

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 85-15756
Exam Date: 06/11/2018

1. Current Owner:
PAUL BOYD 29875 CULDESAC RD CULDESAC ID 83524
SANDRA BOYD 29875 CULDESAC RD CULDESAC ID 83524
GEORGE SCHWARTZ 29875 CULDESAC RD CULDESAC ID 83524

2. Accompanied by: Paul Boyd
Phone No: (208) 553-8082
Address: Same as above
Relationship to permit Holder: Permit Holder.

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
85-15761	UNNAMED STREAM	IRRIGATION	PERMIT

Comments: At time of Field Exam water right 85-15761, same applicant holder, is in licensing process accompanying this water right. Overlap is from pond that is used by applicant as another source of irrigation water. There is no overlap concern.

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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER L28 (SE $\frac{1}{4}$ SW $\frac{1}{4}$), Sec. 12, Twp 35N, Rge 03W, B.M. NEZ PERCE County

Method of Determination: Arcmap and GPS. POD located at -116°39.138, 46°23.058.

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	03W	12												X L28			X L29		

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	03W	12												X L28			X L29		

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	
35N	03W	12												1.2 L28			1.0 L29		2.2

Total Acres: 2.2

Method of Determination: Arcmap and 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
Unknown	FRANKLIN ELECTRIC	0.5			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement due to piping from POD to pressure tank being underground.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretic pump equation calculated 12.4 gpm, with pump lifting 35 feet, and system operating pressure 40 psi. Theoretic pumping equation identifies a diversion rate of 0.03 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: 2.2 acres x 4 af per acre = 8.8 af

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.2 \text{ acres} \times 4 \text{ af per acre} = 8.8 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 294 \text{ days} \times 1.9835 = 17.5 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 8.8 \text{ af}$$

2. Volume Calculations for Other Uses:

$$\text{STOCKWATER component} = 20 \text{ head stock} \times 12 \text{ gpd} \times 365 \text{ days} = 87,600 \text{ gal per year} / 325,850 \text{ gal/af} = 0.3 \text{ af}$$

$$\text{Maximum Diversion Volume} = 0.3 \text{ af (stockwater)} + 8.8 \text{ af (irrigation)} + 0.6 \text{ af (domestic)} = 9.7 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Paul Boyd, showed a well being used for domestic, irrigation, and stockwater uses. Water was diverted from a well using a ½ HP pump. Piping from pump to POU was underground, resulting in no access for flow measurements. Theoretic pumping equation derived 0.03 cfs and 12.4 gpm. The theoretic pumping equation will be used to license this water right for a diversion rate of 0.03 cfs.

At time of exam, irrigation piping was identified, and applicant watered using above ground tripod sprinklers. During field exam irrigation area was traced on copies of permit maps. During licensing review it was challenging to rely on arcmap aerial imagery to show irrigation, as all years showed dead grass on ground at different times of capture. Sentinel satellite imagery was used to further identify the area of irrigation that was historically put to beneficial use. Sentinel imagery showed irrigation was used in past years, but not to the extent applicant anticipated at time of permitting. Irrigation acreage was traced out equaling 2.2 acres, and using the generic volume of 4 afa the annual diversion volume for irrigation of 8.8 af will be carried to licensing.

At time of exam stockwater containment tanks were found placed around the property, and it appeared the applicant rotated them as he rotated areas stock occupied throughout the year. Volume calculations derive a 0.3 af requirement for 20 head of cattle as follows: (20 head stock x 12 gpd x 365 days = 87,600 gal per year / 325,850 gal/af = 0.3 af).

Applicant was using water for domestic purposes for one home, but the rate of diversion was capped by the output of applicant's ½ hp pump which reduced amount of diversion well could produce. This resulted in the 0.06 cfs diversion rate issued at time of permitting being reduced to 0.03 cfs at time of licensing based on maximum diversion the well could produce. The diversion rate of 0.03 cfs for the domestic component will be applied to license. The combined maximum diversion volume for stockwater, irrigation, and domestic components equals 0.3 af (stockwater) + 8.8 af (irrigation) + 0.6 af (domestic) = 9.7 af, which will be carried forward to license.

During licensing review, there were discrepancies noted in both irrigation season of use permitted for, as well as the labeling of government lots at time of permitting. The irrigation season of use was permitted for 03/15-to-11/15, but department standards define a season of use 2/15-to-11/30. Season of use updated at time of licensing to reflect current season of use standard of 2/15-to-11/30. Since permit, government lots have been updated. At time of licensing, government lots (L28 and L29) were applied to Place of Diversion and Places of Use. At time of permitting, the incorrect irrigation headgate value of 3 afa was permitted. At time of licensing, the department headgate value of 4 afa was verified, and the license will be issued reflecting this change (see attached memorandum).

Conditions 26A and 046 were removed from license. Condition R62 was replaced with R68 to correct irrigation headgate requirement. Condition WB5 was edited to better describe domestic POU. Condition X35 was added to describe irrigation overlap of water rights 85-15761 and this water right. All other conditions will remain on license. Water right 85-15761 (in process of licensing) overlaps, but is not a concern.

