

STATE OF KANSAS
BEFORE THE DIVISION OF WATER RESOURCES
KANSAS DEPARTMENT OF AGRICULTURE

In the Matter of the City of Wichita's)	
Phase II Aquifer Storage and Recovery Project)	Case No. 18 WATER 14014
In Harvey and Sedgwick Counties, Kansas.)	
<hr/>)	
Pursuant to K.S.A. 82a-1901 and K.A.R. 5-14-3a)	

INTERVENERS' PRE-HEARING BRIEF AND WRITTEN TESTIMONY

Richard Basore, Josh Carmichael, Judy Carmichael, Bill Carp, Carol Denno, Steve Jacob, Terry Jacob, Michael J. McGinn, Bradley Ott, Tracy Pribbenow and David Wendling ("Intervenors"), by and through counsel Tessa M. Wendling, submit the following pre-hearing brief and written testimony pursuant to the Notice of Final Hearing Schedule issued by the Chief Engineer, Division of Water Resources in the above-captioned matter on December 21, 2018.

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INTRODUCTION

“We forget that the water cycle and the life cycle are one”
Jacques Cousteau

One in five Kansas residents relies on the Equus Beds Aquifer for water. In the 1940’s the City of Wichita (hereinafter “City”) began using the Equus Beds as its primary source of water. Over pumping was depleting the aquifer and, in 1993, the aquifer experienced its lowest recorded water levels. Over the past 15 years the City has been working to recharge the aquifer with an Aquifer Storage and Recovery (ASR) Project at an estimated cost of \$243.5 million.

During the recent 2011-2012 drought the City realized that, in spite of the extensive analysis and modeling done by Burns & McDonnell, this significant investment did not yield a reliable source of water supply. The City realized that water levels in the basin storage area are not solely dependent on the City.¹ Without admitting failure of the ASR project, the City has decided to repurpose the ASR Project for drought mitigation; to ensure a reliable water supply during a 1% drought. Once again relying on analysis and modeling from Burns & McDonnell, the City requested modifications to the ASR Project to (i) lower the minimum index levels between 9.1 ft. and 23.42 ft. across the Basin Storage Area and (ii) allow the City to accumulate Aquifer Maintenance Credits (AMC), capped at 120,000 acre-feet, for water pumped from the Little Arkansas River and used directly. These requests would appropriate additional water to the City of Wichita without properly submitting an application to appropriate water to the Chief Engineer. Approving these modifications rewards the City’s failed ASR efforts, bypasses established regulations and, of much greater import and concern, will be detrimental to other water users and the overall water supply. These modifications would lead to impairment claims, likely chloride contamination of the Aquifer and an unauthorized taking of property.

STATEMENT OF RELEVANT AND UNCONTROVERTED FACTS

¹ Jacobs, Michael G., City of Wichita Letter to DWR Chief Engineer RE: Requested Modification to Limitations on Water Rights. May 24, 2013.

PHASE I:

- a. On July 3, 2003, the City filed applications to appropriate water for purposes of operating Phase I of an Aquifer Storage and Recovery ("ASR") Project.
- b. On September 14, 2004, Equus Beds Groundwater Management District No. 2 (hereinafter "GMD2") and the City agreed to a Memorandum of Understanding regarding Phase I of the ASR (hereinafter "MOU1"). In MOU1 the parties agreed the following:

"One objective of the Project is to retard the eastward movement of the Burrton saltwater contamination. Phase I has multiple objectives including beginning to build a hydraulic barrier to the Burrton contamination. Additional phases are required to fully implement the hydraulic barrier."²

- c. On August 8, 2005, Phase I of the ASR project was approved. The Findings and Orders issued by Chief Engineer David L. Pope included the following:

"That aquifer storage and recovery means the artificial recharge, storage and recovery of water and consists of apparatus for diversion, treatment, recharge, storage, extraction and distribution of water."

"That Phase 1 of the project proposes to begin the development of hydraulic barrier to prevent the migration of a brine plume, currently located in the vicinity of Burrton, Kansas, into the area where the City's existing Equus Beds well field and other water rights are located; that the wells proposed under Application File Nos. 45,567, 45,568, 45,576 and 46,081 are intended to be used, in part, to raise the water level in the aquifer in the area just east of the brine plume through the injection of source water diverted by means of the diversion wells; that the raising of the water level in the aquifer will alter the existing gradient such that the movement of the brine plume will be restricted from encroachment into the City's well field." (Finding 38)

"That passive recharge credits should not be allowed because they are not "artificial recharge" as defined in K.A.R. 5-1-1, because no source water is being artificially recharged to create those credits." (conclusion 3)

"That if the project is operated so that recharge credits cannot be withdrawn if the static water level in the index well is below the lowest index water level for that index well, the public interest in not diverting Equus Beds groundwater will be protected" (conclusion 13)

² Phase I MOU Issue 6 September 14, 2004

"That the project is in the public interest because it will:

1. Make the City's long-term water supply more reliable;
2. Benefit the City and other water users in the area by delaying or stopping the Burrton salt water plume from entering the area and contaminating this fresh water source of supply; and
3. Raise the water level in general which in turn reduces the pumping head saving water users in the area energy and money."

d. ASR Phase I was completed in September 2006.

PHASE II:

- a. Phase II of the ASR Project is comprised of applications filed on November 13, 2006, February 12, 2007 and October 8, 2008 to appropriate groundwater for beneficial use and appropriate surface water from the Little Arkansas River.³ "The goal of ASR Phase II is to provide additional groundwater quality protection by inhibiting the movement of the oil field brine into the wellfield area while also developing a supplemental source of supply to meet future demands."⁴
- b. On December 3, 2008 the City and GMD2 entered into a Memorandum of Understanding regarding Phase II (hereinafter "MOU2") that documented agreements between the parties including but not limited to the following:
 - The City will insure that the water recharged by the Project will not degrade the ambient use of water in the basin storage area.
 - The City and GMD2 will jointly conduct an annual public Project review meeting to include stakeholders, regulatory agencies and other interested parties.
 - Because the Project recharge and recovery wells can only be pumped if water levels in the aquifer are higher than the historic low level, no impairment is expected.
- c. On September 18, 2009 a Findings and Order for the City of Wichita's ASR Project Phase II was issued stating:

"That aquifer storage and recovery means the artificial recharge, storage and recovery of water and consists of apparatus for diversion, treatment, recharge, storage, extraction and distribution of water." (Finding 6)

³ Findings and Order for the City of Wichita's ASR Project Phase II. David W. Barfield at 1. September 18, 2009.

⁴ City of Wichita, WaterSMART: Title XVI Water Reclamation and Reuse Projects Application at 8. July 2018.

“That passive recharge credits shall not be allowed” (Order 2)

- d. In approving Phase II, the Chief Engineer issued the Approval of Application and Permit to Proceed authorizing the diversion of 45,230 acre-feet per year to the City from Little Arkansas River flows under File No. 46,627. This diversion was authorized for both Artificial Recharge to the basin storage area and for municipal use.⁵ The City gained approval for 24 additional permit applications authorizing withdrawal of groundwater recharge credits each containing multiple permit conditions. As an example, the following conditions taken from the permit issued for File No. 46,714:

“That the applicant shall not be deemed to have acquired a water appropriation for groundwater from the Equus Beds aquifer, except for recovery of water recharged pursuant to the approved aquifer storage and recovery project ... (permit condition 7)

“That the use of water herein authorized shall not be made so as to impair any use under existing water rights nor prejudicially and unreasonably affect the public interest.” (permit condition 8)

“That the proposed recovery of water artificially recharged by the City shall only occur when recharge credits are determined to be available in Cell No. 6, and the static water level is above elevation 1,387 mean seal leave (msl).” (permit condition 19)

- e. Phase II of the ASR was complete and operating in 2013.
- f. On May 24, 2013 the City of Wichita requested that the Kansas Department of Agriculture, Division of Water Resources (hereinafter “DWR”) revise the Phase II water appropriations to allow withdrawal of recharge credits and remove the 1993 index water level, claiming that the Chief Engineer did not originally consider that during a drought water levels would decline due to lower precipitation and increased irrigation.⁶
- g. Effective April 29, 2016, although opposed by GMD2,⁷ Kansas Farm Bureau, and Kansas Livestock Association, K.A.R. 5-1-1 and 5-12-1 were modified, as requested by the City.

⁵ Approval of Application and Permit to Proceed File No. 46,627 David W. Barfield September 18, 2009.

⁶ Jacobs, Michael G., City of Wichita Letter to DWR Chief Engineer RE: Requested Modification to Limitations on Water Rights. May 24, 2013.

