

TABLES

1. Correlation of stratigraphic units

[U, upper; M, middle; L, lower; Fm, formation]

2. Correlation of geological units to hydrogeologic units

[U, upper; M, middle; L, lower; RASA, regional aquifer-system analysis]

3. Correlation of this report's distribution of stratigraphic units, Cederstrom's (1957) distribution of stratigraphic units, and Meng and Harsh's (1988) distribution of hydrogeologic units

[RASA, regional aquifer-system analysis; Cu, confining unit; Aq, aquifer; UPot, upper Potomac; MPot, middle Potomac; LPot, lower Potomac; Chic-PP, Chickahominy-Piney Point Aquifer]

SYSTEM	SERIES	Geological units this report		Cederstrom (1957)	Brown and others (1972)	Mixon, Berquist, and others (1989)	+ Powars and others (1992) ¹			
QUATERNARY	Holocene	Alluvium, swamp, beach		Recent beach sand	Rocks of post Miocene age	Coastal barriers, lagoons alluvial, swamp, eolian	(East of the Chesapeake Bay)			
	Pleistocene	U	Tabb Formation			Columbia Group (Quaternary)	Tabb Formation	U Kent Island Formation		
		M	Shirley Formation				Shirley Formation	Wachapreague Formation		
		Chuckatuck Formation		Chuckatuck Formation			M Nassawadox Formation			
		Charles City Formation		Charles City Formation			Omar Formation			
		L	Windsor Formation				Windsor Formation			
Bacon's Castle Formation		Moorings unit								
TERTIARY	Pliocene	U	YORKTOWN FORMATION	Moore House Member ²		Yorktown Formation (Miocene)	Pliocene sand + gravel	CHESAPEAKE GROUP	Chowan River Formation	
				Mogarts Beach Member						
				Rushmere Member						
				Sunken Meadow Member						
	L	U	Eastover Formation	Unnamed beds ³	St. Marys Formation (Miocene)	Miocene sand + gravel	CHESAPEAKE GROUP	Eastover Formation		
				Cobham Bay Member						
	Miocene	M	Calvert Formation ⁴	Claremont Manor Member	Calvert Formation (Miocene)	Rocks of late Miocene age	CHESAPEAKE GROUP	St. Marys Formation		
				St. Marys Formation						
				Choptank Formation (not present in study area)					Choptank Formation	Choptank Formation not present east and south of Chesapeake Bay
				Calvert Beach Member					Calvert Formation	
				Plum Point Member						
	Fairhaven Member									
	Newport News unit									
Oligocene	U	Old Church Formation		Old Church Formation	Rocks of middle Miocene age	CHESAPEAKE GROUP	Old Church Formation			

¹ From Powars and others (1992).

² Chowan River Formation.

³ Unpublished data from D.S. Powars and T. Cronin (1995).

⁴ Not present south of James River.

SYSTEM	SERIES		Geological units this report	Cederstrom (1957)	Brown and others (1972)	Mixon, Berquist, and others (1989)	+ Powars and others (1992) ¹		
TERTIARY	Miocene	L	Newport News unit of Calvert Fm	Calvert Formation (Miocene)	Rocks of Middle Miocene age (?)	Calvert Formation			
	Oligocene	U	Old Church Formation	?		Old Church Formation			
		L	Delmarva beds	?		Delmarva beds			
	Eocene	U		Chickahominy Formation	Chickahominy Formation (upper Eocene)	Rocks of Jackson age	Chickahominy Formation		
				Exmore tsunami-breccia Exmore megablock beds			Exmore beds ¹		
		M		Piney Point Formation ⁴	Nanjemoy Formation (Eocene)	Pamunkey Group	Rocks of Claiborne age	Piney Point Formation	
			L	Nanjemoy Formation			Rocks of Sabine age	Nanjemoy Formation	Woodstock Member ¹ Potapaco Member ¹
			Marlboro Clay	Marlboro Clay					
	Paleocene	U	Aquia Formation	Aquia Formation (Eocene)			Rocks of Midway age	Aquia Formation	Pasapotansa Member ¹ Piscataway Member ¹
		L	Brightseat Formation	Mattaponi Formation (Paleocene + Upper Cretaceous)				Brightseat Formation	
	CRETACEOUS	Upper		Unnamed Upper Cretaceous beds ⁵	?	Rocks of unit A	Red beds ¹		
						Rocks of unit B			
				Rocks of unit C					
				Rocks of unit D		Glaucinitic sand unit ¹			
			Upper Cenomanian beds ⁵	?	Potomac Group (Upper Cretaceous)	Rocks of unit E	Upper Cenomanian beds ¹		
Lower			Potomac Formation	Potomac Group (Lower Cretaceous)	Rocks of unit F	Potomac Formation			
					Rocks of unit G				
				Rocks of unit H					
MESOZOIC	Lower	Lower Mesozoic rift-basin deposits		¹ From Powars and others (1992).					
PALEOZOIC AND PROTEROZOIC		Crystalline basement rocks		² Chowan River Formation.					
				³ Unpublished data from D.S. Powars and T. Cronin (1995).					
				⁴ Not present south of James River.					
				⁵ Not present north of James River.					

