Department of Natural Resources
Resource Assessment Service
MARYLAND GEOLOGICAL SURVEY
Richard A. Ortt, Jr., Director

SELECTED GROUNDWATER LEVEL RECORDS FROM OBSERVATION WELLS IN QUEEN ANNE'S COUNTY, MARYLAND

Compiled by
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Prepared in cooperation with the
Queen Anne's County Department of Public Works

2018

SUMMARY

This report presents water-level data for 27 observation wells in Queen Anne's County updated through 2017. Water-level are tabulated from April 2017 through April 2018. For the two water-table wells QA Cg 69 and QA Ec 1, water levels are measured usually monthly and tabulated for 24 measurements. Water-level hydrographs are shown for the entire period of record at each site. The water-level data are stored in the National Water Information System, Ground-Water Site Inventory database, which is maintained by the U.S. Geological Survey. Historical and additional ground-water data may be obtained from the U.S. Geological Survey website at http://waterdata.usgs.gov/nwis/gw. The water-level data can also be accessed through a convenient map interface of the Maryland Geological Survey at http://www.mgs.md.gov/groundwater/water_level_mapper.html

Surficial (water-table) aquifer. Water levels are measured in two wells in the Surficial aquifer (Barclay and Grasonville). Water levels fluctuate seasonally up to nine feet, with no long-term decline. Current water levels range from about 68 ft above sea level (QA Cg 69) to 13 ft above sea level (QA Ec 1).

Aquia aquifer. Water levels are measured in seventeen wells in the Aquia aquifer, most of which are located on Kent Island. Most wells show seasonal variation, with the lower water levels recorded in late summer and higher water levels in spring. Long-term trends are stable or show a slight rise in water levels. Current water levels range from the highest at about 16 ft above sea level (QA Be 17) to the lowest at about 18 ft below sea level (QA Fc 7).

Magothy aquifer. One well (QA Ea 27) is completed in the Magothy aquifer. The water level has shown a steady decline of about 0.6 ft per year over the last several decades. Since 2015, water levels have leveled off. Current water levels are about 21 ft below sea level.

Upper Patapsco aquifer. Three wells are completed in the Upper Patapsco aquifer. These wells, which are located in Tuckahoe State Park (QA Ef 29), Kent Island (QA Eb 111), and Kingstown (QA Be 16), show fairly steady water-level declines of between 1.0 to 1.5 ft per year over the past twenty years, reflecting pumping effects in Anne Arundel County and Easton. Current water levels range from the highest at about 18 ft below sea level (QA Be 16) to the lowest at about 23 ft below sea level (QA Ef 29).

Lower Patapsco aquifer. Three wells are completed in the Lower Patapsco aquifer. Water levels in two of the wells (QA Be 15 and Eb 112) have declined less than 1 ft per year over the past 15 years. The water level in well QA Eb 112 appears to be leveling off over the last three years. The long-term trend in the third well (QA Eb 182) can't be determined due to the spotty record. Current water levels range from the highest at about 7 ft below sea level (QA Be 15) to the lowest at about 32 ft below sea level (QA Eb 182).

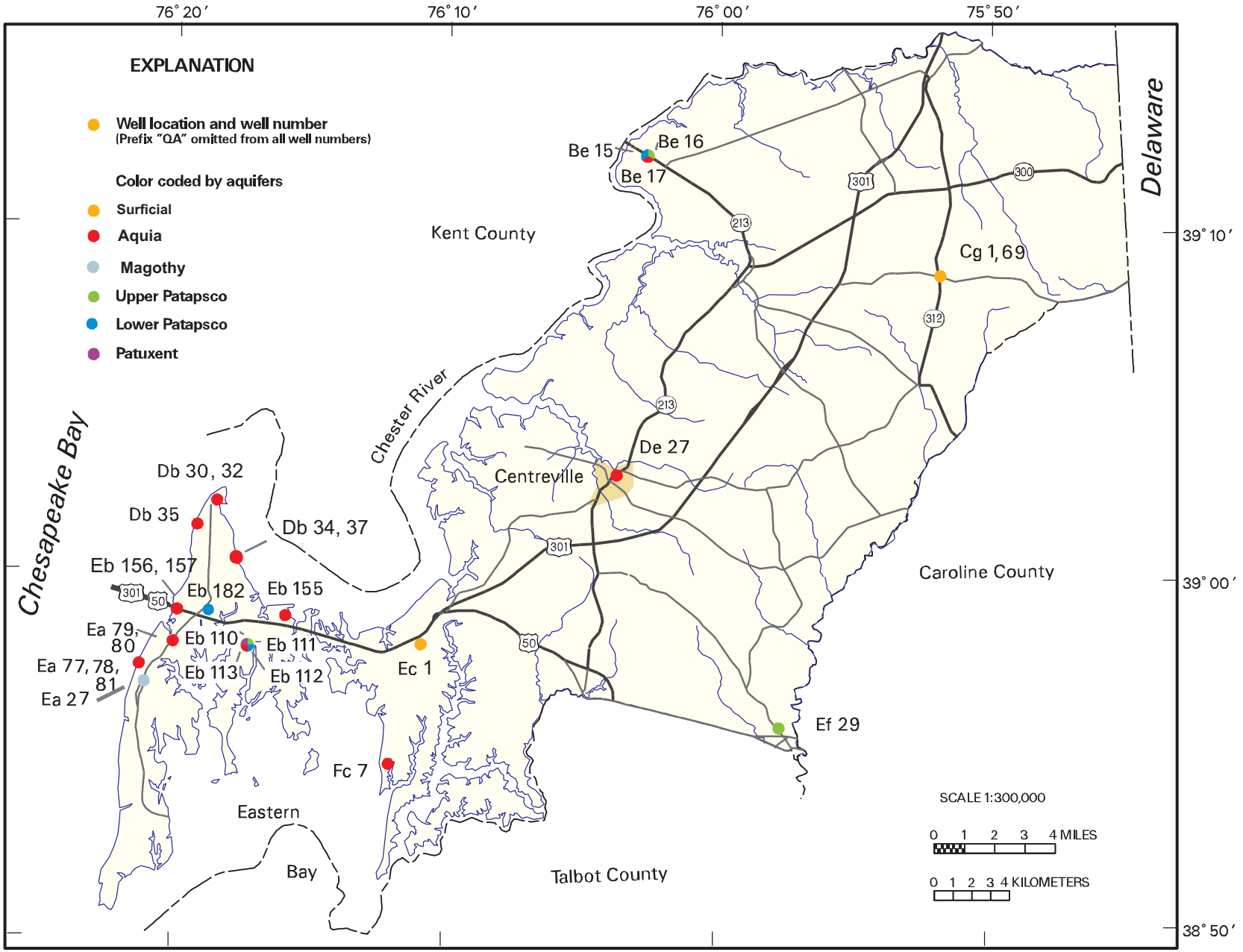
Patuxent aquifer. One well (QA Eb 110, near Chester on Kent Island) is completed in the Patuxent aquifer. The water level in this well had been declining steadily (~0.4 ft/year) between about 1988 and 2012. Beginning in 2012, the water level has been declining by about 1.25 ft/year, likely due to pumpage from the Arnold well field in Anne Arundel County, located about 12 miles west of QA Eb 110. Current water levels are about 11 ft below sea level.

SELECTED GROUND-WATER LEVEL RECORDS FROM OBSERVATION WELLS IN QUEEN ANNE'S COUNTY

Well number	Aquifer	Location
QA Be 15	Lower Patapsco	Kingstown
QA Be 16	Upper Patapsco	Kingstown
QA Be 17	Aquia	Kingstown
QA Cg 69 (replaces QA Cg 1)	Surficial (water table)	Barclay
QA Db 30, 32	Aquia	Love Point
QA Db 34, 37	Aquia	Cloverfields
QA Db 35	Aquia	Marylander Farm
QA De 27	Aquia	Centreville
QA Ea 27	Magothy	Natural Resources Police Academy in Matapeake
QA Ea 77, 78	Aquia	Natural Resources Police Academy in Matapeake
QA Ea 79, 80	Aquia	Mowbray Park
QA Ea 81	Aquia	Natural Resources Police Academy in Matapeake
QA Eb 110	Patuxent	Chester
QA Eb 111	Upper Patapsco	Chester
QA Eb 112	Lower Patapsco	Chester
QA Eb 113	Aquia	Chester
QA Eb 155	Aquia	Piney Creek
QA Eb 156, 157	Aquia	Terrapin Beach Park, Bay Bridge
QA Eb 182 (Measurements resume since April, 2015)	Lower Patapsco	Stevensville Water Treatment Plant
QA Ec 1	Surficial (water table)	Grasonville
QA Ef 29	Upper Patapsco	Tuckahoe State Park
QA Fc 7	Aquia	Prospect Plantation

Selected Observation Wells Monitoring Ground-Water Levels in Queen Anne's County

Measured periodically by the Maryland Geological Survey / U. S. Geological Survey

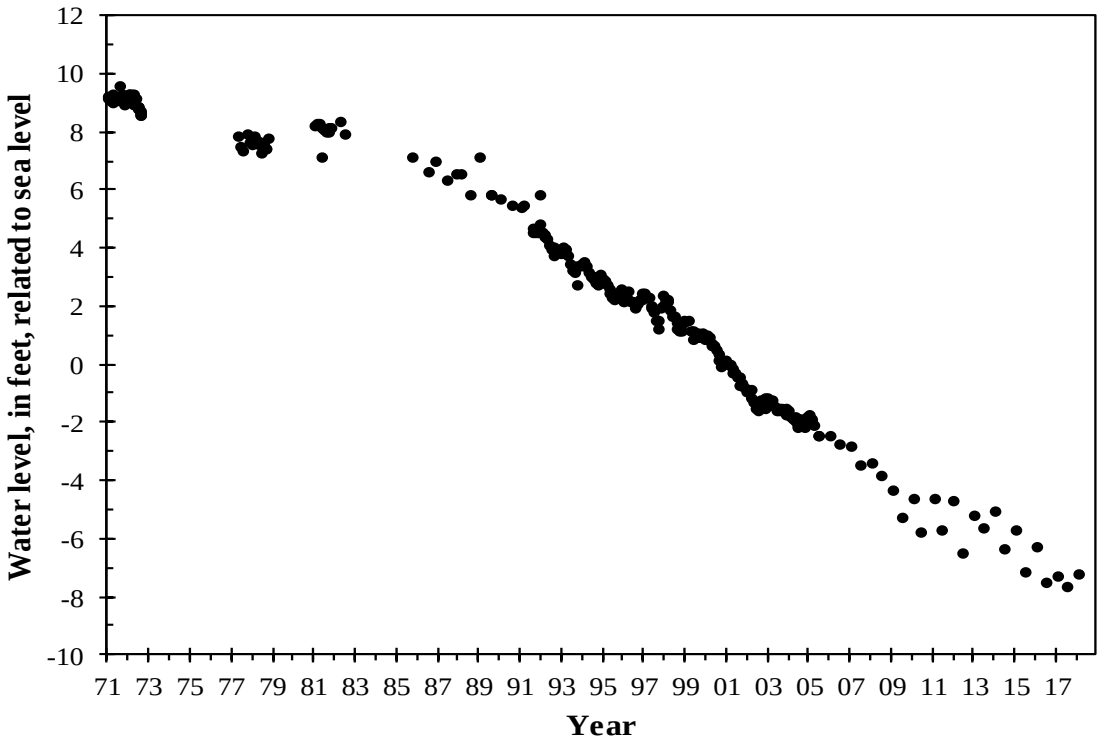


Base map compiled from U. S. G. S. 1:100,000 scale Digital Line Graphs, 1985

WELL NUMBER: QA Be 15 **PERMIT NUMBER: QA-70-0130**
LOCATION: Kingstown, southwest side of MD Rte. 213 **LAT. 39° 12' 03", LONG. 76° 02' 43"**
AQUIFER: Lower Patapsco Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 1,171 ft;
Casing diameter: 4 in. to 1,161 ft;
Screen diameter: 4 in. from 1,161 ft to 1,171 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 25 ft above National Geodetic Vertical Datum of 1929, from topographic map.
MEASURING POINT: Top of casing is 2.52 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.
PERIOD OF RECORD: March 1971 to October 1972, July 1977 to December 1978, March 1981 to September 1982, and October 1986 to current year.
EXTREMES FOR RECORD: Highest water level measured, 15.52 ft below land surface, on October 10, 1971; lowest measured, 32.76 ft below land surface, on September 29, 2017.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

