

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 71-10913

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

IRON CREEK

TRIBUTARY

VALLEY CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: 71-11, 71-12, 71-13

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

IRON CREEK

SE1/4NW1/4NW1/4

Sec. 8, Twp 10N, Rge 13E, B.M.

CUSTER County

Method of Determination: Field observation and IDWR spatial datapoint

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	
10N	13E	8					X												

Method of Determination:

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 taken

2. Measurements: Diameter of the orifice was measured at 4 inches and the amount of head above the center of the orifice was measured at 17.5 inches. However a high water mark on the fish screen structure was measured from the center of the orifice at 22 inches

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 22 inches (to high water mark) = 1.83 feet

$$Q = (0.67)(0.087)[2(32.2)(1.83)]^{1/2}$$

$$Q = 0.63 \text{ cfs}$$

Permitted at 0.80 cfs, recommend a flow of 0.63 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:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.63 \text{ cfs})(184 \text{ days})(1.9835) = 229.9 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 71-10913 was permitted for the diversion of up to 0.80 cfs from Iron 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 Iron Creek through a 4 inch orifice, with 17.5 inches of head above the center of the orifice. However, 22 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 additional water had been utilized by the fish screen bypass in the past. Note that permit 71-10913 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. In addition permit 71-10913 was permitted with the wrong description of the place of use (NWNW1/4) the correct place of use is NENW1/4. Therefore, a licensing amendment was solicited from IDF&G to correct the place of use for permit 71-10913. The signed licensing amendment and fee (via interagency billing # Bill0581) was recently received from IDF&G allowing for the licensing of 71-10913.

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	0.630 CFS	229.9 AF
<u>Totals:</u>		0.630 CFS	229.9 AF

2. Recommended Amendments

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

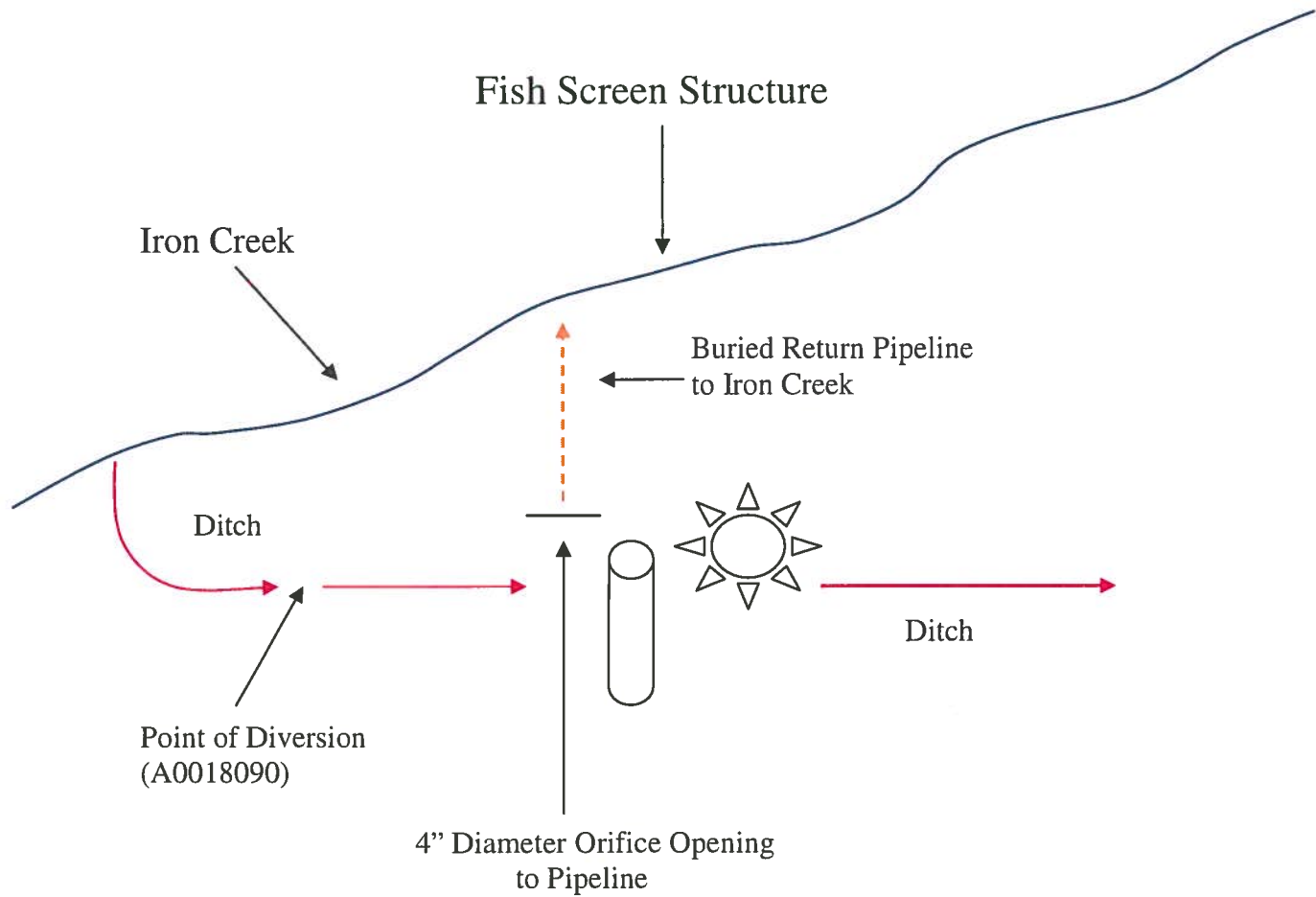
☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Benny Walke Date 4/5/12

