

Equus-Walnut Regional Advisory Committee Meeting
1:00 p.m., May 1, 2018
Exploration Place
Wichita, KS

Members Attendance:

Name	City	Category	Term	Present
Steve Hieger (Chair)	Wichita, KS	Industry/Commerce (cc)	2019	Yes
Roger Black	Arkansas, City, KS	Watershed Protection	2019	No
Kurt Bookout	El Dorado, KS	Public Water Supply 2	2021	Yes
Dan Haines	Leon, KS	Conservation/Environment 2	2019	No
Bob Seiler	Valley Center, KS	Groundwater Management	2019	Yes
Don Koci	Hutchinson, KS	Public Water Supply 3	2021	Yes
Jesse McCurry	Colwich, KS	Agriculture (cc)	2021	No
Brian Meier	Wichita, KS	Industry/Commerce 2	2021	Yes
Denise Middleton	Burden, KS	Agriculture 2	2019	Yes
Joseph Pajor	Wichita, KS	Public Water Supply (cc)	2019	Yes
Lewjene Schneider	Maize, KS	At Large Public (cc)	2021	No
Russell Tomevi	Winfield, KS	Integrated Planning	2019	Yes
Byron Warta	Newton, KS	Conservation/Environment (cc)	2021	Yes

Others in attendance:

Name	Affiliation
David Bollenback	KCC
Sandy Koontz	Butler Co. Conservation District/El Dorado WRAPS
Lisa French	Cheney Lake Watershed
Allison Herring	KDHE
Tom Kneil	Sierra Club
Tim Boese	GMD2
David Barfield	KDA-DWR
Don Henry	City of Wichita
Ron Graber	KSU
Ted Saranchuk	Public
Matt Unruh	KWO

1. **Welcome and Introductions:** Chair Steve Hieger welcomed those in attendance to the meeting. Everyone present provided introductions of themselves.
2. **Approval of Agenda:** Meeting agenda was approved as present.
3. **Approval of March 2018 Meeting Notes:** Denise Middleton made the motion to approve the March 2018 meeting notes, second provided by Brian Meier. Motion carried.

4. **Kansas Water Authority & Budget/Legislative Update:** Chair Steve Hieger provided an update on the April 2018 Kansas Water Authority Meeting. Items discussed with the RAC included the SFY2020/21 KWA budget recommendation development process which includes the opportunity for RAC input, a presentation provided by the Kansas RAC which looks to provide RAC collaboration amongst all 14 RACs on water funding messaging, a report from the Great Bend Prairie RAC which includes RAC collaboration potential on salt water disposal line and public water supply water use efficiency goals for the Great Bend Prairie RAC, the “Kansas Runs on Water” Vision initiative for brand identity/campaign concepting, as well as finalization of the FY 2019 budget in the legislature.

5. Regional Activities

- a. **Wichita ASR Proposed Permit Modification Request:** David Barfield provided an update on the City of Wichita’s Aquifer Storage and Recovery (ASR) proposed permit modification request. The details of this presentation can be found in ATTACHMENT 1 of these meeting notes.

Further information is available online at the DWR – Wichita ASR webpage: <http://agriculture.ks.gov/divisions-programs/dwr/managing-kansas-water-resources/aquifer-storage-and-recovery/wichita-asr>