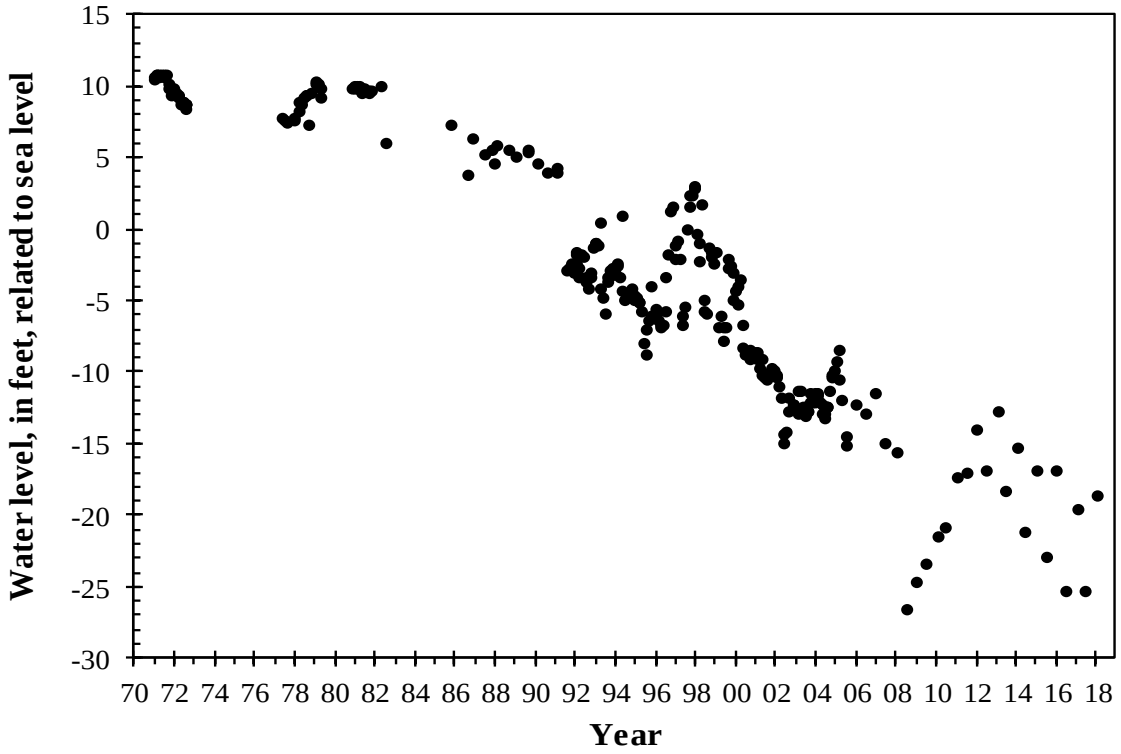
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 13, 2017	32,36				
Sept. 19, 2017	32.76				
Apr. 27, 2018	32.29				



WELL NUMBER: QA Be 16 **PERMIT NUMBER: QA-70-0130**
LOCATION: Kingstown, southwest side of MD Rte. 213 **LAT. 39° 12' 03", LONG. 76° 02' 43"**
AQUIFER: Upper Patapsco Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 495 ft;
Casing diameter: 6 in. to 475 ft;
Screen diameter: 6 in. from 475 to 495 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 25 ft above National Geodetic Vertical Datum of 1929, from topographic map.
MEASURING POINT: Top of casing is 2.70 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels may be affected by nearby pumping.
PERIOD OF RECORD: March 1971 to September 1972, July 1977 to May 1979, January 1981 to September 1982, and October 1986 to current year.
EXTREMES FOR RECORD: Highest water level measured, 14.41 ft below land surface, on September 11, 1971; lowest measured, 51.75 ft below land surface, on September 29, 2008.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 13, 2017	44.83				
Sept. 29, 2017	50.46				
Apr. 27, 2018	43.89				



WELL NUMBER: QA Be 17 **PERMIT NUMBER: None**

LOCATION: Kingstown, southwest side of MD Rte. 213 LAT. 39° 12' 03", LONG. 76° 02' 43"

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 120 ft;
Casing diameter: 6 in. to 100 ft;
Screen diameter: 6 in. from 100 to 120 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 25 ft above National Geodetic Vertical Datum of 1929, from topographic map.

MEASURING POINT: Top of casing is 2.50 ft above land surface.

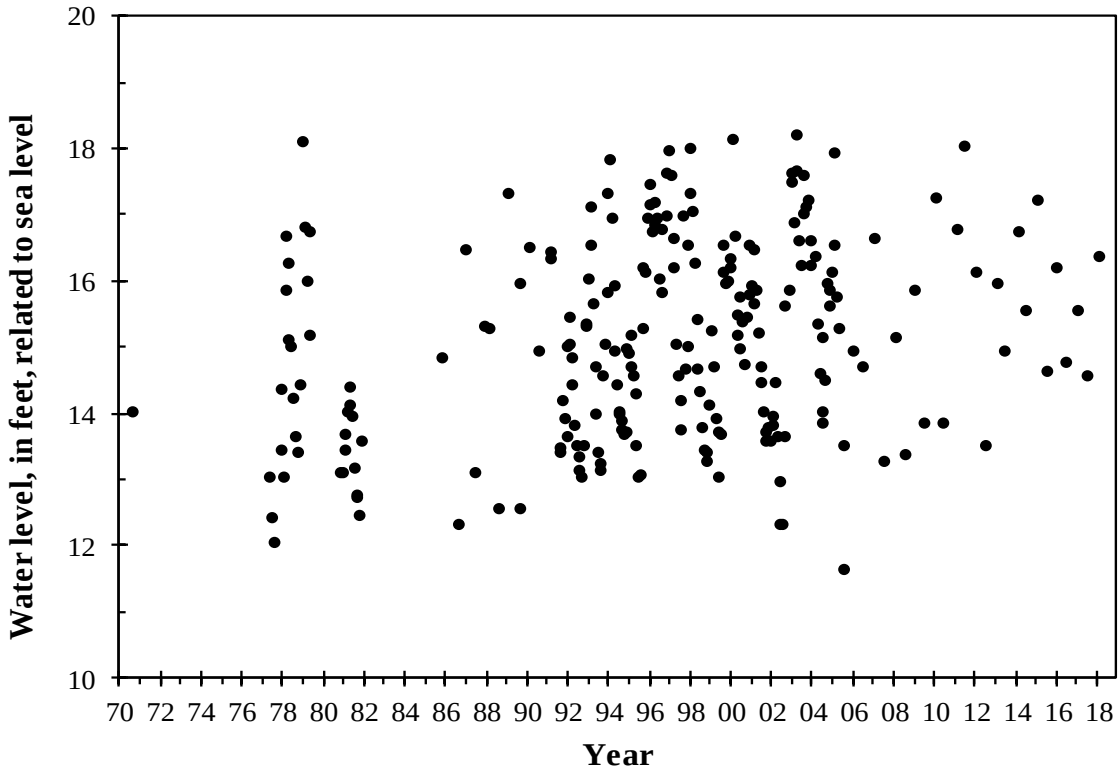
REMARKS: Observation well in the statewide ground-water level network. Water levels may be affected by nearby pumping.

PERIOD OF RECORD: September 1970, July 1977 to July 1979, March 1981 to January 1982, and October 1986 to current year.

EXTREMES FOR RECORD: Highest water level measured, 6.83 ft below land surface, on June 24, 2003; lowest measured, 13.40 ft below land surface, on September 20, 2005.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

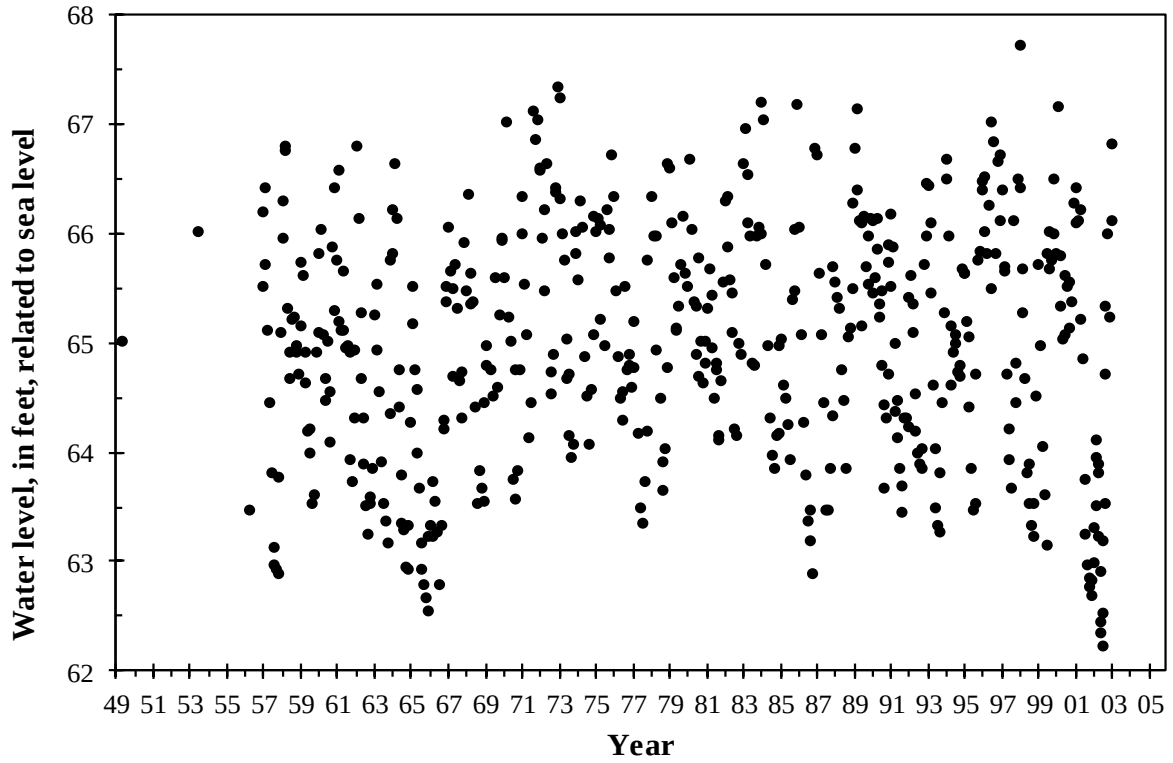
Date	Water Level	Date	Water Level	Date	Water level
Apr. 13, 2017	9.49				
Sep. 29, 2017	10.46				
Apr. 27, 2018	8.65				



WELL NUMBER: QA Cg 1 **PERMIT NUMBER: QA-00-3949**
LOCATION: Town of Barclay, north side of MD Rte. 302 **LAT. 39° 08' 41", LONG. 75° 51' 52"**
AQUIFER: Surficial aquifer of Pleistocene age.
WELL CHARACTERISTICS: Drilled, unused, water-table well. Reported depth is 60 ft, measured depth is 44 ft;
Casing diameter: 4 in. to 50 ft;
Screen diameter: 4 in. from 50 to 60 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 69 ft above National Geodetic Vertical Datum of 1929, from topographic map.
MEASURING POINT: Lip of hose connector is 1.90 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network.
PERIOD OF RECORD: June 1949 to March 2003. Well destroyed.
EXTREMES FOR RECORD: Highest water level measured, 1.30 ft below land surface, on March 10, 1998; lowest measured, 6.79 ft below land surface, on September 13, 2002 .

WATER LEVEL, IN FEET, BELOW LAND SURFACE, LAST MEASURED ON MARCH 28, 2003

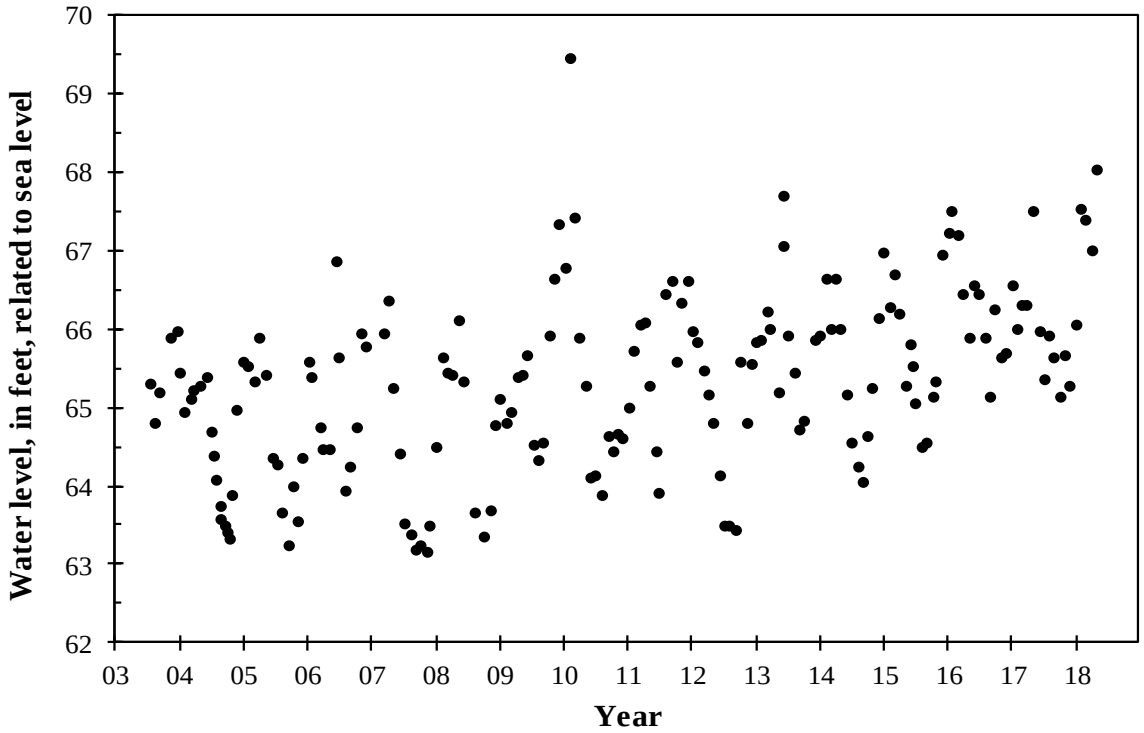
Date	Water Level	Date	Water Level	Date	Water Level
Mar. 28, 2003 (last measured)	2.91				



