

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONExam Date: 02/23/20241. Does this qualify for an in-office field exam (IDAPA 37.03.02.035.01.r)? X Y ___ N

- a. X Irrigation of 5 acres or less
 b. ___ Storage of up to 14.6 AF for stockwater purposes only
 c. ___ Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less.
 d. ___ Other < >

2. Current Owner: **BRIAN & WENDY CARNEY**

Owner of Record Correct? ___ N

Address of Record Correct? ___ N

If No Explain:

3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: C117753

4. Source: Tributary:

PEND OREILLE RIVER**COLUMBIA RIVER**Method of Determination: Bonner County Maps, GIS, and Tax Lot Data.Change in Source: ___ Y X N**B. OVERLAP REVIEW**1. Other water rights with the same place of use: X No Overlap

Water Right No.	Source	Purpose of Use	Basis
96-2202	PEND OREILLE RIVER	IRRIGATION	LICENSE
96-8782	PEND OREILLE RIVER	DOMESTIC	LICENSE

Comments: Right 96-2202 is a surface water right for the irrigation of 20 acres within a place of use (POU) GIS shapefile that is the entire NESW of section 3, overlapping the permit POU. However, the current right owner, Ernest Bauer, does not own any parcels in the NESW. The property likely appurtenant to right 96-2202 is a 28-acre parcel owned by Susan Bauer, located in the adjacent parcel south of the permit POU. The domestic right 96-8782 is not claimed or owned by the permit holder. Any overlap seems unlikely as the permit holder is listed as the owner of the parcel appurtenant to the permit POU.

2. Other water rights with the same point of diversion: X NO Overlap

Water Right No.	Source	Purpose of Use	Basis
NONE	NA	NA	NA

Comments: There are no rights sharing the permit point of diversion (POD).**C. DIVERSION AND DELIVERY SYSTEM**

1. Location of Point(s) of Diversion:

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Pend Oreille River	2		NE	SW	3	55N	04W	B.M.	BONNER

Method of Determination: GIS and Tax lot data.Change in POD? ___ Y X N Amendment Required? ___ Y X N

2. Place of Use: IRRIGATION

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N	04W	3									0.2								0.2
		Lot #									2								
Total Acres =																			0.2

Method of Determination: Bonner County Maps, GIS, and Tax Lot Data.Change in POU? ___ Y X N Amendment Required? ___ Y X N

X Delivery System Diagram Description Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable:

X Aerial Photo Attached (required for irrigation of 10+ acres).

___ Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Pump Model	Pump Make	Pump Serial No. or Discharge Size
Screened inlet in River	Unknown	2	Unknown	Unknown.	Unknown

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

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

2. Measurement Comments: The permit holder stated the system operates on a 2 Hp pump. A maximum head of about 30 ft was estimated to the licensed POU using the DRG map.

E. FLOW CALCULATIONS

____Additional Computation Sheets Attached

Measured Method:

A theoretical calculation and Administrative Memo #17 were used to determine a reasonable rate of diversion.

$$Q = (2 \text{ Hp})(8.8)(0.80 \text{ efficiency})/(30 \text{ ft lift}) + (2.31)*(45 \text{ psi}) = 0.11 \text{ cfs}$$

Specifications

Flow	2.6 - 3.09 GPM (9.8 - 11.7 LPM) (based on pressure)
Inlet	3/4" (1.9 cm) Female NPT
Max Throw	46 ft (14 m) @ 60 PSI (4.1 BAR)
Nozzle Trajectory	25 degrees
Nozzles Included	3.0 GPM (11.4 LPM) pre-installed, pre-set at 180 degrees
Operating Pressure	25 - 65 PSI
Pattern	Adjustable or Full Circle
Pop-up Height	5" (127 mm)
Spacing	25 - 46 ft (7.6 - 14m)

Table 1- Toro popup sprinkler specifications.

4 Toro popup heads maximum in a zone- 3 GPM ea. X 4 heads= **12 GPM** or approximately **0.03cfs**

Theoretical Calculation= 0.11cfs

Permit allowed = 0.03cfs

B.U. Limit= 0.01cfs

Recommendation= 0.01cfs

Comments:

Approximately 0.2 acre of irrigation was measured via GIS aerial imagery. The system was described by and permit holder as a 2 Hp electric pump, which conveys water to in-ground sprinkler system with 5 zones (3-4 Toro pop-up sprinkler heads per zone) throughout the POU. The typical toro popup head uses 2.6 - 3 GPM making the maximum output 12 GPM for a zone. The intake to the pump is screened to keep out debris and is removed at the end of the irrigation season.

