

Water-Data Report 2011

261304080072501 Local number G 2896. USGS Observation Well near Pompano Beach, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Broward County, FL

LOCATION.--Lat 26°13'05.6", long 80°07'24.7" referenced to North American Datum of 1983, in SE ¼ NE ¼ SE ¼ sec.2, T.49 S., R.42 E., Broward County, FL, Hydrologic Unit 03090202, at southwest corner of intersection of Cypress Road South and SW 9th Street, 56.5 ft southwest of the fire hydrant.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 100.5 ft. Upper casing diameter 2 in.; top of first opening 90.5 ft, bottom of last opening 100.5 ft.

DATUM.--Land-surface datum is 6.80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 6.79 ft above National Geodetic Vertical Datum of 1929, Oct. 15, 1997, to present.

PERIOD OF RECORD.--April 2000 to current year. See REMARKS.

INSTRUMENTATION.--Quarterly measurement with chalked steel tape or electric tape. Annual profile by electromagnetic induction logger. See REMARKS.

REMARKS.--This well is also monitored for salinity, including an annual electromagnetic induction log. Quarterly water-level measurements and salinity monitoring began in October 2000. Electromagnetic induction logs were collected from April 2000 to May 2011. Electromagnetic induction logs are used to assess the movement of the fresh-water/salt-water interface in ground water. See [RECORDS OF BULK CONDUCTIVITY](#).

In WY2008, the instrument used to calibrate the induction probe was re-examined, and found to have been constructed to a different specification than originally communicated by the manufacturer. As a consequence of this calibration problem, logs of bulk conductivity published from 2002 to 2008 are considered to be in error. The 0.7686 multiplier correction to conductivity data collected prior to WY2002, as referenced in previous data publications, is not required. Instead, a 1.33 multiplier correction is required for bulk conductivity data collected from 2002 to 2007. A 1.0 multiplier has been applied to the remainder of the data, to the current year. The logs published in this report include the noted corrections to date. However, the depths of any hydrologic or lithologic features previously shown in the published logs are not affected.

In order to display changes in bulk conductivity between induction logs collected over the period of record, each log has been adjusted to a median conductivity value at a depth that corresponds to a stable lithologic feature which produces a consistent conductivity profile, based on data collected from 2000 to 2007. These adjustments compensate for small variations in equipment response resulting from variations in environmental conditions and/or probe calibrations. For this station, induction logs are adjusted to a median response of 9.0 mS/m at a depth of 36 ft below land surface. The resulting plot of logs collected from 2000 to the current year is provided in this report. The original and corrected records of bulk conductivity, in millisiemens per meter, are available in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--

WATER-LEVEL ELEVATION: Highest water level measured, 3.60 ft NGVD, Oct. 24, 2001; lowest, 1.27 ft NGVD, Jan. 29, 2009.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 3,200 mg/L, July 6, 2011; lowest, 260 mg/L, Feb. 6, 2006.

261304080072501 Local number G 2896. USGS Observation Well near Pompano Beach, FL.—Continued

WATER-QUALITY DATA**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**[NGVD, National Geodetic Vertical Datum; ft, feet; mg/L, milligrams per liter; °C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter]