WELL NUMBER: QA Cg 69 **PERMIT NUMBER: QA-94-2072**
LOCATION: Town of Barclay, north side of MD Rte. 302 **LAT. 39° 08' 39", LONG. 75° 51' 50"**
AQUIFER: Surficial aquifer of Pleistocene age.
WELL CHARACTERISTICS: Drilled, unused, water-table well. Reported depth is 69 ft, measured depth is 69 ft;
Casing diameter: 6 in. to 29 ft;
Screen diameter: 4 in. from 29 to 69 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 69.75 ft above National Geodetic Vertical Datum of 1988, from topographic map.
MEASURING POINT: Lip of hose connector is 1.0 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network.
PERIOD OF RECORD: August 2003 to current year.
EXTREMES FOR RECORD: Highest water level measured, 0.32 ft below land surface, on February 25, 2010; lowest measured, 6.64 ft below land surface, on November 30, 2007.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM MAY 2017 TO MAY 2018

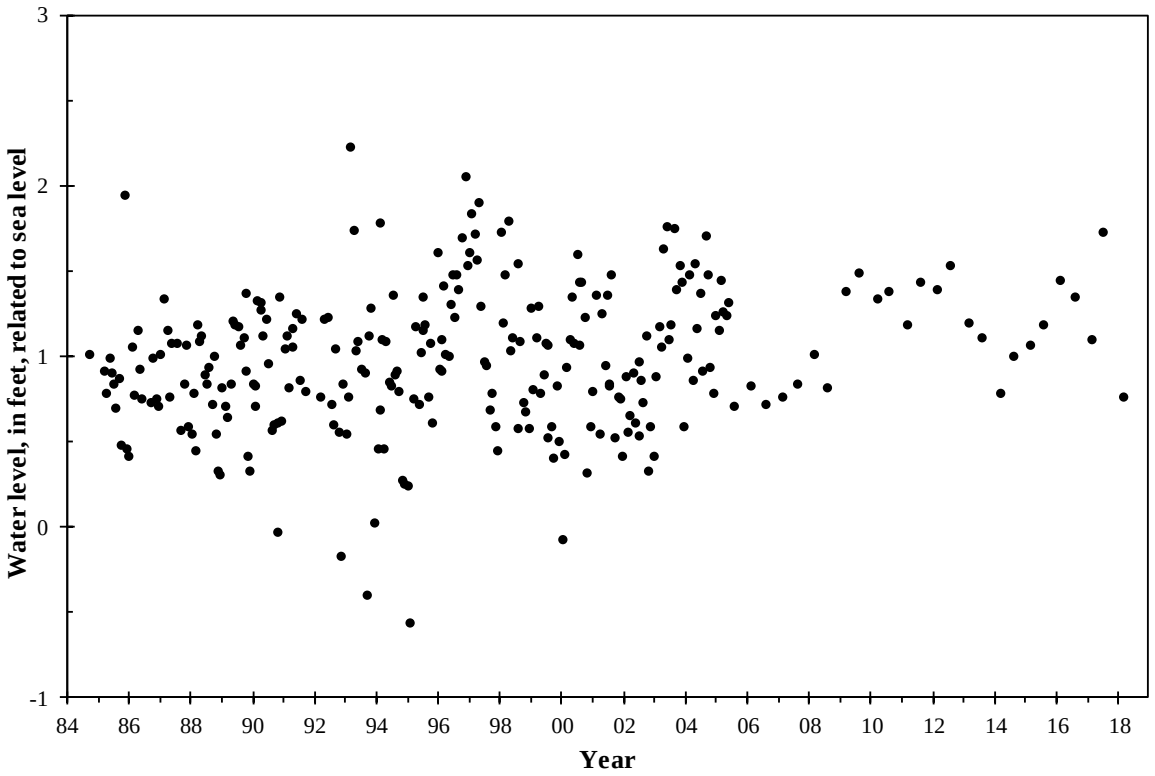
Date	Water Level	Date	Water Level	Date	Water Level
May 31, 2017	2.28	Nov. 22, 2017	4.13		
June 30, 2017	3.82	Dec. 27, 2017	4.51		
July 26, 2017	4.42	Jan. 29, 2018	3.74		
Aug 30, 2017	3.88	Feb. 23, 2018	2.26		
July 26, 2017	4.14	Mar. 26, 2018	2.39		
Oct. 27, 2017	4.66	Apr. 25, 2018	2.77		



WELL NUMBER: QA Db 30 **PERMIT NUMBER: QA-81-0473**
LOCATION: Love Point, north side of Pier Ave., Kent Island LAT. 39° 02' 01", LONG. 76° 18' 27"
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 220 ft;
Casing diameter: 4 in. to 210 ft;
Screen diameter: 4 in. from 210 to 220 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 17.80 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.40 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 15.59 ft below land surface, on April 9, 1993; lowest measured, 18.37 ft below land surface, on March 3, 1995.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

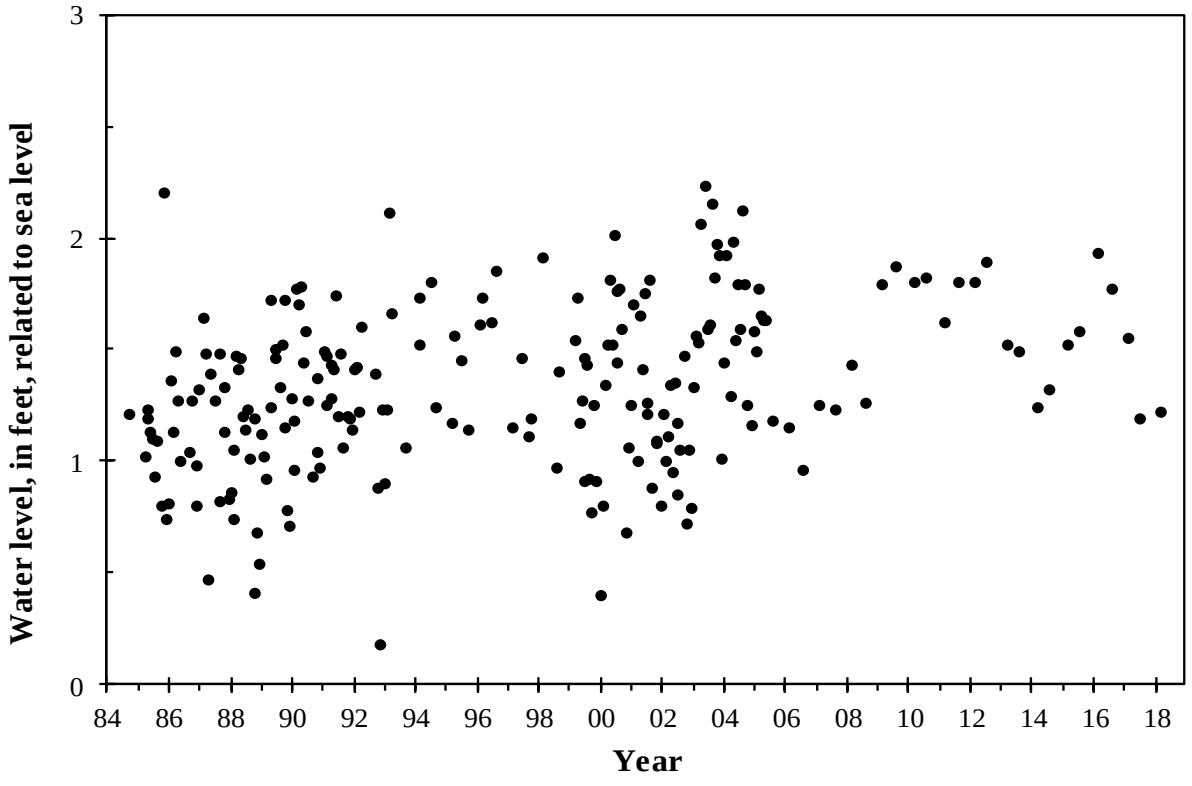
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	16.71				
Aug. 16, 2017	16.08				
Apr. 20, 2018	17.05				



WELL NUMBER: QA Db 32 **PERMIT NUMBER: QA-81-0473**
LOCATION: Love Point III, north side of Pier Ave., Kent Island LAT. 39° 02' 01", LONG. 76° 18' 27"
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 116 ft;
Casing diameter: 4 in. to 116 ft;
Screen diameter: 4 in. from 106 to 116 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 18.0 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.10 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 15.77 ft below land surface, on June 30, 2003; lowest measured, 17.83 ft below land surface, on December 8, 1992.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

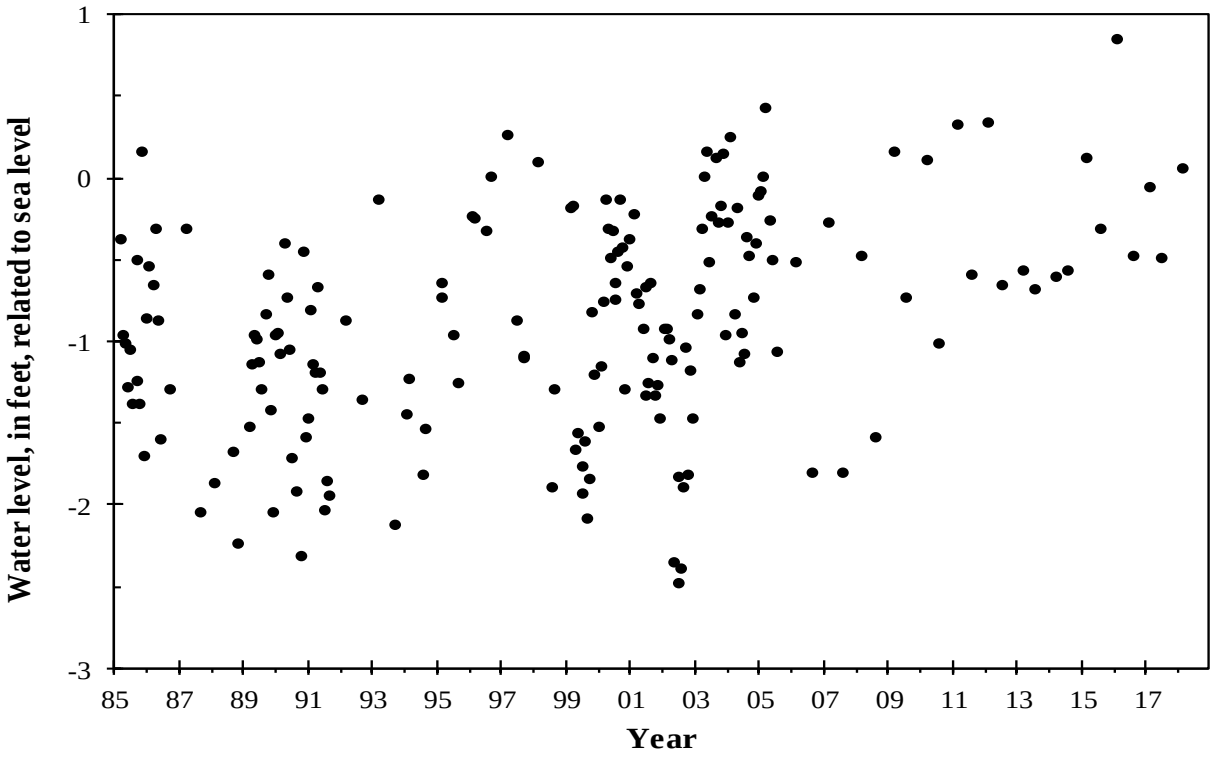
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	16.45				
Aug. 16, 2017	16.82				
Apr. 20, 2018	16.79				



WELL NUMBER: QA Db 34 **PERMIT NUMBER: QA-81-0473**
LOCATION: Cloverfields II, north of harbor, Kent Island **LAT. 39° 00' 23", LONG. 76° 17' 43"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 180 ft;
Casing diameter: 4 in. to 180 ft;
Screen diameter: 4 in. from 170 to 180 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 7.4 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.50 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: April 1985 to current year.
EXTREMES FOR RECORD: Highest water level measured, 6.57 ft below land surface, on April 11, 2016; lowest measured, 9.89 ft below land surface, on August 22, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	7.47				
Aug. 15, 2017	7.90				
Apr. 20, 2018	7.35				



WELL NUMBER: QA Db 35 **PERMIT NUMBER: QA-81-0472**

LOCATION: Mylander Farm, 0.5 mi west of MD Rte. 18, Kent Island. **LAT. 39° 01' 19", LONG. 76° 19' 10"**

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 200 ft;
Casing diameter: 4 in. to 190 ft;
Screen diameter: 4 in. from 190 to 200 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 7.50 ft above National Geodetic Vertical Datum of 1929.

MEASURING POINT: Top of casing is 2.20 ft above land surface.

