

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-16756

Exam Date: 8/11/2011

1. Current Owner: STATE OF IDAHO
DEPT OF FISH & GAME
600 S WALNUT
BOISE ID 83707
(208)334-3700
2. Accompanied by: Benny Walker (IDWR)
Phone No:
Address:
Relationship to Permit Holder:

3. SOURCE

CHALLIS CREEK

TRIBUTARY

SALMON RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: 72-12D, 72-12F, 72-12G, 72-23B, 72-25B, 72-2050B, 72-2104D, 72-4162, 72-10149B, 72-10409, 72-16674, 72-16675, 72-16676, 72-16677, 72-16721, 72-16722, 72-16723, 72-16724, 72-16725, and 72-16726

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

CHALLIS CREEK

NW1/4NE1/4NW1/4

Sec. 9, Twp 14N, Rge 19E, B.M.

CUSTER County

Method of Determination: Field observation and IDWR spatial data point (A0002705)

2.

PLACE OF USE: FISH PROPAGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
14N	19E	9	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
							X												

Method of Determination: Field observation, GPS, and IDWR GIS

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
N/A					

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
None take						

2. Measurements: Diameter of orifice was measured at 4 inches and the amount of head above the center of the orifice was measured at 16 inches. However, 31 inches of head above the center of the orifice to the high water mark on the fish screen structure was measured.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Discharge from a tank through an orifice (see attached 8/24/11 memo for formula and orifice coefficient)

$$Q = C_d A_o (2gh)^{1/2} \quad \text{where } C_d = 0.67 \text{ coefficient of discharge}$$

$$A_o = \text{Area of orifice opening}$$

$$g = 32.2 \text{ ft per second}^2$$

$$h = \text{measured head above center of orifice opening (in feet)}$$

Orifice is a 4 inch diameter hole so $A_o = \pi r^2 = \pi (2 \text{ inch})^2 = 12.566 \text{ inch}^2 = .087 \text{ ft}^2$

h was measured at 31 inches (to high water mark) = 2.583 feet

$$Q = (0.67)(0.087)[2(32.2)(2.583)]^{1/2}$$

$$Q = 0.75 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{N/A}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{N/A}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \text{N/A}$$

2. Volume Calculations for Other Uses:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.75 \text{ cfs})(214 \text{ days})(1.9835) = 318.4 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-16756 was permitted for the diversion of up to 0.80 cfs from Challis Creek for use in a fish screen to flush fish back to the creek that would otherwise be trapped between the point of diversion and the fish screen. During the exam it was observed that water was being diverted through the fish screen and water was flowing back to Challis Creek through a 4 inch diameter orifice, with 16 inches of head above the center of the orifice. However, 31 inches of head above the center of the orifice to the high water mark on the fish screen structure was measured indicating that additional water had been utilized by the fish screen bypass in the past. Note that permit 72-16756 was permitted with the wrong irrigation season (04/01 to 11/01), when the standard for the area is actually 4/01 to 10/31. It is recommended that the standard irrigation season be licensed for the period of use. The standard irrigation season of 214 days was utilized in the annual volume calculations.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FISH PROPAGATION	04/01 to 10/31	0.750 CFS	318.40 AF
<u>Totals:</u>		0.750 CFS	318.40 AF

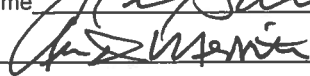
2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

