

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 72-7578
Exam Date: 08/05/2021

1. Current Owner:

SHILOH WARM SPRINGS RANCH LLC
PO BOX 510
CHALLIS ID 83226-0510

2. Accompanied by: Derrick Bosco

Phone No: 424-214-8743

Address:

Relationship to permit Holder: Facility Aquaculture Manager

- 3. SOURCE:**

WARM SPRING CREEK

Tributary

SALMON RIVER

Method of Determination: Field Exam visit and ArcMap aerial imagery confirm source.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
72-7209	Warm Spring Creek Springs	Fish Propagation	License
72-7577	Warm Springs Creek Springs	Fish Propagation	Permit

Comments: Permit 72-7577 is used in a separate building within the facility and has a separate POD.

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

Water Right No.	Source	Purpose of Use	Basis
72-10142, 72-10143, 72-16597, 72-16598	Warm Spring Creek	Irrigation	Decree
72-10141	Warm Spring Creek	Irrigation, Stockwater	Decree
72-7209	Warm Spring Creek	Fish Propagation	License
72-7375	Warm Spring Creek	Power	License

Comments: Most of canal flow is diverted to fish facility, then pumped back to canal for the other uses listed.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

WARM SPRING CREEK SE¼ NW¼ SW¼, Sec. 10, Twp 12N, Rge 20E, B.M. CUSTER County

Method of Determination: Site visit and ArcMap aerial imagery.

PLACE OF USE: FISH PROPAGATION

[illegible]

Method of Determination: Site visit and ArcMap aerial imagery.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X 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.

X

Aerial Photo Attached (required for irrigation of 10+ acres).

X

Photo of Diversion and System Attached

X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WSC 19	NA	NA	NA	NA	NA

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Swoffer 2100?	Current velocity meter	Swoffer	2100			

2. Measurements: IDWR employee Bob Foster (Salmon Office) made measurements on July 7 and August 5 of 1999 apparently in response to a complaint from a downstream water user.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Using a total flow measurement of 12.0 cfs (see narrative) minus the existing 6.98 cfs covered by right 72-7209 yields a recommended rate of **5.02 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: NA

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$

2. Volume Calculations for Other Uses: $5.02 \text{ cfs} \times 1.9835 \text{ AF/day} \times 365 \text{ days} = \mathbf{3634.4 \text{ AF}}$

G. NARRATIVE/REMARKS/COMMENTS

The field exam for permit 72-7578 was completed on August 5, 2021 with facility Aquaculture Manager Derrick Bosco in attendance. Water for the permit is diverted into a canal from Warm Springs Creek approximately 415' downstream of Warm Springs. No measuring device exists at the point of diversion, so a determination of the total flow diverted was not possible. The diversion from the canal to the fish propagation facility is located about 0.68 mile downstream of the diversion from Warm Springs Creek. This diversion consists of a concrete check dam installed in the canal with wooden check boards. The inlet to the facility is a submerged rectangular culvert and it feeds into 5 covered concrete raceways, each approximately 10' x 75' x 3.5 feet deep. Some water is diverted back into the canal at this point, but most of the flow is directed into a series of 12 side-by-side stair-stepped 10' x 50' x 3.5' concrete raceways. These raceways drain in an underground pipe into the settling pond, and the water is pumped back up the hill to the canal, downstream of the fish facility, where it serves a hydro project and irrigation uses nearer to Challis. Currently, the only type of fish being raised in the facility is tilapia, which is a warm water fish species.

This permit apparently originated due to a complaint from a downstream water user, which resulted in then-IDWR employee Bob Foster making site visits and flow measurements on July 7 and August 5 of 1999 (see "Foster Measurement", attachment #1). His measurements revealed that more water was being diverted to the facility than was authorized under the existing fish propagation right, 72-7209. That led to the filing of this permit and permit 72-7577. His measurements were taken at the inlet at the upstream end of the facility where the water is diverted from the canal to the fish farm. The two measurements taken there were 11.64 cfs and 11.14 cfs. It appears that the permit was based on the August 5, 1999 measurement by Bob Foster, where he measured the flow at the inlet at 11.64 cfs and the flow of a separate portion of the facility (permit 72-7577) at 1.46 cfs for a total flow of 13.1 cfs. It appears that the flow rate of the existing fish propagation right, 72-7209, 6.98 cfs was subtracted from the total, leaving the figure of 6.12 cfs for this permit. The flow of the separate portion of the facility should not have been figured into this permit's flow rate. Instead, it should have been based on the measurement at the inlet of this facility, and the August 5, 1999 figure of 11.64 cfs is the higher of the two measurements. In the letter accompanying Mr. Foster's measurement, he noted there was an accuracy factor of plus or minus 5%, so I believe it would be appropriate to license this permit at 5.02 cfs, which is the difference between the measured flow rate rounded up to 12.0 cfs and the existing right, which is 6.98 cfs. A May 9, 2000 Tim Luke memo which resulted from his April 26, 2000 field visit, noted a measured flow rate into the facility at 12.3 cfs. In my conversation with Mr. Bosco, he said he has measured the inflow at the facility at 12.0 cfs, so I believe this is a reasonable diversion rate for the facility and this permit. It would seem that the measurement made in 1999 is a more accurate reflection of the permit development period, as it was made about 6 months before the priority date, where we are now 8 years after proof of beneficial use was submitted. The flow at the facility is carried out 24 hours per day, year-round, so the volume would be figured at 5.02 cfs x 1.9835 acre-feet/day x 365 days, or 3634.4 AF.

