

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-7603
Exam Date: 10/07/2020

1. Current Owner:
PATTCO LLLP 1800 Z ST HEYBURN ID 83336
2. Accompanied by: Russell Patterson
Phone No: (208) 431-1111
Address:
Relationship to permit Holder: Permit Holder

3. SOURCE:
GROUND WATER

Method of Determination: Observation during Field Exam

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
45-7164	Ground water	Irrigation	Decreed
45-13398	Ground water	Irrigation	Decreed
45-2621	Ground water	Irrigation	Decreed
45-7261	Ground water	Irrigation	Decreed
45-13399	Ground water	Irrigation	Decreed

Comments: _____

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

Water Right No.	Source	Purpose of Use	Basis
45-7164	Ground water	Irrigation	Decreed
45-13398	Ground water	Irrigation	Decreed
45-2621	Ground water	Irrigation	Decreed
45-7261	Ground water	Irrigation	Decreed
45-13399	Ground water	Irrigation	Decreed
45-14434, 45-14433, 45-14435	Ground water	Irrigation	Decreed

Comments:

45-14433, 45-14434, 45-14435 are in the name of David Hobson and are used on an adjacent farm and do not overlap any acres of the PATTCO farm

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ SE¼ SW¼, Sec. 29, Twp 10S, Rge 22E, B.M. CASSIA County
GROUND WATER SE¼ SE¼ NW¼, Sec. 31, Twp 10S, Rge 22E, B.M. CASSIA County

Method of Determination: GPS, ArcMap, and personal observation

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	
10S	22E	29											32.0	40.0					72.0
10S	22E	30									37.0			40.0	40.0	40.0	40.0	36.0	233.0
10S	22E	31					40.0	38.0	30.0	34.0									142.0

Right Acre Limit: 72.0

Total Acres: 447.0

Method of Determination: GPS, ArcMap, and personal observation

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).

 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
A0013302	Baldor	200	A1501092060	N/A	N/A
A0005245	US Motor	350	J1430006	N/A	N/A

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flow Meter	Poly Sonic	GE	PT878	09044		April 2019

2. Measurements: A0013302 (Hobson Little Well) = 2.46cfs
 A0005245 (Hobson Big Well) = 4.2 cfs

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: Ten minute average

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (72 \text{ acres}) \times (4.0 \text{ AF/acre}) = 288.0 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (1.26 \text{ cfs}) \times (246 \text{ days}) \times (1.9835) = 614.80566 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 288.0 \text{ AF}$$

G. NARRATIVE/REMARKS/COMMENTS

On October 07, 2020 Jana Reeder (IDWR employee) and I performed a field exam for Water Permit 45-7603 (1.26 cfs) on property located approximately 5.7 miles west and 1.9 miles south of the Highway 30/Overland Avenue intersection in Burley. We met with Russell Patterson, the owner of Pattco LLLP, and he showed us the development of Water Permit 45-7603.

There are two Points of Diversion (POD) that use wells to divert ground water for the farm. Mr. Patterson has named the wells the "Hobson Little Well" and the "Hobson Big Well". Each well is used to divert separate groups of existing irrigation water rights for the farm. Water Rights 45-7164, 45-13398, and Water Permit 45-7603 (the purpose of this field exam) are diverted from the Hobson Little Well. Water Rights 45-2621, 45-7261, and 45-13399 are diverted from the Hobson Big Well. Also Water Rights 45-14433, 45-14434, and 45-14435, in the name of David Hobson, can be diverted from either well and Mr. Patterson indicated that he is contracted to farm the Hobson ground. The three Hobson water rights are on a separate farm and do not overlap any acres of the PATTCO farm. Both wells have IDWR approved flow meters installed and are assigned Water Measurement Information System (WMIS) Identification numbers. The distribution systems of the two wells are combined into a single irrigation system but can be isolated from each other by closing valves.

Mr. Patterson first took us to the Hobson Little Well (WMIS number 900001) and isolated this well so we could get a full-demand flow measurement. The measurement was taken with a General Electric Panametrics PT878 Polysonic Flowmeter using the ten-minute average method that recorded a flow rate of 2.46 cfs.