- b. **Equus Beds Water Technology Farm Update:** Matt Unruh provided an update on planning efforts associated with Water Technology Farm establishment within the Equus-Walnut Region. 2 locations have been identified for the 2019 growing season; the Weber Water Technology Farm located 3 miles east of Burrton and the Jacob Farm Water Technology Farm located 5 miles west of Valley Center. Future information on these two water technology farms can be found on the KWO webpage at <http://www.kwo.ks.gov/projects/weber-farm> and <http://www.kwo.ks.gov/projects/jacob-farms>.
- c. **Water Conservation Field Days/Workshops:** Matt Unruh discussed recent water conservation field days in Hays and Garden City and how similar events would help advance implementation of Regional Goal #2 (Water Conservation Planning) and #7 (Water Use Efficiency). After discussion among members of the RAC the general consensus of the RAC was to try to utilize existing training and resources to promote water use efficiency instead of holding standalone events.
- d. **South Central Kansas Water Summit – RAC Action Plan Breakout Session:** Tonya Bronleewe from the WSU Environmental Finance Center discussed the upcoming South Central Kansas Water Summit and how a portion of the event look at Regional Goal #7 and ways to improve water use efficiency for municipal, commercial and industrial users.
- e. **Drought Update:** Matt Unruh provided an update of drought conditions impacting the Equus-Walnut Region as well as other areas of Kansas. Information regarding drought conditions near the time of the meeting can be found at http://www.kwo.ks.gov/docs/default-source/drought/rpt_08_fullmay2018.pdf?sfvrsn=0.

6. Other Business

- a. Agency Reports: No additional information provided
- b. Messages to the Kansas Water Authority: None provided by the RAC
- c. Public Comments: None Provided

7. Adjourn

- a. Motion made to adjourn the meeting made by Kurt Bookout, seconded by Byron Warta. Motion carried and meeting was adjourned at 3:15 pm.

DRAFT

ATTACHMENT 1

May 1 Update on Wichita's Aquifer Storage & Recovery (ASR) Proposed Permit Modification Request

David Barfield, Chief Engineer
Division of Water Resources
Kansas Department of Agriculture

Equus-Walnut RAC
May 1, 2018



Review of March 26 presentation

- Overviewed Wichita's two prong ASR modification request:
 - Reducing the bottoms of the Basin Storage Areas
 - Allow Aquifer Maintenance Credit (AMC) as a type of recharge credit for water diverted and treated at their ASR facility and pumped to the City when they are unable to recharge it effectively in the well field.
 - Overview of proposed terms and conditions associated with the proposed AMCs
- Overviewed the process ahead, esp. the initial review period

GMD 2 special Board meeting, April 19

- I gave my presentation to your last meeting, answer questions.
- Discussed the proposed hearing procedure.
 - In my Sept 2017 proposal, I anticipated the hearing would be an information one, providing an opportunity for the public to submit comments that GMD could consider in its review and I also would review.
 - Given the complex nature of the issues, we believe it would be more appropriate to do an **evidentiary hearing**. This means that any decision I make will be based on the evidence contained in the hearing record, which will include the GMD's testimony and recommendations provided at the hearing.
- I also addressed their request that I delegate the hearing to someone else.

GMD 2 initial review examples

- Clarify that it is treated water not diversions that is the basis of potential AMC credits
- Provide additional detail and justification on basis of the 5% initial loss and annual loss rates
- Clarify what wells AMC's will be distributed to: all production wells or only those that allow for recharge and recovery?
- Limit potential AMCs to physical capacity to recharge
- Provide more information on the operating plan and the constraints on physical recharge and when the accumulation of AMCs would be allowed.
- The operating plan should be submitted as part of the approval process as some aspects may be subject to terms and conditions.

GMD 2 initial review examples

Specific request for information on recharge capacity:

- Based on current elevated groundwater levels and current infrastructure, what is the current total ASR Physical Recharge Capacity in MGD? Under lower aquifer levels?
- Are the recharge basins included in the determination of capacity? If not, why not?
- Why are January groundwater level measurements to determine the Physical Recharge Capacity of the aquifer and not irrigation season levels when more capacity exists.
- Provide additional justification on why no recharge when capacity less the 5 MGD?
- Is the City planning to increase ability to recharge (more recharge/recovery wells?)

GMD 2 initial review examples

- How much recharge would have occurred historically under these terms.
- Why the 120,000 AF allowable credit accumulation when only 51,000 AF needed for the 1% drought?
- More detail needed on reporting, frequency, etc.
- Are the domestic protections extended only to wells within 660 feet or broader based on lower water levels and other potentially affected.
- Information is needed on sequencing of the use of native rights vs physical Recharge credits and AMCs.

