

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

ADMINISTRATIVE REPORT NO. 17-02-01

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

Compiled by
Grufron Achmad



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

2017

SUMMARY

This report presents water-level data for 27 observation wells in Queen Anne's County updated through 2017. Water-level are tabulated for the last 11 or 12 measurements, generally from April 2010 through April 2017. 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. Data were obtained from the National Water Information System, Ground-Water Site Inventory database, 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>.

Columbia (water-table) aquifer. Water levels are measured in two wells in this aquifer (Barclay and Grasonville). Water levels fluctuate seasonally up to eight feet, with no long-term decline.

Aquia aquifer. Water levels are measured in seventeen wells in this aquifer, most of which are located on Kent Island. Most wells show several feet of 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.

Magothy aquifer. One well (QA Ea 27) is completed in this 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.

Upper Patapsco aquifer. Three wells are completed in this aquifer. These wells, which are located in Tuckahoe State Park (QA Ef 29), Kent Island (QA Eb 111), and Kingstown (QA Be 16), all show fairly steady water-level declines of between 0.5 and 1 ft per year over the past twenty years, reflecting pumping effects in Anne Arundel County and Easton.

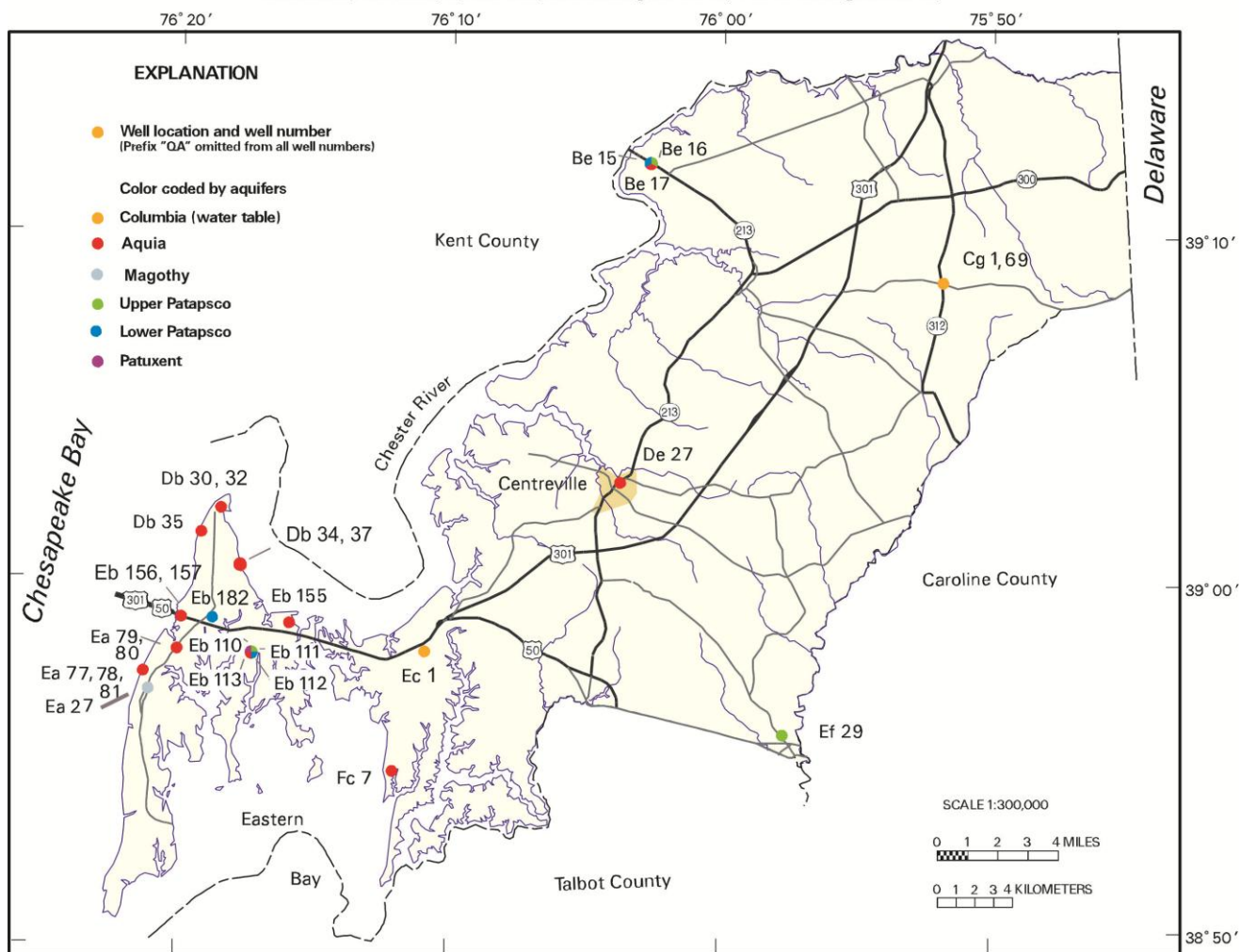
Lower Patapsco aquifer. Three wells are completed in the Lower Patapsco aquifer. Two of the wells (QA Be 15 and Eb 112) averaged less than 1 ft per year over the past 15 years. The water level in well QA Eb 112 appears to be leveling off over the last three years. The long-term trend in the third well (QA Eb 182) cannot yet be determined due to the short period of record.

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 3 ft/year, likely due to pumpage from the Arnold well field in Anne Arundel County, located about 12 miles west of QA Eb 110.

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

<u>Well number</u>	<u>Aquifer</u>	<u>Location</u>
QA Be 15	Lower Patapsco	Kingstown
QA Be 16	Upper Patapsco	Kingstown
QA Be 17	Aquia	Kingstown
QA Cg 69 (replaces QA Cg 1)	Columbia (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	Columbia (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



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.

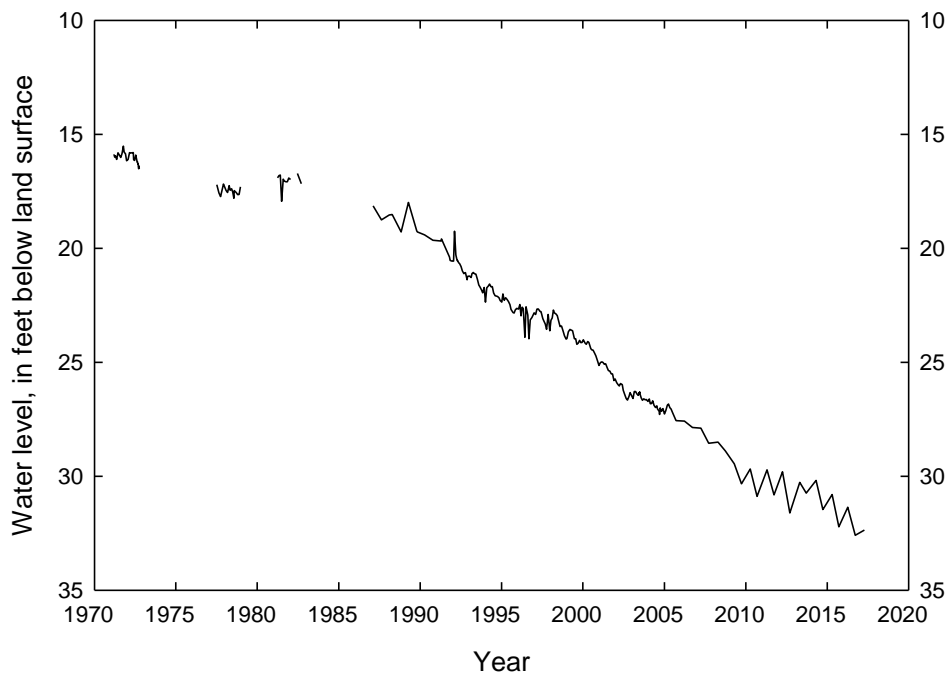
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.

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, 32.59 ft below land surface, on September 22, 2016.

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

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2010	29.68	Sep. 13, 2012	31.61	Apr. 24, 2015	30.80
Sep.13, 2010	30.88	Apr. 25, 2013	30.27	Sep.18, 2015	32.22
Apr. 21, 2011	29.72	Sep. 20, 2013	30.74	Apr. 8, 2016	31.36
Sep.26, 2011	30.82	Apr. 24, 2014	30.18	Sep 22, 2016	32.59
Apr. 2, 2012	29.80	Sep.26, 2014	31.46	Apr. 13, 2017	32.36



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.

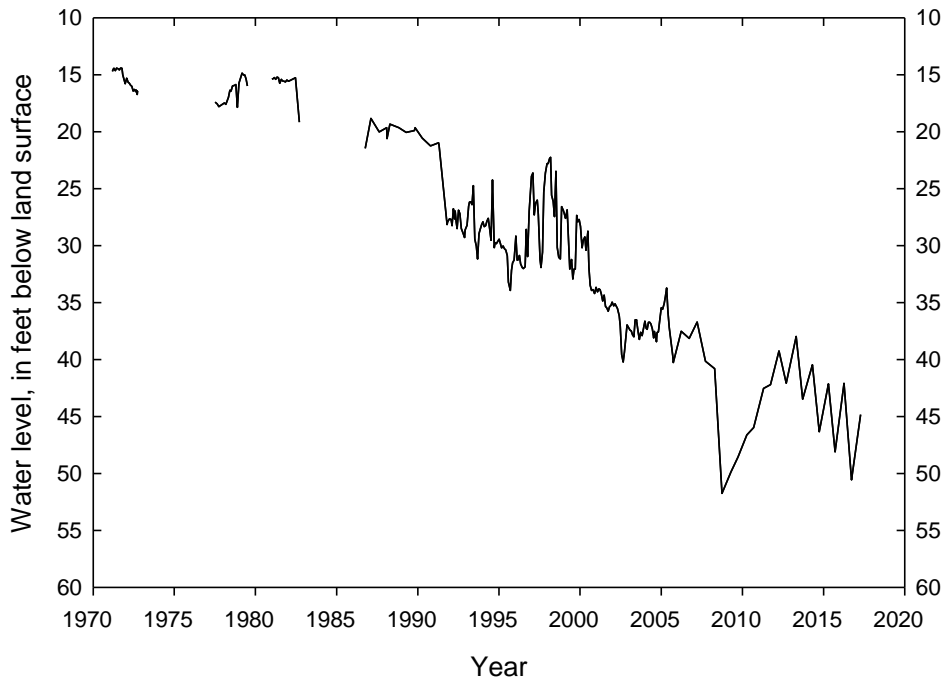
REMARKS: Observation well in the statewide ground-water level network. Water levels may be affected by nearby pumping.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2010	46.62	Sep. 13, 2012	42.08	Apr. 24, 2015	42.13
Sep.13, 2010	45.98	April 25, 2013	37.98	Sep. 18, 2015	48.10
Apr. 21, 2011	42.53	Sep. 20, 2013	43.48	Apr. 8, 2016	42.09
Sep.26, 2011	42.20	Apr. 24, 2014	40.47	Sep. 22, 2016	50.57
Apr. 2, 2012	39.25	Sep. 2, 2014	46.34	Apr. 13, 2017	44.83



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.

