

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-11707
Exam Date: 07/07/2015

1. Current Owner:
VAN WALL WATER ASSN INC 3498 N MEYER RD POST FALLS ID 83854-5938
2. Accompanied by: Erin Finch & Michael Bennier
Phone No: 208-618-1580
Address: Same as above
Relationship to permit Holder: Water Assn Secretary & Water Assn President respectively

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
95-7244	GROUNDWATER	DOMESTIC	DECREED

Comments: Deceased right 95-7244 is owned by the same applicant as this permit, who filed a beneficial use claim during the CSRBA process. The ½ acre of irrigation per 3ea parcels occurring under domestic beneficial use for 95-7244 is part of the same irrigation POU as 95-11707, creating minor overlap between the two rights. Condition X35 was added during licensing review for 95-11707 to describe combined use limitations between the two rights for both diversion rate and irrigation acreage.

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

Water Right No.	Source	Purpose of Use	Basis
95-7244	GROUNDWATER	DOMESTIC	DECREED

Comments: 95-7244 and this permit 95-11707 share the same groundwater POD – well 95-73-N-79. Condition F06 was added to the permit during licensing review describing the shared well use. The POD for 95-7244 was revised in ADHOC to reflect the GPS designated well site found during the field exam for 95-11707; comments were added to 95-7244 explaining the revision in POD.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
GROUND WATER SW¼ NW¼, Sec. 29, Twp 51N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS. POD is a groundwater well 95-73-N-79 located at -116°52.224 47°44.392.

PLACE OF USE: IRRIGATION

[illegible]

Total Acres: 9.2

PLACE OF USE: STOCKWATER

[illegible]

Method of Determination: Field examination(s) and Arcmap aerial imagery.

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
95-73-N-79	PENTEK	5			

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 main service pipe from well routing directly to 3ea pressure tanks which influence flow rates downstream at beneficial. A Theoretic Pump Equation was developed to derive diversion rate equal to 41.2 GPM or 0.09 cfs considering department rounding standards. The 5 hp pump operating at 45 PSI is installed at approximately 280 ft.

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = 5 HP pump @ 280 ft, with 45 PSI operating pressure = 41.2 GPM or **0.09 cfs** considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 9.2 \text{ ac} \times 3.0 \text{ afa} = 27.6 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.09 \text{ cfs} \times 246\text{-day} \times 1.9835 = 43.9 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \mathbf{27.6 \text{ af}}$$

2. Volume Calculations for Other Uses:

Stockwater Annual volume =

- 200 chickens = 10 gal x 2 (factor for 200 chickens) x 365 day = 7,300 gal per year
- 5 cows x 12 gpd x 365 days = 21,900 gal per year
- 20 goats x 2 gpd x 365 day = 14,600 gal per year
- Total = (7,300 gal + 21,900 gal + 14,600 gal) / 325,850 gal per af = 0.13 af or **0.1 af** considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

Department staff performed an initial field examination on 7/7/2015 with the applicant, Karl Peach – President Van Wall Water Assn (at that time), which showed a groundwater well 95-73-N-79 being used for irrigation & stockwater purposes. At time of exam the applicant was irrigating a hay field in addition to garden and lawn spaces for 3ea separate parcels. Department staff took photographs of the well, diverting works, and irrigation practices during the 2015 exam, but did not capture sufficient data about the well pump motor nor diversion rate required to accurately license this water right.

A follow-up site visit was conducted on 3/24/2022 with Mr. Michael Bennier – current time Van Wall Water Assn President. The applicant's entire irrigation water system was not active at time of exam, but additional data was collected pertaining to well pump HP, diverting works & current irrigation/stockwater practices, and photographs of the rest of the irrigation POU and irrigation system. I have utilized a blend of information from the initial field exam & follow-up site visit to make recommendations for licensing purposes. The applicant's development period for the permit was 5/24/2010 – 5/13/2013; year 2013 aerial imagery was used to validate irrigate practices toward acreage recommendations as it was the final year of the development period.