Legal/policy questions

- Regarding the CE's statements that AMCs are not being passive recharge credits as they use existing ASR infrastructure needs additional clarification.
 - AMC only use portions of the infrastructure.
 - Passive recharge credits has no definition. Clear definition of passive recharge credit and AMCs needed.
- The GMD's reviews definitions in GMD 2 (and state) regulations:
 - How are AMCs consistent with the definition of artificial recharge since AMC are not water recharged or stored.
 - Where is the "put"?
 - It seems an exchange or an "in lieu of" credit, explicitly allowed under Arizona law for CAP surface water brought in a used in lieu of groundwater. Where is the authorization of this under KS law?

Alternate procedure

- Update/finalize proposal and draft proposed approval documents
- Pre-hearing conference, set public hearing date
- Public informational meeting
- Public hearing including GMD bringing its recommendations
- Review of record and decision

Questions

ASR Permit Modification Proposal Revised Minimum Index Levels & Aquifer Maintenance Credits



City of Wichita, Kansas

Project No. 71395

3/12/2018

Local Enhanced Management Areas

Intensive Groundwater Use Control Areas

Water Conservation Areas

Information about Kansas Water Resources

Water Assurance Districts

Groundwater Management Districts

Water Conservation Plans

Environmental Reviews

Contact Information

Aquifer Storage and Recovery

[Home](#) > [Divisions & Programs](#) > [Division of Water Resources](#) > [Managing Kansas' Water Resources](#) > [Aquifer Storage and Recovery](#) > [Wichita ASR](#)

Wichita ASR

The City of Wichita has the state's only active Artificial Storage and Recovery project, developed and approved in two phases.

The City has filed a series of new applications that will allow it to recover recharge credits at its existing production wells.

On March 12, 2018, the City forwarded a detailed proposal for changes to the conditions associated with its existing permits for Phase II of the project, including the new applications referenced above (see below).

Also, below is information related to the City's existing ASR permits for reference.

City of Wichita request:

Description	File Size	Document Date	Provided By
Wichita ASR permit modification proposal cover letter	634 KB	03/12/2018	Wichita
Wichita ASR permit modification proposal Attachments A-D	14 MB	03/12/2018	Wichita
Attachment E	10 MB		
Attachments F-J	24 MB		
Wichita New Applications (File Nos. 48,704 through 48,733)	Multiple	Multiple	DWR

Documents related to proposal development:

Description	File Size	Document Date	Provided By
Correspondence - Barfield to GMD2 and City, Process for Draft Proposed Permit Approvals for Initial Review	1 MB	03/22/2018	DWR
Chief Engineer's presentation at special GMD2 Board Meeting	658 KB	12/20/2017	DWR
Correspondence - Barfield to City of Wichita,	638	09/18/2017	DWR

For more information:

<http://www.agriculture.ks.gov/WichitaASR>.

GMD 2 initial review comments posted

Background

- The current basin storage area (BSA) bottoms, set at the 1993 levels, would prevent the City from accessing credits during such a drought.
- The City has determined that the highest value for the ASR project is to supplement their water supply in a protracted (1%) drought.
- Over the last two decades, the City's has moved 400,000 AF of use from the Equus Beds to Cheney Reservoir, contributing to the recovery of the aquifer to near-full conditions. This condition makes it impossible for the City to build the credits it needs in a protracted drought.
- Thus the City is proposing changes to the ASR terms and conditions

