

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-16750

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 TRIBUTARY
SQUAW CREEK 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: 72-137 (record indicates NENESE Section 8)

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

SQUAW CREEK NE1/4SE1/4 Sec. 8, Twp 11N, Rge 17E, B.M.
CUSTER County

Method of Determination: Field observation, IDWR spatial data point (A0013671), and aerial photography

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	
11N	17E	9											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</u> <u>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</u> <u>Size</u>
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N/A

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

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Diameter of orifice was measured at 4 inches and at the time of the field exam, no water was flowing through the fish screen structure. However, 16.5 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)

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

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

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

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

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

$$h \text{ was measured at 16.5 inches (to high water mark)} = 1.375 \text{ feet}$$

$$Q = (0.67)(0.087)[2(32.2)(1.375)]^{1/2}$$

$$Q = 0.55 \text{ cfs}$$

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:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.55 \text{ cfs})(214 \text{ days})(1.9835) = 233.5 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-16750 was permitted for the diversion of up to 0.80 cfs from Squaw 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 not being diverted through the fish screen structure. However, 16.5 inches of head above the center of the 4 inch diameter orifice to the high water mark on the fish screen structure was measured indicating that water had been utilized by the fish screen bypass in the past. Note that permit 72-16750 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. The point of diversion for 72-16750 was permitted as being located in the NENESE of Section 8, which matches the decreed location described on irrigation right 72-137 that utilizes this diversion. Although, close to the line that separates the NENESE from the SENESE, the actual point of diversion appears to be further south and probably located within the SENESE. It is recommended that the point of diversion on 72-16750 be described as the NESE of Section 8, rather than the permitted description in the NENESE of Section 8. Also note that the place of use (fish screen location) was developed in the SWSW of Section 9, rather than the permitted location in the NESE of Section 8. For this reason, a licensing amendment was solicited from the IDF&G to correct the place of use. The signed licensing amendment and fee (via interagency billing # BILL0581) was recently received from IDF&G allowing for the licensing of 72-16750.

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	0.550 CFS	233.50 AF
<u>Totals:</u>		0.550 CFS	233.50 AF