Conditions of approval appear to have been met. There is a straight section of concrete rectangular culvert where the water flows into the facility. This section contains a screen which could have a metal check structure attached for control of the diversion, in conjunction with removal of checkboards in the canal. It was noted that the permit lapsed because proof of beneficial use was not filed; proof was later filed, and the priority date was advanced.

Have conditions of permit approval been met? X 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	01/01 to 12/31	5.02 CFS	3,634.4 AF
<u>Totals:</u>		5.02 CFS	3,634.4 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

Field Examiner's Name Jim Bitzenburg Date 9-8-2021
Jim Bitzenburg - Senior Water Resource Agent

Reviewer _____ Date _____

Shiloh Warm Springs Ranch, LLC
72-7578 POD, POU Map



Legend

- Township/Range
- Sections
- QQ

0 0.05 0.1 0.2 Miles





System Diagram 72-7578 Shiloh Warm Springs Ranch, LLC



Point of Diversion – Warm Spring Creek (blue arrow) and canal (green arrow)

Intake from canal to fish facility





Upper covered raceways

Lower stair-stepped raceways



72-7578 Shiloh Warm Springs Ranch, LLC



Settling pond – Pump at arrow

Water from the settling pond is pumped into the canal



Memorandum

Date: August 09, 1999

To: Jim Stanton, Southern

From: Bob Foster, Salmon

RECEIVED
AUG 11 1999
Department of Water Resources
Southern Region

Re: Measurements of 72-7209 / Morganroth complaint

I have enclosed two sets of measurements taken approximately one month apart as well as a drawing showing the layout and dimensions of the fish raceways operated by Mark Lupher of Epicenter Aquaculture.

Based on these measurements it would appear Mr. Lupher is exceeding the licensed diversion rate of 72-07209 by a substantial amount. The facility volume of .8 acre feet may be exceeded as well.

Mr. Morganroth maintains that the construction and use of the new concrete raceways has increased the water use by Mr. Lupher and has injured the Morganroth water right(s) for irrigation and power generation.

It would also appear that Mr. Lupher may be in violation of one or more of the conditions of approval of 72-07209 with no measuring device at the point of diversion or at the point of effluent discharge. The only measuring device observed was a four foot rectangular weir at the intake to the lower dirt ponds, no measuring device of any sort was observed at the concrete raceways.

Based on these findings we probably need to inform Mr. Lupher that he is exceeding the licensed diversion rate and needs to file an additional application for excess amount. It may be very difficult to insure that Mr. Lupher complies with any action we may take due to the fact there is no water master control on the source as well as no control or measuring devices at the point of diversion.

Let me know how you want to proceed with this matter and if I can be of further assistance.

Foster Measurement
Attachment #1

Meas. No. 000000
Comp. by R. Foster

Date. 8-5, 1995, Party R, *Reagan*
Width Area Vel. G.H. Disch.
Method No. secs. G.H. change in hrs. Susp.
Method coef. Hor. angle coef. Susp. coef. Meter No.
Type of meter 2187 Date rated Tag checked
Meter ft. above bottom of wt. Spin before meas. 015 after 0K
Meas. plots % diff. from rating Levels obtained

GAGE READINGS					WATER QUALITY MEASUREMENTS			
Time		Inside	HM	Chart	Outside	No	Yes	Time
						<u>Samples Collected</u>		
						No	Yes	Time
						<u>Method Used</u>		
						EDI	EWI	Other
						<u>SEDIMENT SAMPLES</u>		
						No	Yes	Time
						<u>Method Used</u>		
						EDI	EWI	Other
						<u>BIOLOGICAL SAMPLES</u>		
						Yes		Time
						No		Type

Weighted M.G.H.
G. H. correction
Correct M.G.H.

