

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-9480
Exam Date: 09/15/2020

1. Current Owner:
GARWOOD WATER COOPERATIVE PO BOX 1137 HAYDEN LAKE ID 83835
2. Accompanied by: Bob Chandler
Phone No: 208-691-3428
Address: 3525 S. Stack RD, Couer D'Alene ID 83814
Relationship to permit Holder: Applicant's representative / water system operator

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
95-8532	GROUNDWATER	MUNICIPAL	DECREEED

Comments: Right 95-8532 uses groundwater from same 2 wells to provide services to the same municipal POU as this water right permit 95-9480. Condition X35 has been incorporated during licensing to mitigate any overlap concerns related to diversion or volume related to the combined water use for the two rights. Due to the large POU service area of the Garwood Water Cooperative system there are numerous single parcel water rights that overlap the POU, but are not connected to the water system and not a concern for overlap, and not cataloged in this report.

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

Water Right No.	Source	Purpose of Use	Basis
95-8532	GROUNDWATER	MUNICIPAL	DECREEED

Comments: Right 95-8532 and this right 95-9480 have the same 2 wells at the POD(s), and utilize the same water system infrastructure. Condition F06 was incorporated during licensing to describe the two rights having the same POD(s).

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

GROUND WATER NE¼ SE¼, Sec. 24, Twp 52N, Rge 04W, B.M. KOOTENAI County
GROUND WATER NE¼ SE¼, Sec. 24, Twp 52N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS. PODs are two wells located at -116° 46.229, 47° 50.322 (Permit 95-86-N-125, E0005199) and -116° 46.225, 47° 50.321 (Permit 95-95-N-0005-000).

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
WELL 1 95-86-N-125	FRANKLIN	60			
WELL 2 95-95-N-0005-000	FRANKLIN	25			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FLOWMETERS	McCROMETER					

2. Measurements: Two each flowmeters installed on main line pipes from each well were used to complete flow measurements. Each pump was cycled on and operated for a period of 10 minutes to identify variance in flow. The largest diversion rate was entered from each well's flowmeter equaling the combined diversion rate from the two wells = 360 gpm = 0.8 cfs considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method:

- well 1 (95-86-N-125) 60 hp pump = 250 gpm
- well 2 (95-95-N-0005-000) 25 hp pump = 110 gpm
- combined diversion rate between the two wells = 360 gpm = **0.8 cfs**

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses:

Annual Volume / Maximum Diversion Volume = 32,858,000 gal (year 2018) / 325,850 gal per acre foot = **101.0 af** considering department rounding standards; annual volume provided by applicant in an annual report to IDWR dated January 23, 2019.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/15/2020 with the applicant's representative, Bob Chandler, showed two groundwater sources providing water for the Garwood Water Cooperative municipal water system. The water conveyance system incorporated two wells with 60 hp and 25 hp pumps diverting water to 2ea 48,000 gallon storage tanks, before being distributed to pressure tanks and piping to the service area. At the POD(s), the two wells are located in-line approximately 8 feet apart, and the pump house is co-located with the wells. 2ea flowmeters that are installed on main line pipes for each well were used to complete flow measurements. Each pump was cycled on independently and operated for a period of 10 minutes to identify variance in flow. The largest diversion rate was entered from each well's flowmeter equaling the combined diversion rate from the two wells = 250 gpm (well 1) + 110 gpm (well 2) = 360 gpm = 0.8 cfs considering department rounding standards. The maximum diversion rate that will be applied to the license equals **0.8 cfs**.

The municipal large area POU is the same service area as that which was permit approved for. During the field exam and follow-up email/phone interaction with Mr. Chandler and Mr. Corky Witherwax, Garwood Water Cooperative President, it was identified the water system currently has 145 service connections as of an email dated 10/27/2020. Mr. Witherwax asserted the water system has an additional 27 "will serve" future commitments not yet active for the water system. The "will serve" commitments occur as larger parcels are subdivided, resulting in future development and result in the need for additional service connections. The "will serve" commitments do not conform to department standards for service connection stub-ins, and are not recommended for credit toward additional volume when determining the annual and maximum diversion volume for licensing purposes.