⁷ Boese, Tim, Equus Beds GMD2 letter to Lane Letourneau Re: Proposed Changes to K.A.R. 5-1-1 and K.A.R 5-12-1. June 12, 2015

Division of Water Resources Chief Engineer David W. Barfield reasoned in approving the change:

“Examination of the USGS storage data indicates that during the recent drought, a pattern of decline is emerging in areas of the Equus Beds Aquifer. While the City has not increased its usage from the aquifer and does not use all of its available water appropriates, water levels have declined significantly during the recent drought through reduced recharge and increased use within the basin storage area. This pattern indicates **water levels in the basin storage area for the aquifer storage and recovery project are not solely dependent on the amount of water that the City utilizes.**”⁸

CURRENT PROPOSAL:

- a. On March 12, 2018, the City submitted a proposal titled “ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits,” Attachments A – J and a letter to the Chief Engineer (hereinafter “Proposal”). This Proposal requests two changes (i) lower the minimum index levels between 9.1 ft. and 23.42 ft. across the basin storage area and (ii) allow the City to accumulate Aquifer Maintenance Credits (AMCs), capped at 120,000 AF, for water pumped directly from the Little Arkansas River and used directly.
- b. On September 27, 2018, the Chief Engineer issued an Order to Modify Hearing and Schedule

“The City shall bear the burden of proof, proving by a preponderance of the evidence that the proposed changes to the project should be approved. The proposed changes must meet the requirements set forth for Aquifer Storage and Recovery projects in K.A.R. 5-12-1 et al. and the requirements set forth in K.S.A. 82a-708b, including that the proposed changes are reasonable and will not cause impairment and that the proposed changes related to the same local source of supply. Whether or not a change is reasonable should consider the affect upon the public interest.”⁹

- c. On April 4, 2018, the City advised GMD2 Board of Directors that as a result of apparent opposition to the proposal submitted on March 12, 2018, the City had made changes to their water supply strategy making the Equus Beds the predominate water supply for the

⁸ Kansas Department of Agriculture Impact Statement Amended Regulations K.A.R. 5-1-1 Definitions; and K.A.R. 5-12-1 Aquifer Storage and Recovery Permitting. March 24, 2016. Emphasis Supplied.

⁹ Order to Modify Hearing and Schedule. at 1. Barfield, David W. (September 27, 2018)

City. "...to produce ASR credits sooner rather than later the City, at least for now, must make space in the aquifer for physical recharge credits to be produced."¹⁰

- d. On October 11, 2018, the Army Corps of Engineer announced the release of water from Cheney Reservoir to maintain the safety of the dam.¹¹
- e. The City has not filed a change application or a new application to appropriate water in seeking approval for the modifications contained in the Proposal.
- f. The City proposes to withdraw accumulated AMCs under existing permits for aquifer storage and recovery wells. K.A.R. 5-22-7 exempts applications for aquifer storage and recovery wells from Safe Yield Regulations.
- g. The City did not analyze the environmental impact of drawing water down to the proposed minimum index levels or the withdrawal of accumulated AMCs. The model used by the City was constructed to simulate groundwater flow in the Equus Beds and is not able to identify individual wells or water rights that might be impaired by the proposed modifications. "Model results were evaluated on a relatively large scale and cannot be used for detailed analysis such as simulating water-level drawdown near a single well. A grid with smaller cells would be needed for such detailed analysis."¹²
- h. The DWR did not independently assess the City's model and determined that the Proposal was sufficiently reasonable to move forward based on Wichita's stated commitment to delay use of recharge credits until a protracted drought.¹³ DWR further contends the proposed new minimum index levels are "not that significant compared to the practical saturated thickness of the aquifer."¹⁴
- i. Table 2-3 of the Proposal shows the simulation results for a 1% drought based on projected demands. The City's model analysis shows a need of 580,163 acre-feet for the modeled

¹⁰ King, Alan D., City of Wichita letter to Equus Beds GMD2 (April 26, 2018.)

¹¹ KWCH, "Army Corps of Engineers to Release water from Cheney Reservoir" October 11, 2018 available at <https://www.kwch.com/content/news/Army-Corps-of-Engineers-to-release-water-from-Cheney-Reservoir-497031291.html>

¹² Kelly, B.P., Pickett, L.L., Hansen, C.V., and Ziegler, A.C., 2013, Simulation of groundwater flow, effects on artificial recharge, and storage volume changes in the Equus Beds aquifer near the city of Wichita, Kansas well field, 1935-2008: U.S. Geological Survey Scientific Investigations Report 2013-5042, 90 p. 72

¹³ DWR's Responses to Intervenor's Interrogatories, No. 19. December 17, 2018

¹⁴ DWR's Responses to Intervenor's Interrogatories, No. 21. December 17, 2018

drought. 216,313 acre-feet, 37%, is allocated to Cheney and the remaining 363,850 acre-feet, 63%, is allocated to the Equus Beds. After using 40,000 acre-feet per year in water rights there would be a shortfall of 43,850 acre-feet from the City's authorized permits in the Equus Beds.¹⁵

- j. The Proposal would allow the City to earn AMCs while at the same time withdrawing accumulated AMCs or recharge credits.¹⁶ Neither the City or DWR have proposed a permit condition that would require the City to use its full available native water rights prior to using any recharge credits.
- k. The Proposal to accumulate AMCs, allowed to be withdrawn under existing permits, would not involve the injection of "source water" as defined by K.A.R. 5-1-1 (yyy) into the Aquifer.¹⁷ "It is DWR's understanding that, under the AMC Proposal, the Aquifer will not be artificially recharged."¹⁸ It is DWR's understanding that, under the AMC Proposal, "source water" (as defined by K.A.R. 5-1-1(yyy) will not be treated and used."¹⁹
- l. DWR did not perform independent calculations or modeling as it relates to the AMC Proposal or lowering of the minimum index levels.²⁰
- m. The Proposal does not consider the impact of GMD2's February 1, 2017 recommendation to expand the Burrton IGUCA boundaries to include portions of the basin storage area/City of Wichita Well Field. Hearings have been held regarding the Burrton IGUCA boundary expansion; however, no decision has been made.²¹ On October 4, 2016 the City provided the following written testimony:

"The City of Wichita Supports the continuation of the IGUCA as long as the IGUCA does not limit the City's ability to withdraw water from any of its wells, including recharge credits. Further the City would be a proponent of expanding the IGUCA boundaries to include the ASR Phase I wells if the IGUCA guaranteed the City could

¹⁵ City of Wichita ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits, March 12, 2018 p 2-5.

¹⁶ DWR's Responses to Intervenor's First Interrogatories, No. 3. December 17, 2018

¹⁷ DWR's Response to GMD2's Second Set of Interrogatories. No 5. December 21, 2018

¹⁸ DWR's Response to GMD2's Second Set of Interrogatories. No 7. December 21, 2018

¹⁹ DWR's Response to GMD2's Second Set of Interrogatories. No 8. December 21, 2018

²⁰ DWR's Response to GMD2's Second Set of Interrogatories. No 12-13. December 21, 2018

²¹ DWR's Responses to Intervenor's Interrogatories, No. 11. December 17, 2018

transfer the point of withdrawal of recharge credits away from any of the IGUCA-affected wells to other city wells.”²²

- n. In July 2018, the City completed an Application for Federal Assistance for ASR Phase III Improvements. The project has an estimated cost of \$48.5 million (seeking \$3.1 million in Federal grant funds) and was to start in September 2018 and be completed by September 2020.²³ ASR Phase III involves additional Bank Storage Wells (BSW’s) to capture source water in addition to Recharge Basins and Recharge Recover Wells to facilitate recharge and recovery. Phase III was presented to accumulate the necessary water supply within 10 years to meet the projected water deficit during 1% drought.²⁴

DATA & STATISTICS:

- a. In 2001, the City requested Federal assistance for the ASR project based on the project goal to “store 65 billion gallons of water in the aquifer to use during drought and high demand periods”. The planned facilities would capture and recharge up to 100 million gallons per day with an estimated cost for the entire project of \$110 million. Phase I would capture and recharge 10 mgd at an estimated cost of \$17.1 million.²⁵ Again in 2009 in an effort to gain Federal assistance the City explained Phase II would provide 30 million gallons per day at an estimated \$125 million.²⁶
- b. Actual Recharge as of October 2018 for Phase I and Phase II combined is 3,632 Million gallons since 2017.²⁷ With a total projection of 40 mgd for Phase I and Phase II combined at 120 days or 4,800 million gallons a year. If the original projections of 10 mgd for Phase I

²² King, Alan, City of Wichita Written Testimony October 4, 2016.

https://sftp.kda.ks.gov:4443/IGUCA.Reviews/Burrton/BurrtonIGUCA_Wichita_Testimony.pdf

²³ City of Wichita, Watersmart: Title XVI Water Reclamation and Reuse Projects. ASR Phase III Improvements. FOA: BOR-DO-18-F011.

