

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**BENEFICIAL USE FIELD REPORT**

**A. GENERAL INFORMATION**

Permit No: 86-11944

Exam Date: 11/18/13

1. Current Owner: DOUGLAS BOYER  
9518 QUAIL CIR  
EAGLE RIVER AK 99577

And

JANET BOYER  
9518 QUAIL CIR  
EAGLE RIVER AK 99577

2. Accompanied by:

Phone No:

Address:

Relationship to Permit Holder:

3. SOURCE

TRIBUTARY

GROUND WATER

**B. OVERLAP REVIEW**

1. Other water rights with the same place of use:
2. Other water rights with the same point of diversion:

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

GROUND WATER NW1/4SW1/4 Sec. 33, Twp 37N, Rge 01W, B.M. NEZ PERCE County  
Method of Determination: Digitized

2.

PLACE OF USE: DOMESTIC

| Twp | Rge | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE |    |    |    | Totals |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE |        |
| 37N | 01W | 33  |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |    |    |        |

PLACE OF USE: IRRIGATION

| Twp | Rge | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE |    |    |    | Totals |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE |        |
| 37N | 01W | 33  |    |    |    |    |    |    |    |    |    |    | .4 |    |    |    |    |    | .4     |

Total Acres: 0.4

## Method of Determination:

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**

3.5 HP

1.25 inch pipe

\*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**

2. Measurements:

Per the driller's report, the well was pumped at a rate of 30 gpm (0.07 cfs) for one hour

**E. FLOW CALCULATIONS**

\_\_\_\_ Additional Computation Sheets Attached

Measured Method:

Theoretical pump flow rate (using 3.5 HP, 70% efficiency, 235 feet of lift, and 30 psi):

$$Q = (8.8 \times 3.5 \times 0.7) / (235 + (30 \times 2.31)) = 0.07 \text{ cfs}$$

Irrigation is for less than an acre so the following rate is used:

$$0.4 \text{ acres} \times 0.03 \text{ cfs/acre} = 0.012 \text{ cfs (rounded to 0.01 cfs)}$$

The diversion rate will be limited to 0.01 cfs for irrigation and 0.02 cfs for domestic, with a combined rate of 0.03 cfs.

**F. VOLUME CALCULATIONS**

## 1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.4 \text{ acres} \times 3.5 \text{ AF/acre} = 1.4 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.07 \text{ cfs} \times 245 \text{ days} \times 1.9835 = 34.0 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1.4 \text{ AF}$$

## 2. Volume Calculations for Other Uses:

Standard in-house domestic use = 0.6 AF

Irrigation = 1.4 AF

Total = 2.0 AF

**G. NARRATIVE/REMARKS/COMMENTS**

This permit was in-office field examined on 11/18/13 by myself, Craig Tesch. This permit authorizes the diversion of ground water to be used for domestic and irrigation purposes. Ground water is supplied by an existing groundwater well approximately 10 miles west of Orofino, Idaho.

Water is used for domestic purposes including standard indoor use for one household. The well is also used to irrigate the house lawn, small vineyard, and windbreak (0.4 acres total). The well is located in a pumphouse 500 feet south of Sunnyside Bench Road behind the main house. Per the application for permit, the well is 6-inches in diameter, 330 feet deep, and has a 3.5 HP submersible pump in it. Static water level from the drillers log is 235 feet below land surface. Pumping level is reported on the drillers log at 330 feet; however, 330 feet is the bottom of the well and where pumping took place, not the depth of the actual pumping water level (lift distance). In the absence of better data, static water level was used to estimate lift. Theoretical pump flow rate was calculated using 3.5 HP, 70% efficiency, 235 feet of lift, and 30 psi (average of standard domestic and irrigation) resulting in a discharge rate of 0.07 cfs.

The theoretical pump flow rate agrees with the actual discharge data on the drillers log; the well was pumped at 30 gallons per minute (0.07 cfs) for one hour. Pump discharge is less than the requested diversion rate of 0.08 cfs (0.04 cfs for domestic plus 0.04 cfs for irrigation). Because irrigation is for less than an acre, the diversion rate to be licensed under this right will be limited to 0.03 cfs per acre. In total, the diversion rate will be limited to 0.01 cfs for irrigation and 0.02 cfs for domestic, with a combined maximum diversion rate of 0.03 cfs.

Standard in-house domestic use volume is 0.6 AF. Irrigation volume was calculated to be 1.4 AF (0.4 acres x 3.5 AF/acre). Combined volume is 2.0 AF. No overlapping water rights exist on the place of use.

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> |
|-----------------------|----------------------|-----------------------|----------------------|
| DOMESTIC              | 01/01 to 12/31       | 0.020 CFS             | 0.6 AF               |
| IRRIGATION            | 03/15 to 11/15       | 0.010 CFS             | 1.4 AF               |
| <u>Totals:</u>        |                      | 0.030 CFS             | 2.0 AF               |

## 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 Graig Tuck Date 11/22/13  
Reviewer Daniel A. Ndu Date 11-26-2013





