

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8102
Exam Date: 06/11/2024

1. Current Owner:
GENE HOOLEY 67 MARYDEL LN BONNERS FERRY ID 83805-4833 AND/OR
MARY ESTHER HOOLEY 67 MARYDEL LN BONNERS FERRY ID 83805-4833
2. Accompanied by: Gene Hooley
Phone No: 986-205-0187
Address: Same as above
Relationship to permit Holder: Permit Holder.

3. **SOURCE:**
MISSION CREEK

Tributary
KOOTENAI RIVER

Method of Determination: ArcMap and DRG layer.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
98-7770	GROUNDWATER	MUNICIPAL	LICENSE

Comments: Licensed Right 98-7770 uses groundwater source(s) for municipal uses by Mission Creek Water Assn. The municipal provider doesn't serve the applicant's property nor is this Permit's surface water system associated with 98-7770's groundwater system. There isn't a concern for POU overlap.

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

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

MISSION CREEK L4 (SW¼ SW¼), Sec. 7, Twp 64N, Rge 01E, B.M. BOUNDARY County

Method of Determination: GPS; POD is located at -116°23.5420, 48°54.3905.

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	
64N	01E	7												0.3					0.3

Total Acres: 0.3

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
64N	01E	7											X L4	X					

Method of Determination: beneficial use field examination and ArcMap aerial imagery.

- 3.
- ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. 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 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ 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
SUBMERSIBLE PUMP IN CREEK	UNKOWN	UNKOWN	SOLAR PANEL TO BATTERY SOLAR PUMP	UNKOWN	1 ¼ INCH DISCHARGE PIPE

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5-GAL BUCKET MEASUREMENT						

2. Measurements: Three 5-gallon bucket tests were completed from a frost-free hydrant after 1 ¼ inch poly pipe routes beneath roadway to applicant's property, with an average of three measurements resulting in a diversion rate of 0.02 cfs.

E. FLOW CALCULATIONS

Measured Method: 5-GAL Bucket Test = (5 gal / 28.00 sec) x 60 sec/min = 10.71 gpm
 = (5 gal / 27.82 sec) x 60 sec/min = 10.78 gpm
 = (5 gal / 28.90 sec) x 60 sec/min = 10.38 gpm

Average of 3ea 5-GAL Bucket Tests = (10.71 gpm + 10.78 gpm + 10.38 gpm) / 3 = 10.6 gpm = 0.02 cfs considering department rounding standards. Permit authorized a maximum diversion rate of 0.08 cfs for development but the applicant is limited by pump performance found at time of beneficial use field exam or 0.02 cfs for licensing purposes.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.3 \text{ ac} \times 3.0 \text{ afa} = 0.9 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 214\text{-day} \times 1.9835 = 8.4 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 0.9 \text{ af}$$

2. Volume Calculations for Other Uses:

- The irrigation beneficial use from the Mission Creek water source is exempt from the volume reporting requirements in accordance with IDAPA 37.03.02, Section 035.
- Stockwater annual volume for 20 chickens rounds up to **0.1 af** considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

I conducted the beneficial use field exam on 6/11/2024 with the Permit Holder, Mr. Gene Hooley, which showed Mission Creek water being diverted for irrigation and stockwater uses. At the POD, the water system incorporates a screened intake with flexible pipe and solar powered ¼ hp RSP system diverting works. The diverting works are powered on at the power station located on a small bench halfway from creek to paved roadway. From the creek, 1-1/4-inch poly pipe is routed through an existing culvert below the roadway to a frost-free hydrant. I captured three 5-gal bucket flow measurements from the hydrant with resulting flow rate of **0.02 cfs**. The permit authorized development of up to 0.08 cfs based on department standards for stockwater & irrigation, but the Permit Holder is limited to pump performance observed at time of exam for licensing purposes.

Mr. Hooley acknowledged that the current system as designed doesn't produce adequate head pressure to pump water from the frost-free hydrant along the roadway up across a field and upgrade to the irrigation POU. Mr. Hooley uses trailer mounted water tanks to transport creek water to the residence area where a 1,500-gal vaulted water tank is filled prior to irrigation use for a large hillside stepped garden around the residence. During the exam I observed active irrigation for the large garden and sketched the irrigation POU on field maps. Watering is all gravity flow from the storage tank, which serves as a 24-hr impoundment vessel. There main gravity flow pipe is connected to a couple frost free hydrants with hose splitters allowing watering of the garden, orchard trees, and landscape plants. During licensing review, I used field maps and ArcMap to accurately trace the irrigation POU which equals 0.3 acres. The annual volume authorized for irrigation equals 0.9 af but as this system uses a surface water source no annual nor maximum diversion volume is assigned to the face of the license. Instead, condition of approval X31 describes the total diversion rate and 0.9 af volume authorized for irrigation under this Right.

