

MEMORANDUM

TO: Water Right File 65-22945

FROM: Daniel Nelson – Analyst 3

DATE: September 24, 2019

SUBJECT: Licensing Review of Water Right 65-22945

The field exam for this right was performed by Certified Field Examiner Terry Scanlan of SPF Water Engineering.

History and Overlap:

Originally this permit was approved in 2005, and owned by Sage SGI LLC. A review of the file showed that permit lapsed in 2010. The permit was reinstated, and the permit holder was given until August 1, 2015, to submit proof of beneficial use. No proof was received in 2015, so the permit lapsed. The permit holder sent a request to reinstate the permit along with a certified water right examiner's field report and the appropriate fees on July 30, 2019. Apparently the property development has been held up in legal investigations and subsequent agreements. This is all explained in the "Request to Reinstate a Permit Lapsed more than Sixty Days" form. It was agreed that we could move forward with reviewing this permit based on the legal issues explained in these documents.

There are several water rights that overlap this place of use. Water right 65-22960 is a water right license that is diverted from the same 2 wells, but only supplies water to the ponds in the subdivision. Water right 65-23042 is another permit diverted from the same 2 wells, but the place of use for this right is south of this subdivision.

Since the wells can supply adequate water for this permit and water right 65-22960, no combined condition limitations are necessary. However, once permit 65-23042 is licensed, they will need to have a combined condition limitation.

The field report supplied by Mr. Scanlan states that there are 132 connections. Mr. Scanlan used a plat map used to designate the domestic uses based on plat maps that were used during the development of the subdivision. According to Mr. Scanlan, these plat maps were used in developing the stubbed in lots in the subdivision. The subdivision design maps do not match the current subdivision plat maps on record with Valley County. Therefore there appears to be several stubbed in units to a single tax parcel that has a designation that it will be developed at a later date. The Valley County subdivision plat maps also show multiple parcels in a location where that only shows a single stubbed in lot. I questioned Mr. Scanlan on this issue, and he stated that the maps he supplied were accurate. When I asked administrative staff about this issue, I was told to move forward with Mr. Scanlan's maps. I shared the shape file I created with Mr. Scanlan, and asked if he could give me a parcel list each list covered. On October 1, 2019, Marcie Pape of SPF Engineering supplied the documents requested. Ms. Papa also determined that there were actually 140 parcels covered by this permit instead of the 132 parcels stated in the field report.

Ownership:

An assignment of Permit was received with the field report and proof of beneficial use statement. The assignment was reviewed and it was determined that the assignment could be processed. I changed the ownership at the time of licensing to reflect the assignment of permit based on the approval to move forward with the assignment from administrative staff.

Place of Use:

I found additional acres in the irrigation portion of this permit when I created the place of use for the irrigation use. The water right examiner stated that he was fine with authorizing the additional acres. The water right examiner used later aerial imagery to determine the acres being irrigated, and I used the 2015 aerial imagery, which showed slightly more acres being irrigated. I am recommending 10.4 acres of irrigation instead of the 9.2 acres recommended by Mr. Scanlan.

When creating the shape files in ArcGIS, I had trouble determining the place of use for the domestic use. As discussed above, the plat maps supplied by the Mr. Scanlan didn't match the Valley County subdivision plat maps, so it was difficult to determine the exact place of use for the domestic portion of this right. I sent a copy of the map that I created to Mr. Scanlan to review the shape files that I created with the information available to me.

Marci Pape of SPF Water Engineering replied with an email that had an updated map and a list of the parcels associated with the permit. Several of those parcels are not included in the county parcels maps, but it does appear as though the developer maintained a consistent parcel numbering system for both the developed and non-developed water rights. Ms. Pape also supplied a table listing the lot and block numbers for each parcel. I will use this table for the X60 condition.

With this additional review, it was also discovered that there are actually 140 domestic connections instead of the 132 connections originally recommended by Mr. Scanlan. This is due to additional lots being added around the club house, and the addition of a 12 duplex units and a few additional lots that were not included in the field report. This seems reasonable, so it will need to be addressed in the diversion rate and volume calculations.

Diversion Rate:

The system for this subdivision is supplied by 2 wells. One well has a 40 Hp pump, and the other well has a 15 Hp pump and a 100 Hp pump. Mr. Scanlan measured the flow rate of the 15 Hp pump and the 40 Hp pump at a diversion rate of 850 gpm (1.89 cfs) at a normal operating condition of 42 psi. Mr. Scanlan then supplied a theoretical calculation for when all three pumps are in operation of 4.46 cfs. The recommended flow rates for the existing water right is 0.17 cfs for the existing water right for the ponds, and the domestic and irrigation portions of this permit are recommended at 0.71 cfs when combined. The flow of the 15 and 40 Hp pumps together are adequate to provide all of the flows needed for the existing water right and the domestic and irrigation uses for this permit, so the theoretical calculation is acceptable to calculate the fire flows. During an existing fire, the permit holder may divert as much water as needed from any water source without a water right, so the additional diversion for fire flows can be determined using the theoretical calculation.