Reviewer Chris Merritt Date 4/9/12

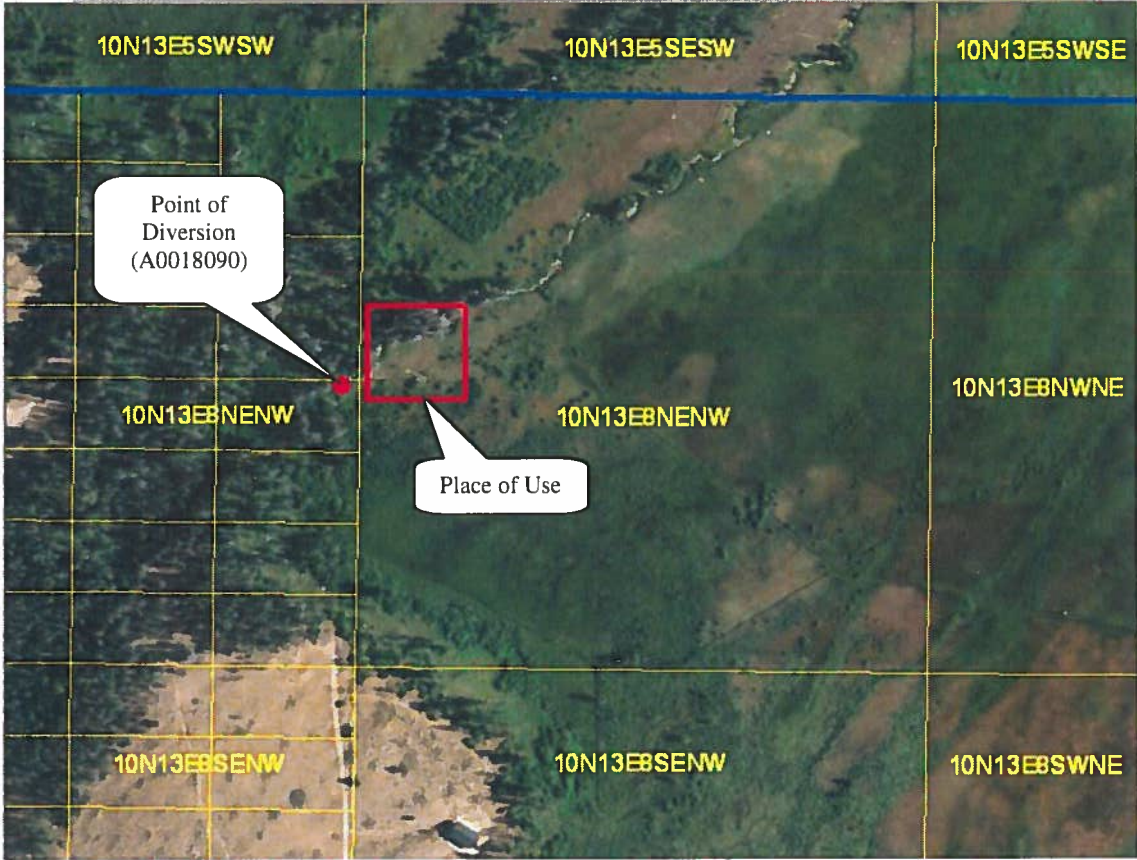
System Diagram for 71-10913



(Diagram Not to Scale)

