

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-11694

Exam Date: 8/1/2014

1. Current Owner: LISA HOTCHKISS
PO BOX 96
MARSING ID 83639
(208)896-9901
2. Accompanied by: Lisa and Wayne Hotchkiss
Phone No: Same as Above
Address: 9519 Sleepy Hollow Drive; Marsing, ID 83639
Relationship to Permit Holder: Permit Holder and Husband

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

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

GROUND WATER NW1/4SE1/4 Sec. 7, Twp 01N, Rge 03W, B.M. OWYHEE County

Method of Determination: Visual Inspection and GPS**2. PLACE OF USE:** IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
01N	03W	7														4.4			4.4

Total Acres: 4.4

Method of Determination: Visual Inspection and GIS

3. Yes Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
Yes Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
Yes Aerial Photo Attached (required for irrigation of 10+ acres).
Yes Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0052907	Franklin Electric	5	50FA5S6-PE	Franklin Electric Submersible (FPS 4400 High Capacity 6 in)	94825008
Re-lift Pump	Franklin Electric	2	RLSP 200	Franklin Electric Non Submersible (Red Lion)	10L142308192M

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration Date
Tyme Flyte #1	Polysonic	x	x	x	x	3/28/2012

2. Measurements: After isolating the flow from the well, measurement was completed on an 8" gated irrigation line. The Tyme Flyte #1 was used to execute the measurement.

Time	Measurement (GPM)	Measurement (CFS)
10:30 AM	44.91	0.10
10:31 AM	45.44	0.10
10:32 AM	44.91	0.10
10:33 AM	47.82	0.11
10:34 AM	48.34	0.11
10:35 AM	45.97	0.10
10:36 AM	45.44	0.10
10:37 AM	45.97	0.10
10:38 AM	48.87	0.11
10:39 AM	47.29	0.11
Average	46.49	0.10

E. FLOW CALCULATIONS

____Additional Computation Sheets Attached

Measured Method:

Maximum Allowable: $(4.4 \text{ acres irrigated}) \times (0.03 \text{ allowable cfs per acre}) = 0.13 \text{ allowable cfs}$ Theoretical: $[(8.8) \times (0.7 \text{ efficiency at } 70\%) \times (5 \text{ hp})] / [(210 \text{ ft depth to water}) + (2.31 \times 40 \text{ psi}) + (0 \text{ frictionless})] = 0.10 \text{ cfs}$ Measurement by Tyme Flyte flow measurement device: $(46.49 \text{ GPM}) \times (0.133681 \text{ gal/cf}) / (60 \text{ sec/min}) = 0.10 \text{ cfs}$

Permit Allowed = 0.11 cfs

Theoretical = 0.10 cfs

Measurement = 0.10 cfs

License recommended for 0.10 cfs. Using an estimated 70% efficiency rate, the theoretical calculation gives a close estimate to the rate of flow. Utilizing the Tyme Flyte flow measurement device, the direct calculation also averaged to 0.1 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (4.4 \text{ acres irrigated}) \times (4.5 \text{ af/ac}) = 19.8 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.10 \text{ cfs}) \times (260 \text{ days}) \times (1.9835) = 53.4 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 19.8 \text{ AF}$$

2. Volume Calculations for Other Uses: No other uses**G. NARRATIVE/REMARKS/COMMENTS****Background**

On Friday, August 1, 2014, Ashley Newbry and Dan Nelson visited 9515 Sleepy Hollow Drive in Marsing, Idaho for a beneficial use exam of the irrigation system on site. Ashley and Dan were escorted on to the property and assisted by Lisa and Wayne Hotchkiss.

System Overview

The Hotchkiss property lies on a west-facing hill slope, with the house and road at the top of the slope. A canal owned by Opaline Irrigation District runs along the bottom of the hill slope, and it geographically signifies the western property boundary.

The beneficial use exam started at the irrigation well near the center of the property. The 6" well was drilled in June 2008 by Knie Pumps & Drilling. It has been equipped with at 5 horsepower Franklin Electric pump. The pipe-work immediately following the well included valves to isolate upper and lower zones of the irrigation system. At the southwest corner of the property, irrigation runoff drains to a rip-rapped collection area below ground. A re-lift pump circulates the water to the top of the hillside, where it is reused. All of the irrigation water is used on the horse pasture.

