

EXPLANATION

DESCRIPTION OF MAP UNITS

ROCKS OF THE SCHUYLKILL VALLEY SEQUENCE

- Omb** BUSKILL MEMBER OF MARTINSBURG FORMATION (MIDDLE ORDOVICIAN)--Medium to dark-gray slate containing thin beds of quartzite slate, graywacke siltstone, and carbonaceous slate.
- Oj** JACKSONBERG LIMESTONE (MIDDLE ORDOVICIAN)--Dark gray to black, laminated to medium-bedded, fine-grained, argillaceous limestone containing some crystalline limestone and calcareous siltstone beds. Most upper and lower contacts are faulted.
- Oe** ONTELAUNE FORMATION OF BECKMANTON GROUP (MIDDLE AND LOWER ORDOVICIAN)--Medium-dark gray, medium to thick-bedded, fine to medium-grained dolomite that is cherty near base and may contain limestone beds near top. Upper contact is faulted.
- Or** EPLER FORMATION OF BECKMANTON GROUP (LOWER ORDOVICIAN)--Medium gray, thin to thick-bedded, fine to medium-grained limestone interbedded with lesser amounts of light to medium-gray, thin to thick-bedded crystalline limestone to medium-crystalline dolomite. Grades up into overlying Ontelaune Formation (Oe).
- Or** RICKENBACH DOLOMITE OF BECKMANTON GROUP (LOWER ORDOVICIAN)--Medium-dark gray, thin to thick-bedded, medium to coarsely crystalline dolomite containing light-gray chert, and medium-gray, laminated, finely crystalline dolomite containing dark-gray chert. Grades up into overlying Epler Formation (Oe).
- Os** STONEHENGE LIMESTONE OF BECKMANTON GROUP (LOWER ORDOVICIAN)--Medium gray, medium to thick-bedded, finely crystalline limestone that has silty or sandy laminae and contains sporadic beds and lenses of fossiliferous, calcarenite, and intraformational conglomerate and has dolomite beds near base. Grades up into the Rickenbach Dolomite (Or).
- Oea** ALLENTOWN DOLOMITE, UNDIVIDED (LOWEST LOWER ORDOVICIAN AND UPPER CAMBRIAN)
- Oeac** MAIDEN CREEK MEMBER (LOWEST LOWER ORDOVICIAN AND UPPER CAMBRIAN)--Medium to dark-medium gray, thick-bedded dolomite and lesser light-medium gray magnesian limestone. Contains dark-gray chert stringers and nodules. Grades up into the Stonehenge Limestone (Os).
- Cam** MULLENBERG MEMBER (UPPER CAMBRIAN)--Medium to light-medium gray, thick-bedded dolomite and magnesian limestone interbedded with calcareous sandstone that serves as host rock for strata-bound limonite deposits. Grades up into the Maiden Creek Member (Oea).
- Cam** TUCKERSON MEMBER (UPPER CAMBRIAN)--Light to dark-medium gray, medium to thick-bedded dolomite, magnesian limestone and limestone. Limestone beds have silty or silty parting.
- Cl** LEITHSVILLE FORMATION (MIDDLE AND LOWER CAMBRIAN)--Medium gray, thick-bedded, finely crystalline dolomite, upper part of unit is silty. Grades up into the Tuckerston Member of the Allentown Dolomite (Oea).
- Ch** HARDYSTON QUARTZITE (LOWER CAMBRIAN)--Light gray, medium to thick-bedded quartzite and felspathic sandstone that has a basal pebbly conglomerate. Upper contact is mostly faulted, but elsewhere is gradational into the Leithsville Formation (Cl).
- pC** UNDIFFERENTIATED PRECAMBRIAN ROCKS including granitic gneiss, hornblende gneiss, other gneisses, and gneisses constituting the Reading Prong.