The theoretical calculation determined approximately 0.11cfs is possible with the 2 Hp pump. Although the use developed is likely higher, according to Administrative Memo #17 up to 0.03cfs per acre is standard for the irrigation of up to 5 acres. The confirmed irrigated POU is approximately 0.2 acres. The minimal reportable rate of 0.01cfs is reasonable for the beneficial use developed. I am recommending a diversion rate of 0.01cfs for the license, as per Administrative Memos #17 & 6.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{0.2\text{-acre} \times 3.0 \text{ AF} = 0.6 \text{ AF}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{0.01\text{cfs} \times 214 \text{ days} \times 1.9835 = 4.3 \text{ AF}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{0.6 \text{ AF}}$$

Comments:

This permit was issued for irrigation use from a natural stream/river source. According to the IDAPA Beneficial Use Examination Rules 37.03.02.35. 01j.viii a diversion volume is not required for irrigation if water is diverted from a natural flowing stream/river or spring. However, as the POU is less than 1 acre condition X31 will be carried on the license stating the annual volume as 0.6 AF.

G. PURPOSE OF USEIrrigation X Y N # Stock NA Domestic # of Homes NA Change in Purpose of Use? Y X N Method of Determination: Bonner County Maps, GIS, and Tax lot Data**H. NARRATIVE/REMARKS/COMMENTS**

This permit for the irrigation of 0.5 acres qualifies for an in-office examination for license. The permit holder submitted the Proof of Beneficial Use, received by IDWR on February 12, 2024, stating in section #3 that the beneficial use was developed for 0.5-acre of irrigation. I was able to confirm approximately 0.2 acres irrigation was developed using aerial imagery (see figures 1 & 2). The permit holder indicated in section #6 of the proof of beneficial use that no fish screen was installed at the intake, so I called the permit holder on February 23, 2024, to discuss the documentation submitted. I followed up the call with an email requesting additional information including a map outlining the irrigated area and POD.

I discussed the system with the permit holder and later received an email from him on February 26, 2024, with photos of the system components, a description of the system, and an aerial image identifying the pump/control valves and POD (Figure 3). The permit holder confirmed that the irrigated area visible in the imagery (0.2 acres) is correct. The system was described by the permit holder as a screened intake (photo 1) from the river to the 2 Hp pump (photo 2) and control valves. There are valves for 5 zones with 3-4 sprinklers per zone, only 1 zone is run at any given time. There are a total of 16 sprinklers throughout the POU, all are Toro pop-up sprinkler heads (Photo 3). The permit holder stated that they set the system to water for 15-20 minutes 3x per week using the controller on the side of the house (Photo 4).

After reviewing the permit holder's response to the information request an area of approximately 0.2 acres is confirmed for irrigation. A theoretical calculation confirmed that the pump can provide the 0.03cfs rate on the permit. However, the permit POU area is approximately 0.2-acre. I am recommending the license be issued with a reported rate of 0.01cfs, as per Administrative Memos 17 & 6. As the diversion is from streamflow the volume was not reported on the license (IDAPA Rules 37.03.02.35, 01j.viii). However, as the irrigated area is less than 1 acre the license will carry condition X31, stating the annual volume allowed is 0.6 AF.

I am recommending the license be issued with a rate of 0.01cfs and conditions X60, 004, 227 and X31. Condition 029 was removed at licensing as the permit holder confirmed there is a screen installed at the intake and no comments were received from IDFG regarding the permit. As the permit POD is within the reach of MSF right 96-8730 for the Pend Oreille River, condition 227 was added at licensing, as per current guidance. Currently no water district is to established a plan for the handling of this minimum stream flow, the Department tries to make right holders aware of any potential issues.

Have conditions of permit approval been met? X Yes No**I. RECOMMENDATIONS**

1. Recommended Amounts:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/01 TO 10/31	0.01 CFS	
	<u>Totals:</u>	0.01 CFS	

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

Other: < >

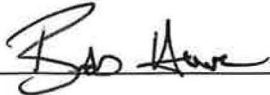
J. AUTHENTICATION- Bob Howe- Water Resource AgentField Examiner's  Date 4/12/24Reviewer  Date 4/15/24



Figure 1- Bonner County GIS- imagery of the measured irrigated POU.



Figure 2- GIS 2022- image of the permit parcel, boundaries indicated by green lines. The yellow boundary indicates the irrigated areas.



Figure 3- Aerial image emailed from permit holder-system diagram providing intake and pumphouse locations.



Photo 1- Intake screen and intake line.