I was concerned by the fact that the 15 Hp and the 100 Hp are in the same well, and there was no accounting for possible interference in the well, but for fire flows, this shouldn't be an issue. However, if additional water rights including these wells are being licensed, I would strongly recommend that a measurement be made with all three wells running at the same time at a normal operating condition of 42 psi or higher.

In the October 1, 2019, email, Ms. Pape determined that there was actually 140 connections instead of the 132 recommended in the field report. Using the charts used by Mr. Scanlan that is part of Administrative Processing Memorandum #22, I determined the diversion rate will actually not change. The difference of 8 domestic connections does not register on this chart.

Using the theoretical calculation, I am recommending that this permit be licensed for 0.50 cfs for domestic use, 0.21 cfs for irrigation ($10.4 \text{ acres} \times 0.02 \text{ cfs/acre} = 0.208 \text{ cfs}$), and 3.34 cfs for fire protection for a total diversion rate of 4.02 cfs. No combined limitation conditions are needed.

Diversion Volume:

Mr. Scanlan correctly calculated the volume for the irrigation and domestic uses. However, I did find additional acres, so the irrigation volume will match the volume needed to supply the additional acres. I am recommending a total of 10.4 acres of irrigation, so the irrigation volume will be limited to 31.2 af ($10.4 \text{ acres} \times 3.0 \text{ af/acre} = 31.2 \text{ af}$). The permit has supplemental conditions to for the irrigation component, because surface water rights 65-7653E and 65-7576C overlap a portion of the place of use. Only 0.8 acres of the irrigation use for this permit is within the borders of these two surface water rights. Therefore, I am going to add a volume to this license, since the majority of this license is a primary ground water right. The domestic volume will remain the same as recommended by Mr. Scanlan.

In Ms. Pape's October 1, 2019 email, she stated that there were actually 140 connections and not 132 as stated in Mr. Scanlan's report. Therefore, using the same volume calculations used by Mr. Scanlan, the volume for the domestic use would increase from 79.2 af to 84 af ($140 \text{ connections} \times 0.6 \text{ af per connection} = 84 \text{ af}$).

Due to rounding requirements I am recommending a volume for irrigation of 31 af and a volume for the domestic use of 84 af for a total volume of 115 af. No volume is recommended for fire protection per Department standards.

Conditions:

Condition 076 authorized multiple wells in the tracts identified. With the identification of the wells and their legal descriptions in the field report, condition 076 will be removed at licensing. The permit used condition 132 to limit the domestic use to 250 homes. The field examiner and Ms. Pape found that the water system only supplied water to 140 residential connections. Therefore, we will correct condition 132 to limit the domestic use to 140 homes.

Condition WB7 will be corrected to read that this right when combined with all other rights shall be limited to 0.02 cfs per acre and an annual maximum diversion volume for the irrigation use of 31 af. Conditions 065 and 105 will be changed to condition 943 as is standard. As stated above, only one parcel (Lot 92 of Block 3, of Blackhawk on the River Subdivision, Phase 2) of 0.8 acres is within the borders of the overlapping surface water rights, so I feel the two above conditions should address the overlapping water right issues for that parcel.

Condition 121 will be changed to condition 103 as is standard. Conditions R58, 077, and 01M will be carried forward to licensing. The remaining conditions will be removed.

Condition X60 authorized a water use in a wide variety of lots, but didn't give specific parcel descriptions. Department staff have determined in the past these types of systems still need the description of each parcel being serviced. I have asked Mr. Scanlan to supply the lot and block numbers being served by this system. Ms. Pape supplied this information in her October 1, 2019, email. The X60 condition will be altered to the following:

Place of use is located within Lots 1- 5, 11-14, 20, 26 – 28, 31 -32, 48, and 51 – 55 in Block 1, and Lot 17 in Block 2 Blackhawk on the River – Phase 1; Lots 56 – 57, 65 -66, 73 – 79, 82 – 86, 89 – 93, 99, 118 – 119, and 122 – 131 in Block 3 of Blackhawk on the River – Phase 2; Lots 104 – 106, and 114 in Block 6 of Blackhawk on the River – Phase 3; Lots 58 – 62 in Block 3 of Blackhawk PUD I; Lots 63 – 64 in Block 3 Blackhawk PUD II; Lots 67 – 72 Block 3 of Blackhawk PUD III; Lots 15 – 16 in Block 2 of Blackhawk PUD IV; Lots 18 – 19 in Block 2 of Blackhawk PUD V; Lots 21 – 22 in Block 1 of Blackhawk PUD VI; Lots 23 – 25 in Block 1 of Blackhawk PUD VII; Lots 80 – 81 of Block 3 of Blackhawk PUD VIII; Lots 29 – 30 in Block 1 of Blackhawk PUD IX; Lots 33 – 34 in Block 1 of Blackhawk PUD X; Lots 87 – 88 in Block 3 of Blackhawk PUD XI; Lots 94 – 98 in Block 3 of Blackhawk PUD XII; Lots 35 – 37 in Block 1 of Blackhawk PUD XIII; Lots 38 – 47 in Block 1 of Blackhawk PUD XIV; Lots 49 – 50 of Block 1 of Blackhawk PUD XV; Lots 6 – 10 in Block 1 of Blackhawk PUD XVI; Lots 107 – 113 in Block 6 of Blackhawk PUD XVII; Lots 115 – 117 in Block 6 of Blackhawk PUD XVIII; Lots 132 in Block 5 of Blackhawk PUD XIX; Lots 120 – 121 in Block 3 of Blackhawk PUD XX; and Lots 1A – 6B of The Bend PUD.

