

September 3, 2019
 Mr. Gary Westbrook, General Manager
 Post Oak Savannah Groundwater Conservation District
 310 E. Avenue C
 Milano, TX 76556

RE: Evaluation of Operating Permits for Burleson Sand

Dear Gary:

INTERA has reviewed the permit application submitted by Burleson Sands for operating two wells listed in Table 1. The requested maximum pumping rate for both wells is 250 gpm. Our technical review supports the granting of the permit with two modifications. One modification is that the maximum pumping rate for Well #1 be reduced to 240 gpm. The second modification is that the permittee provides justification to request that the two wells be spaced closer than 1,750 feet apart for one of the purposes identified in POSGCD Rule 4.1.7. Our technical review considered the well location, well construction, anticipated pumping, property boundaries, and anticipated drawdowns.

Figure 1 shows the location of the two wells. Both wells are screened and pump from the Queen City Aquifer. Based on POSGCD Rule 4.1.4, a proposed permitted well that with a pumping capacity of 250 pgm in the Queen City Aquifer needs to be spaced not less than 3 feet per gallon per minute capacity from the property line. Well #1 is 720 feet from the property line and therefore does not meet the required 750 feet spacing requirement for a 250 gpm well. In order to comply with POSGCD rules, the maximum pumping rate for Well #1 needs to be reduced from 250 gpm to 240 gpm.

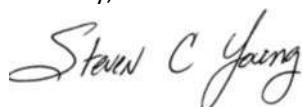
Table 1 Well Information for Burleson Sand Wells

Identification Numbers			Location		Depth(ft) to	
Well #	Well Tracking Report	POSGCD ID	Latitude	Longitude	Top of Screen	Bottom of Screen
1	496941	PO-009454	30.5146	-96.7940	324	524
2	496942	PO-009455	30.5136	-96.7974	195	375

Based on POSGCD Rule 4.1.4 for well spacing in the Queen City for a pumping rate of 250 gpm, a permitted well needs to be spaced not less than 7 feet per gallon per minute capacity from the nearest existing well in the Queen City formation. For a maximum pumping rate of 250 gpm, the minimum distance equals 1,750 feet. With the exception of the proposed permitted wells, there are no existing wells in the Queen City closer than 1,750 feet of either Well #1 and Well #2. The distance between Well #1 and Well #2 is approximately 1,090 feet. The closer spacing of wells owned by the permittee is allowed by POSGCD Rule 4.1.7 in order to install a well at a site secure from flooding, adverse drainage, or any source of potential contamination.

To evaluate the potential impacts on drawdown from pumping the two wells, the Theis solution (Theis, 1935) was used to simulate drawdown from pumping each well at 250 gpm for five years using aquifer parameters extracted from the updated GAM for the Central portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers (Young and others, 2018). Figures 2 and 3 presents modeled drawdowns at the two pumping well and at radial distances of 500 feet and 1000 feet for where each is separately pumping 250 gpm.

Sincerely,



Steven Young, PG PE
 Principal Geoscientist

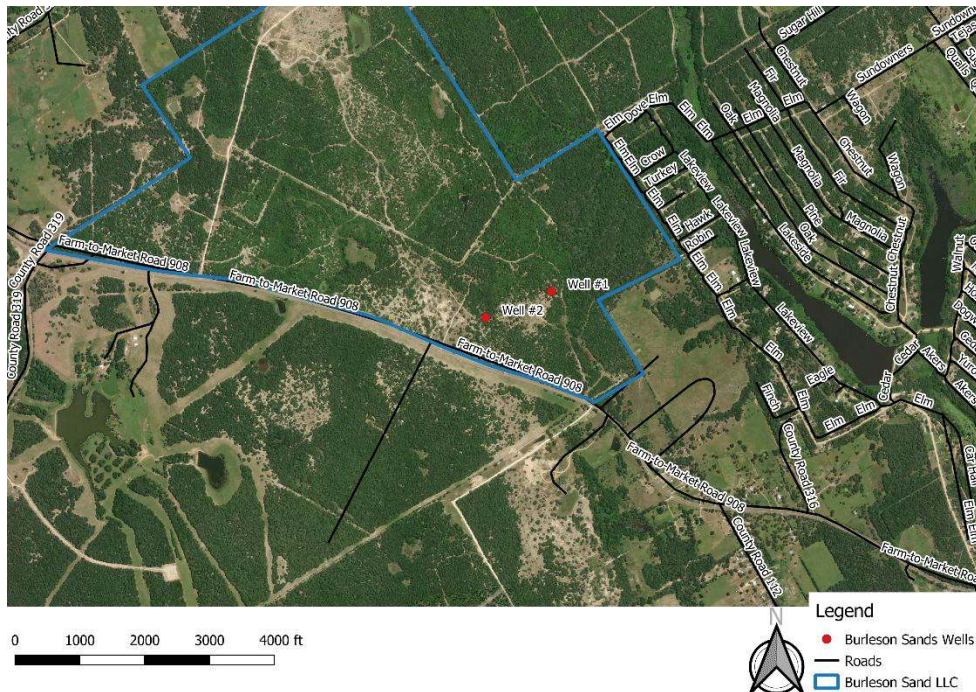


Figure 1 Locations of Well #1 and Well #2. Burleson Sands owns land parcel containing the two wells.