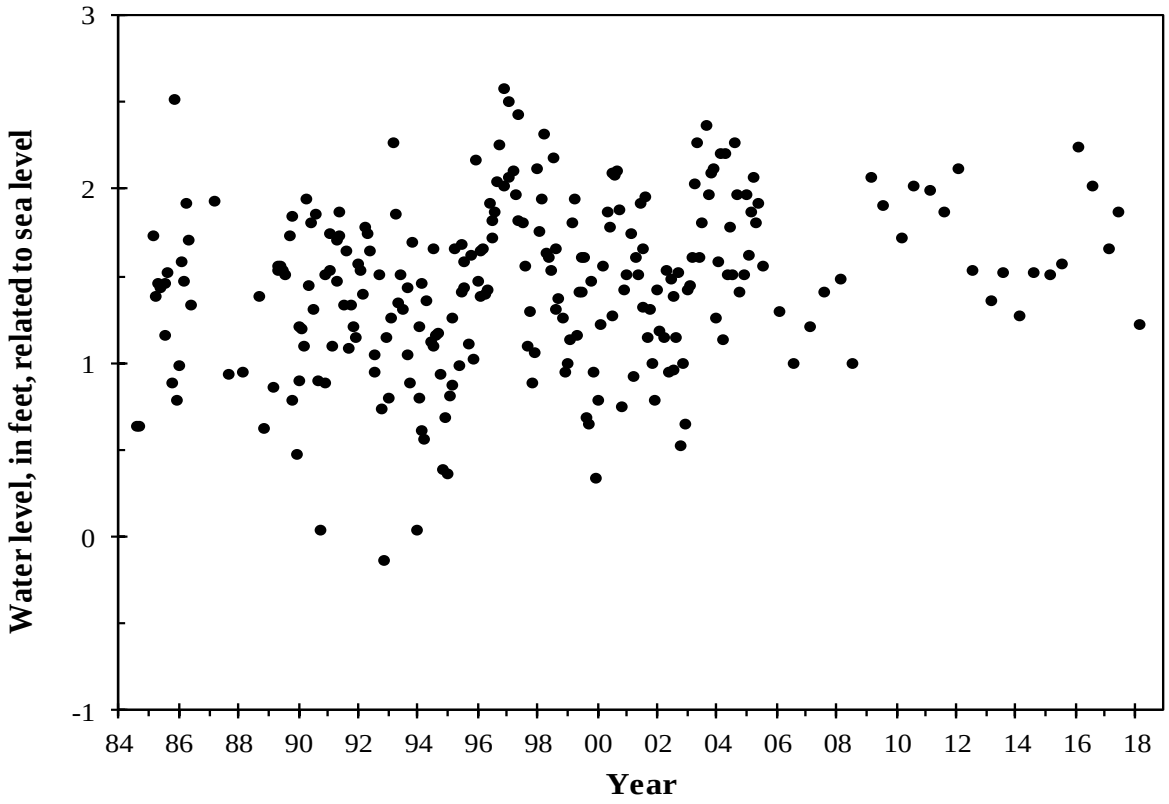
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: August 1984 to current year.

EXTREMES FOR RECORD: Highest water level measured, 4.93 ft below land surface, on December 16, 1996; lowest measured, 7.65 ft below land surface, on December 6, 1992.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

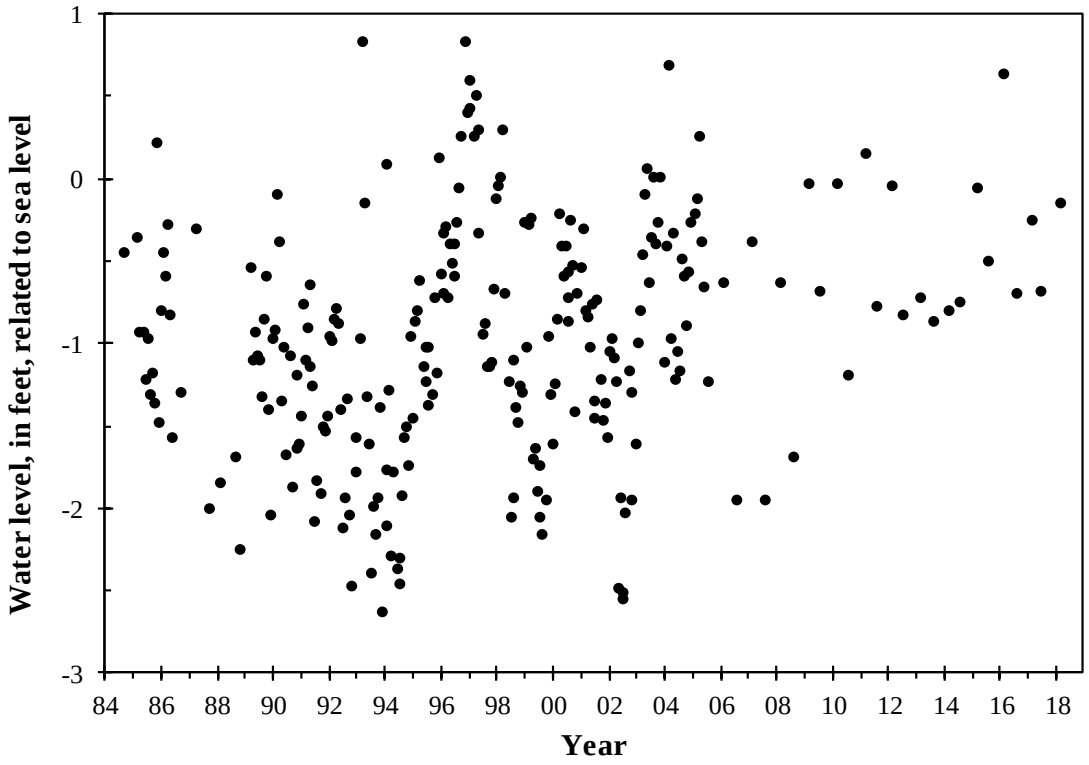
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	5.86				
Aug. 15, 2017	5.65				
Apr. 20, 2018	6.29				



ELL NUMBER: QA Db 37 **PERMIT NUMBER: QA-81-0471**
LOCATION: Cloverfields, north of harbor, Kent Island **LAT. 39° 00' 23", LONG. 76° 17' 43"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 250 ft;
Casing diameter: 4 in. to 240 ft;
Screen diameter: 4 in. from 240 to 250 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 7.10 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.50 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 6.28 ft below land surface, on April 9, 1993, and December 16, 1996; lowest measured, 9.74 ft below land surface, on January 11, 1994.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

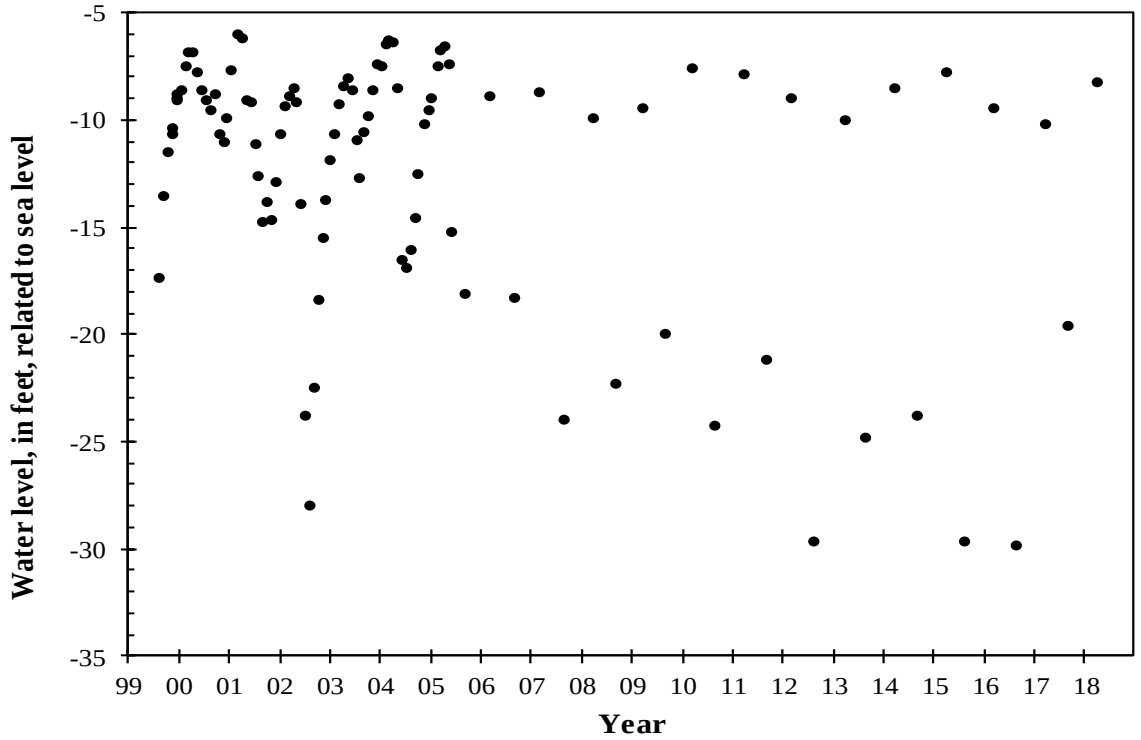
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	7.36				
Aug. 15, 2017	7.8				
Apr. 20, 2018	7.26				



WELL NUMBER: QA De 27 **PERMIT NUMBER: None**
LOCATION: Town of Centreville, near Sheriff's Office **LAT. 39° 00' 51", LONG. 76° 03' 44"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, unused, artesian well. Reported depth is 665 ft, depth of geophysical log is 380 ft; Casing diameter: unknown diameter to 170 ft; Screen diameter: unknown.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 10.19 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of shelter platform is 2.03 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: September 1999 to current year.
EXTREMES FOR RECORD: Highest water level measured, 16.28 ft below land surface, on March 22, 2001; lowest measured, 40.15 ft below land surface, on September 22, 2016.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

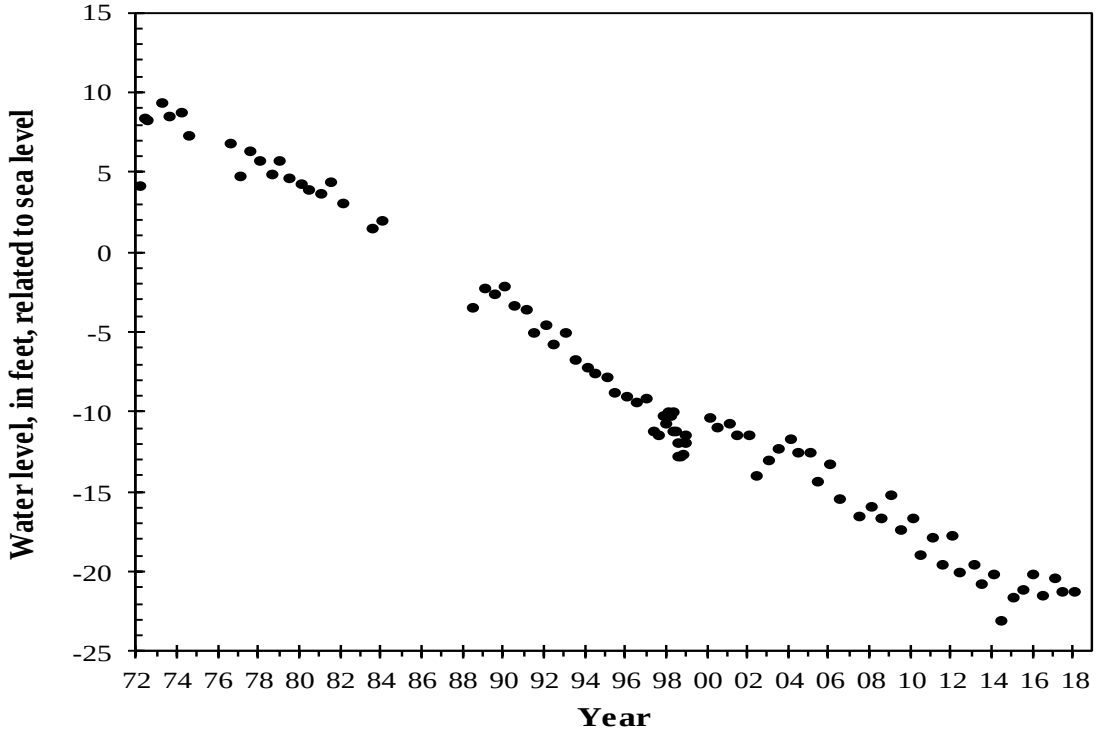
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 13, 2017	20.45				
Sep. 29, 2017	29.93				
Apr. 27, 2018	18.56				



WELL NUMBER: QA Ea 27 **PERMIT NUMBER: None**
LOCATION: Natural Resources Police Academy in Matapeake, Kent Island. **LAT. 38° 57' 14", LONG. 76° 20' 54"**
AQUIFER: Magothy Aquifer of Upper Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 661 ft;
Casing diameter: 6 in. to 661 ft;
Screen diameter: 6 in. from 625 to 661 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface was 18.27 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 1.7 ft above land surface. Remeasurement on August 24, 2012 the top of casing is 3.25 ft above land surface.
REMARKS: Production well in the Kent Island ground-water monitoring network. Water levels are affected ground-water withdrawal.
PERIOD OF RECORD: April 1972 to current year.
EXTREMES FOR RECORD: Highest water level measured, 8.97 ft below land surface, on May 10, 1973; lowest measured, 41.41 ft below land surface, on September 26, 2014.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

