Water-Data Report 2011

# 253024080231001 Local number G 3615. USGS Observation Well near Homestead, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Miami-Dade County, FL

LOCATION.--Lat 25°30'25.9", long 80°23'09.6" referenced to North American Datum of 1983, in NE ¼ NW ¼ NE ¼ sec.1, T.57 S., R.39 E., Miami-Dade County, FL, Hydrologic Unit 03090202, approximately 0.9 mi west of SW 112th Avenue on SW 280th Street, 17 ft east of Homestead Air Force Base perimeter fence.

## WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 80 ft. Upper casing diameter 2 in.; top of first opening 75 ft, bottom of last opening 80 ft.

DATUM.--Land-surface datum is 4.50 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.54 ft above National Geodetic Vertical Datum of 1929, Sept. 19, 1995, to present. Prior to March, 2000, top of casing measuring point was estimated to be 5 ft above NGVD using a topographic map. See REMARKS.

PERIOD OF RECORD.--September 1995 to current year.

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

REMARKS.--This station is also used for salinity monitoring. Salinity monitoring began in September 1995. Induction logging began January 1996. Water-level measurements began in April 2000. Water-level elevation data collected prior to March 14, 2000, have been computed using the measuring point established on March 14, 2000, and are in the files of the U.S. Geological Survey. See DATUM. Induction logs are used to assess 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, logs of bulk conductivity collected from 1996 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 1998, and 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 1996 to 2008. 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 47.6 ft below land surface. The resulting plot of logs collected from 1996 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, 2.56 ft NGVD, Aug. 09, 2005; lowest, 1.02 ft NGVD, May 14, 2002.
CHLORIDE CONCENTRATION: Highest measured chloride concentration, 4,300 mg/L, July 11, 2011; lowest, 540 mg/L, Jan. 24, 2006.

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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; µS/cm, microsiemens per centimeter; --, no data]

| Date | Sample start time | Specific conductance, water, unfiltered, µS/cm at 25 °C (00095) | Elevation above NGVD 1929, ft (72020) | Chloride, water, unfiltered, mg/L (99220) |
|---|---|---|---|---|
| **October 6, 2010** | **1231** | 4,240 | 2.16 | 1,220 |
| **January 19, 2011** | **1207** | 10,000 | 2.31 | 3,300 |
| **April 5, 2011** | **1414** | -- | 1.25 | -- |
| **April 6, 2011** | **1000** | 11,800 | 1.41 | 3,800 |
| **July 11, 2011** | **1152** | 12,700 | 2.29 | 4,300 |

