

5.0 Summary

The City Bryan currently has nine operating permits through the BVGCD, allowing production of 32,138 AFY of groundwater per year. 27,300 AFY of the existing permitted water is defined by the BVGCD as Historic Use. The City of Bryan has an increasing population to serve, as well as a need for flexibility in operation of the Bryan well system, and therefore seeks drilling and operating permits for four new proposed Simsboro wells in Brazos County. The 2021 Bryan Water Distribution Master Plan projects that water demand will double from 2025 to 2040. The four proposed wells would increase permitted withdrawals for the City an additional 14,204 AFY.

Because these wells are non-exempt and capable of producing over 800 AFY, the District requires submittal of a Hydrogeologic Evaluation Report documenting the projected effect of the requested production on the aquifer and on existing permit holders or other groundwater users in the District. This report is written to comply with the requirements of that report as defined in the BVGCD Rules. The following provides a high-level summary of the evaluation.

- All groundwater produced under this production permit will be for beneficial use.
- The city is experiencing growth and will require additional supplies and flexibility in well field use over the coming decades.
- The total annual production from these wells being requested is 14,204 AFY.
- The average annual production rates for new Wells 20 through 23 range from 1,775 to 3,100 gpm.
- Based upon well locations and average annual production rates, the wells comply with the BVGCD spacing and acreage requirements defined in the BCGCD Rules.
- A review of aquifer test data available in the vicinity of the proposed wells indicates that the TWDB Carrizo-Wilcox GAM satisfactorily reproduces the Simsboro transmissivity within a five-mile radius of the wells.
- Predictive regional simulations of drawdown at one and ten years were performed assuming pumping at the requested rates for the four proposed wells using the current State GAM (Young and others, 2020). By 10 years, the drawdown cone extends regionally with drawdown near the five-mile boundary of approximately 55 feet to almost 65 feet. Within one mile of the proposed wells, the average drawdown contour is between 75 and 85 feet of drawdown.
- Predictive local drawdowns were simulated using the analytic element aquifer simulation code TTim. By ten years, the drawdown from combined pumping of the four proposed wells causes 67 to 80 feet of drawdown at City of Bryan wells located within one mile of the new wells. Two wells owned by College Station (Wells #1 and 2) are located within one mile of the proposed wells. At both of these wells, drawdowns after 10 years are predicted to be approximately 73 feet. Drawdown in the four proposed pumping wells range from 108 to 134 feet at 10 years.

- Including the effects of the drawdowns predicted at the surrounding wells, the available confined head above the top Simsboro remains greater than 1,800 feet in the vicinity of the new wells and the greater Bryan wellfield.

6.0 References

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