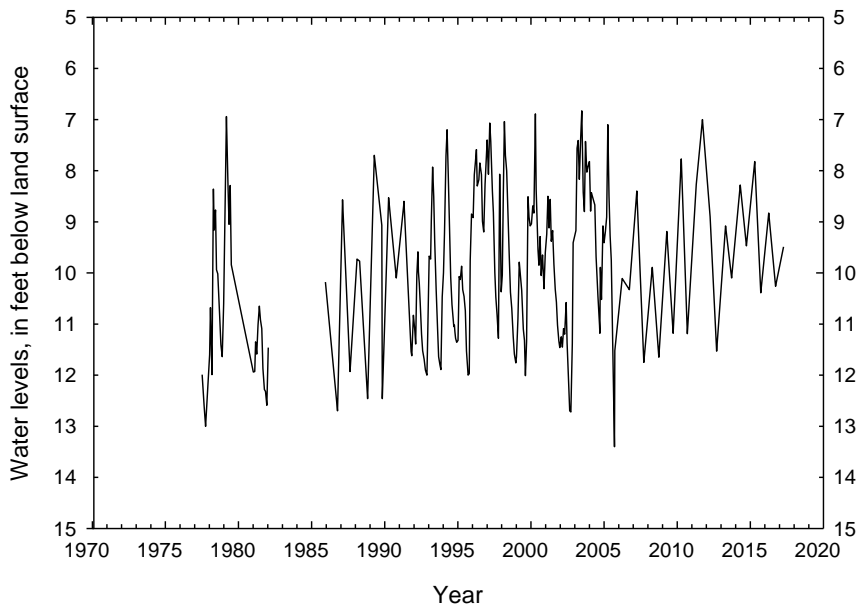
REMARKS: Observation well in the statewide ground-water level network. Water levels may be affected by nearby pumping.

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 2010 TO APRIL 2017

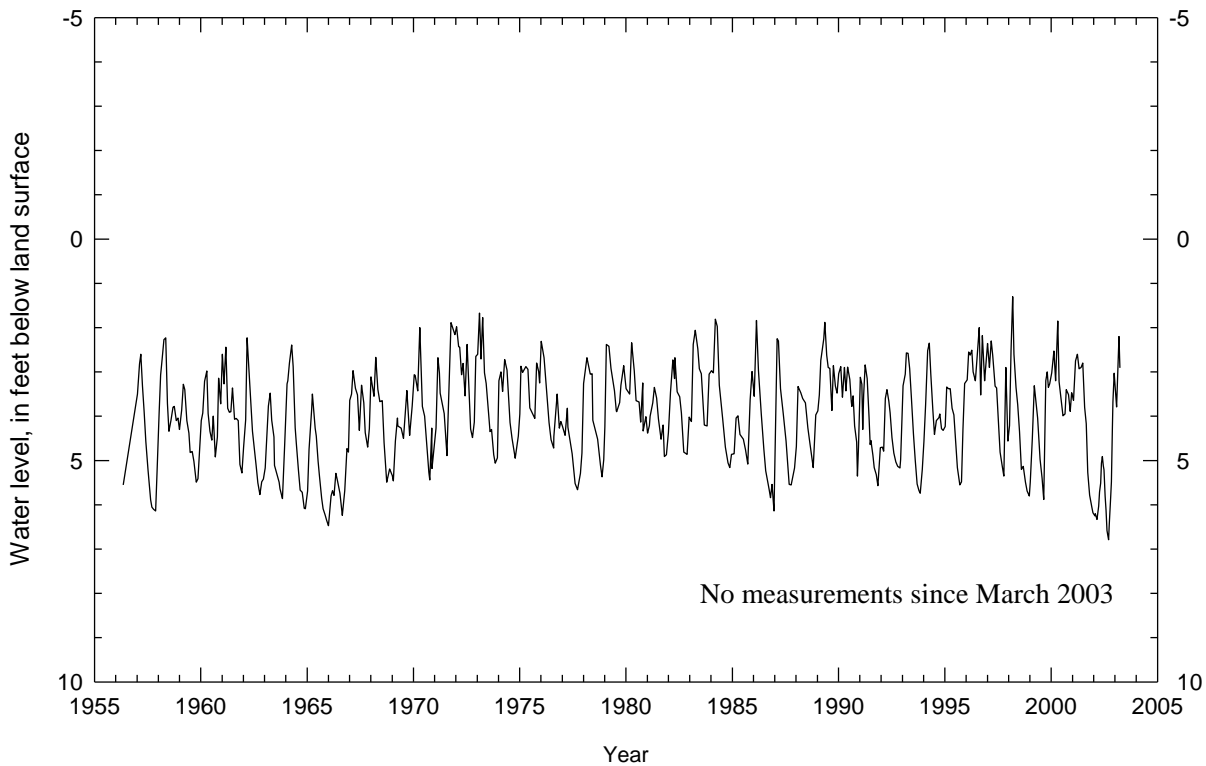
Date	Water Level	Date	Water Level	Date	Water Level
Apr. 12, 2010	7.77	Sep. 13, 2012	11.53	Apr. 24, 2015	7.82
Sep. 13, 2010	11.19	Apr. 25, 2013	9.08	Sep.18, 2015	10.39
Apr. 21, 2011	8.27	Sep. 20, 2013	10.10	Apr. 8, 2016	8.83
Sep. 26, 2011	7.00	Apr. 24, 2014	8.28	Sep. 22, 2016	10.57
Apr. 2, 2012	8.90	Sep.26, 2014	9.47	Apr. 13, 2017	9.49



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: Columbia Aquifer of Late Miocene (?) to 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: Columbia Aquifer of Late Miocene (?) to 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 65 ft above National Geodetic Vertical Datum of 1929, from topographic map.

MEASURING POINT: Lip of hose connector is 1.0 ft above land surface.

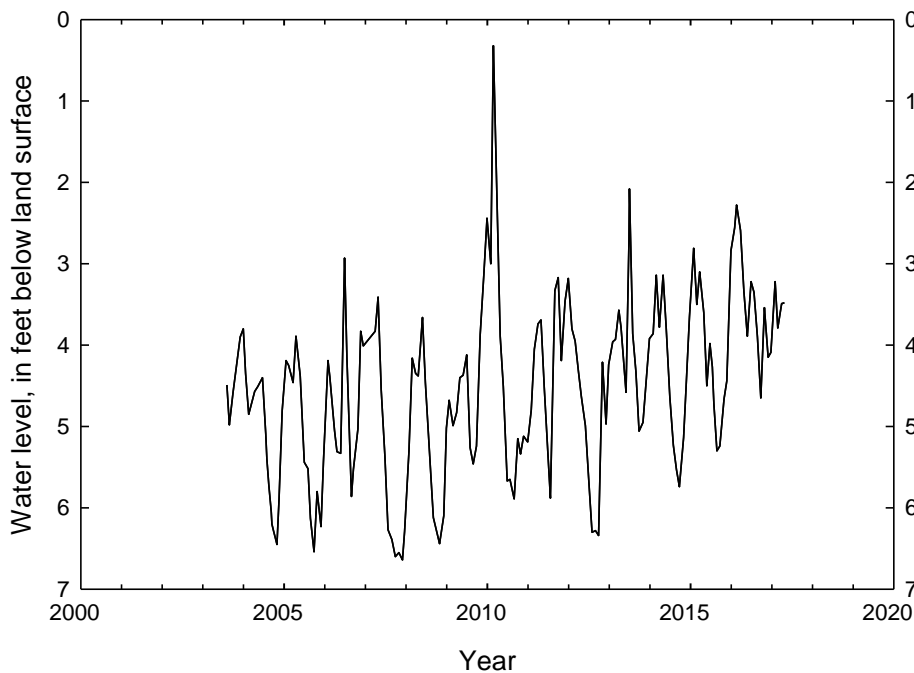
REMARKS: Observation well in the statewide ground-water level network.

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 JUNE 2015 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
June 24, 2015	3.98	Feb. 1, 2016	2.56	Sep. 23, 2016	4.65
July 16, 2015	4.27	Feb. 19, 2016	2.28	Oct. 26, 2016	3.54
July 30, 2015	4.72	Mar. 25, 2016	2.59	Nov. 29, 2016	4.15
Aug. 26, 2015	5.30	Apr. 25, 2016	3.34	Dec. 23, 2016	4.09
Sep 22, 2015	5.24	May 26, 2016	3.89	Jan. 30, 2017	3.22
Oct. 29, 2015	4.66	June 28, 2016	3.22	Feb 23, 2017	3.79
Nov. 23, 2015	4.44	July 25, 2016	3.35	Mar. 30, 2017	3.49
Dec. 30, 2015	2.84	Aug. 24, 2016	3.90	Apr. 24, 2017	3.48



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.