Mr. Patterson then took us to the Hobson Big Well (WMIS number 900002). Mr. Patterson isolated this well so we could get a full-demand flow measurement. Again we used the same General

Electric Panametrics PT878 Polysonic Flowmeter using the ten-minute average method that recorded a flow rate of 4.16 cfs. The total measured (additive) flow rate of both wells is **6.62 cfs**.

The combined flow rate (per conditions on water rights) for water rights group 45-7164 and 45-13398 is 1.2 cfs and Permit 45-7603 proposes a flow rate of 1.26 cfs. The combined flow rate (per conditions on water rights) of water rights group 45-2621, 45-7261, and 45-13399 is 2.87 cfs. The combined flow rate for the three Hobson water rights is 0.8 cfs. All of these flow rates total 6.13 cfs. The total measured (additive) flow rate of the two wells is **6.62 cfs**. The wells can pump the flow rate of all water rights plus the permit without running at full capacity.

A meeting with the applicant was held on January 7, 2021 to discuss options for adding permit 45-7603 to the farm. The applicant decided to make three changes. First, the applicant wished to update the POU to reflect current irrigation use. Second, the applicant wished to have all of the existing ground water rights plus 45-7603 be authorized to use both POD's. Third, the applicant wished to have all existing water rights plus 45-7603 have identical acres per QQ within the updated POU to allow maximum flexibility for irrigation use on the farm. On May 05, 2021 the department received an Application for Amendment and a \$100.00 fee from the applicant to incorporate the following desired changes to 45-7603:

- Include both wells as authorized POD's.
- Change the POU from a 72 acre POU to a 447 acre POU.
- Add a condition to include the combined use limits of the five existing water rights.

Pending Transfer 84735 is proposed to authorize all of the existing PATTCO water rights to be used anywhere within the 447 acre POU and to authorize both POD's on all the existing water rights. If approved, permit 45-7603 will be licensed for the same 447 acre POU and the same two POD's. Also 45-7603 will be added to all of the existing combined use limits of the two groups of water rights.

Existing water rights 45-13398 and 45-13399 are enlargement rights that are subordinate to water rights that have a priority date earlier than 04/12/1994. Water Permit 45-7603 has a priority date of 07/09/1986. If the permit is licensed, it will be of value to the applicant by providing greater flexibility in the event of a future water call that requires curtailment of enlargement rights.

Because the total measured flow rate of the two wells exceeds the combined demand of all water rights and the permit (see Measurements below) I recommend licensing 45-7603 for 72 acres of irrigation within a 447 acre POU with a flow rate of 1.26 cfs and a volume limit of 288 AF.

Measurements

Hobson Little Well: 2.46 cfs

Hobson Big Well : 4.16 cfs

Total Measured Flow Rate of Both Wells

6.62 cfs

Combined Flow Rate Demand of Water Rights and Permit

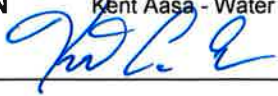
45-7164, 45-13398: 1.2 cfs
 45-2621, 45-7261, 45-13399: 2.87 cfs
 45-7603 Permit: 1.26 cfs
 45-14433, 45-14434, 45-14435 (Hobson): 0.8 cfs
 Total Flow Rate Demand 6.13 cfs

Excess Well Production0.49 cfsHave 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>Volume</u>
IRRIGATION	03/15 to 11/15	1.26 CFS	288.0 AF
<u>Totals:</u>		1.26 CFS	288.0 AF

