

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17245
Exam Date: 09/27/2022

1. Current Owner:
MARK LATHAM 950 S CARPENTER LOOP POST FALLS ID 83854-5748 AND/OR
ALICIA LATHAM 950 S CARPENTER LOOP POST FALLS ID 83854-5748
2. Accompanied by: Mark Latham
Phone No: 208-964-3188
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: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-17238	Groundwater	Domestic, Stockwater	Decreed in CSRBA

Comments: Right 95-12738 is owned by the permit holders and uses common water system infrastructure as this right for Domestic use 1 home with ½ acre irrigation and stockwater for up to 20 head mixed stock with a POU that directly overlaps this Permit's POU(s). I have recommended removal of the stockwater beneficial use component during licensing review as the permit holders are covered by their earlier decreed right. Removal of stockwater eliminates stacking or WRs and there are no additional overlapping concerns for licensing this right.

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

Water Right No.	Source	Purpose of Use	Basis
95-17238	Groundwater	Domestic, Stockwater	Decree

Comments: I've recommended licensing Permit 95-17245 with condition F06 added to describe the shared POD between the two applicants' WRs 95-17238 & 95-17245.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER NW¼ NE¼, Sec. 18, Twp 50N, Rge 05W, B.M. KOOTENAI County

Method of Determination: GPS. POD is located at -117°0.5643, 47°41.0870; well 95-67-N-22

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	
50N	05W	18		2.1															2.1

Total Acres: 2.1

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
95-96-N-22	SIEMENS	5	UNKNOWN	UNKNOWN	1 INCH MAIN SERVICE LINE

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 due to inadequate pipe requirements. Main service line from well routes directly to two pressure tanks prior to distribution to water uses. A Theoretic Pumping Equation was used to calculate flow rates during licensing review with the 5 hp pump capacity equaling 62.4 gpm or 0.14 cfs considering department rounding standards.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Theoretic pump equation for a 5 hp pump installed at a depth of 115 feet with 60 psi operating pressure equals 62.4 gpm or 0.14 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

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

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 29.3 \text{ af}$$

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

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/27/2023 with the applicant, Mark Latham, showed a groundwater well being used for irrigation & stockwater uses on the property. At the POD, GW well 95-67-N-22 is enclosed in a small shed that houses two pressure tanks as part of the water conveyance system. The applicant's warranty deed demonstrates easement to the POD located on the neighboring parcel. The water system has a 5 hp Siemens pump motor relay control panel located within the pump house indicating a 5 hp pump is paired with the motor. From the two pressure tanks a main service line routes upgrade approximately 430 feet prior to use for domestic, stockwater, & irrigation on the applicant's property. I was unable to perform a flow measurement due to inadequate pipe requirements and a theoretic pump equation derives flow rate for a 5 HP pump at 115 ft depth with system operating pressure of 60 psi equaling 0.14 cfs considering department rounding standards.

The applicants' permit authorized development of irrigation & stockwater beneficial uses with diversion rates of 0.09 cfs and 0.02 cfs respectively. The applicants own a previously decreed water right, 95-17238, which uses the same groundwater source for domestic use 1 home with ½ ac irrigation included and stockwater use for up to 20 head of mixed stock. 95-17238 authorizes a diversion rate of 0.06 cfs. The stockwater use designated on the Permit's statement of completion indicates 4 sheep and 20 chickens. I observed chickens on the property, but the goats were not present at the time of examination. Regardless, the applicant maintains stockwater beneficial use with an earlier priority date from WR 95-17238 and have not added stock use beyond 20 head mixed stock. I've removed the stockwater beneficial use from Permit 95-17245 during licensing review to negate stacking of water rights.

I'm recommending 95-17245 for the diversion rate of **0.6 cfs** for irrigation purposes & maximum diversion rate based on department standards for irrigation of less than 5 acres. Considering the theoretic pump equation value of 0.14 cfs and prior Right 95-17245 being authorized 0.06 cfs, I annotate a combined total of 0.12 cfs recommended for diversion from the groundwater well. Considering the applicant's need two pressure tanks and pump upgrade for water uses prior to distribution there is likely head loss that results in 0.14 cfs not being realized for actual diversion of water at the faucet/hose to sprinkler end of the system. I don't have any enlargement concerns based on diversion rate for licensing this right. I have added condition F06 to describe the well POD is shared by Rights 95-17238 & 95-17245.

The irrigation POU was walked during the exam and photographs were taken of active irrigation practices. I used field maps to sketch the POU which consists of lawn, several garden spaces, berry bushes along driveways, and an orchard tree plot. During licensing review, I used ArcMap aerial imagery to accurately trace out the irrigation POU which equals 2.1 acres. The annual volume for irrigation equals **6.3 af** which is recommended as the maximum diversion volume for licensing purposes.

