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Kansas Department of Agriculture

Division of Water Resources

Re: Wichita ASR Project

January 22, 2019

I am a landowner and irrigator located in the NW corner of Sedgwick County, Ks and in the Equus Beds GMD #2 district. I am a 4<sup>th</sup> generation farmer/rancher on this family land (now retired). My family continues to operate and farm the land.

I have three irrigation water rights and wells and my domestic household well, all located approximately within one mile north of the Arkansas River. And I have another water right/irrigation well 2 miles North of the River.

It is well recognized that in this area that the groundwater moves between the Equus Beds and the underground flow of the river through the porous sandy loess based soils and unconsolidated gravels and substrates, based on the water levels in both the Equus Beds groundwater and level of water flow in the river. Water in the river, which has a high saline content well documented by the Kansas Geological Survey as well as the Kansas Department of Health & Environment, and is attributed to both historic salt brine mining impact in and along the Arkansas River in Hutchinson, as well as the natural impact from Rattlesnake Creek and its cutting across the surfacing of the Hutchinson Salt member in Barton County. If the river flow (surface and underflow) is higher than the ambient level occurring in the Equus Beds at any time, then the poor quality river underflow will migrate north into the aquifer groundwater. At that point the river is considered to be a "losing" stream.

While groundwater near and along the Arkansas River in this area has long tended to be somewhat mineralized and under the influence of the river, I suspect that the nearly 70 years of pumping by the City of Wichita and the resultant aquifer cone of depression of some 15 miles in diameter, has sustained and amplified further the intrusion of the poor quality river water and the creation of the currently existing saline laced "plume" along and to the North of the river. As a result I have gone to considerable expenses over the years to re-to drill all my shallow irrigation and domestic wells to depths to near the bottom of the aquifer in an attempt to secure better quality water.

I am greatly concerned that if the City of Wichita is allowed under this proposed new plan, to further and drastically lower the level of the water in the Equus Beds during times of drought, it will greatly exacerbate and speed up the movement of the saline water from the river further to the north in the area where I live and own land, thus having such a deleterious on the water quality available in my wells, that it will have a very negative impact on both domestic use and stock water impacts on animal health, on my ability to raise crops which may suffer from leaf and root burn from saline water, and thus hurt yields. In addition it will create higher levels of salinity in the soil that cannot easily be ameliorated, reducing the actual value of my land through loss of physical soil quality, and well as reducing the value of my water rights.

It will have corrosive effects on well casings, pumps, and irrigation systems and piping, shortening the serviceable life of such equipment and necessitating expensive repairs and replacements.

Once the poor quality river water plume has further infiltrated into the aquifer, it will become virtually impossible to reverse that effect and we as landowners and residents will see our property values, our ability to produce crops and our quality of life very negatively impacted from this point in time forwards.

A similar situation exists in the Burrton oil field salt water plume area, that too would be greatly exacerbated by this proposed program. There are two options that the COW has not considered for this area, the first is to drill wells in the core area of the plume and begin pumping out to the COW where it can be blended in with other water with minimal impact, but it create a cone of depression in the plume and begin "mining" out the highest concentrated saline water and over time reduce the potency threat of the plume to the entire aquifer. Pumping there would also reduce the demand in the core of the Equus Beds and reduce the "pull" of the aquifer on the plume.

In addition to that the city should offer the use of their tree shear equipped skid loaders to attack and remove the extensive cedar tree infestation that has occurred in the Burrton/Buhler sand hills area. The city should offer this service free of charge to landowners. It would be much less expensive than the costly engineered project that has been attempted thus far. It has been well documented by Oklahoma State University and others of the massive amount of water used by a single cedar tree on a year round basis since they are an evergreen. There are 10's of thousands of cedar trees in this area. Their removal would allow a return to the high percolation precipitation recharge that had typically occurred in this area, further diluting and reducing the threat of the salinity plume.

Cedar trees in this area are a non-native invasive species, and have created loss of wildlife habitat for numerous species, loss of grass for pasture or haying, as well as a tremendous wildfire risk to homes and people living in the area, as has been seen in the last decade of wildfire events in this area. The overgrown land has lost value and become nonproductive for nearly any economic purpose.

I think the City should be forced to look at their water supplies as an integrated wholistic system, and that they have to utilize the Cheney Reservoir as their first and main water source. After all they are the sole owner and user of water from that source, no others depend on it, whereas the Equus beds Aquifer has many hundred other holders and users of water rights, including other municipal users as well as industrial, agricultural irrigation and livestock, and urban and rural residents who depend on domestic wells for their own use and consumption. In nearly all those cases, unlike Wichita, these users have no other viable water source, but are entirely dependent on the Equus Beds aquifer. Wichita still has the ability to look beyond parochial politics and work with Eldorado as a source. Additionally a strict water conservation program for city residents and industrial users should be mandated for any time of drought in order to manage and reduce consumption.

Wichita already has the ability to treat and inject surface water from the Little Arkansas River into the Equus Beds Aquifer and to get additional water allocation for pumping and supplying the City over and above their historically held water rights and appropriations by doing so.

To give them additional credits for recharge when they were unable to actually do it, would be akin to allowing every irrigator to gain additional water appropriation every time it rained and they refrained from pumping irrigation water as a result. Actually that makes more sense if you consider that the

GMD#2 management models are based on up to a 20% precipitation recharge, so some actual recharge would be taking place during “wet” times, whereas the city would not actually be recharging anything through their system, and would no doubt still be pumping water for their use, regardless of whether the irrigations systems were shut down or not.

I think the Cities proposed application should be studied with great scrutiny, with an eye on providing long term protections for quality of the aquifer and the myriad of other water users and residents of the Equus Beds Aquifer area.

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