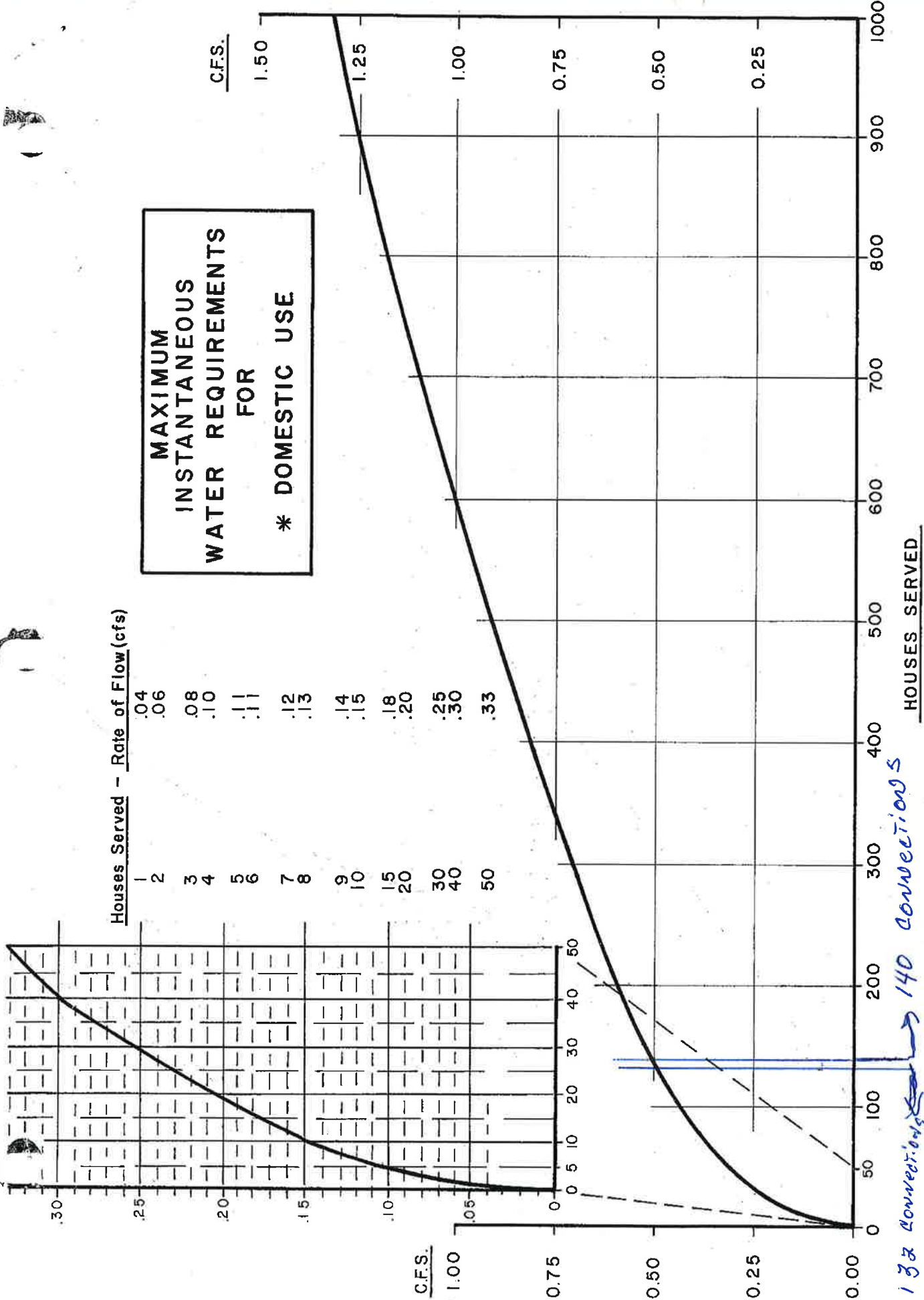


FIG. 1.

* From Community Water Systems Source Book, J. Ameen, 1977, Technical Proceedings, North Carolina.)