

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33921
Exam Date: 07/19/2019

1. Current Owner:
JOSEPH LAMAR HARRIS
7497 WARREN SPUR RD
MELBA ID 83641-5204
2. Accompanied by: Joseph Lamar Harris
Phone No: (208) 495-2140
Address: Same as above
Relationship to permit holder: Owner

3. SOURCE:
GROUND WATER

Method of Determination: Site visit

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-10406	Ground Water	Irrigation	License
Boise Kuna Irrigation District	Canal Water	Irrigation	

Comments: 63-10406 shares the same quarter-quarter section as 63-33921 (SESW), but they are adjacent water rights, not additive.

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
63-10406	Ground Water	Irrigation	License

Comments: Both rights use same well (A0019157).

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ SW¼, Sec. 2, Twp 01S, Rge 02W, B.M. CANYON County

Method of Determination: GPS, aerial imagery, digital PLS map

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	
01S	02W	2									32.0			3.5					35.5

Total Acres: 35.5

Method of Determination: Aerial imagery, digital PLS map

- 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.
- X 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
Well (A0019157)	Nidec Motor	40	H040S2BLF	Verti-Line	D17645
Booster pump	Baldor Reliance	25	39K061X256H1		

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Ultrasonic	Panometrics	GE	PT878	GAA1620004		

2. Measurements: Ten measurements were obtained on both the open discharge system and under pressure using the booster pump. These measurements are attached. Average values for open discharge was 642.5 gpm (1.43 cfs) and the average flow under pressure was 587.8 gpm (1.31 cfs).

E. FLOW CALCULATIONS

 x Additional Computation Sheets Attached

Total irrigated land for water user: 70 acres

Irrigated land covered by license 63-10406: 34.5 acres (0.69 cfs)

Land to be covered under licensed water right 63-33921: 35.5 acres

Measured flow from well: 1.43 cfs

Licensed rate for 63-33921: 35.5 acres x 0.02 cfs = 0.71 cfs

Combined diversion rate of both licenses: 0.71 cfs + 0.69 cfs = 1.40 cfs

I recommend 0.71 cfs for this permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 35.5 \text{ acres} \times 4.5 \text{ afa/acre} = 160 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.71 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 366 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 160 \text{ afa}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

Permit 63-33921 was approved on May 16, 2014 and authorized the diversion of 0.83 cfs to provide supplemental ground water irrigation to 41.5 acres. The water user (Mr. Harris) provided proof of beneficial use on April 9, 2019. On July 19, 2019, I (Amy Steimke, accompanied by Dan Nelson) visited the site to complete a field examination. Mr. Harris was also present for the field examination.

Mr. Harris irrigates a total of 70 acres (38 in the SESW tract and 32 in the NESW tract) as measured using GIS and aerial imagery. He currently holds a license (63-10406) for supplemental ground water irrigation for 34.5 acres in the SESW tract. As such, the place of use for this current license results in 32 acres in the NESW tract and 3.5 acres in the SESW tract (total of 35.5 acres) for supplemental ground water irrigation.

The point of diversion (POD) is a well that is also used as the POD for license 63-10406. There is no well log available for the POD. We did not find any IDWR tags at the POD, so we attached tag #A0019157 to the well.

Mr. Harris's property is configured to irrigate in a multitude of ways. He receives shares of canal water from the Boise Kuna Irrigation District and also diverts wastewater that comes through his property. His ground water irrigation system is set up with two pipes coming off the well. The first one is a 6" pipe which open discharges into a ditch and is then routed around the property to at least one of two holding ponds from where it is used for irrigation. The second is an 8" pipe with a booster pump that can be used to directly run the pivot or can be diverted to one of the ponds on the property. We measured the flow from each of these pipes using a Panametrics flow meter and received 642.5 gpm (1.43 cfs) for the open discharge pipe and 587.8 gpm (1.31 cfs) for the pipe under pressure with the booster pump.

Given that there is a total of 70 acres being irrigated and 34.5 of those acres are covered with a previous license, I recommend to license 35.5 acres with this permit. Given that the maximum allowable diversion rate is 0.02 cfs per acre, this results in a total licensed rate of 0.71 cfs for permit 63-33921. The annual volume I recommend for the license is 160 afa which is the product of number of irrigated acres developed and the headgate requirement of 4.5 afa/acre.