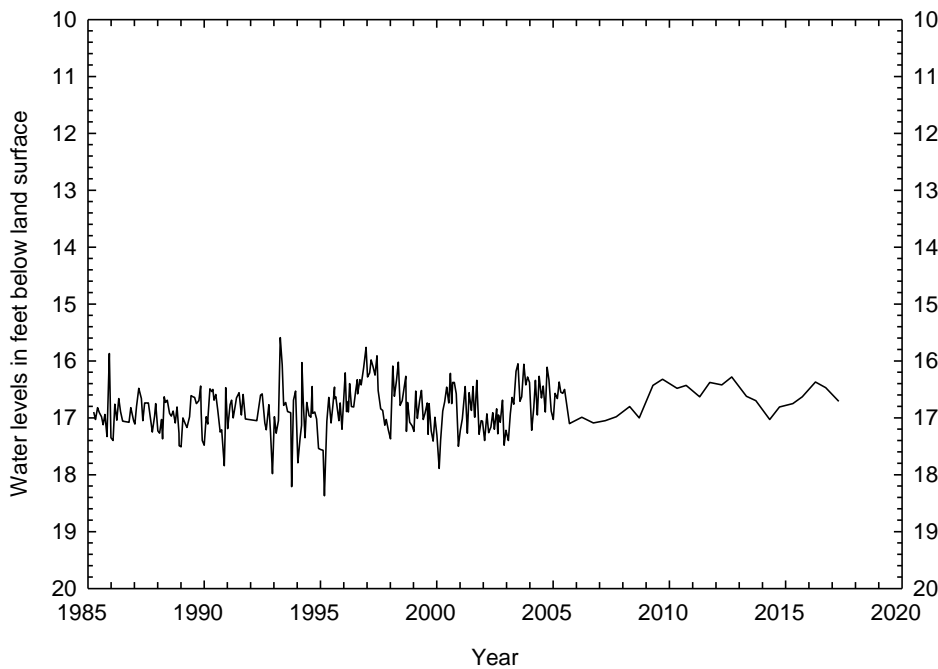
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 30, 2010	16.48	Sep. 05, 2012	16.28	Apr. 24, 2015	16.75
Sep. 30, 2010	16.43	Apr. 25, 2013	16.62	Sep.18, 2015	16.63
Apr. 20, 2011	16.63	Sep. 20, 2013	16.70	Apr. 11, 2016	16.37
Sep. 26, 2011	16.38	Apr. 24, 2014	17.03	Sep. 21, 2016	16.47
Apr. 04, 2012	16.42	Sep.26, 2014	16.81	Apr. 12, 2017	16.71



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.

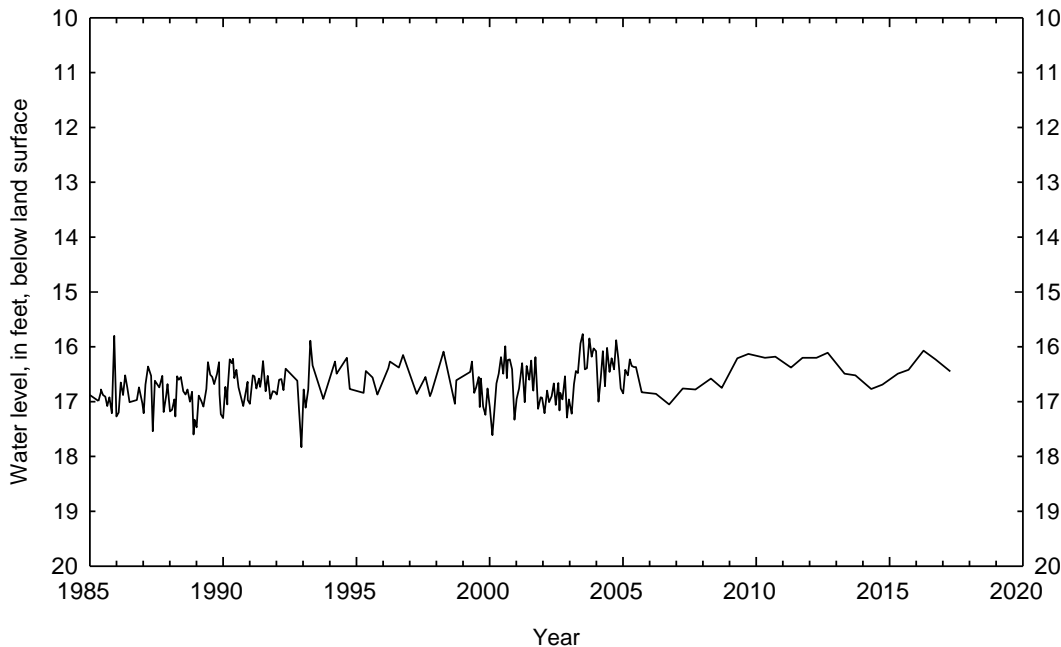
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	16.20	Sep. 5, 2012	16.11	Apr. 24, 2015	16.49
Sep. 20, 2010	16.18	April 25, 2013	16.49	Sep. 18, 2015	16.42
April 21, 2011	16.38	Sep. 20, 2013	16.52	Apr. 11, 2016	16.07
Sep. 26, 2011	16.20	April 24, 2014	16.77	Sep 21, 2016	16.23
April 4, 2012	16.20	Sep. 26, 2014	16.69	Apr. 12, 2017	16.45



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.

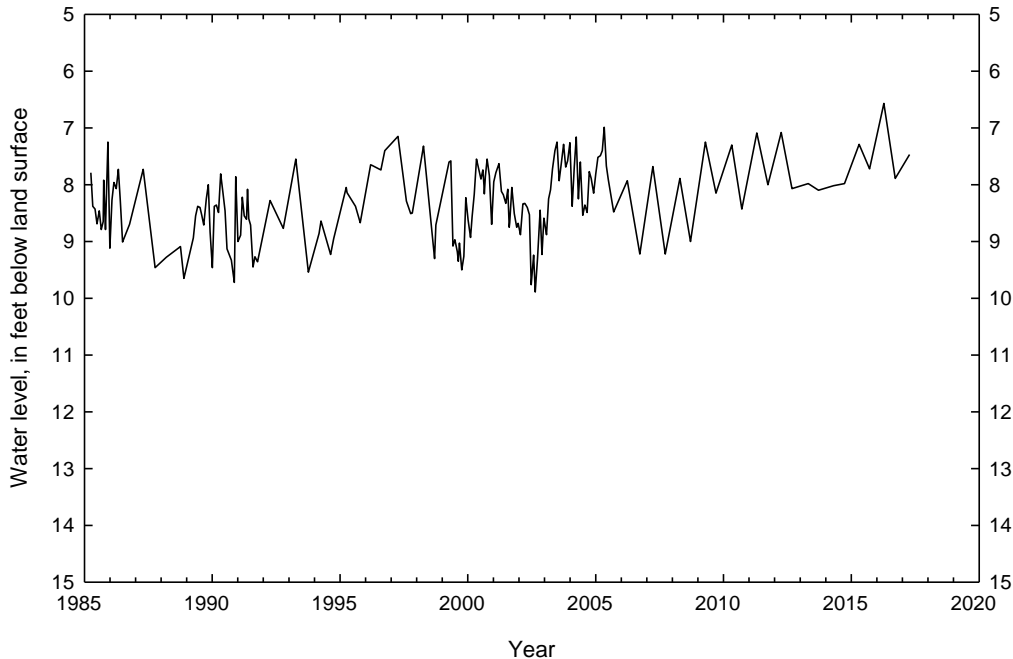
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 30, 2010	7.30	Sep. 4, 2012	8.07	Apr. 24, 2015	7.29
Sep. 20, 2010	8.43	April 25, 2013	7.98	Sep. 18, 2015	7.72
April 21, 2011	7.09	Sep. 20, 2013	8.10	Apr. 11, 2016	6.57
Sep. 26, 2011	8.00	Apr. 24, 2014	8.02	Sep. 21, 2016	7.89
April 4, 2012	7.08	Sep. 26, 2014	7.98	Apr. 12, 2017	7.47



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.

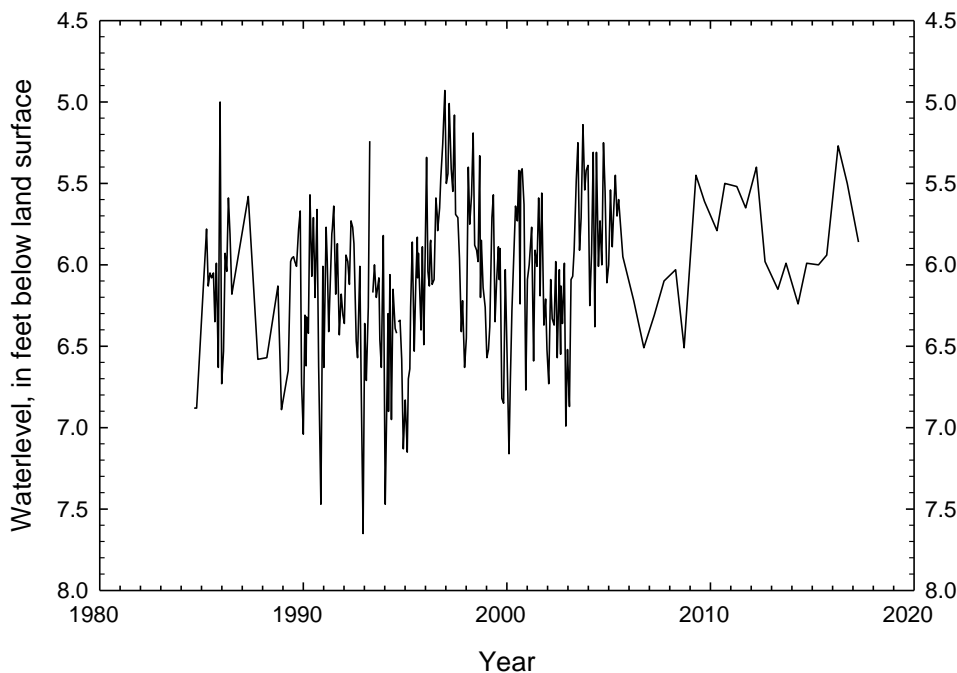
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	5.79	Sep. 6, 2012	5.98	April 24, 2015	6.00
Sep. 16, 2010	5.50	April 25, 2013	6.15	Sep. 18, 2015	5.94
April 21, 2011	5.52	Sep. 20, 2013	5.99	April 11, 2016	5.27
Sep. 29, 2011	5.65	April 24, 2014	6.24	Sep. 21, 2016	5.50
April 4, 2012	5.40	Sep. 26, 2014	5.99	April 12, 2017	5.86



WELL 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.

