SURFICIAL GEOLOGY of MATTHIESSEN STATE PARK, LASALLE COUNTY, ILLINOIS, USA

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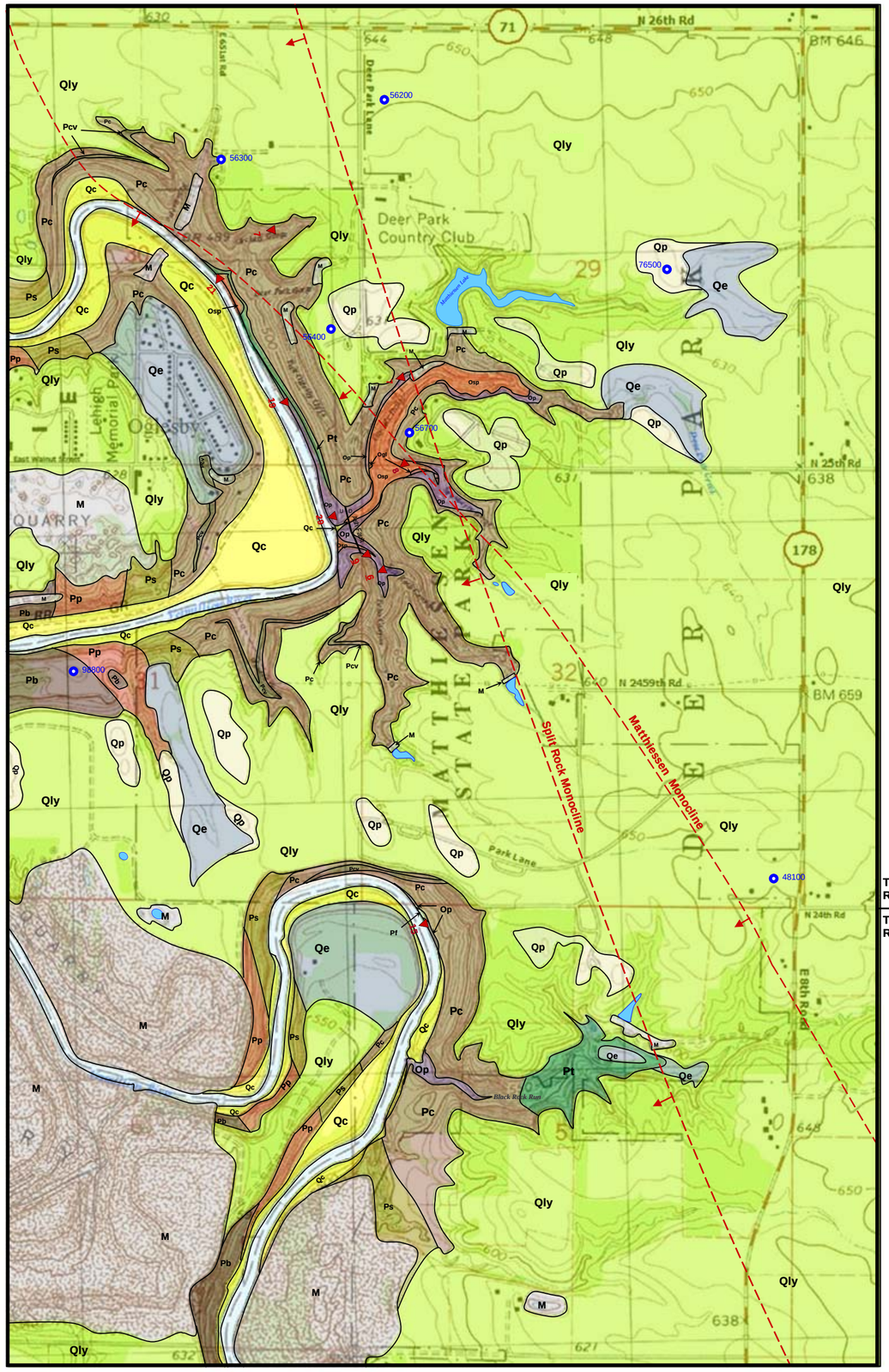


The companion publication to this map is "Geology of the Matthiessen State Park Area". Publication # G-112009-1A

