

SYSTEM	SERIES	GROUP	FORMATION	MEMBER and BED	GRAPHIC COLUMN	THICKNESS ft (m)	UNIT DESCRIPTION
QUATERNARY	Holo-cene		Alluvium, colluvium and talus			0-20(6)	A Unlithified clay, silt, sand, gravel, and boulders (not examined in detail).
	Pleistocene		Peoria Loess			0-20(6)	B Silt is yellowish brown, light brown, and brownish gray; unit is massive, argillaceous, partly calcareous, and rooted.
			Glasford			0-120? (0-37)?	C Diamicton is a light to medium gray and brownish gray silty clay with intermixed sand and pebbles, angular fragments of Pennsylvanian sandstone, and rounded erratic boulders of igneous rock and dolomite up to 4 feet in diameter. Unit contains lenses of poorly sorted, coarsely stratified sand and gravel, and fragments of wood. Paleosol (Sangamon Soil) occurs locally at top.
			Petersburg Silt			0-10(3)?	D Silt is yellowish brown to orange brown, massive, and contains sandstone fragments.
PENNSYLVANIAN	Desm.	Raccoon Creek	Tradewater	upper sandstone member		0-150 (45)	E Intercalated sandstone, siltstone, and shale. Sandstone is a light gray that weathers to brown, predominantly very fine to fine grained lithic arenite with feldspar, mica, and a clay matrix. Unit is locally coarse grained with shale, siderite, and coal clasts; it also contains minor amounts of fine grained quartz arenite. Bedding is thin to massive with large scale planar crossbedding. Siltstone and shale are light to dark gray, blocky to fissile, noncalcareous, and planar and ripple laminated. Interval is poorly exposed.
				middle shaley member		40-65 (12-20)	F Shale, siltstone, and minor sandstone. Shale is medium to dark gray, fissile, carbonaceous, and noncalcareous. Siltstone is light gray to brown, quartzose, and noncalcareous. Sandstone is light gray, very fine grained, shaly to silty, and laminated to thinly bedded. Local thin coal lens occurs near the base. Interval is poorly exposed.
				lower sandstone member		30-90 (9-27)	G Sandstone is a light gray that weathers to ing brown, fine to coarse-grained, poorly sorted lithic arenite with feldspar, mica, and a clay matrix. Unit is generally thick bedded with large scale planar crossbedding. Quartz granules, and shale and siderite clasts occur near the base. Portions are burrowed; marine fossils are present in core. Lower contact is erosional.
				lower shaley member		30-60 (9-18)	H Shale, siltstone, and sandstone, and local coal. Shale is dark gray, fissile, noncalcareous, planar and ripple laminated; trace fossils are abundant. Shale is interlaminated with siltstone that is light gray, micaceous, and quartzose. Sandstone is a light gray, very fine grained lithic arenite; it occurs as thin interbeds in the shale and siltstone. Discontinuous bright-banded coal or carbonaceous shale near the base is approximately equivalent to the Reynoldsburg Coal Bed. Lower contact is gradational and intertonguing.
	Morrowan		Caseyville	Pounds Sandstone Member		0-80 (24)	I Sandstone is a white to light gray that weathers to gray, very fine to medium grained, well sorted quartz arenite with rare quartz pebbles. Bedding is generally thick to massive; ripple marks, and crossbedding, and slumped laminations are common. Lower contact is sharp and probably erosional. Unit thins and becomes discontinuous westward.
				(unnamed)		20-90 (6-27)	J Shale, siltstone, and sandstone. Shale is medium to dark gray, noncalcareous, fissile clay shale and silty shale; some is sideritic. Siltstone is light to medium gray, quartzose, laminated, and commonly interlaminated with shale. Sandstone is white to light gray, very fine grained quartz arenite that is laminated to thinly bedded. Carbonaceous shale with plant fossils, and root casts, and discontinuous thin coal occur near top. Interval is poorly exposed. Lower contact is probably gradational.
				Battery Rock Sandstone Member		0-140 (42)	K Sandstone is white to light gray, very fine to coarse grained quartz arenite. In the east part of the quadrangle, the sandstone contains abundant well rounded quartz pebbles and forms cliffs more than 100 feet high. Planar and trough crossbeds occur in sets 1 to 5 feet thick. Westward, the sandstone becomes finer grained as it thins and pinches out. Lower contact is erosional.
				Wayside		30-145 (9-44)	L Shale, siltstone, sandstone, and thin coal. Shale is medium to dark gray (rarely black), noncalcareous, fissile, and generally silty. Siltstone is light to medium gray, quartzose, and laminated. Sandstone is white to light gray, very fine to fine grained quartz arenite. Unit is dominated by interlaminated and interbedded shale, siltstone, and thin bedded sandstone, which display ripple marks, load casts, tool marks, and slumped bedding. Diverse marine and plant fossils occur near the base of the member in the southeast part of the quadrangle. Buck Branch and Keller sandstone lentils are cliff-forming, crossbedded to massive sandstone that is predominantly fine grained, although quartz pebbles occur near the base. Buck Branch sandstone is as thick as 40 feet and Keller sandstone reaches 80 feet. Sandstone lenses near the base are less extensive and thinner than 25 feet. Lower contact is a regional disconformity.