²⁴ City of Wichita, WaterSMART: Title XVI Water Reclamation and Reuse Projects Application July 2018. p 9, 47. “To meet the goal of accruing 60,000 AF within 10 years, ASR Phase III will consist of a series of 18 new ASR Bank Storage Wells (BSWs), 10 new Recharge Recovery Wells (RRWs), 2 Recharge Basins (RBs), and a conveyance pipeline. These ASR Phase III improvements will provide an average annual yield of 6,600 AF during normal hydrologic conditions.”

²⁵ 2001 ASR Summary for Congress. City of Wichita.

²⁶ Blain, Gerald. 2009 ASR Appropriations Federal Request. City of Wichita.

²⁷ <https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/atoms/files/Combined%20Yearly%20Recharge%20Volumes%28phase1%26%29.pdf>

and 30 mgd (11,000 acre-feet) for Phase II had been accomplished over 25,000 million gallons of recharge instead of the 3,632 million gallons reported as of October 2018.

- c. ASR Phase I cost approximately \$38.9 million. ASR Phase II incurred rehab costs of \$88 million and new supply costs of \$116.6 million. Initial production estimates for Phase II were 30 MGD for 120 days (11,000 acre-feet per year).²⁸ The 2016 Annual ASR Accounting Report reflects a total of 6,372.2 AF in recharge credits. This represents a cost of \$38,212.86 per AF based on the City's cost estimations.

ISSUES

1. Should the bottom of the basin storage area be lowered as proposed by the City of Wichita?
2. Should the modification to the applicable accounting procedures be approved to allow the accumulation of Aquifer Maintenance Credits or AMCs?

ARGUMENT

THE CHIEF ENGINEER LACKS JURISDICTION TO AMEND EXISTING WATER PERMITS.

It is well settled that "No person may acquire a new appropriation right to the use of waters of the state for other than domestic purpose without making an application to the Chief Engineer for a permit to make such an appropriation" K.S.A. 82a-709. Additionally K.S.A. 82a-708b provides: "(a) Any owner of a water right may change the place of use, the point of diversion or the use made of the water, without losing priority of right, provided such owner shall: (1) apply in writing to the Chief Engineer for approval of any proposed change; (2) demonstrate to the Chief Engineer that any proposed change is reasonable and will not impair existing rights; (3) demonstrate to the Chief Engineer that any proposed change relates to the same local source of supply as that to which the water right relates; and (4) receive the approval of the Chief Engineer with respect to

²⁸ City of Wichita, ASR Project History & Production

any proposed change.” The City of Wichita has not made an application to the Chief Engineer for a new application under K.S.A 82a-709 or a change application as allowed by K.S.A. 82a-708b.

Without a new or change application filed by the City, the Chief Engineer lacks jurisdiction to make changes to the existing water permits contemplated by the City’s Proposal to lower the Basin Storage Area and create a new form of recharge credit. “The Chief Engineer cannot retain jurisdiction once the Kansas Department of Agriculture issues a final order” *See Clawson v. State*, 49 Kan. App. 2d 789, 315 P.3d 896, 902 (2013). In Kansas, administrative agencies do not possess common-law powers, authority must be conferred statute. *Id.* at 905. “Where an agency has no specific statutory authority to retain jurisdiction, it has no ability to reconsider or modify its final orders once the time for seeking judicial review has passed. *See Johnson v. Kansas Dept of Revenue*, 29 Kan.App.2d 455, 459, 27 P.3d 943 (2001) and *Clawson*, 315 P.3d at 905. The court also found that the Chief Engineer does not gain continuing jurisdiction merely by adding such language to the permit. Finally, the court clarified the Chief Engineer does not retain jurisdiction to modify an order during the perfection period. *Id.* at 906.

The City’s proposed lowering of the bottom of the basin storage area is a material change to the City’s existing permits to appropriate water. The City’s existing permits were granted after extensive analysis and negotiations resulting in a Memorandum of Understanding for each of Phase I and Phase 2 of the ASR project. The permits have various terms and conditions that act as safeguards to protect the public interest and other water users including but not limited to Minimum Index Levels, rate of diversion, and annual quantity. Analysis by Balleau Groundwater, Inc. of the City’s model shows that the lowered minimum index levels would allow an additional diversion of 79,500 AF of water in addition to the 14, 900 AF allowed by the current minimum index levels.²⁹ The Chief Engineer does not have the authority to modify this order as the City has proposed. The City is requesting a new appropriation and therefore must make an application for such an appropriation under K.S.A. 82a-709.

²⁹ Romero, Dave M. Technical Assessment ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits, at 6. (February 18, 2019)

The proposed Aquifer Maintenance Credits (AMCs) are another attempt for the City to divert additional water without following the proper procedure and filing a new application to divert water. The City has attempted to disguise this additional appropriation as a change to the ASR accounting methodology; however, no change in accounting methodology can qualify water diverted from the Little Arkansas and used directly by the City as a Recharge Credit. K.A.R. 5-1-1 (mmm) defines Recharge Credit as “the quantity of water that is stored in the basin storage area and that is available for subsequent appropriation for beneficial use by the operator of the aquifer storage and recovery system.” The City’s AMC proposal does not involve storing any water in the basin storage area and **instead seeks to “divert native water present in the Aquifer, which is there as a result of recharge from precipitation and the required return flow from other water rights in the area.”**³⁰

It is a wasteful use of resources for the Division of Water Resources, Chief Engineer, GMD2 and others to continue evaluating a proposal that is not submitted in conjunction with either a new application pursuant to K.S.A. 82a-709 or a change application under K.S.A. 82a-708b.

THE CITY HAS FAILED TO MEET ITS BURDEN OF PROOF THAT THE PROJECT SHOULD BE APPROVED, IS REASONABLE, WILL NOT CAUSE IMPAIRMENT AND RELATES TO THE SAME LOCAL SOURCE OF SUPPLY.

The City has the burden to show “by a preponderance of the evidence that the proposed changes to the project should be approved.”³¹ “The proposed changes must meet the requirements set forth in Aquifer Storage and Recovery projects in K.A.R. 5-12-1 et al. and the requirements set forth in K.S.A. 82a-708b, including the proposed changes are reasonable **and will not cause impairment and that the proposed changes relate to the same local source of supply. Whether or not a change is reasonable should consider the affect upon the public interest.**”³²

The City’s model is not fit for the purpose of predicting impairment caused by the proposed modifications. The model is limited by scale and time distributions and unable to identify potential

³⁰ Pope, David Expert Report February 18, 2019 page 9 Emphasis supplied.

³¹ Order to Modify Hearing and Schedule, September 27, 2018 and Pre-Hearing Conference Order, July 23, 2018.

³² Id. Emphasis Supplied.

impairment. According to the USGS report, “model results were evaluated on a relatively large scale and cannot be used for detailed analyses such as simulating water level drawdown near a single well. A grid with smaller cells would be needed for such detailed analysis.”³³ The model is a valuable tool for measuring the volume change from one water level to another with the assumption of a “uniform storage coefficient and specific yield that applies equally.” Because we are dealing with an alluvial deposit “the depositing stream flow energy varied greatly from place to place throughout the area changing the hydraulic conductivity.”³⁴ The Proposal refers only to the vague concept of aquifer fullness rather than addressing localized issues that can arise from varying saturated thickness, depths, and water levels throughout the aquifer.

The City’s model relies on inaccurate data. The Proposed Minimum Index Levels contained in the Proposal are not the same levels used in the model. The City proposed adding a 10-foot contingency to the low water levels reached during the modeled 1% drought; however, it failed to use the proposed levels to analyze impact of the Proposal. Therefore, the minimum index levels proposed by the City are at a lower elevation than the model.³⁵ A 10-foot change in elevation to water levels can have a significant impact to domestic water users. In some index cells there is as much 640 acre-feet per foot of water level,³⁶ representing 6,400 acre-feet of water in just the City’s 10-foot contingency for a single index cell; and there are 38 index cells. While the DWR has expressed a belief the change in minimum index levels is not significant³⁷, the City should properly model the minimum index levels as proposed to prove they are reasonable and will not cause impairment to other water users. The City’s promise to address impairment after it occurs is little comfort to the many people who rely on a domestic well as their exclusive source of household water.

The City’s request to accrue AMCs capped at 120,000 acre-feet far exceeds the needs calculated by the model and fails to consider the impact of withdrawing such credits on other

³³ USGS SIR 2013-5042, Simulation of Groundwater of Wichita, Kansas Well Field, 1935-2008, p 72 (2013)

³⁴ Nuzman, Carl E. Investigation Report on Use of Surface Water for Alternative Maintenance Credits November 28, 2018.