Changes to the Basin Storage Area (BSA) bottoms

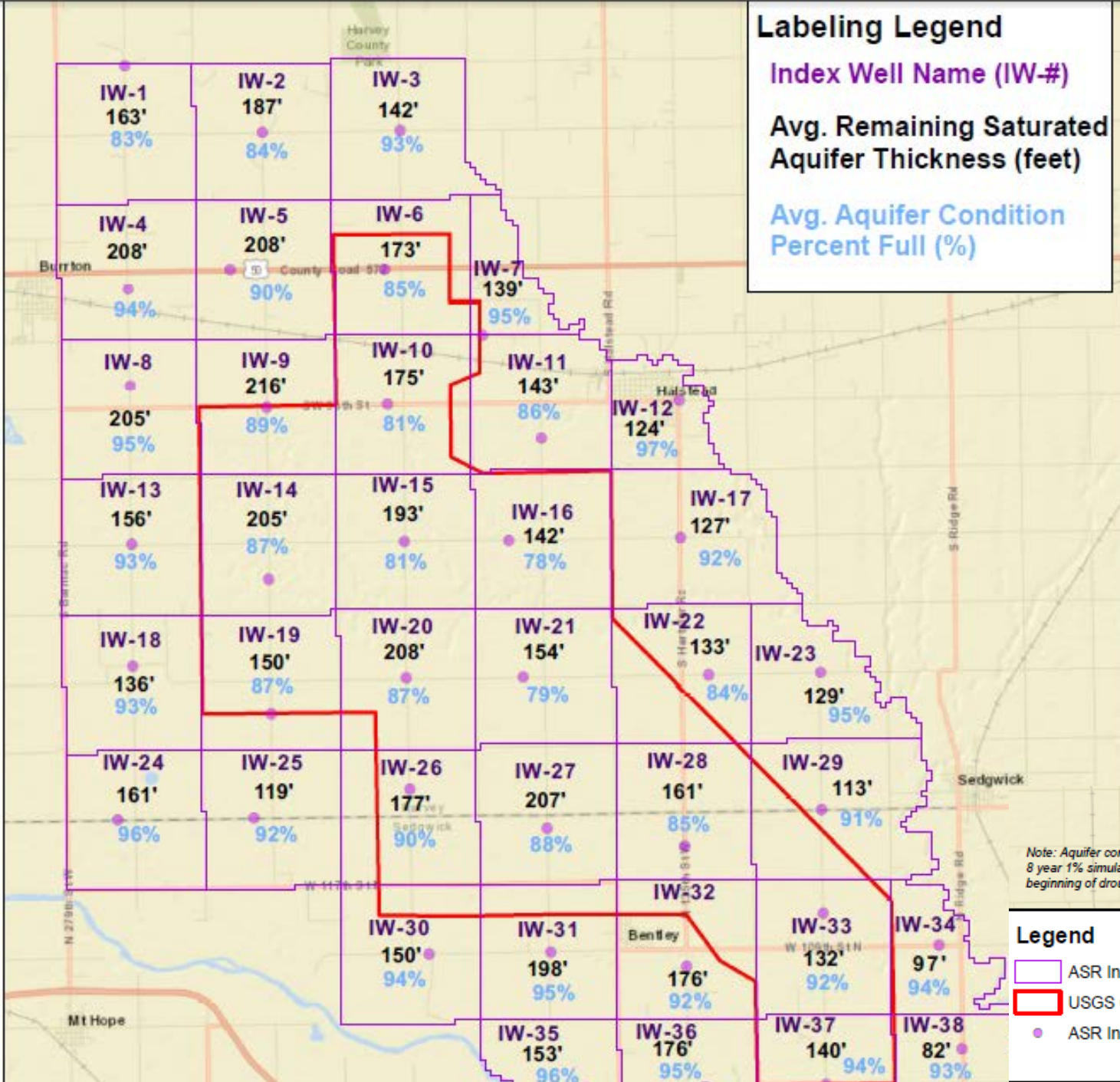
- The City has done extensive modeling to:
 - show that the existing bottoms would restrict its ability to take recharge credits during an extended drought and
 - the bottoms necessary to remedy this.
- The City projects in a 1% drought, assuming a start at less than full aquifer conditions, the aquifer would range between 78 – 94% full at the end of the drought (an average of 86% full in the well field).
- The City's requested bottoms, providing a factor of safety below these modeled results, range between 72 - 86% full.

