



Water-Data Report 2011

371132076405501 Local number 57F 16 SOW 087A

Northern Atlantic Coastal Plain aquifer system
Patuxent Formation

Surry County, VA

LOCATION.--Lat 37°11'32", long 76°40'55" referenced to North American Datum of 1927, Surry County, VA, Hydrologic Unit 02080206, at the end of State Highway 650 in Homewood, 7.6 mi northeast of Bacons Castle. Owner: Virginia Department of Environmental Quality.

GROUNDWATER RECORDS

WELL CHARACTERISTICS.--Depth 1,206 ft. Upper casing diameter 4.00 in; top of first opening 1,170 ft, bottom of last opening 1,185 ft. Drilled observation water well, screened 1,170 to 1,185 ft.

DATUM.--Land-surface datum is 5 ft above National Geodetic Vertical Datum of 1929. Measuring point: TOP OF CASING, 1.50 ft above land-surface datum, July 20, 1978, to present.

PERIOD OF RECORD.--July 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

GAGE.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

REMARKS.--Well is located in Lower Potomac aquifer of Cretaceous age. Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown. Water from this well is known to contain concentrations of dissolved solids greater than 1,000 mg/L.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 53.22 ft below land-surface datum, July 20, 1978; lowest measured, 98.60 ft below land-surface datum, Oct. 22, 2009.

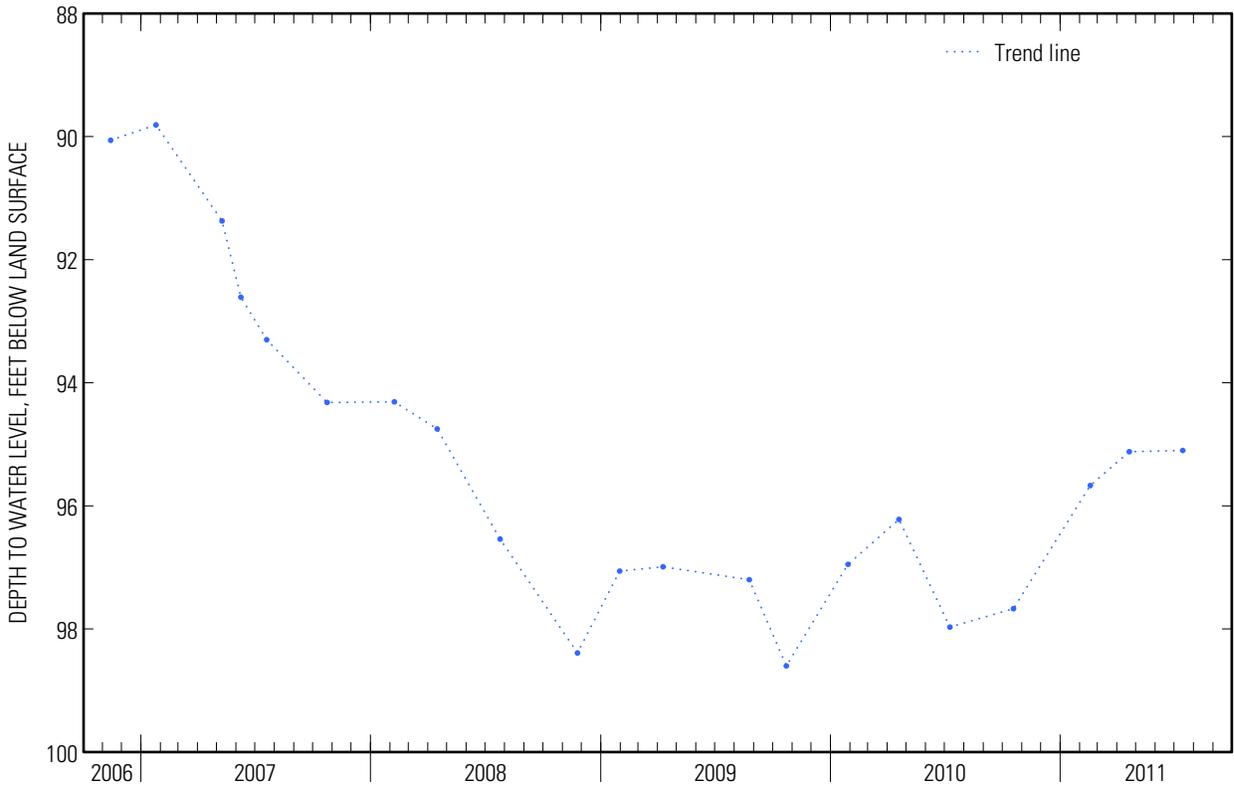
**WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

[Measurement method: S, steel tape. Water-level status: - , static.]

Date	Water level	Measure-ment method	Water-level status	Date	Water level	Measure-ment method	Water-level status
Oct 18	97.67	S	--	Apr 20	95.12	S	--
Feb 17	95.67	S	--	Jul 14	95.10	S	--

Water year 2011 highest: 95.10, Jul 14, 2011; lowest: 97.67, Oct 18, 2010

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WATER-QUALITY RECORDS

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 1 of 4

[%, percent; CaCO₃, calcium carbonate; NTRU, nephelometric turbidity ratio unit; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; 217PTXN, Patuxent Formation; <, less than; M, presence verified but not quantified]

Date	Sample start time	Medium name	Sample type	Geologic unit code	Barometric pressure, mm Hg (00025)	Depth to water level, ft below land surface (72019)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	Flow rate, instantaneous, gallons per minute (00059)	pH, water, unfiltered, field, standard units (00400)
05-20-2011	1300	Groundwater	Regular	217PTXN	763	94.91	< 1.0	1	7.1	7.9

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 2 of 4

[%, percent; CaCO₃, calcium carbonate; NTRU, nephelometric turbidity ratio unit; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; 217PTXN, Patuxent Formation; <, less than; M, presence verified but not quantified]

Date	Sample start time	Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Depth to bottom of sample interval, feet below land surface datum (72016)	Depth to top of sample interval, feet below land surface datum (72015)	Sampling depth, ft (00003)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Hardness, water, mg/L as CaCO ₃ (00900)
05-20-2011	1300	6,700	21.2	5.0	1,185	1,170	117	3,740	104

371132076405501 Local number 57F 16 SOW 087A—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 4

[%, percent; CaCO₃, calcium carbonate; NTRU, nephelometric turbidity ratio unit; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; 217PTXN, Patuxent Formation; <, less than; M, presence verified but not quantified]

Date	Sample start time	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Bromide, water, filtered, mg/L (71870)	Carbonate, water, filtered, inflection-point incremental titration method, field, mg/L (00452)
05-20-2011	1300	23.5	11.0	19.4	1,320	267	325	8.72	2

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 4 of 4

[%, percent; CaCO₃, calcium carbonate; NTRU, nephelometric turbidity ratio unit; SiO₂, silicon dioxide; ft, feet; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; 217PTXN, Patuxent Formation; <, less than; M, presence verified but not quantified]

Date	Sample start time	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Sulfide, water, unfiltered, field, milligrams per liter (99119)	Iron, water, filtered, μg/L (01046)	Manganese, water, filtered, μg/L (01056)
05-20-2011	1300	2,190	.91	18.5	136	M	585	46.0