

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

A. GENERAL INFORMATION

Permit No: 57-07495

Exam Date: 1/2/2014

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: Chipmunk Grazing Assn
- 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: C0

4. **SOURCE****TRIBUTARY**

Spring

Cottonwood Creek

Method of Determination:

Map provided by applicant shows area. I was able to confirm the legal description with PLSS data on ArcMap.

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:

WR 57-10916 is another water right owned by the Chipmunk Grazing Assn found on the same property however it is an in-stream stock water and not associated with this use.

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

Water Right No.	Source	Purpose of Use	Basis

Comments:

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Spring		NE	NE	NE	25	02S	05W	B.M.	OWYHEE
								B.M.	
								B.M.	

Method of Determination:

Map was provided with application. I was able to locate the referenced stream via aerial photography and DRG stream designation. The diversion described within the application seems reasonable given these findings.

Change in POD? ☐ Yes ☒ No

Amendment Required? ☐ Yes ☒ No

2. **PLACE OF USE:** Use: Stock water & Domestic

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02S	05W	24																X	
Total Acres =																			

Method of Determination:

PLSS data verified with aerial photography was able to locate the home applying for domestic use.

Change in POU? ☐ Yes ☒ No

Amendment Required? ☐ Yes ☒ No

☐ 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
NA	NA	NA	NA	NA	NA

*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: These are not available when doing in-office reviews. Theoretical taken.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

Mannings Equation. See attached sheet.

Based on Manning equation, flow rate = 0.07cfs for stock water.

Administrative Memo #22 allows for 0.04 cfs.

When the two are combined, a limit of 0.7 cfs is imposed.

Measurement = 0.07 cfs

Permit allowed = 0.19 cfs

License recommend for 0.07cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: None

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\quad X 3.5 \quad} =$$

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

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

$0.07 \times 1.9835 \times 365 = 50.7 \text{ af}$ (volume of water able to pass through system annually.)

$800 \times 12 \times 365 / 325850 = 10.8 \text{ af}$ (volume of water consumed by 800 head of stock annually.)

For Domestic use, Administrative Memo #22 allows for 1.2 af annually.

G. PURPOSE OF USE

Irrigation ☐ Yes ☒ No # Stock 800 Domestic # of Homes 1

Other: none

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination:

Based on aerial photography, purpose is confirmed as stock water and domestic use.

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

H. NARRATIVE/REMARKS/COMMENTS

This permit was completed as an in-office field exam. The owner supplied aerial an aerial photo and description of the diversion and place of use. Given the system description, an in-office field exam seems reasonable.

The comparison of use and proof report confirmed correct legal descriptions and ownership of property with taxlot data.

Per Administrative Memo #22 for Domestic purposes defines a flow of 0.04 cfs and an annual volume of 1.2 af. This was applied for and no evidence suggests changing that rate.

The application shows a pvc pipe of 1.25" in the system. 1.5" was used instead as this was the smallest diameter available in the flow calculator. This provides a slightly larger volume and flow of water than is actually available, but gives a reasonable estimate. Distances used for slope calculation in rise and run were estimated using DRG elevation data and measure tool through ArcMap. This gave a flow of 0.07 cfs which is less than what was applied for in the permit.

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>
Stockwater	01/01-12/31	0.07	10.8
Domestic	01/01-12/31	0.04	1.2
<u>Totals</u>		0.07 CFS	12.0 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

Other: Amend the rate of flow for stock water use as described above.

J. AUTHENTICATION

Field Examiner's Name David Wiley Date 01-02-14

Reviewer Dennis D. Hale Date 1-2-14

State of Idaho
Department of Water Resources
Field Exam Map
57-7495

This map depicts the DOMESTIC & STOCKWATER 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 0.03 0.06 0.12 Miles



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

S = 0.1143 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 = 120 feet

Run = 1050 feet

Slope, S = 0.1143 ft/ft

Pipe Material, (n):

plastic (pvc, abs)

Pipe Diameter (inches)

1.5 inches

READ ME

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 unitless constant.

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

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

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

[illegible]