The volume derived for the Garwood Water Cooperative system equals the largest year water consumption reported to IDWR by the applicants within the permit development period. Review of the permit back file records shows a letter submitted on 1/23/2019 which provided years 2015-2018 well production annual volume values. Further review of records show a letter submitted on 2/27/2019 from the applicant that provides years 2012-2014 well production annual volume values. Mr. Chandler provided year 2019 well production annual volume data by email on 9/15/2020. Referencing the historic volume data, year 2018 well production was the largest water usage year for the water system, and is being used to determine the annual and maximum diversion volume for licensing purposes equal to 32,858,000 gal (year 2018) / 325,850 gal per acre foot = **101.0 af** considering department rounding standards.

Condition 26A was removed from the permit during licensing review. Condition 128 was updated describing the water system POU. Condition F06 was added to describe that rights 95-8532 and 95-9480 share the same PODs listed above. A text condition similar to X35 was replaced with condition X35 to describe limitations between water rights 95-8532 and 95-9480, and to mitigate overlap concerns. Right 95-8532 uses groundwater from same 2 wells to provide services to the same municipal POU as this water right permit 95-9480. Condition X35 states that rights 95-8532 and 95-9480 when combined shall not exceed a total diversion rate of 0.8 cfs, and a total annual maximum diversion volume of 101.0 af at the field headgate. Due to the large POU service area of the Garwood Water Cooperative system there are numerous single parcel water rights that overlap the POU, but are not connected to the water system and not a concern for overlap, and not cataloged in this report. 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>
MUNICIPAL	01/01 to 12/31	0.80 CFS	101.0 AF

Totals: 0.80 CFS 101.0 AF

2. Recommended Amendments

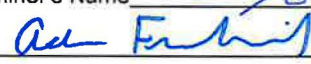
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

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

I. AUTHENTICATION

Luke Bates - Water Resource Agent

Field Examiner's Name  Date 10/30/2020

Reviewer  Date 5/21/2021

Garwood Water Cooperative

Attachment to Field Exam

95-9480

MUNICIPAL system diagram.



● Point of Diversion

Water Service Area Boundary

Townships

PLS Sections

Quarter Quarters

0 0.5 1 2 Miles

WATER CONVEYANCE SYSTEM INCLUDES MILES OF UNDERGROUND WATER MAIN LINES, AND NUMEROUS SECONDARY SERVICE LINES IN ORDER TO PROVIDE SERVICE TO THE LARGE PLACE OF USE FOR THE GARWOOD COOPERATIVE WATER SYSTEM.



Bates, Luke

From: Corky Witherwax <corkywith@gmail.com>
Sent: Tuesday, October 27, 2020 4:24 PM
To: Bates, Luke; Garwood Water
Subject: Garwood Water Coop Info

Luke,

Here is where we sit after a busy summer, we have 145 hookups and we have 27 will serves hanging out there.

Please let me know that you have received this since it is our first email.

Corky Witherwax
208-661-6287

Bates, Luke

From: Bob Chandler <bobchandlercda@gmail.com>
Sent: Tuesday, September 15, 2020 9:51 AM
To: Bates, Luke
Subject: Garwood Cooperative 2019 Well Production

Luke,

For the year of 2019, Garwood Cooperative had a well production of 31,893,000 gallons.

Thanks,
B.

Bob Chandler
District Manager



Avondale Irrigation District
PO Box 81, Hayden ID 83835
Office (208) 772-5657
Mobile (208) 691-3428

Water Conservation Plan

January 2021

This water conservation plan has been created and approved by the board of directors for the Garwood Water Cooperative (GWC). GWC encourages users to utilize conservation methods to conserve water usage. This plan includes conservation tips and practices such as water wise landscaping to ensure water is not wasted or used inappropriately.

HOUSEHOLD USE

The Coop recommends that when building a new residence or replacing existing faucets, shower heads or toilets that the homeowner use or replace them with low flow fixtures.