³⁵ Romero, Dave M. Technical Assessment at 4. (February 18, 2019)

³⁶ ASR Phase I Findings and Order Attachment 4 Water Levels and Storage Capacities (August 8, 2005)

³⁷ DWR’s Responses to Intervenor’s Interrogatories, No. 21. December 17, 2018

water users and the overall health of the Equus Beds Aquifer. Table 2-9 of the Proposal shows during the modeled 1% drought the City will need approximately approximate 51,000 acre-feet³⁸ in additional water rights; however, the City has requested the accrual of AMCs be capped 120,000 acre-feet. "The 120,000 acre-feet limit is ... not a proposal to withdraw a net 120,000 acre-feet of water from the aquifer, and consequently neither such a withdrawal nor the impact on chloride migration was modeled as part of the City's proposal because such an event is not contemplated by the City's Proposal."³⁹ The Proposal cannot be deemed reasonable without, at a minimum, contemplating the withdrawal of the water rights the City seeks to obtain with the Proposal. Existing permits allow the withdrawal of 19,000 acre-feet in recharge-credits annually by the City. If approved, the City would quickly have the ability to begin withdrawing 59,000 acre-feet of water from the Equus Beds on an annual basis.⁴⁰ As Balleau Groundwater concluded in its technical analysis, "In the first year of pumping, approximately 20 percent of the pumping (10 cfs) is depleted from the river system; by the second year, about 35% of the pumping amount (20 cfs) is depleted."⁴¹ It is not reasonable or in the public interest to allow the City to deplete the river system in addition to depleting the aquifer thereby impairing other water users.

The proposed minimum index levels are based on a speculative need with no relevance to the ASR project and are therefore *per se* unreasonable. Minimum index levels represent the floor or bottom of the Basin Storage Area. Prior to recent amendments Basin Storage Area was defined as "the portion of the aquifer's unsaturated zone used for aquifer storage that has defined horizontal boundaries and is delimited by the highest and lowest index water level elevations."⁴² Lowering the ASR minimum index levels allows the City to access water in the aquifer outside of the storage area. Lowering the minimum index level and expanding the Basin Storage Area should

³⁸ City of Wichita Proposal Table 2-3 p 2-5 (March 12, 2018)

³⁹ City of Wichita's Responses to Interveners' Interrogatories to City of Wichita, Kansas No. 24 at 12 (December 7, 2018.)

⁴⁰ The City currently has 40,000 AF in native water rights and a current limitation of 19,000 AF on the withdrawal of recharge credits.

⁴¹ Romero, P.H., Dave M. Technical Analysis at 5 (February 18, 2019)

⁴² K.A.R. 5-1-1(k) 2009 Basin Storage Area was amended to be "the portion of the aquifer used for aquifer storage that has defined horizontal boundaries and is delimited by a maximum index level and a minimum index level" on April 29, 2016. The removal of "unsaturated zone" significantly changed the meaning of Basin Storage Area and paved the way for the City of Wichita to submit this proposal.

only be the result of successful artificial recharge efforts, and not simply because the City wants to access more water. Artificial Recharge is “the use of source water to artificially replenish the water supply in an aquifer.” (K.A.R. 5-1-1(g)). As of the 2016 Annual Accounting Report the City had 6,372 AF recharge credits allocated. The basin storage area is estimated to have 200,000 AF of storage space available. Clearly the City’s request to lower the bottom of the Basin Storage Area is not correlated to the need for additional storage space. It is not reasonable or in the public interest to remove a contractually agreed safeguard⁴³ to accommodate a speculative need for water in the future.

The Chief Engineer has explained the “KDA-DWR’s will determine if the pending applications comply with applicable rules and regulations, and **ensure** that if approved, the applications will **neither impair existing water rights** nor prejudicially or unreasonably affect the public interest.”⁴⁴ The City has not provided adequate, reliable information to allow the KDA – DWR to determine that existing water rights will not be impaired.

THE CITY FAILED TO CONSIDER THE ENVIRONMENTAL IMPACT OF THE PROPOSAL AND IS THEREFORE UNREASONABLE AND ADVERSE TO THE PUBLIC INTEREST.

The City’s Proposal ignores the known issue of chloride movement and contamination. The City relies on the risk of chloride contamination when seeking state and federal funding for the project with statements such as “intrusion of chloride contamination from both manmade and natural sources will eventually render the aquifer useless,”⁴⁵ and “if allowed to reach water supply wells, this [Burrton] plume would render the wells unusable, threatening the viability of the Equus Beds as a water source... deterioration or loss of groundwater availability would be catastrophic to the local ag community and the rural residential population.”⁴⁶ In contrast the City is

⁴³ In the Phase II MOU dated December 3, 2008 GMD2 agreed to grant waivers of the well spacing requirements contingent upon the conditions set out in the MOU and that such “waiver will not unreasonably impair the public interest”. The agreement between the parties was that “project recharge and recovery wells can only be pumped if water levels in the aquifer are higher than the historic low level”

⁴⁴ Letter from Chief Engineer David. W. Barfield to GMD2 Re: City of Wichita ASR Project, New Applications and proposed modified Phase II approval. (March 22, 2018.) Emphasis supplied.

⁴⁵ City of Wichita 2012 ASR Funding Brochure (2012)

⁴⁶ City of Wichita, WaterSMART: Title XVI Water Reclamation and Reuse Projects Application at 21-22 (July 2018)

attempting to almost double their ability to withdraw water from the Equus Beds and lower the exact limits established to protect against chloride migration without considering the potential risks of the modifications. As stated by the City “neither such a withdrawal nor the impact on chloride migration was modeled as part of the City’s proposal because such an event is not contemplated by the City’s proposal.”⁴⁷ A request to accumulate 120,000 AF in credits that does not contemplate the use of such credits is incomplete and inadequate to meet the City’s burden of proof that the Proposal is reasonable, will not cause impairment and is in the public interest. Intentionally ignoring this serious environmental impact demonstrates carelessness, a reckless disregard for others, and a complete lack of respect by the City for the significant time and effort GMD2, DWR and others have spent reviewing the City’s Proposal.

The City disregarded the impact that the proposed modifications will have on stream flow in the Little Arkansas and Kansas Rivers. “One cannot separate groundwater and surface water. What is surface water at one time is ground water the next. What is groundwater today becomes surface water tomorrow. Any concept dealing with all water must correlate ground water and surface water.”⁴⁸ The model used by the City does not account for low or no flow conditions in the river during periods of drought. By assuming streamflow is always present drawdown to the aquifer water levels is likely underestimated.”⁴⁹ We know that during the model period of 2011 and 2012 period stream flow measured at Valley Center was below minimum desirable streamflow (MDS) 49% of the time. In August 2012 the Arkansas River was completely dry near Wichita.⁵⁰ Allowing water levels to drop to the proposed minimum index levels would divert river water at

⁴⁷ City of Wichita’s Response to the Interveners’ First Set of Interrogatories to the City of Wichita, Kansas No. 24 (December 7, 2018)

⁴⁸ Foley, Water and the Laws of Nature 5. Kan. L. Rev. 492 at 497 (1957)

⁴⁹ Romero, Dave M. Technical Analysis February 18, 2019 pg. 7 “The USGS model simulates the Little Arkansas and Arkansas rivers as a boundary condition that does not account for total streamflow. That is, if segments of the right near the City dry out or have low flow during a drought, the model does not account for it. In that setting, there is potential for the model to overestimate river depletion from pumping, which translates to an underestimation of drawdown to aquifer water levels.

⁵⁰ Finger, Stan “The Arkansas River is now Dry in Wichita” The Wichita Eagle August 22, 2012 available at <https://www.kansas.com/news/local/news-columns-blogs/article1097706.html> and National Weather Service “Exceptional drought in 2012 leads to dry rivers across Kansas” available at https://www.weather.gov/ict/event_dryrivers2012

up to 10 cubic feet per second (CFS). “During times of drought, when MDS is generally of concern, the Proposal seeks to recover credit water from below the current minimum index level, which will cause a new depletion to the river system.”⁵¹ The City’s model must first be calibrated to properly account for streamflow before we can accurately measure the extent the City’s proposal will deplete the aquifer and rivers. A further reduction in streamflow beyond drought conditions could have negative environmental impacts both locally and downstream. Reduction in streamflow also prevents both natural and artificial recharge necessary for the aquifer to recover from drought conditions.

