

MEMORANDUM

TO: File 63-32659

FROM: Daniel Nelson – Staff Hydrologist

DATE: May 7, 2014

SUBJECT: Review of Certified Field Examiner Exam Report.

I have been asked to review the field exam supplied by Certified Examiner Scott King of SPF Engineering. Most of the exam seems reasonably well done, however there are a few issues that need to be explained further for licensing purposes. This permit allows ground water to be diverted from 3 existing wells and two new wells generally located in the N1/2 of the SW quarter of Section 7, Township 1 South, Range 1 West. The water is diverted to a dairy operation in the SW quarter of Section 7, Township 1 South, Range 1 West. An existing domestic, commercial, and stockwater water right (63-11054) already exists for this dairy, so this permit was filed to bring the dairy up to current size.

Point of Diversion:

According to the field examiner, only one additional well was added to the system instead of the 2 new wells applied for in the application. The three existing wells are located in Lot 3, NWSW quarter of Section 7. The field examiner provided a better location for these wells than what was available from water right 63-11054. The new well was located in the NESW of Section 7. A GPS reading was not used to confirm the locations of the wells, but aerial photography does show what appears to be small well house at 2 of the 4 locations. Therefore, I feel the locations provide by the field examiner are adequate.

Place of Use:

The field examiner provided a place of use for the stockwater use that outlined the dairy, and a larger place of use for the commercial use for land application of the wastewater. Administrative Transfer Memo 24 states the following:

Land Application of Wastewater. An application for transfer is required for a proposed change in the place of use under a water right for uses such as industrial, dairy, or confined animal feeding operations that would allow land application of wastewater from that use or change the location of lands used for application of wastewater, when there is not a full existing water right for irrigation of the place of use receiving wastewater.

The lands described by the commercial land application in the field exam are all within the borders of the Boise Kuna Irrigation District and New York Irrigation District and a portion of the lands being covered are on lands covered by water right 63-10435. The permit does not state that the commercial use was for land application, so adding the land application use onto the permit at licensing could be considered an enlargement. Therefore, I am reducing the acres being covered to just the location of the dairy shown in the field exam for the stockwater use.

Diversion Rate:

The permit allows a rate of diversion of 1.00 cfs for stockwater and 1.00 cfs for commercial uses for a total of 1.00 cfs. The field examiner measured the water from new well at 0.14 cfs, and then used the theoretical calculations from the field exam for water right 63-10435 for the diversion rate of the existing 3 wells. I am concerned that the field examiner didn't measure the total system capacity with all wells running. The permit states that the water is diverted to a 10,000 gallon storage tank, so I am not sure the combined diversion rate of water is needed to provide water needed for this facility. However, Application Processing Administrative Memo #3 does allow up to 0.0065 cfs per head for dairy cattle, and with 2100 dairy cattle, the water user is allowed up to 1.37 cfs ($2100 \times 0.0065 \text{ cfs/hd} = 1.365 \text{ cfs}$). The system capacity of this dairy is well within the standards set forth in our administrative memos.

At the time the permit was issued, it was the standard of the Department to allow a common diversion rate for commercial use and stockwater use for a dairy operation as long total rate of rate didn't exceed the maximum allowable. Using this standard, the field examiner recommended that the capacity of the system be licensed for both the commercial use and the stockwater use, with a limitation of when they were combined, they were limited to the capacity of the system. Therefore, the commercial use has a much higher rate of diversion 0.55 cfs than the stockwater diversion rate of 0.14 cfs, because the capacity of the system minus the existing water right allows a higher rate of diversion for the commercial use, than it does for the stockwater use. This should be acceptable, but the following condition will need to be added:

Rights 63-11054 and 63-32659 when combined shall not exceed a total diversion rate of 0.59 cfs for stockwater, 0.59 cfs for commercial use, and 0.08 cfs for domestic use for a total combined diversion rate of 0.59 cfs.

Please note that a volume limitation will not to be added to the above condition, since the volume amounts for both water right 63-11054 and 63-32659 will be additive for all of the uses described in the condition.

Diversion Volume:

The field examiner supplied a spreadsheet that is generally used by the Department to determine the volume for this permit. I am generally concerned when I see this spreadsheet used without a good description of the entire system and how each piece of equipment in the spreadsheet is operated and how any water not specifically described in the spreadsheet is used.

The stockwater volume calculated in the spreadsheet does match the drinking water requirements for dairy stock in Dean Falk's University of Idaho study on Dairy use, and is lower than maximum standards allowed by the Department. Commercial use does seem a bit low, but it is also acceptable per the Department's standards. I feel if the water user is happy with the volume calculated in the spreadsheet, then it should be adequate for his needs.

The one thing that the spreadsheet did not take into account is the commercial use of the office described in the existing water right license 63-11054. During the licensing of 63-11054 the water use in the office for the dairy was given an annual volume of 0.6 af. Therefore, I added this amount onto the commercial volume calculated in the field exam. The annual volume allowed under this permit is 10.3 af for stockwater and 4.0 af for commercial use for a total volume of 14.7 af. The field examiner only recommended 3.4 af for the commercial use, so the addition of the 0.6 af for the office would bring this use up to the 4.0 af.

Conditions:

Conditions 1 (26A), 2 (004), 4 (X02), 6 (046), 7 (082), and 8 (106) were removed at licensing. Condition 9 (121) was changed to condition 103 per standards. Condition 3 (01M) was carried over to licensing. Condition X35 was modified and added as discussed in the diversion rate section of this memo.

Conclusion:

With the above corrections, I feel this permit can be licensed. I have contacted the field examiner, and discussed the changes and corrections discussed in this memo. The field examiner didn't have any objection.