

IN THE DISTRICT COURT OF OKLAHOMA COUNTY
STATE OF OKLAHOMA

OKLAHOMA FARM BUREAU LEGAL)
FOUNDATION, et al.,)
)
 Petitioners,)
)
 v.)
)
 OKLAHOMA WATER RESOURCES BOARD,)
)
 Respondent,)
)
 v.)
)
 TISHOMINGO NATIONAL FISH)
 HATCHERY, et al.,)
)
 Other Parties of Record.)

Case No. CV-2013-2414

District Judge Barbara Swinton

NOTICE OF CPASA'S ORAL ARGUMENT PRESENTATION

Citizens for the Protection of the Arbuckle-Simpson Aquifer (herein "CPASA") hereby gives notice of its presentation for oral argument, attached hereto as Exhibit 1.

Respectfully,

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CERTIFICATE OF SERVICE

I hereby certify that on the 23rd day of September, 2015, a true and correct copy of the foregoing instrument was deposited in the United States mail, to the following persons, postage prepaid, first class:

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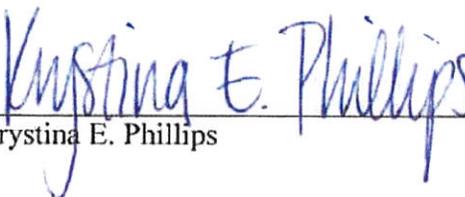
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CITIZENS FOR THE PROTECTION OF THE ARBUCKLE-SIMPSON AQUIFER

Oral Argument in Case No. CV-2013-2414
September 23, 2015

Description of Case

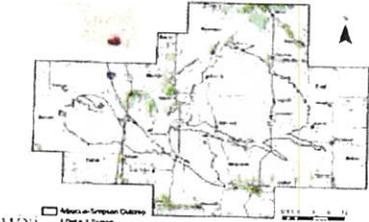
- ASA provides water for numerous uses, such as public water supply, farms, mining, wildlife conservation, and recreation. [Tab 18 of 236]
- No fewer than 6 public water suppliers [Tab 57 of 1465; Tab 63 of 1501, 1506-7, 1519-30, 1532, and 1540; Tab 124 of 1963]



[Tab 33 of 826]

Description of Case, cont.

Population Density

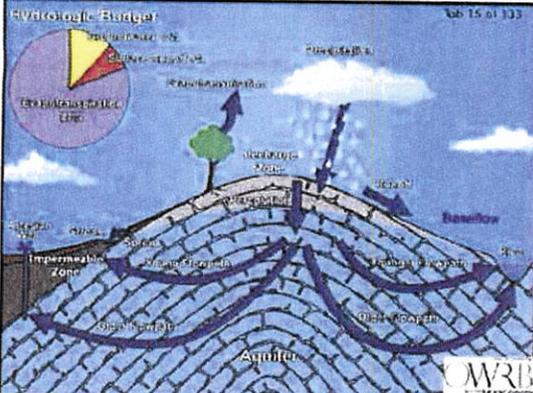


[Tab 15 of 122]

Description of Case

- In 2002, the Central Oklahoma Water Authority (COWA), which consisted of communities in Canadian County, sought an agreement with local landowners to pump as much as 80,000 acre-feet of groundwater per year from the ASA for transport to Canadian County. [Tab 47 at 1397]
- Local stakeholders, including residents, landowners, citizens groups, and federal agencies, were concerned that such large-scale withdrawals would harm the flow of springs and streams and drain the ASA. [Tab 47 at 1397]

Hydrologic Budget



[Tab 15 of 133]

Description of Case

- Senate Bill 288 ("SB288") passed in 2003 to ensure groundwater withdrawals did not reduce the natural flow from springs or streams emanating from the ASA. [Tab 35 at 940]
- Fundamental shift in maximum annual yield process.

Petitioners' Arguments Fail Because:

- ❑ The OWRB's Order is supported by substantial evidence;
- ❑ The OWRB's Order followed proper procedure; and
- ❑ The OWRB's Order comports with constitutional standards.

As such, this Court should affirm the OWRB's Order.