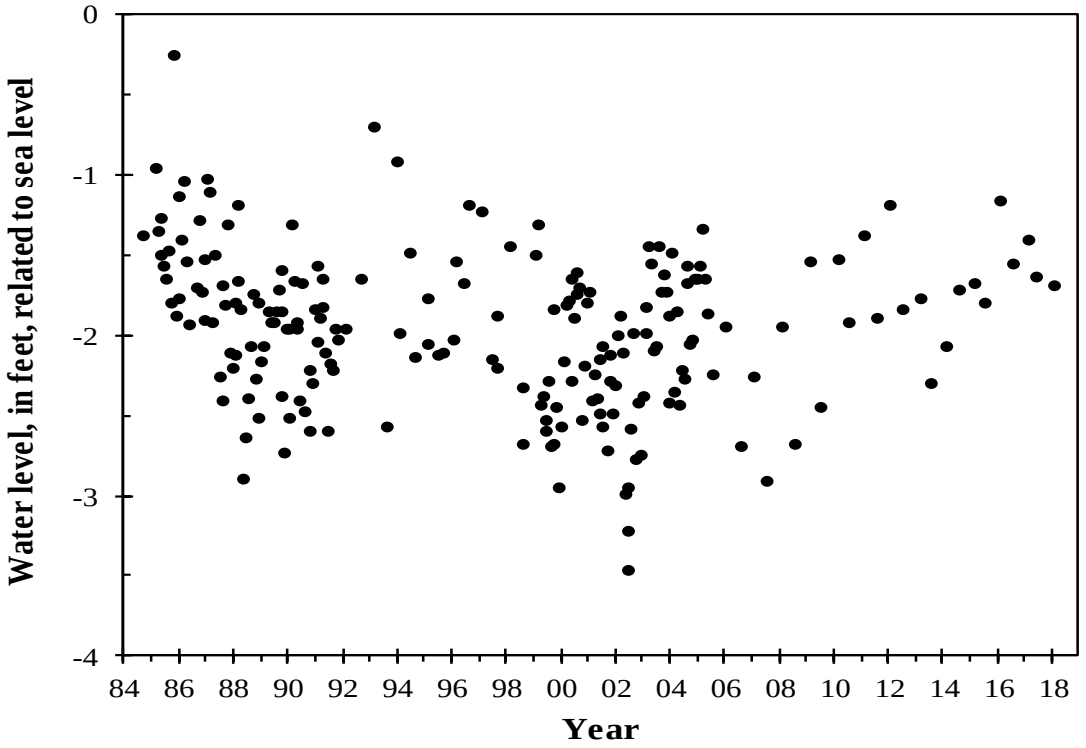
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	38.73				
Sep. 29, 2017	39.58				
Apr. 20, 2018	39.57				



WELL NUMBER: QA Ea 77 **PERMIT NUMBER: QA-81-0474**
LOCATION: Natural Resources Police Academy in Matapeake, Kent Island **LAT. 38° 57' 18", LONG. 76° 21' 15"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 205 ft;
Casing diameter: 4 in. to 205 ft;
Screen diameter: 4 in. from 195 to 205 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 10.80 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.24 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawals.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 11.07 ft below land surface, on December 2, 1985; lowest measured, 14.28 ft below land surface, on August 20, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	12.22				
Aug. 14, 2017	12.45				
Apr. 20. 2018	12.51				



WELL NUMBER: QA Ea 78 **PERMIT NUMBER: QA-81-0474**

LOCATION: Natural Resources Police Academy in Matapeake, Kent Island. **LAT. 38° 57' 18", LONG. 76° 21' 15"**

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 135 ft;
Casing diameter: 4 in. to 125 ft;
Screen diameter: 4 in. from 125 to 135 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 11.80 ft above National Geodetic Vertical Datum of 1929.

MEASURING POINT: Top of casing is 1.91 ft above land surface.

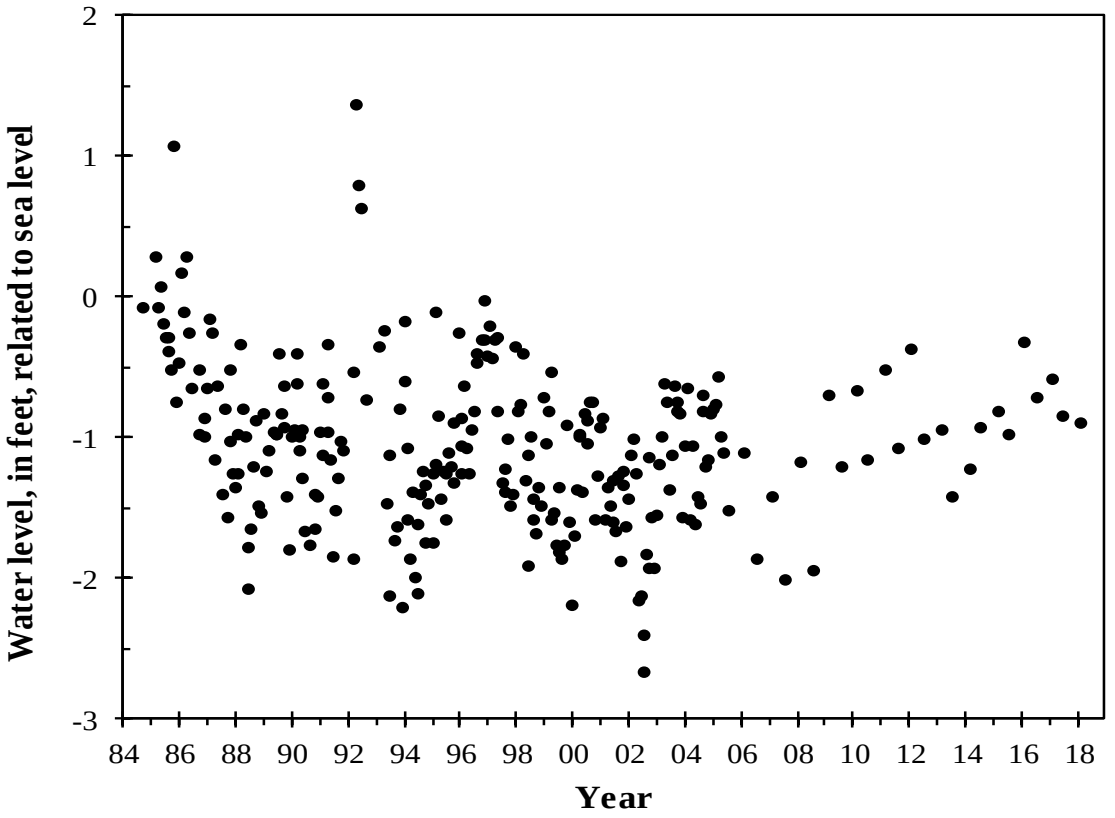
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: October 1984 to current year.

EXTREMES FOR RECORD: Highest water level measured, 10.45 ft below land surface, on June 4, 1992; lowest measured, 14.49 ft below land surface, on August 20, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

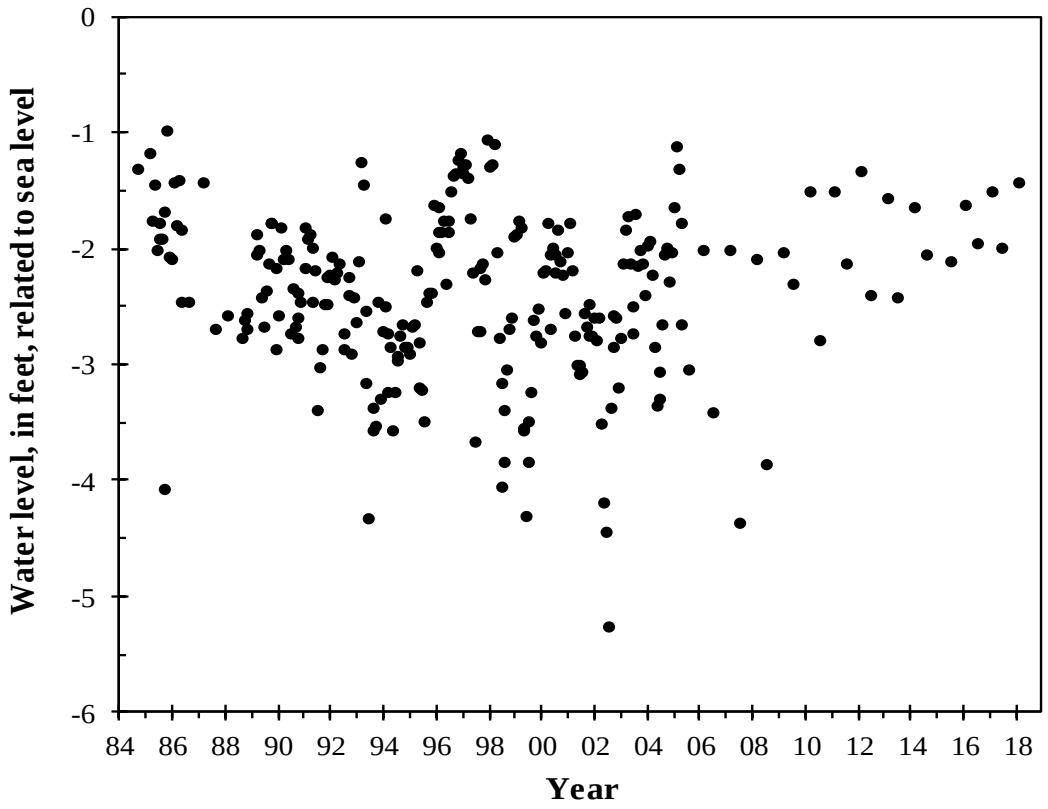
Date	Water Level	Date	Water Level	Date	Water Level
Apr 12, 2017	12.41				
Aug. 14, 2017	12.66				
Apr. 20, 2018	12.72				



WELL NUMBER: QA Ea 79 **PERMIT NUMBER: QA-81-0469**
LOCATION: Mowbray Park, Kent Island **LAT. 38° 57' 57", LONG. 76° 20' 01"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 298 ft;
Casing diameter: 4 in. to 288 ft;
Screen diameter: 4 in. from 288 to 298 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 8.30 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.31 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 9.30 ft below land surface, on December 2, 1985; lowest measured, 13.57 ft below land surface, on August 27, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

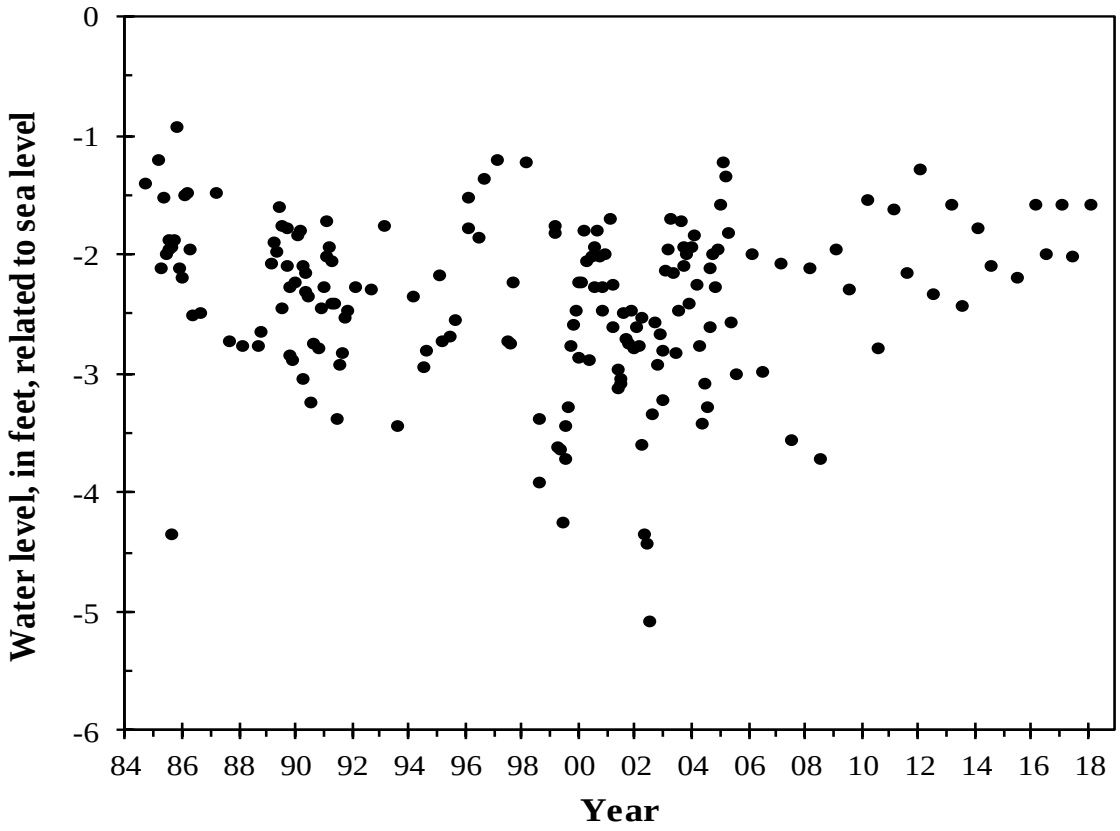
Date	Water Level	Date	Water Level	Date	Water Level
Apr 12, 2017	9.83				
Aug. 14, 2017	10.3				
Apr. 20, 2018	9.75				



WELL NUMBER: QA Ea 80 **PERMIT NUMBER: QA-81-0469**
LOCATION: Mowbray Park II, Kent Island **LAT. 38° 57' 57", LONG. 76° 20' 01"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 130 ft;
Casing diameter: 4 in. to 130 ft;
Screen diameter: 4 in. from 120 to 130 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 8.50 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.51 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 9.45 ft below land surface, on December 2, 1985; lowest measured, 13.61 ft below land surface, on August 27, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

