca County, Ohio (Tiffin North 7.5-min quadrangle)	34–147–40840	41.2264003	-83.18891	Yes[2]	Continuously cored from top to bottom (Greenfield Dolomite to Mesoproterozoic gneiss basement rocks).	2,870	Mesoproterozoic.
4	H.L. Hawkins and H.L. Hawkins, Jr. No. 1 V.E. Leonhardt	Chatfield Township, Crawford County, Ohio (Chatfield 7.5-min quadrangle)	34–033–20050	40.90996	-82.88333	Yes[1]	n/a	3,772	Middle and Upper Cambrian (Mount Simon Sandstone).
5	United Producing Co. No. 3 Orrie Myers	Canaan Township, Morrow County, Ohio (Chesnut 7.5-min quadrangle)	34–117–20012	40.57152	-82.52013	Yes[1]	2,378–2,519.5; Knox Dolomite 4,090–4,100; Mesoproterozoic granitic basement rocks.	4,100	Mesoproterozoic.
6	Pan American Petroleum Corp. No. 1 A.C. Windbigler	Troy Township, Morrow County, Ohio (Elkworthy Grove 7.5-min quadrangle)	34–117–20047	40.69033	-82.66222	Yes[1]	3,853–3,883.5; Black River Group, Wells Creek formation, and Knox Dolomite.	4,890	Mesoproterozoic.
7	Pan American No. 1 J. Palmer	Troy Township, Richland County, Ohio (Mansfield South 7.5-min quadrangle)	34–139–20269	40.64802	-82.58955	Yes[1]	4,169–4,284; Black River Group, Wells Creek formation, and Knox Dolomite.	4,775	Upper Cambrian (Maryville Limestone of Conasauga Group).
8	Bob Tatum No. 1 Edwin L. Lee	Jefferson Township, Coshocton County, Ohio (Warsaw 7.5-min quadrangle)	34–031–22053	40.32292	-82.00095	Yes[1]	n/a	6,970	Mesoproterozoic.
9	Lakeshore Pipeline No. 1 W.R. Marshall	Adams Township, Guernsey County, Ohio (Bloomfield 7.5-min quadrangle)	34–059–20792	40.03672	-81.72047	Yes[1]	6,875–7,045; Black River Group, Wells Creek formation, Knox Dolomite, and Rose Run sandstone.	6,802	Mesoproterozoic.
10	Amerada No. 1 Robert Ullman	Elk Township, Noble County, Ohio (Cutler 7.5-min quadrangle)	34–121–21278	39.61067	-81.3473	Yes[1]	n/a	11,442	Mesoproterozoic.
			West Virginia						
11	Hope Natural Gas No. 36DH Power Oil Co.	Walker District, Wood County, W. Va. (Willow Island 7.5-min quadrangle)	47–107–00351	39.25495	-81.27235	Yes[1]	7,667–7,860; Tuscarora Sandstone, Juniata Formation 9,418–9,591; Utica Shale 9,591–9,700; Trenton Limestone 9,700–10,525; Black River Limestone 10,525–10,690; unnamed anhydritic dolomite 10,690–11,135; unnamed sandstone 11,135–11,626; basement rocks: Copper Ridge Dolomite 11,626–11,664; Rose Run Sandstone 11,503–11,962; Copper Ridge Dolomite 11,962–12,304; Rogersville Shale 12,304–13,327; basement rocks of Mesoproterozoic age.	13,327	Mesoproterozoic.
12	Exxon Corporation No. 1 Howard H. Deem	Steele District, Wood County, W. Va. (Rockport 7.5-min quadrangle)	47–107–00756	39.39057	-81.50795	Yes[1]	12,646–12,473.5; 12,366–12,604; Waynesboro Formation	13,266	Mesoproterozoic.
13	Exxon Corporation No. 1 Walter McCoy	Washington District, Jackson County, W. Va. (Kenna 7.5-min quadrangle)	47–035–01366	38.73055	-81.56944	Yes[1]	9,235–9,308; Black River Limestone 13,575–13,620; 14,020–14,103 14,358–14,418 15,508–15,567.5; Conasauga Group 16,441–16,502; Waynesboro Formation	17,675	Mesoproterozoic.
14	Exxon Corporation No. 1 Gainer-Lee	Center District, Calhoun County, W. Va. (Grantsville 7.5-min quadrangle)	47–013–02503	38.975	-81.0976	Yes[1]	n/a	20,222	Mesoproterozoic.
15	Hope Natural Gas Company No. 5-5228 W. Va. Meat Security Prison Farm	Huttonsville District, Randolph County, W. Va. (Mill Creek 7.5-min quadrangle)	47–083–00103	38.70703	-79.96928	Yes[1]	n/a	13,121	Middle Ordovician (Rose Park Limestone).
16	United Fuel Gas Co. 9850-F No. 1 Ray Sponaugle	Circleville District, Pendleton County, W. Va. (Sinaloy Mountain 7.5-min quadrangle)	47–071–00006	38.54787	-79.51257	Yes[1,4]	12,515–12,527; Black River Limestone	13,000	Middle and Late Cambrian (Elbrook Dolomite thrust over Late Ordovician (Black River and Trenton Groups).
n/a	USGS core hole no. 8	Otter District, Braxton County, W. Va. (Herald 7.5-min quadrangle)	n/a	38.619167	-80.754722	Yes[1]	Continuously cored from top to bottom (Conemaugh Group to Mauch Chunk Group).	1,861	Mississippian (Mauch Chunk Group).

Sources of lithologic logs:

[1]Geological Sample Log Company, Pittsburgh, Pa.
[2]Wickstrom and others (1985).
[3]Exxon mud log.
[4]Petro-Log Log Company.
[5]Colling and others (2002).


Eastern granite-rhyolite province
Grenville province
Rome trough
Rome
APPALACHIAN BASIN
ALLEGHENY PLATEAU
VALLEY AND RIDGE PROVINCE
BLUE RIDGE
PENNSYLVANIA
MARYLAND
INDIANA
OHIO
KENTUCKY
VIRGINIA
TENNESSEE
NORTH CAROLINA
Cumberland saddle
Pike County uplift
Perry County uplift
Nashville dome
Cincinnati arch
Waverly arch
Findlay arch
Kankakee arch
Bloomington arch
Ozark plateau
Nemaha uplift
Central Kansas uplift
Pittsburgh anticline
Chestnut Ridge anticline
Laurel Hill anticline
Nittany anticline
Valley anticline
Blue Ridge anticline
Pulaski anticline
Saltville anticline
Rome trough
Kentucky River fault zone
Rome fault
Burnt Mill Creek fault
Pittsburgh-Washington structural discontinuity
Chestnut Ridge fault
Laurel Hill fault
Nittany fault
Valley fault
Blue Ridge fault
Pulaski fault
Saltville fault
Allegheny structural front
Pittsburgh structural discontinuity
Kankakee arch
Bloomington arch
Ozark plateau
Nemaha uplift
Central Kansas uplift
Cincinnati arch
Waverly arch
Findlay arch