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>
STOCKWATER	01/01 to 12/31	0.02 CFS	0.3 AF
DOMESTIC	01/01 to 12/31	0.03 CFS	0.6 AF
IRRIGATION	02/15 to 11/30	0.03 CFS	8.8 AF

Totals: 0.03 CFS 9.7 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 Luke Bates - Water Resource Agent

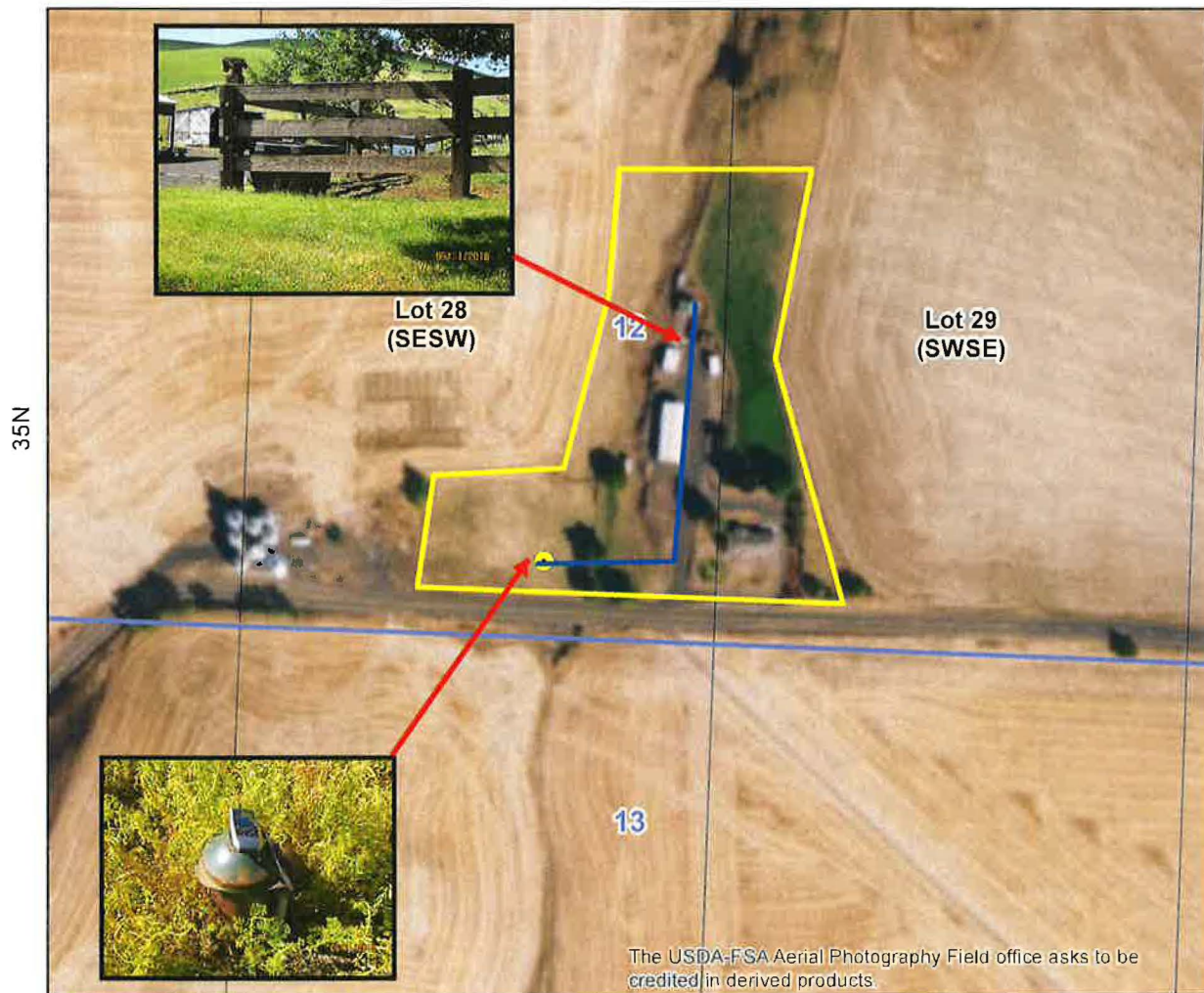
Field Examiner's Name Adrian Fink Date 4/21/2020

Reviewer [Signature] Date 4/15/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
85-15756

STOCKWATER system diagram.

03W



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.03 0.06 0.12 Miles



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DOMESTIC system diagram.



