

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**BENEFICIAL USE FIELD REPORT**

**A. GENERAL INFORMATION**

**Permit No:** 95-18153  
**Exam Date:** 05/09/2023

1. Current Owner:  
JOEL BOTKER PO BOX 2852 HAYDEN ID 83835-2852 AND/OR  
KAREN BOTKER PO BOX 2852 HAYDEN ID 83835-2852
2. Accompanied by: Karen Botker  
Phone No: 208-659-7795  
Address: Same as above  
Relationship to permit Holder: Permit holder.

3. **SOURCE:**  
GROUND WATER

**Method of Determination:** Arcmap & 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 SYSTEM**

1. **LOCATION OF POINT(S) OF DIVERSION:**  
GROUND WATER SE¼ SW¼, Sec. 17, Twp 51N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS. POD is located at -116°51.8709, 47°45.7536; well D-TAG D0079434.

**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 |        |
| 51N | 04W | 17  |    |    |    |    |    |    |    |    |    |    |    | 2.0 |    |    |    |    | 2.0    |

Total Acres: 2.0

**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 |        |
| 51N | 04W | 17  |    |    |    |    |    |    |    |    |    |    |    | X  |    |    |    |    |        |

Method of Determination: Beneficial use field examination & 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 |
|---------------------------|-------------------|----|------------------|-----------|-----------------------------------|
| D0079434                  | Franklin Electric | 3  |                  |           |                                   |

**D. FLOW MEASUREMENTS**

1.

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

2. Measurements: Unable to perform flow measurements due to inadequate pipe requirements. Main water line from well routed direct to pressure tank located in the garage prior to water distribution.

**E. FLOW CALCULATIONS**

  X   Additional Computation Sheets Attached

Measured Method: Theoretic pump equation estimates flow as follows:

- D0079434 - 3 hp pump at 305 ft with 50 PSI operating pressure equals 22.6 gpm or **0.05 cfs** considering department rounding standards.

**F. VOLUME CALCULATIONS**

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.0 \text{ ac} \times 3.0 \text{ afa} = 6.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 246\text{-days} \times 1.9835 = 24.4 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{6.0 \text{ af}}$$

2. Volume Calculations for Other Uses: Domestic annual volume = in-home water usage for 1 home & shop = **0.6 af**.

**G. NARRATIVE/REMARKS/COMMENTS**

Field exam performed on 5/9/2023 with the applicant, Karen Botker, showed a groundwater well being used for domestic and irrigation uses. At the POD, GW well D0079434 routes a buried main service line west a short distance to a garage that includes the control panel for the 3 HP pump motor installed in the well and a pressure tank as part of the diverting works. From the pressure tank the main line routes to a nearby shop and frost-free hydrants for irrigation use. I was unable to perform a flow measurement due to inadequate pipe requirements and a theoretic pump equation derives flow rate for 3 HP pump at 320 ft depth with 50 PSI operating pressure equaling 22.6 gpm or 0.05 cfs considering department rounding standards.

Permit approved development for 1 home with shop and 2 acres irrigation; department standard diversion rates for these uses were permit approved, but due to pump performance determined at time of exam the maximum diversion rate for licensing equals **0.05 cfs**. The irrigation component diversion rate is being reduced from 0.06 cfs to 0.05 cfs, limited by pump performance. The domestic component diversion rate equals 0.04 cfs which is the standard for 1 home with shop restrooms.

The domestic POU was observed during the exam consisting of a custom-built home with garage & large shop. Photographs of the domestic use were taken and are clearly visible in Arcmap aerial imagery, which was used to trace out the domestic POU during licensing review. Annual volume for domestic in-home use only 1 home with shop restroom equals **0.6 af** as recommended for licensing.

The applicant applied for 2 acres of irrigation which was observed during the exam. The Irrigation POU was sketched on field maps consisting of landscape trees, plants, garden beds, and a large lawn space around the residence. During licensing review Arcmap aerial imagery was used to trace out the irrigation POU which consists of 2.0 acres authorized **6.0 af** annually. The applicant's irrigation system is primarily pressurized sprinklers for lawn areas, but there is minor dripline use for landscape plants around structures & hose to sprinkler use for a fenced garden. The maximum diversion volume recommended for licensing equals the sum of two beneficial uses or **6.6 af**.