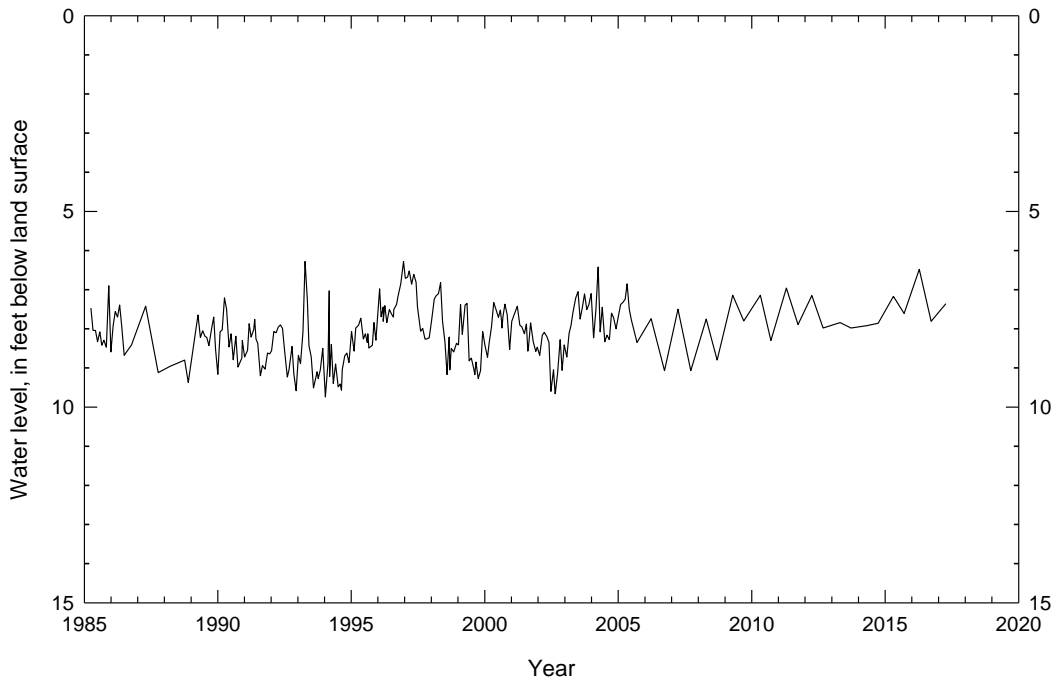
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	7.14	Sep. 9, 2012	7.94	Apr. 24, 2015	7.17
Sep. 20, 2010	8.30	April 25, 2013	7.84	Sep. 18, 2015	7.61
April 21, 2011	6.96	Sep. 20, 2013	7.98	Apr. 11, 2016	6.48
Sep. 26, 2011	7.89	Apr. 24, 2014	7.92	Sep. 21, 2016	7.81
April 4, 2012	7.15	Sep. 26, 2014	7.86	Apr. 12, 2017	7.36



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.

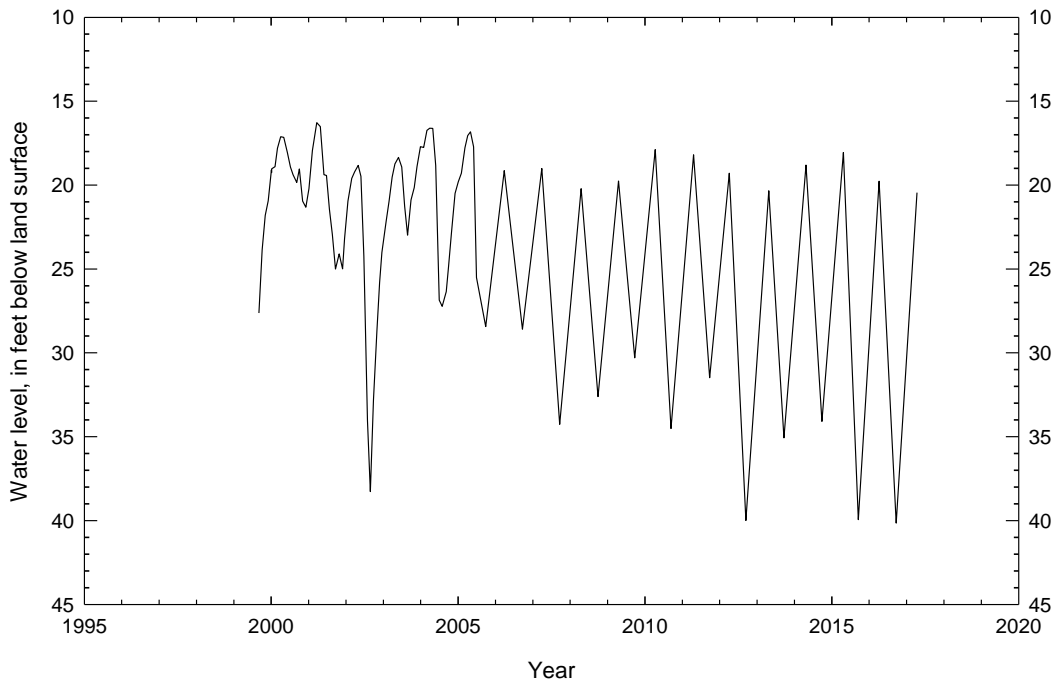
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 12, 2010	17.88	Sep. 13, 2012	39.99	Apr. 24, 2015	18.06
Sep. 13, 2010	34.51	April 25, 2013	20.34	Sep.18, 2015	39.94
April 21, 2011	18.19	Sep. 20, 2013	35.07	Apr. 8, 2016	19.77
Sep. 26, 2011	31.48	Apr. 24, 2014	18.81	Sep. 22, 2016	40.15
April 4, 2012	19.29	Sep.26, 2014	34.09	Apr. 13, 2017	20.45



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.

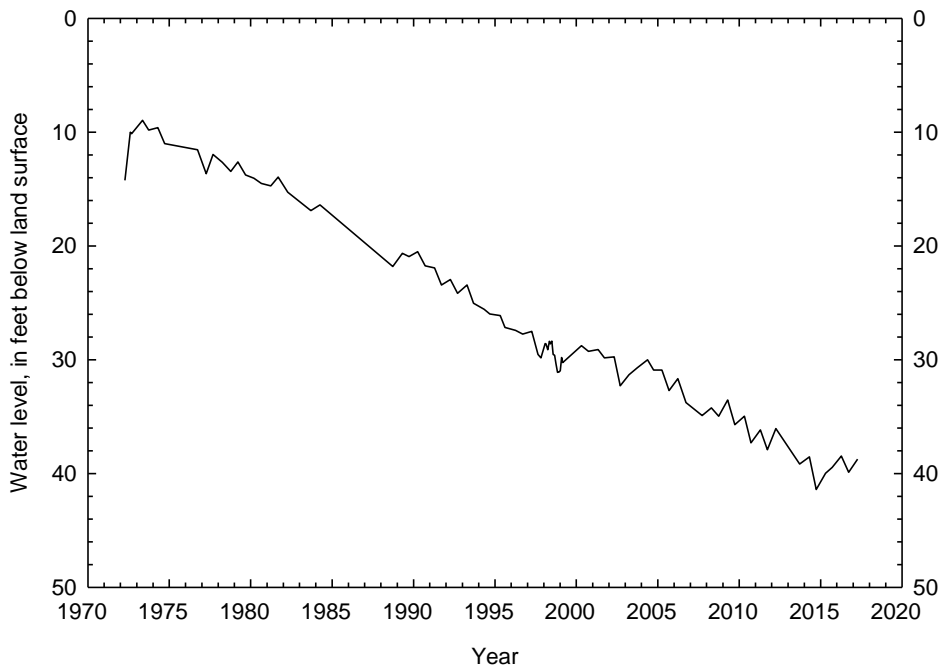
REMARKS: Production well in the Kent Island ground-water monitoring network. Water levels are affected ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
Apr. 30, 2010	34.96	Apr. 4, 2012	36.05	Apr. 24, 2015	39.98
Sep. 24, 2010	37.31	Sep. 20, 2013	39.17	Sep. 18, 2015	39.47
Apr. 21, 2011	36.17	Apr. 24, 2014	38.53	Apr. 11, 2016	38.47
Sep. 26, 2011	37.90	Sep. 26, 2014	41.41	Sep. 21, 2016	39.89
				Apr. 12, 2017	38.73



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.