Roadmap

- ❑ Legal Standard
 - ❑ Statutory Requirements for a MAY Determination
 - ❑ Natural Flow
 - ❑ Groundwater Basin Determination
 - ❑ Geologic Similarities
 - ❑ Hydrologic Similarities
 - ❑ Groundwater Model
 - ❑ Storage Coefficient
 - ❑ Confining Upper Layer
- ❑ Procedure
 - ❑ Natural Flow Determination
 - ❑ Compliance With Writ
 - ❑ Constitutional Compliance



Legal Standard

- ❑ "[I]n the exercise of proper judicial discretion or authority, [a District Court] may set aside or modify the order, or revise it and remand it to the agency for further proceedings, if it determines that the substantial rights of the appellant or petitioner for review have been prejudiced because the agency findings, inferences, conclusions or decisions . . ." 75 O.S. § 322(1).

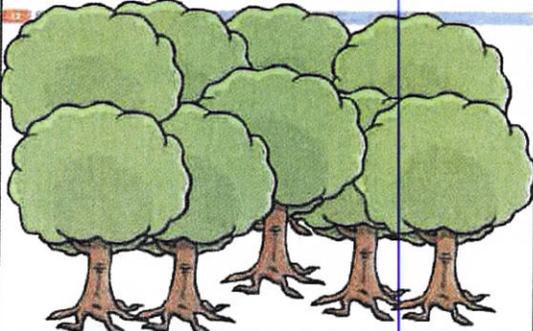
Legal Standard, cont.

- ❑ Party means "a person or agency named and participating, or properly seeking and entitled by law to participate, in an individual proceeding." 75 O.S. § 250.3(12).

Legal Standard, cont.

- ❑ Great weight accorded to expertise of administrative agency, such as OWRB. See *City of Hugo v. State ex rel. Public Employees Relations Bd.*, 1994 OK 134, ¶ 10.
- ❑ Court should not substitute its judgment for that of the agency, particularly in area of agency's expertise. *Id.*

Can't See The Forest For The Trees



**Maximum Annual Yield (MAY)
Determination for the ASA**

Hydrologic investigation of groundwater basins having substantially the same geological and hydrological characteristics[†] and preparation of reports. 82 O.S. § 1020.4(A) and (B).

- In re *Southwestern Bell Tel., L.P. v. State ex rel. Okla. Corp. Comm'n*, 2007 OK 55, ¶ 33.
 - A party included a footnote objecting to certain evidence in its brief-in-chief.
 - Court ruled that such nonchalant treatment "clearly [fell] short of meriting judicial attention."

† Issue on which Petitioners did not preserve objection.

**Maximum Annual Yield (MAY)
Determination for the ASA, cont.**

- Issuance of Tentative MAY based upon
 - Total land overlying the basin*
 - Amount of water in storage*
 - Rate of recharge* and total discharge*
 - Transmissibility*
 - Possibility of pollution from natural sources*

82 O.S. § 1020.5(A)

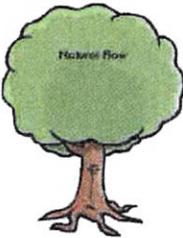
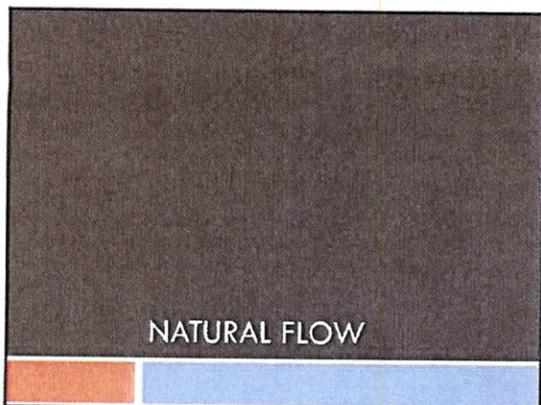
*Issue to which Petitioners do not object

**Maximum Annual Yield (MAY)
Determination for the ASA, cont.**

- MAY must "ensure that any permit for the removal of water from a sensitive sole source groundwater basin will not reduce the natural flow of water from springs or streams emanating from said basin or subbasin." 82 O.S. § 1020.9B

Of the statutorily required MAY factors, Petitioners only objected to the determination of natural flow.

Left With A Single Tree

NATURAL FLOW

Natural Flow

- "[D]etermining how to develop water resources without adversely affecting other resource values, ranging from local economic values and recreation to ecological values is a central challenge in water management. Finding a solution to this difficult question has been the focus of research in the past few decades (Poff and Ward 1989, Poff and Allen 1989, Richter et al. 1996, Poff et al. 1997, Richter et al. 1997, Bunn and Arthington 2002)." [Tab 43 at 1191-92]

Natural Flow, cont.

