

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-7489

Exam Date: 9/12/2011

1. Current Owner: STATE OF IDAHO
DEPT OF FISH & GAME
PO BOX 25
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: 72-2048, 72-10303, and 72-16779 (late claim in SRBA)

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

EAST FORK SALMON RIVER SW1/4SW1/4NE1/4 Sec. 1, Twp 09N, Rge 17E, B.M.
CUSTER County

Method of Determination: Field observation, aerial photography, and IDWR spatial data point (no site tag)

2.

PLACE OF USE: FISH PROPAGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<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>	
09N	17E	1			X														

Method of Determination: Field observation, GPS, 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</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>
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 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 20 inches. However, 28 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 28 inches (to high water mark) = 2.333 feet

$$Q = (0.67)(0.087)[2(32.2)(2.333)]^{1/2}$$

$$Q = 0.71 \text{ cfs}$$

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:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.71 \text{ cfs})(214 \text{ days})(1.9835) = 301.4 \text{ afa}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 72-7489 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 20 inches of head above the center of the orifice. However, 28 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 72-7489 was permitted with the wrong irrigation season (03/15 to 11/15), when the standard for the area is actually 4/1 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 72-7489 was permitted with a point of diversion and place of use within the SWSW of Section 1 when it was actually developed within the SWNE of Section 1. For this reason, a licensing amendment was solicited from the IDF&G to correct the point of diversion and place of use. The signed licensing amendment and fee (via interagency billing # BILL0581) was recently received from IDF&G allowing for the licensing of 72-7489.

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	0.710 CFS	301.40 AF
<u>Totals:</u>		0.710 CFS	301.40 AF

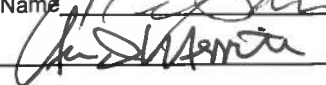
2. Recommended Amendments

☒ 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 4/5/2012

Reviewer  Date 4/9/12

72-7489 System Diagram

(NOT TO SCALE)

