

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 71-10914

Exam Date: 8/23/2011

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

3. **SOURCE**

CHAMPION 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: 71-2077A

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

CHAMPION CREEK

SW1/4SW1/4SW1/4

Sec. 15, Twp 08N, Rge 14E, B.M.

CUSTER County

Method of Determination: Field observation and IDWR spatial data point

2.

PLACE OF USE: FISH PROPAGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
08N	14E	15											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>
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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>
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None taken

2. Measurements: This fish screen had 2 orifices accessible for use, one measured at 4 inches in diameter and the other measured at 3 inches in diameter. At the time of the field exam the 3 inch orifice was being used and the amount of head above the center of the 3 inch orifice was measured at 1.5 inches. However, 22.5 inches of head above the center of the 4 inch orifice to the high water mark on the fish screen structure was measured. The measurement using the 4 inch orifice and the 22.5 inches of head was used to determine the potential amount of flow.

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)

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

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

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

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

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

h was measured at 22.5 inches (to high water mark) = 1.875 feet

$$Q = (0.67)(0.087)[2(32.2)(1.875)]^{1/2}$$

$$Q = 0.64 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.64 \text{ cfs})(184 \text{ days})(1.9835) = 233.6 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 71-10914 was permitted for the diversion of up to 0.80 cfs from Champion 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 a minimal amount of water was being diverted through the fish screen and water was flowing back to Champion Creek through a 3 inch orifice, with 1.5 inches of head above the center of the orifice. It was also observed that there was no water flowing beyond the fish screen structure on down the irrigation ditch. However this fish screen has the option of both a 4 inch and 3 inch orifice to be used during high and low flows. It seems logical that the larger orifice would be used when higher flows would be diverted. A measurement of 22.5 inches of head above the center of the 4 inch orifice to the high water mark on the fish screen structure was measured. The measurement using the 4 inch orifice and the 22.5 inches of head was used to determine the potential amount of flow.

Note that permit 71-10914 was permitted with the wrong irrigation season (04/01 to 11/01), when the standard for the area is actually 05/01 to 10/31. It is recommended that the standard irrigation season be licensed for the period of use (05/01 to 10/31). The standard irrigation season of 184 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	05/01 to 10/31	0.640 CFS	233.6 AF
<u>Totals:</u>		0.640 CFS	233.6 AF