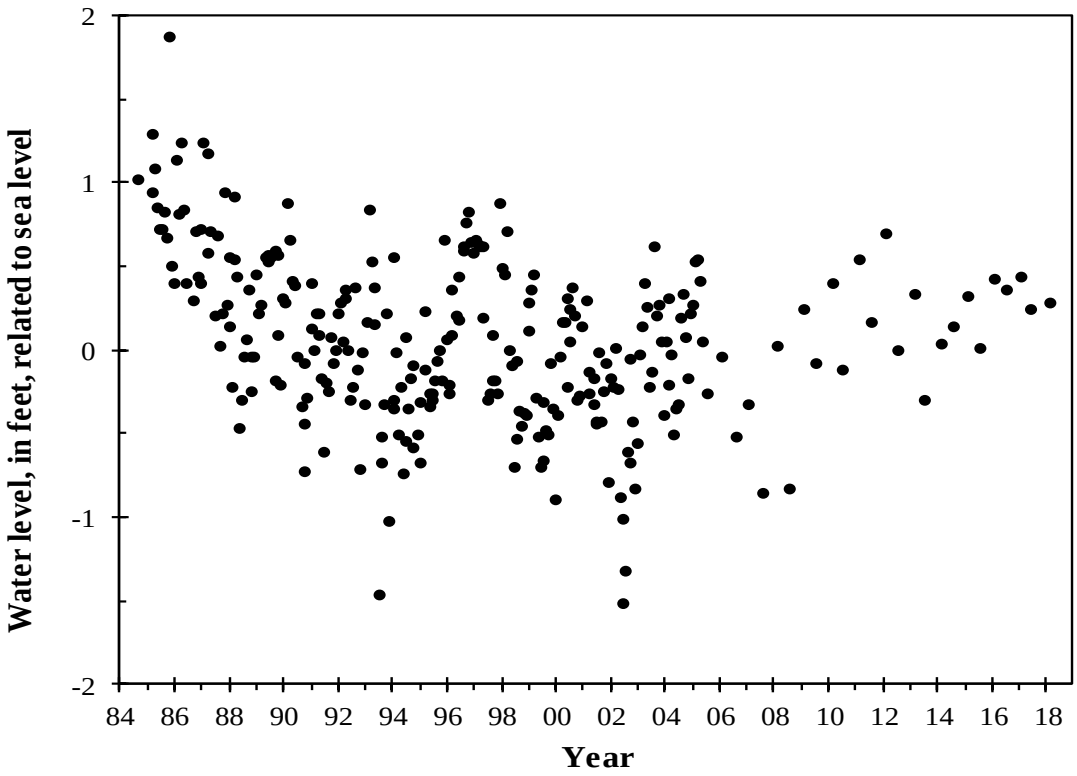
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	10.09				
Aug. 14, 2017	10.54				
Apr. 20, 2018	10.09				



WELL NUMBER: QA Ea 81 **PERMIT NUMBER: QA-81-0474**
LOCATION: Natural Resources Police Academy in Matapeake, Kent Island. **LAT. 38° 57' 18", LONG. 76° 21' 15"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 310 ft;
Casing diameter: 4 in. to 300 ft;
Screen diameter: 4 in. from 300 to 310 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 12.40 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.16 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 10.54 ft below land surface, on December 2, 1985; lowest measured, 13.93 ft below land surface, on August 20, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

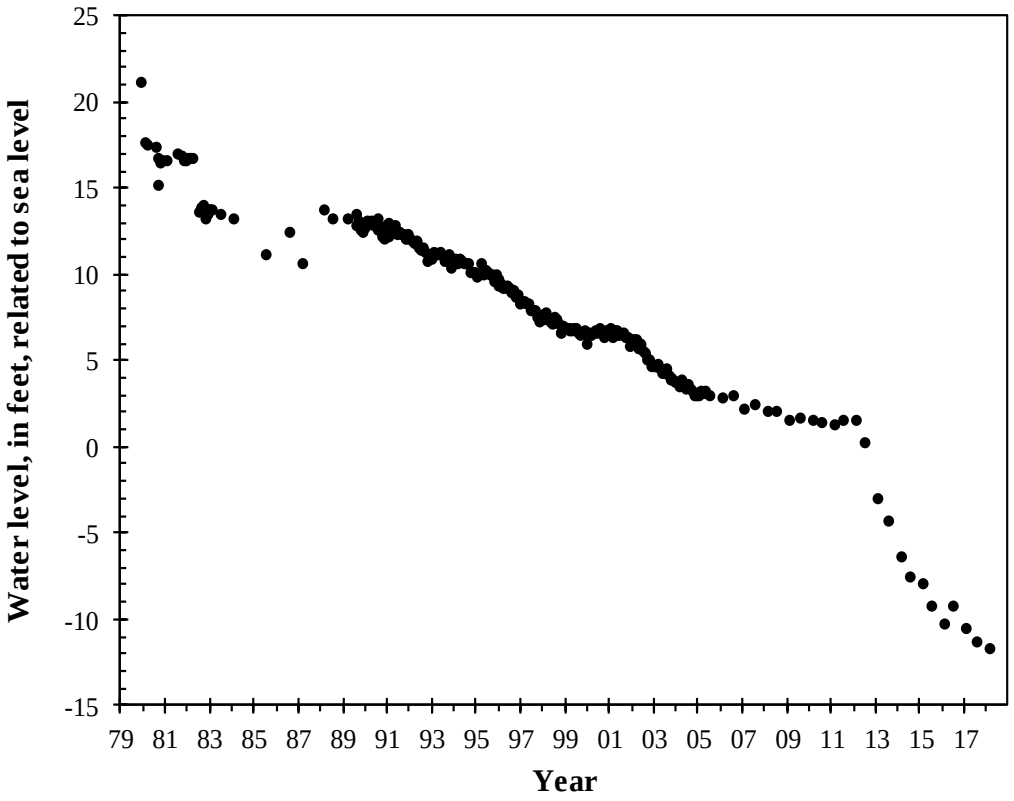
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	11.97				
Aug. 14, 2017	12.17				
April 20, 2018	12.13				



WELL NUMBER: QA Eb 110 **PERMIT NUMBER: QA-73-2979**
LOCATION: Near Chester, east side of Cox Neck Road **LAT. 38° 57' 51", LONG. 76° 17' 16"**
AQUIFER: Patuxent Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 2,485 ft;
Casing diameter: 4 in. to 2,413 ft, from 2,423 to 2,465 ft, and from 2,475 to 2,485 ft;
Screen diameter: 4 in. from 2,413 to 2,423 ft and from 2,465 to 2,475 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 13.98 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 3.36 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.
PERIOD OF RECORD: January 1980 to current year.
EXTREMES FOR RECORD: Highest water level measured 6.99 ft above land surface, on January 21, 1980; lowest measured, 25.78ft below land surface, on April 20, 2018.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

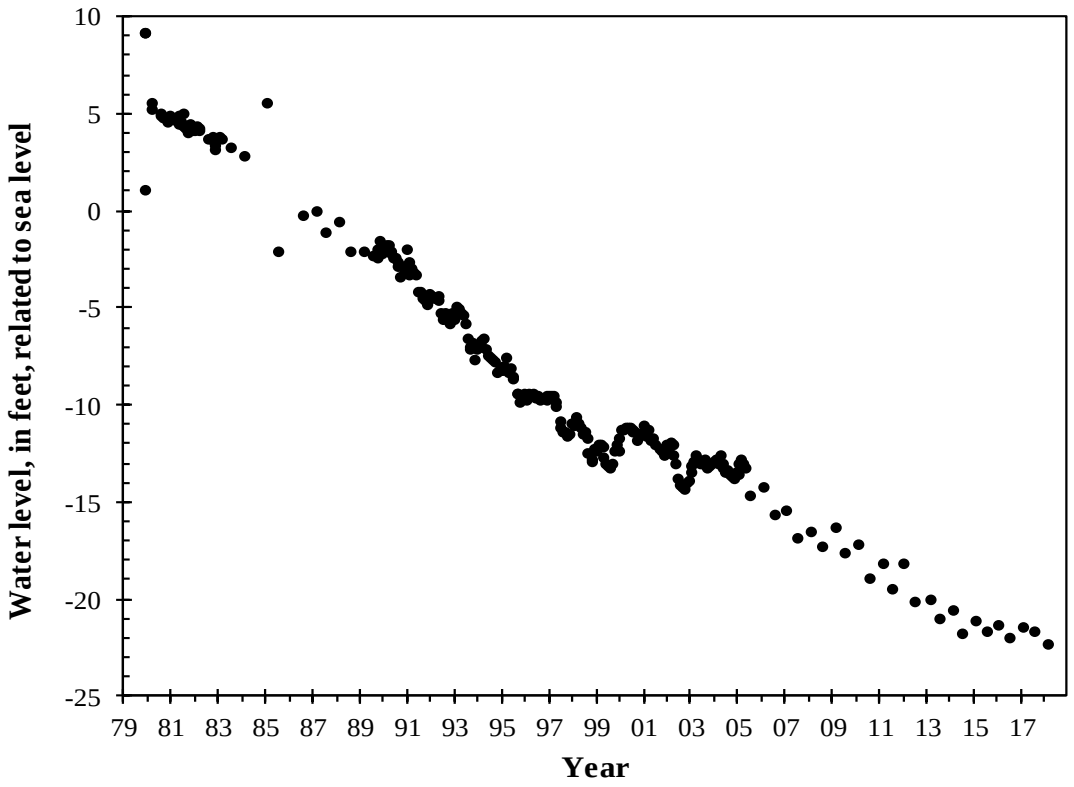
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	24.65				
Sep. 29, 2017	25.45				
Apr. 20, 2018	25.78				



WELL NUMBER: QA Eb 111 **PERMIT NUMBER: QA-73-3122**
LOCATION: Near Chester, east side of Cox Neck Road **LAT. 38° 57' 51", LONG. 76° 17' 16"**
AQUIFER: Upper Patapsco Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 985 ft;
Casing diameter: 4 in. to 955 ft and from 965 to 975 ft;
Screen diameter: 4 in. from 955 to 965 ft and from 975 to 985 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 14.03 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 1.41 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local and regional ground-water withdrawal.
PERIOD OF RECORD: December 1979 to current year.
EXTREMES FOR RECORD: Highest water level measured, 5.02 ft below land surface, on January 21, 1980; lowest measured, 36.51 ft below land surface, on April 20, 2018.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

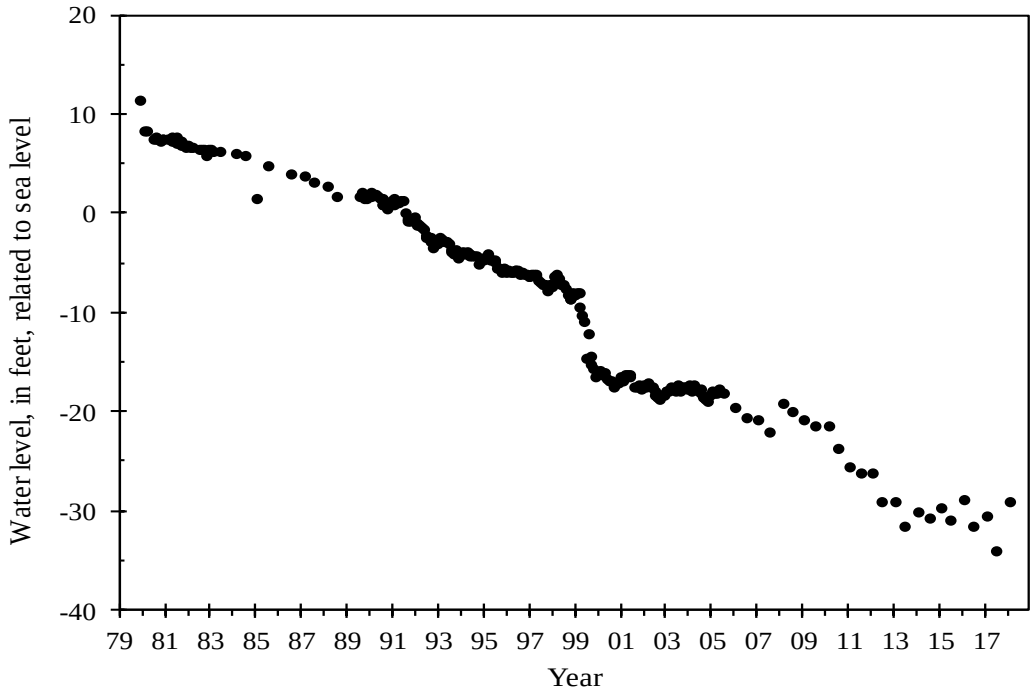
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	35.66				
Sep. 29, 2017	34.77				
Apr. 20, 2018	36.51				



WELL NUMBER: QA Eb 112 **PERMIT NUMBER: QA-73-3123**
LOCATION: Near Chester, east side of Cox Neck Road **LAT. 38° 57' 51", LONG. 76° 17' 16"**
AQUIFER: Lower Patapsco Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 1,679 ft;
Casing diameter: 4 in. to 1,652 ft and from 1,662 to 1,669 ft;
Screen diameter: 4 in. from 1,652 to 1,662 ft and from 1,669 to 1,679 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 13.92 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 1.36 ft above land surface.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local and regional ground-water withdrawal.
PERIOD OF RECORD: January 1980 to current year.
EXTREMES FOR RECORD: Highest water level measured, 2.69 ft below land surface, on January 21, 1980; lowest measured, 48.06 ft below land surface, on September 29, 2017.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

