

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-11866

Exam Date: 9/24/2012

1. Current Owner: REED BATT
BOX 287
WILDER ID 83676
(208)482-6250
- FREDERICK C BATT
1621 IDAHO
CALDWELL ID 83605
(208)453-8588
2. Accompanied by: Rec based upon dept records and info received from Dave Bosey
Phone No: unk
Address: unk
Relationship to Permit Holder: Ranch manager For Crookham Co.

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-33476 and canal shares, Boise Proj Bd of control
2. Other water rights with the same point of diversion: 63-33475, 63-33476, 63-8649

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER	SE1/4SE1/4	Sec. 9,	Twp 04N,	Rge 05W, B.M.	CANYON County
GROUND WATER	SE1/4NE1/4	Sec. 16,	Twp 04N,	Rge 05W, B.M.	CANYON County

Method of Determination: Department records and ArcMap

2. PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
04N	05W	16	37.0	4.0	6.0	30.0													77.0

Total Acres: 77

Method of Determination: Department records and ArcMap

3. * 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).
- * Photo of Diversion and System Attached
- * See dept back files for 63-11700 and 63-8649.

4. Well or Diversion

ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Sec 9 SESE	See backfile for 63-11700 for measurement information and memo 63-11866 Permit Review				
Sec 16 SENE		75 Hp	4055378-1	Welline	Ser no. 77428 8 inch discharge Idaho Power 4N 5W Sec 16 pump 4

D. FLOW MEASUREMENTS

1.

Measurement

<u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
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2. Measurements:

Sec 9 POD theoretical calculation = 4.86 cfs

Sec 16 POD theoretical calculation = 2.85 cfs (See memo 63-11866 Permit Review)

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method:

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 77 \text{ ac } 4.5 \text{ af} = \mathbf{346.5 \text{ afa}}$$

$$V_{DR} = [\text{Div Rate (cfs)}] \times (\text{Days in Irr season}) \times 1.9835 = 1.54 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 794.2 \text{ afa}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

This recommendation utilizes information obtained through the licensing field exam for 63-11700 and to a limited degree 63-8649. 63-11700 was licensed for 188.5 acres within a 261 acre PPU at 3.77 cfs or one inch per acre for the 188.5 acre limit. There has been no change to the irrigation system or POU associated with 63-11700. 63-11700 has been split through an ownership change with child right 63-33476 now being the POU overlapping right. This permit is for the POD in Sec 9 licensed through 63-11700 and the POD in Sec 16 licensed through 63-8649. The motor for 63-8649 has been changed from 60 HP to 75 HP increasing the system capacity to 2.85 cfs. There is no POU overlap with 63-8649.

The POU for this permit overlaps roughly 1/2 of the licensed POU for 63-33476. As this permit also adds a second POD I am recognizing the entire 77 acres within Sec 16 NE1/4 even though 55 of those acres already receive one inch per acre. This permit is ultimately recognized for 1.54 cfs associated with the 77 acres found to be irrigated.

See the 10-12-2012 63-11866 Permit Review for a detailed analysis of the elements ultimately recommended for this permit.

When combined 63-11866, and 63-33476 are limited to a total diversion rate of 2.64 cfs, 594 af, and a total of 132 acres.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/01 to 11/15	1.540 CFS	346.50 AF
	Totals:	1.540 CFS	346.50 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	Other
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I. AUTHENTICATION

Field Examiner's Name Kelly K. Christensen Date 10-25-2012

Reviewer _____ Date _____

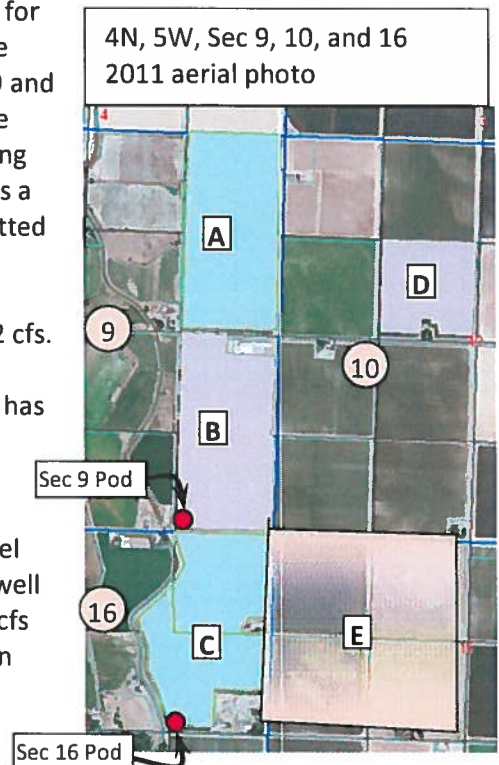
63-11866 PERMIT REVIEW

This permit was filed to provide water to a subset of the PPU for license 63-33476 (a split from 63-11700) and to add a second point of diversion in Sec 16. This permit was approved for acreage in Sec 16 NE¼ only.

