

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

A. GENERAL INFORMATION

Permit No: 94-9057

Exam Date: 10/29/2014

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ☒ Yes ☐ No
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: Joseph L Haferman
Owner of Record Correct? ☒ Yes ☐ No
Address of Record Correct? ☒ Yes ☐ No
If No: Address

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: CO99470

4. **SOURCE** **TRIBUTARY**
Unnamed Stream S Fork Coeur d'Alene River
Method of Determination: Applicant submitted an aerial photo map that outlined POD & POU.
Change in Source: ☐ Yes ☒ No

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments: POU overlap review shows 94-4056. This is a commercial water right not pertinent to the land.

2. Other water rights with the same point of diversion: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments: No POD overlap.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
UNNAMED STREAM	1		NW	NW	35	48N	05E		SHOSHONE

Method of Determination: Legal Description in permit validated by PLS data and mapping.

Change in POD? ☐ Yes ☒ No

Amendment Required? ☐ Yes ☒ No

2. **PLACE OF USE:** Use: Domestic & 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	
48N	05E	35						1.0											1.0
		L1						D											

Method of Determination: Map of property submitted by land owner identifies POU clearly. ArcMap tools used to measure beneficial use area.

Change in POU? ☐ Yes ☒ No Amendment Required? ☐ Yes ☒ No

3.

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

Indicate weir size/pipe as applicable.

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

☐ Photo of Diversion and System Attached

4. Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Unk.	Unk	Unk	Unk	Unk	Unk

*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

2. Measurements: In-office field exam. Theoretical flow included in report.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

See attached theoretical sheet.
Estimated flow rate is 0.07 cfs

Measurement = 0.07 cfs
Permit allowed = 0.07 cfs

License recommend for 0.07cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \times 3.0 = 3.0 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.04 \times 200 \times 1.9835 = 11.9 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 3.0 \text{ af}$$

2. Volume Calculations for Other Uses:

Administrator Memo #22 recommends a volume of 0.6 af for domestic use when irrigation use is licensed separately.

G. PURPOSE OF USEIrrigation ☒ Yes ☐ No # Stock 0 Domestic # of Homes 1

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Information in the water right file is consistent with aerial photography of the property.

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

Permit 94-9057 authorized the diversion of 0.07 cfs from an unnamed spring for domestic and irrigation purposes. Based on the small permitted diversion rate and POU, this qualifies for an in-office field exam. The exam was completed on Oct 29, 2014 by WRA Patrick Kelly.

Legal description of POU & POD on the permit was used to locate the property in the name of Joseph Haferman. A map outlining the POU and POD was submitted with the application and I found no errors in the information that was presented. The Haferman property border the north end of Mullan. There are no domestic structures built on the land. Aerial photography showed that the property has been worked on. I was able to measure a cleared area where grass is growing. Contact was made with Joe via telephone on Oct 28, 2014 to confirm domestic use. He stated that he has plans for a home on the property. But at the moment, they use the land for campers and divert water for dishes, showers and drinking water in the trailers.

Overlap review showed statutory claim 94-4056 is a commercial WR for Citizens Utilities Co. This POU is not pertinent to the Haferman property. Diversion for 94-9057 serves only the Haferman property and there are no other POD's on the land.

Mannings equation worksheet was used to calculate flow for the system. I was able to measure a drop of 40 ft and a run of 336 ft using ArcMap tools. Joe had included a detailed description of his water lines which I used in my measurements. Given this slope and type of pipe being used, a flow rate of 0.07 cfs was determined. There are no other limiting factors licensing the flow rate.

Volume for the stockwater right will not be placed on the license per BU rule 35. Administrator memo #22 recommends a volume of 0.6 af when irrigation is identified separately.

Have conditions of permit approval been met? ☒ 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	04/15-10/31	0.03 cfs	
Domestic	01/01-12/31	0.04 cfs	0.6 af
	<u>Totals</u>	0.07 cfs	

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 ☐ Other

Other: < >

J. AUTHENTICATIONField Examiner's Name Patrick Kelly Date 10-29-2014Reviewer Carrie L Skaggs Date 10-31-2014

State of Idaho
Department of Water Resources
Field Exam Map
94-9057

This map depicts the DOMESTIC place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.025 0.05 0.1 Miles



Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

READ ME

S = 0.1190 ft/ft
n = 0.009 manning's coefficient
d = 1.5 pipe diameter (inches)
D = 0.13 pipe diameter (feet)
r = 0.06 pipe radius (feet)
A = 0.01 area (ft²)
WP = 0.39 wetted perimeter (ft)
R = 0.03 hydraulic radius (ft)
Q = 0.07 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry ☒ Slope Calculator

Slope Calculator

Rise = 40 feet
Run = 336 feet
Slope, S = 0.1190 ft/ft

Pipe Material, (n):

plastic (pvc, abs)

Pipe Diameter (inches)

1.5 inches

Manning's Equation (1), is an empirical formula that solves for velocity (v) in a open channel under uniform flow. The continuity equation (2) when combined with equation (1) allows for the computation of the flow rate (Q) in an open channel under uniform flow.

In equations (1) and (3), η refers to Manning's Coefficient of Roughness and can be found in tabulated form for many open channel types. R is the hydraulic radius of the open channel and is equal to the area of the open channel divided by the wetted perimeter, $R = A/P$. S is the slope of the energy grade line which is often assumed to be equal to the slope of the channel.

Because Manning's Equation is empirical the units are not arbitrary. To obtain a velocity in ft/s and a flow rate in ft³/s, area must be reported in ft², hydraulic radius must be reported in ft, and S must be reported in ft/ft. Manning's Coefficient of Roughness is a

$$(1) \quad v = 1.49 \left(\frac{1}{\eta} \right) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

$$(2) \quad Q = vA$$

$$(3) \quad Q = 1.49 \left(\frac{1}{\eta} \right) (A) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$