SB288 required the OWRB to approve a MAY that "will not reduce the natural flow of water from springs or streams emanating from said basin or subbasin." [Tab 35 at 940]

- "Natural Flow" has rich legal meaning
- In Oklahoma, natural flow is determined by relative reasonableness. *Franco-American Charolaise, Ltd v. OWRB*, 1900 OK 44, ¶ 2.

Natural Flow, cont.

- Quantifying natural flow was a matter of first impression for the OWRB
 - Previous MAY determinations based upon mining theory. [Tab 101, Part 7 at 00:46:20 – 00:48:41]; 82 O.S. § 1020.5(B)
 - Arbuckle-Simpson Study Surface Water Technical Advisory Group
 - Considered fishing, recreation, water supply, among others, for objectively quantifying natural flow. [Tab 101, Part 10 at 00:10:30 – 00:12:22]

Natural Flow, cont.

Canary in a coal mine



ACT's groundwater protection in a coal mine



Groundwater detection systems



ACT 2010
Effective 11/1/2010

Tab 41 of 983

Natural Flow, cont.

Working group recommendation

Groundwater management should be based upon a target of 10 to 25% maximum reduction in baseflow

Tab 41 of 975

Natural Flow, cont.

- Baseflow is defined as the groundwater component of stream flow. [Tab 18 at 265; Tab 47 at 1399]
 - It represents that amount of flow that occurs at least 75% of the time. [Tab 101, Part 10 at 00:29:14 – 00:29:38]
- Streamflow = surface runoff + baseflow. [Tab 27 at 629]

Natural Flow, cont.

80% percentile for height.

20% of children exceed his height.



Natural Flow, cont.

- Baseflow = amount of streamflow occurring at least 75% of the time.
- Baseline Low Flow = 25th Percentile Flow of Streamflow.
- 75% Exceedance Flow = amount of streamflow occurring at least 75% of the time.

Natural Flow, cont.

Q: Okay. What is Base Flow then?

A: Base Flow is that – that flow that occurs at the location the majority of the time. At least 75% of the time (which, according to OWRB and CPASA in its briefs, this is the 75% Exceedance Flow). The Low Flow (Baseline Low Flow) is the lowest measured flow at any time. **There's a big difference.** Smithee, Tab 101, Vol. 10, 28:54-29:38.

Petitioners' Reply at 2

Natural Flow, cont.

- IFA not meant to be sole basis for OWRB's determination.
- The OWRB considered trends and other relevant criteria, such as "frequency, duration, magnitude, rate of change, timing of change, [and] seasonality." [Tab 101, Part 10 at 00:34:35-00:35:51]

Natural Flow, cont.

Table 26. Five year average flow for various 2007-08 and 2008-09 water years based on the five year average for the period 2003-04 to 2007-08. The table is divided into two parts: MERRIFIELD and LITTLE RIVER. The table is divided into two parts: MERRIFIELD and LITTLE RIVER. The table is divided into two parts: MERRIFIELD and LITTLE RIVER.

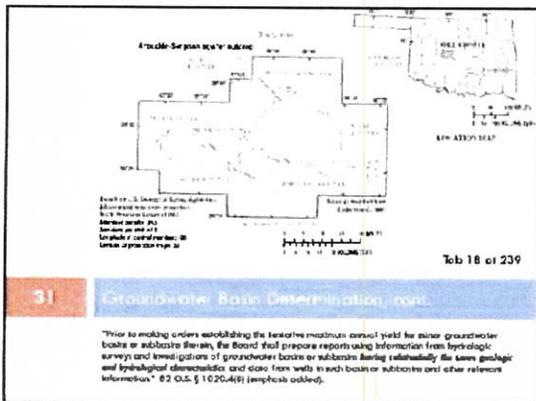
Location	Base Flow	Backflow	Spring	Summer	Winter		Summer	All other	Total
					Flow	Flow			
MERRIFIELD									
EN-1 (2007-08)	1133	214	1245	215	173	2221	818	1718	1527
EN-2 (2007-08)	4676	174	1155	848	232	2440	178	1874	2734
EN-3 (2007-08)	2221	211	196	225	1572	1572	226	424	1799
EN-4 (2007-08)	1133	214	1245	215	173	2221	818	1718	1527
LITTLE RIVER									
EN-1 (2007-08)	267	127	194	127	267	267	127	127	267
EN-2 (2007-08)	127	127	127	127	127	127	127	127	127
EN-3 (2007-08)	127	127	127	127	127	127	127	127	127

