

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17800
Exam Date: 05/14/2024

1. Current Owner:
CHERYL TELOW 536 NORTHERN SKY RD ATHOL ID 83801-8325
2. Accompanied by: Cheryl Telow
Phone No: 208-661-8659
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
GROUND WATER

Method of Determination: ArcMap and DRG layer.

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 SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ SW¼, Sec. 33, Twp 54N, Rge 03W, B.M. BONNER County

Method of Determination: GPS; POD is well D0079501 located at -116°43.1194, 47°58.7543.

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	
54N	03W	33											2.1						2.1

Total Acres: 2.1

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	
54N	03W	33											X						

Method of Determination: beneficial use field examination, ArcMap aerial imagery, and Bonner County tax parcel maps.

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
D0079501	FRANKLIN	5	2821139310	UNKNOWN	UNKNOWN

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: I was unable to perform flow measurements. A frost-free hydrant situated between the well and pump station was attempted with a 5-gal bucket, but I found multiple pressure tanks to influence the flow measurement, filling the bucket in less than 5 seconds. A Theoretic Pump Equation was calculated during licensing review that derived the diversion rate of 0.07 cfs considering department rounding standards.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = the 5 hp Franklin pump motor installed at depth of 405 ft with an operating pressure of 45 psi derives a diversion rate of 31.1 gpm or 0.07 cfs considering department rounding standards.

- The irrigation beneficial use for 2.1 acres observed at time of field exam is authorized a department standard diversion rate of 0.03 cfs x 2.1 ac = 0.06 cfs. I've reduced the diversion rate from 0.12 cfs to reflect **0.06 cfs** recommended for licensing the irrigation component of this Permit.
- The domestic beneficial use is authorized 0.10 cfs for 4 homes but is limited by pump performance to a rate of **0.07 cfs** which I've recommended for licensing purposes.
- I'm recommending a maximum diversion rate of **0.07 cfs** toward licensing this Permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.1 \text{ ac} \times 3.0 \text{ afa} = 6.3 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 25.5$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{6.3 \text{ af}}$$

2. Volume Calculations for Other Uses: the domestic annual volume equals 4 homes x 0.6 af (in-home use only) = **2.4 af**. I've recommended the maximum diversion volume as the sum of two beneficial uses = **8.7 af**.

G. NARRATIVE/REMARKS/COMMENTS

State Office staff attempted to license 95-17800 (Permit) via an in-office exam but were unable to confirm total irrigation acreage; there was some confusion between the applicant and staff that preclude finalizing this Permit for licensing and State Office staff recommended a field exam be performed.

I conducted a beneficial use field examination on 5/14/2024 with the Permit Holder, Cheryl Telow, which showed a cased groundwater well diverting water for irrigation and domestic purposes. At the POD, well D0084857 has been deepened from original well construction (D0079501). The well is located approximately 10 ft from a small pump station which houses water conveyance components; the system is direct flow incorporating 6 pressure tanks that hold a static pressure of 55 PSI. The system has a 5 hp Franklin Electric pump motor installed at a depth of 405 ft.

Due to pressure tank influences I wasn't able to perform a 5-gal bucket measurement, with the bucket filling in 3 seconds or less. I'm recommending licensing using a theoretic pump equation which derives a maximum diversion rate of 0.07 cfs. The Permit authorized each beneficial use for development with larger diversion rates, but I've reduced both component's rates based on department standards and pump capacity as found at time of exam. The Permit Holder asserted in conversation during the exam the well only produces 30 gpm, which is consistent with the pump equations evaluation of 31.1 gpm.

I walked the domestic POU using field maps to sketch the approximate buried main line and taking photographs to support the domestic uses found in a four-parcel minor subdivision. I'm recommending the domestic use annual volume of **2.4 af** based on the following information:

- Lot 1, Telow Estates Subdivision – 1 home and dry garage = 0.6 af.
- Lot 2, Telow Estates Subdivision – 1 home and a small ADU = 0.6 af.
- Lot 3, Telow Estates Subdivision – 1 home and dry garage = 0.6 af.
- Lot 4, Telow Estates Subdivision (well lot) – 1 home, 1 shop with bathroom, and a RV used occasionally = 0.6 af.

