

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 94-9470

Exam Date: 10/07/2021

1. Current Owner:

TERRY MC MENOMY 28390 S LARCH RD ST MARIES ID 83861-5085 AND/OR
JENNIFER MC MENOMY 28390 S LARCH RD ST MARIES ID 83861-5085

2. Accompanied by: Terry Mc Menomy

Phone No: 208-689-3434

Address: Same as above

Relationship to permit Holder: Permit holder

3. **SOURCE:**

GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

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

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ SE¼, Sec. 18, Twp 47N, Rge 02W, B.M. KOOTENAI County

Method of Determination: GPS. POD is a well with tag D0069570 located at -116°38.2529, 47°25.1991.

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	
47N	02W	18									0.1					0.9			1.0

Total Acres: 1.0

PLACE OF USE: STOCKWATER, COMMERCIAL, and DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
47N	02W	18														X			

Method of Determination: Field exam and Arcmap aerial imagery.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be

X 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
D0069570	UNK	2			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5-GAL BUCKET TEST(S)						

2. Measurements: Three 5-gallon bucket tests were completed from a frost-free hydrant located at the well, with average of three resulting in a diversion rate of 5 gal / 13.74 sec x 60 sec/min = 21.83 gpm = **0.05 cfs**, considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 5-GAL Bucket Test = (5 gal / 14.53 sec) x 60 sec/min = 20.65 gpm
 = (5 gal / 13.42 sec) x 60 sec/min = 22.35 gpm
 = (5 gal / 13.27 sec) x 60 sec/min = 22.61 gpm

Average of 3ea 5-GAL Bucket Tests = (20.65 gpm + 22.35 gpm + 22.61 gpm) / 3 = 21.87 gpm = 0.05 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3.0 \text{ afa} = 3.0 \text{ af}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 231\text{-day} \times 1.9835 = 13.7 \text{ af}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \mathbf{3.0 \text{ af}}$

2. Volume Calculations for Other Uses:

Commercial annual volume = 100 gpd x 365 day = 365,000 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards.

Domestic annual volume = 1 home (in-home use only) = **0.6 af**

Stockwater annual volume = 50 chickens x 2.5 gpd x 365 = 45,625 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards.

Maximum diversion volume = 3.0 af (irrigation) + 0.1 af (commercial) + 0.6 af (domestic) + 0.1 af (stockwater) = **3.8 af**.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 10/7/2021 with the applicant, Terry Mc Menomy, showed a groundwater well being used for irrigation, stockwater, commercial and domestic uses. At the POD, well D0069570 has a 2 HP pump installed with a frost-free hydrant co-located with the well. Three 5-gallon bucket tests were completed from a frost-free hydrant located at the well, with average of three resulting in a diversion rate of 5 gal / 13.74 sec x 60 sec/min = 21.83 gpm = **0.05 cfs**, considering department rounding standards which is recommended as the maximum diversion rate for licensing purposes. At time of exam the applicant was in the process of troubleshooting an intermittent issue with his pump shutting off and had the well cap off to shoot wiring (as seen in photographs).

From the well main service lines route to the frost-free hydrant, to a shop with indoor plumbing for sink and bathroom, and to a home on the property. The domestic POU consists of the shop and home which were traced out using Arcmap aerial imagery during licensing review. The annual volume for domestic use equates to in-home use only with **0.6 af** being recommended to license this beneficial use component. The stockwater POU consist of a chicken coup for 50 chickens that are watered from the home, shop, or frost-free hydrant. The POU was traced out as a rectangle area interconnecting the 3 locations that water is obtained to maintain the stock on the property. The stockwater POU is greatly reduced from the permit approved POU due to only chickens being raised by the applicants & them only being near the resident and shop. The annual volume for stockwater use equals 50 chickens x 2.5 gpd x 365 = 45,625 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards which is recommended for licensing this beneficial use component. Domestic & Stockwater diversion rates shall remain the same from permit to licensing.

The commercial POU consists of a small green house (< 0.1 ac in size) used by the applicants to grow vegetables year-round. There is a utility sink used for washing vegetables and plants are watered using micro emitters. The applicant states that due to limited well production, water is cycled between greenhouse use & irrigation use during the summer months. Based on the use of micro emitters to water and the limited grow space, 100 gallons of water use per day is a reasonable volume to assign for the applicant's personal vegetable growth throughout the year. The commercial annual volume recommended for licensing equals 100 gpd x 365 day = 365,000 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards. Commercial diversion rate shall remain the same from permit to licensing.

The irrigation POU was walked with the applicant during the field exam & sketched out on field maps. During licensing review, Arcmap aerial imagery was used to trace out he irrigation POU equaling 1.0 acres. The applicant asserted they were limited by well pumping performance on how much they could water throughout the growing season, prompting them to install primarily micro-emitter irrigation systems to meet their needs. From the frost-free hydrant at the well a hose to poly-pipe routes across the property to a long stretch of berry bushes located along the south side of the property and driveway. The berry patch is fenced in to protect from animals and watered by micro-emitters. In the middle of a pasture the applicants irrigate starter trees using rainbird pressurized sprinklers, soaker hoses, and micro-emitters. Near the greenhouse the applicants have developed a small fenced in orchard with fruit trees that are watered from a frost-free hydrant inside the orchard. Near the well is a small patch of berry bushes and vegetables (squash/pumpkins) that are watered using micro-emitters.

