

# SINKHOLES AND KARST-RELATED FEATURES OF LEBANON AND DAUPHIN COUNTIES, PENNSYLVANIA

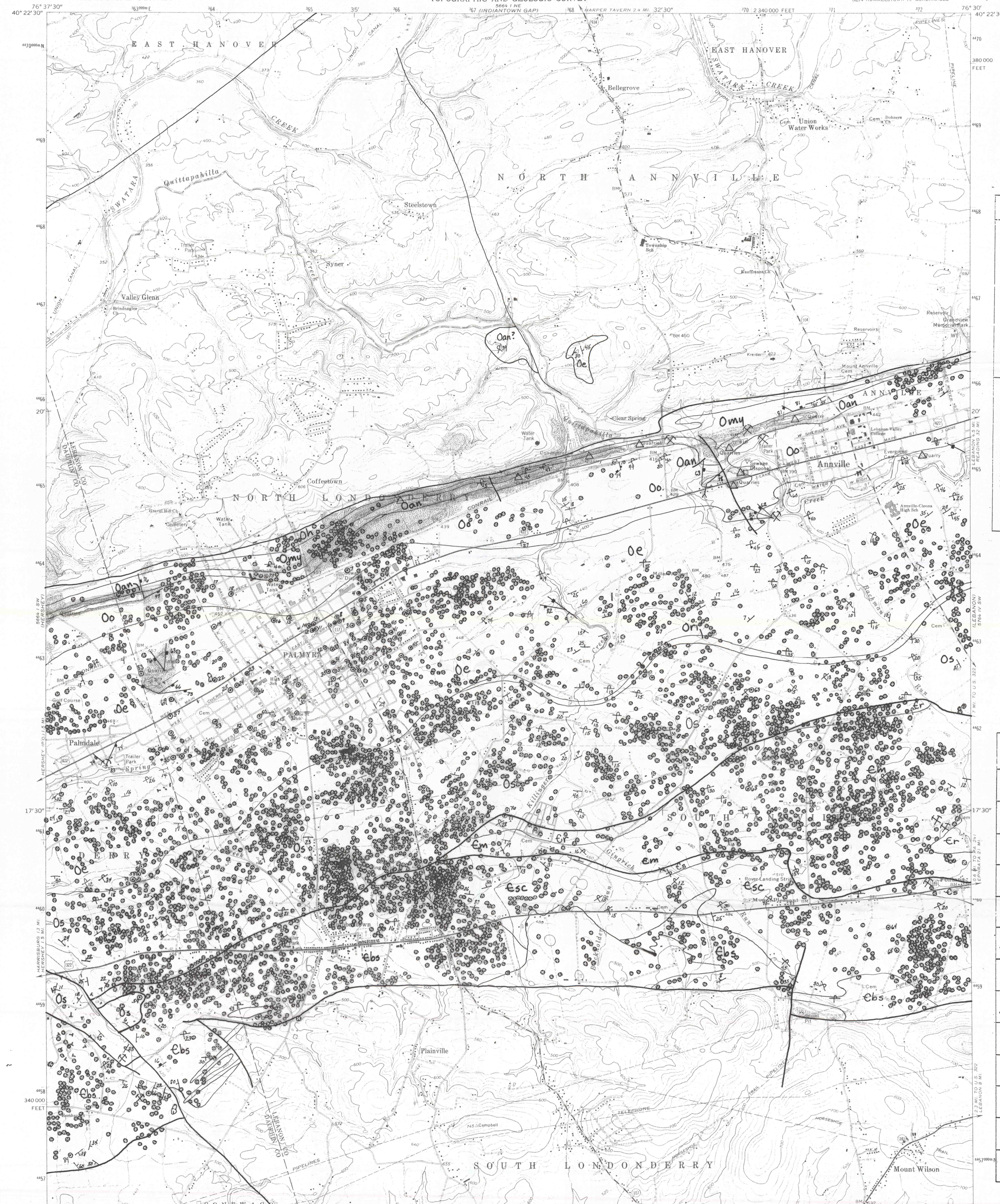
by W.E. Kochanov

1988 & 1989

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
TOPOGRAPHIC AND GEOLOGIC SURVEY

0644  
PALMYRA QUADRANGLE  
PENNSYLVANIA  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
SE/4 HUMMELSTOWN 15 QUADRANGLE

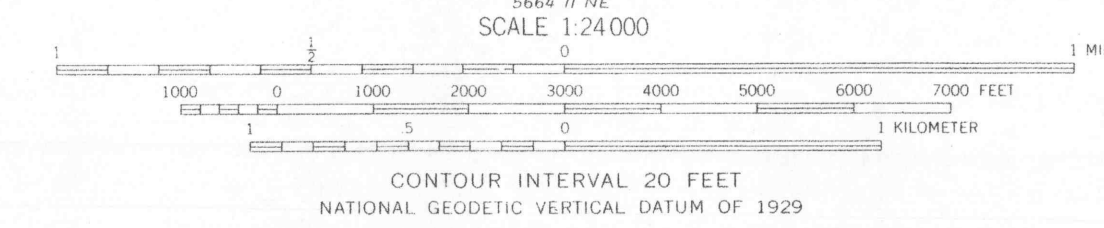
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



SYSTEM	SUBSYSTEM	FORMATION
ORDOVICIAN	UPPER	Beaumont Sequence Limestone
		Berkey and Myerstown Formation (undifferentiated)
	MIDDLE	Annville Formation
		Onetaunee Formation
	LOWER	Epler Formation
		Zickelbach Formation
		Stonewall Formation
		Zickelbach Formation
		Stonewall Formation
		Stonewall Formation
CAMBRIAN	UPPER	Zickelbach Formation
		Millbach Formation
	MIDDLE	Lebanon Valley Formation
		Lebanon Valley Formation
	LOWER	Lebanon Valley Formation
		Lebanon Valley Formation
		Lebanon Valley Formation
		Lebanon Valley Formation
		Lebanon Valley Formation
		Lebanon Valley Formation

SYMBOLS	
	individual sinkhole
	or sinkhole group
	closed depressions interpreted from aerial photographs
	surface mine, iron
	surface mine limestone/dolomite
	surface mine type unknown
	cave entrance
	bedding orientation strike and dip
	approximate strike and dip
	overturned, bed strike and dip
	joint orientation strike and dip
	joint orientation strike and 90° dip
	fault contact
	formation contact

Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography by photogrammetric methods from aerial photographs taken 1968. Field checked 1969  
Supersedes Army Map Service map dated 1947  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on Pennsylvania coordinate system, south zone  
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue  
Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked  
Red tint indicates areas in which only landmark buildings are shown  
Purple tint indicates extension of urban areas



ROAD CLASSIFICATION  
Primary highway, hard surface  
Secondary highway, hard surface  
Light duty road, hard or improved surface  
Unimproved road  
Interstate Route  
U.S. Route  
State Route

0644  
PALMYRA, PA.  
SE/4 HUMMELSTOWN 15 QUADRANGLE  
N 4015-W7630/7.5  
1969  
PHOTOREVISED 1974  
AMS 5664 I SE-SERIES 1981

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple compiled in cooperation with State of Pennsylvania agencies from aerial photographs taken 1974.  
This information not field checked

**The work presented here has not been reviewed for formal publication.**  
**Bureau of Topographic and Geologic Survey**  
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