I used ArcMap aerial imagery to accurately trace out the domestic POU during licensing review. I found the water uses related to a small ADU, RV, and shop bathroom to be ancillary to the primary residences and these domestic uses are satisfied by the 0.6 af authorized per home as designated on the license recommendation.

The irrigation POU consists of small lawn spaces occurring around each of 4 primary residences, a fenced garden in Lot 4, and minor lawn/landscape watering occurring in Lot 4. Field maps were used to sketch the irrigation POU, which went traced using ArcMap equal 2.1 acres. The annual volume recommended for licensing equals $2.1 \text{ ac} \times 3.0 \text{ afa} = \mathbf{6.3 \text{ af}}$. There are multiple frost-free hydrants situated throughout each parcel with irrigation occurring by hose and sprinklers. There were many newly planted trees, shrubs, and other landscape cover plants that don't show up on aerial imagery but are actively being irrigated. The maximum diversion volume equals the sum of both beneficial uses equaling **8.7 af**.

I removed conditions 26A and 046 from the Permit during licensing review based on compliance by the applicant. I've added conditions X59 & X60 to the Permit which describe the POD/POU being located in a named subdivision. I've carried all other conditions on the Permit forward to the license. There are no overlapping water right concerns toward licensing 95-17800.

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	0.06 CFS	6.3 AF
DOMESTIC	01/01 to 12/31	0.07 CFS	2.4 AF
<u>Totals:</u>		0.07 CFS	8.7 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

