

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33764
Exam Date: 8/23/2019

1. Current Owner:
JAMES RONALD HAYS 2438 E HERBERT DR BOISE ID 83706
2. Accompanied by: Ron Hays
Phone No: (208) 249-4999
Address: 2438 E Herbert Dr., Boise, ID 83706
Relationship to permit Holder: Same

3. SOURCE:
GROUND WATER

Method of Determination: Permit application, ArcMap, aerial imagery, USGS topography, and field examination.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
Boise-Kuna Irrigation District	Boise River	Irrigation	Decree

Comments: Overlap of POU by surface water irrigation from Boise-Kuna Irrigation District, this is a supplemental water right.

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

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

Comments: None

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ NW¼, Sec. 12, Twp 01S, Rge 02W, 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	
01S	02W	12								38.8									38.8

Total Acres: 38.8

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

- Y Delivery System Diagram Attached (required). Indicate all major components and distances between components.
Indicate weir size/pipe as applicable.
- N Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- Y Aerial Photo Attached (required for irrigation of 10+ acres).
- Y 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
D0066194	Franklin	25	14A19-20-06415A	Franklin	8-in. turbine

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Ultrasonic Flow Meter	Clamp On	GE	PT878	GA1620004		4/1/2019

2. Measurements: Measurement taken at center of 18 foot exposed portion of steel pipe free from elbows or turbulence

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Data collected from GE Panametrics PT878 meter.

Pipe Diameter: 5.55"
Wall thickness: 0.075"
Transducer spacing: 4.824"

Time	Q (gpm)	Q (ft ³ /s)	V (ft/s)
11:33	463.6	1.003	6.62

Theoretical calculation:

Open discharge from well into gated pipe and concrete ditch with 25 hp pump set estimated at 189 feet.
 $(8.8) \times (25 \text{ hp}) \times 0.70 / 189 = 0.81 \text{ cfs}$ or 365.7 gpm

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (38.8 \text{ acres}) \times (4.5 \text{ af}) = 174.6 \text{ af}$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.78 \text{ cfs}) \times (260 \text{ days}) \times 1.9835 = 402.25 \text{ af}$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 174.6 \text{ af}$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

A field exam was conducted by WRA Allen Bradbury and accompanied by Ron Hays on August 23, 2019. Current Canyon County taxlot data represents that the permit holder owns the land pertinent to the Place of Use (POU) and Point of Diversion (POD) in the SENW Section 12 T01S R02W.

The well was drilled under drilling permit 965354-871413 and tagged with #D0066194. The well was completed on March 28, 2014 with a completed depth of 260 feet. The pump set was interpolated to be at 189 feet based on the amount of drop pipe provided on the Coonse Well Drilling & Pump invoice provided by Mr. Hays.

To measure rate of flow from the well, a GE Panametric PT878 Ultrasonic Flow Meter was attached near the center of an 18 foot section of 5.55-inch O.D. steel pipe free from elbows or turbulence. The flow from the well open discharged into the concrete ditch system. The device measured a flow of 463.6 gpm or 1.03 cfs.

The system consists of a 25 hp Franklin motor pumping water from the well to the NE with open discharge into a concrete ditch which is capable of receiving both surface water and groundwater. A nearby headgate controls surface water from the Boise-Kuna Irrigation District.

The POU was determined using aerial photography. The permit authorized the irrigation of 40 acres and proof of beneficial use was submitted on July 9, 2018. Aerial photography and field observation corroborated that the supplemental well water could be delivered to all 40 acres. Review of 2013 through 2017 aerial imagery shows continual irrigation of around 38.8 acres of agricultural land which is currently planted in barley/alfalfa hay and corn. Approximately 1.2 acres in the south east quarter of the property is occupied by a farmstead. The amount of area irrigated has remained the same during the beneficial use period until present. I am recommending that the POU be set 38.8 acres to reflect the removal of the homestead.

Overlap review found that James Ronald Hays has surface water delivery for irrigation from Boise-Kuna Irrigation District that cover the extent of the property and therefore also cover the same acreage as water right permit 63-33764. Water right 63-33764 should hence remain conditioned as supplemental groundwater. POD analysis found that no overlap exists. At the time of exam, the concrete ditch and siphon tube system demonstrated the capability of irrigating 38.8 acres. As a result, and backed by the measured rate and theoretical rate calculated during the exam, I am recommending a license for the beneficial use rate of 0.78 cfs.

Conditions 046 and 26A were removed as per department licensing standards. Condition 121 was updated to 103. Condition WB7 was added to account for supplemental irrigation. Inactive condition 104 was removed as per department licensing standards. Condition 943 replaced conditions 065 and 104. Condition R65 replace with condition R61.

