

# 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](http://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](http://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](http://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 transducer

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