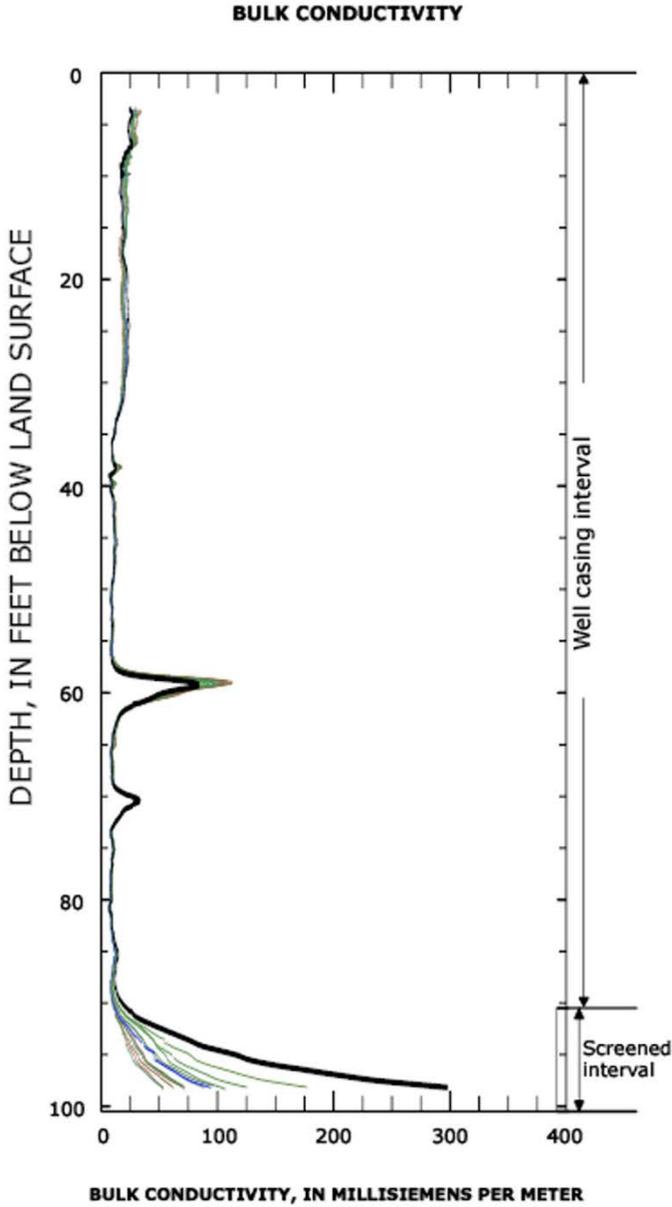
Date	Sample start time	Specific conductance, water, unfiltered, $\mu\text{S}/\text{cm}$ at 25 °C (00095)	Elevation above NGVD 1929, ft (72020)	Chloride, water, unfiltered, mg/L (99220)
October 8, 2010	1450	3,140	2.60	860
January 24, 2011	1442	4,420	1.47	1,300
May 3, 2011	1330	7,290	1.56	2,180
July 6, 2011	1443	10,100	2.16	3,200



WY 2011 Induction log results

Station: USGS 261304080072501

Local name: G -2896



**INDUCTION LOG DATES,
ASSOCIATED CHLORIDE SAMPLE DATES**

Induction log date	Chloride sample date	Dissolved chloride concentration, in mg/L
May 3, 2011	May 3, 2011	2,150
May 3, 2010	May 3, 2010	660
May 21, 2009	May 21, 2009	1,290
May 16, 2008	May 16, 2008	880
May 30, 2007	May 30, 2007	780
May 3, 2006	May 3, 2006	320
May 5, 2005	May 5, 2005	600
April 30, 2004	April 30, 2004	410
May 8, 2003	May 8, 2003	700
May 23, 2002	April 24, 2002	410
April 17, 2001	April 17, 2001	508
Aug. 29, 2000	- no sample -	--
April 19, 2000	- no sample -	--

261304080072501 Local number G 2896. USGS Observation Well near Pompano Beach, FL.—Continued**Lithologic log, USGS 261304080072501. Local Number G -2896**

Depth interval (ft below land surface)	Lithologic description
0 - 5	Sand, black and brown, fine to very fine grained, grains are frosted, sub-angular to sub-rounded and coated with organic matter; organic matter
5 - 10	Quartz sand, yellow to brown, well sorted, fine to very- fine grained, grains are sub-angular
10 - 15	Quartz sand, tan to brown, well sorted, fine to very-fine grained, grains are frosted and sub-angular
15 - 25	Quartz sand, tan to white, well sorted, very-fine grained, grains are clear and sub-angular to sub-rounded
25 - 35	Sandy carbonate mud, white, with some shell fragments, quartz sand is very-fine grained, grains are sub-angular
35 - 40	Quartz sand, tan, fine to very-fine grained, grains are sub-angular, with concretions, calcite cement
40 - 45	Quartz sand, tan, fine to very-fine grained, grains are sub-angular, with brown to orange concretion structures and shell fragments
45 - 50	Sandy limestone, tan, well cemented with calcite cement, quartz sand is fine to very-fine grained, grains are sub-angular
50 - 55	Quartz sand, tan, very-fine grained, grains are clear and sub-angular, with shell fragments and concretions
55 - 60	Quartz sand, tan, fine to very-fine grained, grains are sub-angular, with shell fragments, spar crystals, and calcite
60 - 65	Quartz sand, tan, fine to very-fine grained, grains are sub-angular to rounded, with heavy minerals and shell fragments
65 - 70	Quartz sand, tan, well sorted, very-fine grained, grains are sub-angular, with shell fragments and concretions
70 - 100	Quartz sand, tan to gray, well sorted, very-fine grained, grains are sub-angular, with heavy minerals, shell fragments and concretions

Compiled and modified from the original lithologic description of Hydrologic Associates USA Inc., Miami, FL.