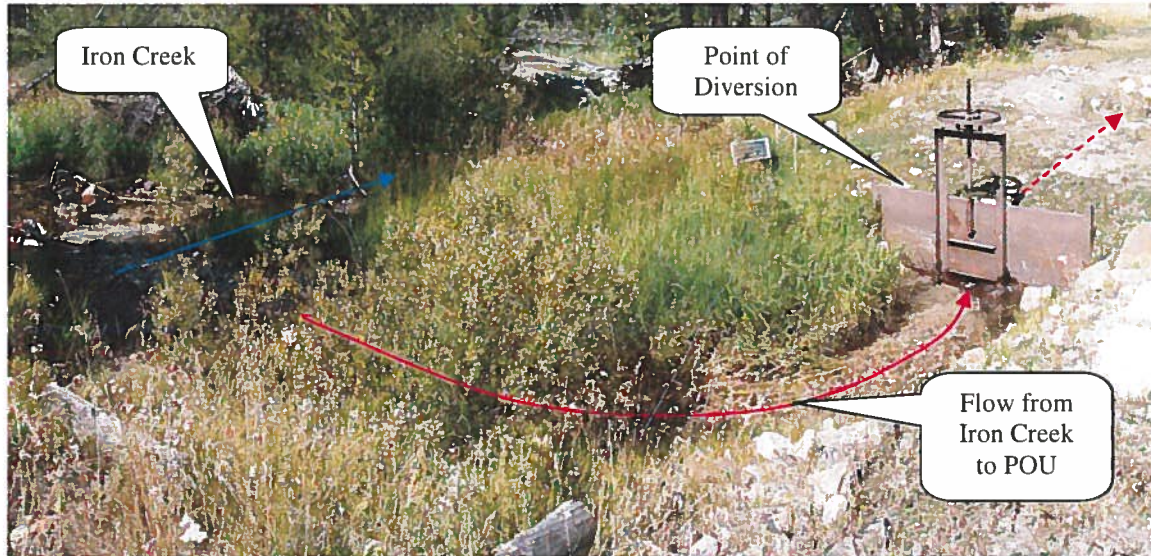


71-10913 Field Exam Map



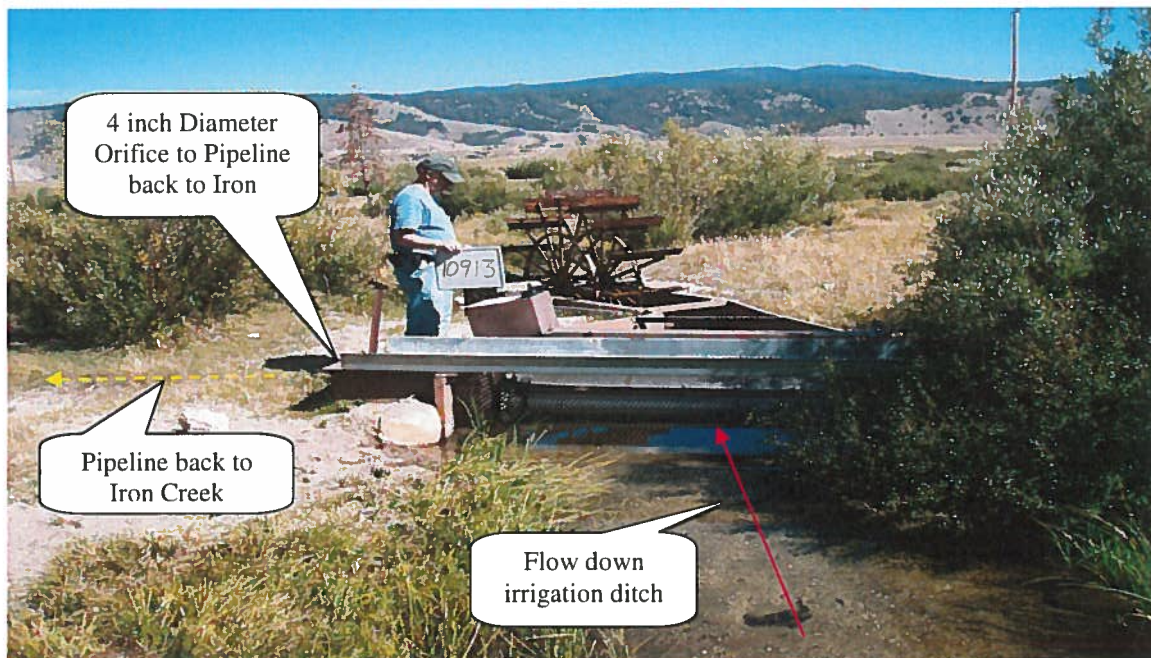
Photos for 71-10913 Field Exam

August 23, 2011



Above: View of Point of Diversion for 71-10913 (site tag #A0018090)

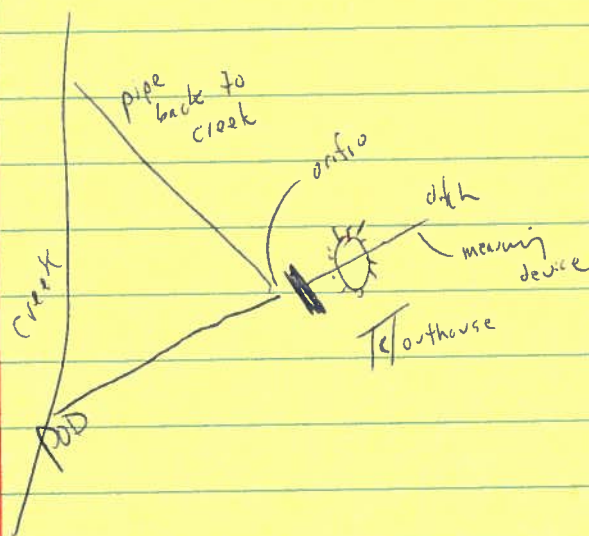
Below: View of Place of Use for 71-10913





71-10913

POD site tag A0018090



GPS POD
2422465
1496520

from top of plate 2.5" water level
7" to high water mark

$y = \text{dia}$
orifice

15" from center to top of plate

17.5" of head of orifice

22" of head of orifice to
high water mark