Labeling Legend

Index Well Name (IW-#)

Avg. Remaining Saturated
Aquifer Thickness (feet)

Avg. Aquifer Condition
Percent Full (%)



Note: Aquifer conditions shown are reflective of the end of the 8 year 1% simulated drought with water levels at the beginning of drought starting at 1998 elevations.

Legend

- ASR Index Cells (Numbered)
- USGS Central Wellfield Study Area
- ASR Index Well Locations

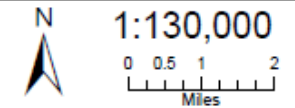
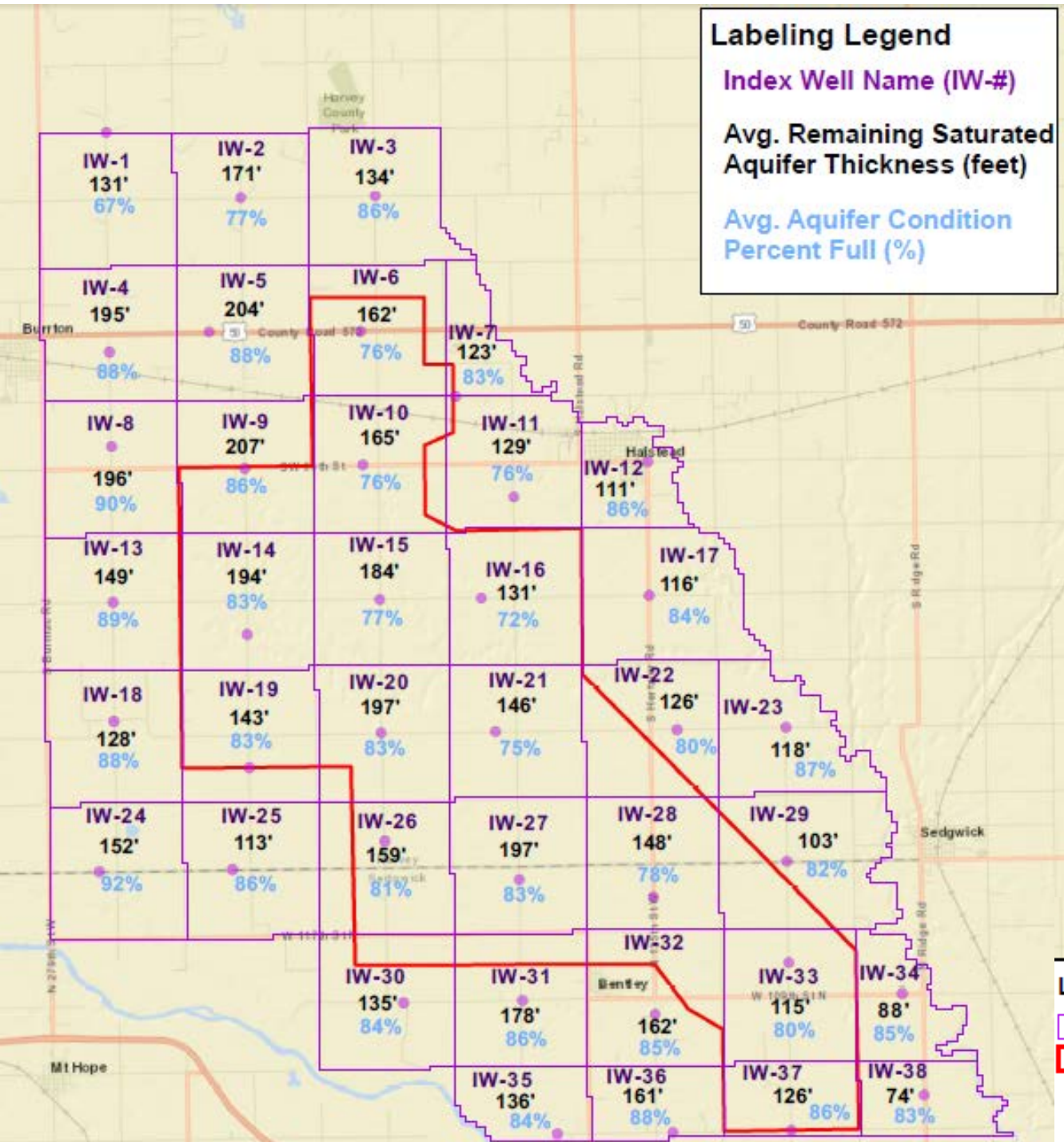


