

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-16948
Exam Date: 11/14/2019

1. Current Owner:
OLD CURRAN RANCH LLC PO BOX 3398 HAILEY ID 83333
2. Accompanied by: Jason Howald (Ranch Manager) & Frank Erwin (36A Watermaster)
Phone No: Jason Howald (573) 253-9739 Frank Erwin (208) 837-4433
Address: PO BOX 3398 HAILEY ID 83333
Relationship to permit Holder: Ranch Manager

3. **SOURCE:**
WASTE WATER

Tributary
BILLINGSLEY CREEK

Method of Determination: Aerial Photography and on-site inspection.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
36-16857	Billingsley Creek	Irrigation-Wildlife-wildlife storage-Diversion to Storage	Decreed

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

WASTE WATER NE¼ NE¼ SE¼, Sec. 23, Twp 07S, Rge 13E, B.M. GOODING County

Method of Determination: Aerial Photography and on-site observation.

2.

PLACE OF USE: WILDLIFE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07S	13E	23															X	X	

PLACE OF USE: WILDLIFE STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07S	13E	23															X	X	

Method of Determination: Aerial Photography and on-site observation.

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.

Diversion ID No.*

Spatial ID 341130
Curran Ditch**D. FLOW CALCULATIONS**

Measured Method: Staff gage reading on 2 ft. standard contracted rectangular weir.

Reference: U.S. Bureau of Reclamation. *Water Measurement Manual*, Third Edition. U.S. Government Printing Office, 2001 p. A-3

E. VOLUME CALCULATIONS

1. Volume Calculations: Wildlife volume based on water measurement records submitted by the Watermaster. See attached narrative, and spreadsheet, for full explanation of wildlife volume calculations. Wildlife storage volume of 51.2 AF is based on a 7.5 acre pond with an average depth of 4 feet* (30 AF) plus the evaporation of 21.2 AF (7.5 x 2.83 AF per University of Idaho precipitation deficit). This exceeds the Wildlife storage volume on the permit so the license will be limited to 43.9 AF.

* per ranch manager—application for permit indicated a depth of 3 feet.

F. NARRATIVE/REMARKS/COMMENTS

On November 14, 2019 David Graybill (IDWR employee) and I performed a field exam for Water Permit 36-16948 (6.0 cfs and 43.9 AF) on property known as the Old Curran Ranch. The property is located at 18199A U.S. Highway 30 approximately 1.1 miles south of Hagerman. We met with Ranch Manager Jason Howald and Frank Erwin, the Watermaster of Water District 36-A. Mr. Howald showed us the developed water use for the Wildlife, Wildlife Storage, and Diversion-to-storage components of the permit.

Mr. Howald began with showing us a newly-installed (July 2019) 2 ft. standard contracted rectangular weir located in the NE ¼ of the SE ¼ of Section 23, Township 07 South, Range 13 East. He explained that the Point of Diversion (POD) is located approximately 1000 ft. to the northeast and adjacent to U.S. Highway 30. From the POD water flows approximately 400 feet through a buried pipe that discharges into an open ditch and flows approximately 600 feet to the new weir. From the weir water flows approximately 20 feet downstream where the water is conveyed southeast through a field for approximately 950 feet in a buried 18 inch pipe. On the other side of the field the buried 18 inch pipe goes under a road and discharges into an open ditch that conveys the water approximately 500 feet to the 7.5 acre pond Place of Use (POU).

The Watermaster indicated that the full amount of wastewater is not available until irrigation ceases in the fall. The Ranch Manager and the Watermaster both indicated that the amount of water in the ditch on the day of the exam was a typical maximum end-of-irrigation-season flow based on their years of experience and past observations. On the day of the exam I observed a staff gage head reading of 0.74 which indicates a flow rate of 4.06 cfs which is consistent with winter flow recordings made by the Ranch Manager. Flow records submitted to IDWR from the Watermaster indicate that flows can peak, during the winter months, as high as 4.22 cfs. Old Curran Ranch LLC, also owns water right 36-

16857 that has Irrigation, Wildlife, Wildlife Storage, and Diversion to Storage (14.1cfs and 56.0 AF)) uses that cover a portion of the 7.5 acre pond POU. This permit will cover the entire 7.5 acre pond and overlap that portion associated with 36-16857.

Conditions of the permit have been met and I recommend licensing 4.22 cfs and 1563.4 AF (43.9 AF plus 1519.5 AF) per year based on IDAPA rule 37.03.02 Beneficial Use Exam Rules (03/29/2012).