At the GW well, the applicant has a 5 HP Pentek pump motor installed in the well; this has not changed since the last field exam date. During the site visit I was unable to perform flow measurements due to main service pipe from well routing directly to 3ea pressure tanks before distribution to beneficial uses, which influences flow rates. A Theoretic Pump Equation was developed to derive diversion rate equal to 41.2 GPM or 0.09 cfs considering department rounding standards. The 5 HP pump operating at 45 PSI is installed at approximately 280 ft. Well driller report identified approx. 25 gpm at time of completion in 1973, which is less than the theoretical pump equation but due to the age of the well driller report the current time pump equation derived values are recommended to license this Rathdrum Prairie Groundwater Aquifer well.

The irrigation POU consists of a hay field, and lawn/tree/garden watered areas for 3ea parcels: 51N04W293850, 51N04W293400, & 51N04W293320. The applicant's irrigation system incorporates a main trunk service that routes from the well direct to an easement along Meyer Rd, then North with stub-in(s) to each of the three parcels. Irrigation occurs by frost free hydrant and hose-to-sprinklers on the two southern parcels, and pressurized sprinklers for parcel 51N04W293320. Department staff identified the hay field associated with parcel 51N04W293400 was irrigated during the development window and current owner does irrigate and is developing a better system to increase efficiency in irrigating for stock feed crops.

A field area associated with parcel 51N04W293320 which was part of the permit's irrigation POU was not developed and has only been used a few years since 2013 for dry agriculture hay cutting. This portion of the original irrigation POU was removed during licensing review as it was not developed. Field maps were used to sketch out the irrigation POU, and Arcmap aerial imagery year 2013 was used to accurately trace out irrigation acreage equaling 9.2 acres. The annual volume for the irrigation beneficial use equals $9.2 \text{ ac} \times 3.0 \text{ afa} = 27.6 \text{ af}$, which is recommended for licensing purposes.

The stockwater POU consists of the entirety of the three parcels described above, in which the applicants have 200 chickens, 20 goats, and 5 cows during the development period of the permit. The cattle stockwater usage has varied in the past few years due to ownership changes within the water Assn, but historical use from the permit's development period is being used to recommend volume for licensing. The annual volume for the stock listed above was derived at **0.1 af** considering department rounding standards which is recommend for licensing purposes. The maximum diversion volume equals $27.6 \text{ af (irrigation)} + 0.1 \text{ af (stockwater)} = 27.7 \text{ af}$.

Conditions 26A and X02 were removed from the permit during licensing review. Condition(s) 01R & 175 were added based on Rathdrum Prairie Groundwater Management Area (RPGWMA) requirements. Condition F06 was added due to the applicant having a separate decreed right claimed in the CSRBA which uses the same POD. Condition X35 was added in order to mitigate overlap concerns as discussed below.

Overlap concerns: Decreed right 95-7244 is owned by the same applicant as this permit, who filed a beneficial use claim during the CSRBA process. The ½ acre of irrigation per 3ea parcels occurring under domestic beneficial use for 95-7244 is part of the same irrigation POU as 95-11707, creating minor overlap between the two rights. Condition X35 was added during licensing review for 95-11707 to describe combined use limitations between the two rights for both diversion rate and irrigation acreage. There are no additional overlap concerns for this water right.

Have conditions of permit approval been met? ☒ 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	0.09 CFS	27.6 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF

Totals: 0.09 CFS 27.7 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 -

Field Examiner's Name  Date 3/29/2022

Reviewer  Date 5/1/2022

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-11707

IRRIGATION system diagram.



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

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
Attachment to Field Exam
95-11707

STOCKWATER system diagram.