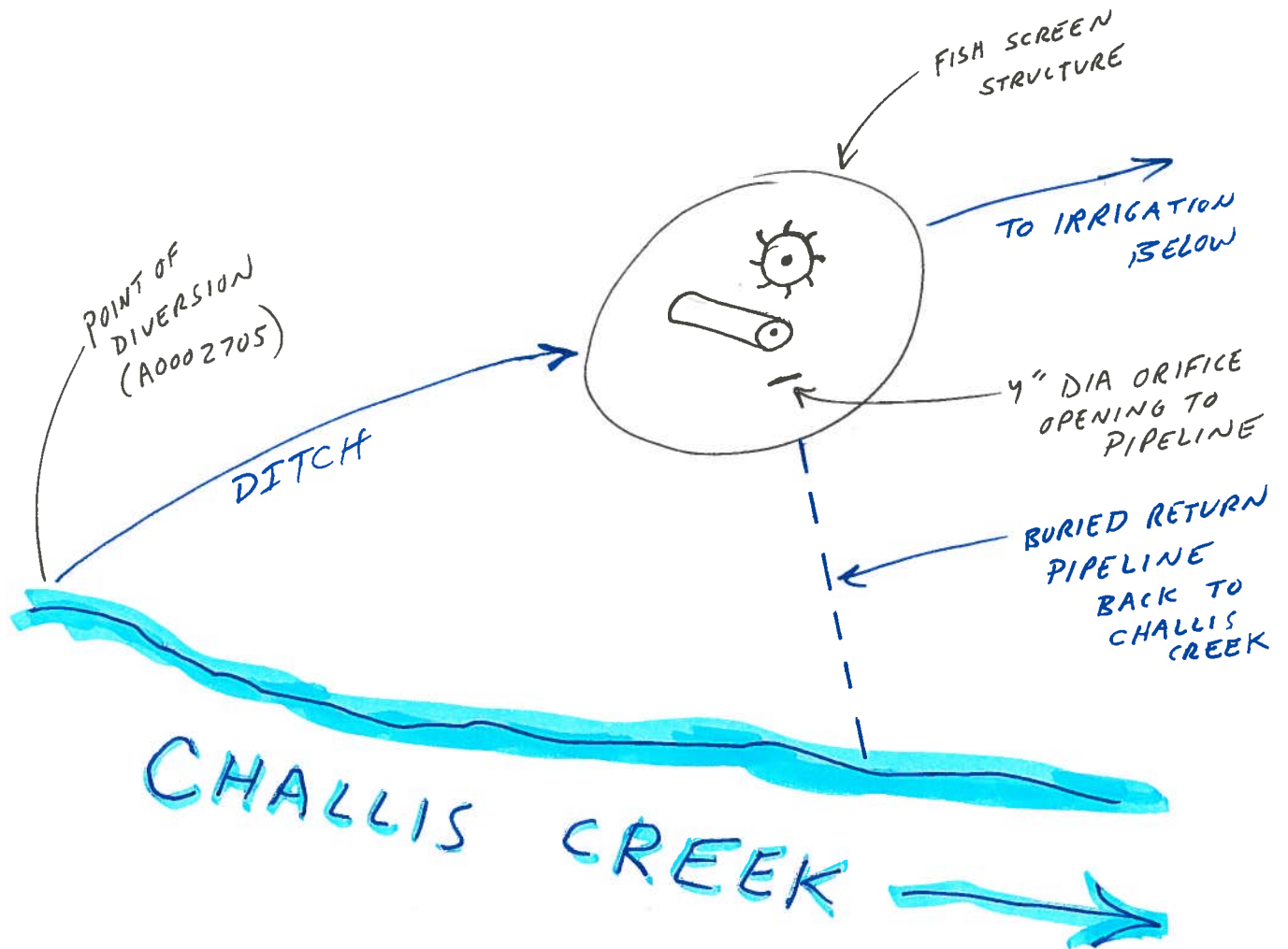
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

