STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A.   GENERAL INFORMATION

Permit No: 95-17573
Exam Date: 06/02/2020

  1. Current Owner:
     SNOWY FIR WATER ASSN INC   PO BOX 162   ATHOL   ID   83801-0162

  2. Accompanied by: Ben Deon
      Phone No: 208-755-0405
      Address: Same as above
      Relationship to permit Holder: Snowy Fir Water Assoc Inc Representative

  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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

  2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-9481	GROUNDWATER	IRRIGATION, DOMESTIC	LICENSE

Comments: WR 95-17573 and WR 95-9481 divert water from the same well D0017830, both for irrigation and domestic use. This water right is for the addition of 3 homes into Snowy Fir Water Association Inc.

C.   DIVERSION AND DELIVERY SYSTEM

  1.   **LOCATION OF POINT(S) OF DIVERSION:**
  GROUND WATER   NW¼ SE¼, Sec. 14, Twp 53N, Rge 03W, B.M.   KOOTENAI County

Method of Determination: GPS. POD located at -116°39.737, 47°56.423. Well D0017830.

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	
53N	03W	14													2.2				2.2

Total Acres: 2.2

PLACE OF USE: 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	
53N	03W	14													X				

Method of Determination: Field exam and Arcmap.

3.

  X   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
D0017830					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: Unable to perform flow measurement because system pumped directly into pressure tank.

E. FLOW CALCULATIONS

                                                                 X   Additional Computation Sheets Attached

Measured Method: Theoretical pumping equation derived a flow rate of 43.7 gpm, which equals **0.10 cfs**, from pump estimated to be at 427ft and operating at 50 psi. See attached theoretical pumping equation worksheet.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

V_{IR} = (Acres Irrigated) x (Irrigation Requirement) = 2.2 acres x 3.0 afa = 6.6 af

V_{DR} = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.0̶7̶ ~~0.00~~ cfs x 214 days x 1.9835 = ~~42.4~~ **29.7** af

V = Smaller of V_{IR} and V_{DR} = **6.6 af**

2. Volume Calculations for Other Uses:

Domestic use for in home only = 0.6 af

3 homes x 0.6 af = 1.8 af

G.   NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 6/2/2020 with water association representative, Ben Deon, showed a well being used for domestic and irrigation purposes. The well, D0017830, has a 7.5 HP pump which diverted water into pressure tanks. I was unable to perform a flow measurement because water was diverted directly into pressure tank with no proper place to perform measurement. Theoretical pumping equation was used to estimate a flow rate of 0.10 cfs. The pump was estimated to be 427 feet down and the system running at 50 psi (equation attached). The license will be issued with a maximum diversion rate of **0.10 cfs**.

There were three homes identified and verified during field exam that were using water for in home use. The department standard diversion rate for domestic 3 homes is equal to **0.08 cfs**, which will be applied the the beneficial use rate of diversion for domestic on license. The Irrigation component of license was observed during field exam, and was traced out during licensing review to equal 2.2 acres. The irrigation for 3 separate parcels is from hoses and sprinklers, there was no automatic sprinklers on any of the three lots. The domestic volume will be limited to 1.8 af (3 homes x 0.6 af). The irrigation volume will be limited to 6.6 af (2.2 ac x 3.0 af). The annual volume for the irrigation component will be limited to a diversion rate of 0.07 cfs, which is the department standard for irrigation equal to 0.03 cfs x 2.2 acres = **0.07 cfs** in accordance with acceptable rates of irrigation flow for small acreages admin memo, application processing memo No. 17. The maximum diversion volume applied to license equals irrigation annual volume plus domestic annual volume, which equals 6.6 af + 1.8 af = **8.4 af**.

Condition 046 was removed from license. Condition R62 was modified to R66 because the irrigation found was less than 5 acres and limited to 0.03 cfs per acre instead of 0.02 cfs. Condition X35 was added to describe overlap limitation in diversion rate, annual volume, and acres irrigated when water rights 95-9481 and 95-17573 are combined, in order to mitigate overlap concerns. All other conditions remained on license. The well associated with WR 95-17573 is also the POD for WR 95-9481, for same Snowy Fir Water Assn Inc, and incorporates 3 new homes added to association water system. Although there is no overlap concern for POU, the same well between WRs 95-9481 and 95-17573 pose concerns for overlap in pumping performance; the concerns for overlap have been mitigated with the addition of condition X35 (see above).