Condition 046 was removed from the permit during licensing review. Condition 132 was revised to remove the bathroom description from the shop. Beneficial use of water was proven during the exam and the added description of restrooms are not necessary for licensing purposes. All other conditions of approval are being carried to licensing. 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 11/15       | 0.05 CFS                 | 6.0 AF               |
| DOMESTIC              | 01/01 to 12/31       | 0.04 CFS                 | 0.6 AF               |

Totals: 0.05 CFS 6.6 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 -

Field Examiner's Name                     *L. Bates*                     Date           7/21/23          

Reviewer                     *Chris Buel*                     Date           5/21/24

State of Idaho  
Department of Water Resources  
**Attachment to Field Exam**  
95-18153

DOMESTIC system diagram.



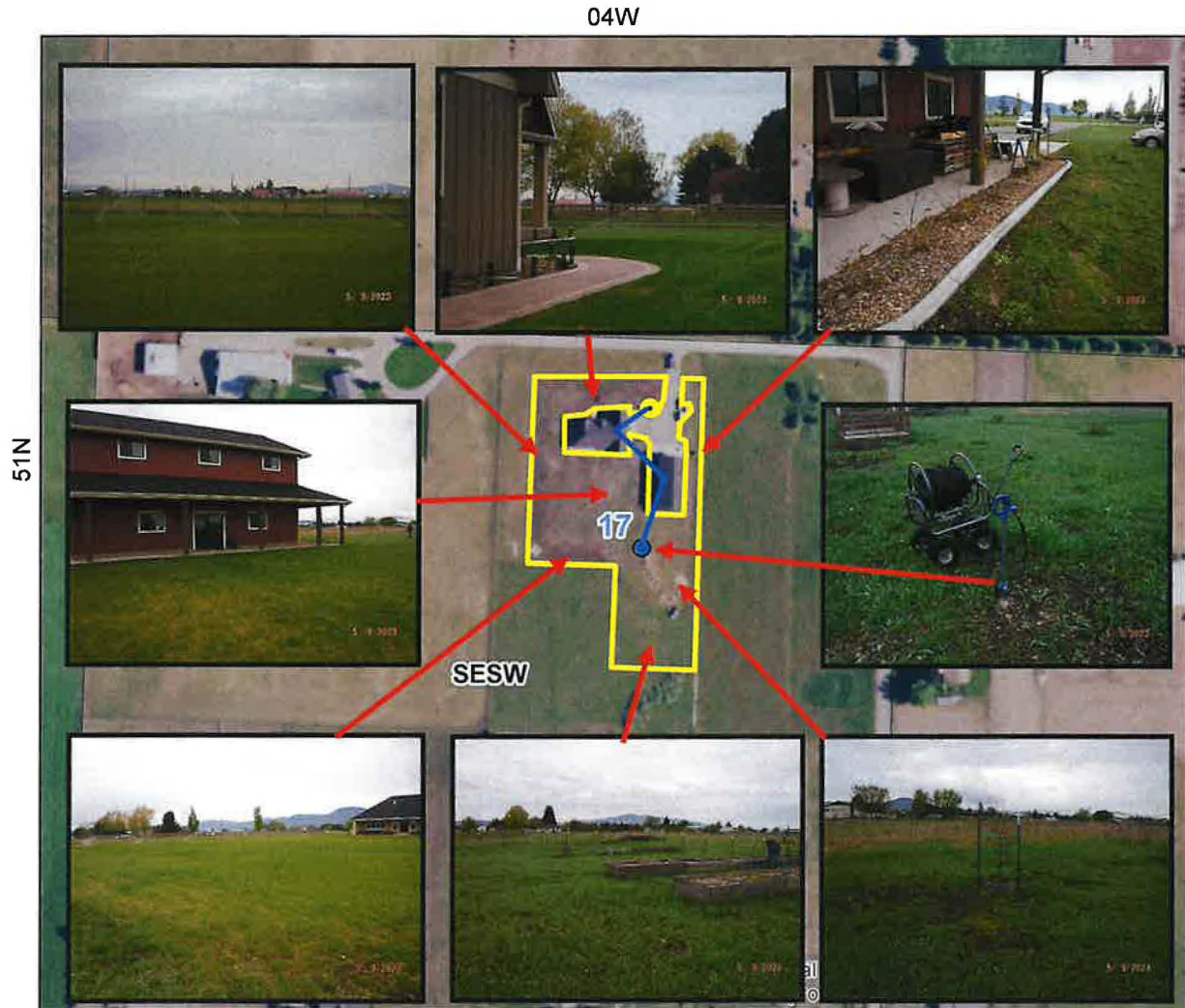
0 0.035 0.07 0.14 Miles

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



State of Idaho  
Department of Water Resources  
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IRRIGATION system diagram.



