

Water-Data Report 2011

255625080094901 Local number G 3705. USGS Observation Well near North Miami Beach, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Miami-Dade County, FL

LOCATION.--Lat 25°56'25", long 80°09'49" referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.9, T.52 S., R.42 E., Miami-Dade County, FL, Hydrologic Unit 03090202, 15 ft north of NE 179th Street and 175 ft west of NE 19th Avenue, 0.90 mi west of U.S. Highway 1.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 135 ft. Upper casing diameter 2 in.; top of first opening 125 ft, bottom of last opening 135 ft.

DATUM.--Land-surface datum is 9.1 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 9.06 ft above National Geodetic Vertical Datum of 1929, Mar. 14, 2000, to present.

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

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

REMARKS.--Well is also used for salinity monitoring, including an annual induction log. Annual induction logs began in April 2000. Water-level measurements began in November 2000. Salinity sampling began in May 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 WY2008, 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, logs of bulk conductivity collected from 2002 to 2007 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. However, the depths of any hydrologic or lithologic features seen 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 16.2 mS/m at a depth of 71.9 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, 3.24 ft NGVD, Aug. 4, 2004; lowest, 1.40 ft NGVD, May 10, 2002.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 2,050 mg/L, Apr. 30, 2009; lowest, 780 mg/L, May 10, 2002.

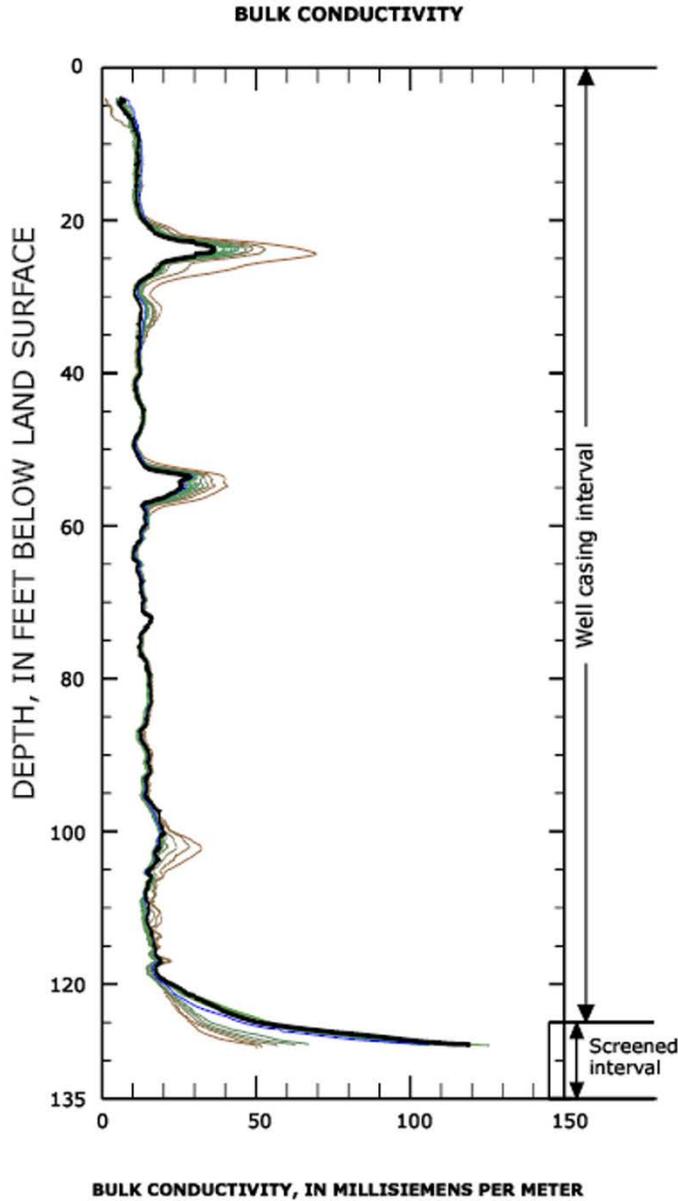
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WATER-QUALITY DATA**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**[NGVD, National Geodetic Vertical Datum; ft, feet; mg/L, milligrams per liter; °C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter; --, no data]

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 21, 2010	1343	--	2.28	--
January 25, 2011	0904	--	2.09	--
April 26, 2011	0930	6,250	1.63	1,850
July 14, 2011	1303	--	2.06	--



WY 2011 Induction log results
Station: USGS 255625080094901
Local name: G -3705



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

Induction log date	Chloride sample date	Dissolved chloride concentration, in mg/L
Apr. 26, 2011	Apr. 26, 2011	1,850
Apr. 21, 2010	Apr. 21, 2010	1,500
Apr. 30, 2009	Apr. 30, 2009	2,050
May 5, 2008	May 5, 2008	1,700
June 18, 2007	June 18, 2007	1,760
Apr. 25, 2006	Apr. 25, 2006	1,760
Apr. 25, 2005	Apr. 25, 2005	1,720
Apr. 22, 2004	Apr. 22, 2004	1,020
Apr. 29, 2003	Apr. 29, 2003	880
May 10, 2002	May 10, 2002	780
Apr. 11, 2001	- no sample -	--
Apr. 18, 2000	- no sample -	--

255625080094901 Local number G 3705. USGS Observation Well near North Miami Beach, FL.—Continued**Lithologic log, USGS 255625080094901. Local Number G -3705**

Depth interval (ft below land surface)	Lithologic description
0 - 5	Quartz sand, brown, well sorted, grains are very fine and sub-angular to sub-rounded, with heavy minerals; organic matter
5 - 15	Sandstone, tan, fine to very-fine grained, grains are quartz and sub-angular to sub-rounded, with calcite crystals
15 - 20	Limestone, tan, oolitic, well cemented; quartz sand, tan, fine grained, grains are sub-angular to sub-rounded
20 - 30	Quartz sand and concretions, gray, cemented with calcite, fine grained, grains are frosted and sub-angular, with calcite crystals; limestone, tan, well cemented, with shell fragments
30 - 40	Limestone, tan, well cemented, with shell fragments; quartz sand, tan, well sorted, fine grained, grains are sub-angular, with calcite crystals and heavy minerals
40 - 65	Quartz sand, tan to gray, fine to very-fine grained, grains are frosted and sub-angular to sub-rounded, with shell fragments, calcite crystals, concretions, and heavy minerals
65 - 85	Quartz sand, gray, fine to very-fine grained, grains are frosted and sub-angular to sub-rounded, with heavy minerals; limestone, gray, well cemented, with concretions cemented by calcite
85 - 95	Sandstone, tan to gray, cemented with calcite, with shell fragments
95 - 100	Sandstone, tan to gray, cemented with calcite, with shell fragments; sand, gray, fine to very-fine grained, grains are sub-angular to sub-rounded
100 - 105	Sandstone, tan to gray, with shell fragments; sand
105 - 115	Quartz sand, gray, well sorted, fine to very-fine grained, grains are frosted and sub-angular to sub-rounded, with heavy minerals, shell fragments, and concretions cemented by calcite
115 - 125	Sandstone, gray, cemented with calcite, grains are frosted, with shell fragments
125 - 135	Quartz sand, tan to gray, fine to very-fine grained, grains are frosted and sub-angular to sub-rounded

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