Check bar, chain found changed to at
Wading, cable, ice, boat, upstr., downstr., side bridge. feet, mile, above, below gage.
 Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%); based on the following cond:
 Flow good
 Cross section good
 Control . None
 Gate operating Weather
 Intake/Orifice cleaned Air °C @ Water °C @
 Record removed Extreme Indicator: Max. Min.
 Manometer N₂ Pressure Tank Feed Bbl rate per min.
 CSG checked Stick reading
 Observer
 HWM outside, in well
 Remarks first measurement at inlet, second at outlet
measurement at farm boat wren 23' or 1.46 cfs
 GPS LAT/LONG
 G.H. of zero flow ft. Sheet No. of sheets

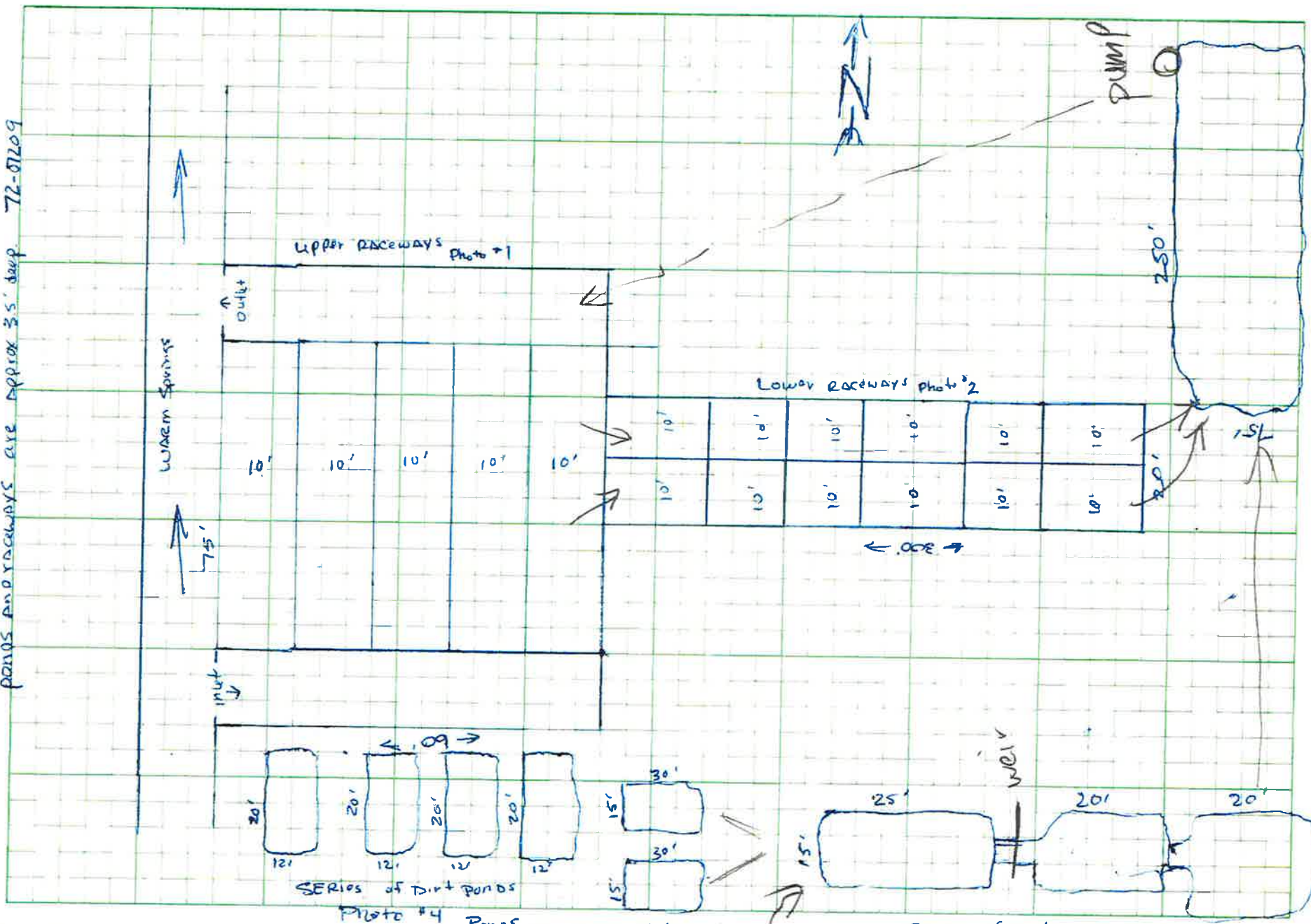
.0 .10 .20 .30 .40 .50 .60 .70 .80 .90 .95