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	03/01 to 11/15	0.71 CFS	160.0 AF

Totals: 0.71 CFS 160.0 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 ☒ None

I. AUTHENTICATION Amy Steimke - Hydrogeologist, Staff

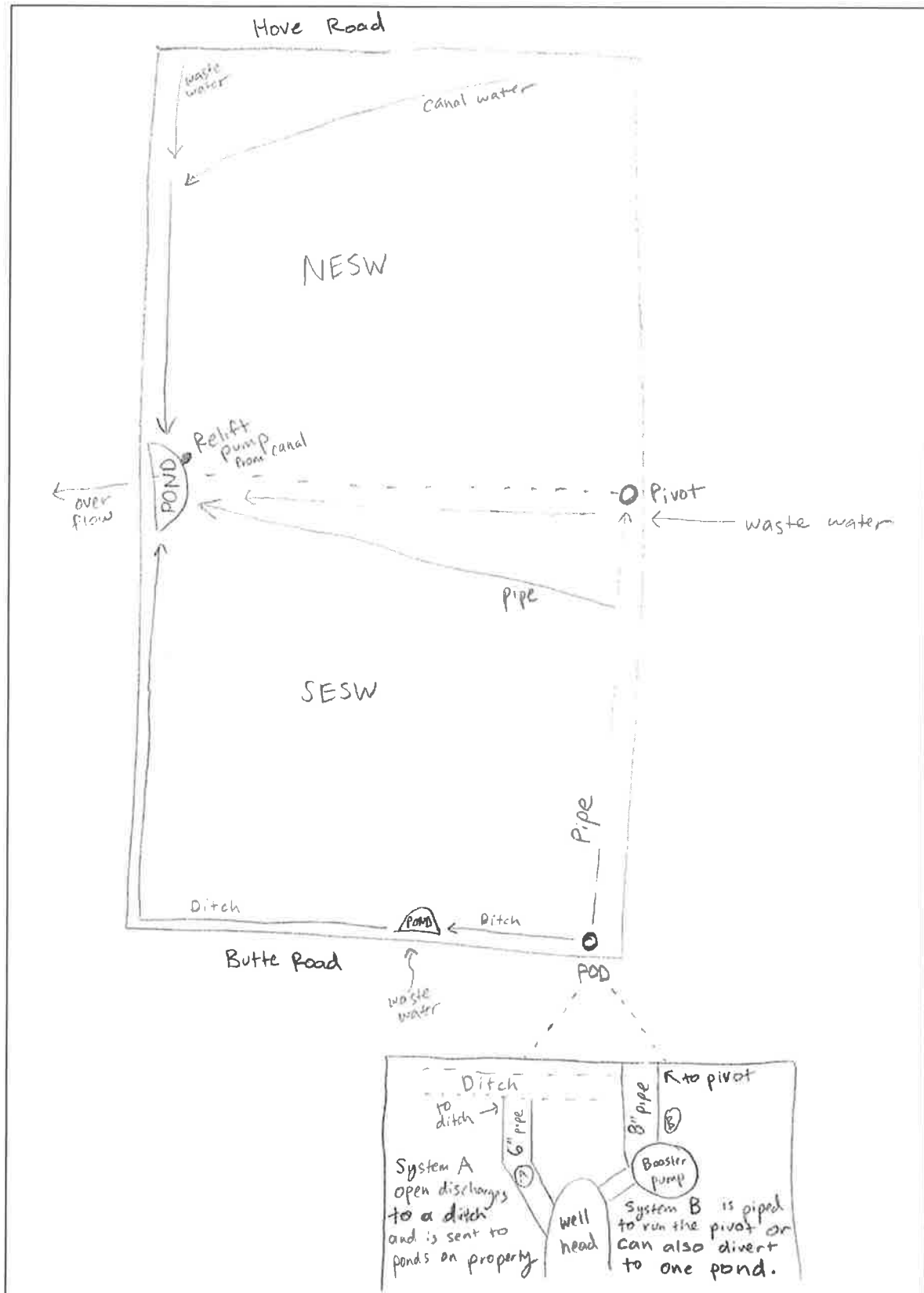
Field Examiner's Name Amy Steimke Date 7/30/2019

Reviewer Dan Nelson Date 7-31-19

Map showing the place of use (POU) and point of diversion (POD) for water right 63-33921.