				Buck Br. ss lentil			M Shale and limestone. Shale is gray to greenish and olive gray, soft, blocky to fissile, partly calcareous, and contains marine fossils. Limestone is gray to brown, argillaceous, coarse skeletal wackestone to grainstone. argillaceous; limestone that occurs as lenses and thin interbeds in shale. Lower contact is disconformable.
				Keller ss lentil			N Limestone is light to medium gray and brownish gray, largely medium to coarse grained crinoidal packstone and grainstone. Unit is oolitic near the top and medium to thick bedded with argillaceous partings and occasional scattered chert nodules. Lower contact is sharp, probably disconformable.
				Member			O Shale, claystone, and thin limestone layers. At the top is dark gray, well laminated, calcareous shale thinly interbedded with dark gray, micritic limestone. Below[At the base?] lies is variegated greenish gray, brick red, and ochre claystone that contains nodules of argillaceous limestone and dolomite. Lower contact is sharp and slightly irregular.
							P Limestone and shale. Limestone is petrologically diverse, dominated by a partly dolomitic lime mudstone to wackestone that is medium to dark gray and weathers to light gray; it contains with dark gray vitreous chert nodules. Interbeds of light gray, fine to coarse grained skeletal packstone and grainstone are present. Shale is greenish gray, dark gray to black, fissile, well laminated, calcareous clay shale; it occurs as partings, laminae, and interbeds. Lower contact is sharp and planar.
							Q Shale is greenish to bluish gray and dark gray, calcareous, and fissile; the upper part is silty. Lower contact is sharp and planar to slightly irregular.
							R Limestone is medium to dark gray, fossiliferous lime mudstone to skeletal wackestone with some fine to coarse grained skeletal packstone and grainstone at the top of the unit. Bedding is nodular; dark gray wavy argillaceous partings separate the beds. Fossils are common; large bellerophonid gastropods and Girvanella oncolids are diagnostic for the lower portion of the member. Lower contact is sharp and planar.
MISSISSIPPIAN	Chesterian	Pope	Kinkaid Limestone	Grove Church Sh Mbr		0-25 (7.6)	S Shale, siltstone, sandstone, and claystone. The relatively thin unit consists of interbedded shale and siltstone to very fine sandstone. The greenish gray, brownish gray, and olive gray rocks are noncalcareous and laminated to thinly bedded. Variegated greenish gray, yellow, and red claystone occurs at the top. The unit thickens near the west edge of the quadrangle where it is composed largely of light gray, very fine to fine grained, crossbedded quartz arenite. Lower contact is sharp.
				Goreville Ls Mbr		0-50 (15)	T Shale and limestone. Shale is dark greenish gray, olive gray, and black, weakly to very fissile, calcareous clay shale and silty shale. Limestone is light to dark gray and brown, argillaceous lime mudstone and skeletal wackestone. At the base is a massive layer of dolomitic limestone that is 5 to 16 feet thick and weathers to a distinctive grayish orange. Lower contact is sharp.
				Cave Hill Member		83-92 (25.4-28.0)	U Sandstone, siltstone, shale, and limestone. Outcrops generally consist of two upward-coarsening siliciclastic intervals separated by limestone. The two clastic intervals grade upward from dark gray clay shale and silty shale at the base to fine grained quartz arenite at the top. Both sandstones contain stigmarian root casts at the top. The limestone is a dark gray, argillaceous lime mudstone to skeletal wackestone with interbeds of dark gray clay shale. Subsurface data indicate that the limestone bed is locally absent. Lower contact is sharp to rapidly gradational.
				Negli Creek Limestone Member		30-32 (9-9.6)	V Shale, limestone, and siltstone. Shale predominates; it is a medium to dark gray and greenish gray, laminated, fissile, calcareous, abundantly fossiliferous clay shale to silty shale. Limestone is medium to dark gray, argillaceous lime mudstone with numerous whole fossils. Limestone beds are up to about 4 feet thick. Gray to greenish gray, micaceous, calcareous siltstone occurs in the lower part of the unit. Lower contact is not exposed at outcrops; sharp contact shows in core.
							W Shale, siltstone, and sandstone. Shale is medium to dark gray, noncalcareous, fissile, clay shale to silty shale. Siltstone is light to medium gray, quartzose, noncalcareous, laminated, and commonly interlaminated with shale. Sandstone is a very fine to medium grained, well sorted, quartz arenite. Thin to thick beds occur mainly in the lower part of the formation, as shown in core. Lower contact is not exposed at outcrops, but appears sharp and probably disconformable in core.
		Dagonia	Dagonia		40-80 (12-24)	X Limestone and shale. Limestone is a medium to dark gray that weathers to light gray, fossiliferous lime mudstone and skeletal wackestone. Medium to thick hummocky beds are separated by shale partings. Shale is medium gray and olive gray to black, weakly to very fissile, and partly calcareous and fossiliferous. Shale occurs as laminae and interbeds, and in layers as thick as 15 feet.	
			Clore	Ford Station Mbr		20-45 (6-14)	
				Tygett Ss Member		28-80 (8.4-24)	
				Cora Member		38-75 (11.6-23)	
			Palestine		40-67 (12-20)		
Menard Ls.		50 + (15 +)					

Plate 1
Stratigraphic Column of Rocks Exposed at Surface