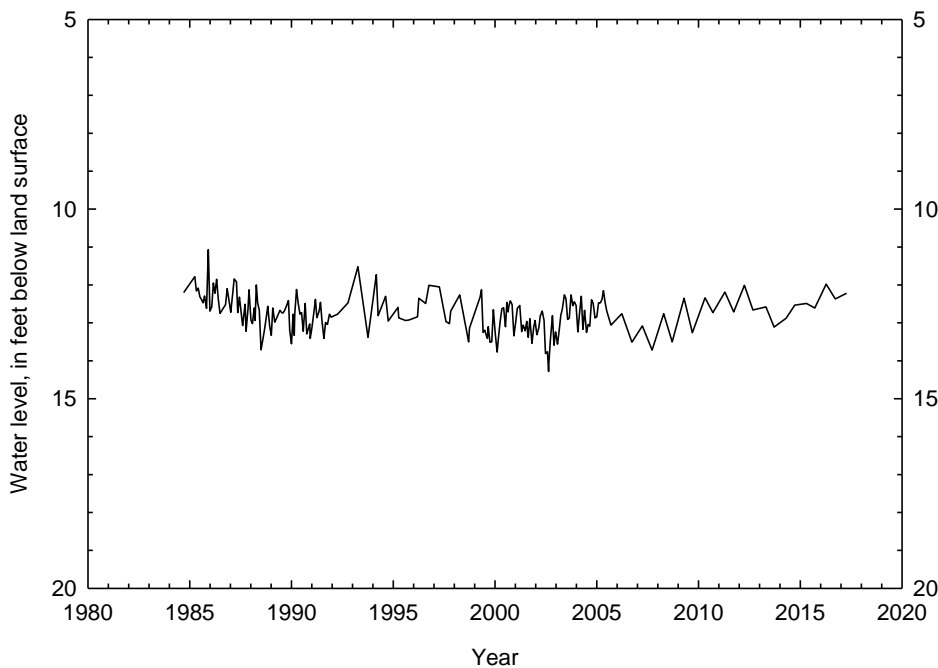
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawals.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	12.34	Sep. 4, 2012	12.66	Apr. 24, 2015	12.49
Sep. 16, 2010	12.73	April 25, 2013	12.58	Sep. 18, 2015	12.61
April 21, 2011	12.19	Sep. 20, 2013	13.11	Apr. 11, 2016	11.98
Sep. 26, 2011	12.71	April 24, 2014	12.88	Sep. 21, 2016	12.37
April 4, 2012	12.01	Sep. 25, 2014	12.53	Apr. 12, 2017	12.22



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.

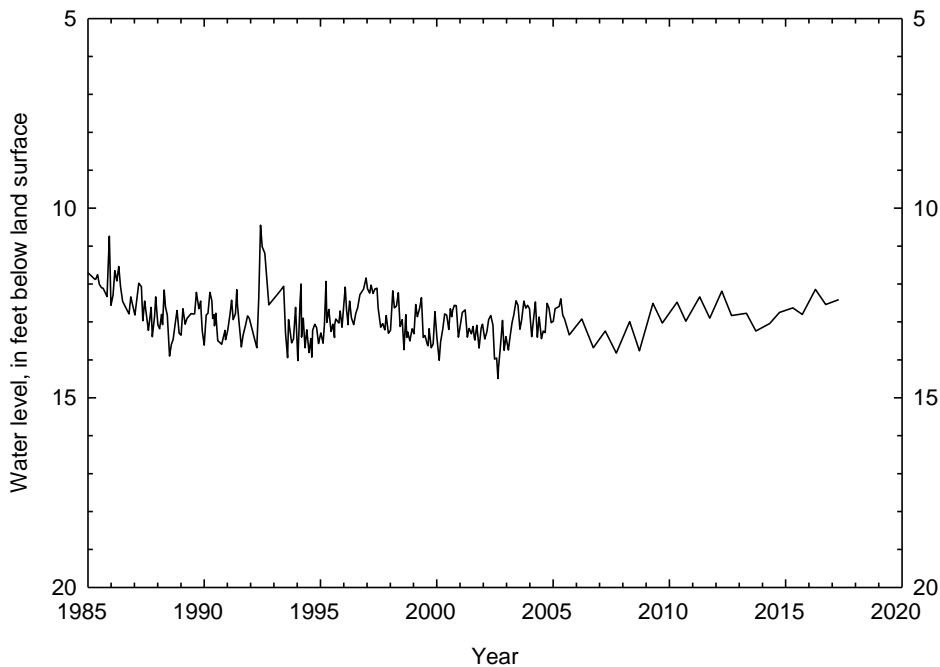
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	12.48	Sep. 4, 2012	12.83	April 24, 2015	12.63
Sep. 16, 2010	12.98	April 25, 2013	12.77	Sep. 18, 2015	12.80
April 21, 2011	12.34	Sep. 20, 2013	13.24	April 11, 2016	12.14
Sep. 26, 2011	12.90	April 24, 2014	13.04	Sep. 21, 2016	12.54
Apr. 4, 2012	12.19	Sep. 25, 2014	12.75	April 12, 2017	12.41



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.

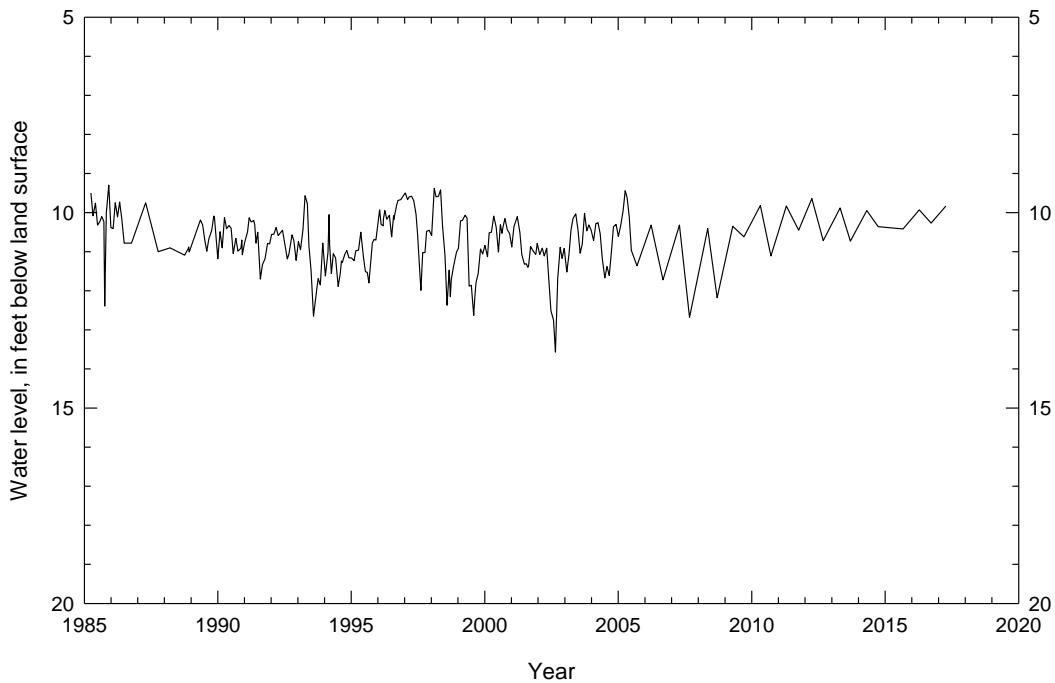
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

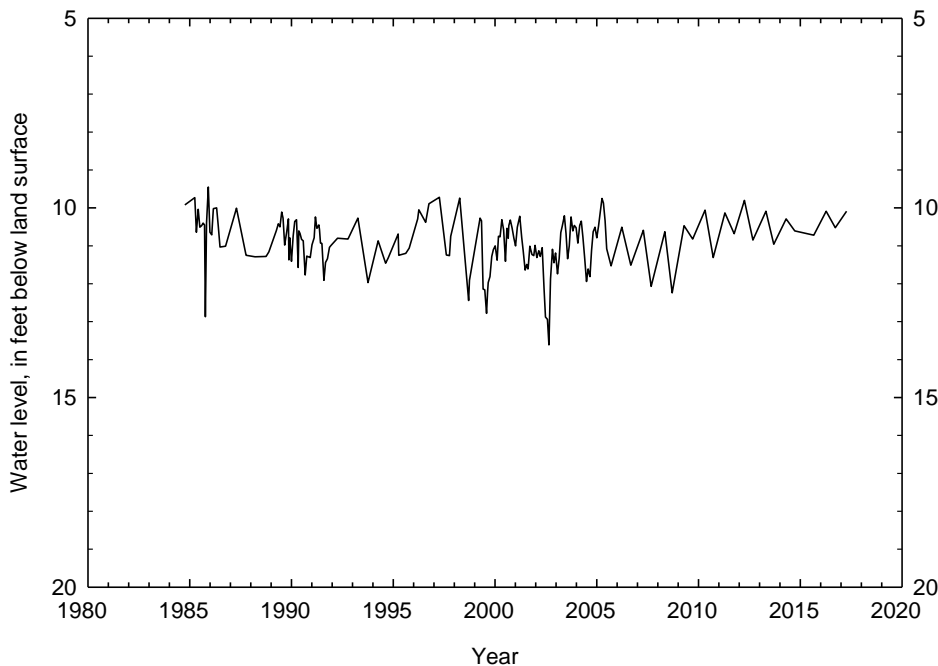
Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	9.82	Sep. 5, 2012	10.72	Sep. 3, 2015	10.42
Sep. 21, 2010	11.11	April 25, 2013	9.88	April 11, 2016	9.93
April 21, 2011	9.83	Sep. 13, 2013	10.73	Sep. 21, 2016	10.27
Oct. 5, 2011	10.45	April 24, 2014	9.95	April 12, 2017	9.83
April 4, 2012	9.64	Sep. 26, 2014	10.36		



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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	10.06	Sep. 5, 2012	10.85	Sep 3, 2015	10.72
Sep. 21, 2010	11.31	April 25, 2013	10.09	April 11, 2016	10.09
April 21, 2011	10.13	Sep. 13, 2013	10.96	Sep. 21, 2016	10.52
Oct. 5, 2011	10.68	April 24, 2014	10.29	April 12, 2017	10.09
April 4, 2012	9.80	Sep. 26, 2014	10.61		



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.

