OWRB Groundwater Data

The Oklahoma Water Resources Board (OWRB) maintains automated stations to monitor groundwater elevation and groundwater temperature. Groundwater measurements are taken using a pressure transducer sensor located in a static (i.e. non-pumping) well. Data recorded at the station are based on a single sample taken at 55 minutes and 36 seconds past each hour. Groundwater elevation is then derived using the sensor elevation, station elevation, sensor pressure, atmospheric pressure, and temperature. Rainfall data are collected from the nearest Oklahoma Mesonet (www.mesonet.org) station and show the accumulation of rainfall since midnight UTC (18:00 CST/19:00 CDT).

Data are available for viewing or download from the Groundwater Section of the Oklahoma Mesonet website (www.mesonet.org). Available sites are displayed in the 'Station' drop-down menu. A map highlighting available sites is available by clicking 'Choose From Map'. The 'Product' drop down menu allows users to select the type of time series graph they wish to view. The graphs default to displaying data for the past week, ending the previous day. There is a 1-day delay in displaying data due to data collection and processing. The 'Type' drop-down menu allows users to choose between viewing a graph of the data or a comma-separated value (CSV) text file.

Data are provisional; please contact Christopher Neel at the OWRB (www.owrb.ok.gov) for more information at 405.530.8800.

Data Formats

Graphs:
*The axis will exaggerate the scale for short term time series plots since groundwater temperature and groundwater elevation usually change gradually over time

Ground Water:
Bottom Axis: time
Left Axis: elevation (feet)
Right Axis: rainfall accumulation in inches
Green Line: rain accumulation from nearest Mesonet station since midnight UTC (18:00 CST/19:00 CDT)
Blue Line: groundwater elevation

Water Temperature
Bottom Axis: time
Left Axis: temperature (degrees Fahrenheit)
Red Line: groundwater temperature

Ground Water & Temp.
Bottom Axis: Time
Left Axis: temperature (degrees Fahrenheit)
Right Axis: elevation (feet)
*right axis changes to rainfall accumulation (inches) when rain is selected in the legend
Red Line: groundwater temperature
Green Line: rain accumulation from nearest Mesonet station since midnight UTC (18:00 CST/19:00 CDT)
Blue Line: groundwater elevation

Text Files:
CSV: Comma-separated value format
Column Headers:
STID: station ID
DATE: timestamp of observation, local time CST/CDT (YYYY-MM-DD HH:MM)
GH20: groundwater elevation (feet)
TH20: groundwater temperature (degree Celsius)
RAIN: rain accumulation from nearest Mesonet station (mm) since midnight UTC

Station Information

Acme
Well Depth: 50 ft.
Elevation: 1297.3 ft
Current Elevation/Depth of Sensor: 1250.7 ft/46.6 ft.
Instrumentation

6/3/2004 – 6/19/2007: In-situ miniTroll SSP-100 w/ 15 psi tranducer
6/19/2007 – Present : In-situ LevelTroll 700 w/ 30 psi transducer

El Reno
Well Depth: 27 ft.
Elevation: 1368.6 ft.
Current Elevation/Depth of Sensor: 1346.7 ft./21.9 ft.
Instrumentation

5/27/2004 – 6/14/2005: In-situ miniTroll SSP-100 w/ 15 psi transducer
6/14/2005 – 8/3/2005: In-situ miniTroll SSP-100 w/ 30 psi transducer
8/3/2005 – 6/19/2007: In-situ miniTroll SSP-100 w/ 15 psi transducer
6/19/2007 – Present: In-situ LevelTroll 700 w/ 30 psi transducer

Fittstown
Well Depth: 257 ft.
Elevation: 1153.9 ft.
Current Elevation/Depth of Sensor: 954.1 ft./199.8 ft
Instrumentation

1/5/2006 – 10/3/2007: In-situ LevelTroll 700 w/ 30 psi transducer
10/3/2007 – Present: In-situ LevelTroll 500 w/ 100 psi transducer

Shawnee
Well Depth: ~117 ft.
Elevation: 1078.3 ft.
Current Elevation/Depth of Sensor: 1007.5 ft./70.8 ft.
Instrumentation

3/4/2009 – Present: In-situ LevelTroll 700 w/ 30 psi transducer

Sensor Specifications

In-Situ Inc. Level TROLL 500/700
Titanium encased vented silicon strain gauge
Operating Temperature Range: -20 to 80C
Depth Accuracy:
+/-0.05% (15C)
+/- 0.1% (-5 to 50C)
+/-0.25% (-20 to -5C or 50 to 80C)
Depth Resolution: 0.005% Full Scale
Temperature Accuracy: +/-0.1C
Temperature Resolution: 0.01C

In-Situ Inc. Mini TROLL
Vented silicon strain gauge
Operating Temperature Range: -5 to 50C
Depth Accuracy:
+/-0.1% (15C)
+/- 0.2% (-5 to 50C)
Temperature Accuracy: +/-0.25C

Met One Unheated Tipping-Bucket Rain Gauge
Accuracy:
+/-5% over range of 0-5 cm/hour
Gauge surrounded by 121 cm metal alter shield