

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-7373

Exam Date: 8/15/2012

1. Current Owner: US DEPT OF ENERGY
BONNEVILLE POWER
PO BOX 3621 TRF 3
PORTLAND OR 97208-3621
(503)230-5572
2. Accompanied by: Steve Rodgers
Phone No: 208-843-7384
Address: H18985 Hubbard Gulch Road Juliaetta, ID 83535
Relationship to Permit Holder:

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 86-7371 and 86-7372
2. Other water rights with the same point of diversion: none

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SW1/4SW1/4 Sec. 25, Twp 37N, Rge 03W, B.M. NEZ PERCE County

Method of Determination: Field verification with a Garmin GPS unit

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
37N	03W	25	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	1.9
											1.0	.9							

Total Acres: 1.9

Method of Determination:
Field verification with handheld Garmin GPS unit

3. ☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

**Well or Diversion
ID No.*****Motor Make****Hp****Motor Serial No.****Pump Make****Pump Serial No. or Discharge
Size**

Domestic Well

10

UNK

UNK

UNK

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

**Measurement
Equipment****Type****Make****Model No.****Serial No.****Size****Calib. Date**

N/A

2. Measurements:

No measurements were not able to be made during the field exam**E. FLOW CALCULATIONS**☒ Additional Computation Sheets Attached

Measured Method: Theoretical HP calculation – see attached worksheet

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.9 \times 3.5 = 6.65 \text{ af} \quad \text{6.70 af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 133 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} \quad \text{6.70 af}$$

2. Volume Calculations for Other Uses: see attached worksheet

G. NARRATIVE/REMARKS/COMMENTS

This field exam for permit 86-7373 was conducted on 8/16/2012 by Dennis Owsley. Steve Rodgers, the hatchery supervisor, accompanied me on the exam. This permit is the domestic water right for the Nez Perce Tribal Fish Hatchery and the residents who reside at the hatchery complex. The permit authorized the diversion of 0.24 cubic feet per second of groundwater for domestic (0.10 cfs) and irrigation (0.14 cfs) purposes. The source of water for this permit is groundwater, diverted from a single well located on the property.

The domestic use of this permit is used for the two full time residents that reside at the hatchery complex in addition to the domestic water uses needed for the hatchery operations (restrooms, showers, drinking water, etc.). The irrigation component of this permit authorizes the irrigation of the landscaping at the two domestic residences and the hatchery landscaping.

One well supplies the groundwater for this permit. During the field exam, a measurement was not able to be made due to inaccessibility to the distribution system (buried lines). In addition, a flow meter is currently not installed on this system, so theoretical calculations were used to estimate flow rates from the well. The attached theoretical computation sheet shows the calculated flow rate.

To determine the volumes of water beneficially used through this permit, volumes associated with the two homes, the domestic hatchery uses, and the landscaping of the two homes and the hatchery were calculated. For the in-house domestic use, the standard 0.6 af per home was used. Based on the number of employees at the hatchery, a standard of 50 gallons per day per employee was used. These two volumes summed together result in 2.2 af. Details regarding the calculations can be seen on the attached computation sheets.

The amount of landscaping irrigated at the two homes and the hatchery was determined through the field inspection and the use of aerial photography. Approximately 2 acres of landscaping are irrigated through this permit. Using the standard application rate of 3.5 af per acre, an annual limit of 7 af was determined as the beneficially used volume for the irrigation component of this permit. 6.7

Based on the field examination and a review of the permit file, it appears that this permit has been put to beneficial use. I recommend a flow rate of 0.24 cfs with a combined (domestic and irrigation) volume limit of 9.2 af. 4.9

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/15 to 11/15	0.140 CFS	<u>6.7</u> ~~2.20~~ AF
DOMESTIC	01/01 to 12/31	0.100 CFS	2.20 AF
<u>Totals:</u>		0.240 CFS	~~9.20~~ AF <u>8.9 AF</u> <u>0.20</u>

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Dennis Owsley

Date 1/14/13

Reviewer _____

Date _____

Field exam photos for 86-7373. Photos taken on 8/16 by D. Owsley.



Photo 1. View of the POD for 86-7373.



Photo 2. Landscaping on the hatchery property.



Photo 3. Landscaping at one of the two residences.



Photo 4. Landscaping near raceway at the hatchery.