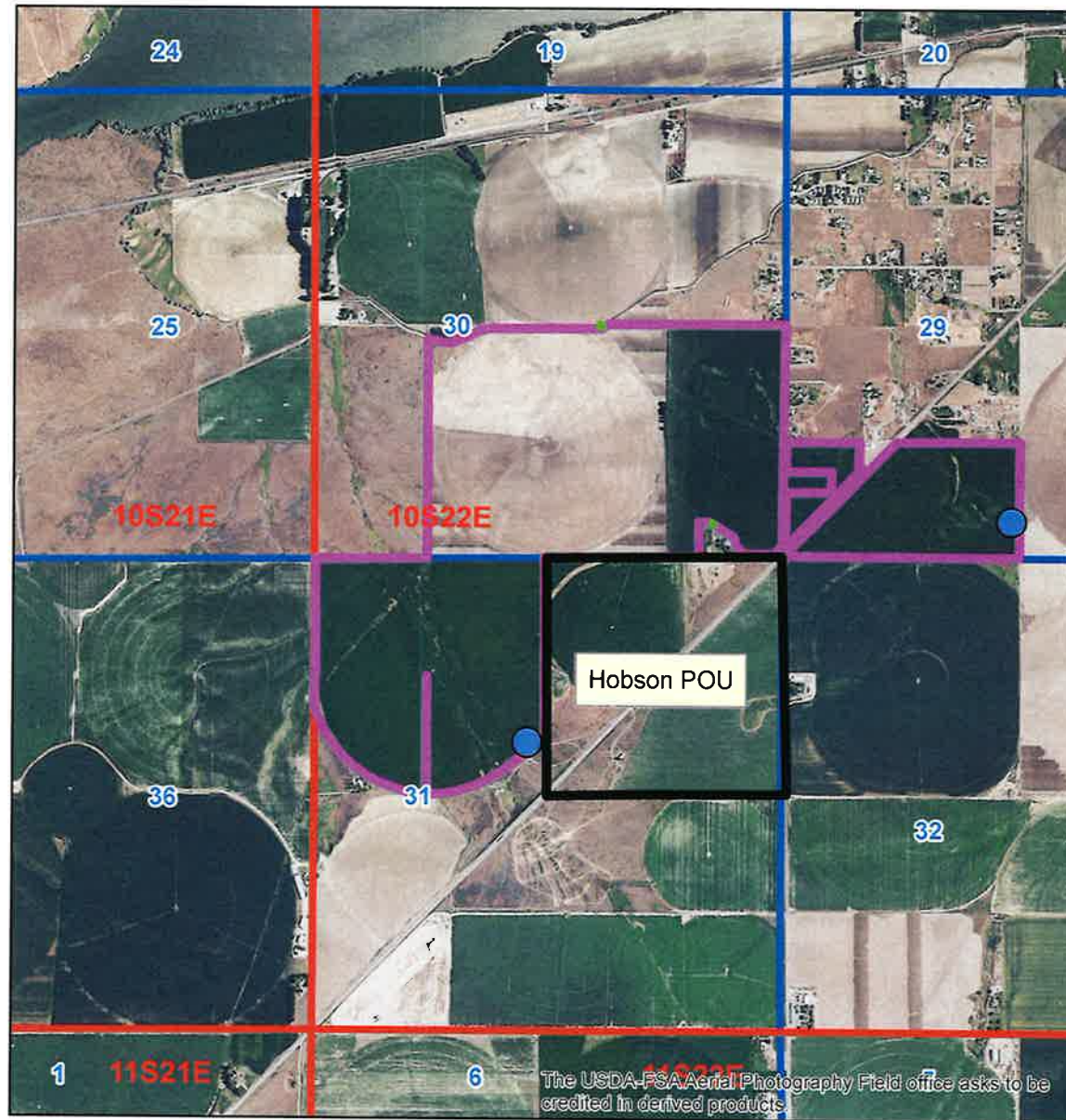
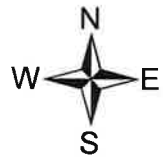
2. Recommended Amendments☐ Change P.D. as reflected above ☒ Add P.D. as reflected above ☐ None☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ None**I. AUTHENTICATION**