WATER EFFICIENT LAWN WATERING PRACTICES

Summer lawn watering creates large demands on local water utilities. Water supply treatment and storage facilities are often built two, three and even four times larger to supply additional demands created by lawn watering. This extra capacity is not used for most of the year and adds significant costs to the design, construction, and operation of a water system. Water customers and communities can save money by using water more efficiently. These water efficient lawn watering practices can help maintain a beautiful yard and conserve valuable water supplies.

GENERAL INFORMATION

Adjust sprinklers to water only grass areas and not impervious surfaces such as streets, driveways, and walkways. Mow grass to a height of 2 to 3 inches. Taller grass shades the roots and soil surface, which helps reduce the amount of water that is lost to evaporation. Use sprinklers that spray low large drops vs. high fine ones. Use handheld soakers for small trees, shrubs, and plants. Use shut off nozzles on hoses and repair leaky hoses and fittings. Limit the amount of lawn area you plan to water.

WHEN TO WATER

About one inch of water per week (including precipitation) is adequate for maintaining a healthy lawn. Use a can or rain gauge to help determine the amount of water applied by the sprinkling system and supplied by rainfall. Do not use a fixed schedule for lawn watering. Apply water only when it is needed. Over watering can promote diseases and affect the health of the lawn. A simple test for determining if grass needs water is to walk on the lawn and if you leave footprints, it may be time to water the lawn. Using a spade or gardening tool to check soil conditions 2 to 6 inches below the surface can provide information on soil moisture and the need to water. A good soaking once or twice a week is better than watering every day. Allowing the soil to dry between watering will allow the roots to grow to greater depths and help make turf more drought tolerant. Understand how weather affects your lawn. High temperature and low humidity as well as wind cause your lawn to need more water.

JAN 21 2021

BEST TIMES FOR LAWN WATERING

Water during the cool part of the day to minimize water lost to evaporation. Early morning hours (4 a.m. to 8 a.m.) are the best, and the peak water consumption hours (4 p.m. to 9 p.m.) should be avoided. Avoid watering during midday hours when it is hot and sunny to prevent scalding the turf. Watering at night is not recommended because the lawn stays wet for a long period of time which can promote diseases and affect the health of your lawn. Avoid watering during rainy or windy weather conditions.

AUTOMATIC LAWN WATERING SYSTEMS

An automatic timer is part of most buried sprinkler systems but can be added to any sprinkler system for an exceptionally low cost. Automatic timers make it easy to set sprinkling systems to apply specified amounts of water during the best times of the day. Set systems to turn on between 4:00 a.m. and 8:00 a.m. in the morning. Set the system to turn on for three 10-minute sessions with each session 2 hour apart to improve water infiltration and reduce runoff. Equip the system with moisture sensors so the system does not turn on when it is raining. Set the automatic timer to water every 3 or 4 days adjusting the time and frequency, as needed, to accommodate changes in seasonal water demand. Learn to adjust your irrigation system seasonally according to the weather.

