Update on Wichita’s Aquifer Storage & Recovery (ASR) Proposed Permit Modification Request

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Equus-Walnut RAC
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ASR Permit Modification Proposal
Revised Minimum Index Levels & Aquifer Maintenance Credits

City of Wichita, Kansas

Project No. 71395
3/12/2018
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.
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.
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?