Kent Aasa - Water Resource Agent, Senior

Field Examiner's Name  Date 5-26-21

Reviewer _____ Date _____

45-7603 FIELD EXAM



Legend

- | | |
|--|--|
|  Pattco_POU_2 |  Sections |
|  Township/Range | QQ |

POD 10S 22E Sec 29 SESW
Hobson Little Well
WMIS 900001



45-7603 Little Well
Flow Meter



45-7603
POD 10S 22E Sec 31 SENW
Hobson Big Well
WMIS 900002



45-7603
Hobson Big Well
Flow Meter



45-7603
POU
Hobson Big Well

POU looking west



POU looking northwest



45-7603
POU
Hobson Little Well

POU looking north from Hobson Little Well



POU looking north from Hobson Big Well



MEASURING DEVICE VERIFICATION

WMIS Number	900001	Water District #	SWID WD 140
Date Inspected	10/7/20	Examiner	greeder/Kasa
Diversion Name	Hobson Little Well		
Contact	Russ Paterson Patco		
Contact Information			
Well Use	☒ Irrigation ☐ Stockwater ☐ Commercial ☐ Other:		
Tag Number	A0013302	New tag?	
Tag Location	physical location including offsets		
Utility Info	Pole Number	Demand Meter SN#	

Flow Meter

Information:

Meter Type	Full profile mag ☒ Spooled ultrasonic ☐ Clamp-on/wetted transducer ☐		
	Other:		
IDWR Approved?	Yes ☒ No ☐ Variance approved ☐		
Meter Manufacturer	Siemens	Installation date	
Model Number	Mag 5000	Serial Number	619001D469
Rate Units	g x	Volume Units	g x
Rate Multiplier	g x 1	Volume Multiplier	g x 1000

Pipe Parameters:

Pipe Material	CS	Outside Diameter	10.76
Wall Thickness	.238	Spacing	9.8108 (402)

Measurement:

Installed meter (totalizer reading)	Time	Total Gallons	Average Flow Rate GPM (M1)	Standard total gallons	Average Flow Rate GPM (M2)	% diff. (±)	Comments
79906	10:45:27	13000	1209.3	11051.6	1105.2	9.4	*
79919	(10:75)						
13000							

Notes:

SS 4817	Filename Log 13
* Booster cycling off and on meter above measurement Below (interference?)	

Measurement No. 1 (M₁) is the measured rate of flow from the permanently installed flow meter.

Measurement No. 2 (M₂) is the measured rate of flow from the measuring device being used to check the flow for the calibration.

Percent Difference = (M₁ - M₂) / M₂ X 100 = ± % (Acceptable is within ± 5%)

Calibration Multiplier = M₂ / M₁

$$\begin{array}{r} 18235.983 \\ - 7184.383 \\ \hline 11051.6 \end{array}$$

Hobson Little well

Log Name LOG13.LOG
Log Title LOG13.LOG
Start Time 10/7/2020 10:35
End Time 10/7/2020 10:45
Records 3
Interval 60
Error Flags 8208
Cyclic Flags 2

Item #	Label	Symbol	UnitType	Channel	Comport	Computer
0	Velocity	ft/s	578	0	0	PT878
1	Volume	gal/m	846	0	0	PT878
2	(+)Total	gal	1160	0	0	PT878

Date/Time	Velocity (ft/s)	Volume (gal/m)	(+)Total (gal)	Error #
10/7/2020 10:35:00	4.266340716	1104.561931	7184.383058	0
10/7/2020 10:35:59	4.250377364	1100.428996	8245.455506	0
10/7/2020 10:37:00	4.045545096	1047.397618	9357.348537	0
10/7/2020 10:38:01	4.50669725	1166.790594	10512.68415	0
10/7/2020 10:38:59	4.822312686	1248.503898	11505.83764	0
10/7/2020 10:40:00	4.577884025	1185.220955	12723.73833	0
10/7/2020 10:40:59	4.555718501	1179.482268	13765.23398	0
10/7/2020 10:41:59	3.676437926	951.8352251	14860.80708	0
10/7/2020 10:42:59	4.683831349	1212.650875	16022.96824	0
10/7/2020 10:43:59	4.572092293	1183.721467	17097.46706	0
10/7/2020 10:44:59	4.610464522	1193.656094	18235.98335	0