ROCKS OF THE LEHIGH VALLEY SEQUENCE

- Omb** BUSKILL MEMBER OF MARTINSBURG FORMATION (MIDDLE ORDOVICIAN)--Medium to dark-gray slate containing thin beds of quartzite slate, graywacke siltstone, and carbonaceous slate. Grades down to cement rock facies of the Jacksonburg Limestone (Oj).
- Oj** JACKSONBERG LIMESTONE (MIDDLE ORDOVICIAN)
- Oj** CEMENT ROCK FACIES--dark-gray to black, fine to very-fine-grained argillaceous limestone, with bedding nearly obliterated by slaty cleavage. Contains scattered thin beds of crystalline limestone.
- Oj** CEMENT LIMESTONE FACIES--light to medium-gray, well bedded, medium to coarse-grained calcarenite, and fine to medium-crystalline, high-calcium limestone. Grades up into the cement rock facies (Oj).
- Oe** EPLER FORMATION OF BECKMANTON GROUP (LOWER ORDOVICIAN)--Medium gray, thin to thick-bedded, fine to medium-grained limestone interbedded with lesser amounts of light to medium-gray, thin to thick-bedded crystalline limestone to medium-crystalline dolomite. Grades up into overlying Ontelaune Formation (Oe).
- Or** RICKENBACH DOLOMITE OF BECKMANTON GROUP (LOWER ORDOVICIAN)--Medium-dark gray, thin to thick-bedded, medium to coarsely crystalline dolomite containing light-gray chert, and medium-gray, laminated, finely crystalline dolomite containing dark-gray chert. Grades up into overlying Epler Formation (Oe).
- Oea** ALLENTOWN DOLOMITE, UNDIVIDED (LOWEST LOWER ORDOVICIAN AND UPPER CAMBRIAN)--Light to dark-medium gray, very fine to medium-grained, rhythmically bedded dolomite containing abundant algal stromatolites and beds and lenses of orthoquartzite. Upper contact is gradational.
- Cl** LEITHSVILLE FORMATION (MIDDLE AND LOWER CAMBRIAN)--Interbedded light-medium to dark-gray coarse-grained dolomite and calcitic dolomite, light-gray to tan phyllite, and very thin beds of quartz and dolomite sandstone. Grades up into the Allentown Dolomite (Oea).
- Ch** HARDYSTON QUARTZITE (LOWER CAMBRIAN)--Light gray, medium to thick-bedded quartzite and felspathic sandstone that has a basal pebbly conglomerate. Upper contact is mostly faulted, but elsewhere is gradational into the Leithsville Formation (Cl).
- pC** UNDIFFERENTIATED PRECAMBRIAN ROCKS including granitic gneiss, hornblende gneiss, other gneisses, and gneisses constituting the Reading Prong.

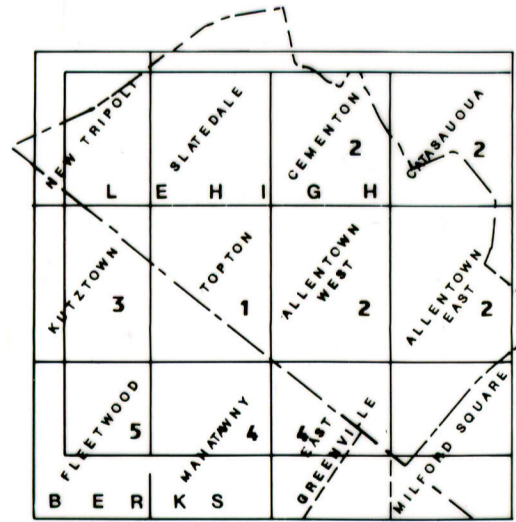
CORRELATION OF MAP UNITS

SCHUYLKILL SEQUENCE	LEHIGH VALLEY SEQUENCE	HAMBURG KLIPPE SEQUENCE		ORDOVICIAN
Omb	Omb			Middle Ordovician
Oj	Oj			
	Oj			
Discontinuity	Unconformity			
Oe	Oe	Ow	Fault Contact	Middle and Lower Ordovician
Or	Or			Lower Ordovician
Os	Os			Lower Ordovician
Oea	Oea			Upper Cambrian
Cam	Cam			Cambrian
Cl	Cl			Middle and Lower Cambrian
Ch	Ch			Lower Ordovician
pC	pC			PRECAMBRIAN

¹ Allentown Dolomite not divided into members in geologic mapping east of 75°30' longitude.