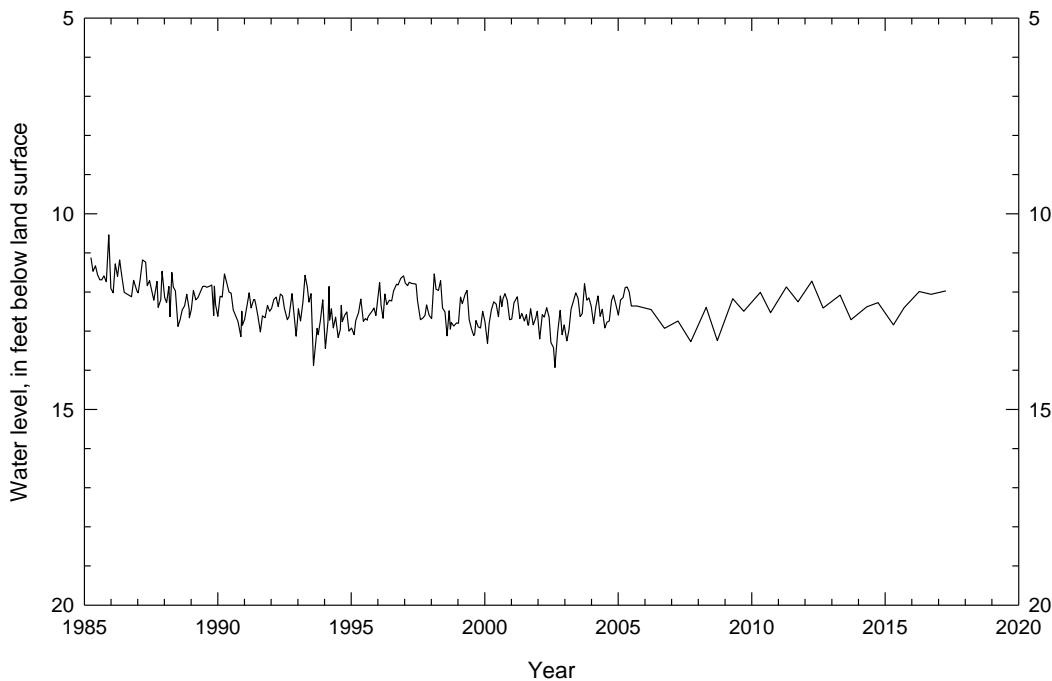
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	12.01	Sep. 4, 2012	12.41	April 24, 2015	12.84
Sep. 16, 2010	12.53	April 25, 2013	12.08	Sep. 18, 2015	12.40
April 21, 2011	11.87	Sep. 20, 2013	12.71	April 11, 2016	11.99
Sep. 26, 2011	12.25	April 24, 2014	12.38	Sep. 21, 2016	12.06
April 21, 2012	11.72	Sep. 25, 2014	12.27	April 12, 2017	11.97



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.

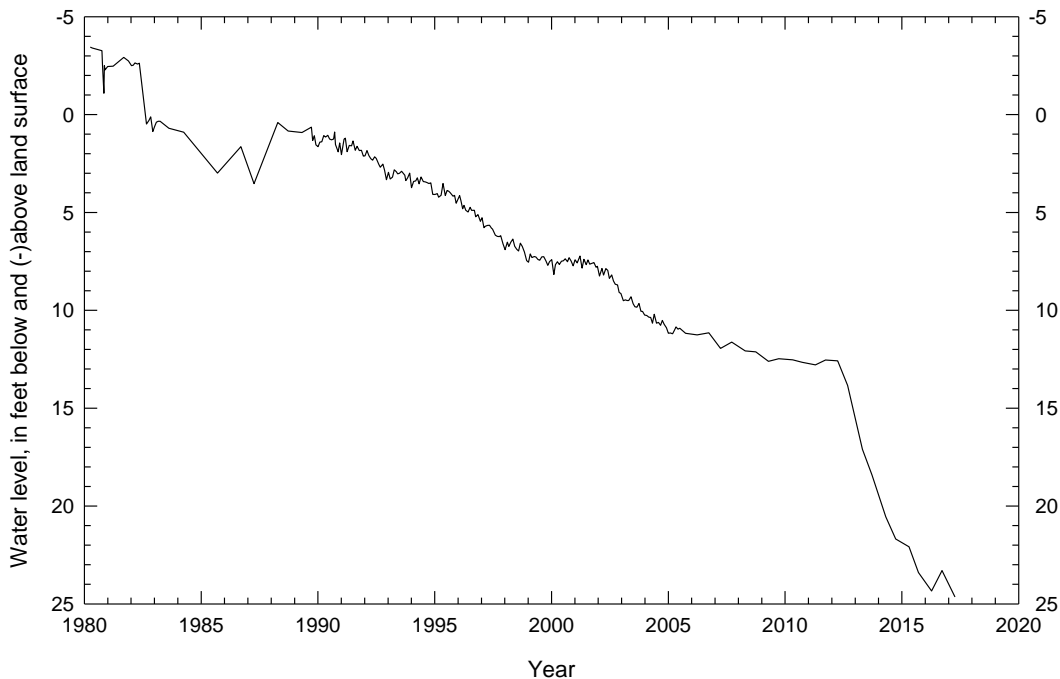
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.

PERIOD OF RECORD: January 1980 to current year.

EXTREMES FOR RECORD: Highest water level measured, 6.81 ft above land surface, on April 4, 1980; lowest measured, 24.65ft below land surface, on April 11, 2017.

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

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	12.53	Sep. 5, 2012	13.84	Apr. 24, 2015	22.08
Sep. 24, 2010	12.66	April 25, 2013	17.10	Sep. 18, 2015	23.40
April 21, 2011	12.79	Sep. 20, 2013	18.41	Apr. 11, 2016	24.34
Sep.26, 2011	12.54	April 24, 2014	20.55	Sep. 21, 2016	23.30
April 4, 2012	12.58	Sep. 26, 2014	21.68	April 12, 2017	24.65



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.

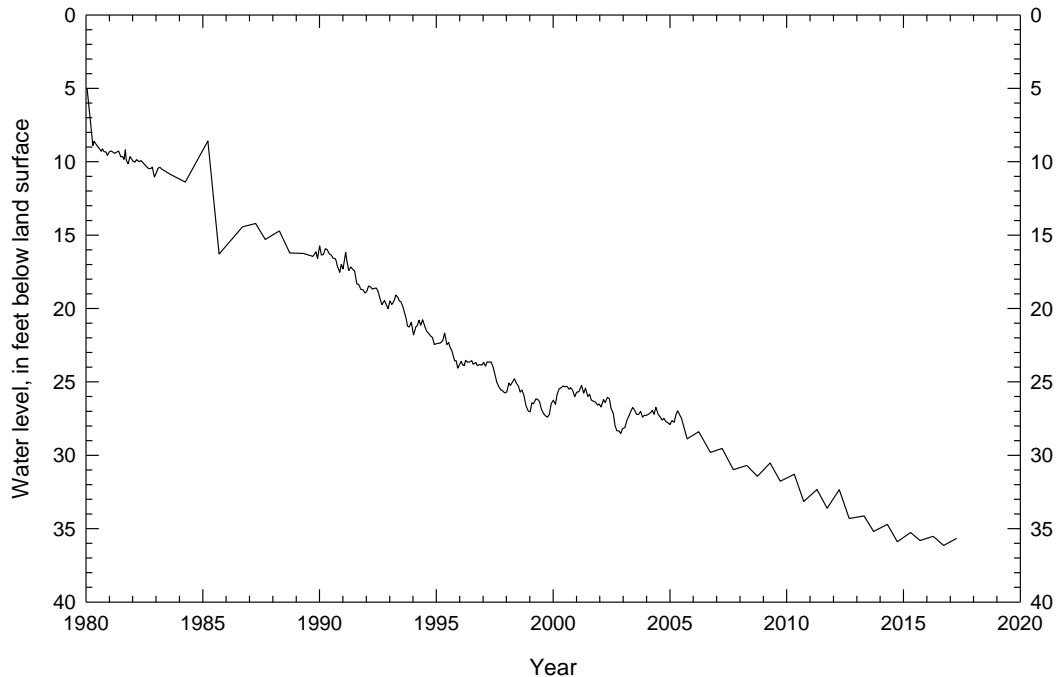
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local and regional ground-water withdrawal.

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, 36.14 ft below land surface, on September 21, 2016.

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

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	31.29	Sep. 5, 2012	34.31	April 24, 2015	35.27
Sep. 24, 2010	33.14	April 25, 2013	34.13	Sep. 18, 2015	35.81
April 21, 2011	32.33	Sep. 20, 2013	35.19	April 11, 2016	35.52
Sep. 26, 2011	33.61	April 24, 2014	34.71	Sep. 21, 2016	36.14
April 4, 2012	32.34	Sep. 26, 2014	35.89	April 12, 2017	35.66



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.

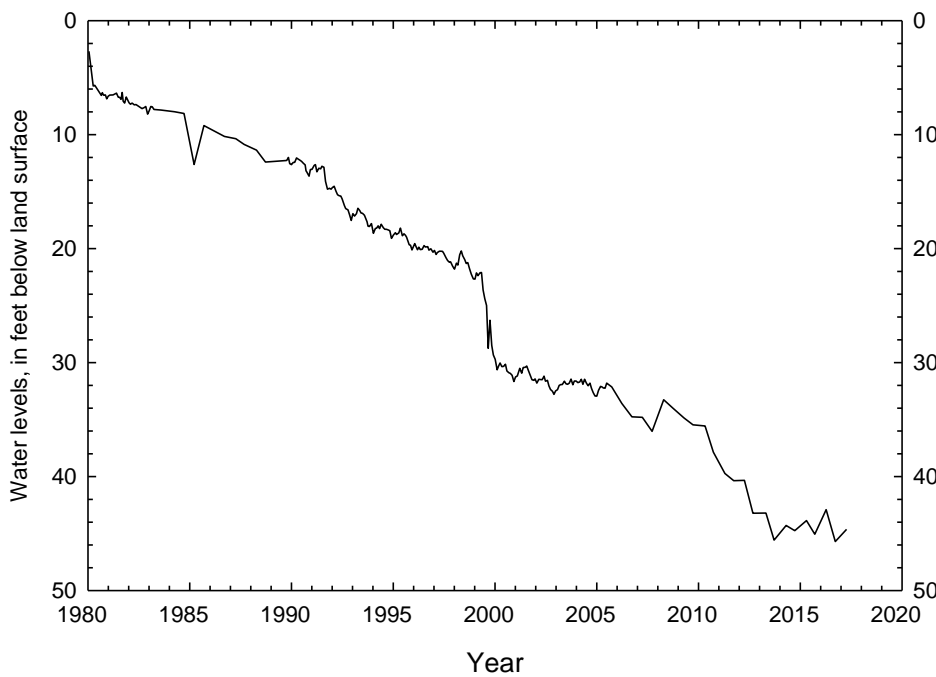
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local and regional ground-water withdrawal.