The City’s Proposal unreasonably considers only the City’s short-term interest while ignoring the serious and potentially irreversible damage the proposed modifications could inflict. The City explains the proposal as a way to keep the aquifer full longer and achieve higher long-term aquifer levels⁵² does not excuse a failure to examine the substantial potential harms of the proposal. Furthermore, the City’s focus on short term benefits, threats to pump a hole in the aquifer⁵³ and affirmative steps taken in that direction⁵⁴ in order to more quickly develop physical recharge credits demonstrate its lack of interest in finding a solution that protects our water supply and is in the best interest of all water users. “Individuals do not live alone in isolated areas where they, at their will, can assert all of their individual rights without regard to the effect upon others” *State, ex rel., v. Knapp*, 167 Kan. 546, 207 P.2d 440 at 555. The City’s proposal considers only the impact to the City and its bottom line and fails to meet the requirements of K.A.R. 5-12-1 et al. and K.S.A. 82a-708b.

THE PROPOSED MODIFICATIONS RESULT IN AN UNAUTHORIZED TAKING IN VIOLATION OF THE 5TH AMENDMENT.

⁵¹ Romero, Dave M. Technical Analysis at 6-7. (February 18, 2019)

⁵² City of Wichita ASR Website at <https://wichitaasr.org/index-level-faq> accessed March 13, 2019

⁵³ Letter from Alan King, City of Wichita to GMD2 RE: City of Wichita Water Rights and Aquifer Storage and Recovery (ASR) Project (April 26, 2018.)

⁵⁴ Letter from Tim Boese, Equus Beds GMD2 to City of Wichita RE: City of Wichita Water Rights and Aquifer Storage and Recovery (ASR) Project (April 6, 2018)

The changes contained in the City's proposal result in an unauthorized taking. Expansion of the Basin Storage Area by lowering minimum index levels and allowing the withdrawal of AMCs, without a prerequisite recharge system described in K.A.R. 5-12-1(b)(1)⁵⁵ to accumulate such credits is an unauthorized taking in violation of the Fifth Amendment of the United States Constitution. The Fifth Amendment to the Constitution prohibits many things including "nor shall private property be taken for public use, without just compensation." This guarantee in the Fifth Amendment "was designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole. *Armstrong v. United States*, 364 U.S. 40, 49 (1960). The Court has found that "physical taking is not inevitably required" in determining whether a property owner is entitled to compensation. *Creegan v. State*, 305 Kan. 1156, 391 P.3d 36, 47 (Kan. 2017). The protection against takings is extended to the states by the Fourteenth Amendment. Takings can be direct condemnation where the government exercises eminent domain powers to take property in exchange for just compensation.

Inverse condemnation occurs when the government takes the property without using eminent domain powers and individuals must bring a cause of action to receive compensation.⁵⁶ The three elements for inverse condemnation are: (1) a private property interest (2) taken (3) for public use. Just compensation must be paid when these elements are present. See *Creegan v. State*, 391 P.3d 36, 41 (Kan. 2017). It is undisputed that Kansas Statute deems water rights a real property right.⁵⁷ Domestic water use does not require a permit but is an appropriated right.⁵⁸ Individual Interveners possess either a water right, domestic well or both.

There are three recognized types of taking that give rise to inverse condemnation: physical, regulatory and land-use exactions. *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 548 (2005). The

⁵⁵ K.A.R. 5-12-1(b)(1) "The recharge system may include recharge pits, recharge trenches, recharge wells or other similar systems that cause source water to enter the storage volume of the basin storage area, either by gravity flow or injection." *Emphasis added*.

⁵⁶ Neither the City or DWR have commenced an Eminent Domain Action.

⁵⁷ K.S.A. 82a-701(g)

⁵⁸ **82a-705a. Domestic use after June 28, 1945; information to chief engineer.** The use of water for domestic purposes instituted subsequently to June 28, 1945, to the extent that it is beneficial, shall constitute an appropriation right.

Kansas Supreme Court held that regulatory action constitutes a *per se* taking when “the government requires a landowner to suffer a permanent physical invasion of the landowner’s property, however minor.” See *Frick v. City of Salina*, 290 Kan. 869, 885 (2010).

The right to appropriate native water in the aquifer has already been granted to others, including the Interveners, and is a real property right belonging to those with vested rights, water permits or domestic users.⁵⁹ The City claims water in the basin storage area is not aquifer water and is all “recharge water” regardless of the fact minimal to no artificial recharge actually occurs. Expanding the basin storage area will further displace native water to accommodate physical recharge credits and AMC’s if approved. This displacement, at a minimum, interferes with the ability for water users to access the native aquifer water they have a right to access and has the likely potential to impede all access to the water they have rights to use.

Approving AMC’s, as proposed by the City, inappropriately converts the native water in the aquifer to a recharge credit allocated exclusively to Wichita. In attempts to simplify the ASR concept water in the aquifer has been explained as red water and blue water. For example, blue water represents native water in the aquifer and red water represents artificially recharged water approved as a recharge credit. The City’s AMC proposal seeks to convert blue water to red water at the discretion of the Chief Engineer. The native water in the aquifer (all aquifer water with the exception of the City’s approximate 6,000 recharge credits) has already been fully appropriated for domestic use, vested rights, and appropriated water rights. In the Central Wichita Well Field, new applications to appropriate water are not available due to Safe Yield Regulations.⁶⁰ The proposed AMCs do not involve any actual recharge to the aquifer and therefore the native water in the aquifer will be inappropriately converted to recharge water. The result is a physical taking of water that has been appropriated to others. It is also a permanent physical invasion into the

⁵⁹ K.S.A. 82a-701(g)

⁶⁰ Boese, Tim Expert Report p. 8 “Based on safe yield evaluations conducted previously by the District, there is no groundwater available for appropriation in the City’s Equus Beds Aquifer well field area and therefore new groundwater appropriations cannot be approved, except for recovery of recharge credits established as a result of physical artificial recharge.”

landowner's property under the generally known common law principal that a fee-simple ownership interest in land includes the entire track "from the heavens to the depths."

Expanding the basin storage area serves no legitimate purpose other than depriving the rightful property right owners' access to exercise their rights to water and impermissibly transfers those property rights to the sole benefit of the City. The ASR projects were approved with safeguards in the permit conditions and MOUs based on the regulations effective at the time. Basin storage area was defined as "the portion of the aquifer's unsaturated zone used for aquifer storage."⁶¹ Expanding the basin storage area beyond the unsaturated zone allows the City of Wichita to deprive water right holders of over 200,000 acre-feet⁶² of water already appropriated to others and forcing it out of reach for some water users. Additionally, because the City seeks to expand the basin storage area far beyond the amount of actual physical recharge, while also gaining the ability to withdraw water far in excess of the amount recharged, the City will be withdrawing water that has been appropriated and is real property right belonging to the Interveners and others. Finally, allowing the city to lower the minimum index levels and accumulate AMCs will likely accelerate chloride contamination from the Burrton Salt Plume and Arkansas River. Intentionally contaminating the aquifer will make the water unusable for irrigation and domestic purposes and is a compensable taking.

When the taking is temporary, the Penn Central factors are applicable to determine just and fair compensation. The Penn Central factors are: "(1) economic impact of the regulation on the claimant, (2) the extent by which the regulation has interfered with the distinct, investment-backed expectations, and (3) the character of the governmental action." See *Frick* at 886.

The City's Proposal seeks to afford the City enormous flexibility in the use of water diverted from the Equus Beds and Little Arkansas River. This uncertainty impedes the Interveners' ability to calculate the economic impact of the proposed action. The Proposed modifications would allow the City to withdraw up to 59,000 acre-feet of water annually from the basin storage area. Analysis

⁶¹ K.A.R. 5-1-1 (k) 2009

⁶² ASR Phase I Findings and Order Finding No. 29. August 8, 2005.

demonstrates that at withdrawing only 40,000 acre-feet of water such actions begin depleting the Little Arkansas and Arkansas Rivers. Additionally, we see that a minimum of 35 existing wells will be impacted by the City withdrawing water as allowed by the Proposal.⁶³

The value of land and other property held in the basin storage area will be damaged when there is no longer access to usable water. Irrigated land in the region is generally worth 2-3 times the value of non-irrigated land.⁶⁴ Land owners have invested significant amounts in irrigation equipment. Information from North Dakota State University shows in 2018 an average cost of setting up a pivot to be \$90,000 with additional costs of \$65,000 for the pump, well, pipeline, controls, etc.⁶⁵ This investment, in addition to the premiums paid for land with intact water rights will be lost. Without water, homes in rural areas will be inhabitable and residents will be forced to relocate and purchase new homes where treated water is available. Additionally, livestock need water to survive and will similarly have to be sold or moved out of the Equus Beds. This will have a significant negative economic effect to the people and communities currently dependent on the Equus Beds.

