

Water-Data Report 2011

252652080244301 Local number G 3699. USGS Observation Well near Homestead, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Miami-Dade County, FL

LOCATION.--Lat 25°26'53.6", long 80°24'42.5" referenced to North American Datum of 1983, in SW ¼ SW ¼ sec.23, T.57 S., R.39 E., Miami-Dade County, FL, Hydrologic Unit 03090202, 40 ft northeast of east bridge abutment north of SW 344th Street and 0.02 mi east of SW 137th Avenue.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 88 ft. Upper casing diameter 2 in.; top of first opening 83 ft, bottom of last opening 88 ft.

DATUM.--Land-surface datum is 5.80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing at land surface, 5.80 ft above National Geodetic Vertical Datum of 1929, Mar. 14, 2000, to present.

PERIOD OF RECORD.--November 2000 to October 2008 (quarterly), January 2009 to current year. See REMARKS.

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

REMARKS.--This station is also used for annual salinity monitoring, including an annual induction log and chloride sample collection. Water-level measurements began in November 2000. Induction logging began April 2000. Chloride sampling began in October 2002. Induction logs are used to assess the movement of the fresh-water/salt-water interface in ground water. See [RECORDS OF BULK CONDUCTIVITY](#).

In 2008, the instrument used to calibrate the induction logging 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, published logs of bulk conductivity collected from 2000 to 2007 are considered to be in error. The 0.7686 multiplier correction applied to most bulk conductivity data collected prior to 2002, as referenced in previous data publications, is not required. Instead, a 1.33 multiplier correction is required for bulk conductivity data collected from water years 2002 to 2007. A 1.0 multiplier has been applied to the remainder of the data, to the current year. However, the depths of any hydrologic or lithologic features seen in the published logs are not affected by this correction.

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 8.2 mS/m at a depth of 14.2 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, 3.39 ft NGVD, Nov. 6, 2009; lowest, 0.20 ft below NGVD, May 13, 2009.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 9,800 mg/L, May 19, 2011; lowest, 5,000 mg/L, Oct. 23, 2002, Apr. 19, 2004.

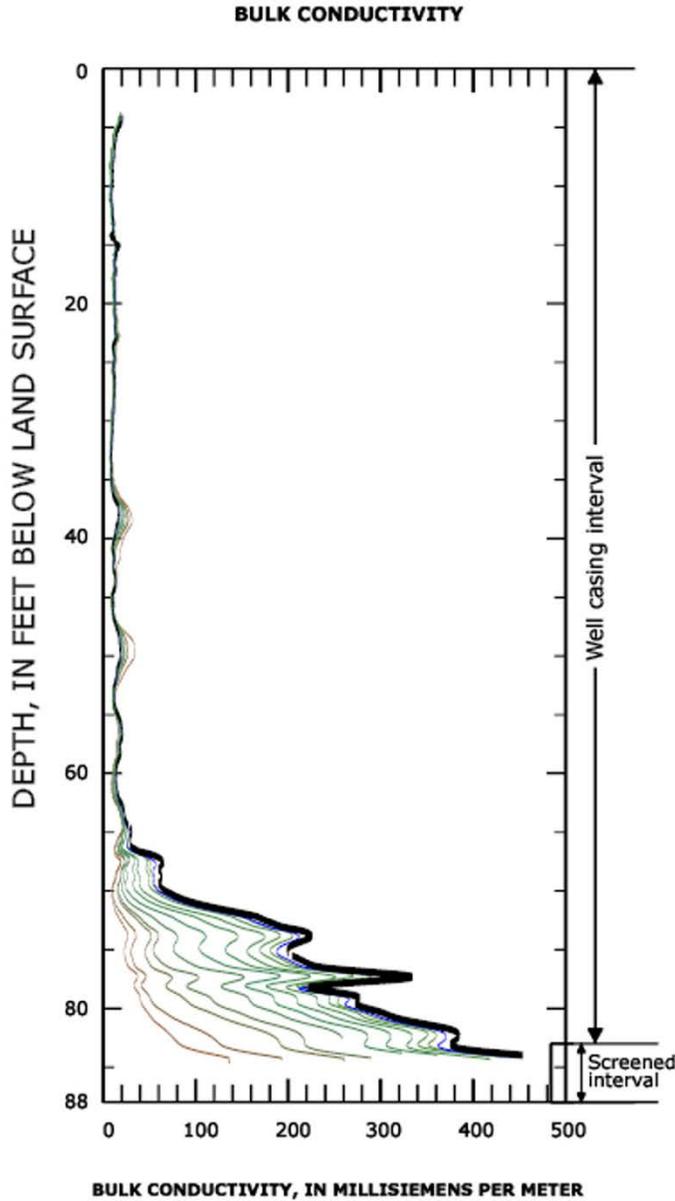
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WATER-QUALITY DATA**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**[NGVD, National Geodetic Vertical Datum; ft, feet; mg/L, milligrams per liter;
°C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter]

