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Coordinator's Corner

The Oklahoma Water Resources Board (OWRB) would like to thank the many firms that submitted renewal applications in a complete and timely manner this year. Well Driller and Pump Installer (WDPI) program staff will mail out new licenses and certifications soon. Several renewal applications were submitted without Continuing Education Unit (CEU) verification. WDPI staff does not track the CEUs operators receive throughout the year, so please remember to save your Certificates of Completion and send them in with your renewal application.

Continuing Education Unit (CEU) Requirement

Eight hours of CEUs are required for all licensed firms and certified operators between July 1 and June 30 during your firm's two-year renewal period. One hour must be a course on Oklahoma Rules and Regulations; the remaining seven hours may be satisfied by any course(s) approved by the WDPI program, and up to four of these seven hours may be obtained online at the International School of Well Drilling. With the exception of Texas, CEUs awarded in other states may be approved by WDPI staff upon review of the course agenda. Please do not wait until the last minute to get approval. A firm must pay a $250 fine for each operator who fails to satisfy the CEU requirement and the operator(s) will be required to obtain 16 CEUs during the next renewal period. Alternatively, the firm may remove the operator(s) and may no longer utilize them as a certified operator until such time as they submit a new application, retest, and become recertified.

Lithology Log Guidance

Lithology is a description of the physical characteristics of a rock or rock formation. The most useful groundwater well completion reports include a detailed and informed lithologic log, which is a description of the type, depth, and thickness of soil and rock layers encountered by the driller when constructing a new well. The lithologic log has usefulness far beyond its origins in the field. Obviously, the driller can turn to lithologic logs for hints about which zones and depths may be a productive well location. Geologists refer to these logs in order to map and study the State's numerous aquifers, and civil engineers use them to guide and inform the design of important projects.

The process of developing a lithologic log begins with collecting samples. Drillers are keenly aware that rock layers can vary immensely over the total depth of a well. While the driller may notice obvious changes in lithology (when the drill bit encounters a dolomite layer, for example), taking samples at regular depth intervals allows the driller to observe more subtle changes in lithology.

When completing a lithologic log, the driller should take special care to include the composition (e.g. sandstone) of each sampled layer as well as the depth at which it was encountered. Water-bearing (saturated) layers should be noted as such. A good description might also include more information about a layer's composition, for example, the color of a shale layer or whether a sandstone lens contains fine, medium, or coarse grains. When describing a layer, consider what qualities make it unique from the layers above and below. Is the layer hard (highly indurated) or soft? Is it consolidated (cemented) the way bedrock often is, or loose and unconsolidated like sandy alluvium deposits? This added bit of detail will greatly improve the usefulness of the completion report.

When adequate attention is applied to producing accurate lithologic logs, they can be used to correlate water-bearing layers across larger areas. As stated above, this information is immediately useful to drillers targeting potentially productive zones in adjacent areas. By observing the simple tips presented above, motivated drillers can separate themselves from the pack with regard to completion reports.

OWRB Publishes Enid Isolated Terrace 20-Year Update Report

In late June, the OWRB published the 20-year update of the Enid Isolated Terrace (EIT) Aquifer Hydrologic Investigation. The EIT aquifer is located in north-central Oklahoma in the western half of Garfield County with a small portion in Alfalfa County.

The report includes an updated description of the area geology and climate, plus detailed hydrogeological information, including an analysis of water use over time,
recharge rates, water quality analysis, changes over time to water levels, and estimated effects of pumping. The objectives of the update are to (1) summarize hydrologic information about the study area from existing reports; (2) evaluate data and information collected between 1982 and 2014; and (3) determine which, if any, changes impacted the aquifer between 1982 and 2014.

The aquifer is used mainly for public water supply and irrigation with total use averaging 3,243 acre-feet per year from 1967 to 2013. Water quality in the Enid Isolated Terrace is good with varying water types although localized high concentrations of nitrates (as nitrogen) and arsenic do occur.

- Data yielded the greatest saturated thicknesses near the center of the study area, north of the city of Enid, thinning towards the east and west.
- The mean value for hydraulic conductivity was estimated to be 50.16 feet per day utilizing data from single-well pumping tests with a range of 0.32-289.7 feet per day.
- Multi-well aquifer tests estimated transmissivity to range from 2,333 to 5,031 square feet per day, storativity to range from 0.01-0.006, and hydraulic conductivity to range from 101 to 132 feet per day.

Visit [www.owrb.ok.gov/gwstudies](http://www.owrb.ok.gov/gwstudies) to view the full report.

### 2016 Oklahoma Groundwater Monitoring Report Available

The OWRB’s 2016 Beneficial Use Monitoring Program (BUMP) report of statewide groundwater quality data is now available at [www.owrb.ok.gov/bump](http://www.owrb.ok.gov/bump).

Oklahoma's major aquifers are sampled through the Groundwater Monitoring and Assessment Program (GMAP) in approximately 750 wells across the state. The GMAP online report also includes summaries for each aquifer that show nutrient, mineral, and metal statistics as well as general parameters, such as depth to water, alkalinity, hardness, and total dissolved solids (TDS).

### 2017 Workshops

Last spring, the OGWA and the WDPI conducted eight continuing education workshops across the state for over 200 well drillers. The WDPI program would like to thank the attending operators as well as Josh McClintock and Amy Ford of the OGWA for their efforts in another successful training season.

### Upcoming Events

- **October 31-November 1, 2017**
  Oklahoma Governor’s Water Conference & Research Symposium, Embassy Suites, Norman
- **January 11-12, 2018**
  Oklahoma Groundwater Association Annual Conference, Embassy Suites, Norman