Have conditions of permit approval been met?   __X__ Yes   ____ No

H.   RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	**Period of Use**	**Rate of Diversion**	**Annual Volume**
IRRIGATION	04/01 to 10/31	0.07 CFS	6.6 AF
DOMESTIC	01/01 to 12/31	0.08 CFS	1.8 AF

Totals: 0.10 CFS   8.4 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 _____   Date __6/11/2020__

Reviewer _____   Date __6/11/2020__

Attachment to Field Exam

95-17573

DOMESTIC system diagram.

Legend	
⊙	Point of Diversion
▭	Place Of Use Boundary
▭	Townships
▭	PLS Sections
▭	Quarter Quarters

0   0.04   0.08   0.16 Miles

N

State of Idaho
Department of Water Resources
Attachment to Field Exam
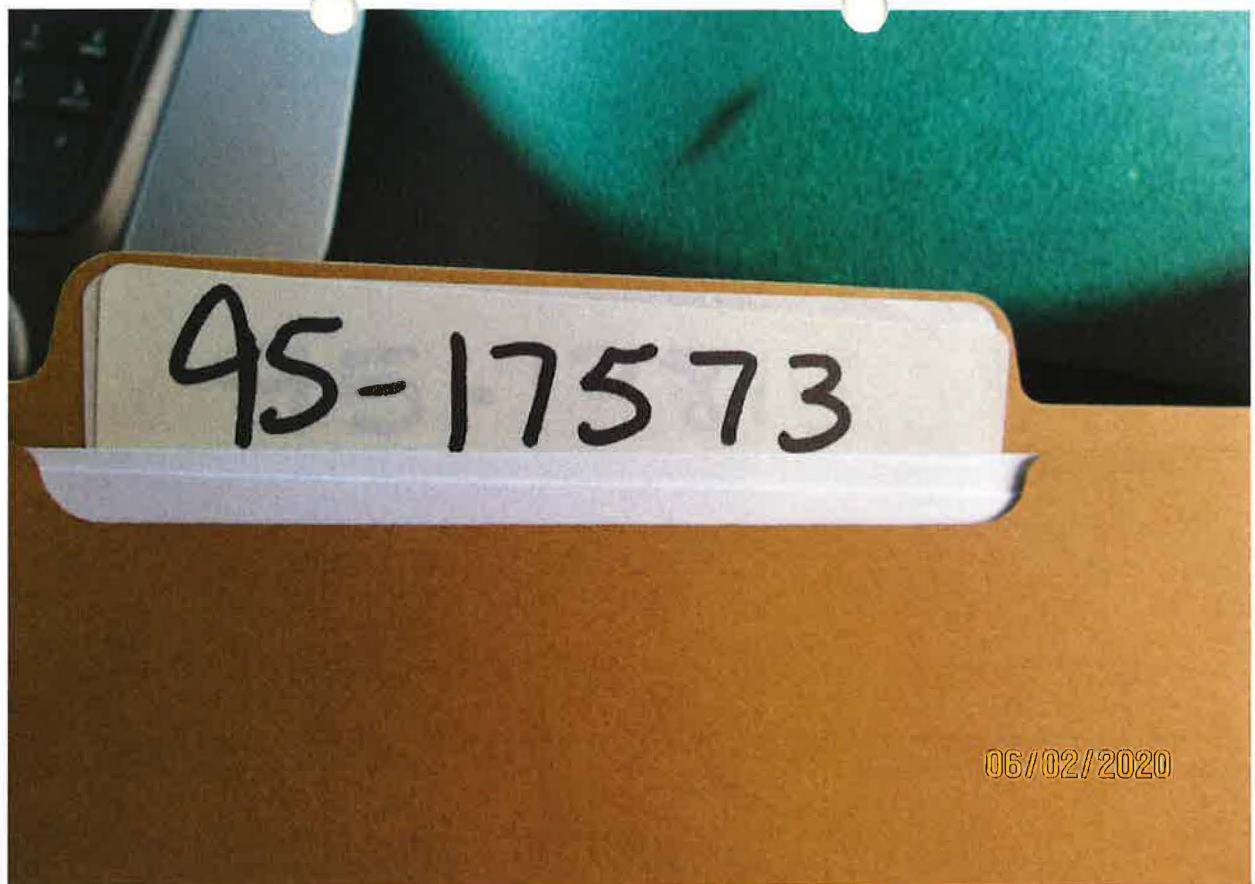### 95-17573

IRRIGATION system diagram.

