

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-16751

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

EAST FORK SALMON RIVER

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: 72-233B and 72-16788 (late claim filed in SRBA)

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

EAST FORK SALMON RIVER SW1/4NW1/4SE1/4 Sec. 22, Twp 09N, Rge 17E, B.M.
CUSTER County

Method of Determination: Field observation, aerial photography, and IDWR spatial data point (A0011351)

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	
09N	17E	22														X			

Method of Determination: Field observation, aerial photography, and GPS

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: Diameter of orifice was measured at 4 inches and the amount of head above the center of the orifice was measured at 6 inches. However, 24 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)

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

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

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

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

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

h was measured at 24 inches (to high water mark) = 2.0 feet

$$Q = (0.67)(0.087)[2(32.2)(2.0)]^{1/2}$$

$$Q = 0.66 \text{ cfs}$$

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:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.66 \text{ cfs})(214 \text{ days})(1.9835) = 280.1 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-16751 was permitted for the diversion of up to 0.80 cfs from the East Fork of the Salmon River for use in a fish screen to flush fish back to the river 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 the East Fork of the Salmon River through a 4 inch diameter orifice, with 6 inches of head above the center of the orifice. However, 24 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 72-16751 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. Also note that permit 72-16751 was permitted with a point of diversion within the SWNWNE of Section 22 when it was actually developed within the SWNWSE of Section 22. For this reason, a licensing amendment was solicited from the IDF&G to correct the point of diversion. The signed licensing amendment and fee (via interagency billing # BILL0581) was recently received from IDF&G allowing for the licensing of 72-16751.

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	0.660 CFS	280.10 AF
<u>Totals:</u>		0.660 CFS	280.10 AF

2. Recommended Amendments

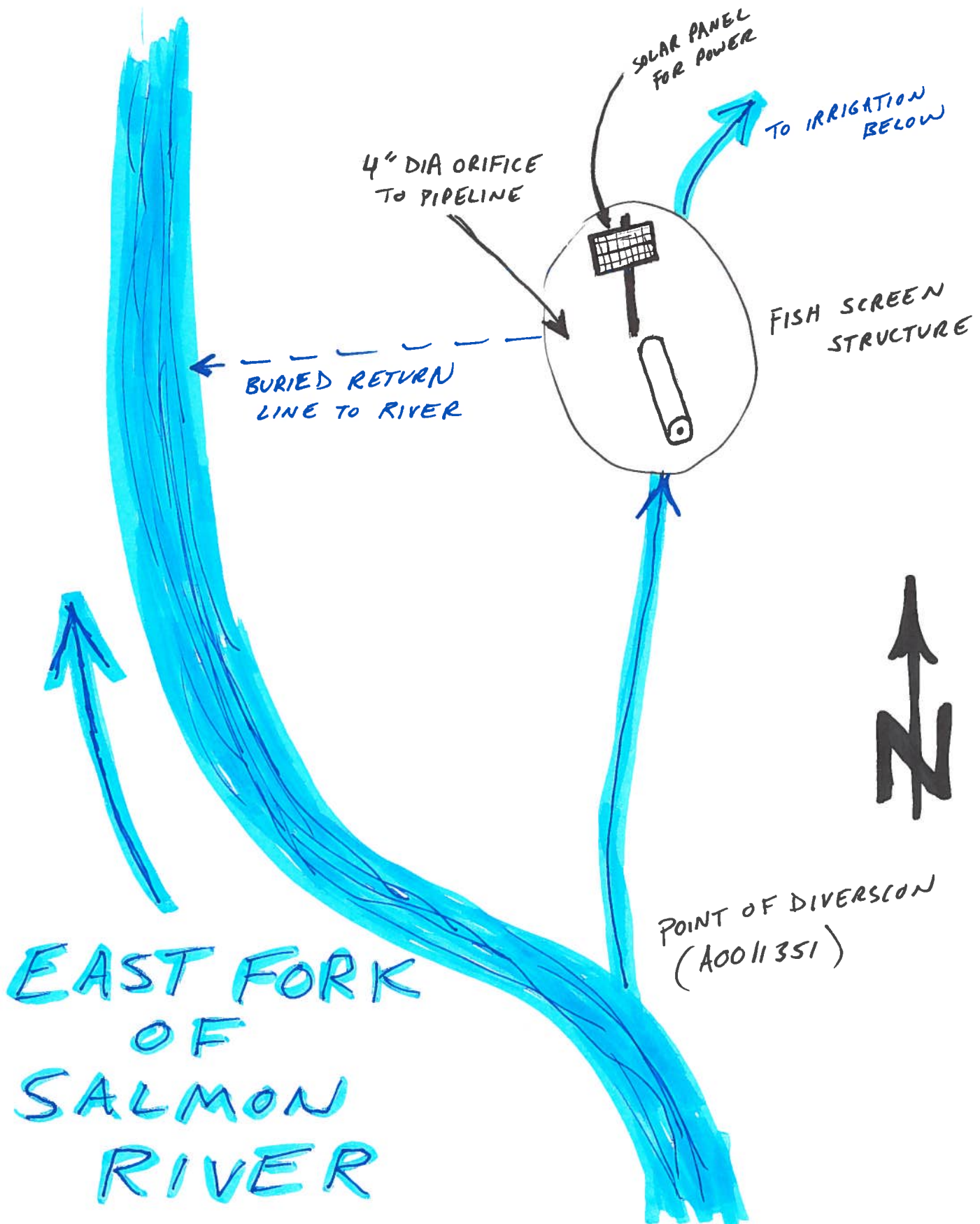
☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