Along the western edge of the horse corrals, the Hotchkiss's have placed an 8" gated irrigation line. When the gates are opened, the line allows for gravity irrigation of the west pasture. At the higher elevations, the pasture is irrigated with 3/16" nozzle impact rotor sprinklers, which were on risers 3 to 5 feet above ground level.

Measurements and Methodology

With the assistance of Lisa and Wayne, Ashley and Dan isolated the irrigation water supply to the 8" gated line. Dan and Wayne used calipers to measure the pipe wall thickness. Ashley used a small tape measure to determine the pipe's outer diameter. After making sure all of the upstream gates were closed, Dan requested that Wayne begin to pressurize the system. Everyone waited a few minutes for the 8" line to fill with water.

Ashley and Dan placed the measurement apparatus near the low elevation inlet of the 8" gated line. Because the line slanted upward, we could be sure that the upstream (lower elevation) portion of the line was full when the downstream (higher elevation) gates began to flow. Ashley and Dan programmed the Tyme Flyte (State Office Unit #1) to measure the volumetric flow rate in the 8" gated pipe at the upstream end of the gated line.

To verify the volumetric flow results from the Tyme Flyte, theoretical calculations were also completed. With friction assumed to be negligible and a lift distance estimated with the pump at the bottom of the well, the theoretical calculation matches the measurement results. (Property owner confirmed that the well pump is installed at the bottom of the column.)

Overlapping Water Rights

Only one water right held by Opaline Irrigation District (2-2072) overlaps the Hotchkiss's irrigation place of use for 57-11694. Wayne and Lisa Hotchkiss do not have shares with Opaline Irrigation District.

Conditions

Conditions 046 and 26A were removed. Condition 121 was modified to 103, and R65 was changed to R69. Conditions 01M has been retained per licensing condition standard practice.

Have conditions of permit approval been met? x 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	0.100 CFS	19.80 AF
	<u>Totals:</u>	0.100 CFS	19.80 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 ___ Other

I. AUTHENTICATION

Ashley Newbry, Engineer Associate
Field Examiner's Name Ashley Newbry Date 8/12/2014

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Field Map for Irrigation
57-11694



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

0 0.05 0.1 0.2 Miles





Irrigation Lines

Cattle Corral

8" Gated line

House

Horse Corral

Runoff Collection Area w/ Pump

Irrigation Well

Shop & Storage

Domestic Well

Recycled Runoff line

The irrigation well (blue) near the center of the property is used to water pasture around the central corrals. The 6" well was drilled in June 2008. The receiving pipework included valves to isolate upper and lower zones of the irrigation system. At the southwest corner of the property, irrigation runoff drains to a collection area below ground. A re-lift pump circulates water to the top of the hillside, where it is reused in the irrigation system. The domestic well (red) at the southeast corner of the property supplies water to the house.

MEMORANDUM

TO: Shelley Keen
FROM: Ashley Newbry
DATE: August 1, 2014
RE: Thyme Flyte Measurement

On August 1, 2014, an irrigation flow measurement was taken during the beneficial use field exam at the Hotchkiss property (9549 Sleepy Hollow Drive; Marsing, ID), pursuant to WR 57-11694. The Thyme Flyte flow measurement tool was used. The data tape containing the test results is attached.

OUTER DIAMETER
3.10000 IN

PIPE MATERIAL
? PUC

WALL THICKNESS
0.1640 IN

INNER LINING
? NO LING.