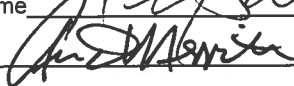
2. Recommended Amendments

☐ 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

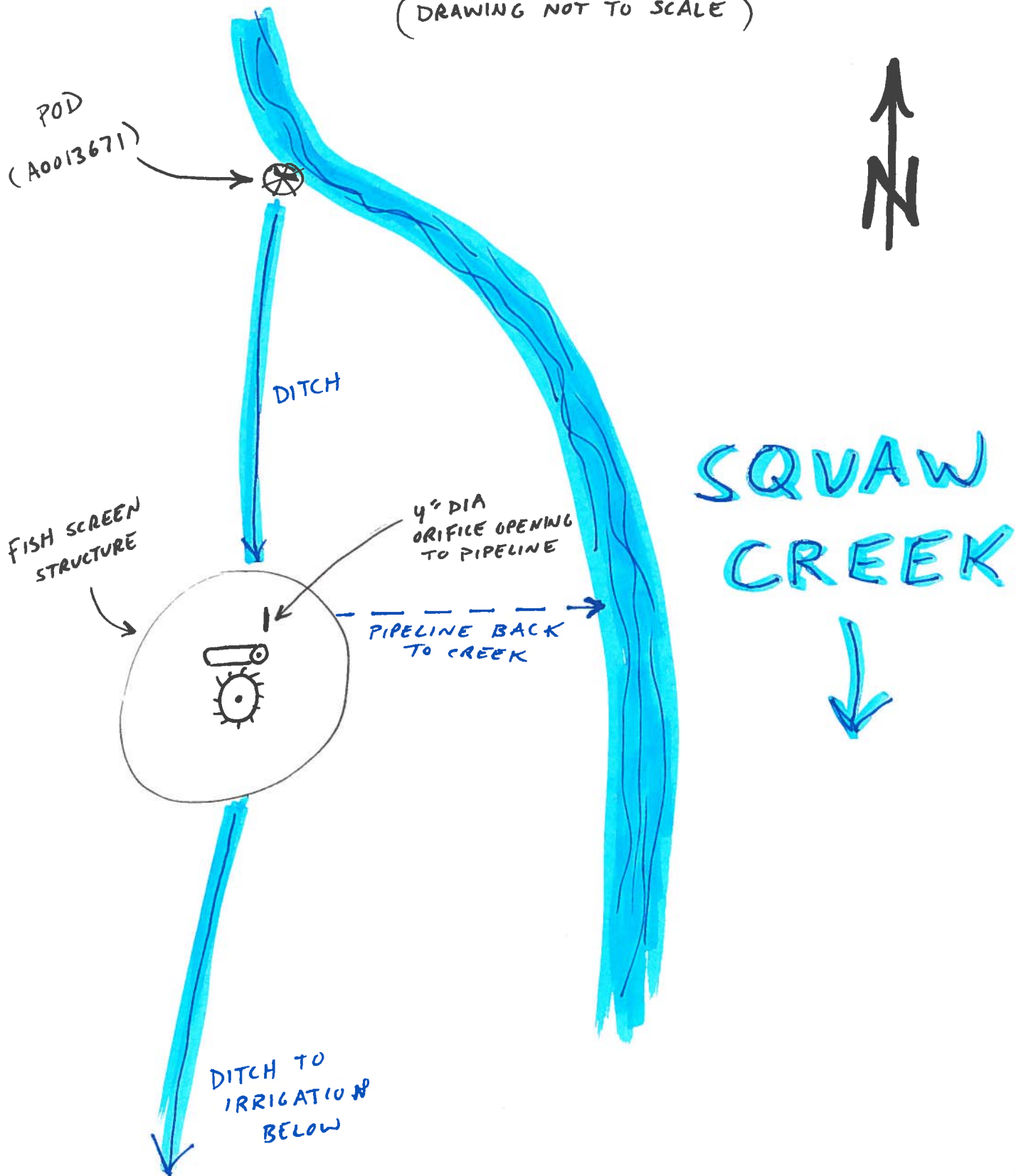
I. AUTHENTICATION

Field Examiner's Name  Date 4/3/2012

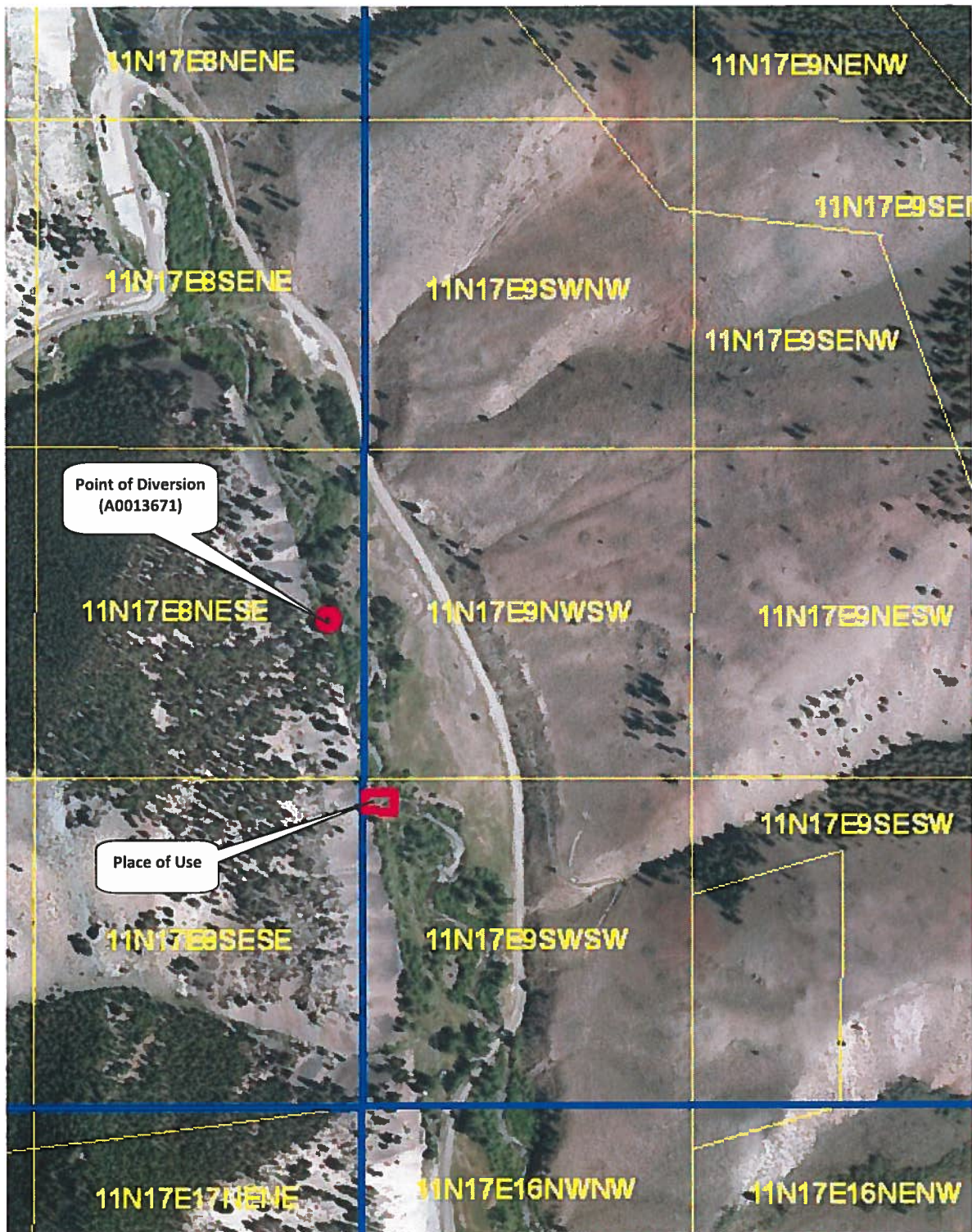
Reviewer  Date 4/9/12

System Diagram for 72-16750

(DRAWING NOT TO SCALE)