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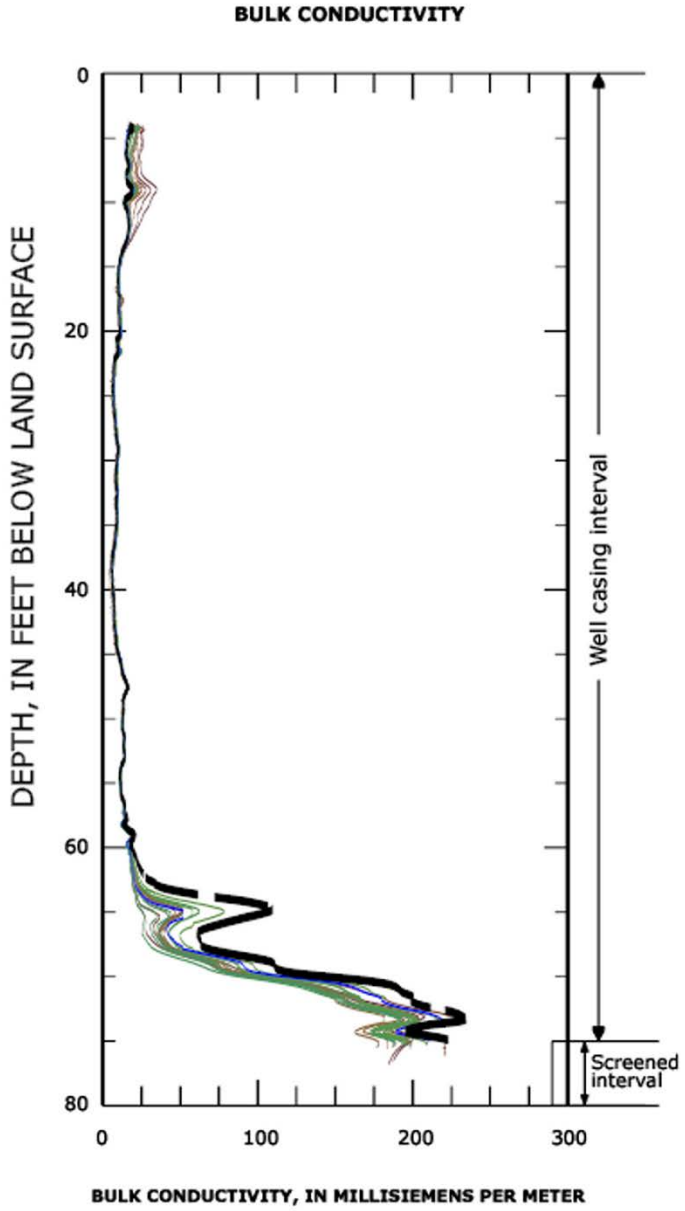
**WY 2011 Induction log results**

**Station: USGS 253024080231001**

**Local name: G -3615**




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

| Induction log date | Chloride sample date | Dissolved chloride concentration, in mg/L |
|---|---|---|
| Apr. 6, 2011 | Apr. 6, 2011 | 3,800 |
| Apr. 6, 2010 | Apr. 6, 2010 | 2,250 |
| Apr. 28, 2009 | Apr. 28, 2009 | 3,800 |
| Apr. 28, 2008 | Apr. 28, 2008 | 2,100 |
| May 25, 2007 | May 25, 2007 | 2,000 |
| Apr. 17, 2006 | Apr. 17, 2006 | 980 |
| Apr. 14, 2005 | Apr. 14, 2005 | 1,520 |
| Apr. 19, 2004 | Apr. 19, 2004 | 1,300 |
| Apr. 24, 2003 | Apr. 24, 2003 | 1,580 |
| May 14, 2002 | May 14, 2002 | 2,100 |
| Apr. 4, 2001 | Apr. 4, 2001 | 2,700 |
| Apr. 18, 2000 | Apr. 18, 2000 | 1,020 |
| Apr. 7, 1999 | Apr. 8, 1999 | 1,680 |
| Apr. 1998 | Apr. 17, 1998 | 1,600 |
| May 8, 1996 | - no sample - | -- |
| Jan. 17, 1996 | Jan. 11, 1996 | 2,000 |

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Lithologic log, USGS 253024080231001. Local Number G -3615

| Depth interval (ft below land surface) | Lithologic description |
|---|---|
| 0 - 15 | Sandy, peloidal limestone with micrite; some sandy limestone with coral towards the bottom of the section |
| 15 - 40 | Sandy limestone with marine shells, large dissolution features containing calcite fill; some iron content and possibly foraminifera |
| 40 - 45 | Sandy limestone with mollusks; sand is fine to very fine grained quartz |
| 45 - 60 | Sandy limestone with marine shell fragments and molds; sand is poorly to well sorted medium-grained quartz; sequence fines upward |
| 60 - 65 | Sandy limestone with marine shells and recrystallized coral |
| 65 - 70 | Sandy limestone with dissolution pipes and possible hard layers; includes some large marine shells in a bed with sparry calcite |
| 70 - 75 | Sandstone, coarse-grained, sparry calcite; includes marine shells, some coral fragments, and poorly sorted quartz sand |
| 75 - 80 | Section not logged |