KIND OF FLUID
? WATER

SENSOR MOUNTING
? J

TYPE OF SENSOR
? SMALL

DATA CHANGE
? NO

SPACING
5.756 IN U

ZERO MODE
CLEAR

ZERO MODE
AUT ZERO

08-01 10:0600 *R
+0003.00 % A12

MODE SELECT
T0 CHECK

0289.7 MMSEC
099.78 % T0

10:30+ 44.909E 00GPM 00R
+00000 *10 G 00R
-00000 *10 G 00R

10:31+ 45.437E 00GPM 00R
+00004 *10 G 00R
-00000 *10 G 00R

10:32+ 44.909E 00GPM 00R
+00008 *10 G 00R
-00000 *10 G 00R

10:33+ 47.815E 00GPM 00R
+00013 *10 G 00R
-00000 *10 G 00R

10:34+ 48.343E 00GPM 00R
+00018 *10 G 00R
-00000 *10 G 00R

10:35+ 45.965E 00GPM 00R
+00022 *10 G 00R
-00000 *10 G 00R

10:36+ 45.437E 00GPM 00R
+00027 *10 G 00R
-00000 *10 G 00R

10:37+ 45.965E 00GPM 00R
+00031 *10 G 00R
-00000 *10 G 00R

10:38+ 48.871E 00GPM 00R
+00036 *10 G 00R
-00000 *10 G 00R

10:39+ 47.286E 00GPM 00R
+00041 *10 G 00R
-00000 *10 G 00R

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Form 238-7
6/07IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

851570

1. WELL TAG NO. D 0052907
 Drilling Permit No. 904565-851570
 Water right or injection well # 57-11694
 2. OWNER: Lisa Hotchkiss

Name _____
 Address P.O. Box 96 Marsing
 City Marsing State Id Zip 83639

3. WELL LOCATION:
 Twp. 1 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
 Sec. 7 1/4 NW 1/4 SE 1/4

Gov't Lot _____ County Owyhee
 Lat. _____ (Deg. and Decimal minutes)
 Long. _____ (Deg. and Decimal minutes)
 Address of Well Site Sleepy Hollow Rd. and Hwy 55 1/4 m off 55 City Marsing
 (Give at least name of road + distance to road or landmark)
 Lot. _____ Blk. _____ Sub. Name 1/4 mile off Hwy 55

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>Bentonite</u>	<u>0</u>	<u>19</u>	<u>13 sacks</u>	<u>OVERBORE</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Threaded	Welded
<u>6"</u>	<u>+2</u>	<u>60'</u>	<u>.250</u>	<u>steel</u>	☒	☐	☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 60'

9. PERFORATIONS/SCREENS:
 Perforations ☐ Y ☐ N Method _____
 Manufactured screen ☐ Y ☐ N Type
 Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule

Length of Headpipe _____ Length of Tailpipe _____
 Packer ☐ Y ☐ N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:
 Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____
 Describe control device 6" well cap

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 190 Static water level (ft) 70'
 Water temp. (°F) 85° or less Bottom hole temp. (°F) 85° or less
 Describe access port 6" well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
	<u>30</u>	<u>60 min</u>

Test method:

Pump ☐ Bailer ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: Good Clean water

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>4</u>	<u>Top soil</u>		☒
	<u>4</u>	<u>18</u>	<u>Sandy clay</u>		
<u>6</u>	<u>18</u>	<u>24</u>	<u>Gravel & sandy</u>		
	<u>24</u>	<u>52</u>	<u>Clay with sand strips</u>		
	<u>52</u>	<u>190</u>	<u>Blue clay</u>		
	<u>190</u>	<u>240</u>	<u>Blue clay with sand strips</u>		☒

RECEIVED

JUL 22 2008

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 240'
 Date Started: 5/30/08 Date Completed: 6/3/08

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Hillier Pumps Drilling Co. No. 417

*Principal Driller Date 7-21-08

*Driller Date 7/21/08

*Operator II Date 7/21/08

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

Note: Though there are many water rights found in the same quarter-quarter, only WR 2-2072 held by Opaline Irrigation District overlaps 57-11964. The permit holder of 57-11964, Lisa Hotchkiss, does not have shares in Opaline Irrigation District.