Date	Sample start time	Specific conduc- tance, water, unfiltered, $\mu\text{S}/\text{cm}$ at 25 °C (00095)	Elevation above NGVD 1929, ft (72020)	Chloride, water, unfiltered, mg/L (99220)
October 6, 2010	1107	26,200	1.95	8,800
November 19, 2010	1410	26,000	1.34	8,800
December 15, 2010	1420	26,000	.89	8,600
January 19, 2011	1046	26,400	1.74	9,500
February 25, 2011	1120	27,800	.91	9,600
March 24, 2011	1039	28,900	.31	9,700
April 4, 2011	1427	28,300	.64	9,700
May 19, 2011	1024	28,600	.23	9,800
June 16, 2011	1401	26,900	-.01	9,700
July 11, 2011	1037	27,600	1.44	9,700
August 15, 2011	1004	27,300	1.73	9,600
September 14, 2011	1012	28,100	1.57	9,600



WY 2011 Induction log results
Station: USGS 252652080244301
Local name: G -3699



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

Induction log date	Chloride sample date	Dissolved chloride concentration, in mg/L
Apr. 4, 2011	Apr. 4, 2011	9,700
Apr. 6, 2010	Apr. 6, 2010	8,700
Apr. 28, 2009	Apr. 28, 2009	8,600
Apr. 28, 2008	Apr. 28, 2008	8,500
June 12, 2007	June 12, 2007	8,000
Apr. 18, 2006	Apr. 18, 2006	5,800
Apr. 19, 2005	Apr. 19, 2005	5,700
Apr. 19, 2004	Apr. 19, 2004	5,000
Apr. 25, 2003	Apr. 25, 2003	5,500
May 15, 2002	- no sample -	--
Apr. 4, 2001	- no sample -	--
Apr. 18, 2000	- no sample -	--

252652080244301 Local number G 3699. USGS Observation Well near Homestead, FL.—Continued**Lithologic log, USGS 252652080244301. Local Number G -3699**

Depth interval (ft below land surface)	Lithologic description
0 - 5	Carbonate mud, gray
5 - 20	Carbonate mud with limestone pieces, limestone pieces are white and well cemented
20 - 40	Limestone, white to tan, well cemented, with shell fragments
40 - 50	Limestone, white to gray, moderately cemented, with shell fragments
50 - 55	Limestone, white to tan, well cemented, with shell fragments
55 - 60	Limestone, tan to gray, well cemented with calcite cement, with abundant shell fragments
60 - 65	Limestone, white, well cemented, with shell fragments
65 - 70	Quartz sand, tan, well sorted, medium to fine grained, grains are sub-angular to sub-rounded with heavy minerals
70 - 75	Sand, tan, well sorted, medium to fine grained, grains are sub-angular to sub-rounded, with shell fragments
75 - 80	Limestone, white, well cemented, with shell fragments
80 - 85	Quartz sand, gray, fine to very fine grained, grains are frosted and sub-angular to sub-rounded, with calcite crystals and shell fragments
85 - 88	Quartz sand, white, very fine grained, grains are clear and sub-angular to sub-rounded, with heavy minerals

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