WATERING RESTRICTIONS

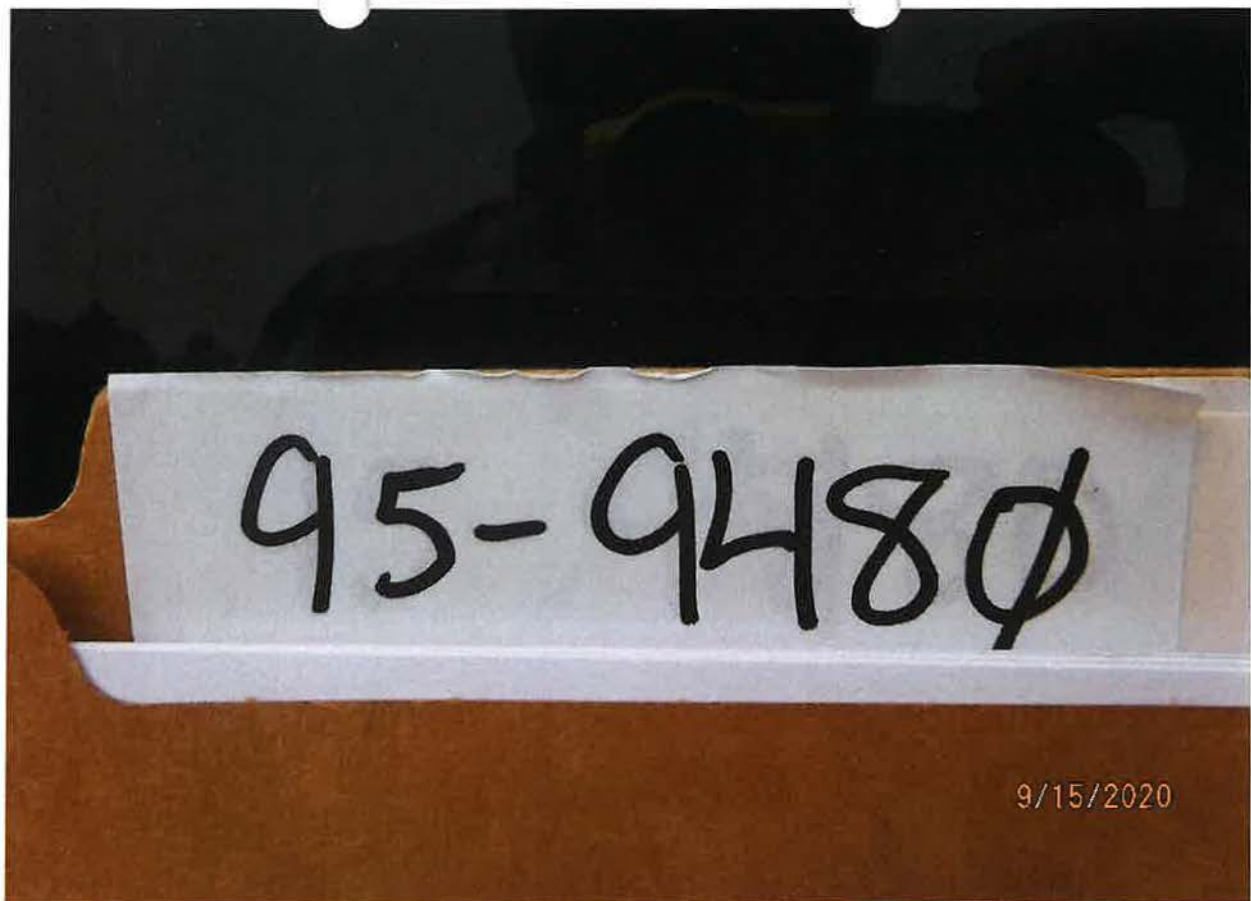
Local watering restrictions are sometimes necessary due to limited treatment capacity or reduced water supplies caused by mechanical problems or drought conditions. Water efficient lawn watering practices can help reduce the need for watering restrictions and expensive expansions to the water system. Here are a few recommendations in the event lawn watering restrictions are needed. Water less frequently and gradually reduce the amount of water. This will help reduce stress and condition the turf if a total ban on lawn watering becomes necessary. Reduce the amount of foot traffic allowed on the lawn as much as possible. Allow the grass to grow longer to reduce moisture loss from the soil. It is important to know your soil type and the amount of water it is going to consume. Sandy soils require more water than clay soils.

NEW LAWNS AND LANDSCAPING ALTERNATIVES

Adding organic matter before seeding will help improve water and nutrient retention. Reduce water requirements by using drought-tolerant grass seed and sod. Reduce turf areas by planting drought-tolerant trees, shrubs, and plants. Follow proper fertilization guidelines to promote healthy grass.

CURRENT CONSERVATION PRACTICES

- GWC has a full-time water operator, Bob Chandler. Bob has experience with finding leaks and helping customers with irrigation questions.
- Customers pay a tiered fee for water used that is used to operate, maintain, and upgrade the water system.
- GWC encourages customers to conserve water by following conservation guidelines published by EPA in (Water Conservation Plan Guidelines, environmental Protection Agency, 1998).
- Address these practices at the GWC annual meeting.