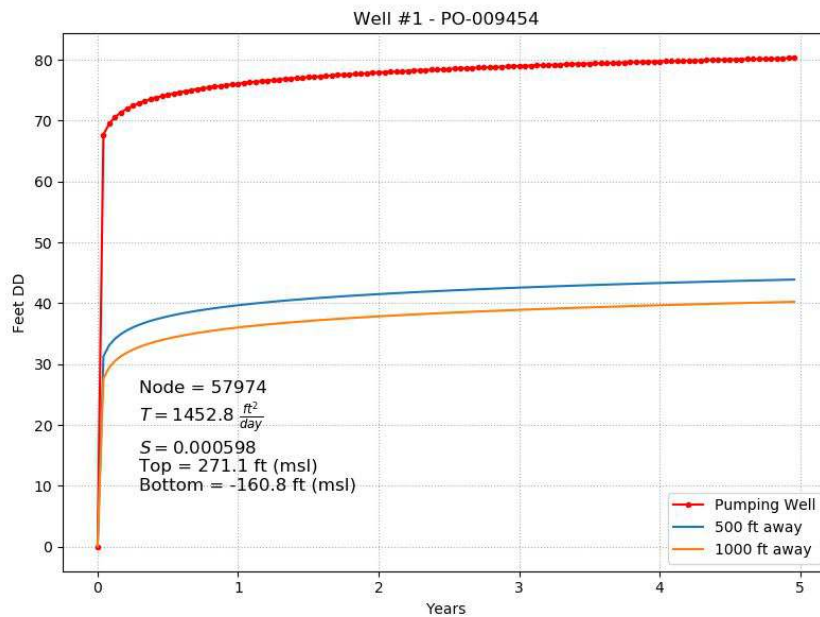


Figure 2 Simulated drawdown from pumping Well #1 at 250 gpm for five years based on the Theis solution (Theis, 1935) and aquifer parameters extracted from the updated GAM for the Central portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers.

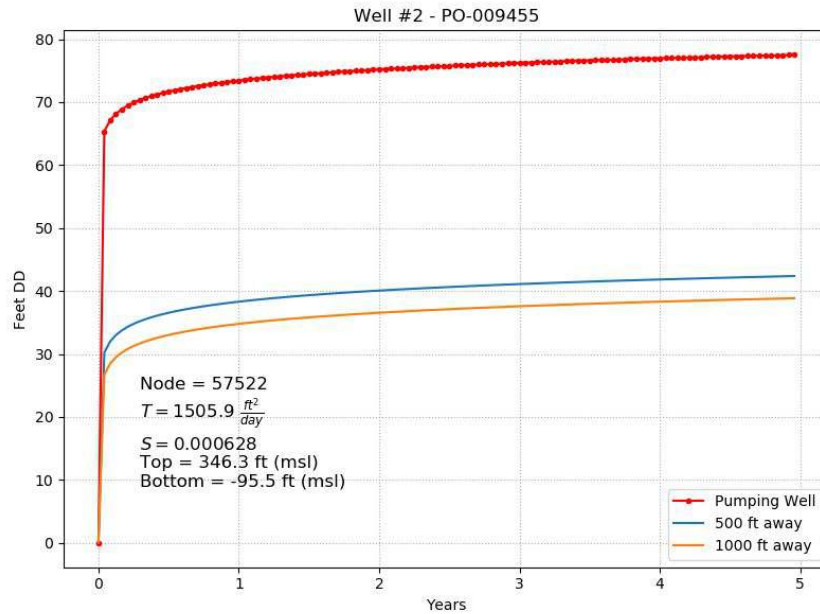


Figure 3 Simulated drawdown from pumping Well #2 at 250 gpm for five years based on the Theis solution (Theis, 1935) and aquifer parameters extracted from the updated GAM for the Central portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers.

References

- Theis, C. V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage: American Geophysical Union Transaction, v. 16, p. 519–524.
- Young, S., Jigmond, M., Jones, T., and Ewing, T. 2018. Groundwater Availability Model for Central Portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifer, prepared for the TWDB, unnumbered report, September 2018