



GENERAL HYDROGEOLOGIC COLUMN AND CORRELATIONS FOR SEDIMENTS OF THE VIRGINIA COASTAL PLAIN

PERIOD	EPOCH	POLLEN ZONE	GROUP	STRATIGRAPHIC FORMATION	HYDROGEOLOGIC UNITS	GENERALIZED RESISTIVITY AND LITHOLOGIC COLUMN	DOMINANT LITHOLOGIC CHARACTER AND REMARKS	ORIGIN	MAJOR AREAS OF AQUIFER USAGE	CORRELATION WITH ADJOINING RASA STUDIES											
										MARYLAND	NORTH CAROLINA										
TERTIARY	Quaternary	Holocene	COLUMBIA	Undifferentiated	Columbia Aquifer		Sand, fine to coarse, and gravel, commonly clayey; interbedded with silts and clays; tan to rusty orange; generally unconfined, confined locally.	Fluvial & marine	Throughout eastern area	Columbia Aquifer	Surficial Aquifer										
	NEOGENE	Pleistocene		Yorktown Formation	Yorktown Confining Bed		Clay, silty and shelly; locally interbedded with fine sands; commonly light gray to orange, or multicolored.	Shallow, open marine		Confining Bed 9	Confining Bed										
		PLIOCENE		Yorktown Formation	Yorktown-Eastover Aquifer		Sand, fine to coarse, commonly shelly; interbedded with silts, clays, shell beds, and gravels; shell beds locally indurated, whitish gray to yellow; generally confined; unconfined updip in outcrop area.	Shallow, open marine	Throughout central and eastern areas	Upper Chesapeake Aquifer	Yorktown Aquifer										
			Eastover Formation	St. Marys Confining Bed	Clay, silty and shelly; interbedded with fine sands; light gray to blue.	Shallow, restricted marine		Confining Bed 8	Confining Bed												
			St. Marys Formation	St. Marys-Choptank Aquifer	Sand, very fine to fine, silty and shelly; interbedded with silty clays; white to light bluish gray; confined, restricted to northeastern area.	Shallow, open marine	Not used in Virginia	Lower Chesapeake Aquifer	Pungo River Aquifer												
			Choptank Formation	Calvert Confining Bed	Clay, silty, diatomaceous, sparsely shelly and sandy; contains basal phosphatic lag deposits; greenish gray to dark green.	Quiet, restricted marine		Confining Bed 7	Confining Bed												
			MIOCENE	Calvert Formation	Old Church Confining Bed	Sand, fine to coarse, glauconitic; interbedded with shell beds, silts, and clays; shell beds commonly indurated; speckled black, green, white, and gray; generally confined, unconfined where outcrops in major stream valleys of west-central and northwestern areas.	Shallow, open marine, inner shelf basin	Throughout central and west-central areas	Piney Point-Nanjemoy Aquifer	Castle Hayne Aquifer											
		Old Church Formation		Chickahominy-Piney Point Aquifer	Clay, silty, shelly, glauconitic, and sandy; interbedded with fine glauconitic sands; dark green to greenish gray in upper part (Nanjemoy), pink and gray in lower part (Marlboro Clay).	Shallow, open marine, inner to middle shelf basin		Confining Bed 6b	Confining Bed												
		Eocene		Nanjemoy Formation	Nanjemoy-Marlboro Clay Confining Bed	Sand, fine to medium, glauconitic; interbedded with shell beds, sometimes indurated; dark green; generally confined, unconfined where outcrops in northwestern area and major stream valleys throughout western area.	Shallow, open marine, inner shelf basin	Throughout central and west-central areas north of Norfolk arch	Rancocas-Aquia Aquifer	Beaufort Aquifer											
				Marlboro Clay	Aquia Aquifer	Clay, silty, sandy, micaceous, and lignitic; dark gray to black, top is oxidized orange-red.	Restricted marine, inner to middle shelf basin		Confining Bed 6a												
			Brightseat Formation	Brightseat Aquifer	Sand, fine to medium, occasionally lignitic; interbedded with silty clay; white; confined, restricted to north-central area.	Restricted marine, near shore	Throughout north-central area	Lower Paleocene Aquifer													
		PALEOGENE	PALEOCENE	PAMUNKEY	Undifferentiated	Upper Potomac Confining Bed	Clay, silty, micaceous, chalky in eastern areas; interbedded with fine sands;	Marine		Confining Bed 2	Confining Bed										
					Upper Potomac Aquifer	Sand, very fine to medium, micaceous, lignitic, and clayey; interbedded with silty clays; white to whitish gray; confined, restricted to central and eastern areas.	Continental and marginal marine, outer delta, sub-aqueous	Throughout central and southeastern areas	Raritan-Patapsco Aquifer	Upper Cape Fear Aquifer											
					Middle Potomac Confining Bed	Clay, silty; massive to laminated and carbonaceous; interbedded with sands; variegated red, green, gray, orange, and purple.	Continental, fluvial deltaic flood plains	Confining Bed													
		LATE	IV		III	Middle Potomac Aquifer	Sand, fine to medium, occasional gravels; interbedded with silty clays; abrupt lateral and vertical lithologic changes; gray; generally confined, unconfined where outcrops in northwestern area and major stream valleys throughout western area.	Continental, fluvial deltaic, meandering streams and flood plains, lower to middle flood plain		Throughout western and central areas	Lower Cape Fear Aquifer										
Potomac Formation	Lower Potomac Confining Bed					Clay, silty, sandy; massive; dark yellow, red, and brown.	Continental, fluvial deltaic, back-swamp basins		Confining Bed 1	Confining Bed											
Lower Potomac Aquifer	Sand, medium to coarse, and gravels, clayey; interbedded with silty clays; abrupt lateral and vertical lithologic changes; gray; generally confined, unconfined where outcrops in northwestern area.					Continental, fluvial deltaic, braided streams, sub-aerial, upper flood plain	Throughout western area	Patuxent Aquifer	Lower Cretaceous Aquifer												
CRETACEOUS	EARLY	MIDDLE	B POTOMAC	Potomac Formation																	
												UPPER	C	II	B	A	I	PRE-I			
																			LOWER EARLY	I	PRE-I
	TRIASSIC, JURASSIC(?), PALEOZOIC & PRECAMBRIAN	Basement Rock																			

EXPLANATION

Metamorphic rocks	Triassic rocks	Gravel	Coarse sand	Medium sand	Fine sand	Clayey sand	Sandy clay	Clay	Chalky clay	Coquina	Shells	Glauconite	Diatoms	Mica	Phosphate