Process	Basin Sequence	Draft	Owner	Source	POD/POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	2-2072	N	OPALINE IRRIGATION DISTRICT	SNAKE RIVER	POU	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	0
Water Right	2-7140	N	HOAGLAND, MOLLIE L	SNAKE RIVER	POU													3.0				3
Water Right	2-7177	N	TORREY, KENNETH D; TORREY, SUSAN V	SNAKE RIVER	POU												35.0			26.0		61
Water Right	57-10026	N	STROM, STEPHEN B	GROUND WATER	POD							X										0
Water Right	57-10026	N	STROM, STEPHEN B	GROUND WATER	POU							X										0
Water Right	57-10089	N	YOUNG, CHARLES C	GROUND WATER	POD			X														0
Water Right	57-10089	N	YOUNG, CHARLES C	GROUND WATER	POU			X														0
Water Right	57-10090	N	YOUNG, CHARLES C	GROUND WATER	POD			X														0
Water Right	57-10090	N	YOUNG, CHARLES C	GROUND WATER	POU			X														0
Water Right	57-10458	N	HAGEN, ROBERT E	GROUND WATER	POD																X	0
Water Right	57-10458	N	HAGEN, ROBERT E	GROUND WATER	POU																X	0
Water Right	57-11628	N	KELLY, RONALD L	GROUND WATER	POD											X						0
Water Right	57-11628	N	KELLY, RONALD L	GROUND WATER	POU											25.0						25
Water Permit	57-11657	N	CARSON, IVAN E	GROUND WATER	POD							X										0
Water Permit	57-11657	N	CARSON, IVAN E	GROUND WATER	POU							1.5										1.5
Water Right	57-11659	N	ANDERSON, MURIEL J; TEMPLE, DANIEL P	GROUND WATER	POD									X								0
Water Right	57-11659	N	ANDERSON, MURIEL J; TEMPLE, DANIEL P	GROUND WATER	POU									X								0
Water Permit	57-11672	N	CAMPBELL, MICHAEL	GROUND WATER	POD							X										0
Water Permit	57-11672	N	CAMPBELL, MICHAEL	GROUND WATER	POU							4.0										4
Water Permit	57-11672	N	CAMPBELL, MICHAEL	GROUND WATER	POU							X										0
Water Permit	57-11694	N	HOTCHKISS, LISA	GROUND WATER	POD														X			0
Water Permit	57-11694	N	HOTCHKISS, LISA	GROUND WATER	POU														5.5			5.5
Water Right	57-11748	N	KELLY, RONALD L	GROUND WATER	POD											X						0
Water Right	57-11748	N	KELLY, RONALD L	GROUND WATER	POU											8.3						8.3
Water Right	57-11748	N	KELLY, RONALD L	GROUND WATER	POU											X						0
Water Right	57-2204	N	LARRABASTER, DIONISIO	GROUND WATER	POD									X								0
Water Right	57-2204	N	LARRABASTER, DIONISIO	GROUND WATER	POU									X								4
Water Right	57-2204	N	LARRABASTER, DIONISIO	GROUND WATER	POU									X								0
Water Right	57-2240	N	TORREY, KENNETH D; TORREY, SUSAN V	GROUND WATER	POU												35.0			26.0		61
Water Right	57-4045	N	DANIEL, CHRISTINE	GROUND WATER	POD	X																0
Water Right	57-4045	N	DANIEL, CHRISTINE	GROUND WATER	POU	X																0

PHOTOGRAPHER AND DATE OF PHOTOS ASHLEY NEWBRY • August 1, 2014

FILE NUMBER 57-11694



The photo shows the 6" irrigation supply well (left) outfitted with a Franklin Electric submersible pump (center – control panel). The gage (right) shows the system pressure in psi when the pump is running.



The first photo includes the 8" gated irrigation line (left) which was measured during the field exam. The remaining photos show the gravity irrigated pasture at the south of the property (center and right). An Opaline Irrigation District Canal runs along the west boundary of the property (center).



Raised 3/16" nozzle impact rotor sprinklers (center) irrigate the higher elevations of the pasture (left). The front lawn of the house is watered from the domestic well (right).



At the southwest corner of the property, a rip-rapped infiltration area collects irrigation runoff (left). A Franklin Electric Red Lion 2 horsepower pump (right) re-lifts the collected runoff and recycles it (center) to the top of the pasture.



The horse (left) and cattle corrals are located in the center of the property; they are surrounded by pasture (right).