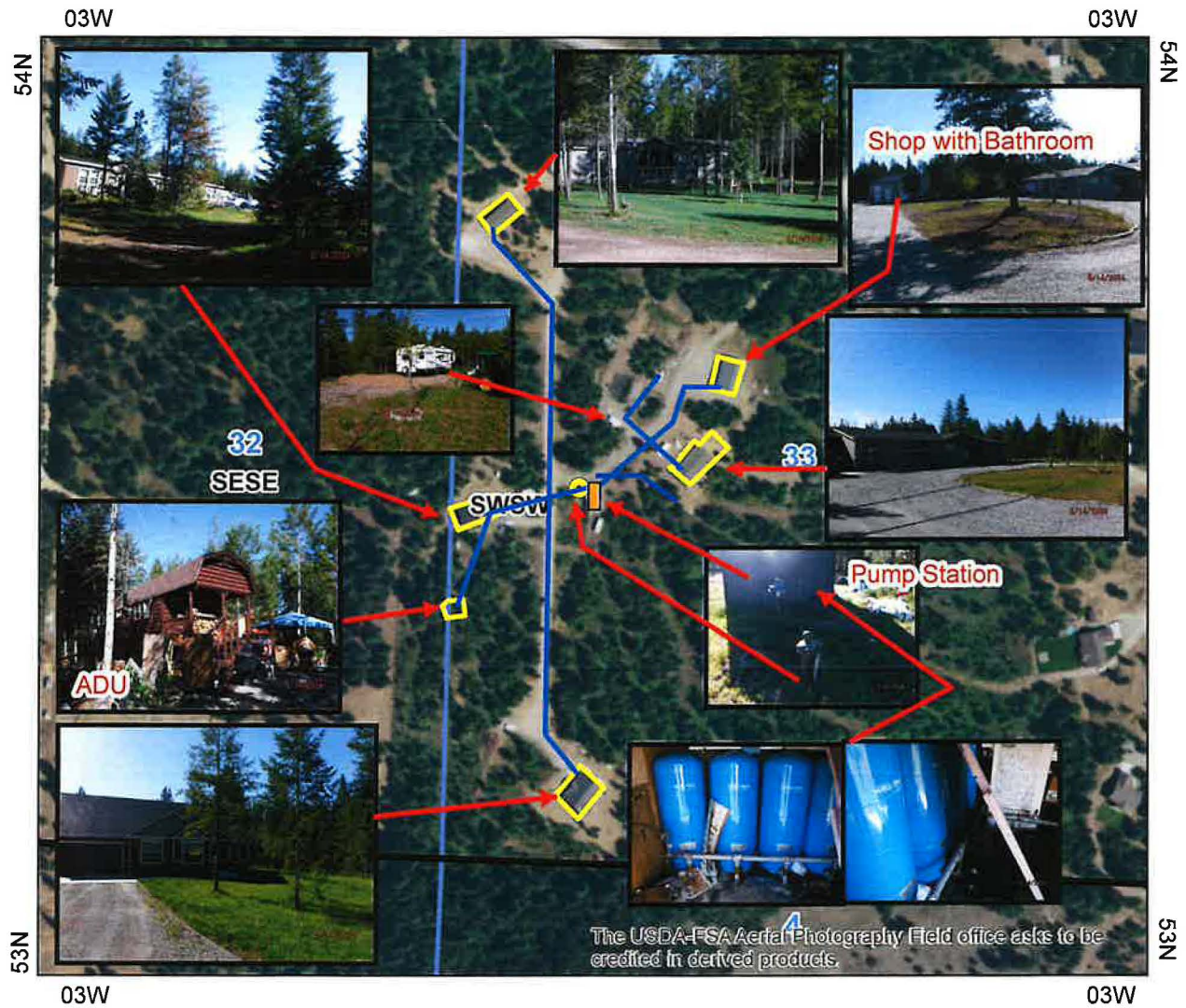
Luke Bates – Sr. Water Resource Agent

Field Examiner's Name  Date 5/15/2024

Reviewer  Date 2/18/2025

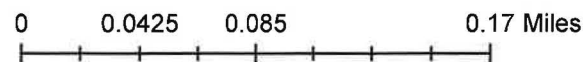
State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17800

This map depicts the DOMESTIC system diagram.