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>
WILDLIFE	01/01 to 12/31	4.22 CFS	1519.5 AF
WILDLIFE STORAGE	01/01 to 12/31		43.9 AF
DIVERSION TO STORAGE	01/01 to 12/31	4.22 CFS	

Totals: 4.22 CFS 1563.4 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 ☒ None

I. AUTHENTICATION

Kent Aasa Water Resource Agent, Senior

Field Examiner's Name  Date 06/09/2020

Reviewer _____ Date _____



Sections



QQ



Water Permit POD

Field Exam 36-16948

36-16948 POD
Looking south to weir under trees at corn field
(photo from Google Earth Street view)



Old Curran Ranch 36-16948 POU



Old Curran Ranch 36-16948 Open Ditch to POU



Old Curran Ranch 36-16948 November 14, 2019
Foreground: 2 ft. Standard Rectangular Contracted Weir
Background: 18 inch buried pipe begins at old weir structure



Old Curran Ranch 36-16948 20. Standard contracted rectangular weir



36-16948 POD
Looking south to weir under trees at corn field
(photo from Google Earth Street view)



Field Exam 36-16948

Old Curran Ranch 36-16948_POU



Field Exam 36-16948

Old Curran Ranch 36-16948_Open Ditch to POU



Field Exam 36-16948

Old Curran Ranch 36-16948_November 14, 2019
Foreground: 2 ft. Standard Rectangular Contracted Weir
Background: 18 inch buried pipe begins at old weir structure



Field Exam 36-16948

Old Curran Ranch 36-16948 2ft. Standard contracted rectangular weir



Field Exam 36-16948

Narrative for Calculating the AFA for 36-16948

Permit 36-16948 is for the use of wastewater discharged from the Lemmon fish hatchery. During irrigation season the discharge water from the hatchery is rediverted to fields for irrigation of crops. The Watermaster indicated that, from approximately March 15 each year, the full amount of wastewater is not available for permit 36-16948 until irrigation ceases in the fall. The License Examination was performed on November 4, 2019 when all of the wastewater was available. A flow rate of 4.06 cfs was measured on the day of the exam and that is consistent with winter flow recordings made by the Ranch Manager.

The Ranch Manager made the very first weekly flow measurement of 1.06 cfs on July 17, 2019. He continued to record measurements approximately every 5 to 7 days. On March 18, 2020 the Watermaster submitted a record of measurements to IDWR taken from mid-July 2019 to mid-March 2020. The submitted measurements cover the 237 days between July 17, 2019 and March 10, 2020. To calculate an annual acre-foot volume (AFA) it is necessary to have data for 365 days. I created a spreadsheet using the submitted measurements and extrapolated some data to fill in the 128-day gap.

To create a 365 day spreadsheet of measurement values it was necessary to use three assumptions. First, in terms of entering the submitted measurements on the spreadsheet, each recorded value was carried forward each subsequent day until the next measurement (5 to 7 days later). Then that value was carried forward each day until the next measurement and so on. That created a daily record of values for 237 days. The second assumption involves the four day gap from March 10 (4.06 cfs) to March 15 (the approximate day that irrigation diversion begins*). Using the same process of carrying values forward, the 4.06 cfs was carried forward for March 11 through 14. Finally, the third assumption involves entering 1.06 (the very first measurement recorded on March 15, 2019) as the amount of water available each day from March 15 through July 16 which completes a 365 day record of flow measurements.