0 0.035 0.07 0.14 Miles

-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters
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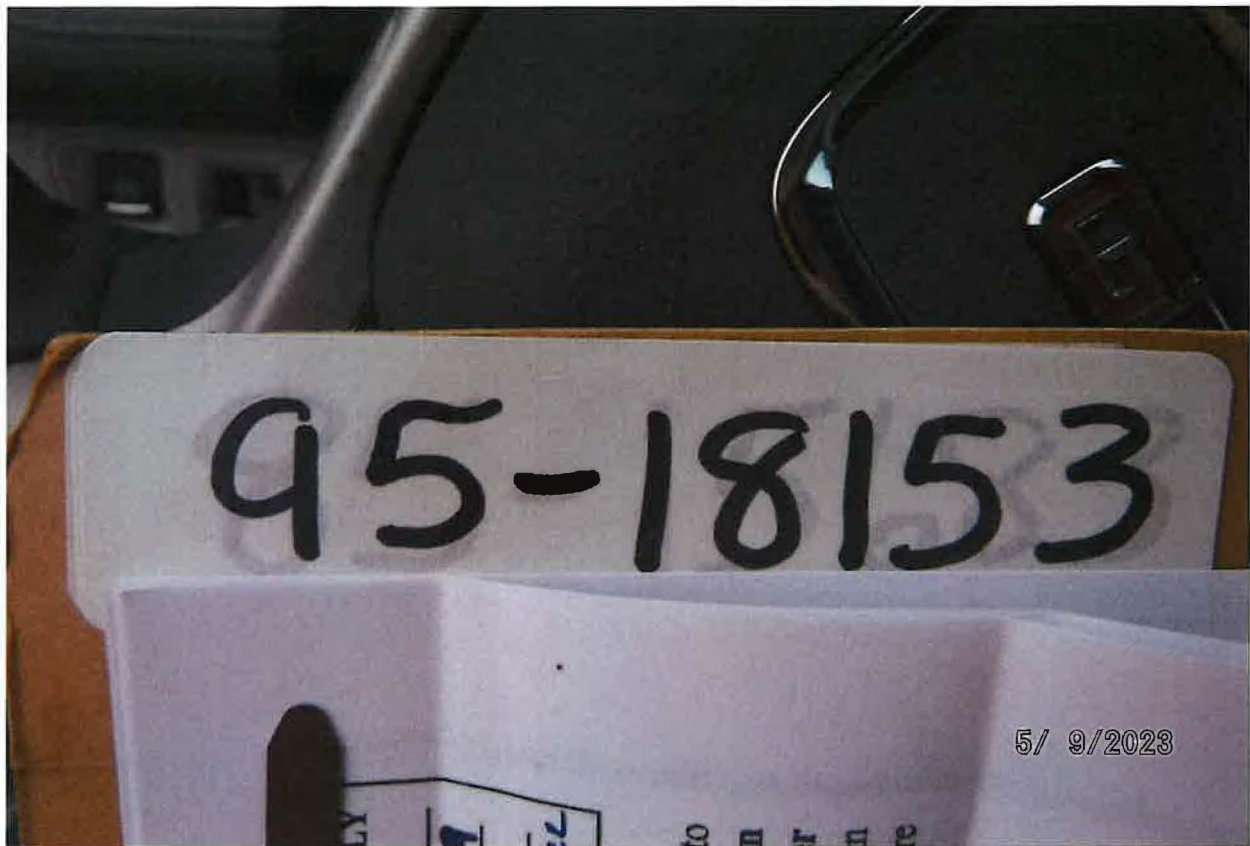
THEORETICAL PUMPING EQUATION(S) FOR WR# 95-18153

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 305 ft, and running at 50 psi.

