

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 73-12263
Exam Date: 08/08/2023

1. Current Owner:
STATE OF IDAHO
IDAHO FISH & GAME COMMISSION
PO BOX 25
BOISE ID 83707-0025

2. Accompanied by:
None

3. **SOURCE:**
SULPHUR CREEK

Tributary
PAHSIMEROI RIVER

Method of Determination: Field exam and GIS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
73-12251	Sulphur Creek	Stockwater	Decreed

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
73-2A	Sulphur Creek	Irrigation, Stockwater	Decreed

Comments: This right provides Idaho Fish & Game with a bypass to prevent fish from entering the pipeline supplying water for right 73-2A.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

SULPHUR CREEK NW¼ SE¼, Sec. 13, Twp 14N, Rge 21E, B.M. CUSTER County

Method of Determination: GPS

PLACE OF USE: FISH PROPAGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14N	21E	13														X			

Method of Determination: GPS

D. FLOW MEASUREMENTS

1. Measurements: None. Fish propagation portion of the diversion is combined with water for one other right until it is piped at the fish screen. The system does not allow for a direct measurement.

E. FLOW CALCULATIONS

Measured Method:

The following equation has been used historically by IDWR for similar IDFG fish bypass structures:

$$Q = C_d A_o \sqrt{(2gh)}$$

Where:

Q = flowrate (cfs)

C_d = coefficient of discharge

A_o = Area of orifice opening (ft²)

g = gravitational acceleration $\left(32.2 \frac{\text{ft}}{\text{s}^2}\right)$

h = Measured head above center of orifice opening (ft)

The orifice diameter for this structure is 4 inches, which results in $A_o = 0.09 \text{ ft}^2$.

The high water mark measured above the orifice center was 3.125 ft.

The standard coefficient of discharge used by IDWR for similar IDFG diversion structures is 0.67.

$$Q = 0.86 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses:

$$0.80 \text{ cfs} \times 1.9835 \text{ AF/cfs/day} \times 214 \text{ days/season} = 340 \text{ AF/season}$$

G. NARRATIVE/REMARKS/COMMENTS

This fish screen structure is a similar design to 73-12256 in the Pahsimeroi Valley. The calculated flowrate exceeds the permitted rate, therefore it is recommended that the right is license at the full rate allowed by the permit. POD and POU shapes were updated in Ad Hoc based on GPS locations.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
FISH PROPAGATION	04/01 to 10/31	0.80 CFS	340 AF
<u>Totals:</u>		0.80 CFS	340 AF

2. Recommended Amendments

_____ Change P.D. as reflected above _____ Add P.D. as reflected above x None

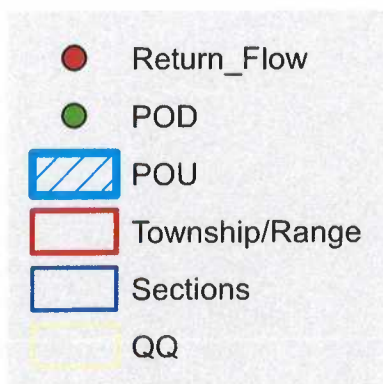
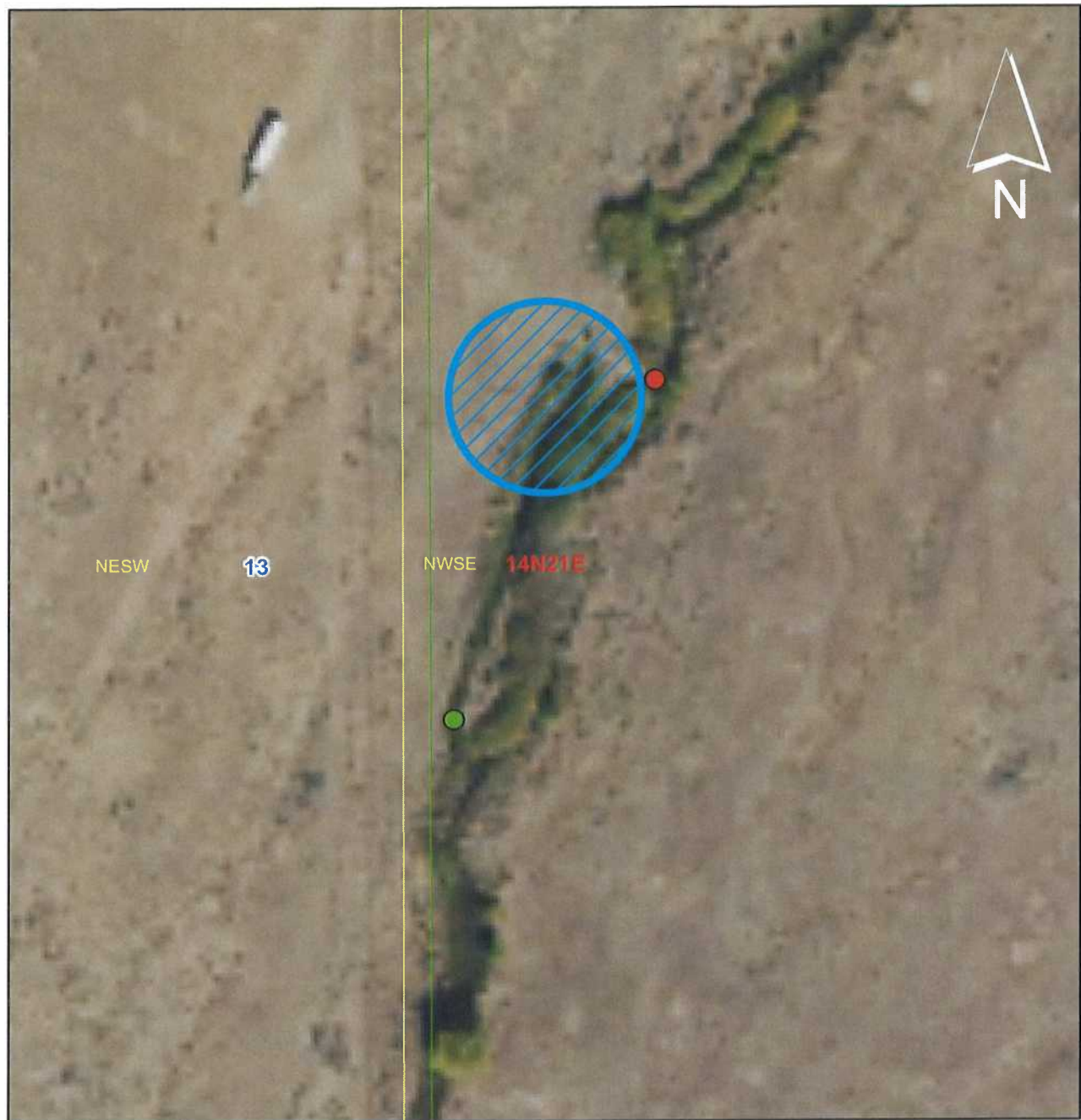
_____ Change P.U. as reflected above _____ Add P.U. as reflected above x None

