



Aquifer and Well Characteristics in New Jersey

Aquifer Name and Description	Aquifer Withdrawals in 1980 (Mgal/d)	Well Characteristics			Remarks
		Depth (ft)	Yield (gal/min)		
		Common Range	Common Range	May Exceed	
Coastal Plain Aquifers					
Kirkwood-Cohansey aquifer system: Sand, quartz, fine to coarse grained, pebbly; local clay beds. Unconfined.	70	20-350	500-1,000	1,500	Ground water occurs generally under water-table conditions. Aquifer system extends from southern Monmouth County to Delaware Bay and from 12 mi. southeast of the Delaware River to the Atlantic Ocean. Aquifer thickness can exceed 350 ft. Brackish and salty water may occur in coastal areas.
Atlantic City 800-foot sand: Sand, quartz, medium to coarse grained, gravel, fragmented shell material. Confined.	20	450-950	600-800	1,000	Principal confined artesian aquifer supplying water along the barrier beaches in Cape May, Atlantic, and Ocean Counties. Aquifer thickness generally ranges between 100 and 150 ft. Water

					quality suitable for most purposes.
Wenonah-Mount Laurel aquifer: Sand, quartz, slightly glauconitic, very fine to coarse grained, layers of shells. Confined.	5	50-600	50-250	500	Important confined aquifer in the northeast and southwest part of the Coastal Plain. Aquifer thickness generally range between 60 and 120 ft. Water quality suitable for most purposes.
Englishtown aquifer: Sand, quartz, fine to medium grained, local clay beds. Confined.	12	50-1,000	300-500	1,000	Important source of water for Ocean and Monmouth Counties. Confined aquifer thickness generally range between 60 and 140 ft. Excellent water quality.
Potomac-Raritan-Magothy aquifer system: Alternating layers of sand, gravel, silt, and clay. Confined.	243	50-1,800	500-1,000	2,000	Highly productive and most used confined aquifer in the Coastal Plain. Aquifer system extends throughout Coastal Plain and attains maximum thickness of 4,100 ft. Includes two aquifers in northern Coastal Plain: Farrington and Old Bridge aquifers. Salty water increases with depth and in downdip direction. Excellent water quality but large iron concentrations in some areas.

Non-Coastal Plain Aquifers					
Glacial valley-fill aquifers: Sand, gravel, interbedded silt and clay. Generally unconfined except where overlain by lake silt and clay or till.	--	10-300	100-1,000	2,000	North of terminal moraine occur principally as channel fill in preglacial stream valleys; south of moraine, as outwash plains and valley trains. Important aquifers in Bergen, Essex and Morris Counties. Water quality suitable for most uses.
Aquifers in the Newark Group: Shale and sandstone: Shale, sandstone, some conglomerate. Unconfined to partially confined in upper 200 ft; confined at greater depth.	--	30-1,500	10-500	1,500	Most productive aquifers in Essex, Passaic and Union Counties. Water generally hard; may have large concentrations of iron and sulfate. Saltwater has intruded areas of large ground-water withdrawal near bays and estuaries.
Valley and Ridge sedimentary units: Predominantly limestone and shale; some dolomite, calcareous sandstone and siltstone, sandstone, conglomerate and slate. Confined and unconfined.	--	150-400	5-500	1,500	Highest yields from cavernous limestones and in weathered and fractured zone within 300 ft. of land surface. Locally excessive iron, hardness, and low pH.

Highlands crystalline units: Gneiss, marble, quartzite, pegmatite; some schist, amphibolite and granite. Includes thin belts of conglomerate, sandstone, not significant as aquifers. Confined and unconfined.	--	35-800	5-50	400	Most water obtained from weathered and fractured zone in upper 300 ft; high yields in or near major fault zones. Excellent source of water for domestic use in some areas.
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