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

0 0.045 0.09 0.18 Miles



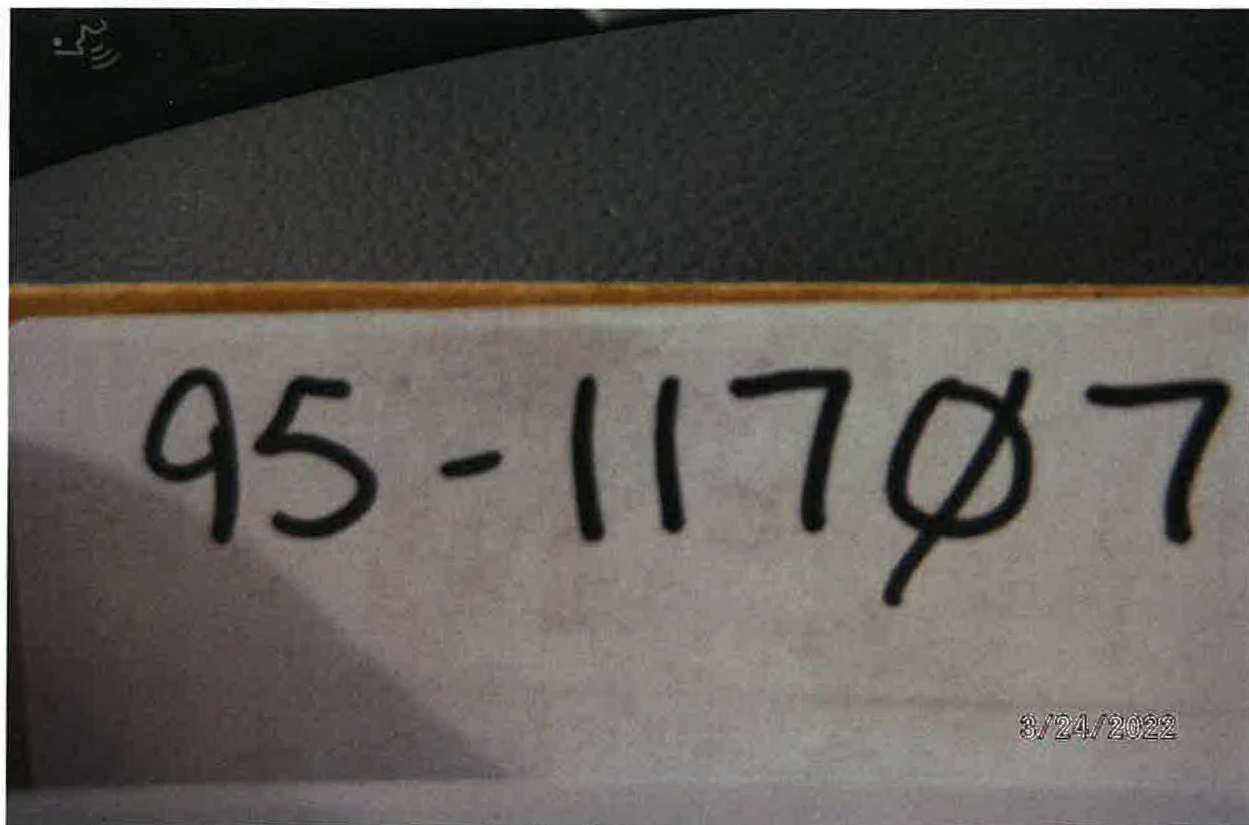
THEORETICAL PUMPING EQUATION(S) FOR WR# 95-11707

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 280 ft, and running at 45 psi.