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

0   0.045   0.09   0.18 Miles

N

THEORETICAL PUMPING EQUATION FOR WR# 95-17573

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 427 ft, and running at 50 psi.

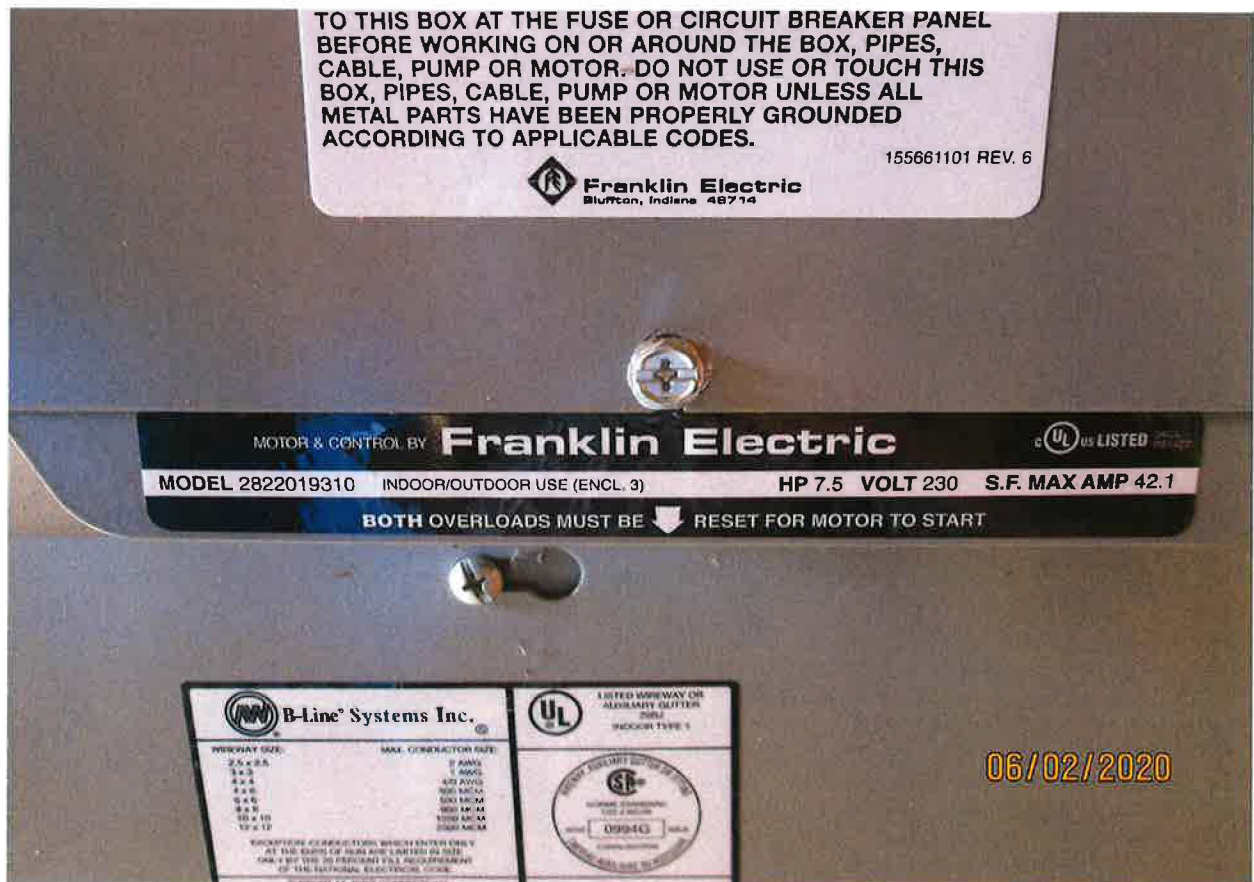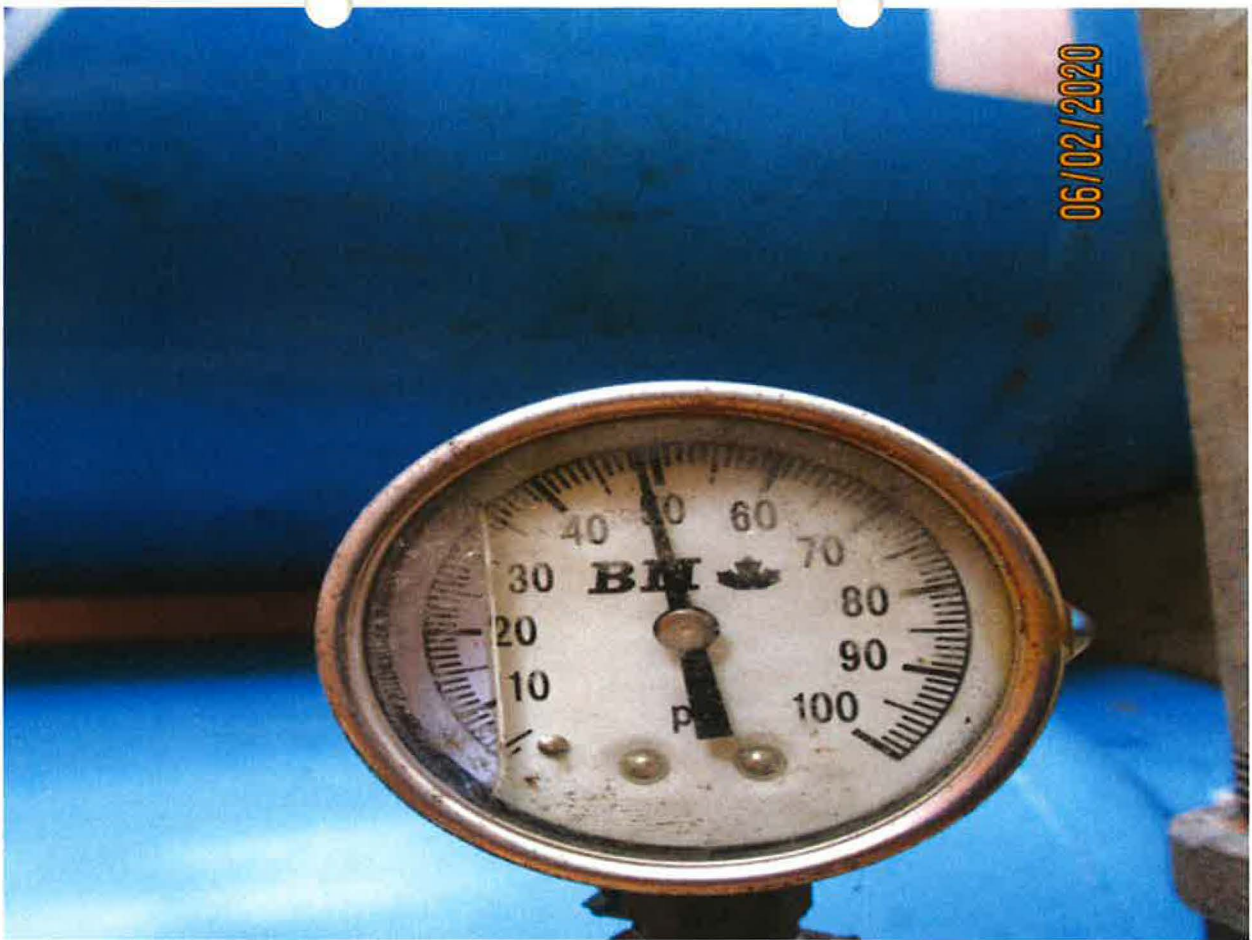| **PUMP EQUATIONS**						
WATER RIGHT No. 95-17573						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	7.5	542.6463	0.8	427	50
Q =	**0.097 cfs**		**43.7 gpm**			

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POD – SHARED WELL

WELL TAG D0017830

FRANKLIN ELECTRIC 7.5 HP PUMP

SYSTEM OPERATING AT 50 PSI

PRESSURE TANKS FOR 3 LOTS

9284 E SNOWY LN - DOMESTIC & IRRIGATION POU

29359 N RED FIR RD - DOMESTIC & IRRIGATION POU

IRRIGATION POU LOT 2 OF 3

06/02/2020

29359 N RED FIR RD - IRRIGATION POU WITH FROST FREE HYDRANT

06/02/2020

06/02/2020

29359 N RED FIR RD - IRRIGATION POU WITH FROST FREE HYDRANT

06/02/2020

9471 E SNOWY LN - DOMESTIC & IRRIGATION POU

9471 E SNOWY LN - DOMESTIC & IRRIGATION POU