Similar impairment arguments were made in *Cochran v. Kansas Dept. of Agriculture* where in spite of the Cochran's expressing concerns their prior appropriation rights would be impaired DWR approved permits for the City to appropriate water from the Bentley Well Field in February 2008. The Cochran's argued they would have "no other source of water for their home and their land other than their two points of diversion." Impairment would harm the value of their home to the extent that no one would buy a house without water. *Cochran v. Kansas Dept. of Agriculture* 291 Kan. 898, 909-910, 249 P.3d 434 (Kan. 2011) Rather than addressing the potential impairment that would be caused by appropriating more water to the City, the Division of Water Resources decided the Cochrans did not have standing to appeal the Chief Engineer's determination. After a lengthy and expensive process, the Kansas Supreme Court held the

⁶³ Romero, Dave M., Technical Analysis. At 5, 8 February 18, 2019

⁶⁴ Taylor, Dr. Mykel, 2017 Kansas County-Level Land Values. <https://www.agmanager.info/land-leasing/land-buying-valuing/2017-kansas-county-level-land-values>

⁶⁵ North Dakota State University, Irrigation – Frequently Asked Questions. at www.ag.ndsu.edu/irrigation/faq. March 18, 2019.

Cochran's have standing to challenge determinations of the Chief Engineer under the Kansas Act for Judicial Review and Civil Enforcement of Agency Actions (KJRA). *Cochran* at 910. The Division of Water Resources expressed agreement with the City's determination that protections for those negatively impacted by the Proposal are best addressed as permit conditions.⁶⁶ The relevant permit conditions proposed by the Chief Engineer fail to address issues of impairment and include only retroactive remedies for domestic wells.⁶⁷ It is imperative the Chief Engineer require the City to meet its burden to prove no impairment will occur as a result of the proposed modifications in order to protect the public interest and avoid further unnecessary litigation.

LOWERING THE BOTTOM OF THE BASIN STORAGE AREA BY LOWERING THE MINIMUM INDEX LEVELS IS UNREASONABLE, WILL IMPAIR OTHER WATER USERS, IS NOT IN THE PUBLIC INTEREST AND SHOULD BE DENIED.

The impact of lowering the minimum index levels is equivalent to an additional appropriation of almost 80,000 acre-feet.⁶⁸ Such a large new appropriation unreasonably exceeds safe yield regulations and is likely to impair other water users. The City already has unlimited rights to earn physical recharge credits in the current Basin Storage Area which is estimated to be approximately 200,000 acre-feet.⁶⁹ The current minimum index levels were agreed to with Phase I and Phase II of the project specifically to protect the public interests and encourage the City to keep aquifer levels high. During the initial hearing Gerald Blain for the City said "the City's applications also allow water to be pumped from the wells only when there are recharge credits available and water levels are above the minimum water levels identified for the individual cells.

⁶⁶ Division of Water Resources responses to the Interveners first Set of Interrogatories No. 13.

⁶⁷ Letter from Chief Engineer David. W. Barfield to GMD2 Re: City of Wichita ASR Project, New Applications and proposed modified Phase II approval. Draft Permit Conditions File No 48, 714 dated March 22, 2018. "12. ...that if water quality in a nearby, existing domestic well meets the current drinking water standards and the water quality is subsequently changed by the ASR project such that the water no longer meets the current drinking water standards, the City will provide and install a home water treatment system to bring the water back to drinking water standards or provide other appropriate remedies to replace the domestic water supply with water that meets the drinking water standard without additional cost to the resident. 13. ...that if a domestic water well, existing before the filing of this application for permit and within 660 feet of an existing or new ASR well, is adversely impacted by drawdown from such well, the City will re-drill or take other appropriate, affirmative action to restore productivity of such domestic well to the same rate and quality as existed before."

⁶⁸ Romero, Dave M. Technical Analysis, at 6 February 18, 2019

⁶⁹ ASR Phase I Finding No 29 (May 13, 2006)

Therefore, the operation of these wells cannot impair other water users because the aquifer will have to be higher than the base elevation before they can even be operated.”⁷⁰ The health of the aquifer is dependent on the City maintaining a full aquifer. Modifying the minimum index levels rewards the City’s poor stewardship and provides no incentive or requirement to maintain a full aquifer.

Minimum index levels are one of many interrelated safeguards in the permit conditions and MOUs to protect the public interest as the City experiments with the ASR project. Modifying the minimum index levels would and should require a reconsideration of the safe yield exemption, diversion rate and quantity for all permits in order to protect the public interest, especially if the City is allowed to accumulate recharge credits without performing recharge as proposed with the AMCs.

Minimum index levels represent the bottom of the basin storage area which should represent the area used for aquifer storage. New regulations allow the minimum index level to be 20 feet above the bedrock elevation or an alternatively proposed minimum elevation for storage within a basin storage area.”⁷¹ This change was made after “the City concluded that the bottoms of the BSA were problematic based on the City’s re-purposing of the ASR to drought mitigation.”⁷² As a result of the City’s success in changing the regulation this proposal to modify the ASR Phase II permit conditions is now being considered. The City’s proposal blatantly ignores the essential purpose of minimum index levels in defining the storage area for an Aquifer Storage and Recovery program. The Basin Storage Area is not defined by the quantity of water the City desires to possess. Rather, it reflects the area that can be used for storage. Using the basin storage area for storage also implies that the City deposit or inject water in to the aquifer which is another aspect of ASR the City seems to have forgotten. Wichita’s ASR project was approved with the Basin Storage Area defined as “the portion of the aquifer’s unsaturated zone used for aquifer storage that has defined horizontal boundaries and is delimited by the highest and lowest index

⁷⁰ Blain, Jerry. ASR Phase I Public Hearing Transcript at 133

⁷¹ K.A.R. 5-1-1(uu) as amended April 29, 2016.

⁷² Aaron Oleen, DWR response to GMD2’s first set of Interrogatories. No. 21

water level elevations.” *Emphasis added.* Aquifer Storage was “the act of storing water in the unsaturated portion of an aquifer by artificial recharge for subsequent diversion and beneficial use.” (K.A.R. 5-1-1 (e) *emphasis added*). The USGS defines the unsaturated zone as “the portion of the subsurface above the groundwater table.”⁷³ It is logical to limit the storage area to the unsaturated zone and very difficult - - if not impossible to understand why it would be changed to only 20 feet above bedrock.

As requested by the City, against the advice of Groundwater Management District No 2 and others, the regulations were amended to remove language pertaining to the unsaturated zone.⁷⁴ The Chief Engineer addressed concerns the changes would be detrimental if applied to the only existing ASR project stating “such concerns can only receive full and due consideration when the issue is ripe, that is, in the context of a specific project proposal or request for change. If a new project or a change to the Wichita ASR project is proposed pursuant to these rule modifications, a full hearing will be held and a record of facts and concerns will be made and acted upon.”⁷⁵ The issue is now ripe as the City’s proposal seeks to apply the new definitions with the ability to draw down the aquifer to these dangerously low levels.⁷⁶

A primary purpose of the initial ASR project was to form a freshwater barrier to salt water contamination. Both Conclusion No. 13 and Order No. 8, stem from the principle that withdrawal

⁷³ <https://water.usgs.gov/ogw/unsaturated.html> accessed March 9, 2019

⁷⁴ Boese, Tim Letter to Lane Letourneau, Kansas Dept. of Ag, DWR Re: Proposed changes to K.A.R. 5-1-1 and 5-12-1 dated June 12, 2015.

⁷⁵ Barfield, David W. Chief Engineer Division of Water Resources letter to Tim Boese and GMD2 Re: Proposed changes to K.A.R. 5-1-1 and 5-12-1 dated March 8, 2016.

⁷⁶ Note: Application of the new definitions to preexisting permits disregards safeguards designed to protect the public interest. In preparation this proposal the definition of Aquifer Storage in K.A.R. 5-1-1(e) was changed from “the act of storing water in the unsaturated portion of an aquifer...” to “the act of storing water in an aquifer”. Similarly, the definition of Basin Storage Area was changed from “the portion of the aquifer’s unsaturated zone used for aquifer storage” to “the portion of the aquifer used for aquifer storage”. The basin storage area has been referred to as the “box” in which the City stores water. By changing these definitions, the Chief Engineer dramatically increased the “box” in which the City is able to store water making it significantly easier for the City to accumulate recharge credits. The confines of the basin storage area were one of many safeguards implemented with the approval of the ASR project. This change ignored the reality of natural recharge and acted as if all recharge is artificial and attributed to the City of Wichita’s ASR project. The question of but for the ASR project would the Equus Beds Aquifer have recharged naturally is a critical question and should be considered prior to any changes to the ASR project.

of recharge credits during period when water levels are below those that existed in 1993 would not serve the public interest because it would deteriorate any established hydraulic barrier created from recharge injection. Therefore, the limitations to the recharge credit withdrawal relative to the lowest index water levels for Phase I (January 1993) were largely based on maintaining water quality in the City's well field with a hydraulic barrier.