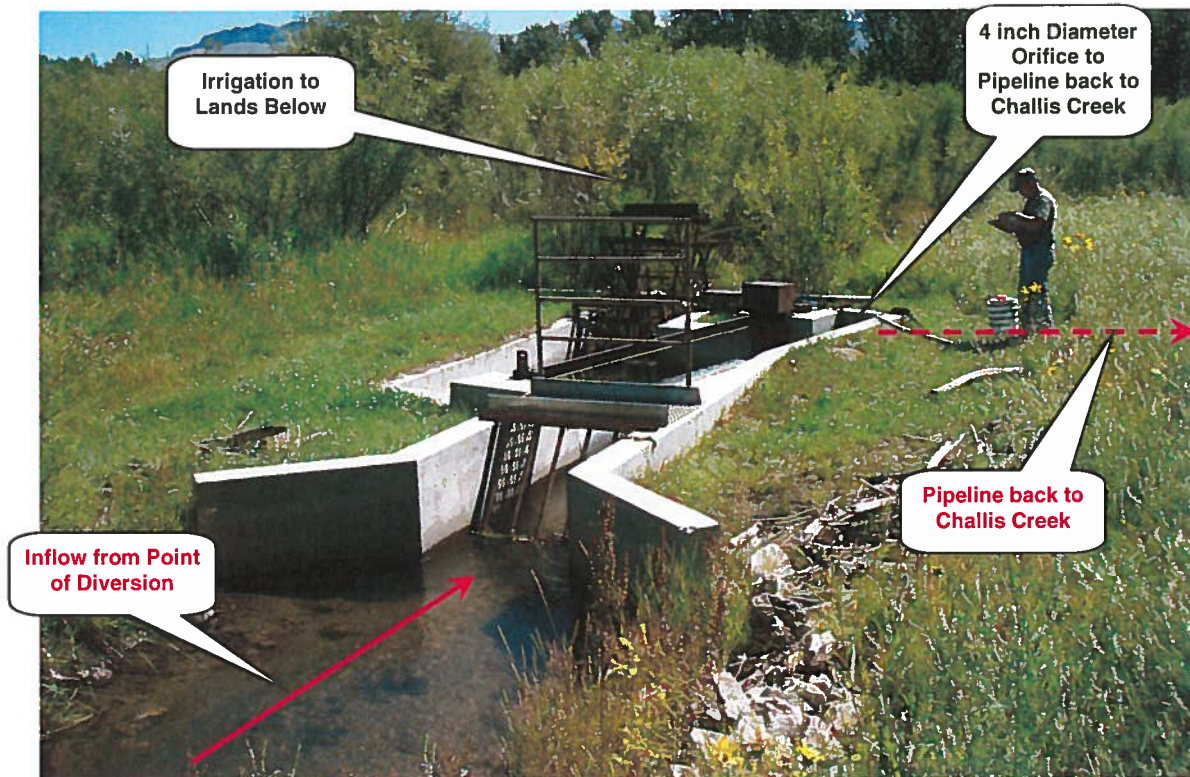
Field Examiner's Name  Date 10/24/2011

Reviewer  Date 12/6/2011

System Diagram for 72-16756

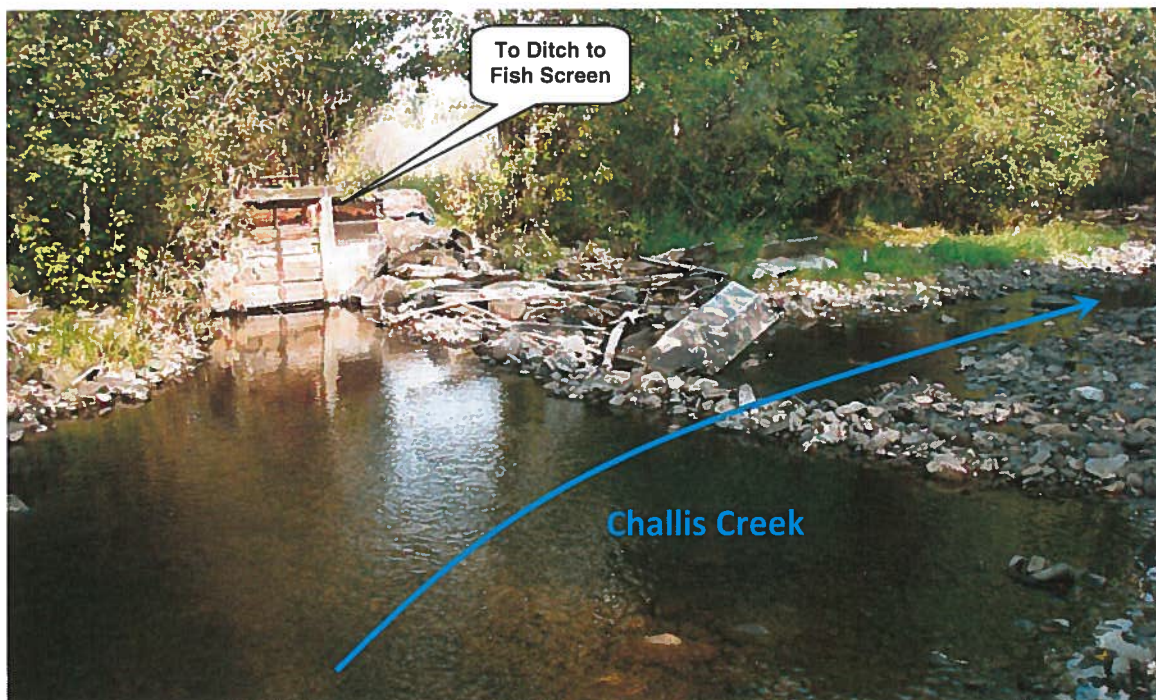


Photos for 72-16756 Field Exam



ABOVE: View of place of use for 72-16756 on August 11, 2011 (date of licensing exam).

BELOW: View of Point of diversion for 72-16756 (site tag # A0002705). Note picture taken on different date (September 12, 2011)



8/11/2011
FIELD
NOTES

72-16756

Schae - 03

4" diameter hole

3/4" steel



POD
A0002705

actual 16" of head

21" wet mark

31" high water mark

2.583'

$Q = .75 \text{ cfs}$

$V = 318.4 \text{ fpm}$

POV

2481956

1484752

≈ 12.15

discharge to creek
under water

72-16756 Field Exam Map