PUMP EQUATIONS

WATER RIGHT No. 95-11707

95-73-N-79	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	384.0816	0.8	280	45
Q = 0.092 cfs 41.2 gpm					



INITIAL FIELD EXAM DATE 7/7/2015; FOLLOW UP EXAM DATE 3/24/2022



POD – GROUNDWATER WELL DRILLED IN 1973 LOCATED WITHIN PUMP HOUSE



POD – WELL 95-73-N-79; LOCATED IN CRAWLSPACE OF PUMP HOUSE



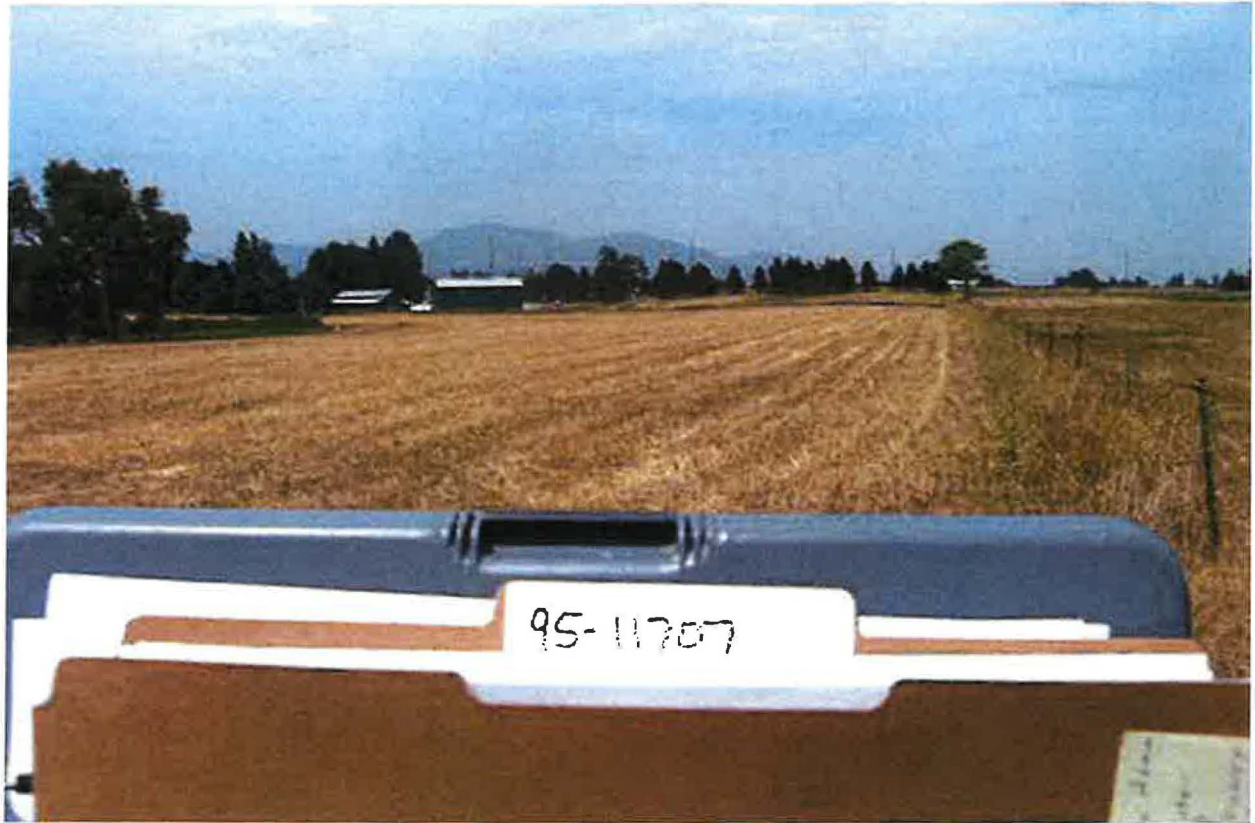
5 HP PENTEK PUMP MOTOR INSTALLED



DIVERTING WORKS – 3EA PRESSURE TANKS INSTALLED IN WATER SYSTEM



WATER SYSTEM MAIN SERVICE LINE TO POU



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU



IRRIGATION POU – HAND LINE FOR IRRIGATING HAY FIELD



IRRIGATION POU



STOCKWATER POU



STOCKWATER POU





STOCKWATER POU





IRRIGATION & STOCKWATER POU