EAST FORK
SALMON
RIVER



TO IRRIGATION
BELOW

4" DIA OFFICE TO
PIPELINE BACK
TO RIVER

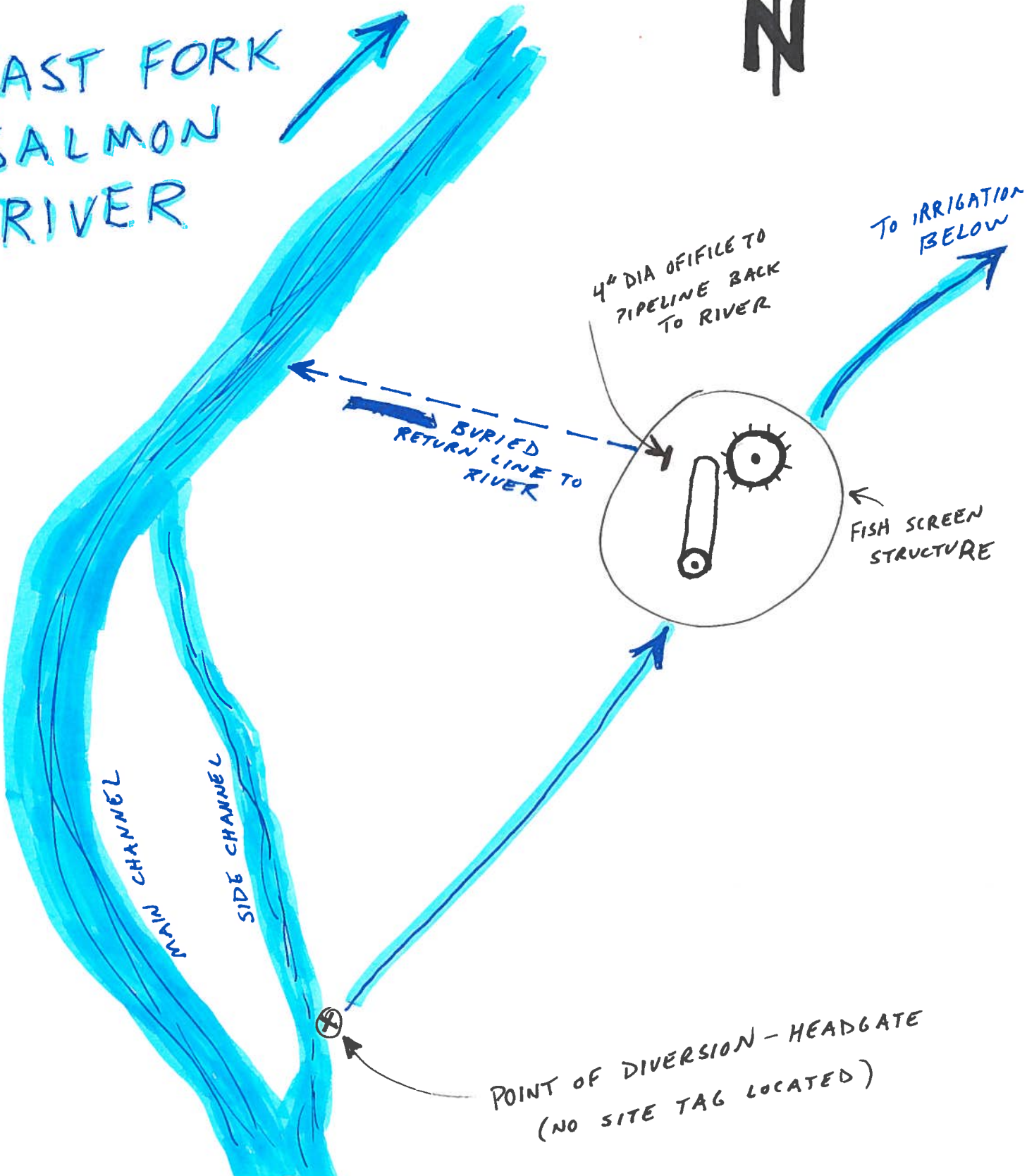
BURIED
RETURN LINE TO
RIVER

FISH SCREEN
STRUCTURE

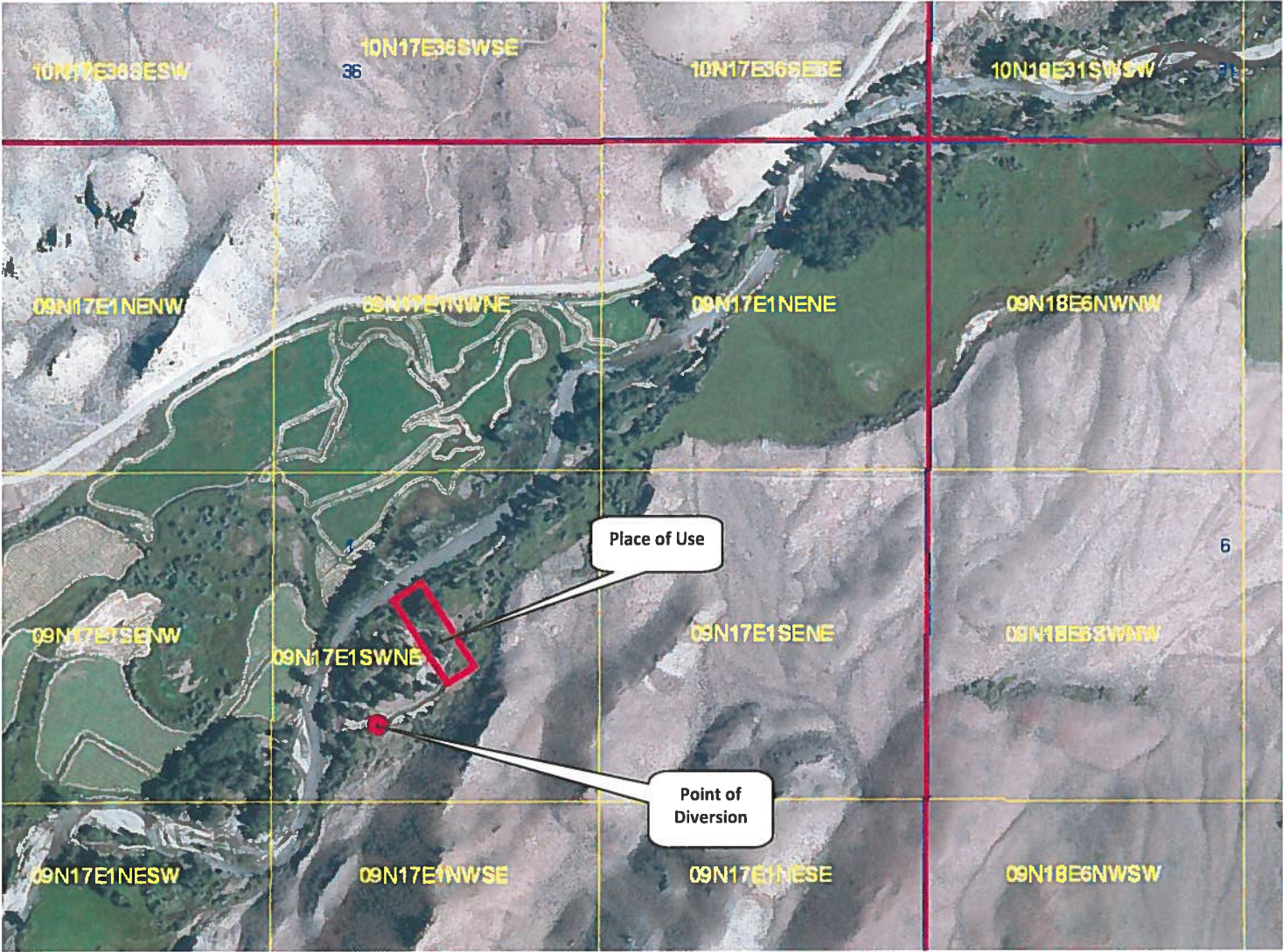
POINT OF DIVERSION - HEADGATE
(NO SITE TAG LOCATED)