Tab 18 at 323

29 Natural Flow

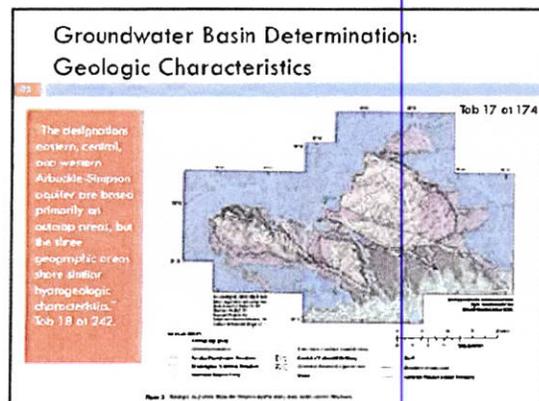
Petitioners' objection to this statutorily required element fails. As such, this Court should find the OWRB's Order supported by substantial evidence.

GROUNDWATER BASIN DETERMINATION



31 Groundwater Basin Determination, cont.

"Prior to making orders establishing the tentative maximum annual yield for minor groundwater basins or subbasins therein, the Board shall prepare reports using information from hydrologic surveys and investigations of groundwater basins or subbasins bearing substantially the same geologic and hydrological characteristics and data from wells in such basins or subbasins and other relevant information." 42 C.S. § 1020.4(b) (emphasis added).



The designation eastern, central, and western Arbutus-Simpson aquifer are based primarily on outcrop areas, but the three geographic areas share similar hydrogeologic characteristics. Tab 18 at 242.

Groundwater Basin Determination: Geologic Characteristics, cont.

Tab 15 of 140

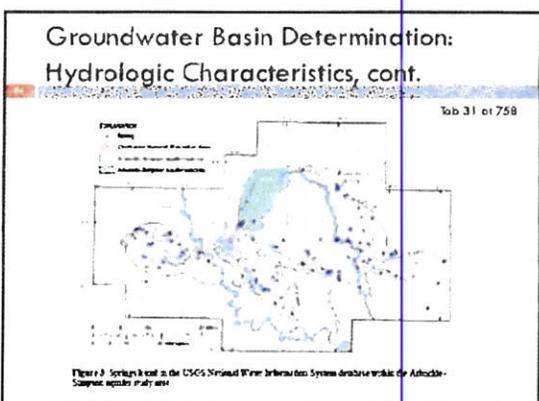
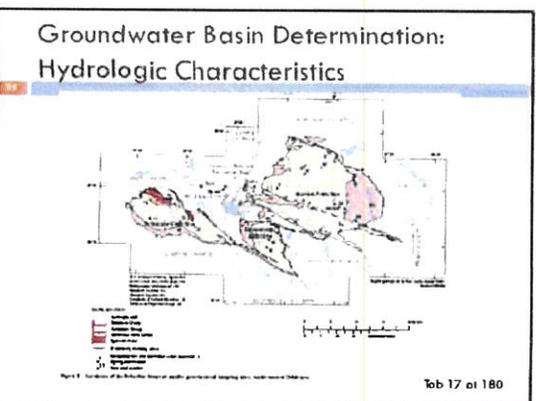
Time Stratigraphic Unit	Rock-Stratigraphic Unit	Hydrogeologic Unit	Basal Hydrogeologic Unit
Pre-Pleistocene to Late Cretaceous	Peak Depression Geologic Units	Open Confining Unit	Peak Depression
Middle Cretaceous	Brigham Group	Arbutus-Simpson Aquifer	Arbutus
Early Ordovician	Adair Group	Arbutus-Simpson Aquifer	Arbutus
Late Cretaceous	Arbutus Group	Arbutus-Simpson Aquifer	Arbutus
Peak Depression	Conifer Shale	Arbutus-Simpson Aquifer	Arbutus
Pre-Pleistocene	Subsidence Geologic Units	Arbutus-Simpson Aquifer	Arbutus

Groundwater Basin Determination: Geologic Characteristics, cont.

Detailed explanations of the Aquifer's geologic characteristics can be found at:

- Tab 17 at 172-175
- Tab 18 at 242-255

In sum, the geology of the Aquifer "is characterized by great thicknesses of most carbonate sedimentary rocks, uplifts, folded structures, and large fault displacements." Tab 18 at 242



Groundwater Basin Determination: Hydrologic Characteristics, cont.

