

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 75-14833
Exam Date: 11/5/2020

1. Current Owner:
STATE OF IDAHO
DEPT OF FISH AND GAME
PO BOX 25
BOISE, ID 83707-0025

2. Accompanied by: None

3. **SOURCE:**
CARMEN CREEK

Tributary
SALMON RIVER

Method of Determination: Field exam and GIS

B. OVERLAP REVIEW

1. Other water rights with the same place of use:

Water Right No.	Source	Purpose of Use	Basis
75-10324	Spring	Domestic	Decreed
75-10326	Springs	Stockwater	Decreed
75-14499	Carmen Creek	Irrigation	Decreed
75-14497	Carmen Creek	Irrigation	Decreed
75-14501	Carmen Creek	Irrigation	Decreed
75-14503	Carmen Creek	Irrigation	Decreed
75-14505	Carmen Creek	Irrigation	Decreed

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

Water Right No.	Source	Purpose of Use	Basis
75-63D	Carmen Creek	Irrigation	Decreed
75-63C	Carmen Creek	Irrigation	Decreed
75-10061W	Carmen Creek	Irrigation	Decreed
75-10061AK	Carmen Creek	Irrigation	Decreed
75-10061AL	Carmen Creek	Irrigation	Decreed
75-10062U	Carmen Creek	Irrigation	Decreed
75-10062AJ	Carmen Creek	Irrigation	Decreed
75-10062AK	Carmen Creek	Irrigation	Decreed
75-10474	Carmen Creek	Irrigation	Decreed
75-10629	Carmen Creek	Irrigation	Decreed
75-13996	Carmen Creek	Irrigation	Decreed
75-13997	Carmen Creek	Irrigation	Decreed
75-10827	Carmen Creek	Irrigation	Decreed
75-14079	Carmen Creek	Irrigation	Decreed
75-14085	Carmen Creek	Irrigation	Decreed
75-14315	Carmen Creek	Irrigation	Decreed
75-14317	Carmen Creek	Irrigation	Decreed
75-14319	Carmen Creek	Irrigation	Decreed
75-14321	Carmen Creek	Irrigation	Decreed
75-14316	Carmen Creek	Irrigation	Decreed
75-14318	Carmen Creek	Irrigation	Decreed
75-14320	Carmen Creek	Irrigation	Decreed
75-14322	Carmen Creek	Irrigation	Decreed
75-14340	Carmen Creek	Irrigation	Decreed
75-14341	Carmen Creek	Irrigation	Decreed
75-14077	Carmen Creek	Irrigation	Decreed
75-14078	Carmen Creek	Irrigation	Decreed
75-14083	Carmen Creek	Irrigation	Decreed

75-14084	Carmen Creek	Irrigation	Decreed
75-14087	Carmen Creek	Irrigation	Decreed
75-14081	Carmen Creek	Irrigation	Decreed
75-14086	Carmen Creek	Irrigation	Decreed
75-14080	Carmen Creek	Irrigation	Decreed
75-14451	Carmen Creek	Irrigation, Stockwater	Decreed
75-14452	Carmen Creek	Irrigation, Stockwater	Decreed
75-14453	Carmen Creek	Irrigation, Stockwater	Decreed
75-14454	Carmen Creek	Irrigation, Stockwater	Decreed
75-14459	Carmen Creek	Irrigation	Decreed
75-14460	Carmen Creek	Irrigation	Decreed

Comments: The purpose of this fish propagation right is to allow IDFG to provide a screened diversion with fish bypass to satisfy the water rights listed above.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

CARMEN CREEK NW¼ SW¼, Sec. 9, Twp 22N, Rge 22E, B.M. LEMHI County

Method of Determination: Field exam and GIS

PLACE OF USE: FISH PROPAGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
22N	22E	9										X	X						

Method of Determination: Field exam and GIS

D. FLOW MEASUREMENTS

- Measurements: None taken. The configuration of this diversion does not allow for the direct measurement of only the Fish Propagation portion of the water being diverted.

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

The following equation has been used historically by IDWR for similar IDFG fish bypass structures:

$$Q = C_d A_o \sqrt{(2gh)}$$

Where:

Q = flowrate (cfs)

C_d = coefficient of discharge

A_o = Area of orifice opening (ft²)

g = gravitational acceleration $\left(32.2 \frac{\text{ft}}{\text{s}^2}\right)$

h = Measured head above center of orifice opening (ft)

The orifice diameter for this structure is 4 inches, which results in $A_o = 0.09 \text{ ft}^2$.

The high water mark measured above the orifice center was 2.3 ft.

The standard coefficient of discharge used by IDWR for similar IDFG diversion structures is 0.67.

$$Q = 0.73 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses: $0.73 \text{ cfs} \times 1.9835 \text{ AF/cfs/day} \times 214 \text{ days/season} = 310 \text{ AF/season}$ **G. NARRATIVE/REMARKS/COMMENTS**

This diversion structure is similar to many other diversions built by Fish & Game throughout the Lemhi and Salmon River basins to protect fish from entering the irrigating works. The calculated flowrate does not meet the permitted rate. It is recommended the calculated rate replace the permitted rate on the license.

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>
FISH PROPAGATION	04/01 to 10/31	0.73 CFS	310 AF

Totals: 0.73 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 ☒ None

I. AUTHENTICATION

Brian Normandeau – Associate Engineer

Field Examiner's Name: Brian NormandeauDate: 12/8/2020

Reviewer _____ Date _____



Photo 1: Diversion on Carmen Creek



Photo 2: Fish screen/bypass approach



Photo 3: Fish screen structure



Photo 4: Fish bypass return to Carmen Creek



Legend

-  Place of Use
-  Point of Diversion
-  Township/Range
-  Sections
-  QQ

0 170 340 680 Feet

1 inch = 250 feet