MAIN CHANNEL

SIDE CHANNEL



72-7489 Field Exam Map

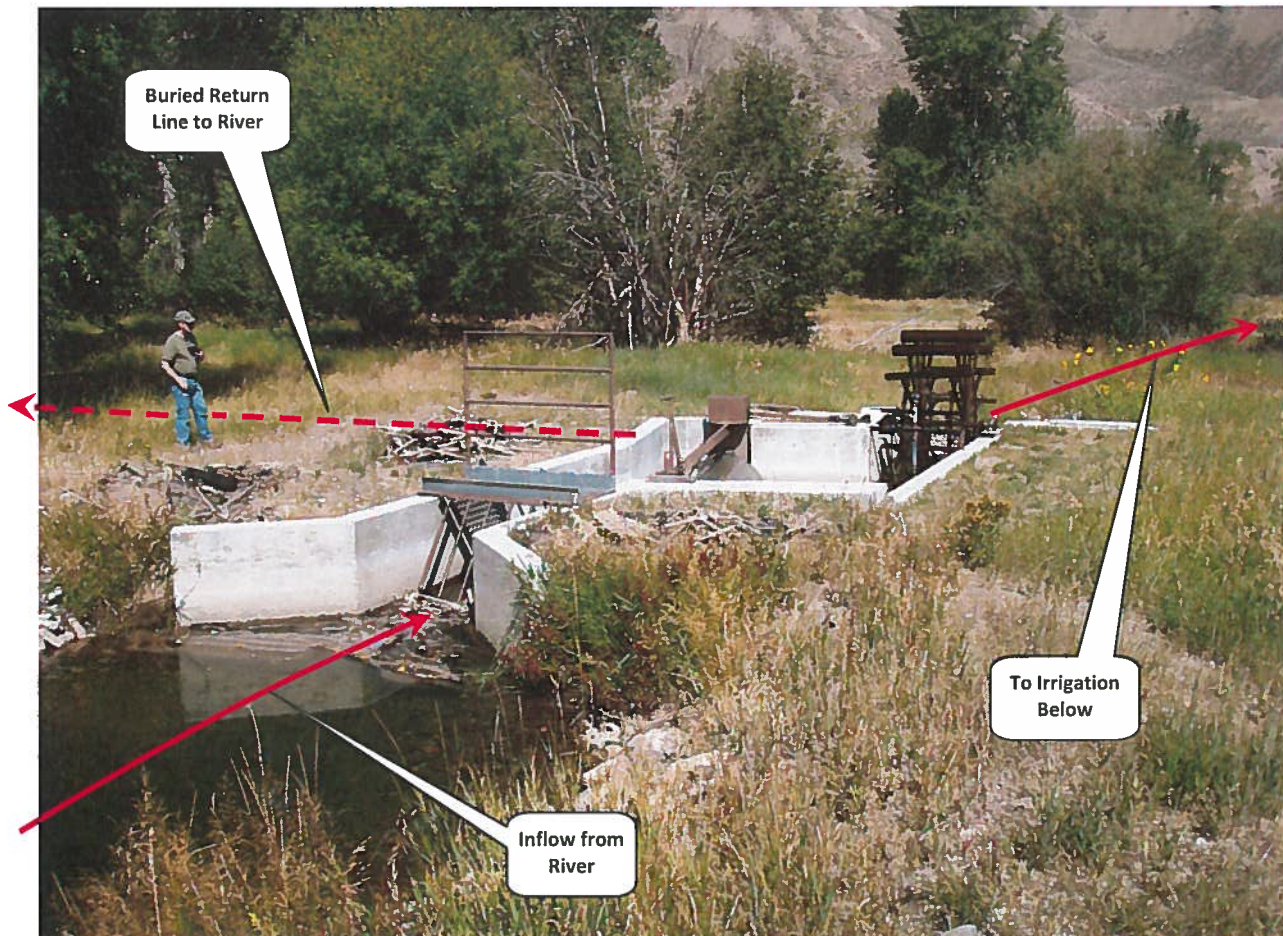


Point of Diversion & Place of Use for 72-7489



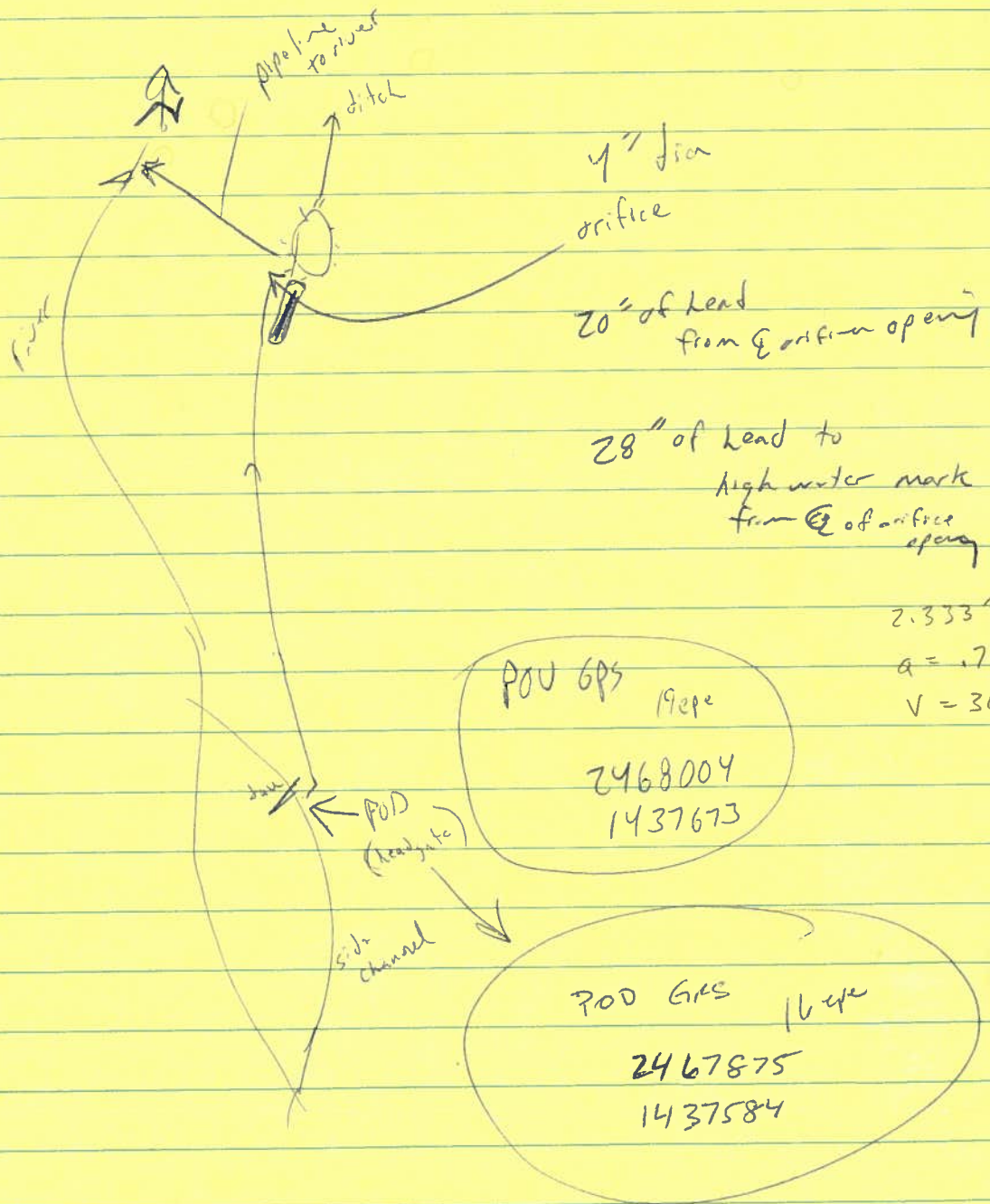
ABOVE: View looking down the East Fork of the Salmon River showing the location of the point of diversion for 72-7489.

BELOW: View of the place of use for 72-7489.



72-7489

no site tag



72-2048 72-10303

72-16779 (late claim)