11 "Many types of information are required to understand the hydrology of the Arbuckle-Simpson aquifer. For example, climatic factors, such as precipitation, evaporation, and soil moisture, determine the amount of water available for recharging the aquifer." Tab 31 at 760.

- ◆ Developed a 304-year tree-ring chronology from post oak trees.
- ◆ Reconstructed precipitation and streamflow.
 - to provide a longer term perspective of climatic variability than is possible with instrumental records and
 - to evaluate the risk of drought.

Groundwater Basin Determination: Hydrologic Characteristics, cont.

15 **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 not, between the western 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. Geophysical studies were performed across the aquifer. For historical hydrology, we have data on streamflow data from that history and a rough idea of what is going on in the western part of the aquifer. We will be working on the western part of the aquifer in the future.

Tab 16 at 160 (emphasis added)

Groundwater Basin Determination: Hydrologic Characteristics, cont.

16 Detailed explanations of the Aquifer's hydrologic characteristics can be found at:

- ◆ Tab 17 at 175-182
- ◆ Tab 18 at 261-289

40 Groundwater Basin Determination

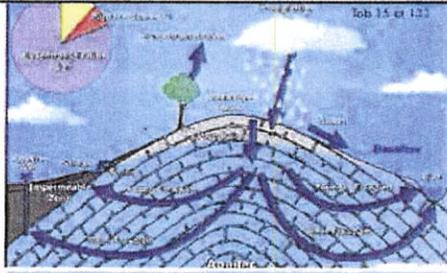
The record is rife with geologic information and data, hydrologic information and data, and well information and data. The OWRB's determination was based upon substantial evidence.

GROUNDWATER MODEL

42 Groundwater Model

17 The USGS developed a digital groundwater-flow model of the eastern portion of the aquifer "to test conceptual models of the aquifer and to predict the consequences of aquifer-scale groundwater withdrawals on streamflow." Tab 31 at 751.

18 Was not meant to be the sole decision-making tool. Rather, the studies, data, and information (including the model) provided the OWRB with scientific information needed to satisfy the statutory requirements. Tab 101, Part 13 at 00:49:31 – 00:50:45.



43 Groundwater Model, cont.

Spring discharge equals recharge. Tab 101, Part 7 at 00:46:20-00:46:41.
If you withdraw groundwater to amounts equal to or greater than recharge, the springs will go away. *Id.*

Groundwater Model, cont.

- Importance of recharge stressed to Petitioners no less than five (5) times during the formal hearing:
 - Tab 101, Part 6 at 00:14:54-00:16:00
 - Tab 101, Part 6 at 00:16:01-00:16:26
 - Tab 101, Part 6 at 00:34:35-00:34:54
 - Tab 101, Part 7 at 00:06:21-00:06:47
 - Tab 101, Part 7 at 00:46:20-00:48:41

Groundwater Model: Storage Coefficient, cont.

- Even Petitioners' experts agree the USGS took great care in developing a model to accurately depict recharge and stream flow.
 - Dr. Reely stating that the model was developed "to simulate recharge, storage, flow, and discharge from the eastern lobe." [Tab 101, Part 12 at 00:11:58 - 00:12:07]
 - Dr. Poeter admitting that "much effort was applied to representing the distribution of hydraulic conductivity and recharge in the model." [Tab 89 at 1731]

Groundwater Model: Storage Coefficient

Petitioners' Argument

- One study indicates a storage coefficient of 0.011. [Tab 34]
- Generally, when you have a water table discharging to springs, the storage coefficient is 10 times greater than a confined storage coefficient.
- Short pump test preliminarily indicated a storage coefficient of 0.011.

Groundwater Model: Storage Coefficient, cont.

Problems with Petitioners' Argument

- 1. Study cited only used 5 of 14 wells to determine storage coefficient. [Tab 34 at 926]
- 1. The Arbuckle-Simpson Aquifer is the exception to the general rule. [Tab 101, Part 6 at 00:25:23-00:25:28 (Scott Christenson testifying "I also expected [the storage coefficient] to be much higher. We made measurements. It isn't.")] [Tab 92 at 1740 (Then OWRB Executive Director, Duane Smith, stated "The aquifer is very deep, and has a lot of water by some standards, but the storage is very small. This is something that is very surprising to us.")]

Groundwater Model: Storage Coefficient, cont.

Problems with Petitioners' Argument

- The pump test was only conducted for 24 hours, when it is preferred to run for at least 7 days in order to obtain accurate storage coefficient. [Tab 101, Part 7 at 00:11:39-00:12:57; Tab 18 at 282]
- Petitioners never identified what they allege to be the proper storage coefficient, let alone establish if it would change the ultimate determination.