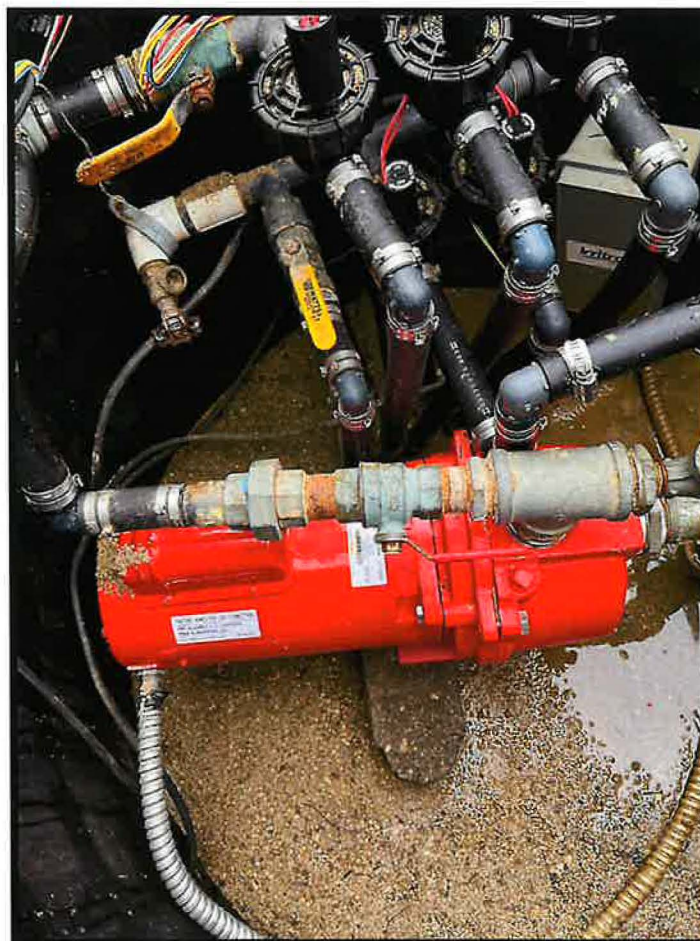


Photo 2 – Pump and Control valves (5 visible valves).



Photo 3- Sprinkler heads used throughout the POU.



Photo 4- Irrigation Controller.

Howe, Bob

From: Brian Carney <bcarney@cochraneco.com>
Sent: Monday, February 26, 2024 6:42 PM
To: Howe, Bob
Subject: RE: Additional Information Requested- Permit 96-13281

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Bob,

Thank you for the email.

We have a pump in the each under the circle lid. It's a 2 horse pump. The line goes straight out from there and sits under the dock. There is a screen on the end of the line to keep sediment out and I suppose fish from entering. It is an on demand under ground pressure system with toro heads. There are I believe 5 zones and a total of 16 heads. We only water the grass 15 to 20 minutes a zone 3 to 4 days a week June, July, August. I believe your calculation is correct at about .02 acres.

Brian

From: Howe, Bob <Bob.Howe@idwr.idaho.gov>
Sent: Friday, February 23, 2024 10:48 AM
To: Brian Carney <bcarney@cochraneco.com>
Subject: Additional Information Requested- Permit 96-13281

Dear Brian & Wendy Carney,

The Department received the Proof of Beneficial Use you submitted for permit #96-13281. I am currently reviewing the permit eligibility for an in-office examination for licensing. In-office examination expedites the licensing process by using information and documentation submitted by the permit holder(s) and GIS aerial images to process the examination without the need for a field examination to be scheduled and conducted at a later time. The permit issued provided a scope for the development of future uses. The purpose of the examination is to record the details of the use that has been developed.

After reviewing your Proof of Beneficial Use, there are a few items in need of further information or clarification.

(1) The aerial imagery indicates approximately 0.2 acres of lawn is irrigated (the irrigated area is rounded to the tenths place); other areas appear to be gravel, driveway, and structures (see attached image). On section #3 of the Statement of Completion you stated that the extent of the irrigation use developed is 0.5 acres. I have attached an aerial image outlining the GIS measurement of the arable land within the parcel. I have also attached a second Bonner County GIS image of the Parcel without irrigated areas identified. Please respond to this email confirming if the area identified is correct. If it is not accurate please submit a system diagram outlining any irrigated areas (you may draw the irrigated area outline on one of the attached images, or one of your own).

(2) Please provide a sketch of the system diagram from the point of diversion to delivery for the irrigation occurring. Making sure to identify the **boundary of the area(s) irrigated, sprinklers, water lines** (including dia. and type, for example ½" poly pipe), the **pump** details (such as Hp, Make, etc.) and location. This can be drawn on one of the images I have attached to this email, or you may use your own. Then attach the diagram to an email with any additional information regarding the system and/or that would be helpful in describing the system diagram.

(3) On your permit condition # 4 requires that you comply with all Idaho Fish and Game requirements, including those requiring fish screens at the intake. On Section #6 of your Statement of Completion you did not indicate that you have installed a fish screen. Is a fish screen installed at this time? If so, please confirm if a fish screen or foot valve is installed on the system diagram email.

Feel free to reach out to me with any questions or concerns regarding the items requested. If I am unavailable any of my team members should be able to assist you if you provide your permit # 96-13281. It is important that you **respond to this request within 14 days** by email and/or phone, in order to pursue this method to expedite your licensing process.

Thank you for your time and attention in this matter.

Best Regards,

Bob Howe



IDAHO DEPARTMENT OF
WATER RESOURCES

Bob Howe | Water Resource Agent

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