I. AUTHENTICATION Thomas Lafortune -

Field Examiner's Name _____ Thomas Lafortune _____ Date _____ 12/20/2023

Reviewer _____ James Cefalo _____ Date _____ 12/21/2023

73-12263 Field Exam



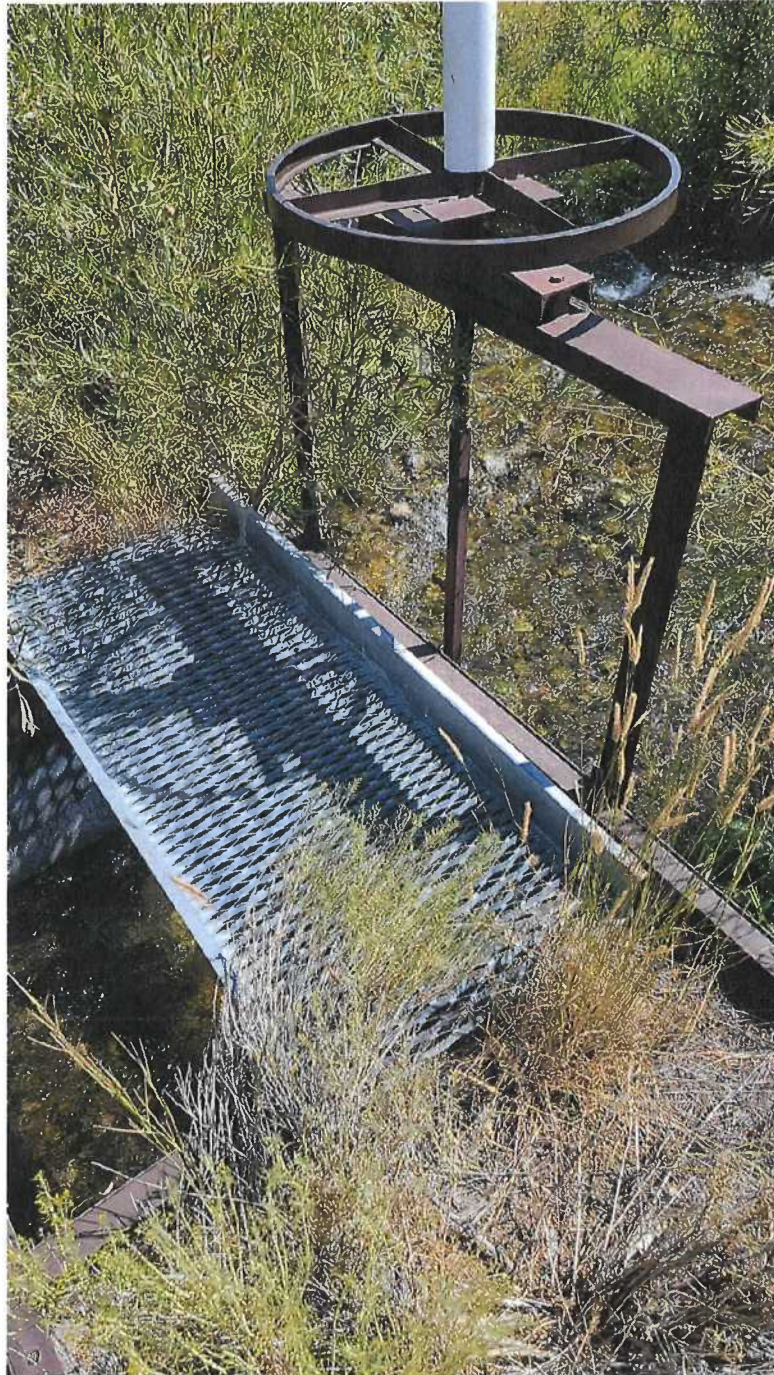


Photo 1: Diversion and headgate from Sulphur Creek



Photo 2: Fish screen/bypass. Pipeline for right 73-2A heads north towards sagebrush and willows. Fish bypass pipe heads right (east), perpendicular to the structure.



Photo 3: Return flow to Sulphur Creek. Right (southern) 10" pipe is for fish bypass. Left (northern) pipe is overflow from irrigation pipeline.