

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-12014
Exam Date: 9/10/20

1. Current Owner:
KAREN STEENHOF 18109 BRIAR CREEK RD MURPHY ID 83650-5006

3. **SOURCE:**
GROUND WATER

Method of Determination: Site visit, Permit application, ArcMap, aerial imagery, and USGS topography.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: No POU overlap.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: No POD overlap

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SE¼ SE¼, Sec. 5, Twp 03S, Rge 02W, B.M. OWYHEE County

Method of Determination: Field exam, aerial imagery, ArcMap.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03S	02W	5																1.0	1.0

Total Acres: 1.0

Method of Determination: Field exam, aerial imagery, ArcMap.

- 3.
- X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- N/A Aerial Photo Attached (required for irrigation of 10+ acres).
- X 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
N/A		3	20FA3S4-PE	Franklin Tri-Seal 4400	N/A

D. FLOW MEASUREMENTS

Unable to take flow measurements.

E. FLOW CALCULATIONS

Theoretical Flow Calculation:

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

Horsepower	3
Pumping Level	315
Discharge Pressure	30-60
Rate of Flow (cfs)	0.04 cfs

Irrigation Permit:	0.06 cfs
B.U. Standard Allowance:	0.03 cfs x 1 ac= 0.03 cfs
B.U. Proof Fee:	\$50 → 0.00 cfs to 0.20 cfs
License Recommendation	0.03 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (1.0 \text{ ac}) \times (4.5 \text{ afa}) = 4.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.03 \text{ cfs}) \times (123 \text{ days}) \times 1.9835 = 7.3 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 4.5 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted on September 10, 2020 by Kate Hulse.

Permit 57-12014 authorized the diversion of 0.06 cfs for irrigation use in Section 05, Township 03 South, Range 02 West, SE 1/4, SE 1/4.

The proof of beneficial use was submitted on July 23, 2020 by Karen Steenhof. Current Owyhee County tax lot data represent Ms. Steenhof as the land owners pertinent to the place of use and point of diversion. The permit specifies

that the irrigation use is to provide wildlife and pollinator habitat for the NRCS. The project consists of 4 high impact sprinklers that run 1 hour each day to irrigate the seeded forbs and grasses during the growing season and a dripline that also runs one hour each day for a 350 foot row of shrubs. Measured 1.0 acre of irrigation using ArcMap tools and imagery and verified with a site visit.

The system consists of a 3 hp pump located in a pump house adjacent to the POU on Ms. Steenhofs property. I have calculated the theoretical flow rate using the 3 hp pump, a pressure range of 40-60 psi, and an estimated lift of 315 feet. The average theoretical rate is 0.04 cfs, which seems reasonable as the 1 acre POU only requires 0.03 cfs.

The permit authorized 2 acres of irrigation, however, during the field exam it was verified that only 1 acre of irrigation had been developed during the development period. The right was permitted at 0.03 cfs per acre, and therefore a diversion rate of 0.03 cfs is recommended for licensing.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 11/15	0.03 CFS	4.5 AF

Totals: 0.03 CFS 4.5AF

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 ☒ None

I. AUTHENTICATION Kate Hulse - Water Resource Agent

Field Examiner's Name Kate Hulse Date 9/23/20

Reviewer Patricia Kelly Date 9-24-2020

Steenhof System Diagram



Legend

- Township/Range
- Sections
- QQ

0 0.03 0.06 Miles

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 57-12014
 Reviewer: Kate Huelse
 Date of Review: 9/21/2020

P/D No.:	Scenario 1	Scenario 2	Scenario 3
PUMP HORSEPOWER	3	3	3
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	315	315	315
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	0.05	0.04	0.04 0.04

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.
 No Friction

Examiners Notes:

Field exam reports a 3 hp pump for irrigation use. Lift was measured using the well depth of 315 feet given by the owner. A range of discharge pressures were assumed given this is for a small irrigation use and the requested diversion rate is relatively small. Theoretical average flow rate is 0.04 cfs.