

MEMORANDUM

TO: Water Right No. 57-7502
FROM: Phill Hummer
DATE: 05/17/2017
SUBJECT: Field exam review

The permit was approved on 12/08/1989 authorizing the diversion of 3.0 cfs of groundwater for heating, fish propagation, and for diversion to storage. The permit also authorizes 37.0 AF for fish propagation storage. Two points of diversion are listed on the permit within the SWNW of section 32 in township 04S and range 02E. A field examination was conducted on 11/06/1997 by a M. Minicucci, any references in this memorandum to a field examination, report or notes is a reference to the documentation created as a result of that examination.

I have reviewed the field exam report and find the documents to be mostly complete. The field examiner found 7 ponds in the system and reported either the circumference or diameter of each along with the depth. From the report and exam notes I calculated a theoretical capacity of the diversion system and the capacity and volume requirements of all the ponds.

My review of the documentation supplied with the field exam is as follows:

Ownership and Address

The permit was issued in Dan Jordan's name. County taxlot data shows he is the owner of the property at the place of use. However, the application, permit approval, request for an extension, proof of beneficial use, and field exam report all list a different address than what is currently listed on the permit. I could not find any documents in the file for this permit or water right no. 57-7103 that has 30911 Hwy 78 Murphy ID, 83650 as the address. Taxlot data available to the department indicates the address for the property at the place of use is 30911 Hwy 78 Oreana ID 83650.

Source, POU, POD

The map and photos included with the field examination report indicate the hot water well used for heating and for the ponds is located in the SWNW of section 32, township 04S and range 02E. The report and notes indicate all the ponds associated with the system are in the same QQ as the well. Aerial imagery analysis in Arcmap verifies the location of the pond system.

Diversion Rate

Using the well data from the exam I calculated a theoretical system capacity of 0.28 cfs, see the attached calculation sheet and description. This is the rate I recommend for each individual beneficial use requiring a rate (fish propagation, heating, and diversion to storage). It is also the rate that should be used for the total rate on license since the system was constructed to divert a maximum of that rate.

Volume

The field examiner recorded the size and depth of each pond in the system. I used that information, climate data from the Grand View weather station, and the soil data from the department's pond soils layer in ArcMap to calculate capacity, volume lost, and total volume requirements of each pond. The attached worksheets show the calculations made using application processing memorandum no. 76, the results are summarized in the following table.

Pond Number	Surface Area (ac)	Depth (ft)	Capacity (af)	Seepage Loss (af)	Evaporative Loss (af)	Total Volume Requirement (af)
1	0.1	2.5	0.25	7.3	0.3	7.85
2	0.2	8.0	1.6	14.6	0.5	16.7
3	0.1	11.0	1.1	7.3	0.3	8.7
4	0.3	8.0	2.4	2.2	0.8	5.4
5	0.4	9.0	3.6	2.9	1.1	7.6
6	0.01	3.0	0.03	0.7	0.03	0.76
7	0.02	2.5	0.05	1.5	0.1	1.65

total 48.7

The water used for fish propagation and heating are used within the pond system so the volume diverted for these uses is the same as the amount diverted for fish propagation storage. The total volume used does not exceed 37.0 af.

Overlap Review:

Water right no. 57-7103 authorizes the domestic and heating use for the house on the property. The water for the internal domestic use and possibly some irrigation associated with the domestic use are diverted from a separate cold water well. The hot water used for heating is diverted from the same well used for the pond system under this permit. Water right no. 2-7065A authorizes irrigation from the Snake River. Since this right authorizes a different beneficial use from a different source it is not being considered as an overlapping water right.

Summary:

Although the permit was amended to add a second point of diversion the field examiner determined the system developed to divert hot water into the ponds and to provide heating for the greenhouse and fish propagation system only utilizes one well. Only one well in the SWNW of section 32, township 04S, and range 02E is recommend for the license. The diversion rate recommend for the license is the 0.28 cfs, based off of the theoretical system capacity calculation.

The permit was approved for 37 af of storage for fish propagation purposes based off of the system design plans submitted by the applicant. However, at the time the permit was approved the department did not consider seepage and evaporative losses as part of the volume requirements for storage, so the 37 af approved on the permit was intended to cover only the capacity of the pond system. Conditions on the permit indicate the applicant was allowed to either construct an injection well or land apply the flow through water (fish propagation) diverted. Since the permit was condition to be non-consumptive I believe that at the time of approval the land application of water was considered non-consumptive due to infiltration. Since the point of diversion is with the Trust Water Area the non-consumptive condition should remain on the license and it should be issued for the volume of water beneficially used that can be considered non-consumptive. For these reasons the license should be issued for the full capacity of the pond system and as much of the seepage loss calculated up to the storage volume authorized by the permit.

Using the pond loss calculation spreadsheet I calculated the total volume requirement of all the ponds to be 48.7 af. This total includes 9.1 af for the capacity of the ponds, 36.5 af of seepage loss and 3.1 af of evaporative loss. This amount is 11.7 af more than the fish propagation storage volume authorized on the permit. The examiner calculated a total storage volume (not included seepage or evaporation losses) of 9.6 af. I believe the examiners calculations to be more accurate. They are based on in the field measurements of the pond dimensions and information supplied by the permit holder. Where I made used shapes drawn in ArcMap over areal images of the pond system from 2004. As discussed previously I am recommending the license be issued for the capacity of the pond and any additional seepage losses available. That would equal 9.6 af for the capacity and 27.4 af for any additional seepage.

Conditions:

Most of the conditions that were placed on the permit are no longer used by the department and should be removed. Condition 027 should remain on the license since the point of diversion is within the Trust Water Area and the intent of the permit was to develop a non-consumptive use. Condition 219 should be added to the license to provide additional details regarding the volume restrictions.

State of Idaho
Department of Water Resources
Field Report Map
57-7502

This map depicts the FISH PROPAGATION, FISH PROPAGATION STORAGE, and HEATING, place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