*As per the Watermaster

	Jan		Feb		Mar		Apr		May		June		July		Aug		Sept		Oct		Nov		Dec	
Day	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF	cfs	AF
1	4.06	8.0530	3.58	7.1009	3.12	6.1885	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530
2	4.14	8.2117	3.58	7.1009	3.12	6.1885	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530
3	4.14	8.2117	3.58	7.1009	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530
4	4.14	8.2117	3.58	7.1009	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.44	2.8562	3.05	6.0497	4.22	8.3704
5	4.14	8.2117	3.58	7.1009	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.44	2.8562	3.05	6.0497	4.22	8.3704
6	4.14	8.2117	3.58	7.1009	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.06	2.1025	1.44	2.8562	3.05	6.0497	4.22	8.3704
7	4.14	8.2117	3.05	6.0497	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.44	2.8562	3.58	7.1009	4.22	8.3704
8	4.06	8.0530	3.05	6.0497	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.44	2.8562	3.58	7.1009	4.22	8.3704
9	4.06	8.0530	3.05	6.0497	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.44	2.8562	3.58	7.1009	4.22	8.3704
10	4.06	8.0530	3.05	6.0497	4.06	8.0530	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.98	3.9273	3.58	7.1009	4.22	8.3704
11	4.06	8.0530	3.05	6.0497	4.06	8.0530	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.98	3.9273	3.58	7.1009	4.22	8.3704
12	4.06	8.0530	3.19	6.3274	4.06	8.0530	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.06	2.1025	1.98	3.9273	3.58	7.1009	3.66	7.2596
13	4.06	8.0530	3.19	6.3274	4.06	8.0530	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.39	2.7571	1.98	3.9273	3.9	7.7357	3.66	7.2596
14	4.06	8.0530	3.19	6.3274	4.06	8.0530	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.584	1.1584	1.39	2.7571	1.98	3.9273	3.9	7.7357	3.66	7.2596
15	4.06	8.0530	3.19	6.3274	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.39	2.7571	1.98	3.9273	3.9	7.7357	3.66	7.2596
16	3.98	7.8943	3.19	6.3274	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.39	2.7571	1.98	3.9273	3.9	7.7357	3.66	7.2596
17	3.98	7.8943	3.19	6.3274	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.39	2.7571	1.86	3.6893	3.9	7.7357	3.66	7.2596
18	3.98	7.8943	3.19	6.3274	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.33	2.6381	1.86	3.6893	3.9	7.7357	3.9	7.7357
19	3.98	7.8943	3.19	6.3274	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.33	2.6381	1.86	3.6893	3.9	7.7357	3.9	7.7357
20	3.98	7.8943	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.672	1.3329	1.33	2.6381	1.86	3.6893	3.9	7.7357	3.9	7.7357
21	3.98	7.8943	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.33	2.6381	1.86	3.6893	4.14	8.2117	3.9	7.7357
22	3.98	7.8943	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.812	1.6106	1.33	2.6381	1.86	3.6893	4.14	8.2117	3.9	7.7357
23	4.06	8.0530	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	0.812	1.6106	1.33	2.6381	1.86	3.6893	4.14	8.2117	3.9	7.7357
24	4.06	8.0530	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	0.812	1.6106	1.33	2.6381	2.24	4.4430	4.14	8.2117	3.9	7.7357
25	4.06	8.0530	3.05	6.0497	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	0.812	1.6106	1.33	2.6381	2.24	4.4430	4.14	8.2117	3.9	7.7357
26	4.06	8.0530	3.12	6.1885	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	0.812	1.6106	1.62	3.2133	2.24	4.4430	4.14	8.2117	3.9	7.7357
27	4.06	8.0530	3.12	6.1885	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	0.812	1.6106	1.62	3.2133	2.24	4.4430	4.14	8.2117	4.06	8.0530
28	3.58	7.1009	3.12	6.1885	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530	4.06	8.0530
29	3.58	7.1009		0.0000	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530	4.06	8.0530
30	3.58	7.1009		0.0000	1.06	2.1025	1.06	2.1025	1.06	2.1025	1.06	2.1025	0.86	1.7058	1.06	2.1025	1.62	3.2133	3.05	6.0497	4.06	8.0530	4.06	8.0530
31	3.58	7.1009		0.0000	1.06	2.1025		0.0000	1.06	2.1025		0.0000	0.86	1.7058	1.06	2.1025		0.0000	3.05	6.0497		0.0000	4.06	8.0530
AFA		245.7		178.3		130.7		63.1		65.2		63.1		61.6		46.6		76.2		122.1		222.4		244.6
Total AFA =												1519.5												
1.9835 AF per cfs												36-16948 Old Curran Ranch Field Exam Flow Data												
Highlighted numbers are measurements taken that day--then that number is carried forward to the next recorded measurement.																								
March 15, 2020 Irrigation starts and wastewater flow diminishes																								
1.06 is extrapolated from March 15, when irrigation begins and wastewater flow diminishes, to July 17, the day of the very first measurement.																								

Field Exam 36-16948

Table A7-2 [continued]. Discharge of standard contracted rectangular weirs in ft³/sec. Shaded entries determined experimentally. All others computed from the formula $Q = 3.33(L - 0.2h_1)h_1^{1.5}$