**PUMP EQUATION**

**WATER RIGHT No. 95-18153**

| <b>96-93-N-105-000</b>                  | <b>HP</b> | <b>H in feet</b> | <b>Efficiency<br/>as a<br/>decimal</b> | <b>Pumping<br/>lift in feet</b> | <b>System<br/>pressure<br/>in PSI</b> |
|-----------------------------------------|-----------|------------------|----------------------------------------|---------------------------------|---------------------------------------|
| Q = $HP \cdot 8.8 \cdot \text{Eff} / H$ | 3         | 420.6463         | 0.8                                    | 305                             | 50                                    |
| Q = <b>0.050 cfs</b> <b>22.6 gpm</b>    |           |                  |                                        |                                 |                                       |



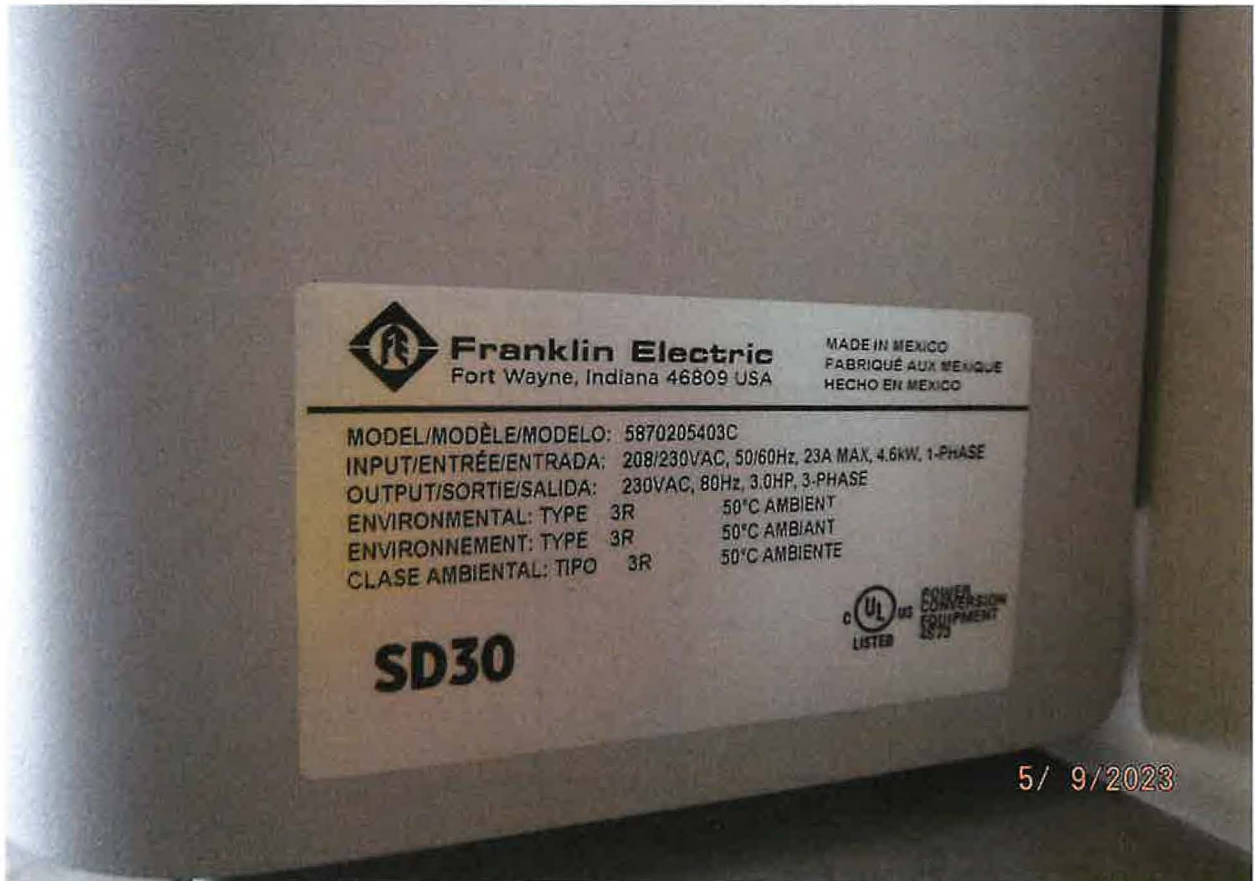
BENEFICIAL USE FIELD EXAMINATION DATE 5/9/2023



