

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34081

Exam Date: 7/27/20

1. Current Owner:
SHELLY HAWKINS 2726 E WILDERNEST LN BOISE ID 83706 AND
JAY HAWKINS 2726 E WILDERNEST LN BOISE ID 83706
2. Accompanied by: JAY HAWKINS
3. **SOURCE:**
GROUND WATER

Method of Determination: Determined groundwater source by field exam, well on site, and well log.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
Boise Project Board of Control	Boise River/ Snake River	Irrigation	Decreed
United States of America Acting Through	Boise River/ Snake River	Irrigation	Decreed

Comments: Wilder Irrigation provides surface water irrigation to the property.

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 SW¼ NE¼, Sec. 9, Twp 03N, Rge 04W, B.M. CANYON County

Method of Determination: Field examination, Garmin Handheld GPS, and ArcMap tools with aerial imagery.

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	
03N	04W	9														20.0			20.0

Total Acres: 20.0

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam.

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
N/A	Franklin Electric submersible motor	30	16H19-17-06128A	Franklin Electric submersible motor	16H19-17-06128A

D. FLOW MEASUREMENTS

No flow measurements taken.

E. FLOW CALCULATIONS

Theoretical Flow calculation:

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

Pump Horsepower 30
Pumping Level 252
Discharge Pressure 50
Rate of Flow (cfs) 0.50

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (20 \text{ acres}) (4.5 \text{ af}) = 90 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.40 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 206.3 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 90 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted July 28, 2020 by Kate Huelse.

The original owner of the permit was James Dyke Nally or Patricia Anne Lodge on May 12 2015. The permit was assigned to Jay and Shelly Hawkins March 9, 2016. The proof of beneficial use was submitted by Jay and Shelly Hawkins on June 11, 2020 Current Canyon county taxlot data represent Jay and Shelly Hawkins as the owners of the land pertinent to the place of use and point of diversion.

Groundwater comes from a well drilled by Houston Drillers in 1959 drilled with a completed depth of 420 feet. According to the pump test recorded on the well log the well is capable of delivering 1000 gpm. The pump set was reported to be set at 252 feet based on communication with Mr. Hawkins. The system consists of a 30 hp 3 stage pump.

The POU was determined using aerial photography, GIS, and field exam observation to determine irrigation within the beneficial use period. The permit authorized the irrigation of 23 acres however at the time of the exam only 19.8 acres were verified as developed. Aerial photography and field observation documented that the well water could be delivered to the 19.8 acre POU, however Mr. Hawkins claims that they primarily use surface water for irrigation and well water is used as supplemental. The license recommendation of 20.0 acres follows the IDAPA beneficial use exam rules to round to the nearest whole number when irrigation use is greater than 10.0 acres.

Overlap review found additional water rights for the POU, as the property does receive surface water irrigation shares from Wilder. Thus, this right should be considered supplemental and is conditioned as such. POD overlap review found no other existing rights on the property.

The well log give the legal description and the GPS coordinates in Degrees-Minutes- Seconds, both of these methods place the well in Section 9, Township 03 North, Range 04 West, SW 1/4, NE 1/4. The system diverts water using a 30 hp pump to a drip irrigation sprinkler system to irrigate 19.8 acres of grapes. The drip irrigation emitters are every 36 inches and produce 0.42 gallons per hour. The theoretical flow rate is calculated to be 0.50 cfs and the pump test recorded on well log suggests the system is capable of 1000 gpm. The rate at which the irrigation pump is required to divert water to irrigate 19.8 acres is 0.40 cfs, the theoretical flow rate is calculated to be 0.50 cfs. The original permit allowed for the irrigation of 23 acres and a maximum diversion rate of 0.45 cfs, the total rate of diversion for which the proof was submitted was 0.45 cfs . The total diversion rate I have recommended for this license is 0.40 cfs for the 20.0 acres of observed irrigation, which seems reasonable as the system is capable of producing up to 0.50 cfs.

Conditions 046 removed as per department licensing standards. Condition 01M will remain. Condition X02 was removed as per department licensing standards. Condition 121 was updated to 103 and conditions 105 and 065 were updated to 943 as per department licensing standards.

Have conditions of permit approval been met? X 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	03/01 to 11/15	0.40 CFS	90.0 AF
<u>Totals:</u>		0.40 CFS	90.0 AF

2. Recommended Amendments

____ Change P.D. as reflected above ____ Add P.D. as reflected above X None

____ Change P.U. as reflected above ____ Add P.U. as reflected above X None

I. AUTHENTICATION

Kate Hulse - Water Resource Agent

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

Reviewer Patrick Wiley Date 9-10-2020

System Diagram



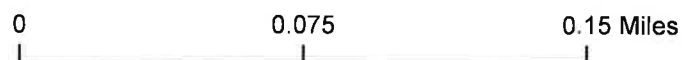
Legend

 Township/Range

 Sections

 QQ

Township/Range
Sections
QQ





POU: 20 Acres of irrigation



Point of Diversion (44.830064, -116.065261)
30 hp pump



Drip irrigation system

Mainline Diameter: 12 inches

1600 emitters/ acre

0.42 gal/hour



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-34081
 Reviewer: Kate Huelse
 Date of Review: 8/3/2020

P/D No.:	Scenario 1	Scenario 2	Scenario 3
PUMP HORSEPOWER	30	30	30
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	252	252	252
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	0.54	0.50	0.47 0.50

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:

Pump is 30 hp and is set at 252 feet. A range of discharge pressures were used for the 23 acres of irrigation.