I removed Conditions 26A, 046, and X02 during licensing review & added condition F06. All other conditions on the permit shall be carried forward to licensing. Overlap concerns: as discussed in detail on PG1, the applicant's own Decreed Right 95-17238 which directly overlaps this Permit's irrigation POU. The domestic use occurring under 95-17238 is a separate beneficial use than the irrigation found under the Permit, and the stockwater use being removed from the active Permit negates any overlap concerns between the two Rights. There are no other overlapping concerns for licensing this 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	0.06 CFS	6.3 AF
<u>Totals:</u>		0.06 CFS	6.3 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 [Signature] Date 12/11/2023

Reviewer Chae 134 Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17245

This map depicts the IRRIGATION system diagram.



0 0.035 0.07 0.14 Miles

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



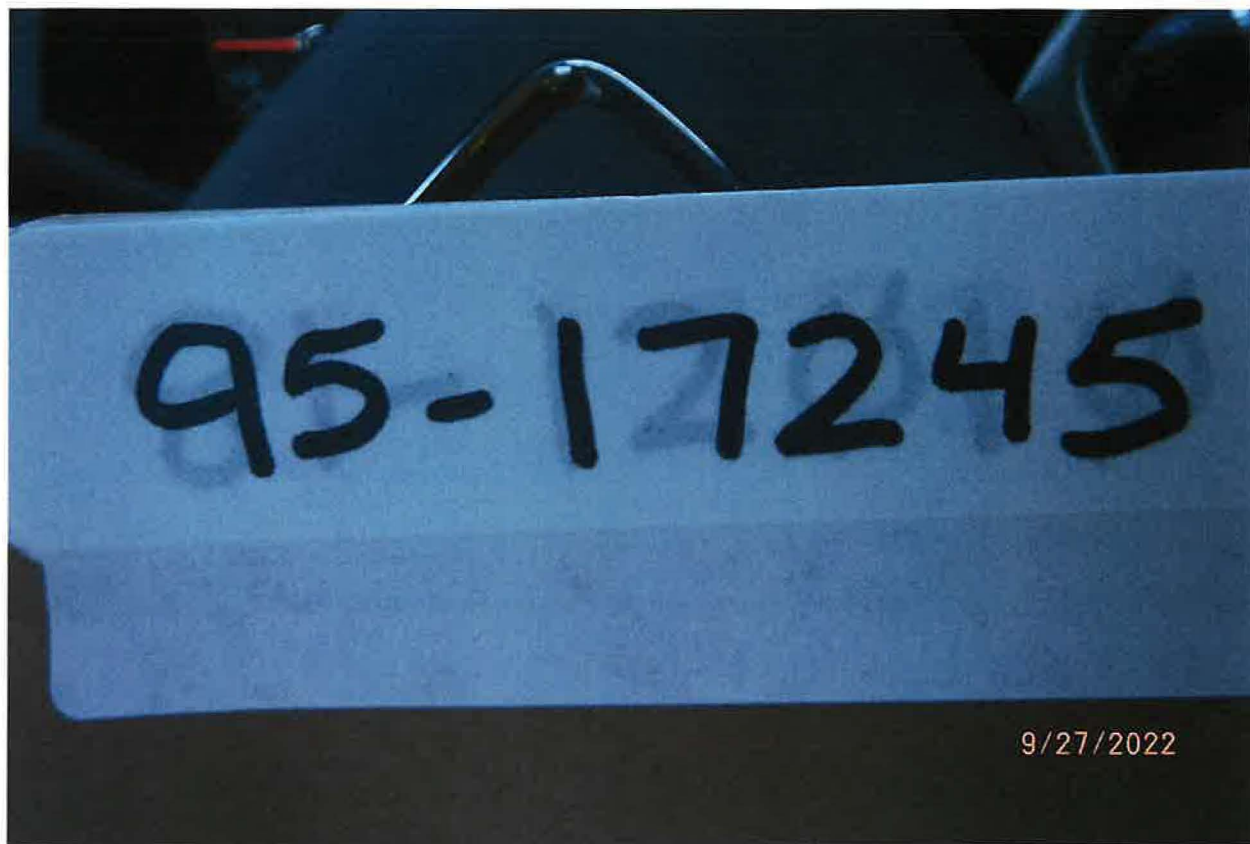
THEORETICAL PUMPING EQUATION(S) FOR WR# 95-17245

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 115 ft, and running at 60 psi.