POD – GROUNDWATER WELL D0079434



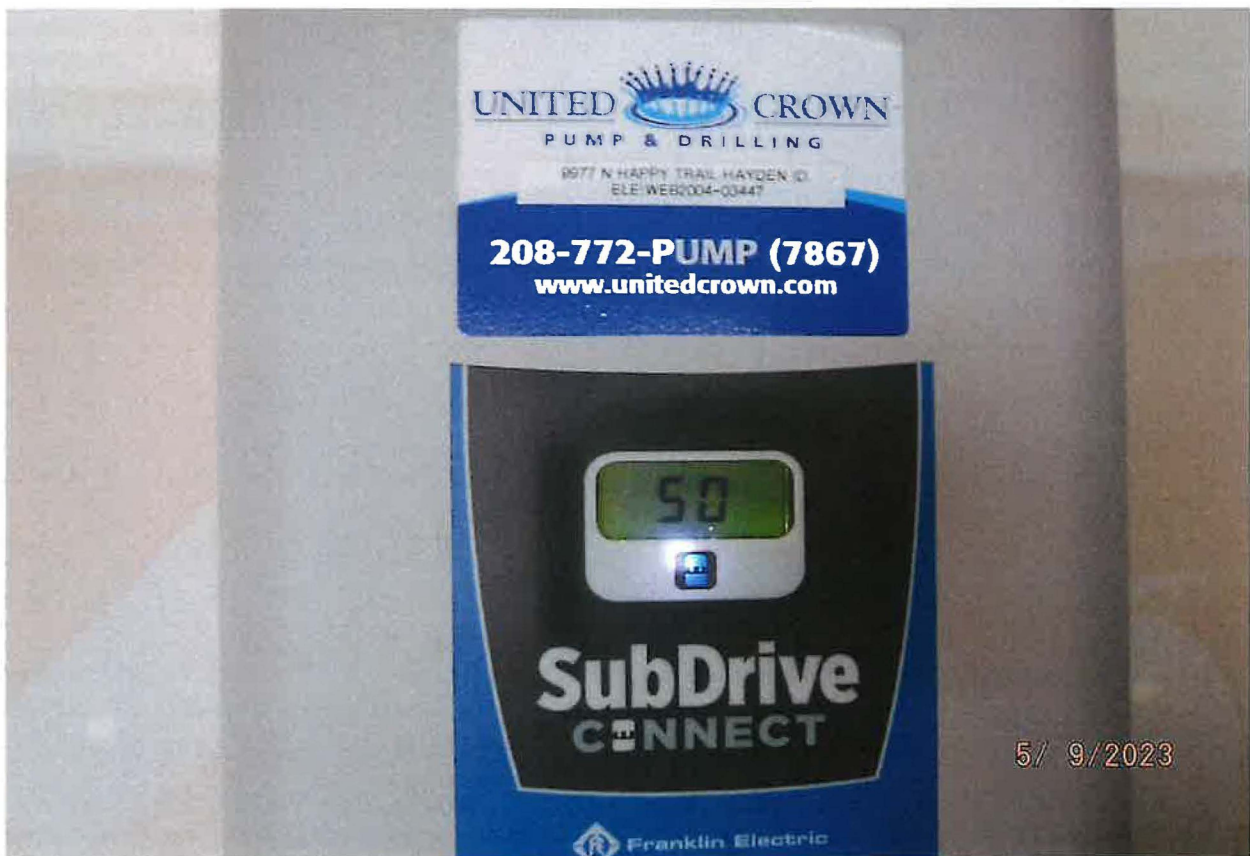
WELL D-TAG D0079434



DIVERTING WORKS – 3 HP, 3 PHASE FRANKLIN ELECTRIC PUMP MOTOR (SD30) INSTALLED IN WELL



WATER SYSTEM PUMPS DIRECT TO PRESSURE TANK PRIOR TO DISTRIBUTION TO BENEFICIAL USES



50 PSI WATER SYSTEM OPERATING PRESSURE



DOMESTIC POU – 1 RESIDENCE WITH SHOP (RESTROOM FACILITIES INCLUDED IN SHOP)



