

Parker, Cody

From: Bates, Luke
Sent: Wednesday, September 20, 2023 8:29 AM
To: Parker, Cody
Subject: RE: 98-8105 irr acreage
Attachments: DSCF3655.JPG

Cody,

I visited with Mr. Foster yesterday afternoon and collected GPS data & irrigation POU data. The irrigation system doesn't extend around the home, rather incorporates a large garden area and minor pasture plat that is seasonally irrigated depending on whether the neighbors' horses are moved onto the property. This year they were moved off early so there wasn't a lot of irrigating taking place in the pasture portion, but it is reasonable to assume irrigation of the minor pasture area does take place.

Unfortunately, Mr. Foster jumped the gun on his S.of.Completion instead of letting a few seasons of active irrigation take place. I believe this was due to the system being pre-existing and the applicant assuming he was complete based on historic use of water.



Red polygon reflects the irrigation area I noted during my site visit. 1.4 ac approximately.

Let me know if there is any additional information needed.

-116 20.4254, 48 36.9426 +/- 12 ft

Regards,
Luke Bates
Sr. Water Resource Agent
Northern Region
P: 208-762-2817



IDAHO DEPARTMENT OF
WATER RESOURCES
7600 N. Mineral Dr., Suite 100
Coeur D'Alene, ID 83815-7763

From: Parker, Cody <Cody.Parker@idwr.idaho.gov>
Sent: Friday, September 8, 2023 7:16 AM
To: Bates, Luke <Luke.Bates@idwr.idaho.gov>
Subject: Re: 98-8105 irr acreage

A GPS point of the POD would be great too. Blake calculated the quantities based on the acres irrigated. I think that is ok for an in-office license, so I don't think we need any measurements. We can just update the quantities based on the irrigated area you measure.

Thanks Luke

Cody

From: Bates, Luke <Luke.Bates@idwr.idaho.gov>
Sent: Thursday, September 7, 2023 1:56 PM
To: Parker, Cody <Cody.Parker@idwr.idaho.gov>
Subject: 98-8105 irr acreage

Cody,
I'm going to meet with Mike Foster for a site visit on 9/19.

Are you only interested in the field map trace out of active irrigation and nothing else?

Just wanting to validate how much of an exam to perform.

Thanks,

Luke Bates
Sr. Water Resource Agent
Northern Region
P: 208-762-2817



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7600 N. Mineral Dr., Suite 100
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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8105

Exam Date: 07/12/2023

1. 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:**

RANDEE LLEWELLIN FOSTER 63 RELOAD LN NAPLES ID 83847-0300 AND/OR
MICHAEL J FOSTER 63 RELOAD LN NAPLES ID 83847-0300

3. **SOURCE:**

GROUND WATER

Method of Determination: Photographs of well construction**B. OVERLAP REVIEW**

1. Other water rights with the same place of use:
- NO
- Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: No Overlap

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

Water Right No.	Source	Purpose of Use	Basis
N/A			

Comments: No Overlap**C. DIVERSION AND DELIVERY SYSTEM**1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ NE¼, Sec. 28, Twp 61N, Rge 01E, B.M. BOUNDARY County

Method of Determination: GIS**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	
61N	01E	28		1.5															1.5

Total Acres: 1.5

Method of Determination: GIS and aerial imagery (Google Earth)

3.

Delivery System Diagram Attached. 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
N/A		1.5			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: N/A (In-office exam)

E. FLOW CALCULATIONS

 x Additional Computation Sheets Attached

Measured Method: Brake Horsepower equation (see attachment)

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.5 \text{ acres} \times 3 \text{ acre-ft/acre} = 4.5 \text{ acre-ft}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \times 214 \times 1.9835 = 21.2 \text{ acre-ft}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 4.5 \text{ acre-ft}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Permit 98-8105 qualifies for an in-house beneficial use exam due to acreage of irrigation being less than 5 acres. Initially, I thought that the open field on the right side of the parcel was the irrigated area, which is larger than 5 acres, so I called the permit holder for clarification. He informed me that the field had been covered with an herbicide that prevents him from using the land for farming/ranching. He said that it will remain toxic for many more years.

Over the phone, the permit holder informed me that he irrigates 1.5 acres near his domestic structure and in the surrounding clearing. Without conducting a field exam, IDWR has no basis to dispute this, given the satellite imagery is not great in this area. I am recommending a volume of 4.5 acre-ft and a corresponding flow rate of 0.05 cfs, which are the standard quantities of 1.5 acres of irrigation.

There are no POU/POD overlaps to discuss. The permit holder may file an adjudication claim or apply for new water right for domestic use. If so, that future water right should be limited to in-house use unless the applicant demonstrates that an additional 0.5 acres are irrigated.

Condition 046 should be removed from the license since the development has concluded and the well is 18 ft deep, which did not require a drilling permit. Condition 004 should also be removed because the POD is on the property owned by the permit holders. Condition R66 should remain on the permit since the permit holder or future owners may apply for future irrigation or domestic water rights.

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	04/01 to 10/31	0.05 CFS	4.5 AF
<u>Totals:</u>		0.05 CFS	4.5 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 Blake Burkard -

Field Examiner's Name _____ Date _____

Reviewer _____ Date _____

FLOW CALCULATIONS

PERMITTED FLOW (CFS):	0.05
(GPM):	22.443

TOTAL DYNAMIC HEAD	
Elevation of water surface (ft):	0
Elevation of highest sprinkler location (ft):	10
STATIC HEAD (ft):	10
Sprinkler Pressure (psi):	60
PRESSURE HEAD (ft):	138.6
Linear distance between pump and furthest sprinkler head (ft):	0
Assume friction loss: (psi/100 ft)	0.6
FRICTION HEAD (ft):	0
SUM (ft):	148.6

EFFICIENCY(%):	70
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BRAKE HORSEPOWER (PUMP):	1.20
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REARRANGE FOR FLOW:	
Pump HP:	1.5

Q (cfs):	0.062
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Calculations demonstrate that the installed pump is capable of pumping groundwater at the permitted rate of 0.05 cfs. 1.2 horsepower is the smallest pump size needed for 0.5 cfs, and a 1.5 hp pump is capable of pumping at a rate of 0.06 cfs.



Figure 1: 20' x 36" casing for hand-dug well. Well has 2' of stick up to remain 18' deep

Hello Blake, Please find the attachment below of the 3' round x 20' long Galvanized Culvert Pipe. The 20ga. standoff wire (6" apart) is for a double wrap of landscape fabric. It is installed to hold the dirt back away to prevent sifting through the holes. The pipe is placed vertical into a 18' hole dug out with an excavator. The submersible pump is 1.5 hp.

The cistem holds aprox. 470 gals. (+/-). You can check my calculations (3ft dia. x 3.14 pi x 12ft. static hgt. x 4.17 = 471.38 gals.) The top rim of the pipe is 2' abv. grade. The static hgt. inside the cistem is at 12' ft. This is all verifiable at the time of inspection.

Sorry, there is no Well Construction Log. I think that just about covers all your questions, and maybe more than you wanted.

Looking forward to hearing from you,
Mike Foster

Figure 2: Email from permit holder



Figure 3: POU Shape based on phone call with permit holder