The stockwater POU consists of portable stock tanks filled near the frost-free hydrant in the Permit Holder's lower field and stock tanks filled near the main residence from the 1,500-gal storage tank. The stockwater system was only developed for use for 20 chickens, as the fencing required to house goats and cattle were not completed in the development period of the Permit. I notified Mr. Hooley that the stockwater annual volume would reflect minor usage but due to Department rounding standards will equal **0.1 af** annually. I notified Mr. Hooley if he added a couple goats to the water usage, he wouldn't be breaking the 0.1 af annual volume authorized but if cattle were planned in the future additional water rights would need to be added to this Right unless they cattle drink directly from Mission Creek as an in-stream stockwater practice. I used ArcMap during licensing review to assign rectangular shapes that align with where the stock tanks are filled and were observed at time of exam. Photographs were taken to further demonstrate developed stockwater & irrigation practices on the property.

I've removed conditions 029 and X02 during licensing review as the water system has a fish screen and the description of stockwater isn't needed for licensing purposes once validated at time of exam. I replaced condition R66 with X31 to better describe small area irrigation of less than 1 acre occurring under the Permit's development. All other conditions on the Permit shall be carried forward to licensing. There are no overlapping water right concerns toward licensing Permit 98-8102.

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	04/01 to 10/31	0.02 CFS	
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF

Totals: 0.02 CFS

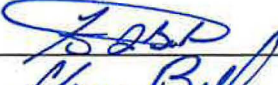
2. Recommended Amendments

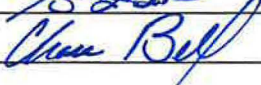
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

