

MEMORANDUM

TO: File 22-13918

FROM: Daniel Nelson – Staff Hydrologist

DATE: July 14, 2014

SUBJECT: Licensing Review for 22-13918

This is licensing review of the field exam that was supplied by the Certified Field Examiner (CFE), Scott King of SPF Engineering. This water right was split from water right 22-13220. The other portion of the split is 22-13917. Mr. King performed the field examination on both splits, and submitted the field exams as a package. There are couple issues that need to be addressed in the licensing of this permit. Water rights 22-7641, 22-12272, 22-13917 and 22-13918 are direct overlapping water rights. Water right 22-7660 is a water right from an unnamed stream that overlaps the storage component described in 22-7641. I will address each issue separately.

Diversion Rate:

The certified examiner measured the well for this permit as producing 519 gpm or 1.16 cfs. This seems like a reasonable capacity of the well. There are overlapping water rights using this well. This permit allows 0.98 cfs for 49 acres of irrigation and 1.10 cfs for diversion to storage developed under this permit. Water right 22-7641 allows 0.02 cfs from this well for domestic purposes, 0.10 cfs for aesthetic purposes, and 0.10 cfs for diversion to storage (for a separate pond) limited to 0.10 cfs. It must be noted that water right 22-7641 has a combined condition for the domestic use with water right 22-12272, but the domestic use under 22-12272 comes from a separate well from the one used on this system. I can't determine from the records if the domestic well is connected into the system that supplies water to the irrigation and storage reservoirs, but Scott King did confirm the wells are connected together. Water right 22-12272 is for 0.10 cfs for domestic use. Water right 22-13917 allows 0.10 cfs for irrigation. When all of the rights are added together, the total diversion rate needed is 1.20 cfs. Water rights 22-7641 and 22-13918 are in the ownership of Curlew Partners LLLP and 22-13917 and 22-12272 are in the ownership of JRG Partners. This makes reducing the diversion rate for one of the permits difficult because of the split ownership. It gets further complicated when considering the different water uses and the fact that water right 22-7641 is already a licensed right and 22-12272 is a decreed right. The only way to prevent confusion is to ensure that the capacity of the well doesn't change and limit all three water rights when combined to the amount measured by their examiner of 1.16 cfs.

Water right 22-13918 can be licensed for the full amount of 0.98 cfs for 49 acres.

Diversion Volume:

The field examiner originally determined that this permit 22-13918 should be limited to a diversion volume of 171.5 af for irrigation and 36.6 acre feet for storage. The field examiner originally included the pond volumes in the field exam recommendation for permit 22-13918, but has sent a letter retracting that assessment and limited the volume to consumptive use or the evaporation losses of the ponds to 14 acre feet. I reviewed the examiners evaporation calculations and agree with his assessment. Permit 22-13918 should be licensed for 171.5 af for irrigation for a total of 185.5 af.

However as stated above, there are other water rights on this system. Water right 22-7641 allows a total volume of 14.3 af, and permit 22-13917 allows 17.5 af. Water right 22-12272 is for 13,000 gpd for a maximum of 14.6 af per year. A diversion rate of 1.16 cfs can provide 840 af ($1.16 \text{ cfs} \times 1.9835 \times 365 = 840 \text{ af}$). The volume for all of the water rights are added together the total volume needed is 217.3 af, which is well below the capacity of the well. The diversion to storage, Aesthetic, and Domestic use are year round uses, so I had to use 365 days to calculate the volume amount.

Mitigation:

The mitigation for this permit is discussed in a memorandum composed by L. Glen Saxton on August 8, 2002. Whereas this permit was issued based on this mitigation plan, changing the mitigation to meet with current modeling standards is not acceptable unless the applicant provides an updated mitigation plan. No plan was submitted by the field examiner, therefore, we must assess this permit based on the information provided.

The original mitigation plan proposed to retire 70 acres of water right 31-2327B. According the 2002 memo, the 70 acres of water right 31-2327B could provide 93 acre feet of consumptive volume to be used for mitigation of permits 22-13917 and 22-13918. In the analysis, it was determined that 21 af would be needed for evaporation, and 92 af for consumptive use of irrigation for 54 acres for a total of 113 af. The difference of 20 af was attributed to the different seasons of use of the two water rights (15 af) and allowance of the margin of error (5 af).

The field examiner found that 14 acre feet of water was consumptively used (evaporated) from the ponds, and that the 49 acres and 171.5 acre feet of water was determined for the irrigation, so the portion of the mitigation right 31-2327B associated with this permit would be a proportionate share of the 70 acres. The field examiner also found that the full 5 acres and 17.5 acre feet of water right 22-13918 were irrigated. When you calculate the consumptive use for both permits you still have 106 acre feet which reduces the amount of error to 13 acre feet instead of the 20 acre feet allowed in the 2002 memo.

Therefore, I used a proportionate split of the acres to determine the number of acres from water right 31-2327B that needs to be assessed to each water right. This is important because the original permit was split and there are now two different owners. The attached spreadsheet shows how I split the 70 acres between the two water right permits. My calculations show that 64.5 acres of water right 31-2327B should be used to mitigate 22-13917 and 5.5 acres of water right 31-2327B should be used to mitigate 22-13918. Please see the attached spreadsheet for more details.

Conditions:

Conditions 3(046), and 6(048) were removed at licensing. Conditions 1(01M) and 3(R63) were carried forward to licensing. Condition 2(068) was replaced with a non standard condition. Condition 5 was replaced with condition 170. I also added condition 259 to better defined the volume separation from the irrigation use and the wildlife storage use. I also added condition X35 to account for the combined uses discussed in the diversion rate section of this memo. All of the acre foot amounts and irrigated acre amounts are additive, so X35 only addresses the diversion rate which is not an additive element of the combined rights. It is as follows:

Rights 22-7641, 22-13917 and 22-13918 when combined shall not exceed a total diversion rate of 1.16 cfs.

Another X35 condition is needed to account for the combined acres being irrigated out this well. This condition is as follows:

When the irrigation components of 22-7641, 22-12272, 22-13917 and 22-13918 are combined they shall not exceed a total diversion rate of 1.09 cfs.

Condition 170 was placed on this right and water right 31-2327B was changed to mitigation.

To mitigate for the depletion of water resulting from the use of water under this right and to prevent injury to senior water right holders, the right holder shall cease diverting and using water as authorized by the following water rights for the purposes and amounts specified below. Moreover, the official record for the following water right will be changed to show that diversion and use of water is not authorized because the rights, or portion thereof, are being dedicated to mitigation purposes.

Right No.	Use Changed to Mitigation	Mitigation Rate (cfs)	Mitigation Volume (AF)	Mitigation Acres
31-2327B	Irrigation	0.09	19.3	5.5

The land that will no longer be irrigated under this right is located within the NE, Section 26, Township 6N, Range 35E, B.M.

If the specified mitigation right, or portion thereof, is sold, transferred, leased, used on any place of use, or is not deliverable due to a shortage of water or a priority call, then the amount of water authorized for diversion under this right approval shall be reduced by the same proportion as the reduction to the mitigation rights.