Figure 10

Average Aquifer Conditions
by Index Cell at the
End of Simulated Drought
Stress Period 8

Labeling Legend

- Index Well Name (IW-#)
- Avg. Remaining Saturated Aquifer Thickness (feet)
- Avg. Aquifer Condition Percent Full (%)



Legend

- ASR Index Cells (Numbered)
- USGS Central Wellfield Study Area
- ASR Index Well Locations

N

1:130,000

0 0.5 1 2 Miles

Figure 11
Average Aquifer Conditions by Index Cell at Modified ASR Minimum Index Level Elevations

What Aquifer Maintenance Credits and Why is the City seeking them?

- AMCs would allow the City to build recharge credits for:
 - water diverted and treated via ASR infrastructure (diversion of Little Arkansas River flows)
 - when it cannot be injected into the ground as the aquifer is near full and
 - such water is taken to the City in lieu of Equus Beds water.
- AMCs allow the City's to build ASR credits needed for protracted drought while keeping the Equus Beds Aquifer full.

Table 2-3: MODSIM-DSS simulation results for the 1% drought utilizing projected 2060 demands

MODSIM-DSS Variable	Drought Year 1	Drought Year 2	Drought Year 3	Drought Year 4	Drought Year 5	Drought Year 6	Drought Year 7	Drought Year 8
Baseline City Demand (AF)	81,690	81,690	81,690	81,690	81,690	81,690	81,690	81,690
Simulated Calendar Year of Drought	1933	1934	1935	1936	1937	1938	1939	1940
Revised City Demand from Drought Response Plan (AF)	81,262	72,492	71,116	71,890	70,812	70,811	71,116	70,664
City Demand Assigned to EBWF & ASR	34,202	45,651	59,907	46,732	56,579	41,980	39,308	39,491
City Demand Assigned to Cheney Reservoir	47,060	26,841	11,209	25,158	14,233	28,831	31,808	31,173
Cheney % of Conservation Pool 12 Month Average	110%	92%	62%	59%	62%	53%	53%	63%

Wichita future base demand = 81,690 AF/year

In drought, reduced to approx. 71,000 AF/year

Wichita plans to use its 40,000 AF native rights to full extent in long term drought.

Demands > 40,000 AF to be provided from ASR credits.

Major Proposed terms and conditions

- No change in ASR Phase I (to minimize plume migration).
- Require all AMCs to be water diverted via the ASR division works and within the approved rates and quantities authorized under File No. 46,627.
- The City will seek first to store these flows in the Equus Beds Aquifer. AMC will be allowed only to the extent there is inadequate space to store or capacity of the aquifer to accept recharge in the basin storage area
- The AMCs would be subject to a 5% initial loss and annual losses depending on where they are distributed (less loss in the west; more less in the east).
- A cap of 120,000 AF total recharge credits (approx. 12% of aquifer storage).
- Domestic well protections

Other potential conditions

- Ensuring other area native rights are protected from impairment by requiring the City to use pumping rotation and timing if conflicts occur.
- Reporting frequency and form of reporting on taking of recharge credits.

Process ahead

- Initial review of the proposal through April 28 to insure as clear and complete a proposal and draft terms and conditions as possible.
- Public notice
- Public hearing, late May
- GMD review and recommendations: we will allow two board meetings plus 10 days following the public meeting to complete.
- Chief Engineer review of the record, decision on proposal as it relates to both the pending new applications and existing ASR permits

Questions?

Recurring Credit Loss %

- 1% - Western Boundary
- 3% - Central EBWF Area
- 5% - Eastern Boundary