EXPLANATION OF MAP SYMBOLS

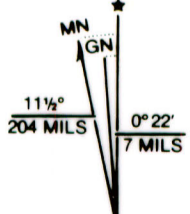
- Contact--accuracy not defined
- Faults--accuracy not defined
- Thrust fault--Sawteeth on upper plate. Dip shown where known.
- Overturned thrust fault--Sawteeth in direction of dip; bar on side of tectonically higher plate.
- Tear fault--Arrows indicate direction of relative movement.
- High-angle fault--U, upthrown side; D, downthrown side.
- 1286 WELL AND IDENTIFICATION NUMBER
- ▲ SP-15 SPRING AND IDENTIFICATION NUMBER



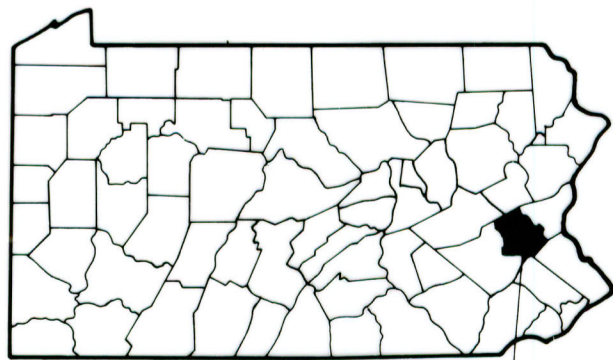
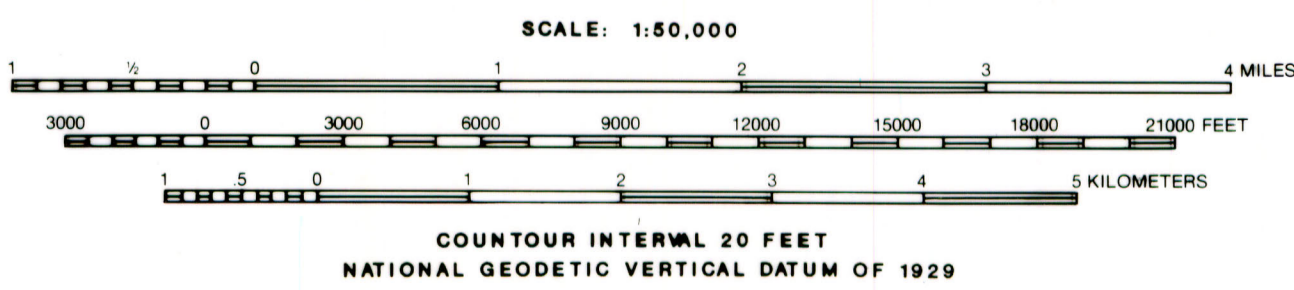
INDEX TO GEOLOGIC MAPPING

- Drake, A.K., 1987, Geologic Map of the Tipton Quadrangle, Lehigh and Berks Counties, Pennsylvania: U.S. Geological Survey Map G-1507, 1:24,000.
- Drake, A.K., unpublished field notes, reprinted in Koshenkov, W.E., 1987, Strabos and karst-related features of Lehigh County, Pennsylvania: Pennsylvania Geological Survey, Open-File Report 87/1, text and 6 map sheets, 1:24,000.
- Lash, G.G., 1985, Geologic map of the Kutztown Quadrangle, Berks and Lehigh Counties, Pennsylvania: U.S. Geological Survey Map G-1557, 1:24,000.
- Berg, T.W. and Dodge, C.W., 1981, Atlas of preliminary geologic quadrangle maps of Pennsylvania: Pennsylvania Geological Survey, 4th series, Map G-1, 1:62,500.
- MacLachlan, D.B., 1979, Geology and mineral resources of the Temple and Fleetwood Quadrangles, Berks County, Pennsylvania: Pennsylvania Geological Survey, 4th series, Atlas 1076b, 71 p. and 2 plates, 1:24,000.

Base from U.S. Geological Survey
Berks County 1:50,000, 1971
Lehigh County 1:50,000, 1968



UTM GRID AND 1987 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET



LOCATION OF MAPPED AREA

GEOLOGY AND LOCATION OF SELECTED WELLS AND SPRINGS, LITTLE LEHIGH CREEK BASIN
AND VICINITY, BERKS AND LEHIGH COUNTIES, PENNSYLVANIA