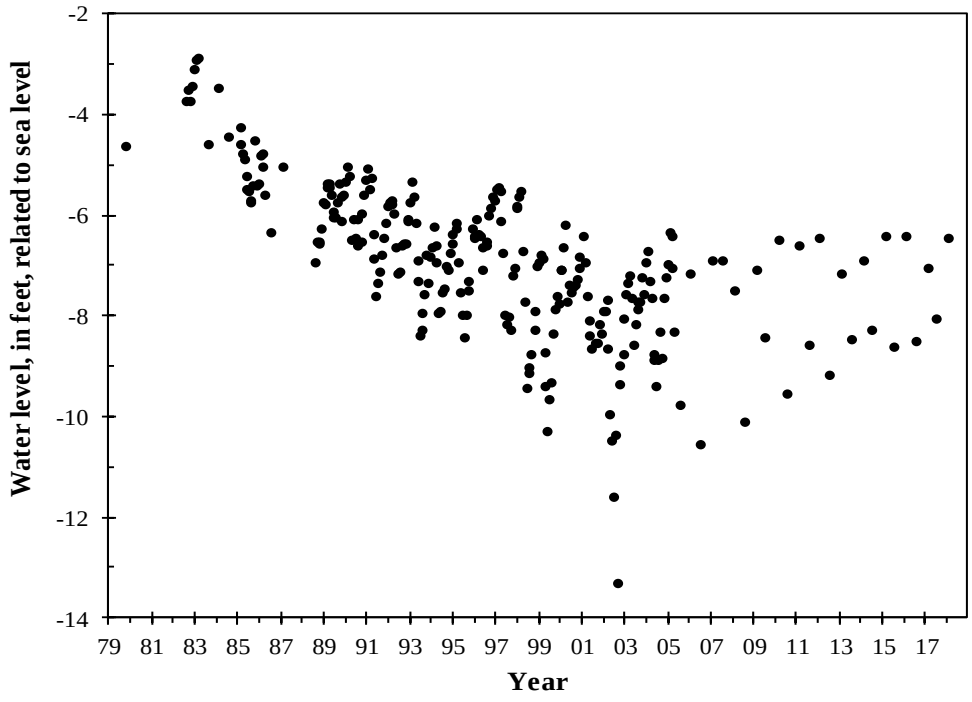
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	44.64				
Sep. 29, 2017	48.06				
Apr. 20, 2018	43.08				



WELL NUMBER: QA Eb 113 **PERMIT NUMBER: QA-73-3172**
LOCATION: Near Chester, east side of Cox Neck Road **LAT. 38° 57' 48", LONG. 76° 17' 20"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 216 ft;
Casing diameter: 6 in. to 176 ft;
Screen diameter: 6 in. from 176 to 216 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 11.34 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Since October 2003 top of casing is 1.6 ft above land surface, which is 1 ft lower than before. Water levels measured after October 2003 were corrected accordingly.
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: November 1979 to current year.
EXTREMES FOR RECORD: Highest water level measured, 14.28 ft below land surface, on April 1, 1983; lowest measured, 24.68 ft below land surface, on October 29, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

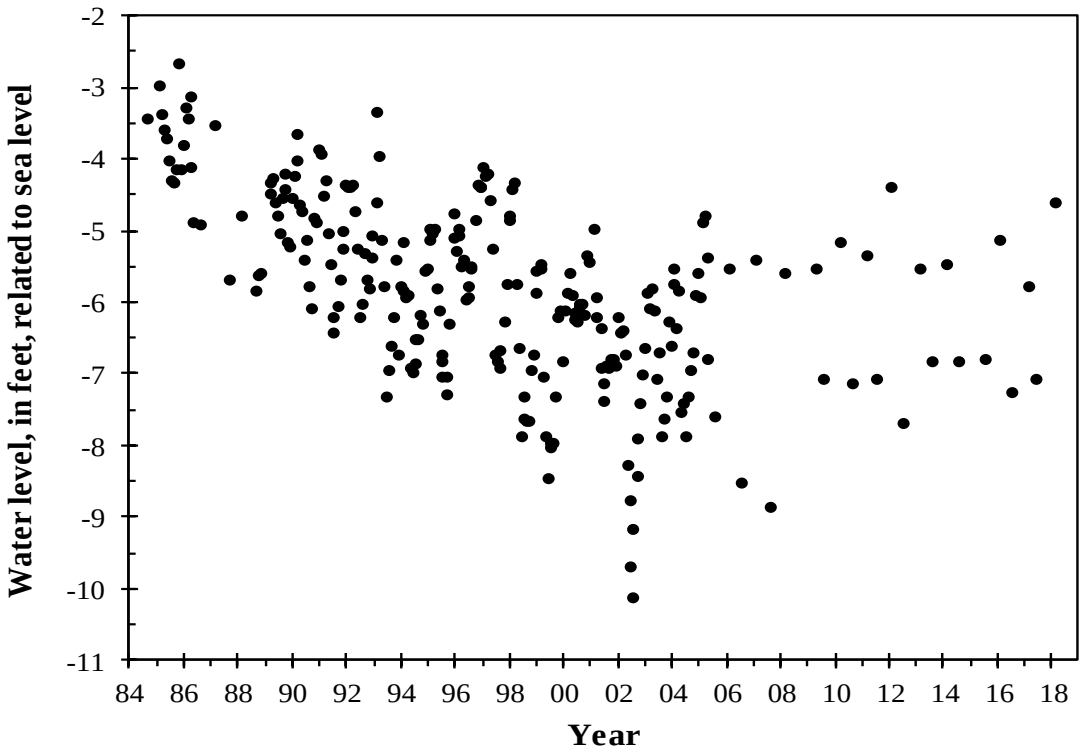
Date	Water Level	Date	Water Level	Date	Water Level
April 12, 2017	18.42				
Sep. 29, 2017	19.46				
April 20, 2018	17.83				



WELL NUMBER: QA Eb 155 **PERMIT NUMBER: QA-81-0470**
LOCATION: At north end of Piney Creek Road, Kent Island **LAT. 38° 58' 43", LONG. 76° 15' 53"**
AQUIFER: Aquia Aquifer of Early to Late Paleocene age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 245 ft;
Casing diameter: 4 in. to 235 ft;
Screen diameter: 4 in. from 235 to 245 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 3.90 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 2.50 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.
PERIOD OF RECORD: October 1984 to current year.
EXTREMES FOR RECORD: Highest water level measured, 6.60 ft below land surface, on December 2, 1985; lowest measured, 14.05 ft below land surface, on August 27, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
April 12, 2017	9.72				
Aug. 17, 2017	11.01				
April 27, 2018	8.55				



WELL NUMBER: QA Eb 156 **PERMIT NUMBER: QA-81-0475**

LOCATION: At Terrapin Beach Park, north of US Rte. 50, Kent Island. **LAT. 38° 58' 52", LONG. 76° 19' 52"**

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 220 ft;
Casing diameter: 4 in. to 210 ft;
Screen diameter: 4 in. from 210 to 220 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 12.01 ft above National Geodetic Vertical Datum of 1929.

MEASURING POINT: Top of casing is 2.20 ft above land surface.

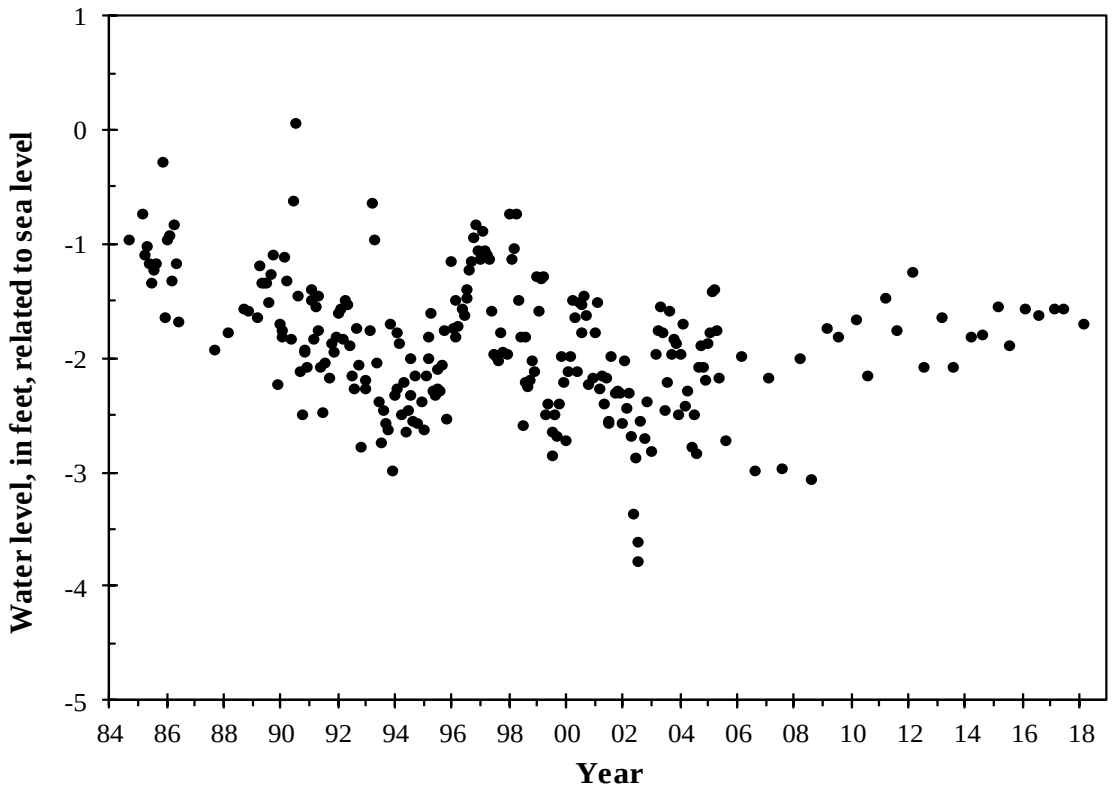
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: October 1984 to current year.

EXTREMES FOR RECORD: Highest water level measured, 11.97 ft below land surface, on August, 1, 1990; lowest measured, 15.81 ft below land surface, on August 22, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	13.59				
Aug. 15, 2017	13.60				
April 20, 2018	13.73				



WELL NUMBER: QA Eb 157 **PERMIT NUMBER: QA-81-0475**

LOCATION: At Terrapin Beach Park, north of US Rte. 50, Kent Island. **LAT. 38° 58' 52", LONG. 76° 19' 52"**

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 120 ft;
Casing diameter: 4 in. to 110 ft;
Screen diameter: 4 in. from 110 to 120 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 11.92 ft above National Geodetic Vertical Datum of 1929.

MEASURING POINT: Top of casing is 2.50 ft above land surface.

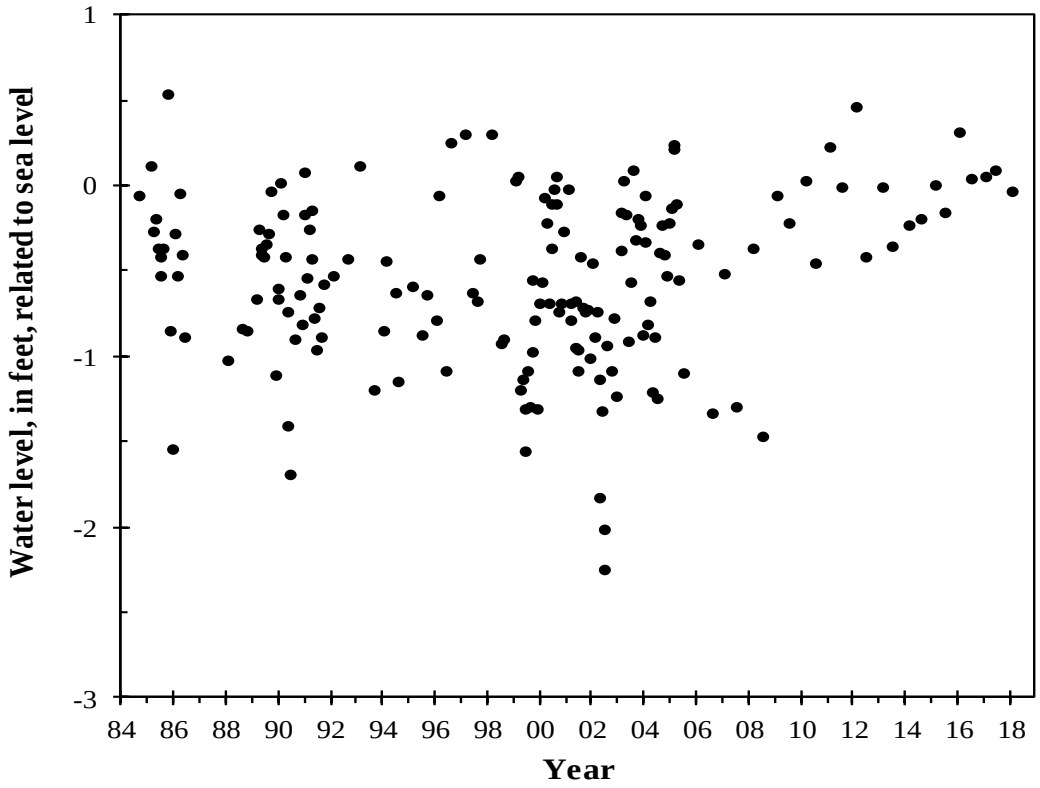
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: October 1984 to current year.