2. Recommended Amendments

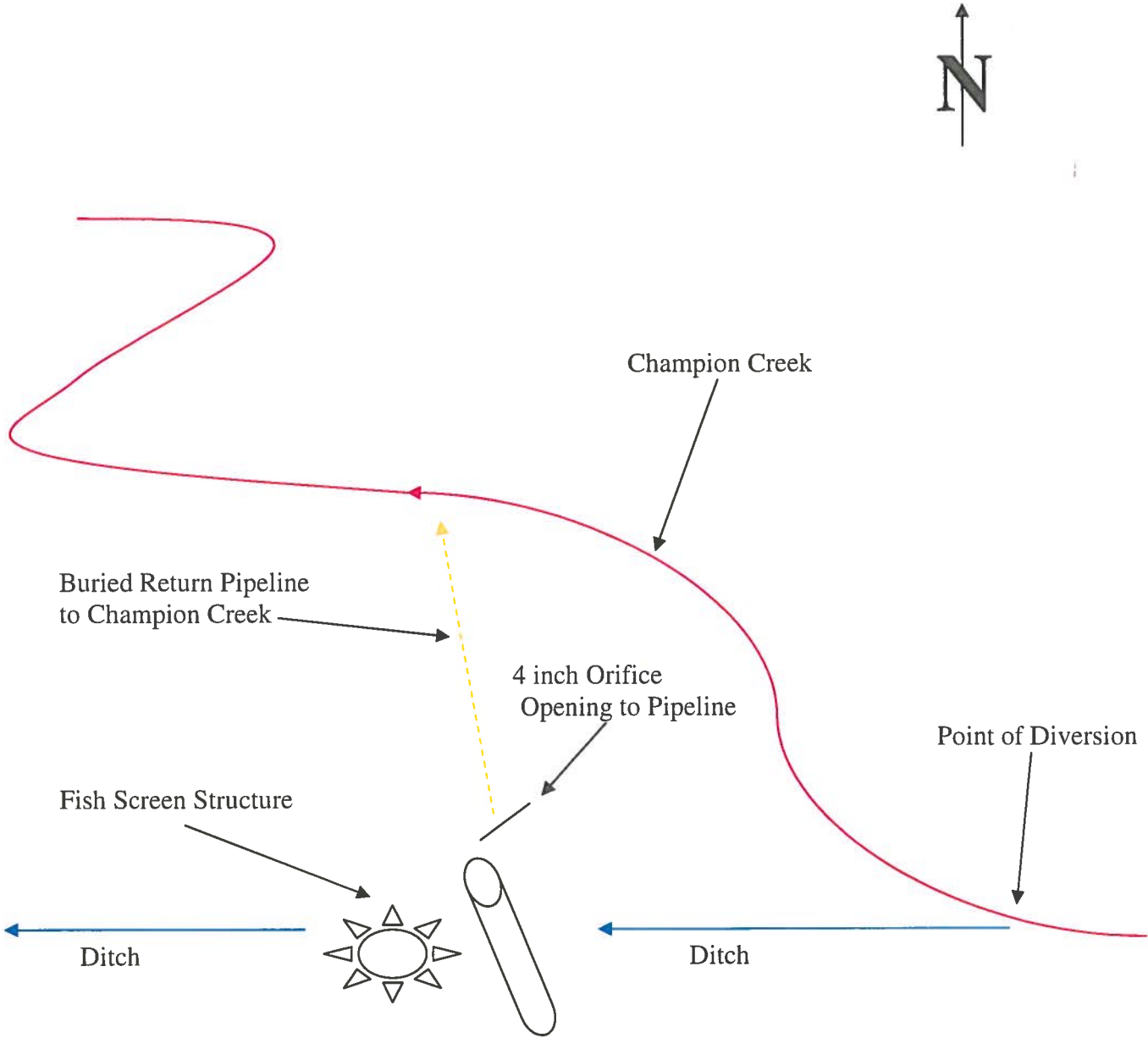
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

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

I. AUTHENTICATION

Field Examiner's Name Benny Walker Date 10/4/2011
 Reviewer [Signature] Date 10/21/11

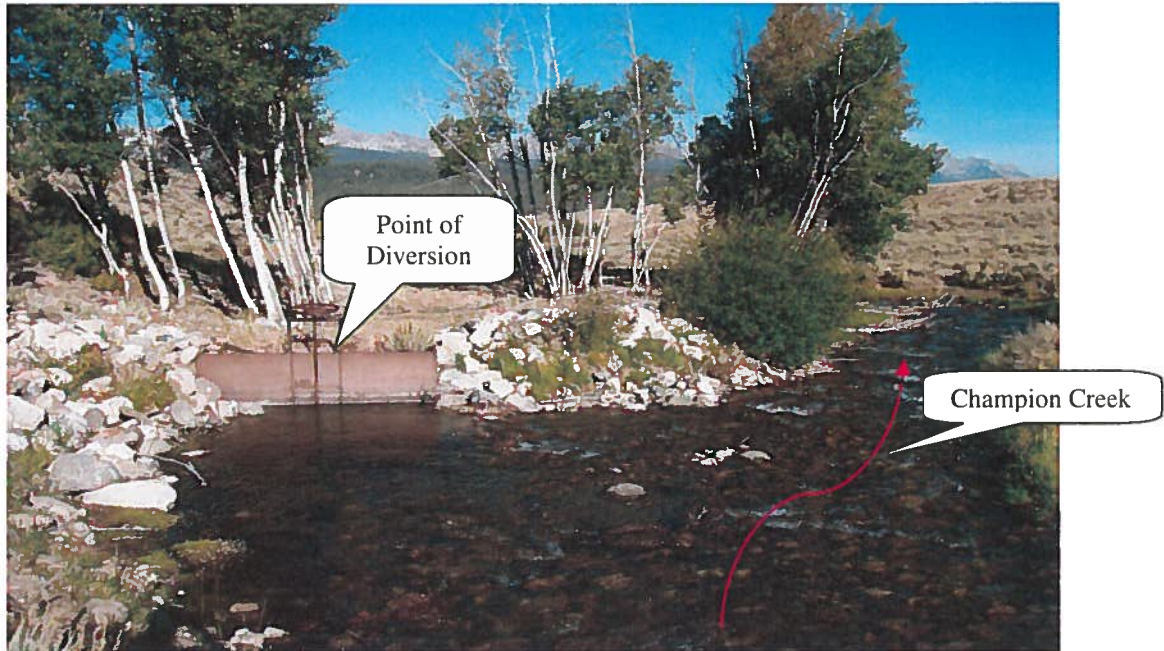
System Diagram for 71-10914



(Diagram Not to Scale)