The City's speculative need for water does not justify an arbitrary expansion of the Basin Storage Area to a size more convenient for the City. The City failed to provide any basis or substantiation of artificial recharge success to substantiate an expansion to the basin storage area. The expansion of the basin storage area by lowering the minimum index levels serves the exclusive purpose of meeting the City's speculative future water needs. In the City's May 24, 2013 letter to the Chief Engineer, David W. Barfield, references a concerning pattern of decline in the Equus Beds. The City conveniently based this off of the isolated 4-year period of 2009 – 2013; which includes the modeled drought years of 2011 and 2012. The City has ample data available and could have used a more representative number. However, a larger data set would show Equus Beds levels are actually increasing, and not support the City's request that the minimum index levels should be lowered because of an alleged decline in the Equus Beds Water levels. It is more than a bit ironic the City used declining aquifer levels to support lowering the minimum index levels while claiming high aquifer levels as the basis for AMCs.

AQUIFER MAINTENANCE CREDITS (AMCs) ARE NOT RECHARGE CREDITS, ARE NOT AUTHORIZED UNDER THE KWAA, ARE AN ADDITIONAL APPROPRIATION LIKELY TO VIOLATE SAFE YIELD, ARE NOT IN THE PUBLIC INTEREST, WILL LIKELY IMPAIR OTHER WATER USERS AND SHOULD NOT BE ALLOWED.

Water diverted from the Little Arkansas River, treated, and used directly by the City, as proposed by the City, is not a Recharge Credit nor is it the functional equivalent to a Recharge Credit and should not be allowed. Given the complexity of the ASR Project and associated regulations it is important to understand the historical context and especially the regulations effective when the program and permits were approved. Important definitions include the following:

- Recharge Credit is “the quantity of water that is stored in the basin storage area and that is available for subsequent appropriation for beneficial use by the operator of the aquifer storage and recovery system.” K.A.R 5-1-1(mmm)
- Aquifer storage and recovery system “means the physical infrastructure that meets the following conditions: (1) Is constructed and operated for **artificial recharge**, storage, and recovery of source water; and (2) consists for apparatus for diversion, treatment, **recharge**, storage, extraction, and distribution.” (K.A.R. 5-1-1(f))
- Artificial Recharge “means the use of source water to artificially replenish the water supply in an aquifer.” (K.A.R. 5-1-1(g))
- Source Water “means water used for **artificial recharge** that meets the following conditions: (1) Is available for appropriation for beneficial use; (2) is above base-flow stage in the stream; (3) is not needed to satisfy minimum desirable streamflow requirements; and (4) will not degrade the ambient groundwater quality in the basin storage area.” (K.A.R. 5-1-1(yyy))

Artificial Recharge is a critical and necessary component to an ASR system and is completely lacking with the City’s AMC proposal. The City does not propose to engage in artificial recharge of the aquifer or any means to replenish the water supply other than a decision to divert water from one of their alternate sources of water supply. Rather, the City proposes to directly and immediately use source water and allow natural recharge to replenish the aquifer rather than artificial recharge. Source Water is the water diverted from the Little Arkansas River under Permit File No. 46,627; however, by deciding to send the water directly to the City for immediate use rather than using it for artificial recharge the City foregoes the opportunity to earn a recharge credit. The city has a choice in how to use the diverted water. Merely using the same ASR system of pipes to transport the water from the Little Arkansas River to the City does not create a Recharge Credit. At no point in the City’s proposed process is water injected, added or deposited into the aquifer other than the possibility of natural recharge. The City is seeking a Recharge Credit for the water they do not pump which is not authorized by the Kansas Water Appropriation Act (“KWAA”). The Chief Engineer is responsible for enforcing and administering the laws of the

state⁷⁷ but does not have the authority to impose new laws; that responsibility rests with the state legislators. It is the City's decision whether to use water from any one of their many sources of water. In exchange for the privilege of being granted water rights well in excess of actual needs the City should act as a responsible steward for all water users in the Equus Beds rather than seek to control as much water as the Chief Engineer will allow.

The proposed AMCs are passive recharge credits and do not artificially replenish water into the basin storage area that is "available for subsequent appropriation" as clearly required by the definition of Recharge Credit in K.A.R. 5-1-1(mmm). Former Chief Engineer David L. Pope, who has extensive experience with the ASR project, came to this conclusion in his expert report.⁷⁸ Passive recharge credits were previously considered by both Chief Engineers, David L. Pope and David W. Barfield, respectively in the August 8, 2005 Findings & Order approving ASR Phase I and the September 18, 2009 Findings & Order approving Phase II. Phase I and Phase II both prohibit passive recharge credits. After past unsuccessful attempts to gain approval for passive recharge credits, the City again seeks to earn passive recharge credits by declaring AMCs the functional equivalent of physical recharge credits. In a February 28, 2003 memorandum by Burns & McDonnell to the Division of Water Resources staff regarding a meeting it states "If Wichita puts only part of their water to beneficial use, they should be entitled to credit" and "The Chief Engineer will consider recharge credits for water not pumped."⁷⁹ The City has recently been successful in undoing some of the safeguards designed to protect the public interest;⁸⁰ however, the analysis regarding passive recharge has not changed. AMCs are passive recharge and expressly prohibited.

Water rights can be lost for non-use without a valid reason.⁸¹ With the exception of multi-year flex accounts unused water rights do not carry over from year to year. AMCs are a construct by the City to create a Recharge Credit from water they elect not to use. The concept of recharge

⁷⁷ K.S.A. 82a-706

⁷⁸ Pope, David Expert Report February 18, 2019 page 10

⁷⁹ Klein, Jeff Burns & McDonnell Memorandum Re: Wichita ASR Phase I, ASR Permit and Accounting System B&McD Project No 29886 February 28, 2003

⁸⁰ Change to definition of Basin Storage Area to remove unsaturated zone and changing definition of minimum index level.

⁸¹ Kan. Stat. Ann. 82a-718

credit only exists within the confines of an aquifer storage and recovery system and does not apply to water rights that are not used. For example, if an irrigator does not use his or her full water right during a wet year, he or she does not have a right to pump the unused portion in a future year, outside of the parameters of a multi-year flex account. Granting the City AMCs for water rights in the Equus Beds that go unused gives the City two bites at the same apple. They get to divert for immediate use, reducing source water that could potentially naturally recharge the aquifer and also earn a credit to use native water from the aquifer in the future.... a credit for water that they never recharged. This proposal discriminates in favor of the City to make available a credit that is not similarly available to other water users. The City's decision to divert water from the Little Arkansas River in lieu of the Equus Beds is not recharge and should not be rewarded with a recharge credit.

AMCs, as proposed by the City, would be an additional appropriation of native ground water in the Equus Beds and not the recovery of Source Water. Rather than having a neutral impact on the aquifer, the City's Proposal seeks permission to withdraw water as recharge credits without engaging in Recharge, which requires infiltration of water "*into an aquifer*" pursuant to K.A.R. 5-1-1(III). Essentially the City seeks to appropriate and use water twice. Rather than actively engaging in recharge through infiltration or injection of water into the aquifer,⁸² the City seeks to take ownership of water in the aquifer gained through natural precipitation recharging the Aquifer. While natural precipitation is a significant source of recharge, that water has already been appropriated pursuant to other permits. To qualify as source water under K.A.R. 5-1-1(yyy) and meet the requirements of an ASR system, the water must be available for appropriation.

Allowing the City to withdraw native water from the Equus Beds as so-called AMCs without following the proper procedure to grant a new permit to appropriate water is the conversion of property belonging to other water users and an unconstitutional taking. The withdrawal of native water from the Equus Beds in the form of an AMC which does not comply with safe yield requirements will deprive other water right holders of their property rights properly granted. The

⁸² K.A.R. 5-1-1(III).

City seeks to interfere and deprive Equus Beds water right holders and domestic users of their property rights to use water from the Equus Beds by withdrawing Recharge Credits without performing any recharge. The City knows well that a new permit to appropriate water will not be approved due to Safe Yield requirements and, therefore is attempting to create a fictitious water source called AMCs in order to take water appropriated to others.