Surficial Map Units

ERA	PERIOD	EPOCH	AGE	SYMBOL	UNIT	DESCRIPTION
Cenozoic	Quaternary	Holocene		M		**Human altered land:** Mostly quarries, road fill, and earthen dams.
				Qc		**Cahokia Formation:** Modern stream deposits. Black and gray, organic clays, silts, gavels, and sands in a laminated to braided structure.
		Pleistocene		Qp		**Peoria Silt:** Wind blown and beach deposits. Pale yellow brown, fine sands and silts.
			Calabrian	Qe		**Equality Formation:** Lake deposits. Gray to dark gray, laminated, clays silts, and fine sands.
				Qly		**Lemont Formation, Yorkville Member:** Diamicton (Till). Gray to pale brown, massive, sandy to silty loam with exotic erratics.
Paleozoic	Pennsylvanian		Kasimovian	Pb		**Bond Formation:** Delta and shallow marine deposits. Greenish gray to gray, clays, minor limestones, siltstones, and minor coals.
			Moscovian	Pp		**Patoka Formation:** Delta and shallow marine deposits. Greenish gray to gray, clays, siltstones, some sandstones, and minor coals.
				Ps		**Shelburn Formation:** Delta and stream deposits. Greenish gray to gray, clays, limestones, siltstones, some sandstones, and some coals.
			Bashkiran	Pcv		**Carbondale Formation, Vermillion Sandstone Member:** Beach and stream deposits. Gray to light brown, cross bedded, micaceous, fine to medium sandstone.
				Pc		**Carbondale Formation:** Delta, shallow marine, and stream deposits. Greenish gray to gray, clays, siltstones, limestones, sandstones, minor conglomerates, and abundant coals.
				Pt		**Tradewater Formation:** Delta, shallow marine, beach, and stream deposits. Greenish gray to gray, clays, limestones, siltstones, sandstones, and coals.
				Pf		**Fill (Undivided):** Stream and valley deposits. Gray to dark gray, calcareous, argillaceous, conglomeratic, sandstone, with mica.
	Ordovician	Late	Caradocian	Op		**Platteville Group:** Marine carbonate deposits. Gray mottled pink and yellow orange, micritic to coarse crystalline, fossiliferous, limestones and dolostones.
				Ogl		**Glenwood Formation:** Stream and valley deposits. Gray mottled orange and red, sandy dolostone, slightly conglomeratic.
		Middle	Llaneilian	Osp		**Saint Peter Formation:** Near shore, barrier island, and beach deposits. White to yellow brown, well sorted, sometimes cross bedded medium to coarse grained sandstone. Basal red and green, sandy, cherty, conglomerate (*Readstown Member*).

Era, Period, Epoch, and Age based on the 1999 Geologic Time Scale produced by the "Geological Society of America".

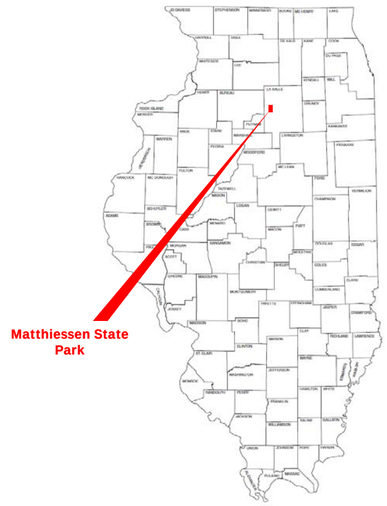
Formation Thicknesses

Unit	Range	Average
M =	0 to 150 feet	15 feet
Qc =	0 to 25 feet	7 feet
Qp =	0 to 10 feet	6 feet
Qe =	0 to 15 feet	11 feet
Qly =	0 to 85 feet	67 feet

Unit	Range	Average
Pb =	0 to 180 feet	120 feet
Pp =	0 to 120 feet	95 feet
Ps =	0 to 210 feet	121 feet
Pvc =	0 to 30 feet	21 feet
Pc =	0 to 290 feet	189 feet
Pt =	0 to 190 feet	79 feet
Pf =	0 to 10 feet	5 feet

Unit	Range	Average
Op =	0 to 80 feet	24 feet
Ogl =	0 to 9 feet	4 feet
Osp =	150 to 200 feet	180 feet

SITE LOCATION MAP



Geologic Map Symbols

= Geologic Contact

56200 = Water Well Location and API Number (Last 5 digits)

U D = Normal Fault (D indicates downthrown side)

13 = Strike and Dip (Number indicates degrees and direction of true dip)

= Front of Monocline (Arrows are in direction of dip)

Topographic Map Symbols

178 = State Route

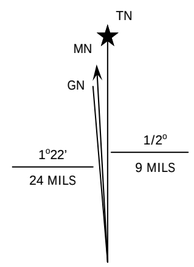
= Paved Road

= Unpaved Road

= Park Border

590 = Topographic Contour

= Water



UTM Grid and 1993 Magnetic North Declination at Center of Sheet

SCALE = 1:12 000

1/8 1/4 1/2 1 Mile 1 MILE

0 1000 2000 3000 4000 5000 FEET

Contour Interval = 10 feet

Topographic map produced by the United States Geological Survey (USGS). Control by USGS and NOS/NOAA. Topography by photogrammetric methods from aerial photographs taken in 1965 and field checked in 1966. Revised from aerial photographs taken in 1988 and field checked in 1992. Map edited in 1993. 1927 North American Datum (NAD 1927).