

## August 18, 2009, Meeting Questions and Comments

The following responses to questions posed at the August 18 meeting (shown in italics) were prepared by Oklahoma Water Resources Board staff and may not necessarily reflect the views of the agency. In some cases, questions, comments, and responses have been paraphrased and are not verbatim from the meeting.

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1. **Since 2007 was such a wet year, are the model results skewed?**  
*No. The average for the five years of the study is representative of the long-term average. 2007 was a wet year but 2006 was an extremely dry year.*
2. **What are the hydraulic differences between the upper and lower aquifer?**  
*The Simpson hydrostratigraphic unit, which is the upper part of the aquifer, generally is less productive than the Arbuckle-Timbered Hills hydrostratigraphic unit, which is the lower part of the aquifer. Wells in the Simpson yield less water than wells in the Arbuckle-Timbered Hills, and the Simpson receives less recharge and is less transmissive than the Arbuckle-Timbered Hills.*
3. **What is the recommended depth for a domestic well?**  
*There is no recommended depth for a domestic well. Most domestic wells are drilled until sufficient water is encountered to supply the intended use. The U.S. Geological Survey's National Water Information System database lists 162 domestic wells completed in the Arbuckle-Simpson aquifer. The average depth of those 162 domestic wells is 232 feet and the median depth is 122 feet (the median depth means that ½ the wells are deeper than 122 feet and ½ are shallower than 122 feet).*
4. **Will water that flows out of the basin ever be returned?**  
*The only hydrologic processes that could return water that flows out of the basin are evaporation and precipitation, and the amount of water returned by the process probably is very small.*
5. **Don't we need to register more usage to keep Texas from coming after our water?**  
*This question raises policy issues that would need to be addressed by legislation. Currently, individual domestic use from wells, streams and ponds is not required to be permitted, so not all usage is being accounted for.*
6. **What is the accuracy of this study? My neighbors and I own large amounts of land and we were never contacted about measuring our wells.**  
*The groundwater flow model is calibrated to measured stream flows and measured heads, the head being the elevation of the water table at specific locations. We were able to obtain streamflow measurements on all the large streams discharging from the eastern Arbuckle-Simpson aquifer. A groundwater flow model can be well calibrated and accurate if a sufficient number of head measurements, dispersed across the aquifer, are made. The eastern Arbuckle-Simpson aquifer steady-state groundwater flow model was calibrated to a very complete set of head measurements that were obtained in August, 1995.*
7. **Does the model provide insight into where wastewater might best be recharged?**  
*The current model analysis was not designed to determine specific areas for artificial recharge. Senator Paddock has a committee that is looking into recharge possibilities for the aquifer.*
8. **Since pit water is potable, is the OWRB checking on the activities of Martin Marietta?**  
*Yes, the OWRB has attended several meetings on this issue. Permits to use water from wells and from definite streams for mining activity will be issued in the same manner as permits for all other beneficial uses.*
9. **Has anyone run a simulation on a 5-year drought period?**  
*Not to our knowledge. Being a computer model, we can run any simulation we want, even if it results in a hypothetical equal proportionate share of zero, but we need a balanced and reliable plan that satisfies both the private property owners those who want the streams and springs to flow.*
10. **How do we know that all water used during mining is reported?**  
*The OWRB does not have the authority to require metering, but often to address concerns, permit applicants may voluntarily agree to install meters and implement a monitoring plan.*
11. **Any public policy should have two facets: 1) for normal usage and recharge and 2) for emergency situations when more stringent water conservation should be enforced.**  
*We have an example of this type of "water market" policy with the Edwards Aquifer in Texas, where the price of water is actually driven by levels in the aquifer.*
12. **Could the additional land that Ada needs to purchase be anywhere over the aquifer and would it need to be contiguous?**  
*The land must overlie the basin but it would not have to be contiguous.*
13. **If the OWRB determines at a later date that the maximum annual yield (and EPS) decision it makes does not end up protecting the springs and streams, can the Board go back and change the amount?**  
*The OWRB may, in subsequent basin hearings, and after additional hydrologic surveys, increase the amount of water allocated but shall not decrease the amount of water allocated. The Board is required to review and update if necessary the hydrologic surveys every 20 years.*
14. **There have been significant changes in the springs in the Chickasaw National Recreation Area over the years. In 1906, there were 33 active springs, and now there are only 5. Decreasing the flows another 25% may be devastating. Please keep in mind that this is a federal park and help protect it.**
15. **Water use by quarries should be put to a vote of the people.**

16. **Could discharge from springs be brought back and impounded into a centrally located lake for cities to use? They are doing it in Texas.**  
*This could be considered.*
17. **The model shows that if you access the aquifer away from springs, you have less impact. Can the OWRB take advantage of this and put restrictions on certain wells?**  
*Senate Bill 288 would allow for this.*
18. **If nobody knows how the east and west portions of the aquifer affect each other, how can we base decisions for the west on studies that were done in the east?**  
*We know that the east and west portions of the aquifer are connected in the subsurface but the current study was not specifically designed to determine if groundwater is flowing, or can flow, between the western, central, and eastern parts of the Arbuckle-Simpson aquifer. However, although the current study focused largely on the eastern part of the aquifer, we know quite a bit about the western and central parts. We have geologic information for all parts of the aquifer. Geochemical studies were performed across the aquifer. Perhaps most importantly, recharge calculations done on streamflow data show that timing and magnitude of recharge on the western part of the aquifer is similar to recharge on the eastern Arbuckle-Simpson aquifer.*
19. **Is there any chance municipalities will get special status to preserve or "grandfather" their current use?**  
*There is nothing in current water law that gives preference to one type of use over another.*
20. **Will the OWRB be able to apply the knowledge gained from the Arbuckle-Simpson study (regarding the interaction of groundwater and stream water) to other aquifers across the state?**  
*There is currently no plan to use this knowledge for management of other aquifers in the state, even though we know there can be interaction between water in aquifers and water in streams. This would require additional changes to the law.*
21. **How will the OWRB handle the regulatory and additional administrative duties these decisions will require?**  
*We will follow the law, but because Senate Bill 288 imposes new and complex duties, we will be as responsive as possible in addressing issues directly with citizens.*
22. **Why was the trout not considered in the IFIM study?**  
*The trout was not ignored, but it is not native to Oklahoma. Also it is a "seasonal" fish that is sensitive to some nutrients but not others. It was not a good candidate for the study.*
23. **We need to keep integrated management in mind. For example, in the Edwards aquifer, they made an effort to get rid of the mesquite.**
24. **Fish are not good indicators for springs because they are less sensitive than invertebrates. We need to look at invertebrates in spring heads.**
25. **We are assuming that SB 288 will be viable two years from now, but all of this can be gutted in one session. We need to get OWRB where they can manage and enforce it.**
26. **We need to come together as neighbors. Do we really want to bankrupt our cities by forcing them to acquire extra water rights?**
27. **We should pass laws to keep water from moving out of the aquifer.**
28. **Can we hold future meetings in another city?**  
*Yes.*
29. **Can the model be run for the worst five years of record?**  
*Yes, but this will take time. Please send us a request in writing.*
30. **Are there ways to recharge water from municipalities?**  
*Recharge projects should be looked into.*

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