

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-16757

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: Numerous other rights diverted through the Highline Canal, but all have been decreed in SRBA with an incorrect POD description.

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

CHALLIS CREEK L2 NW1/4SW1/4NW1/4 Sec. 7, Twp 14N, Rge 19E, B.M.
CUSTER County

Method of Determination: IDWR spatial data points (GPSed), field observation, and aerial photography

2.

PLACE OF USE: FISH PROPAGATION

Twp	Rge	Sec	NE				NW				SW				SE				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
14N	19E	7							X										
									L 2										

Method of Determination: field observation, and aerial photography

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 28.5 inches. However, 34.5 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)

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

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

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

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

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 34.5 inches (to high water mark) = 2.875 feet

$$Q = (0.67)(0.087)[2(32.2)(2.875)]^{1/2}$$

$$Q = 0.79 \text{ cfs}$$

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:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.79 \text{ cfs})(214 \text{ days})(1.9835) = 335.3 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-16757 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. This particular fish screen structure is located at the head of the Highline Canal. 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 28.5 inches of head above the center of the orifice. However, 34.5 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 72-16757 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 72-16757 was permitted with the wrong point of diversion and place of use descriptions. However, note that the permitted point of diversion description matches the SRBA decreed description for over 100 rights that list their diversion point as the Highline Canal diversion. This matter was discussed with IDWR State Office staff and direction was given that permit 72-16757 should be licensed at its actual, correct, physical location. Therefore, a licensing amendment was solicited from IDF&G to correct the point of diversion and place of use descriptions for permit 72-16757. The signed licensing amendment and fee (via interagency billing # BILL0581) was recently received from IDF&G allowing for the licensing of 72-16757.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

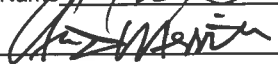
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FISH PROPAGATION	04/01 to 10/31	0.790 CFS	335.30 AF
<u>Totals:</u>		0.790 CFS	335.30 AF

2. Recommended Amendments

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

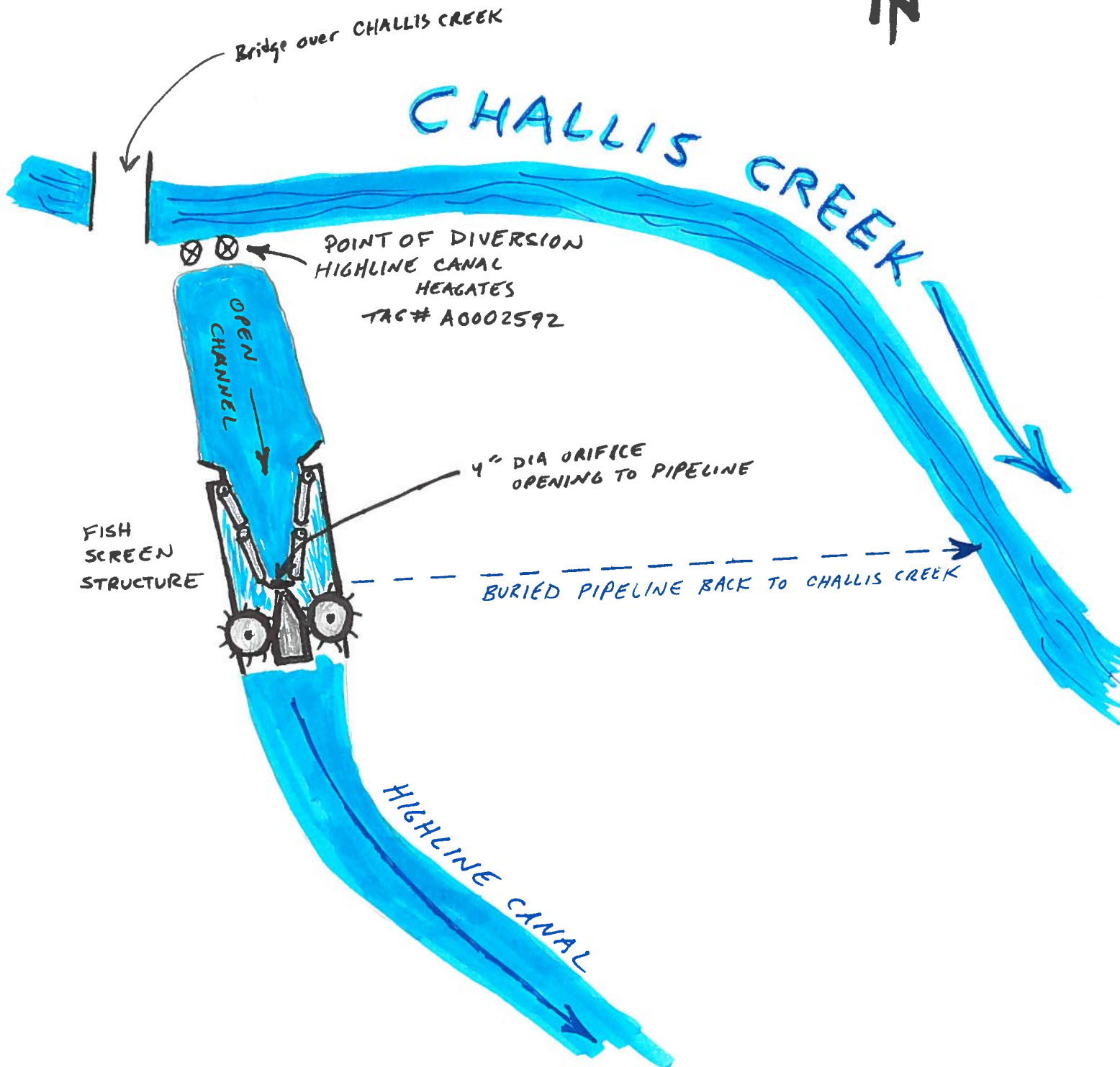
☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