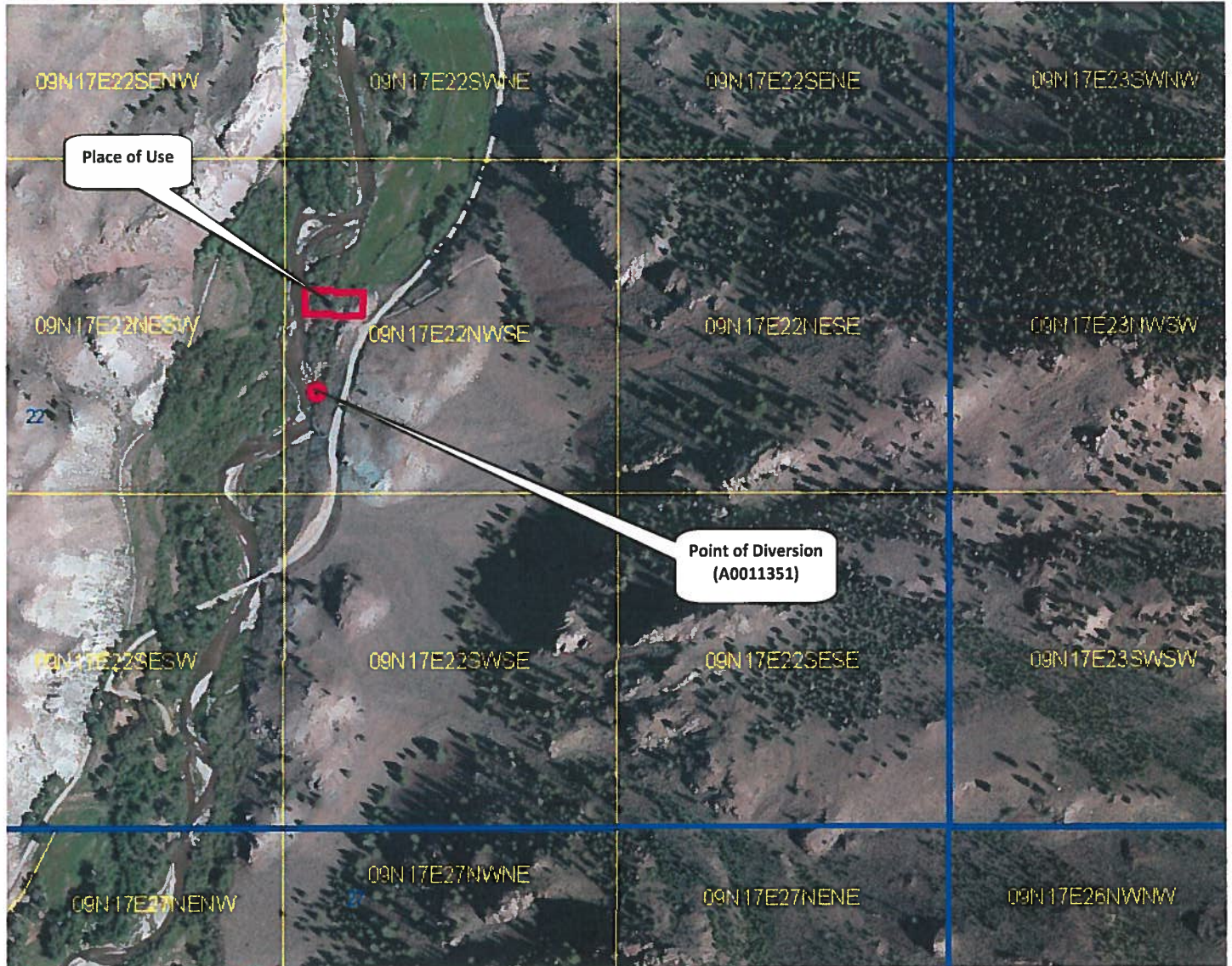
Field Examiner's Name [Signature] Date 4/3/2012
 Reviewer [Signature] Date 4/9/12