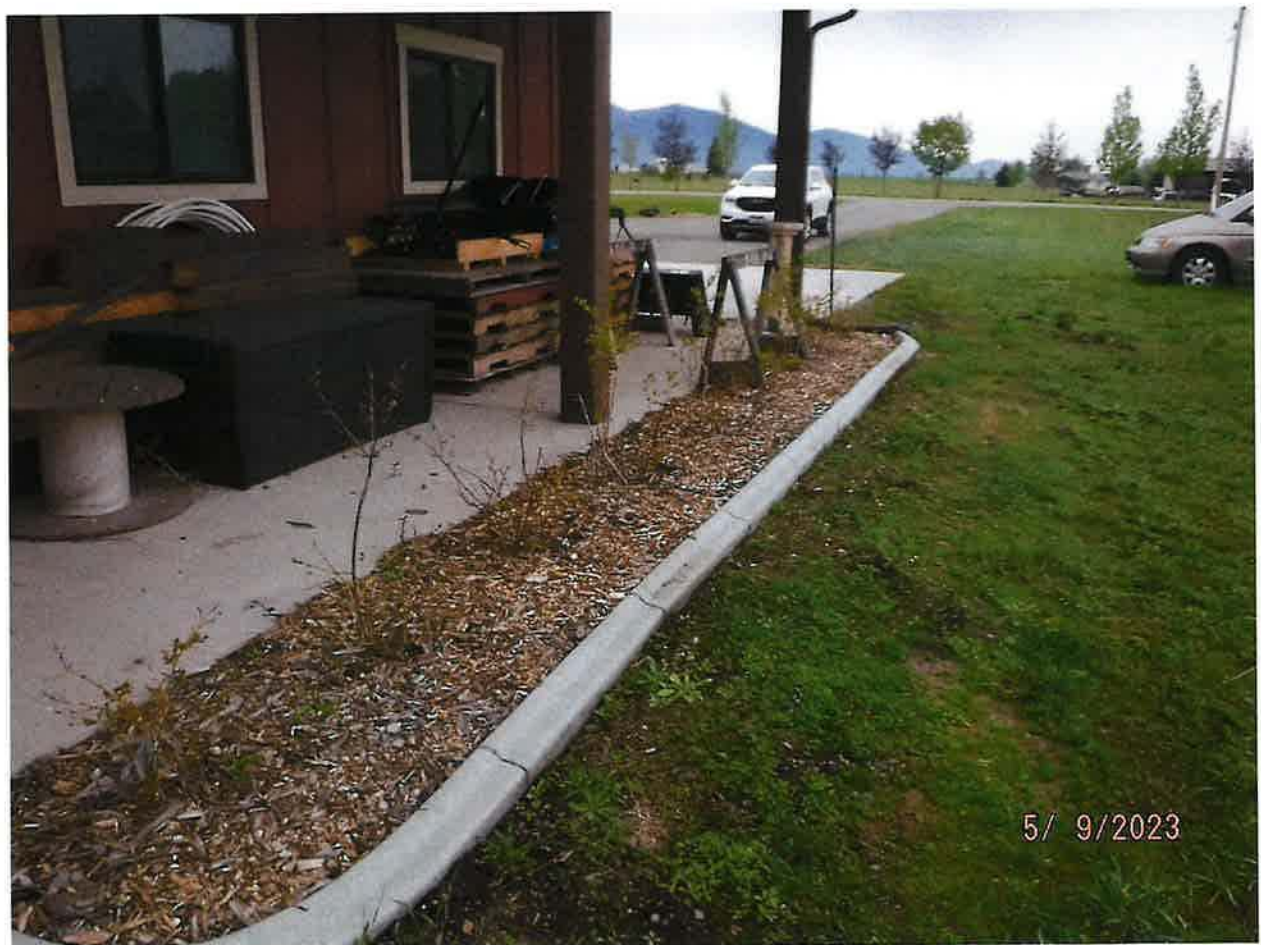


IRRIGATION POU – INCLUDES PRESSURIZED SPRINKLER SYSTEM FOR YARD AND HOSE & SPRINKLER FOR GARDEN AREA





IRRIGATION POU – INCLUDES LANDSCAPE WATERING AROUND SHOP





IRRIGATION POU – FROST FREE HYDRANT TO HOSE & SPRINKLER FOR FENCED GARDEN AREA





IRRIGATION POU – GRADEN AREA





IRRIGATION POU – GARDEN AREA





IRRIGATION POU – LARGE LAWN SPACE AROUND RESIDENCE





IRRIGATION POU – ROAD FRONTAGE EAST OF RESIDENCE