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

This map depicts the IRRIGATION system diagram.



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



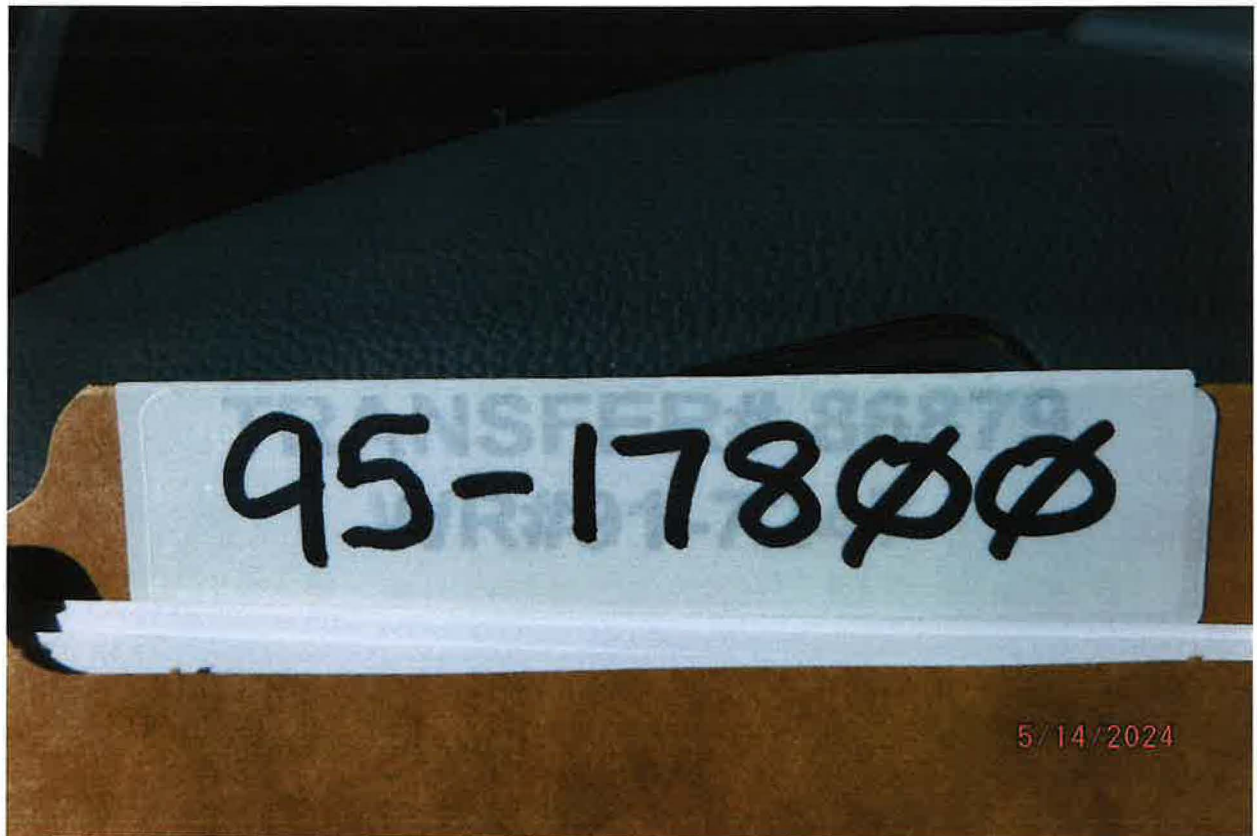
THEORETICAL PUMPING EQUATION(S) FOR WR# 95-17800