Due to the reduced footprint in irrigation observed during the field exam from what was permit approved (10 acres), the diversion rate was reduced from 0.2 cfs to 0.03 cfs during licensing review to conform with department standards. The annual volume associated with 1 acre irrigation equals 1.0 ac x 3.0 afa = **3.0 af** which is recommended to license this beneficial use component. The maximum diversion volume is the sum of all beneficial uses and equals 3.0 af (irrigation) + 0.1 af (commercial) + 0.6 af (domestic) + 0.1 af (stockwater) = **3.8 af**.

Conditions 26A, 046, and X02 were removed from the permit during licensing review. Condition R62 was replaced with R66 describing small acreage diversion rate and diversion volume limitations. All other conditions on the permit shall be carried to the license. There are no overlap concerns for this water right.

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>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 10/31	0.03 CFS	3.0 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
COMMERCIAL	01/01 to 12/31	0.03 CFS	0.1 AF
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
<u>Totals:</u>		0.05 CFS	3.8 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 X None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name *SBDO* Date *10/27/2021*

Reviewer *Adam Fink* Date *11/18/2021*

IRRIGATION system diagram.

47N

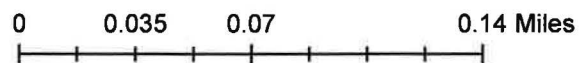
NESW

NWSE

18

ar, GeoEye, Earthstar Geographics, USDA, USGS, AeroGRID, IGN, and the city

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



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STOCKWATER system diagram.

02W



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

0 0.035 0.07 0.14 Miles



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COMMERCIAL system diagram.

02W



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

0 0.03 0.06 0.12 Miles



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DOMESTIC system diagram.