63-33476 is licensed for fewer irrigated acres within a PPU and this permit while adding a second POD to the system overlaps with roughly ½ of the licensed right POU. The analysis has to be broken down into smaller segments to establish the recommendation for licensing purposes.

ANALYSIS OF 63-11700 THE POU OVERLAPPING RIGHT Now split into 63-33475 and 63-33476 And 63-8649, a POD overlap for the POD in Section 16

63-11700 was originally permitted for 188.5 acres at 3.77 cfs for shapes A, B, and D in the aerial photo shown on the right and the one point of diversion in Sec 9. A field examination was made for in 1999 and found 261 irrigated acres with 77 acres in Sec 16 NE¼ (shape C to the right). Sec 16 NE¼ was not a part of the permit. Through the licensing process the permit was amended to add the 77 acres to the permit as a part of a PPU. Ultimately it was licensed for the 188.5 original permitted acres at 3.77 cfs within a 261 acre PPU. The irrigated POU has not changed since that time. It was licensed for one POD in Sec 9. A theoretical calculation was made for the system capacity finding 3.82 cfs. On 9-24-2012 the applicant provided information showing the same serial number for the current pump. Therefore it appears that there has been no change to the delivery system. In reviewing the field exam information relating to the theoretical calculation I find an alternative value. The examiner used 219 ft for the dynamic level based upon the difference between the well depth and the static level divided by 2. In reviewing the well log for that well I noted that the well log shows that 3 different pump tests were made ranging from 4.23 cfs to 6.02 cfs. Each test was made at a different pumping level between 159 ft and 167 ft all significantly shallower than the exam estimate. Assuming the worst case scenario using 167 ft the diversion rate would be 4.86 cfs



A change of ownership for a portion of that right was submitted in 2011 to identify Crookham Co as the owner of parcels A and C. That split was done incorrectly but has since corrected. Right 63-33475 recognizes parcels B and D for 78 acres within a 108 acre PPU at 1.56 cfs and right 63-33476 recognizes parcels A and C for 110.5 acres within a 153 acre PPU at 2.21 cfs which is the subject to the POU overlap analysis for this permit.

In reviewing tax lot information it appears that shape B is now owned by Stephen Woodward and shape D is owned by Stephen Batt Credit Shelter Trust. Therefore 63-33475 probably should be split through a change of ownership.

63-8649 ANALYSIS

The second POD shown on the permit (in sec 16) has been licensed for the POU shown by shape E through right 63-8649 thus that POU is a part of the system when calculating the rate per acre for the 'new acres' to be recognized through this permit. The field exam for 63-8649 conducted in 1981 found a system capacity of 2.28 cfs for the irrigation of 142 acres using a 60 HP system. On 9-24-2012 Dave Bosey submitted a document indicating that the Fargo and Penny pump is now 75 hp with a system capacity of

$$\frac{(\frac{150}{10})\text{Hp} * 8.8 * 0.7}{(\frac{10}{10})\text{PSI} * 2.31) + 167 \text{ ft}} = 4.86 \text{ cfs}$$

2.85 cfs. Although an increase in HP would probably increase drawdown, no information is available therefore I utilized the same dynamic level as a good estimate for the calculation.

Calculation for dynamic level based upon 60 HP, and a measured rate of 2.28 cfs and open discharge.	Calculation for diversion rate based upon 75 HP, the same dynamic level, and open discharge.
$\frac{(60) \text{ Hp} * 8.8 * 0.7}{(10) \text{ PSI} * 2.31 + 139 \text{ ft}} = 2.28 \text{ cfs}$	$\frac{(75) \text{ Hp} * 8.8 * 0.7}{(10) \text{ PSI} * 2.31 + 139 \text{ ft}} = 2.85 \text{ cfs}$

PRELIMINARY ANALYSIS FOR LICENSING PURPOSES

Assumptions; The current POU has not changed since the licensing field exams for 63-11700 and 63-8649. The irrigated POU for this permit matches the licensed POU for sec 16 as shown for 63-33746 (77 acres). The permitted well in sec 16 is the same well associated with 63-8649 but the HP was increased from 60 HP to 75 HP. The estimated diversion rate for the 75 HP system is 2.85 cfs. The overall system is the combination of shapes A through E with the combined system diversion rates for the two PODs.

As this permit is adding a well to the system I am recognizing the entire 77 acres at the current system rate per acre and then limiting the rights through overlapping remarks.