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, 45.71 ft below land surface, on September 21, 2016.

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

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	35.56	Sep. 5, 2012	43.22	Apr. 24, 2015	43.87
Sep. 24, 2010	37.86	April 25, 2013	43.21	Sep. 18, 2015	45.06
April 21, 2011	39.73	Sep. 20, 2013	45.58	April 11, 2016	42.90
Sep. 26, 2011	40.36	April 24, 2014	44.29	Sep. 21, 2016	45.71
April 4, 2012	40.34	Sep. 26, 2014	44.75	April 12, 2017	44.64



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.

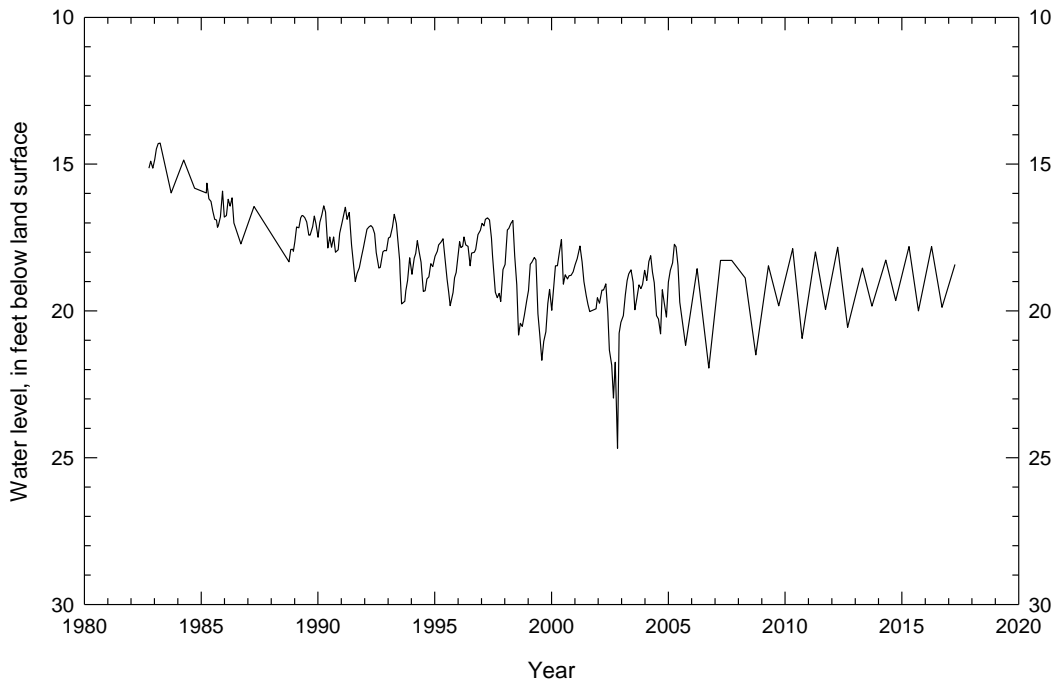
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: October 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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	17.88	Sep. 5, 2012	20.56	Apr. 24, 2015	17.81
Sep. 24, 2010	20.94	April 25, 2013	18.54	Sep. 18, 2015	20.00
April 21, 2011	17.99	Sep. 20, 2013	19.84	April 11, 2016	17.81
Sep. 26, 2011	19.95	April 24, 2014	18.27	Sep. 21, 2016	19.88
April 21, 2012	17.83	Sep. 26, 2014	19.65	April 12, 2017	18.42



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.

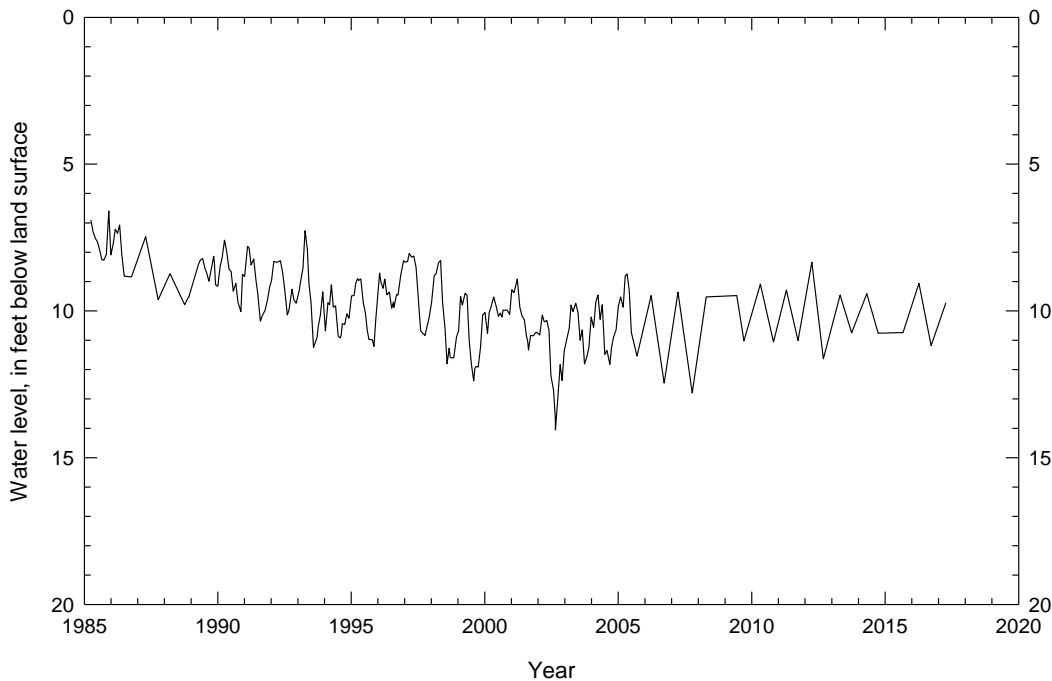
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: April 1985 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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	9.09	Sep 7, 2012	11.63	Sep. 3, 2015	10.74
Oct. 26, 2010	11.06	April 25, 2013	9.46	April 8, 2016	9.06
April 21, 2011	9.29	Sep. 30, 2013	10.75	Sep. 9, 2016	11.18
Sep. 26, 2011	11.01	April 24, 2014	9.41	April 12, 2017	9.72
April 4, 2012	8.34	Sep. 26, 2014	10.76		



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.

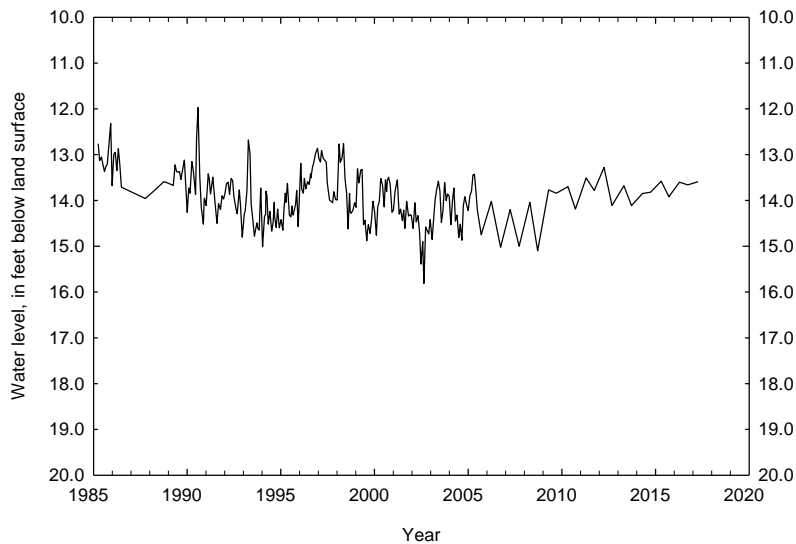
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

PERIOD OF RECORD: April 1985 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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	13.70	Sep. 6, 2012	14.11	Apr. 24, 2015	13.58
Sep 21, 2010	14.19	April 25, 2013	13.68	Sep. 18, 2015	13.92
April 21, 2011	13.51	Sep. 20, 2013	14.11	Apr. 11, 2016	13.60
Sep 26, 2011	13.78	April 24, 2014	13.85	Sep.21, 2016	13.66
April 4, 2012	13.28	Sep. 26, 2014	13.82	Apr. 12, 2017	13.59



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 11.52 ft above National Geodetic Vertical Datum of 1929.