POD - WELL No. 1 95-86-N-125



POD – WELL No. 1 DEQ TAG # E0005199



POD – WELL No. 2 95-95-N-0005-000



POD – WELL No. 2 DEQ TAG # E0005198



PUMP HOUSE AND 2EA WELL LOCATIONS

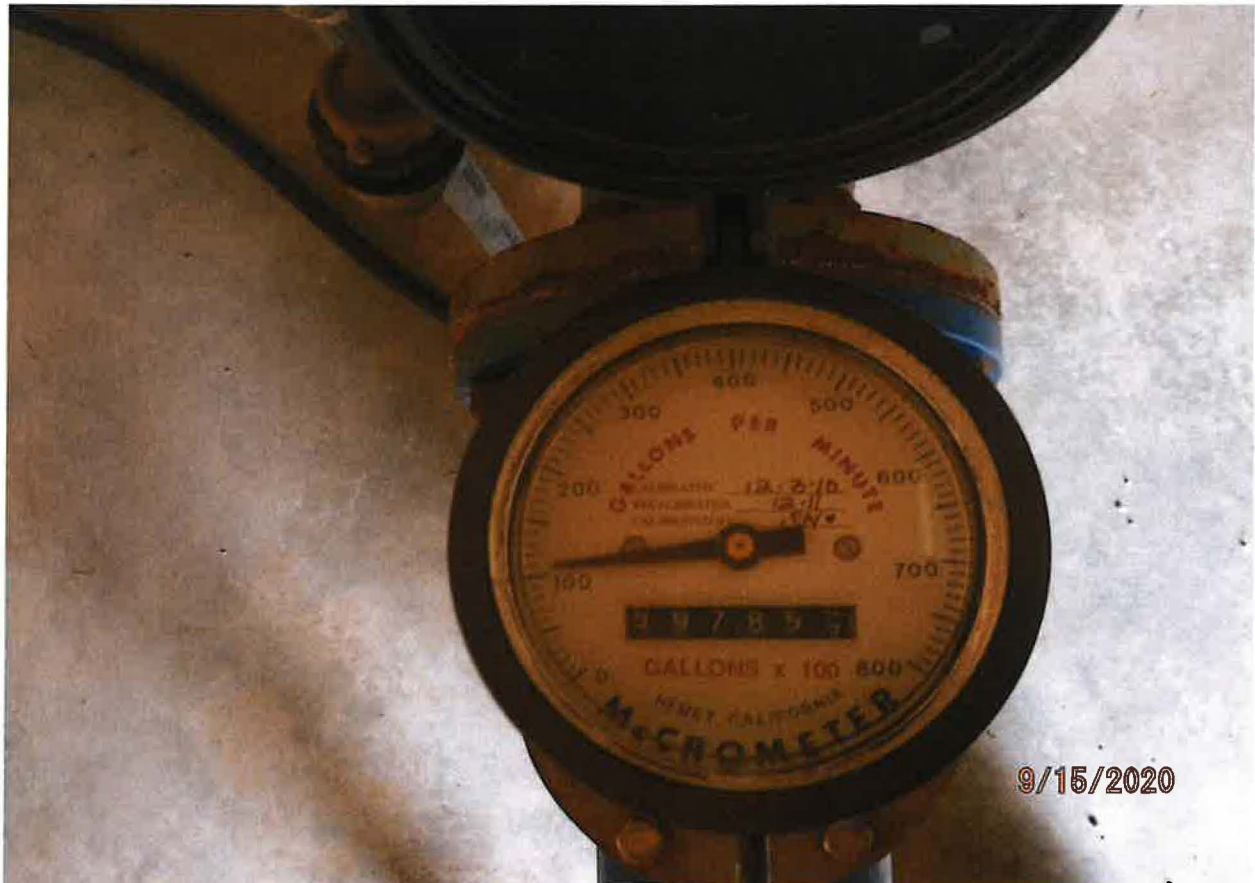


PUMP HOUSE – WATER SYSTEM





WELL No. 1 – 60 HP PUMP WITH 250 GPM FLOW RATE



WELL No. 2 – 25 HP PUMP WITH 110 GPM FLOW RATE



60 PSI SYSTEM OPERATING PRESSURE.