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>	
IRRIGATION	03/01 to 11/15	0.78 CFS	

Totals: 0.78 CFS

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

Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 10/25/19

Reviewer _____ Date _____

BENEFICIAL USE FIELD REPORT CALCULATIONS

Permit #: 63-33764

Owner: Jim Hays

Proof Due: 9/1/2018

Priority Date 4/22/2013

Proof Subm: 7/9/2018

Exam Date: 8/23/2019

Flow Rate 0.21 to 1.00

Fee Rate 0.80

Exam Fee \$100.00

0.00 to 0.20	\$50.00	2.01 to 3.00	\$150.00
0.21 to 1.00	\$100.00	3.01 to 4.00	\$175.00
1.01 to 2.00	\$125.00	4.01 to 5.00	\$200.00

Proposed Well Use: irrigation

Drill Date: 3/28/2014

Well Depth: 260 ft

Pump Set: 189 ft

Permit Uses: supplemental irrigation

est. by drop pipe length
on invoice

	cfs	gpm
Proposed Rate	0.80	359.06
Permit Rate	0.80	359.06
Proof Report	0.80	359.06
Irrig. Only	0.80	359.06
Stockwater		0.00
Domestic		0.00

Acres Proposed:	40.0
Acres Permitted:	40.0
Acres Developed:	38.8

FLOW CALCULATIONS

Meter Type: GE Panametric PT878

Meter Reading 463.60 gpm

1.033 cfs

Nozzle Size	
Input # heads:	
Input gpm/head	
gpm/line	0.0
cfs/line	0.00

Theoretical Method

$$Q = \frac{(8.8) \times (HP) \times E}{TDH}$$

Est. Pump Set

199 minus 10' =

189

HP =	E =	H =	PSI =	Q =	Q =
25.0	70.0%	189	0	0.81	365.71
				cfs	gpm

$$TDH = [(LIFT) + (PSI \times 2.31)]$$

TDH =	Lift =	PSI =	2.31
189.0	189	0	2.31

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

Q = rate of flow in cubic feet per second,

Consumptive Use	4.5	Headgate Requirement	4.5	
Season of Use	3/1	11/15	=	260 days
Volume (VIR)	38.8	X	4.5	= 174.6 af
Volume (DR)	0.780	x	260	x 1.9835 = 402.25 af
BU Standard Rate	38.8	X	0.02	= 0.78 cfs
Rate/acre	0.780	/	38.8	= 0.020 cfs/ac

$$V.I.R. = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement})$$

$$V.D.R. = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835$$

V = Smaller of V.I.R. and V.D.R.

Recommendation Standards for diversion rate (choose most restrictive)

0.80 Permit Rate – the rate applied for

0.80 Fee Rate – the maximum rated paid for on the fee schedule.

0.78 Beneficial Use (BU) standard = x.x ac * 0.020 cfs/acre

1.03 Measured Value – the value measured in the field

0.81 Theoretical Rate - the rate calculated

Beneficial Use Field Report

System Design



Legend

- 63-33764_POU
- Contours

0 0.015 0.03 0.06 Miles



Pumping Capacity

25 HP Franklin STS Turbine pump set @ 189 ft with open discharge into concrete ditch..

Pump Equation: $(8.8) \times (25) \times (0.7) / (189 + (2.31 \times 0))$
 $Q = 0.81 \text{ cfs or } 365.7 \text{ gpm.}$

Panametric Transport PT878 Flow meter measurement of 463.6 gpm or 1.03 cfs

BU Standard $(40.0 \text{ acres} \times 0.02 \text{ cfs/acre}) = 0.78 \text{ cfs}$

COONSE WELL DRILLING & PUMP CO., INC.

P O Box 366
Middleton, ID 83644

Phone # 208-454-0190
Fax # 208-454-2743

PROGRESS INVOICE

BILL TO:

DATE

INVOICE

4/24/2014

20

RON HAYS
2438 E HERBERT DRIVE
BOISE, ID 83706-5706

PROJECT		TERMS	DUE
1413 S SOUTHSIDE BLVD		Due on receipt	4/24/
QTY	DESCRIPTION	UNIT PRICE	AMT
38	15.5-IN DRILLING	60.00	
222	10-IN DRILLING	35.00	
40	10-IN STEEL CASING	32.00	
38	CEMENT & BENTONITE SEAL INSTALL PER FOOT	10.00	
1	IRRIGATION DRILLING PERMIT	200.00	
1	10X5 WELL CAP	315.00	
1	25 HP 8-IN FRANKLIN ELECTRIC STS TURBINE, MOD # F8STS0255506602, CODE # 2M4-0706	2,211.00	
1	25 HP 6-IN FRANKLIN ELECTRIC, 3PH 3W 460V MOTOR, FEM62500343SFS, S/N 14A19-20-06415A	2,729.00	
1	30 HP CERUS DRIVE	1,630.00	
189	5-IN BLACK DROP PIPE	17.00	
200	8/3 SUB PUMP CABLE	2.50	
1	SPLICE KIT #8	6.50	
1	6X10 BLACK NIPPLE	47.46	
1	6X5 BLACK BELL	128.37	
1	5X12 BLACK NIPPLE	51.57	
2	5-IN THREADED FLANGE CL150	45.71	
1	5-IN WAFER BODY VALVE	92.60	
8	3/4 X 5 1/2 BOLTS	2.91	
8	3/4 ZINC NUTS	0.42	
1	5-IN GALV PLUG	53.95	
1	5-IN GALV TEE	219.41	
1	1 1/4 THREAD-A-LET	17.95	
1	1 1/2 X 12 BLK NIP	7.50	
1	1 1/2 BLK CAP	3.50	
1	5-IN BLK WELD ON 90	36.80	
1	5-IN .188 STEEL CASING FOR DISCHARGE X 17 FT	212.67	

THANK YOU FOR YOUR BUSINESS! PLEASE PAY BY THIS INVOICE.

TERMS - All accounts are due and payable upon receipt of invoice. Accounts 30 days past due are subject to a finance charge of 1 1/2% per month (18% annual rate). In the event that this invoice has not been paid within 60 days, a property lien will be filed and legal fees for collection will be added to total amount due.

NOTE: THERE IS A 3% PROCESSING FEE ON CREDIT CARD PAYMENTS.

Total

Payments Applied

Balance Due

08/23/2019 10:53



Process	Basin Sequence	Draft	Owner	Source	POD	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	63-33764	N	HAYS, JAMES RONALD	GROUND WATER	POU	IRRIGATION	X	X	X	X	X	X	X	40	X	X	X	X	X	X	X	X	40
Water Right	63-136	N	BARKER ROSHOLT & SIMPSON LLP; BOISE PROJECT BOARD	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-137B	N	BARKER ROSHOLT & SIMPSON LLP; BOISE PROJECT BOARD	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-200A	N	BARKER ROSHOLT & SIMPSON LLP; BOISE PROJECT BOARD	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-233K	N	AMERICAN DITCH CO; BARKER ROSHOLT & SIMPSON LLP	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-2388A	N	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-251A	N	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-26671	N	BARKER ROSHOLT & SIMPSON LLP; BOISE KUNA IRRIGATION	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-301A	N	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-302A	N	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-372	N	BARKER ROSHOLT & SIMPSON LLP; BOISE KUNA IRRIGATION	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-373A	N	UNITED STATES OF AMERICA ACTING THROUGH	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-2106	N	UNITED STATES OF AMERICA ACTING THROUGH	FIVEMILE CREEK	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-11483	N	SWARTHOUT, C R	GROUND WATER	POU	IRRIGATION	33	33															
Water Right	63-11752	N	O DELL, GLENN L; O DELL, SANDRA J; ROBERTS, CYNTHIA	GROUND WATER	POU	IRRIGATION									26	33							39
Water Right	63-33251	N	BOISE PROJECT BOARD OF CONTROL	INDIAN CREEK	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-33253	N	BOISE PROJECT BOARD OF CONTROL	TENMILE CREEK	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-2392H	N	BOISE PROJECT BOARD OF CONTROL	WASTE WATER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-27051	N	O DELL, GLENN L; O DELL, SANDRA J; ROBERTS, CINDY	WASTE WATER	POU	IRRIGATION									1.6	21							22.6

 Surface water overlapping water permit



Figure 1. Well tag #D0066194.



Figure 2. Well head with open discharge pipe into ditch.



Figure 3. Panametrics flow meter reading a rate of 463.6 gpm or 1.03 cfs discharge.



Figure 4. Open discharge from well into concrete ditch.



Figure 5. Franklin control panel.



Figure 6. Surface water is delivered to field via a concrete ditch and siphon tubes.

8/23/2019
8/8/2018

Field Exam 63-33764

WRA Allen Bradbury



Figure 7. Source of surface water through black metal headgate labeled 2.46.



Figure 8. Surface water being diverted into pipeline and conveyed to ditch in the center of the field.

8/23/2019
~~8/8/2018~~

Field Exam 63-33764

WRA Allen Bradbury



Figure 9. Corn and cereal crops irrigated by system.



Figure 10. Looking southwest at irrigated field.

8/23/2019
8/8/2018

Field Exam 63-33764

WRA Allen Bradbury