To determine the appurtenant diversion rate for 'new' acres the analysis is based upon the irrigated acre limits for 63-33475 and 63-33476, not the total permissible place of use. The permitted POU for this permit (63-11866 shape C only) is a subset of the POU for right 63-33476. Therefore for analysis purposes that right is analyzed by each parcel (A & C).

Table 1 63-33476 analysis by parcels A and C

Right			
63-33476	Licensed for the irrigation of 110.5 acres within a PPU of 153 acres.		
	shape	Ac limit	PPU Rate
	A	55 ac	76 ac 1.10 cfs
	C	55.5 ac	77 ac 1.11 cfs
Totals		110.5 ac	153 ac 2.21 cfs (license data) 2.21 cfs / 110.5 ac = <u>0.02 cfs/ac</u>

OVERALL SYSTEM ANALYSIS

Table 2

Right	Shapes	Ac limit
63-33745	B & D	78 ac
63-33746	A	55 ac
63-11866	C	77 ac (includes the 55.5 ac limit for 63-33746)
63-8649	E	142 ac
Totals		352 ac

System capacity

Sec 9 4.86 cfs modified theoretical calc

Sec 16 2.85 cfs rate based upon the 75 HP system

7.71 cfs

7.71 cfs / 352 ac = 0.022 cfs/ac. The system

capacity exceeds an inch per acre when considering the overall system.

Elements of analysis;

The found POU for 63-11866 is recognized as 77 acres. Although 55.5 acres receive 1 inch per acre via 63-33476, this permit adds a new POD therefore I am recommending this permit for 0.02 cfs/ac * 77 ac or 1.54 cfs. 63-33476 is licensed for the irrigation of 110.5 acres within 153 acres. This permit adds water to 21.5 acres not covered by 63-33476 in Sec 16 NE¼. 110.5 ac + 21.5 ac = 132 acres. This

recommendation still leaves a portion of the POU for 63-33476 without a groundwater right (the 22 acres within Parcel A Sec 9 E½NE¼).

Combined right limits

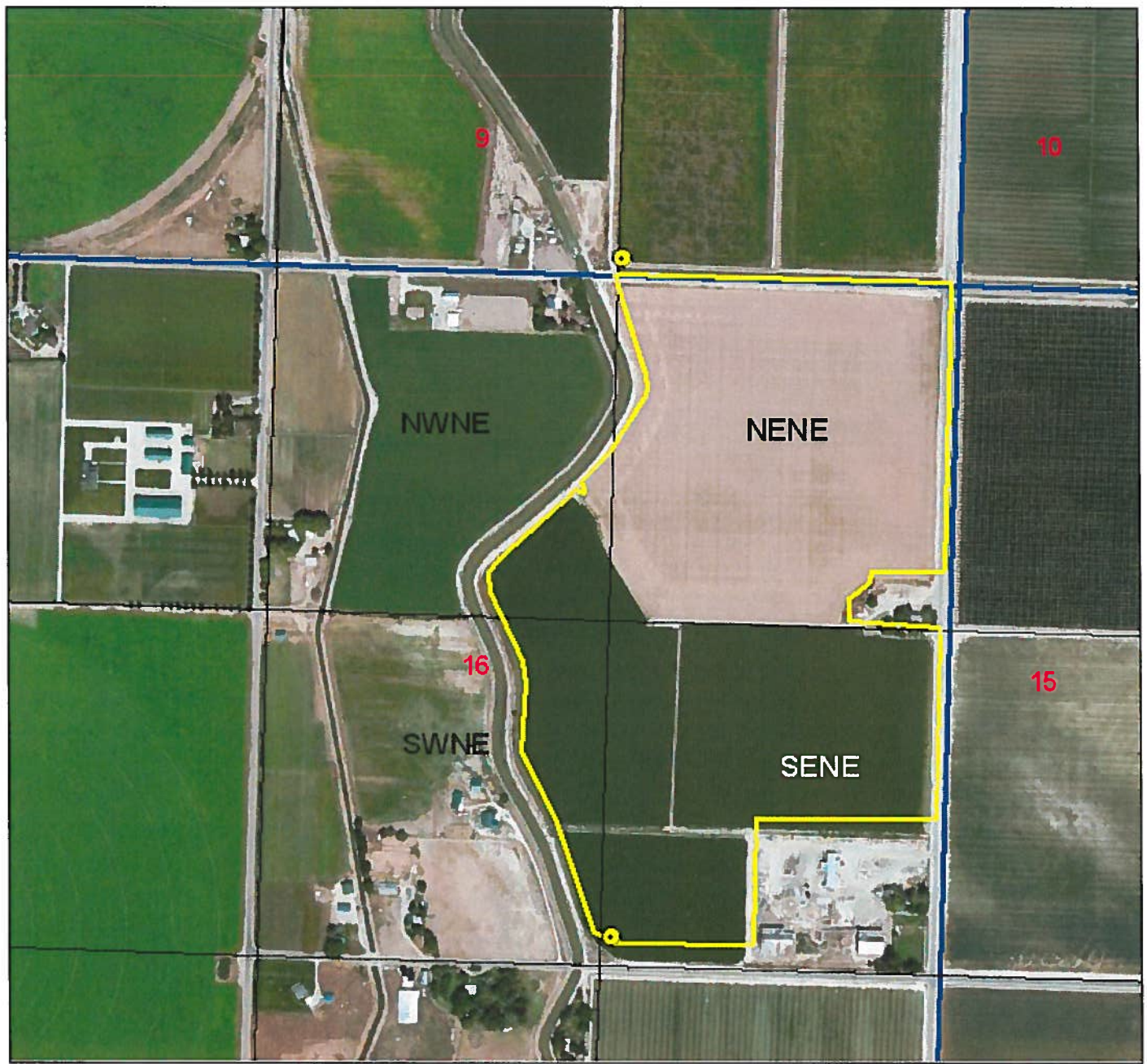
63-33475	no POU O/L	1.56 cfs
63-8649	<u>no POU O/L</u>	<u>2.28 cfs</u>
	132 ac	6.48 cfs