EXTREMES FOR RECORD: Highest water level measured, 11.40 ft below land surface, on December 2, 1985; lowest measured, 14.19 ft below land surface, on August 22, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2010 TO APRIL 2017

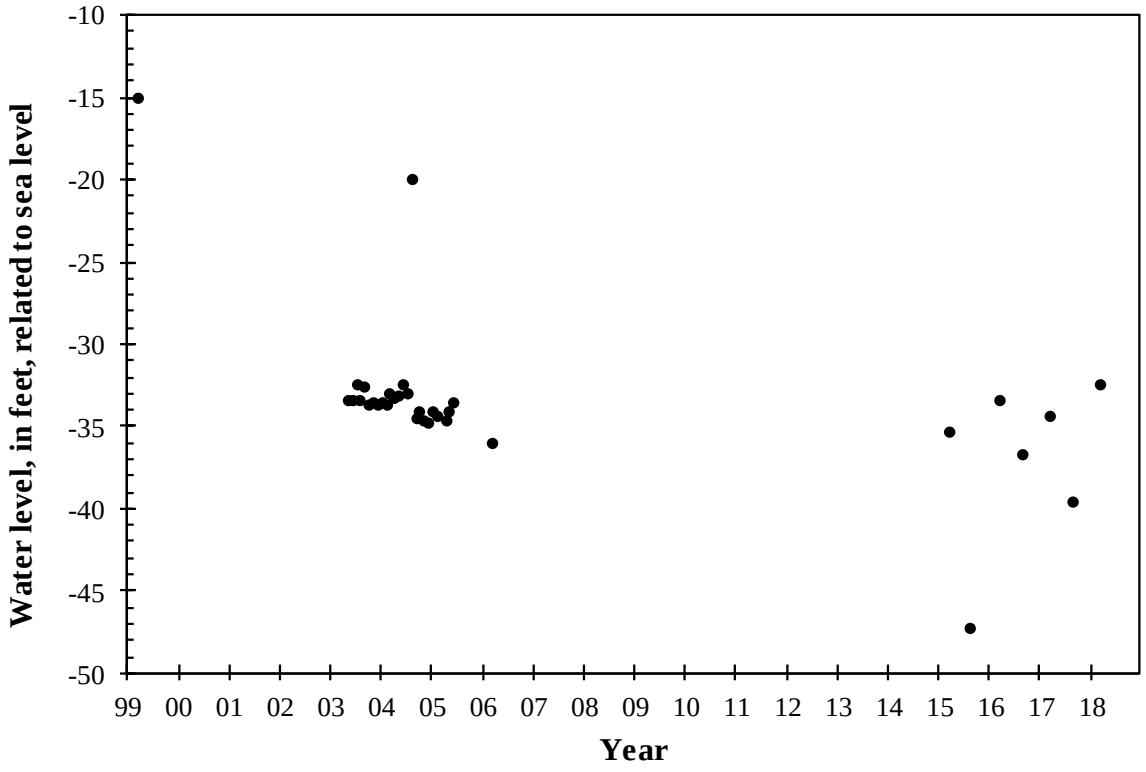
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2917	11.88				
Aug. 15, 2017	11.85				
Apr. 20, 2018	11.97				



WELL NUMBER: QA Eb 182 **PERMIT NUMBER: QA-81-0475**
LOCATION: At 208 Church Street, Stevensville Water Treatment Plant, Stevensville, Kent Island. **LAT. 38° 58' 50", LONG. 76° 18' 35"**
AQUIFER: Lower Patapsco Aquifer of Early Cretaceous age.
WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 1,580 ft; Casing diameter: 5 in. to 280 ft; 4 in. from 280 ft to 1460 ft; Screen diameter: 4 in. from 1,460 ft to 1,480 ft, from 1,520 ft to 1,530 ft, and from 1,550 ft to 1,580 ft.
INSTRUMENTATION: Monthly measurements with steel or electric tape.
DATUM: Altitude of land surface is 14.0 ft above National Geodetic Vertical Datum of 1929.
MEASURING POINT: Top of casing is 1.80 ft above land surface.
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal. Measurement resumed since April 2015.
PERIOD OF RECORD: April 1999, May 2003 to March 28, 2006, and from April 2015 to April 2016.
EXTREMES FOR RECORD: Highest water level measured, 29.20 ft below land surface, on April 1, 1999; lowest measured, 61.43 ft below land surface, on September 18, 2015.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM MARCH 2005 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2017	48.59				
Sep. 29, 2017	53.71				
April 20, 2018	46.63				



WELL NUMBER: QA Ec 1 **PERMIT NUMBER: None**

LOCATION: Near Grasonville, south side of MD Rte. 18 and northeast of Nesbit Rd. **LAT. 38° 57' 56", LONG. 76° 10' 53"**

AQUIFER: Surficial aquifer of Pleistocene age.

WELL CHARACTERISTICS: Drilled, unused, water-table well. Depth is 21 ft; Casing diameter: 1.25 in. to 21 ft; no screen.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map.

MEASURING POINT: Top of casing is 0.27 ft above land surface.

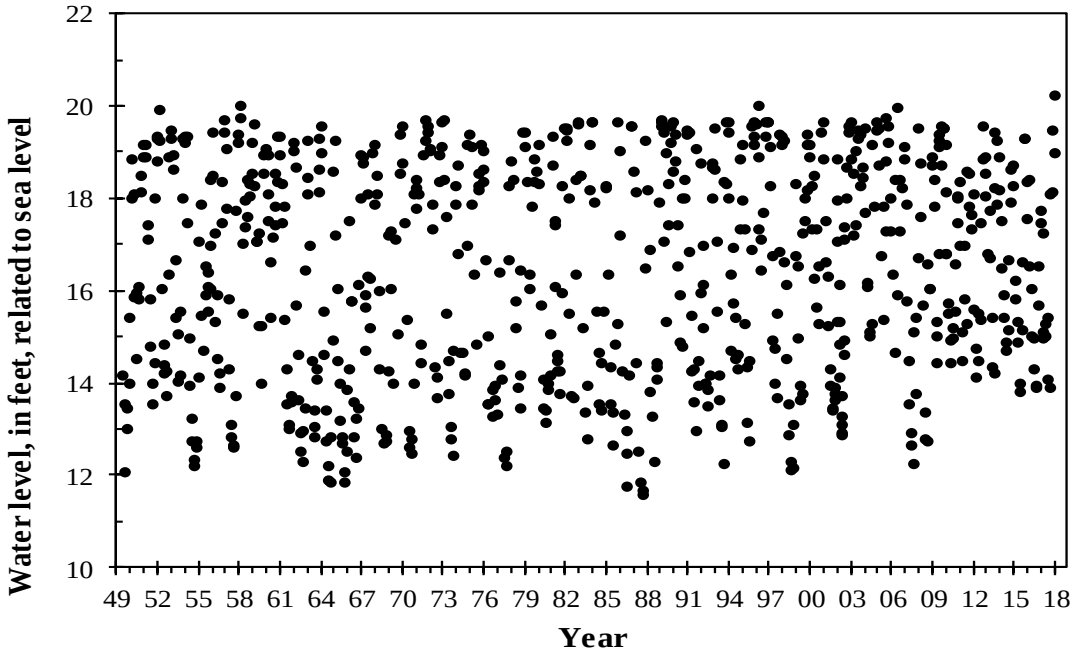
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: September 1949 to current year.

EXTREMES FOR RECORD: Highest water level measured 0.18 above land surface, on August 2, 1996; lowest measured, 8.46 ft below land surface, on January 7, 1988.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO MAY 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 24, 2017	2.59	Nov. 22, 2017	4.63		
May 31, 2017	2.79	Dec. 27, 2017	6.16		
June 29, 2017	4.96	Jan. 29, 2018	1.96		
July 26, 2017	5.08	Feb. 26, 2018	1.92		
Aug. 25, 2017	4.76	Mar. 26, 2018	0.57		
Sep. 25, 2017	5.04	Apr. 23, 2018	1.07		
Oct. 27, 2017	5.97	May 23, 2018	-0.18		



WELL NUMBER: QA Ef 29 **PERMIT NUMBER: QA-81-1593**

LOCATION: Tuckahoe State Park, off east side of MD Rte. 309. **LAT. 38° 55' 38", LONG. 75° 57' 40"**

AQUIFER: Upper Patapsco Aquifer of Early Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 1,325 ft;

Casing diameter: 14 in. to 500 ft and 8 in. from 500 to 1,110 ft, from 1,120 to 1,135 ft, from 1,180 to 1,195 ft, from 1,210 to 1,230 ft, from 1,270 to 1,285 ft, and from 1,315 to 1,325 ft;

Screen diameter: 8 in. from 1,110 to 1,120 ft, from 1,135 to 1,180 ft, from 1,195 to 1,210 ft, from 1,230 to 1,270 ft, and from 1,285 to 1,315 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 61.69 ft above National Geodetic Vertical Datum of 1929.

MEASURING POINT: Top of 2 in. riser pipe is 3.80 ft above land surface.

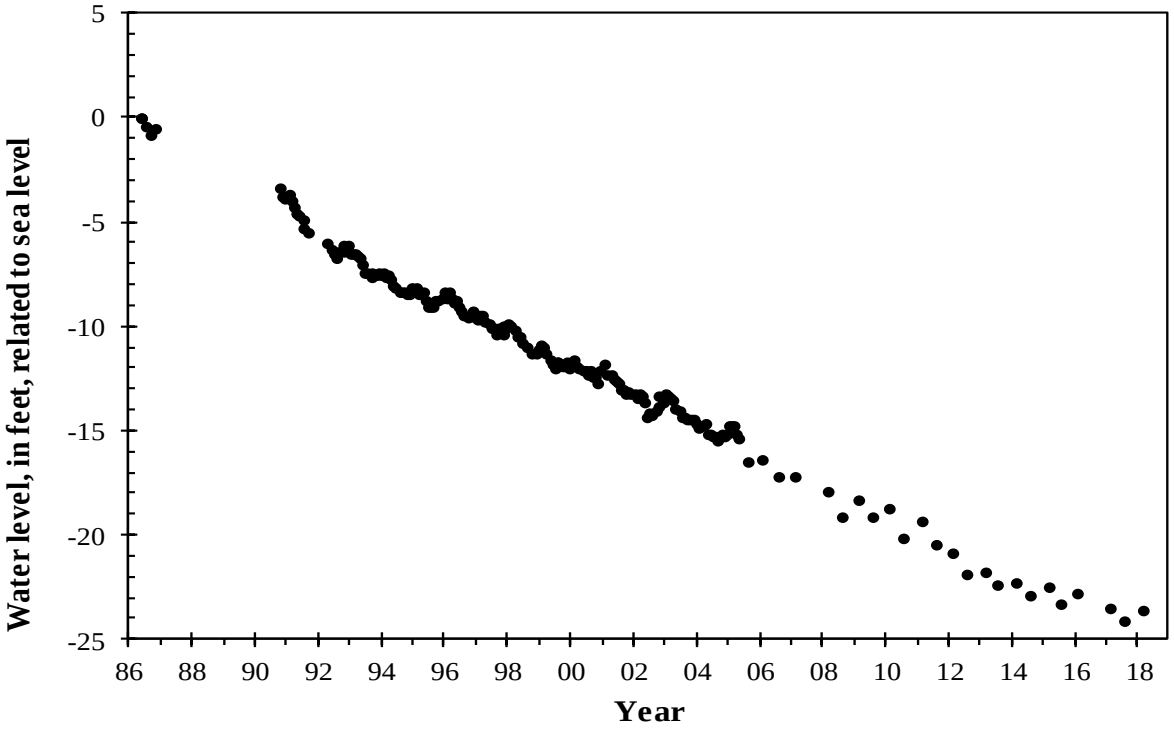
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.

PERIOD OF RECORD: June 1986 to December 1986 and November 1990 to current year.

- FOR RECORD: Highest water level measured, 61.85 ft below land surface, on June 27, 1986; lowest measured, 85.9 ft below land surface, on September 29, 2017.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 13, 2017	85.37				
Sep. 29, 2017	85.9				
Apr. 27, 2018	85.4				



WELL NUMBER: QA Fc 7 **PERMIT NUMBER: QA-73-2191**

LOCATION: Prospect Plantation, west side of Greenwood Shoals. **LAT. 38° 54' 29", LONG. 76° 12' 02"**

AQUIFER: Aquia Aquifer of Early to Late Paleocene age.

WELL CHARACTERISTICS: Drilled, observation, artesian well. Depth is 356 ft;
Casing diameter: 4 in. to 336 ft;
Screen diameter: 4 in. from 336 to 356 ft.

INSTRUMENTATION: Monthly measurements with steel or electric tape.

DATUM: Altitude of land surface is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

MEASURING POINT: Top of casing at land surface.

REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: May 1978 to current year.

EXTREMES FOR RECORD: Highest water level measured, 19.77 ft below land surface, on March 3, 1983; lowest measured, 42.77 ft below land surface, on August 27, 2002.

WATER LEVEL, IN FEET, BELOW LAND SURFACE, FROM APRIL 2017 TO APRIL 2018

Date	Water Level	Date	Water Level	Date	Water Level
April 12, 2017	30.11				
Sep 29, 2017	36.51				
April 27, 2018	29.25