72-16750 Field Exam Map

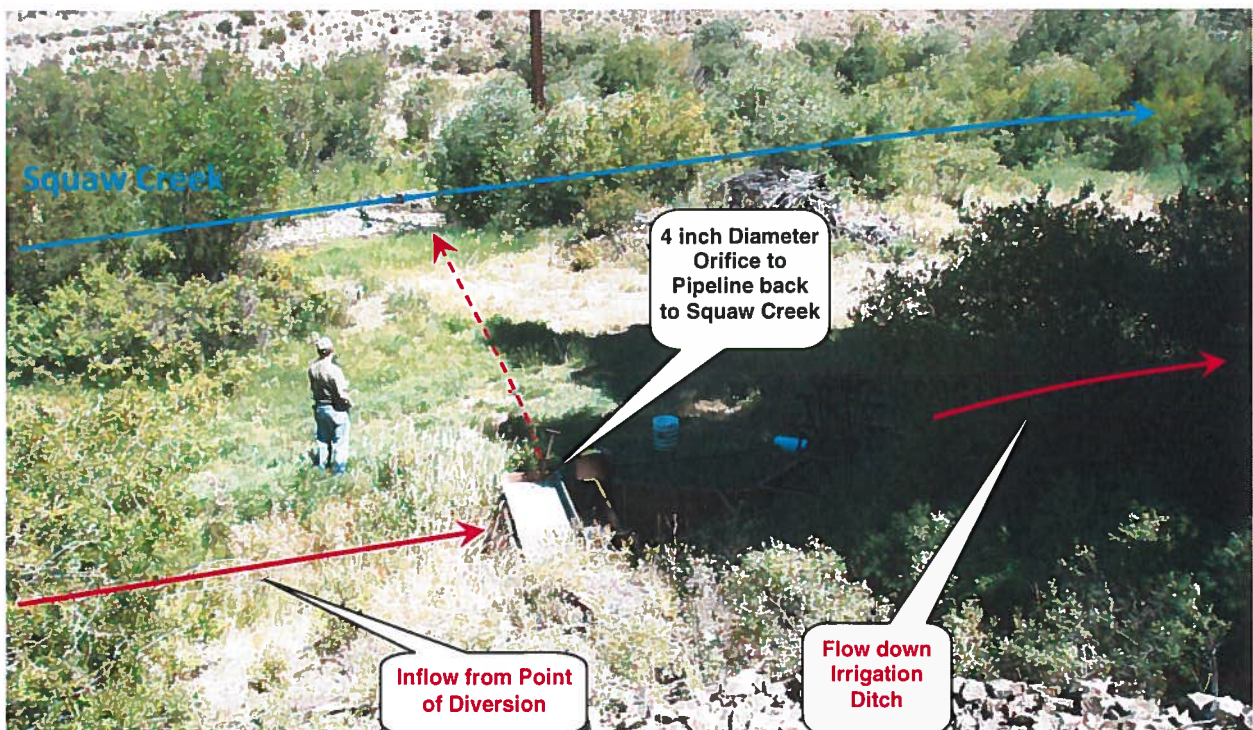


Photos for 72-16750 Field Exam



ABOVE: View of Point of diversion for 72-16750. Note picture taken on different date and obtained from \\A006\Water Measurement\Water Districts by Basin\WD 170 Upper Salmon\Photos\DIVERSION INVENTORY\BASIN 72 TRIBS\Squaw Creek\Sqc6.

BELOW: View of place of use for 72-16750 on August 11, 2011 (date of licensing exam).



~~514~~

8/11/2011

72-16750 on west side of creek

~ 3:30

Site tag A0013671

1" dia

3" dia

2" dia

orifices

bottom of all holes < 1 inch from plate edge

high water mark

19" from bottom

assume $y = \text{dia}$

center of orifice ~ 2.5" from bottom

use 16.5" of head

$$16.5 = \approx 1.375'$$

$$Q = .55 \text{ cfs}$$

$$V = 233.5 \text{ fpm}$$

POV

2462225

1454782



| Squaw Creek | Sgc 6