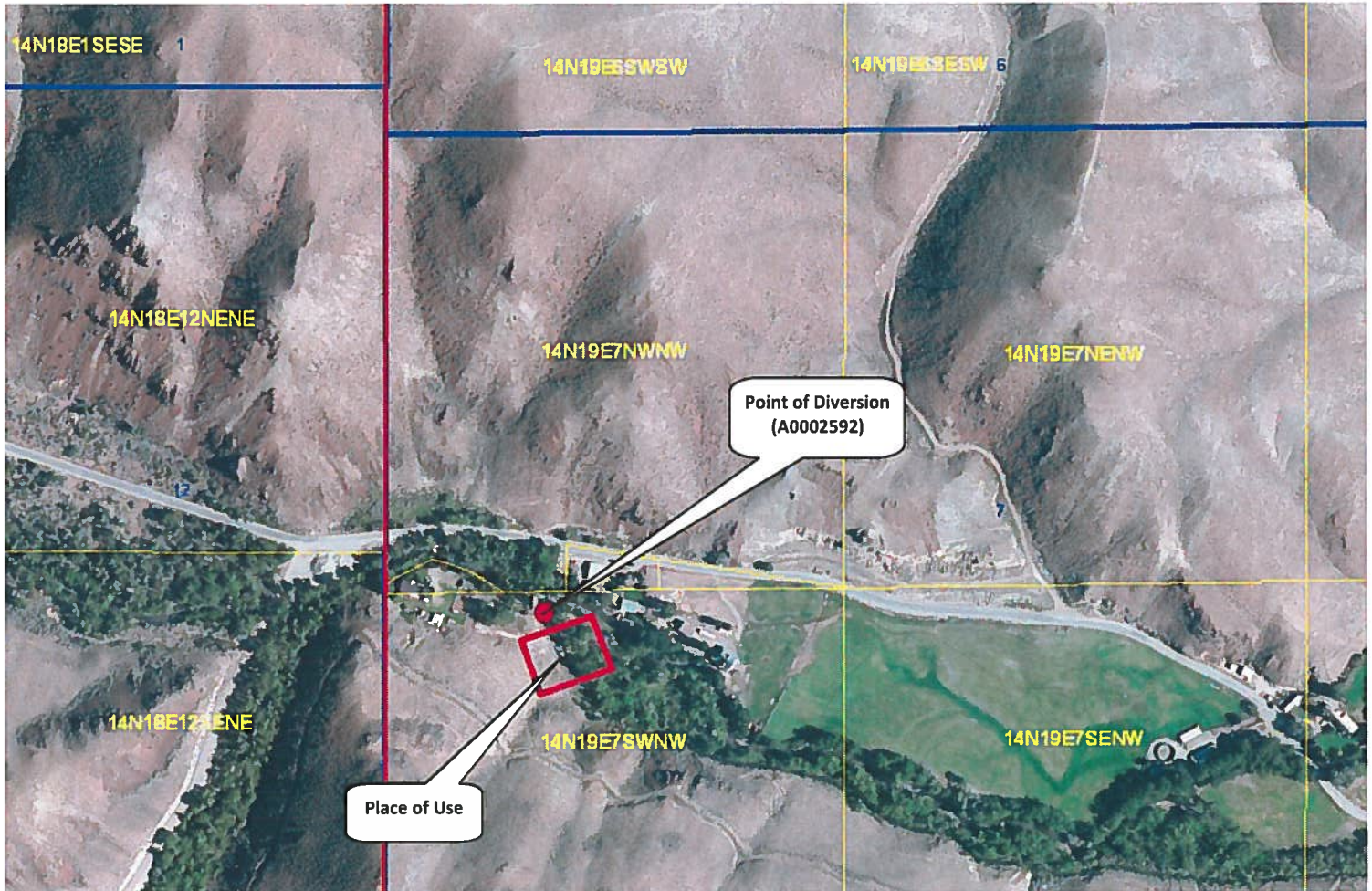
Field Examiner's Name  Date 4/2/2012
 Reviewer  Date 4/9/12