63-33476	110.5 ac*	2.21 cfs	*There is a 55.5 ac overlap between the two rights in Sec 16.
63-11866	<u>77.0 ac*</u>	0.43 cfs	(represents the new 21.5 ac at 0.02 cfs/ac)
Total	187.5 ac less	55.5 ac overlap	= <u>132 irrigated acres.</u>
		132 ac * 0.02 cfs	= <u>2.64 cfs</u>
		132 ac * 4.5 af	= <u>594 af</u>

When combined 63-11866, and 63-33476 are limited to a total diversion rate of 2.64 cfs, 594 af, and a total of 132 acres.

Although the PPU for 33476 includes an additional 22 acres within Sec 9 E½NE¼ I am not recognizing the two rights within a 154 ac total ppu as this permit is not tied to those 22 acres.

63-11866 LICENSING PLACE OF USE



★ LOCATION IN BASIN

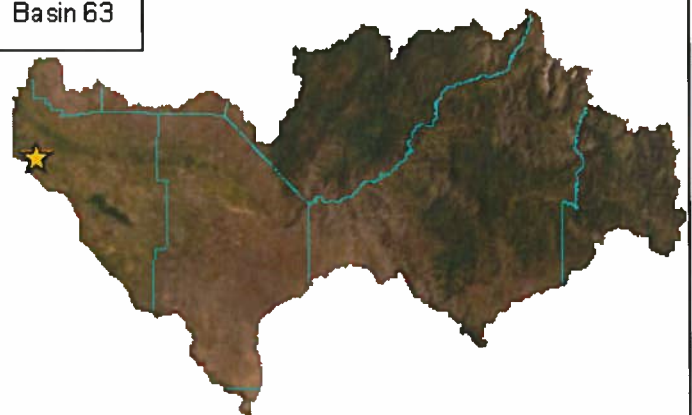
PLACE OF USE
TWP 04N, RNG 5W Sec 16
Data Entry on October 15, 2012



- Found point of diversion
- Found place of use
- Township lines
- Section lines
- Quarter/quarter lines

GIS PLACE OF USE PRESENTATION
2011 AERIAL PHOTOGRAPHY
BY KELLY K CHRISTENSEN

Basin 63



September 19th 1:15 onions^e
@ Wilder.

Redwine Vinegar 16^{oz}
1034'

Kelly Christenson 1:00 P.M.
1977 west of Fargo

Serial and HP of pumps

Cap of amount of water used 250" to 300"

Fargo and Penny
Pump HP 75

SFI-15 4055378-1

(IOWA Power
4W-5W Sec 16 Pump 4)

Red Top and Fargo GE

Pump HP 150 mode SK6277 XH152H

Ser. D J J 418107

(4W-5W Sec 9 Pump 7 IOWA Power)

Ser # matches
Serial # shown
on Field Report for →
63-11700 signed
7-26-2000

Dave Bozay

9-24-12

field notes of system

63-11866

Permit 63-11866

NOTE: The current owner of the permitted POU for this permit is;

CROOKHAM COMPANY
PO BOX 520
CALDWELL ID 83606

I discussed the permit and the need for an assignment with Mr Crookham and expected a completed assignment of permit but it has not shown up as of 10-15-2012

Kelly K Christensen