			Hydrogeologic units								
SYSTEM	SERIES	Geological units this report	Meng and Harsh (1988)	Virginia RASA model unit	Laczniak and Meng (1988)	Brockman and others (1997)					
						Lackey Plain	Croaker Flat				
QUATERNARY	Holocene	Alluvium, swamp, + beach									
	Pleistocene	U	Tabb Formation	Columbia aquifer	AQ10	Columbia aquifer	Columbia aquifer	Columbia aquifer			
		M	Shirley Formation								
			Chuckatuck Formation								
		L	Charles City Formation								
		Windsor Formation									
TERTIARY	Pliocene		Bacons Castle Formation	Yorktown confining unit	CU9	Yorktown confining unit	York County shallow aquifer system	Columbia aquifer	Yorktown confining unit ²		
		U	YORKTOWN FORMATION	Moore House Member	Yorktown-Eastover aquifer			AQ9	Yorktown confining unit	Cornwallis Cave confining unit	
				Mogarts Beach Member						Cornwallis Cave aquifer	
				Rushmere Member						Yorktown confining unit	
				Sunken Meadow Member						Yorktown confining unit	
	L		Unnamed beds ¹			Yorktown confining unit					
	Miocene	U	CHESAPEAKE GROUP	EASTOVER FORMATION	Cobham Bay Member						
						Claremont Manor Member	St. Marys confining unit	CU8	St. Marys confining unit	Eastover-Calvert confining unit	
						St. Marys Formation	St. Marys-Choptank aquifer	AQ8	Calvert confining unit		
		M	CALVERT FORMATION	Choptank Formation (not present in study area)	Calvert confining unit	CU7	Calvert confining unit	Calvert confining unit		Calvert confining unit	
				Calvert Beach Member							
				Plum Point Member							
				Fairhaven Member							
	L		Newport News unit								
	Oligocene	U	Old Church Formation	Chickahominy- Piney Point aquifer	AQ7	Chickahominy- Piney Point aquifer	Not covered in report				

¹Unpublished data D.S. Powars and T. Cronin (1995).

²Yorktown-Eastover aquifer.

			Hydrogeologic units								
SYSTEM	SERIES	Geological units this report	Meng and Harsh (1988)	Virginia RASA model unit	Laczniak and Meng (1988)	Brockman and others (1997)					
TERTIARY	Miocene	M	Plum Point Member of the Calvert Fm	Calvert confining unit	CU7	Calvert confining unit	Eastover-Calvert confining unit				
		L	Fairhaven Member of the Calvert Fm								
		L	Newport News unit of the Calvert Fm								
	Oligocene	U	Old Church Formation	Chickahominy- Piney Point aquifer	AQ7	Chickahominy- Piney Point aquifer	Not covered in report ↓				
		L	Delmarva beds								
	Eocene	U	Chickahominy Formation								
		U	Exmore tsunami-breccia								
		M	Exmore megablock beds								
		M	Piney Point Formation								
	Paleocene	L	Nanjemoy Formation					Nanjemoy- Marlboro Clay confining unit	CU6	Nanjemoy- Marlboro Clay confining unit	
		L	Marlboro Clay								
		U	Aquia Formation					Aquia aquifer	AQ6	Aquia aquifer	
		L	Brightseat Formation					Brightseat confining unit	CU3	Upper Potomac confining unit	
		L	Brightseat Formation					Brightseat aquifer	AQ3	Upper Potomac aquifer	
CRETACEOUS	Upper	Upper Cretaceous beds						Upper Potomac confining unit	CU3	Virginia Beach confining unit	CU4
		Upper Cenomanian beds								Virginia Beach aquifer	AQ4
								Upper Potomac aquifer	AQ3	Upper Potomac confining unit	
				Upper Potomac aquifer		Upper Potomac aquifer					
	Lower	Potomac Formation		Mid-Potomac confining unit	CU2	Mid-Potomac confining unit					
				Mid-Potomac aquifer	AQ2	Mid-Potomac aquifer					
				Lower Potomac confining unit	CU1	Lower Potomac confining unit					
				Lower Potomac aquifer	AQ1	Lower Potomac aquifer					
MESOZOIC	Lower	Rift-basin deposits									
PALEOZOIC AND PROTEROZOIC		Crystalline basement rocks	¹ Unpublished data Powars and Cronin (1995). ² Yorktown-Eastover aquifer.								