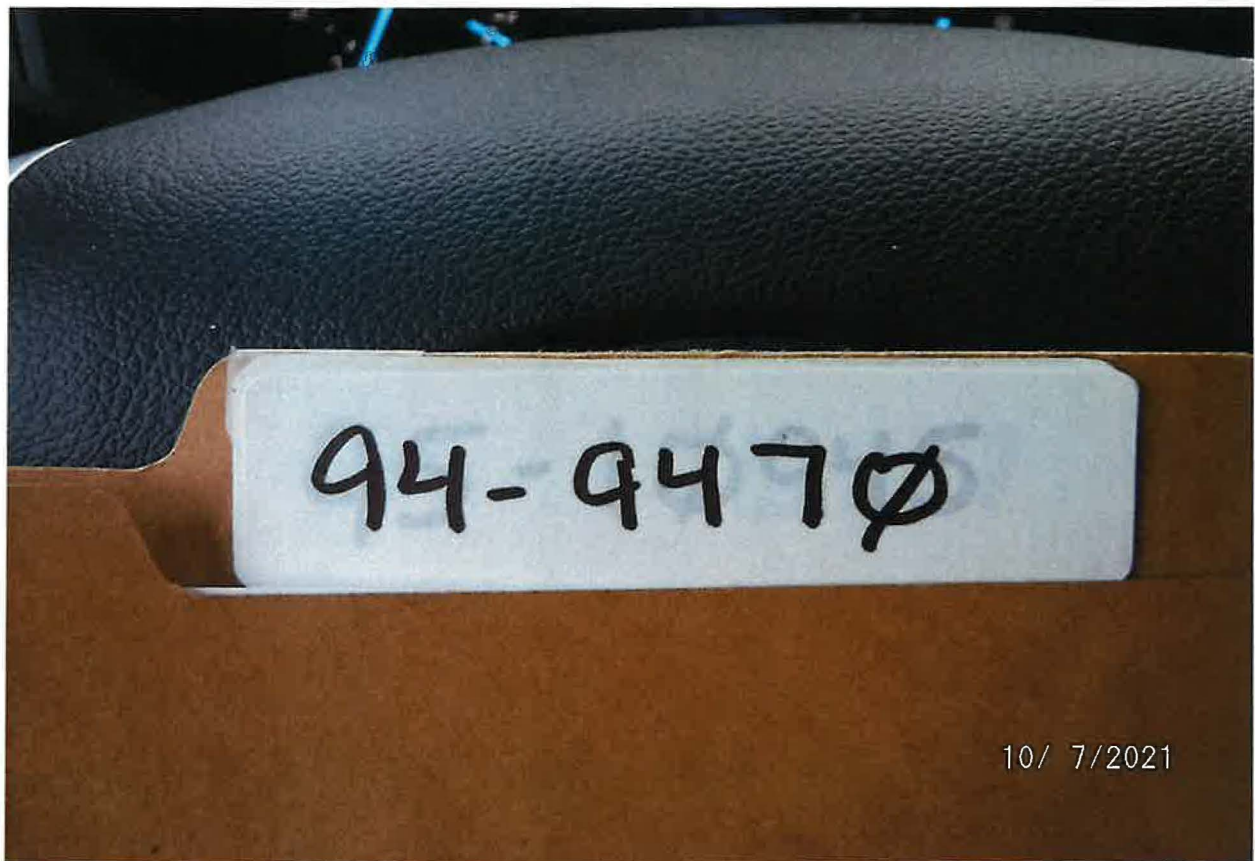
02W



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

0 0.035 0.07 0.14 Miles





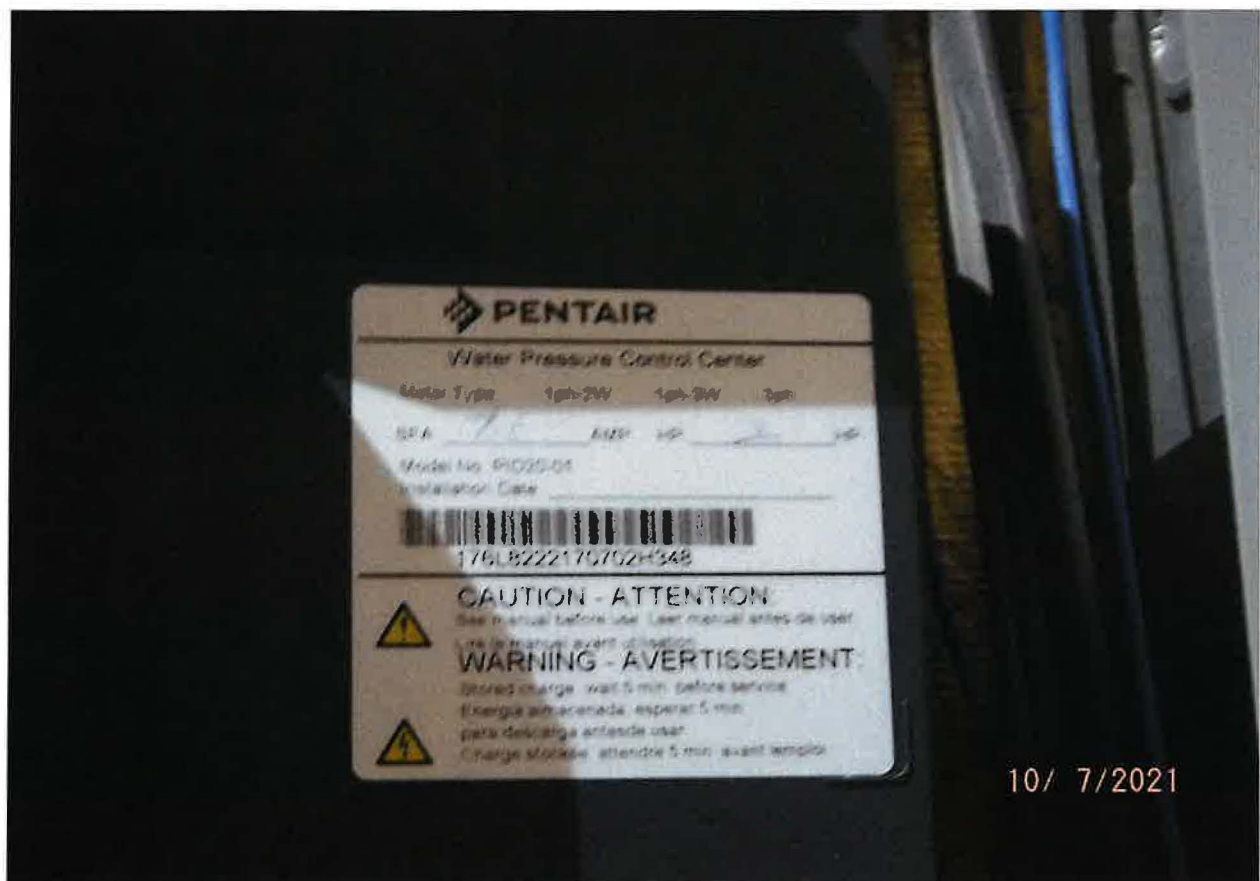
FIELD EXAM DATE 10/7/2021



POD – GROUNDWATER WELL (WIRING REPAIR IN PROCESS AT TIME OF EXAM)



WELL D-TAG D0068570



2 HP PENTAIR PUMP MOTOR INSTALLED IN WELL



DOMESTIC POU – 1 HOME AND SHOP WITH SINK INSTALLED





COMMERCIAL POU – GREEN HOUSE FOR PERSONAL USE





COMMERCIAL USE – GREEN HOUSE WITH SINK





COMMERCIAL USE – GREEN HOUSE USES MICRO EMITTERS TO WATER YEAR ROUND





STOCKWATER POU – CHICKENS



IRRIGATION SYSTEM CONNNECTIONS



IRRIGATION POU – BERRY PATCH ALONG DRIVEWAY



IRRIGATION POU – FENCED IN GARDEN/ORCHARD



IRRIGATION POU





IRRIGATION POU – TRANSPLANT TREES





IRRIGATION POU – MICRO EMITTER



IRRIGATION POU – TRANSPLANT TREES