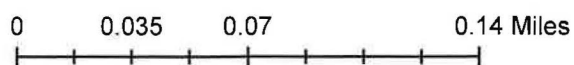
I. AUTHENTICATION

Luke Bates – Sr Water Resource Agent

Field Examiner's Name  Date 9/27/2024

Reviewer  Date 2/24/2025

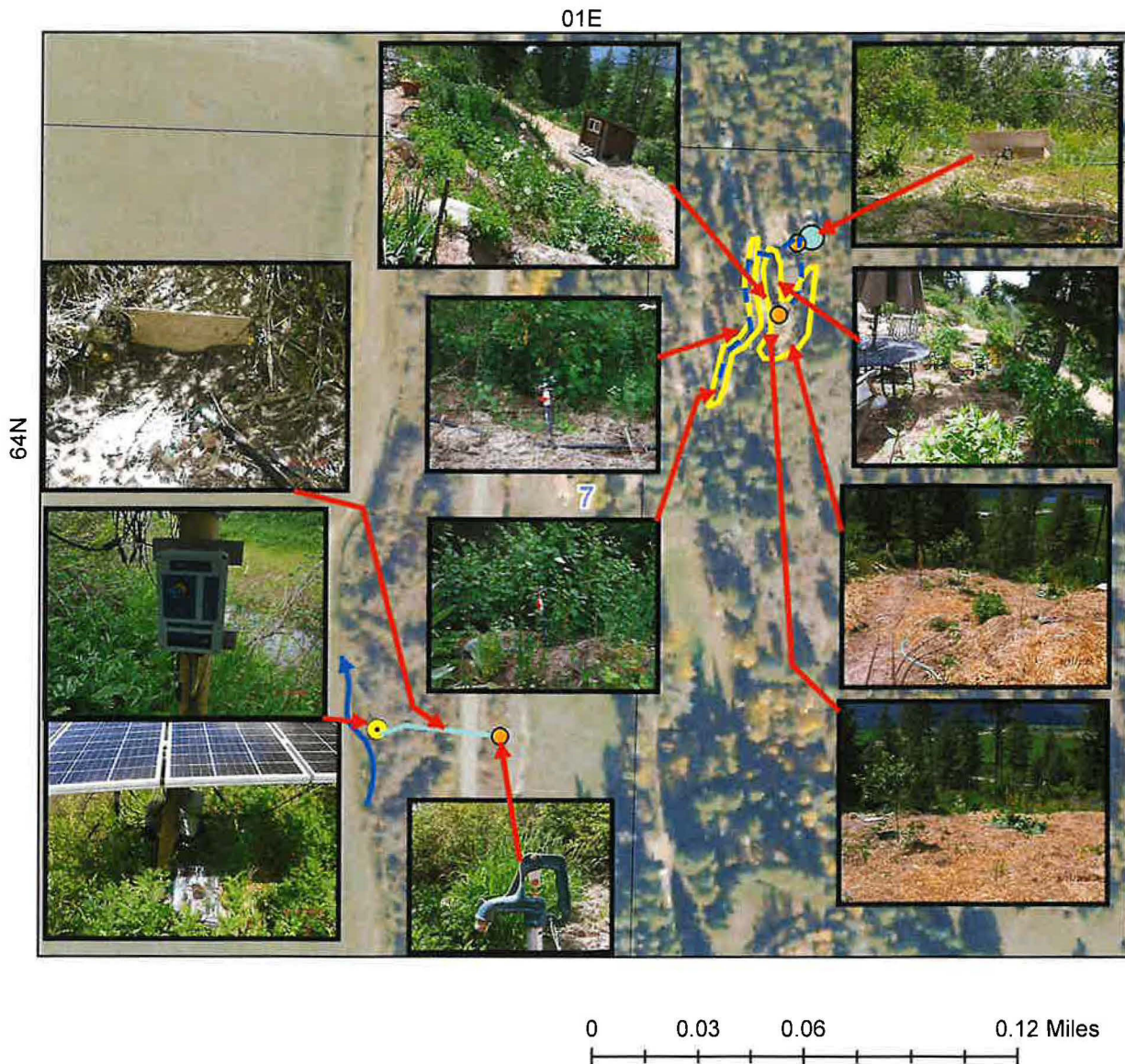
This map depicts the STOCKWATER system diagram.



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State of Idaho
Department of Water Resources
Attachment to Field Exam
98-8102

This map depicts the IRRIGATION system diagram.



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





BENEFICIAL USE FIELD EXAM DATE 6/11/2024



POD – SCREENED INTAKE PIPE DRAFTING WATER FROM MISSION CREEK



1-1/4 INCH POLYPIPE ROUTED UP STEEP EMBANKMENT FROM CREEK TO PUMP POWER SOURCE



POD – SOLAR PUMP WITH BATTERIES USED FOR SOLAR DIVERTING PUMP



RURAL POWER SYSTEM SOLAR PUMP CONTROLLER



1-1/4 INCH POLYPIPE CONVEYANCE PIPELINE



CONVEYANCE PIPELINE RUNNING FROM CREEK & BENEATH ROADWAY IN A CULVERT





5-GAL BUCKET MEASUREMENTS TAKEN FROM FROST FREE HYDRANT





PIPELINE ROUTES ACROSS LOWLAND FIELD TO HILL SLOPE BUT DOESN'T EXTEND ALL THE WAY TO THE IRRIGATION POU



TRUCK MOUNTED STORAGE TANK USED TO TRANSPORT WATER UP DRIVEWAY TO STORAGE RESERVIOR LOCATED AT POU



1,500-GAL VAULTED STORAGE RESERVOIR USES GRAVITY FLOW TO IRRIGATE BY HYDRANT(S) AND HOSES



IRRIGATION POU – LANDSCAPE AND GARDEN WATERING WHICH SURROUNDS RESIDENCE (POTABLE WATER TRUCKED IN FOR IN-HOME WATER USE)



IRRIGATION POU – AERIAL IMAGERY DOESN'T CLEARLY DEPICT IRRIGATION PRACTICES





IRRIGATION POU



POU STRAW COVERED TO PROTECT AGAINST SPRING FREEZE CONDITIONS



IRRIGATION POU – FRUIT TREES PLANTED THROUGHOUT THE POU





IRRIGATION & STOCKWATER POU – FROSTREE HYDRANT TO HOSE



STOCKWATER POU – CHICKEN COOP



IRRIGATION POU – LANDSCAPE WATERING ALONG DRIVEWAY FROM VALLEY FLOOR UP TO RESIDENCE