PUMP EQUATION

WATER RIGHT No. 95-17245

95-67-N-22	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP \cdot 8.8 \cdot \text{Eff}}{H}$	5	253.7755	0.8	115	60
Q = 0.139 cfs 62.4 gpm					



BENEFICIAL USE FIELD EXAM DATE 9/27/2022



POD – GROUNDWATER WELL LOCATED WITHIN WELL HOUSE



POD – WELL 95-67-N-22 (1967 DRILLED WELL)



DIVERTING WORKS – MAINLINE PIPES DIRECT TO TWO PRESSURE TANKS BEFORE DISTRIBUTION TO WATER USES.



5 HP PUMP INSTALLED IN WELL

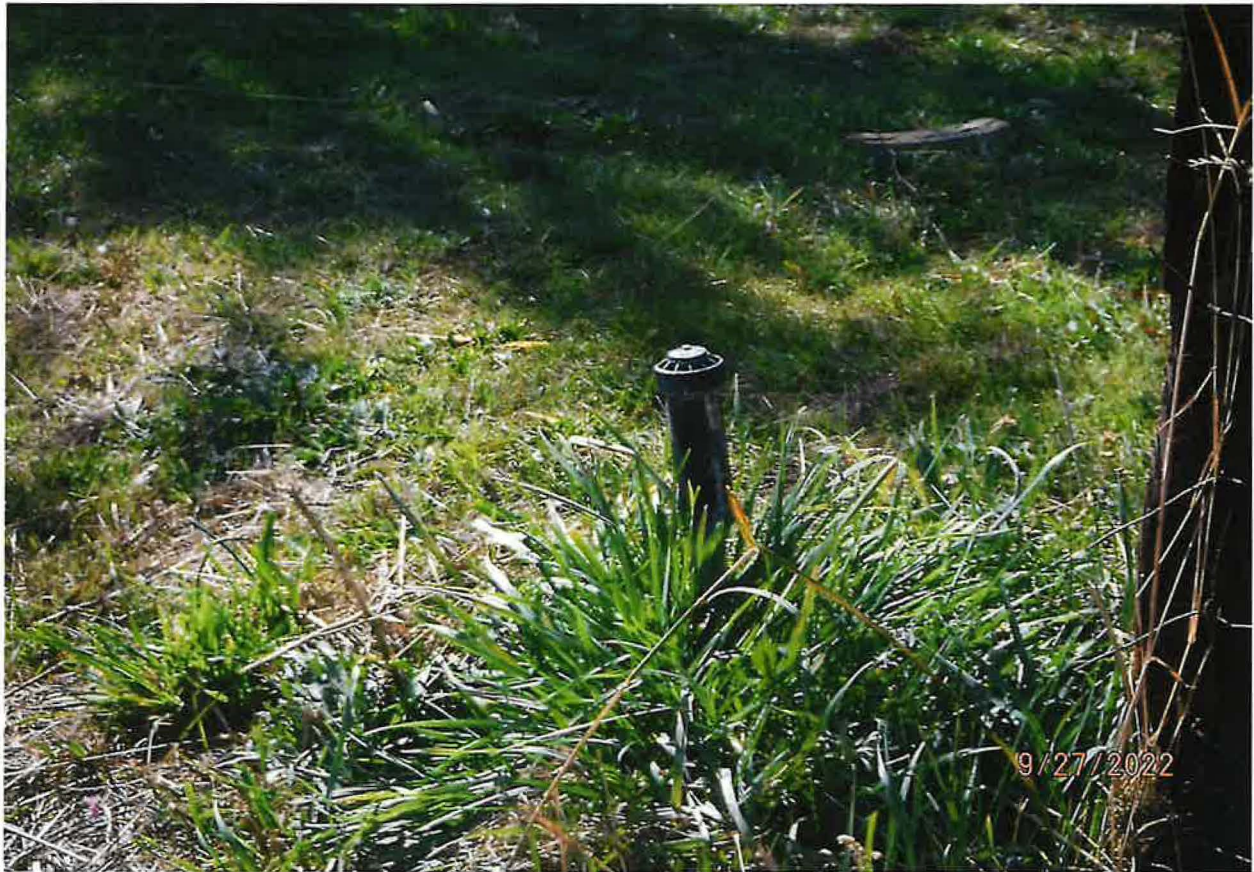


IRRIGATION RISER WITH HOSE SPLITTERS LOCATED NEAR MAIN RESIDENCE



EXAMPLE – FROST FREE HYDRANT WITH HOSE SPLITTERS USED FOR IRRIGATION AT POU





EXAMPLE – PRESSURIZED SPRINKLERS FOR IRRIGATION OF LAWN AREA



EXAMPLE – SOAKER HOSES USED FOR TREES & GARDEN AREA



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





STOCKWATER POU





STOCKWATER POU