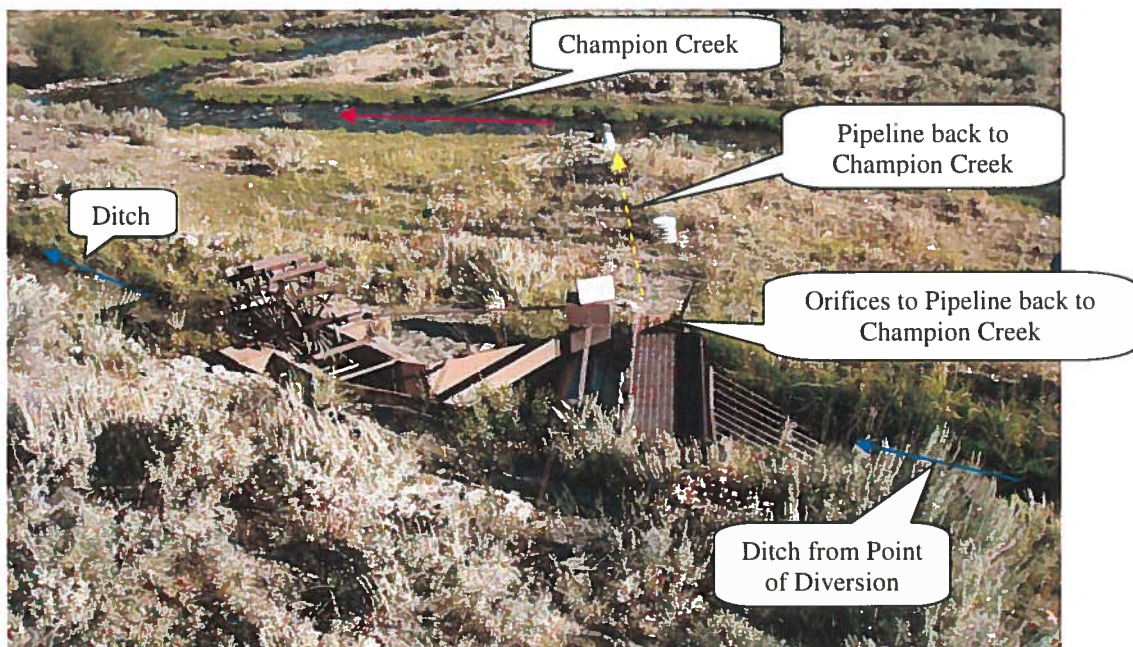
Photos for 71-10914 Field Exam

August 23, 2011



Above: View of Point of Diversion for 71-10914 (site tag #A0018085)

Below: View of Place of Use for 71-10914



71-10914

POD tag # A0018085

Gps POB ~~3939433142~~ 2434833
1424245

Plastic

using

4" hole or
3" dia hole

Calipers

inside

3.965"

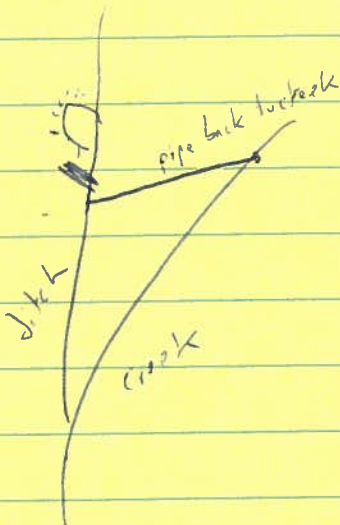
2.928"

head to g

~~1.25" head~~
1.5" head

but

high water mark
& head 22.5"



4 gallons

4.69 seconds

4.34 sec

4.69 sec

4.59 sec

.12 cfs

71-10914 Field Exam Map