The Fifth Amendment of the United States Constitution clearly states: “nor shall private property be taken for public use, without just compensation.” Kansas Statutes deem a water right is a real property right.⁸³ Allowing the additional appropriation of native water from the Equus Beds aquifer that does not comply with Safe Yield requirements of K.A.R. 5-22-7 at a minimum is an improper appropriation and if such water is withdrawn as the City has proposed will result in the taking of private property without just compensation.

If the City and the Division of Water Resources are now of the opinion that water is available for appropriation, in compliance with Safe Yield requirements the opportunity should first be offered to those applicants previously denied due to safe yield regulations. It has been commonly known for decades that in the area of the City of Wichita’s Equus Beds Well Field (“EBWF”) that new appropriations will be denied due to safe yield. In 1980 an applicant was denied stating “The Revised Management Program of the Equus Beds Groundwater Management District states that after April 11, 1979, no more than 4,025 acre-feet of water may be appropriated within a two-mile radius of a proposed well location. The evaluation shows that 14,517 acre-feet are presently appropriated within a two-mile radius of the well location described above. Again, this means that a permit could not be approved.”⁸⁴ The City’s application seeks the ability to withdraw up to 120,000 acre-feet of water from the same areas that are over appropriated by over 10,000 acre-feet. More recently in March 2016 an application was denied stating “the application does not comply with the District’s Safe Yield Regulation K.A.R. 5-22-7(a), as existing and proposed

⁸³ K.S.A. 82a-701(g)

⁸⁴ Equus Beds Groundwater Management District No. 2 letter to Floyd E. Holle July 15, 1980.

consumptive appropriations exceed the maximum allowable appropriation.”⁸⁵ Due process demands that new appropriations be available to all and not exclusively available to the City.

The City is seeking a credit for the non-use of water. Credits for the non-use of water are not currently allowed and it clearly is not in the public interest to implement such a program without further research and study of the state-wide implications. If approved, a credit for non-use should be available to all water users and not exclusively to the City. As this would be a fundamental change in the state’s water law principles appropriate research and analysis is required. Such a change far exceeds the scope of this hearing.

The City has already been granted water rights greatly exceeding their annual demand. The City is the dominant user of Cheney Reservoir with the ability to divert in excess of 47,000 acre-feet.⁸⁶ The City also has 45,230 acre-feet from the Little Arkansas River,⁸⁷ 40,000 acre-feet in existing water rights in the Equus Beds Well Field and additional rights in the E&S Wellfield and Bentley Reserve Wellfield.⁸⁸ The City has access to over 132,230 acre-feet annually to meet projected demands of 81,960 are-feet by the year 2060.⁸⁹ All water users would like assurances of an adequate water supply during a 1% drought, especially rural residents whose only option for water is a shallow domestic well. Unfortunately, water is a limited natural resource and it is not possible to have a guaranteed supply of water during a 1% drought. The KWAA clearly states “Appropriation rights in excess of the reasonable needs of the appropriators shall not be allowed.”⁹⁰ Water rights are also subject to the principle of beneficial use.⁹¹ Neither storage or drought assurance are listed as beneficial uses of water.⁹²

⁸⁵ Findings and Order in the Matter of the Dismissal of Application File No. 49,566. October 24, 2016.

⁸⁶ ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits March 12, 2018 City of Wichita. Table 2-3 page 2-5.

⁸⁷ Approval of Application and Permit to Proceed File No 46,627 September 18, 2009

⁸⁸ ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits March 12, 2018 City of Wichita. Page 2-3

⁸⁹ *Id.*

⁹⁰ K.S.A. 82a 707(e)

⁹¹ Peck, John C. Property Rights in Groundwater – Some Lessons from the Kansas Experience. 12 Kan. J.L. & Pub. Pol’y 493, 497 (2002 – 2003)

⁹² K.A.R. 5-1-1 (o)

It is not in the public interest to grant the City's proposal for AMCs. In addition to the reasons listed above, the use of AMCs is likely to impair other water users. It is the City's burden of proof to demonstrate this proposal will not cause any impairment. The City attempts to avoid this obligation by claiming the proposal is limited to the accumulation of credits. The City's Proposal treats AMCs as Recharge Credits which allows them to withdraw 19,000 acre-feet annually under existing permits. Far more detailed analysis is needed to understand the impact of allowing an additional 19,000 acre-feet to be withdrawn from the Basin Storage Area annually. Safe yield regulations were established to protect the public interest and the City proposes to evade safe yield regulations for the 120,000 AMCs under the waiver granted for recharge credits earned by actual physical recharge. AMCs do not involve any recharge and therefore compliance with safe yield regulations is imperative to prevent impairment and protect the public interest.

CONCLUSION

Throughout history, alterations and natural contributions in projections have led to catastrophic results. Incidents such as the 1986 Challenger explosion, and the sinking of the Titanic are situations that demonstrate the impact of decisions that are made. Evaluating the progress of Phase I and Phase II of the ASR project, impacts from weather and other external forces have led to large variations in the projected and actual performance to recharge the aquifer. Our future of quality and quantity of water is at stake, this decision must not be made in haste and must consider the ramifications of missed projections.

The bottom of the basin storage area should **not** be lowered as proposed by the City. To date, the City has failed to demonstrate the ability of the ASR Project to achieve projected performance. Prior to a hasty decision, additional time is needed to allow for natural fluxes in climate to provide more accurate projections on the performance of the ASR Project. Chloride contamination is a real threat corrupting the quality of the water supply which would have disastrous consequences for Kansans.

The applicable accounting procedures should **not** be modified to allow the accumulation of AMCs. Again, the Orders approving Phase I and Phase II of the ASR project have repeatedly

emphasized that passive credits are not allowed. By side stepping the legal process available to acquire the right to use water from the aquifer, the City seeks a credit for unused water to be used for speculative purposes and demonstrates little regard for established water rights laws.

The City's impatience in waiting for its million-dollar investment to produce intended results does not justify taking actions that will deplete the aquifer, impair water users and unnecessarily lead to extensive and expensive litigation. Phase II of the ASR Project was not approved with the promise it would supply adequate credits for a 1% drought in the span of 5 years. The City began working on these proposed modifications even before Phase II of the ASR project was fully operational. The City's motivation to justify the extraordinary expense is understandable, but the public would be best served if the City would recognize the project shortcomings and invest in one of the many alternative sources of water available to the City.

The solution to the City's drought mitigation problem is not in the proposed modifications but in getting ASR Phase I and Phase II to operate as projected. Phase II was implemented to produce 11,000 acre-feet annually but to date has an average annual yield of 2,900 acre-feet per year, 26% of designed capacity⁹³. If the City and Burns & McDonnell were able to make such a gross miscalculation after both a test pilot project and Phase I, what confidence can anyone have in the current unsubstantiated analysis?

The City had enough confidence in this unreasonable Proposal that fails to conform with existing regulations and statutes, that it has already planned to move forward with expanding the ASR Project. This position is inconsistent with its stated reasons for the proposed modifications. The City apparently believes the aquifer is too full for them to accumulate physical recharge credits with the Phase I and Phase II infrastructure which requires the actual injection of water into the aquifer. If that were true there would be no benefit to investing a further \$48.5 million dollars on additional recharge facilities with ASR Phase III.⁹⁴ There appears to be no limits to the City's ongoing deception. It will say whatever is necessary to accomplish its immediate objectives with

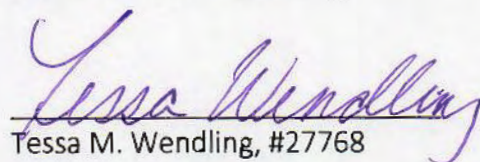
⁹³ City of Wichita, WaterSMART: Title XVI Water Reclamation and Reuse Projects Application July 2018. p 13.

⁹⁴ *Id.* at 26.

no regard for the harm to others or the negative long-term implications. It is time for honesty and an independent, thorough evaluation of the ASR.

Based on such additional information that may be learned at the formal-phase hearing for this matter or otherwise, the Interveners reserve the right to revise or supplement their opinions and recommendations herein, by the post-hearing deadline provided in the Hearing Officer.

Respectfully submitted by,



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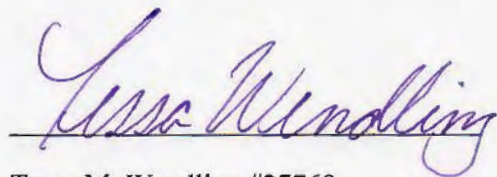
CERTIFICATE OF FILING AND SERVICE

The undersigned hereby certifies that she transmitted the above and foregoing Interveners' Pre-Hearing Brief and Written Testimony by electronic mail on this 18th day of March, 2019, for filing, to David.Barfield@ks.gov and served the same upon counsel for the other parties herein by electronic mail, this 18th day of March, 2019 addressed to:

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