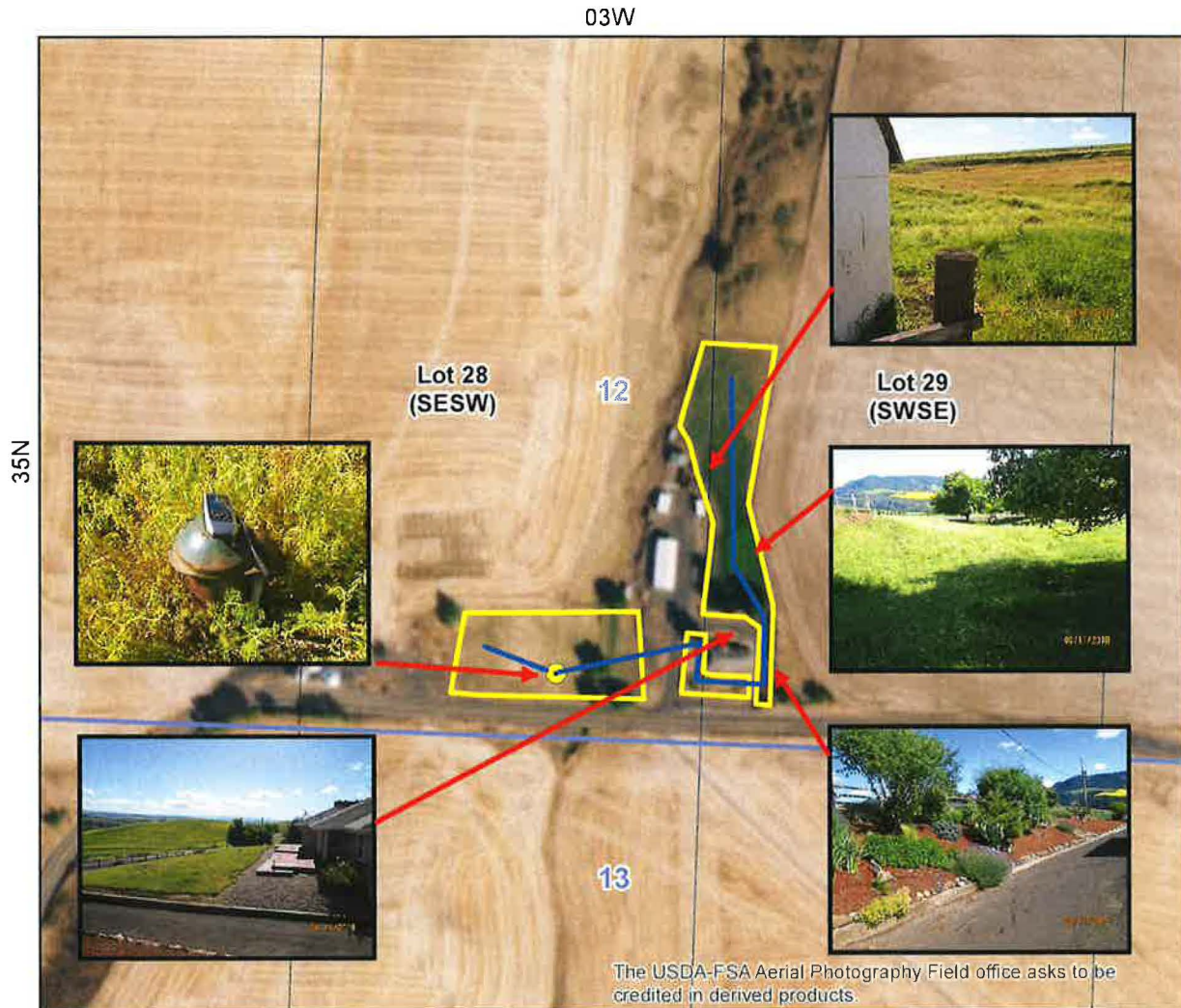
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles



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IRRIGATION system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles



MEMORANDUM

To: Water Right License 85-15756

From: Luke Bates

Date: 4/13/2020

Re: License to Appropriate Water within the State of Idaho.

During licensing review of applicant's permit, Paul Boyd and Sandra Boyd and Georage Schwartz, several discrepancies were identified and correctly applied to license as listed below:

- Season of use issued on permit was 3/15 to 11/15; department standard irrigation head gate requirement for this parcel is 2/15 to 11/30. The latter corrected season of use applied to license.
- 3.0 afa per acre at the headgate for irrigation of the place of use was issued on permit; department standard for this parcel was verified to be 4 afa per acre. The latter corrected value of 4 afa was applied to license.
- At time of permit, government lots did not show on arcmap imagery tax lot data; current updated tax lot data shows Lot 28 (SESW) and LOT 29 (SWSE) associated with this water right. Both POD and 3ea POU's were updated to reflect correct government lot at time of licensing.

THEORETICAL PUMPING EQUATION FOR WR# 85-15756

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 35 ft, and running at 40 psi.

<u>PUMP EQUATIONS</u>						
WATER RIGHT No.			85-15756			
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	0.5	127.517	0.8	35	40
Q =		0.028 cfs	12.4 gpm			



POD PERMIT NO. 85-95-N-47-200



1/2 HP PUMP



POU DOMESTIC



POU DOMESTIC AND IRRIGATION





POU STOCKWATER



IRRIGATION SPRINKLER