Panametrics= 1105.160029 gpm → 2.46 cfs

45-13398

45-7164

45-14433

45-14434

45-14435

45-7603

Decimal	Width	Input	NodeID
4	12	2	0
4	12	3	0
4	12	20	0

MEASURING DEVICE VERIFICATION

WMIS Number	900002	Water District #	SWID WD140
Date Inspected	10/7/20	Examiner	greeder/kasa
Diversion Name	Hobson Big Well		
Contact	Russ Paterson Patta		
Contact Information			
Well Use	☒ Irrigation ☐ Stockwater ☐ Commercial ☐ Other:		
Tag Number	A0005245	New tag?	
Tag Location	physical location including offsets		
Utility Info	Pole Number	Demand Meter SN#	

Flow Meter

Information:

Meter Type	Full profile mag ☐ Spooled ultrasonic ☒ Clamp-on/wetted transducer ☐		
	Other:		
IDWR Approved?	Yes ☐ No ☐ Variance approved ☐		
Meter Manufacturer	Seametrics	Installation date	
Model Number	AG2000	Serial Number	
Rate Units	g x	Volume Units	AF x
Rate Multiplier	1	Volume Multiplier	.01

Pipe Parameters:

Pipe Material	CS	Outside Diameter	10.78
Wall Thickness	.234	Spacing	10.678 (402)

Measurement:

Installed meter (totalizer reading)	Time	Total Gallons	Average Flow Rate GPM (M1)	Standard total gallons	Average Flow Rate GPM (M2)	% diff. (±)	Comments
2445.34	10:18:39	19551	1898.2	186745	1867.5	1.6	good meas
2445.40	(10.3)						
6 x							
325850 =							
1955100							

Notes: x .01

SS 4805.8	Log 14

Measurement No. 1 (M_1) is the measured rate of flow from the permanently installed flow meter.

Measurement No. 2 (M_2) is the measured rate of flow from the measuring device being used to check the flow for the calibration.

Percent Difference = $(M_1 - M_2) / M_2 \times 100 = \pm \%$ (Acceptable is within $\pm 5\%$)

Calibration Multiplier = M_2 / M_1

Hobson Big well

Log Name C:\Users\jreeder\Desktop\LOG14.LOG
 Log Title C:\Users\jreeder\Desktop\LOG14.LOG
 Start Time 10/7/2020 11:57
 End Time 10/7/2020 12:08
 Records 3
 Interval 60
 Error Flags 8208
 Cyclic Flags 2

Item #	Label	Symbol	UnitType	Channel
0	Velocity	ft/s	578	0
1	Volume	gal/m	846	0
2	(+)Total	gal	1160	0

Date/Time	Velocity (ft/s)	Volume (gal/m)	(+)Total (gal)	Error #
10/7/2020 11:57:02	7.291479901	1898.068578	27361.4805	0
10/7/2020 11:58:03	7.407079727	1928.160741	29262.05448	0
10/7/2020 11:59:02	7.343329056	1911.565599	31138.57268	0
10/7/2020 12:00:02	7.33443022	1909.249114	33057.83548	0
10/7/2020 12:01:02	7.267534661	1891.835316	34993.60476	0
10/7/2020 12:02:03	7.479834226	1947.099698	36845.50555	0
10/7/2020 12:03:02	7.374798812	1919.757592	38667.35831	0
10/7/2020 12:04:02	7.368465738	1918.109009	40620.17197	0
10/7/2020 12:05:03	6.968573061	1814.011661	42516.37267	0
10/7/2020 12:06:03	6.918095606	1800.871712	44335.70823	0
10/7/2020 12:07:02	6.917206945	1800.640382	46035.99605	0

Panametrics= 1867.451556 gpm

1867.45 gpm

448.83 gpm/cfs

4.16 cfs → 4.2 cfs

Comport	Computer	Decimal	Width	Input	NodeID	
0	PT878		4	12	2	0
0	PT878		4	12	3	0
0	PT878		4	12	20	0