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 405 ft, and running at 45 psi.

PUMP EQUATION

WATER RIGHT No. 95-17800

D0084857		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	5	509.0816	0.8	405	45
Q = 0.069 cfs 31.1 gpm						



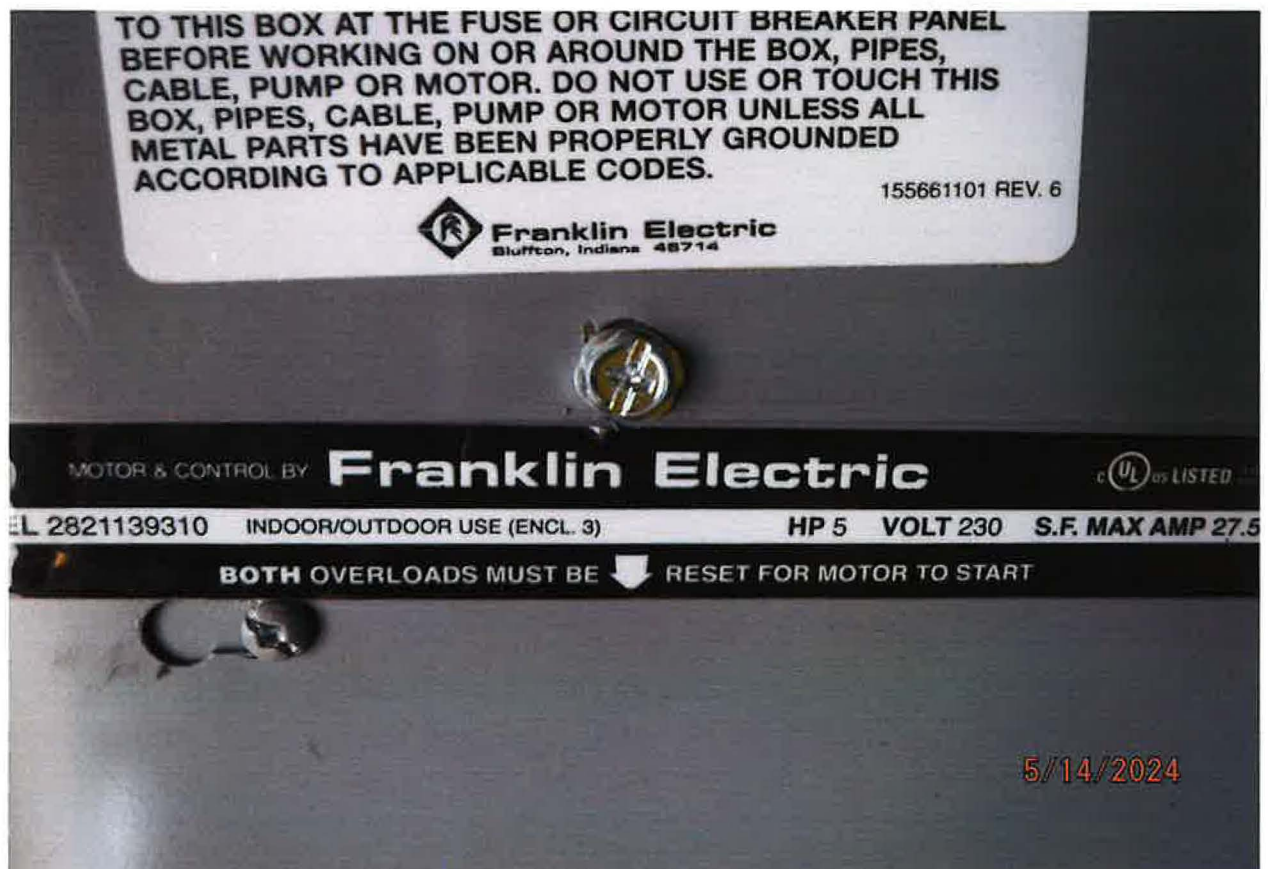
BENEFICIAL USE FIELD EXAM DATE 5/14/2024