**Cederstrom
(1957)**

This report

**RASA
hydrogeologic units
(Meng and Harsh, 1988)**

Columbia Group	Quaternary undifferentiated	Columbia aquifer
Columbia Group	Bacons Castle Formation	Yorktown Cu + Yorktown-Eastover Aq + ? Columbia Aq
Yorktown Formation ¹	Chowan River Formation	Yorktown-Eastover Aq + ? Columbia Aq
Yorktown Formation ¹	Yorktown Formation	Yorktown Cu + Yorktown-Eastover Aq
Yorktown + St. Marys Formations ¹	Eastover Formation	Yorktown-Eastover Aq + St. Marys Cu ²
St. Marys Formation ¹	St. Marys Formation	St. Marys Cu + Calvert Cu
St. Marys + Calvert Formations ¹	Upper + middle Calvert Formation	Calvert Cu
Calvert ¹ + Chickahominy Formations	Newport News unit of the Calvert Formation	Chickahominy-Piney Point Aq
Calvert ¹ + Chickahominy Formations	Old Church Formation	Chickahominy-Piney Point Aq + UPot Aq
Chickahominy Formation	Delmarva beds	Chickahominy-Piney Point Aq + UPot Aq
Chickahominy + Nanjemoy Formations	Chickahominy Formation	Nanjemoy-Marlboro Clay Cu $\begin{matrix} \blacksquare^3 \\ \blacksquare \\ \blacksquare \\ \blacksquare \end{matrix}$ UPot Aq, MPot Cu, MPot Aq ²
Chickahominy + ? Aquia + Mattaponi Formations	Exmore tsunami-breccia	Aquia Aq + UPot Cu + UPot Aq $\begin{matrix} \blacksquare^3 \\ \blacksquare \\ \blacksquare \\ \blacksquare \end{matrix}$ MPot Aq
Nanjemoy Formation	Piney Point Formation	Chickahominy-Piney Point Aq
Nanjemoy Formation	Nanjemoy Formation	Chic-PP Aq + Nanj-Marl Cu
Nanjemoy Formation	Marlboro Clay	Nanjemoy-Marlboro Clay Cu
Aquia + Mattaponi Formations	Aquia Formation	Chic-PP Aq + Aquia Aq
Aquia + Mattaponi Formations	Brightseat Formation	Aquia Aq + Brightseat Cu + ? Brightseat Aq
Mattaponi Formation + $\begin{matrix} \text{Potomac Group} \\ \text{(Upper Cretaceous)} \end{matrix}$	Unnamed Upper Cretaceous beds	Chic-PP Aq, Nanj-Marl Cu, Aquia Aq, UPot Cu
Potomac Group (Upper Cretaceous)	Upper Cenomanian beds	UPot Cu + UPot Aq
Potomac Group (Lower Cretaceous)	Potomac Formation	UPot Aq, MPot Cu, MPot Aq, LPot Cu, LPot Aq
Basement	Basement	? Impermeable boundary

¹Mostly reported as undifferentiated Chesapeake Group.

²Only the uppermost part of unit.

³To the right of this symbol $\begin{matrix} \blacksquare \\ \blacksquare \\ \blacksquare \\ \blacksquare \end{matrix}$ = units equivalent downdip.