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Obstructions from depth	Revolutions	Time in seconds	VELOCITY		Adjusted for hor. angle or	Area	Discharge
							At point	Mean in vertical			
INLET	LEW 1.0	—	2 1/8								
	1.5	.50	3.80				.69	.635		1.900	1.20
	2.0	.50	3.80				.75	.710		1.900	1.34
	2.5	.50	3.70				.67	.660		1.850	1.22
	3.0	.50	3.60				.82	.765		1.800	1.37
	3.5	.50	3.50				.76	.730		1.750	1.27
	4.0	.50	3.50				.79	.730		1.750	1.27
	4.5	.50	3.30				.86	.845		1.650	1.39
	5.0	.50	3.30				.89	.800		1.650	1.32
	5.5	.50	3.20				.85	.790		1.600	1.26
REW 6.0	—										11.64 cfs
WATER MEASUREMENT											1.46 cfs
											13.10 cfs
OUTLET	LEW 0	.80	2.9	2 1/8			At Point	Avg. Vel.			
	1.30	.50	2.90				1.40	1.425		1.450	2.06
	1.90	.50	2.90				.89	.895		1.450	1.29
	2.30	.50	2.90				1.00	.980		1.450	1.42
	2.80	.50	2.90				1.14	.980		1.450	1.42
	3.30	.50	2.90				1.09	.900		1.450	1.30
	3.80	.50	2.90				1.15	.955		1.450	1.35
	4.30	.50	2.90				.90	.825		1.450	1.19
	4.80	.50	2.90				1.26	.950		1.450	1.37
	5.30	.50	2.90				1.25	1.110		1.450	1.60
REW 5.80	—										13.03 cfs

River at—											
Angle coef. Point	Dist. from initial point	Width	Depth	Observations	Revolutions	Time in sec. -s	VELOCITY		Adjusted for hor. angle or	Area	Discharge
							At point	Mean in vertical			
RE 20	—	—	—	1/8							
25	50	3.1					1.81	1.65		1.55	1.07
30	50	3.2					1.81	1.78		1.60	1.25
35	50	3.2					1.81	1.86		1.60	1.38
40	50	3.3					1.81	1.65		1.65	1.09
45	50	3.4					1.81	1.76		1.70	1.30
50	50	3.5					1.81	1.75		1.75	1.18
55	50	3.7					1.75	1.70		1.85	1.35
60	50	3.7					1.75	1.80		1.85	1.07
65	50	3.8					1.75	1.76		1.90	1.45
70	50	—	—								
75	50	—	—								
80	50	—	—								
85	50	—	—								
90	50	—	—								
95	50	—	—								
100	50	—	—								
105	50	—	—								
110	50	—	—								
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835	50	—	—								
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845	50	—	—								
850	50	—	—								
855	50	—	—								
860	50	—	—								
865	50	—	—								
870	50	—	—								
875	50	—	—								
880	50	—	—								
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890	50	—	—								
895	50	—	—								
900	50	—	—								
905	50	—	—								
910	50	—	—								
915	50	—	—								
920	50	—	—		</						

72-57209



Not to scale

Series of Dirt ponds South of
Concrete Raceways photo # 6



Project Inspection Photographs



File Number: 72-07209

Taken By: Bob Foster

Notes

Upper
Raceways

inlet in
lower left
corner

photo taken
looking
NNE

①



Notes

lower
raceways

photo taken
looking
west.

②





Project Inspection Photographs



File Number: 72-07209

Taken By: Bob Foster

Notes

largest
Pond east
of concrete
Raceways

③



Notes

Series of 6
Dirt ponds
south of
concrete
raceways.

Four foot
rectangular
wider at
arrow in
upper right

④





Project Inspection Photographs



File Number: 72-07209

Taken By: Bob Foster

Notes

SERIES OF 6
DIRT PONDS
SOUTH OF
CONCRETE
RAILWAYS

(5)



Notes

SERIES OF
6 DIRT PONDS
SOUTH OF
CONCRETE
RAILWAYS

(6)





State of Idaho

DEPARTMENT OF WATER RESOURCES

206 Van Dreff, Suite B, Salmon, Idaho 83467-4117

Phone: (208) 756-6644 FAX: (208) 756-6644

DIRK KEMPTHORNE
GOVERNOR

KARL L. DREIER
DIRECTOR

July 07, 1999

Mark Luper
HC-61 Box 3016
Challis, Idaho 83226

Mr. Luper:

Please find enclosed copies of the calculated flow measurements I completed this morning.

It would appear the total flow of the inlet from the canal (11.14 cfs) along with the measurement obtained at the four foot weir (1.10 cfs) at the lower spring, there is a combined total of 12.24 cfs. The measured flow at the outlet from the raceways totaled 12.26 cfs.

Based on these measurements I would conclude there is no appreciable evaporation loss and there may be a slight gain. Please keep in mind these measurements have an accuracy factor of plus or minus five percent.

If I can be of further assistance or if you have any questions regarding these measurements feel free to call me at the above number.

Sincerely,

Robert E. Foster
Sr. Water Rights Agent