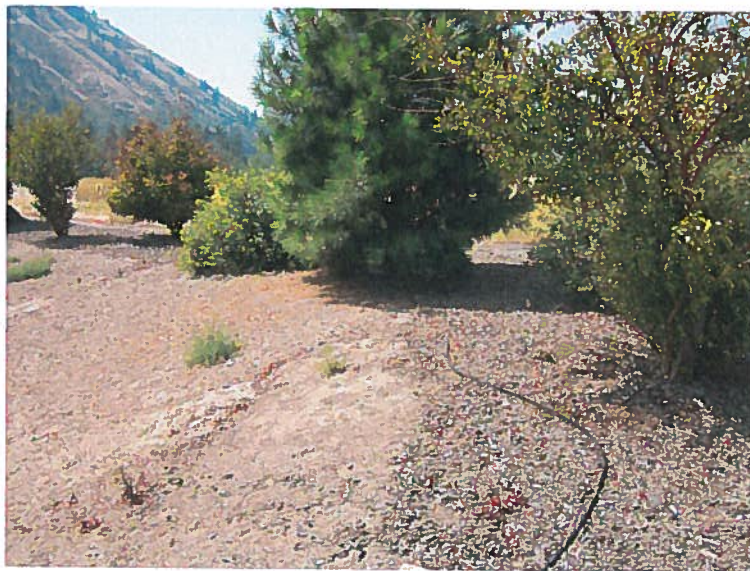


Photo 5. Landscaping at the hatchery.

Map for field exa 86-7373

0 0.05 0.1 Miles

Landscaping

Landscaping

Landscaping

Landscaping

POD

Landscaping

WATER USE RATE CALCULATION SHEET

DOMESTIC USE:

Domestic use comprises of 2 homes for in-house use only and fish hatchery commercial uses. The irrigation of the yards and landscape is covered under the irrigation component shown on the Field Exam Report form. The in-house use will be limited by the standard of 0.02 cfs per home for in-house use. The hatchery is considered a domestic type use. Under Idaho Code 42 111, commercial uses under the domestic exemption are limited to 0.04 cfs, therefore, the diversion rate would be limited to the following:

$$(0.02 \text{ cfs per home} \times 2 \text{ homes}) + 0.04 \text{ cfs for hatchery use} = 0.08 \text{ cfs}$$

Domestic use will be limited to 0.08 cfs.

VOLUME CALCULATION SHEET

DOMESTIC USE:

Domestic use comprises of 2 homes for in-house use only and fish hatchery commercial uses. The irrigation of the yards and landscape is covered under the irrigation component shown on the Field Exam Report form. The in-house use will be limited by the standard of 0.6 af per home for in-house use.

Homes:

TOTAL VOLUME FOR HOMES =

$$2 \text{ Homes} \times 0.6 \text{ afa per home standard} = 1.2 \text{ af volume for homes}$$

FISH HATCHERY:

The fish hatchery employs 11 full-time employees and additional seasonal help during the spawning season. During the spawning season up to 20 employees work on site.

Number of Employees =	20
Number of Days Spawning =	90
Gpd per employee=	50

$$20 \times 90 \times 50 = 112500 \text{ gpy} / 325850 = 0.276 \text{ af}$$

During the non spawning period the working employee are reduced to 11 employees for 275 days.

Number of Employees =	11
Number of Days Non-Spawning =	275
Gpd per employee=	50

$11 \times 275 \times 50 = 206250 \text{ gpy} / 325850 = 0.46 \text{ af}$

$0.276 \text{ af Spawning} + 0.46 \text{ Non-Spawning} = 0.74 \text{ af Hatchery Use rounded to } 1.0 \text{ af}$

TOTAL DOMESTIC VOLUME;

$1.2 \text{ af Home volume} + 1.0 \text{ Fish Hatchery} = 2.2 \text{ af}$

I recommend 2.2 af for the Domestic portion of this permit.

The following condition will need to be added to this water right at licensing:

The Domestic use for this permit includes in-house use for two homes and domestic type uses for the fish hatchery.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 86-7373

Examiner: Dennis

Date of Field Exam: 8/16/2012

P/D No.:	Option 1	OPTION 2	OPTION 3	
PUMP HORSEPOWER	10	10	10	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	129	129	129	
DISCHARGE PRESSURE	40	50	60	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	0.28	0.25	0.23	AVE
(gpm)	124.9	113.1	103.3	0.25

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Lift was taken from well log. Hp was found during site visit. A standard psi for domestic use of 40 to 60 psi was used to estimate the pressure against the pump.