72-16757 System Diagram

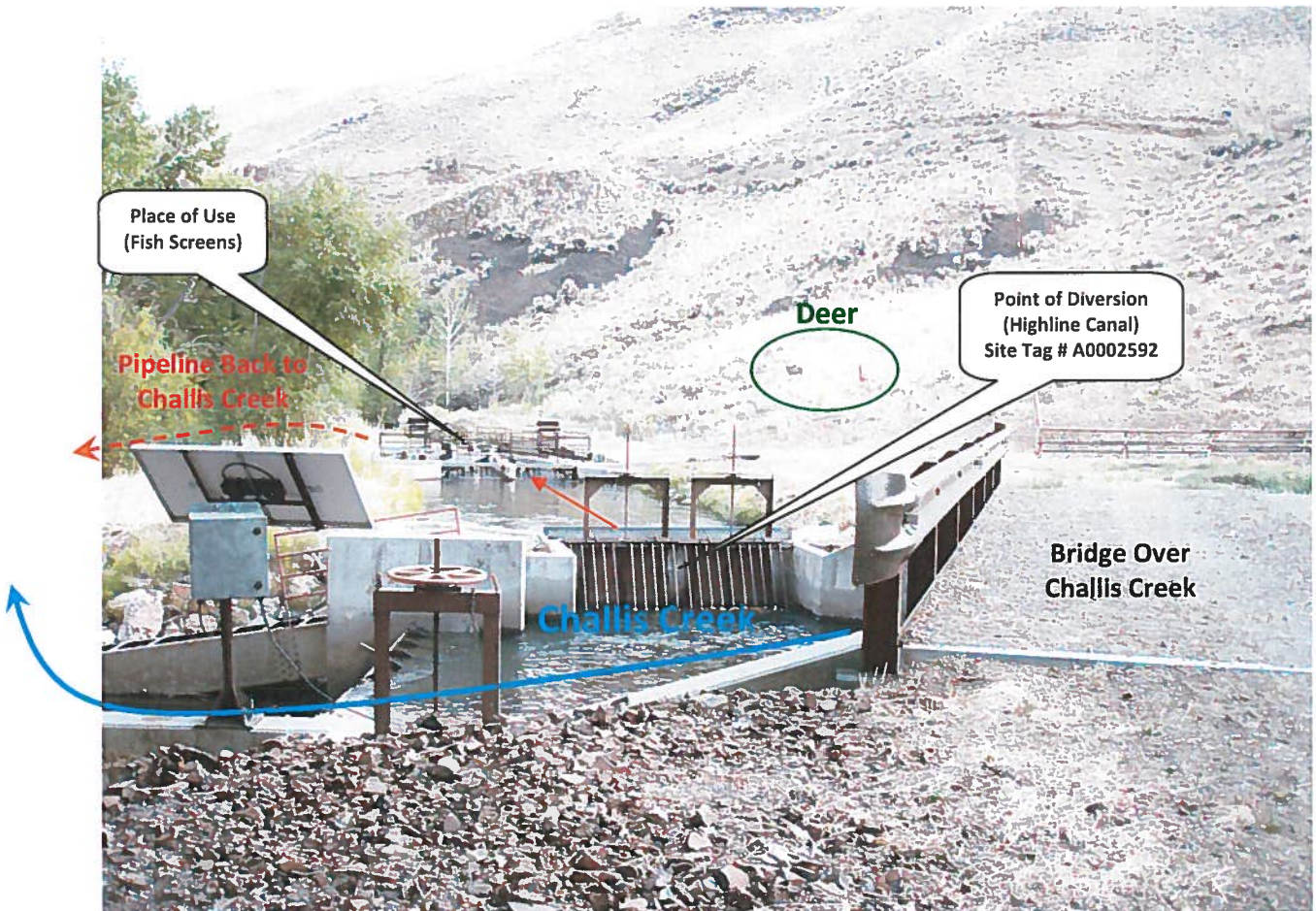
(DRAWING NOT TO SCALE)



72-16757 Field Exam Map



Point of Diversion and Place of Use Photo for 72-16757



View looking south across Challis Creek at the Highline Canal diversion (site tag #A0002592) showing the location of the point of diversion and place of use for 72-16757

A0002592

72-16757

Schal-08

4-19-04

4' dia hole

28.5" head

≈ 12.45

high water mark 34.5"

$\approx 2.875'$

gps
pov

repe

2478393

1484377

$Q = 0.79 \text{ cfs}$
 $V = 335.3 \text{ m/s}$