72-16751 System Diagram

(DRAWING NOT TO SCALE)



72-16751 Field Exam Map

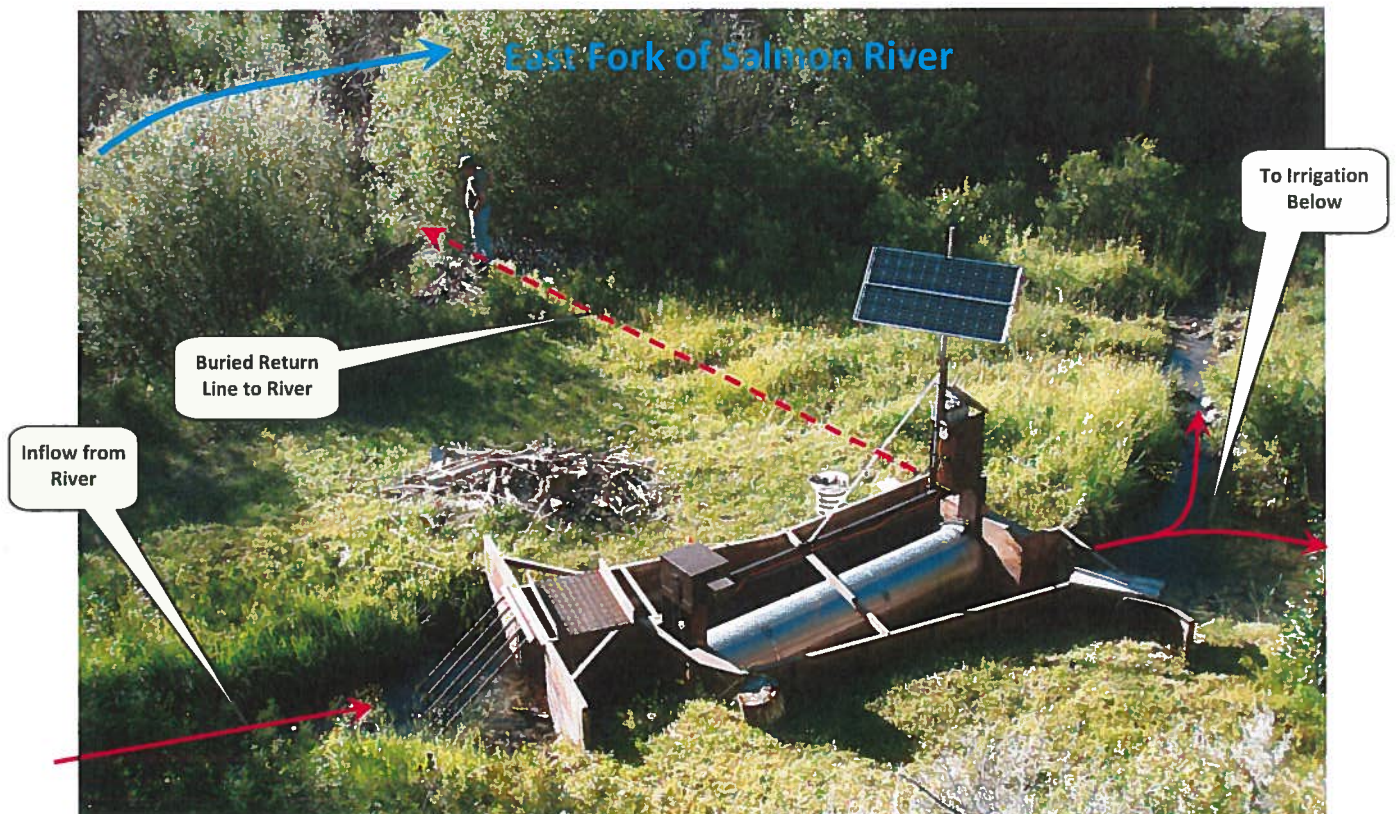


Point of Diversion and Place of Use for 72-16751



ABOVE: View of point of diversion for 72-167751.

BELOW: View, further down the ditch, showing the place of use for 72-16751.



72-16751

6:00

4" opening 6" water to 4 of opening
24" Highwater mark

POU GPS

2464627

1432507

24" = 2'

Q = .66 cfs

V = 280.1

A0011351

72-23313 same POD

72-16788 ^{int} claim