

Water-Data Report 2012

260534080110801 Local number G 2904. USGS Observation Well near Fort Lauderdale, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Broward County, FL

LOCATION.--Lat 26°05'35.7", long 80°11'08.0" referenced to North American Datum of 1983, in SW ¼ SW ¼ SW ¼ sec.17, T.50 S., R.42 E., Broward County, FL, Hydrologic Unit 03090202, at St. Ambrose Church, 16 ft east of SW 31st Avenue, northeast of the intersection of SW 31st Avenue and SW 23rd Court.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 126 ft. Upper casing diameter 2; top of first opening 116 ft, bottom of last opening 126 ft.

DATUM.--Land-surface datum is 5 ft above National Geodetic Vertical Datum of 1929. Measuring point: From Nov. 3, 1997, to present, measuring point has been top of casing, 5.04 ft above National Geodetic Vertical Datum of 1929. PERIOD OF RECORD.--April 2000 to current year. See REMARKS.

INSTRUMENTATION.--Quarterly measurement with chalked steel tape or electric tape. See REMARKS.

REMARKS.--This well is also used for salinity monitoring. Electromagnetic induction logs were collected from April 2000 to May 2011. Quarterly water-level measurements and salinity samples began in October 2000. Electromagnetic induction logs are used to assess movement of the fresh-water/salt-water interface in ground water. See http://www.sflorida.er.usgs.gov/edl_data/text/induction.html#induction>RECORDS OF BULK CONDUCTIVITY.

In 2008, the induction probe calibration equipment was found to have been misidentified by the manufacturer, resulting in a combination of errors of scale for converting instrument response to units of measurement (mS/m) and errors in correcting the log data to consistent units of measurement among the induction logs collected. The equipment misidentification and resulting errors affect data collected from 2000 to 2008 at this station. As a result, published induction logs released by the U.S. Geological Survey prior to 2008 are considered to be in error. The combined corrections require a 1.33 multiplier to be applied to the bulk conductivity data collected from 2002 to 2008. A 1.0 multiplier has been applied to the remainder of the data, to the 2011 water year. The logs published in the annual reports include the noted corrections. 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 9.8 mS/m at a depth of 64.0 ft below land surface. The resulting plot of logs collected, from 2001 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, 3.08 ft NGVD, Oct. 16, 2008; lowest, 0.38 ft NGVD, Jan. 29, 2009.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 5,200 mg/L, July 06, 2012; lowest, 1,620 mg/L, Oct. 27, 2000.

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WATER-QUALITY DATA**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**[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 27, 2011	1032	14,800	2.08	4,800
January 20, 2012	1213	14,200	.53	4,500
April 16, 2012	1140	14,800	1.41	5,000
July 6, 2012	1150	14,400	1.56	5,200