POD – GW WELL AND PUMP STATION IN BACKGROUND



DEEPENED WELL D-TAG D0084857



DIVERTING WORKS – 5 HP FRANKLIN ELECTRIC PUMP MOTOR PAIRED WITH PUMP IN WELL



INFLOW FROM WELL TO PUMP STATION (L/H PIPELINE) AND OUTFLOW TO WATER DELIVERY SYSTEM
WITH MANUAL SHUTOFF VALVE (R/H)



SIX PRESSURE TANKS ASSOCIATED WITH THIS WATER SYSTEM; NO STORAGE INCORPORATED



WATER SYSTEM INFRASTRUCTURE SINGLE MAIN PIPELINE



WATER SYSTEM STATIC PRESSURE HOLDS AT 55 PSI



DOMESTIC & IRRIGATION POU – LOT 1, TELOW ESTATES SUBDIVISION



LAWN & LANDSCAPE IRRIGATION FROM FROST-FREE HYDRANTS & HOSE BIBS TO HOSE/SPRINKLERS



DOMESTIC & IRRIGATION POU – LOT 2, TELOW ESTATES SUBDIVISION



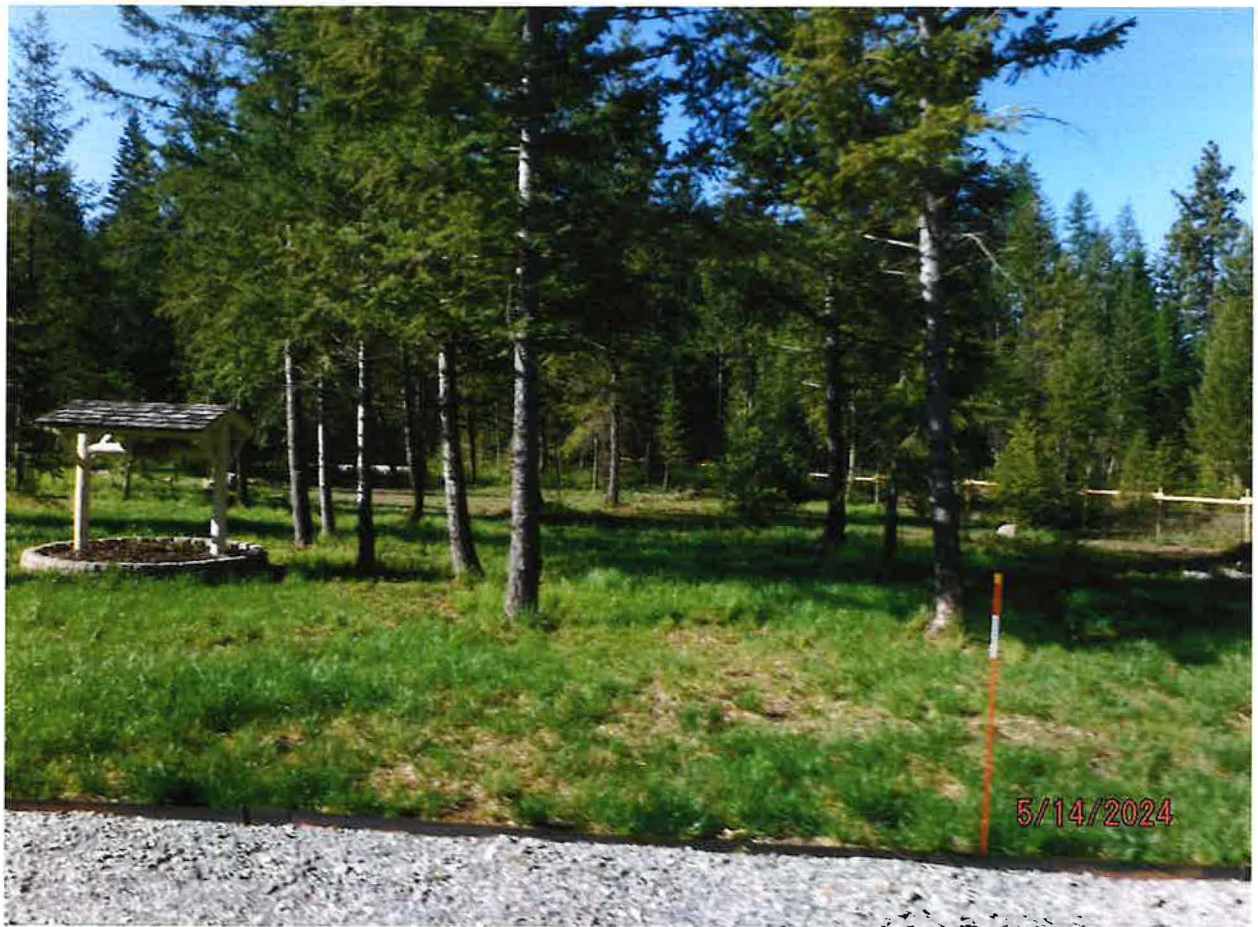
SMALL YARD AND TREE WATERING BY HOSE AND SPRINKLER



DOMESTIC POU – SMALL ADU ASSOCIATED WITH LOT 2; 1 BED 1 BATH USE.



DOMESTIC & IRRIGATION POU – LOT 3, TELOW ESTATES SUBDIVISION



LAWN AND LANSCAPE WATERING OCCURRING AT LOT 3 BY HOSE & SPRINKLER FROM HYDRANTS





DOMESTIC & IRRIGATION POU – LOT 4, TELOW ESTATES SUBDIVISION; PRIMARY RESIDENCE AND SHOP WITH RESTROOM



OCCATIONAL DOMESTIC USE RV LOCATED ON LOT 4



MULTIPLE FROST-FREE HYDRANTS INSTALLED OFF WATER MAIN LINE FOR LAWN/LANDSCAPE IRRIGATION
ON LOT 4



IRRIGATION POU – LOT 4



IRRIGATION POU – LOT 4; LANDSCAPE PLANTINGS





IRRIGATION POU – LOT 4



BACK YARD PRIMARY RESIDENCE LOT 4



IRRIGATION POU – LOT 4



FENCED GARDEN WITH FROST-FREE HYDRANT TO HOSE & SPRINKLERS INSIDE FENCELINE