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

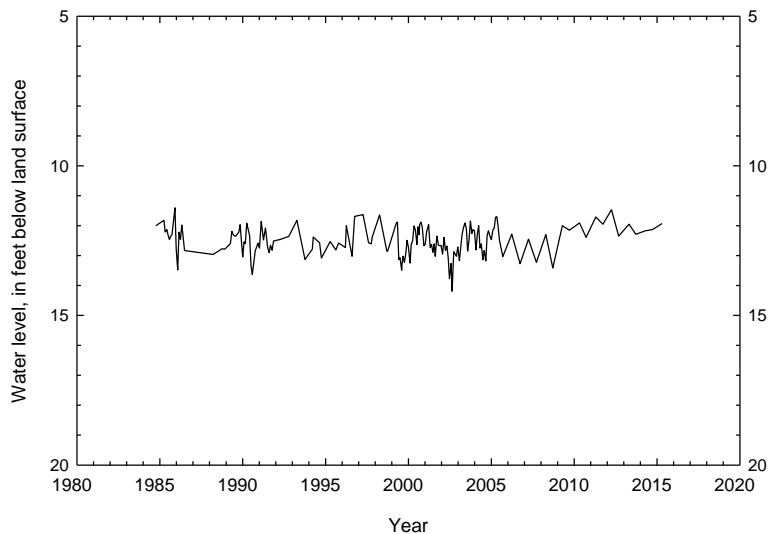
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal.

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
April 30, 2010	11.91	Sep. 6, 2012	12.35	Apr. 24, 2015	11.93
Sep. 21, 2010	12.39	April 25, 2013	11.95	Sep.18, 2015	12.10
April 21, 2011	11.71	Sep. 20, 2013	12.29	Apr. 11, 2016	11.62
Sep. 26, 2011	11.95	April 24, 2014	12.17	Sep.21, 2016	11.90
April 4, 2012	11.47	Sep. 26, 2014	12.13	Apr. 12, 2017	11.88



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.

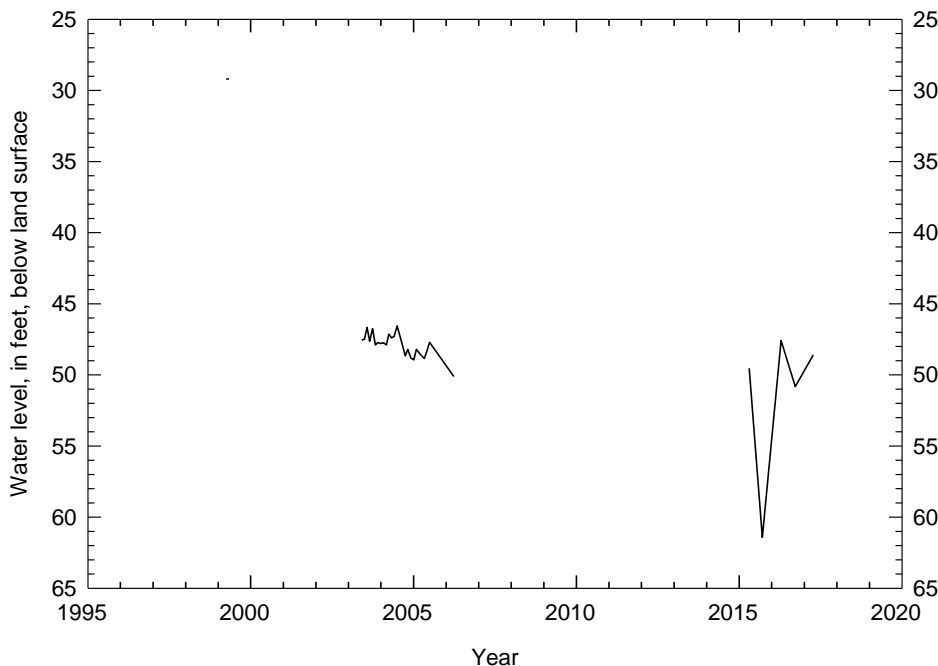
REMARKS: Observation well in the Kent Island ground-water monitoring network. Water levels are affected by local ground-water withdrawal. Measurement resumed since April 2015.

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
Mar. 9, 2005	48.50	March 28, 2006	50.11	Apr. 15, 2016	47.59
May 2, 2005	48.85	Apr. 24, 2015	49.53	Sep. 21, 2016	50.82
June 1, 2005	48.28	Sep. 18, 2015	61.43	Apr. 12, 2017	48.59
June 29, 2005	47.70				



WELL NUMBER: QA Ec 1
LOCATION: Near Grasonville, south side of MD Rte. 18
 and northeast of Nesbit Rd.

PERMIT NUMBER: None
LAT. 38° 57' 56", **LONG.** 76° 10' 53"

AQUIFER: Columbia 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.

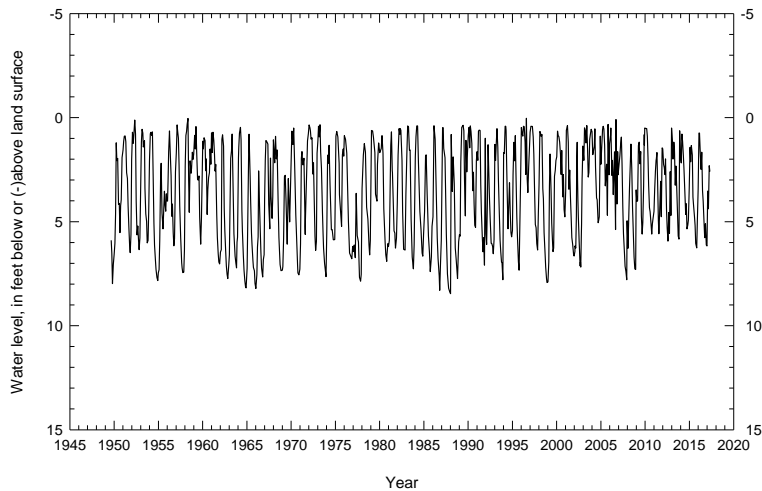
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by
 local ground-water withdrawal.

PERIOD OF RECORD: September 1949 to current year.

EXTREMES FOR RECORD: Highest water level measured, 0.03 ft below 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 MAY 2015 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
May 27, 2015	3.82	Feb. 1, 2016	0.74	Sep. 23, 2016	5.77
June 23	4.25	Feb. 19	0.74	Oct. 26	5.10
July 29	4.74	Mar. 25	1.69	Nov. 29	6.12
Aug. 25	5.18	Apr. 27	2.49	Dec. 23, 2016	6.17
Sep. 21	6.04	May 26	1.66	Jan. 30, 2017	3.53
Oct. 29	6.26	June 28	3.52	Feb 23	4.38
Nov. 23	4.91	July 25	4.02	Mar. 30	2.31
Dec. 30, 2015	3.42	Aug. 24, 2016	5.02	Apr. 24, 2017	2.59



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.

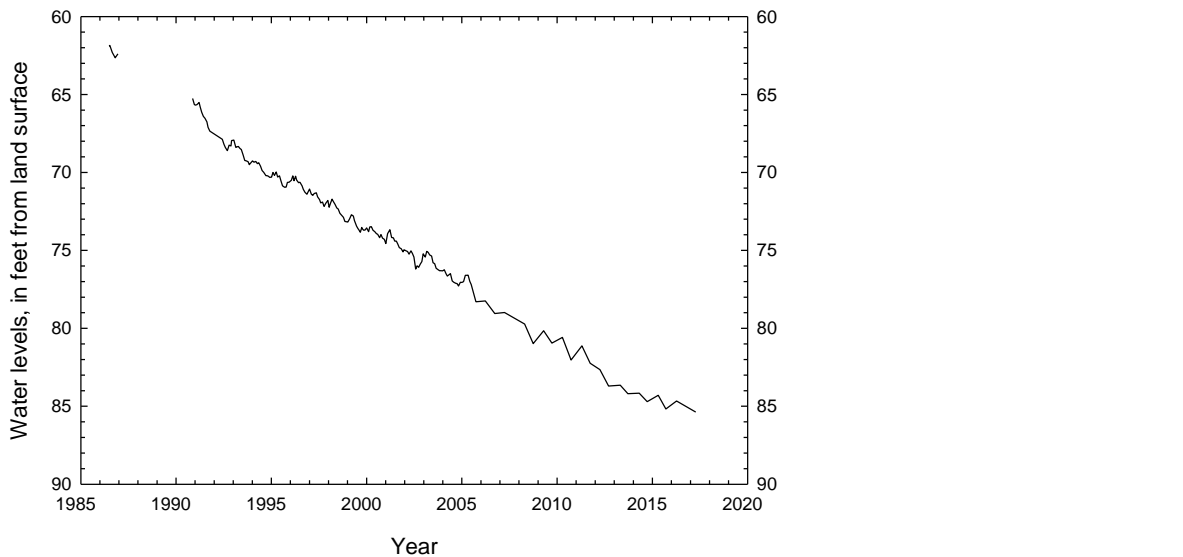
REMARKS: Observation well in the statewide ground-water level network. Water levels are affected by regional ground-water withdrawal.

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

- FOR RECORD: Highest water level measured, 62.30 ft below land surface, on August 27, 1986; lowest measured, 85.37 ft below land surface, on April 12, 2017.

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

Date	Water Level	Date	Water Level	Date	Water Level
April 12, 2010	80.58	Sep. 13, 2012	83.70	Apr. 24, 2015	84.30
Sep. 24, 2010	82.03	April 25, 2013	83.65	Sep. 18, 2015	85.17
April 21, 2011	81.13	Sep. 20, 2013	84.19	Apr. 8, 2016	84.66
Sep. 26, 2011	82.24	April 24, 2014	84.16	Apr. 13, 2017	85.37
April 2, 2012	82.65	Sep. 26, 2014	84.70		



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: February 1980 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 2010 TO APRIL 2017

Date	Water Level	Date	Water Level	Date	Water Level
April 30, 2010	29.14	Sep. 13, 2012	38.84	April 24, 2015	29.48
Sep. 24, 2010	40.67	April 25, 2013	29.75	Sep. 18, 2015	38.68
April 21, 2011	29.70	Sep. 20, 2013	37.05	April 8, 2016	29.76
Sep. 26, 2011	36.63	April 24, 2014	29.82	Sep. 21, 2016	36.43
April 4, 2012	28.77	Sep. 26, 2014	35.99	April 12, 2017	30.11