System diagram for water right 63-33921



Flow measurements / calculations

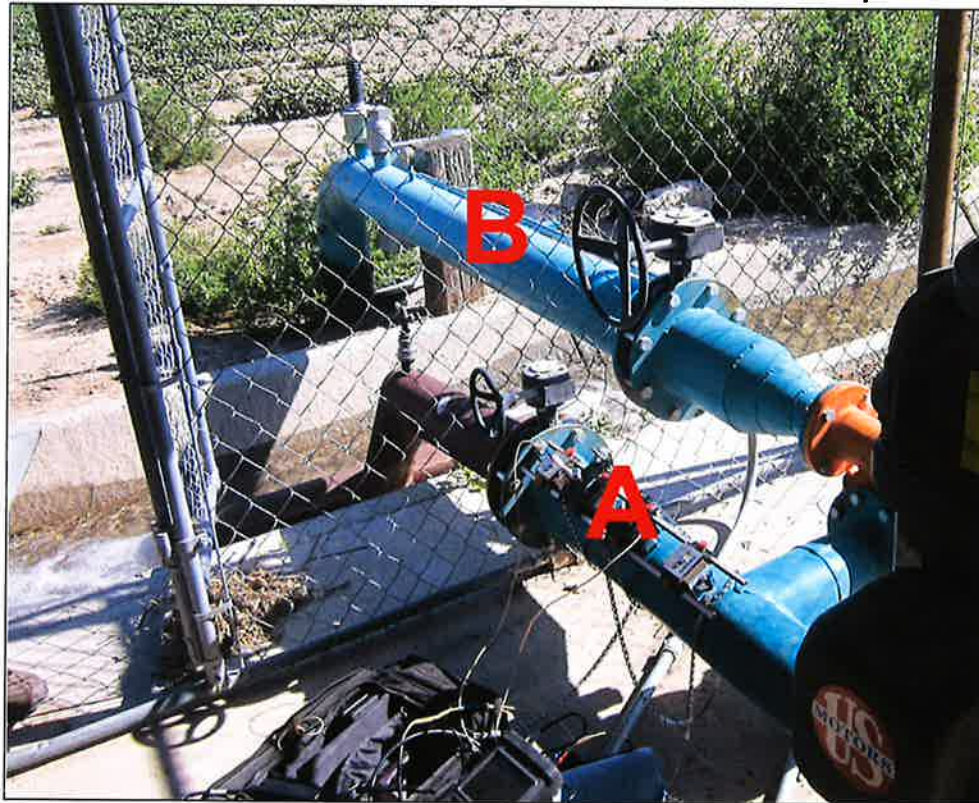
Table A: Measurements obtained on the open-discharge pipe (A in below picture).

Time	Volume (gpm)
9:58	643.5
9:59	647.3
10:00	643.4
10:01	643.4
10:02	639.2
10:03	640.2
10:04	641.0
10:05	643.4
10:06	642.9
10:07	641.3
10:08	642.0
AVERAGE	642.5 (1.43 cfs)

Table B: Measurements taken under pressure with the addition of the booster pump (B in below picture).

Time	Volume (gpm)
10:46	577.1
10:47	583.4
10:48	594.8
10:49	593.3
10:50	589.9
10:51	576.6
10:52	589.1
10:53	588.0
10:54	591.4
10:55	588.2
10:56	594.0
AVERAGE	587.8 (1.31 cfs)

Figure below shows where the above measurements were performed.



Calculations

Total irrigated land for water user: 70 acres

Irrigated land covered by license 63-10406: 34.5 acres (0.69 cfs)

Land to be covered under licensed water right 63-33921: 35.5 acres

Licensed rate for 63-33921: 35.5 acres x 0.02 cfs = **0.71 cfs**

Combined diversion rate of both licenses: 0.71 cfs + 0.69 cfs = 1.40 cfs

Additional Pictures



Figure 1: Looking west onto the POD, which is currently discharging into the open ditch.



Figure 2: Picture showing place of use.



Figure 3: Pressure gage on pipe after booster pump (reading ~62 PSI).