Groundwater Model: Storage Coefficient, cont.

Substantial Evidence in Record

Previous studies report storage coefficient of 0.008. [Tab 34 at 926]
 All storage coefficient determinations in previous study were less than 0.1, even in parts that should be unconfined. [Tab 18 at 278]
 Regional storage coefficients calculated as part of study ranged from 0.008 to 0.011. [Tab 18 at 282]
 Table 10 calculates the storage coefficient for Byrds Mill Spring (with discharge entirely of groundwater) to be 0.008. [Tab 18 at 282, Table 10]
 Table 11 calculates storage coefficients for 10 wells based upon multiple recharge events. The storage coefficients range from 0.00211 to 0.07475. [Tab 18 at 284, Table 11]
 Utilizing experience and expertise, OWRB considered the relative thickness of the Aquifer. [Tab 18 at 249, Figure 5 end at 295]

Groundwater Model: Confining Upper Layer, cont.

Petitioners' Argument

- Generally, when you have a water table, the aquifer is unconfined. Thus, the upper layer of the ASA is unconfined. [BIC at 21]
- Using a storage coefficient of 0.07475 for the upper model layer, the model simulated streamflow reduction 5 times less than using a storage coefficient of 0.008. [BIC at 28]

Groundwater Model: Confining Upper Layer, cont.

Problems with Petitioners' Argument

- The ASA is not a typical aquifer. In many instances, the Aquifer exhibited characteristics of a confined aquifer, even in places that should be unconfined. [Tab 101, Part 6 at 00:21:30-00:22:46; Tab 18 at 295]
- Dr. Poeter did not recalibrate the model after making changes to the upper layer's storage coefficient. [Tab 120 at 1939]

Groundwater Model: Confining Upper Layer, cont.

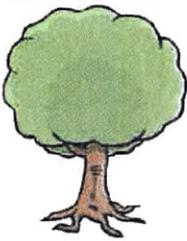
Substantial Evidence in Record

- Areas expected to be unconfined behave in a confined manner. [Tab 101, Part 6 at 00:21:30-00:22:46]
- Treating the aquifer as confined has numerical benefits in that the solution is more linear and instability is reduced. [Tab 18 at 295]

53 Groundwater Model

Not the sole basis of the OWRB's Order
 Recharge is the key factor
 Misdirection by Petitioners

Evidentiary Conclusion



- One valid objection: natural flow.
- Fails because substantial evidence supports Order
- Other ancillary objections.
- Fails because substantial evidence supports Order

PROCEDURAL QUESTIONS

Natural Flow Determination

- All Parties agree the OWRB's Order falls under Article II of the Oklahoma Administrative Procedures Act [Petitioners' BIC at 4; OWRB Response at 17; CPASA Response at 29]
- Every agency decision is not required to be in the form of a rule. See *Okla. Public Employees Ass'n v. Okla. Dept. of Central Services*, 2002 OK 71 ¶ 33.
- "Rule" specifically excludes "orders by an agency." 75 O.S. § 250.3(17)(e).

Compliance with Writ

- "To the extent that somebody does feel that they need to present something that is in the nature of evidence, I ask you to please submit a motion to admit that along with a statement justifying why that could not be done today and explaining its relevance and importance to the proceeding."
[Tab 101, Part 13 at 01:24:37-01:25:06]

CONSTITUTIONAL COMPLIANCE

Constitutional Compliance

- "Acts done in the proper exercise of the police power, which merely impair the use of property, do not constitute a taking within the meaning of the constitutional requirements . . ." *Jacobs Ranch*, 2006 OK 34, ¶ 52.
- Long established that water can be restricted by the state through its police powers "for the preservation of the public health, safety and welfare without compensating the property owner." *Franco-American*, 1900 OK 44, ¶ 16.

Constitutional Compliance, cont.

- In *Franco-American*, statute "abolish[ed] the right of riparian owners to assert their vested interest in the prospective reasonable use of the stream." ¶ 17
- Landowners over the ASA may still withdraw groundwater—their rights have not been abolished.

Conclusion

Petitioners' failed to meet the strict burden of proof required in such an administrative appeal.

Petitioners' attempts to create procedural "error" fail.

The OWRB's Order constitutes a reasonable exercise of the State's police power.

**This Court should rule against
Petitioners by affirming the MAY Order
of the OWRB.**