Head, h_1 ft	2.0	3.0	4.0	5.0	6.0	7.0
0.61	2.98	4.57	6.15	7.74	9.33	10.9
.62	3.05	4.68	6.30	7.93	9.55	11.2
.63	3.12	4.79	6.45	8.12	9.78	11.4
.64	3.19	4.90	6.60	8.31	10.0	11.7
.65	3.26	5.01	6.75	8.50	10.2	12.0
.66	3.34	5.12	6.91	8.69	10.5	12.3
.67	3.41	5.23	7.06	8.89	10.7	12.5
.68	3.58	5.35	7.22	9.08	10.9	12.8
.69	3.66	5.46	7.37	9.28	11.2	13.1
.70	3.74	5.58	7.53	9.48	11.4	13.4
.71	3.82	5.69	7.69	9.68	11.7	13.7
.72	3.90	5.81	7.84	9.88	11.9	13.9
.73	3.98	5.93	8.00	10.1	12.2	14.2
.74	4.06	6.05	8.17	10.3	12.4	14.5
.75	4.14	6.16	8.33	10.5	12.7	14.8
.76	4.22	6.28	8.49	10.7	12.9	15.1
.77	4.30	6.40	8.65	10.9	13.2	15.4
.78	4.38	6.52	8.82	11.1	13.4	15.7
.79	4.46	6.65	8.98	11.3	13.7	16.0
.80	4.54	6.77	9.15	11.5	13.9	16.3
.81	4.62	6.89	9.32	11.7	14.2	16.6
.82	4.70	7.01	9.49	12.0	14.4	16.9
.83	4.78	7.14	9.65	12.2	14.7	17.2
.84	4.87	7.26	9.82	12.4	15.0	17.5
.85	4.96	7.39	9.99	12.6	15.2	17.8
.86	5.05	7.51	10.2	12.8	15.5	18.1
.87	5.14	7.64	10.3	13.0	15.7	18.4
.88	5.23	7.76	10.5	13.3	16.0	18.8
.89	5.32	7.89	10.7	13.5	16.3	19.1
.90	5.41	8.02	10.9	13.7	16.5	19.4
.91	5.50	8.15	11.0	13.9	16.8	19.7
.92	5.59	8.27	11.2	14.2	17.1	20.0
.93	5.68	8.40	11.4	14.4	17.4	20.4
.94	5.77	8.53	11.6	14.6	17.6	20.7
.95	5.86	8.66	11.7	14.8	17.9	21.0
.96	5.95	8.80	11.9	15.1	18.2	21.3
.97	6.04	8.93	12.1	15.3	18.5	21.7
.98	6.13	9.06	12.3	15.5	18.8	22.0
.99	6.22	9.19	12.5	15.8	19.0	22.3
1.00	6.31	9.32	12.7	16.0	19.3	22.6
1.01	-----	-----	12.8	16.2	19.6	23.0
1.02	-----	-----	13.0	16.5	19.9	23.3
1.03	-----	-----	13.2	16.7	20.2	23.6
1.04	-----	-----	13.4	16.9	20.5	24.0
1.05	-----	-----	13.6	17.2	20.7	24.3

Old Curren Ranch
Waste Water Diversion

Attn: Kent
at IDWR

1003297

Year 2020

SECTION III Water Measurement Log (measurements must be recorded at least once per week and

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
1						
2	4.14	C.F.S.				
3			3.05			
4						
5						
6						
7		3.05				
8	4.06					
9						
10			4.06			
11						
12		3.19				
13						
14						
15						
16	3.98					
17						
18						
19						
20		3.05				
21						
22						
23	4.06					
24						
25						
26		3.12				
27						
28	3.58					
29						
30						
31						

RECEIVED

MAR 18 2020

DEPT OF WATER RESOURCES
SOUTHERN REGION

SECTION III Water Measurement Log (Continued). *(measurements must be recorded at least once per week and in units of cubic feet per second.) PLEASE SHOW TURN ON/TURN OFF DATES.*

DAY	JULY	AUGUST	SEPT	OCTOBER	NOVEMBER	DECEMBER
1		.812				
2						
3						
4				1.44		4.22
5			1.06			
6						
7		.584			3.58	
8						
9						
10				1.98		
11						
12						3.66
13			1.39		3.90	
14						
15		.472				
16						
17	1.06			1.86		
18			1.83			3.90
19						
20						
21		.812			4.14	
22						
23	.860					
24				2.24		
25						
26			1.62			
27						4.06
28		1.06		3.05	4.06	
29						
30						
31			-----		-----	



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ETIdaho 2017

Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

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2020-06-08 17:39

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Hagerman 2SW (NWS -- USC00103932)

Statistics based on thirty year normal spans 1986 to 2016 years

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds/streams) Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean ^j	mm/day												mm		
Monthly ^c	-0.36	0.44	1.59	2.90	3.64	4.72	5.33	4.66	3.60	2.17	0.31	-0.78	862	0	862
15-Day Moving Average ^d	-0.44	0.33	1.62	2.94	3.66	4.72	5.35	4.69	3.62	2.26	0.29	-0.65			
7-Day Moving Average ^e	-0.39	0.38	1.58	2.91	3.63	4.70	5.34	4.69	3.62	2.25	0.32	-0.72			
3-Day Moving Average ^f	-0.37	0.44	1.58	2.91	3.64	4.71	5.33	4.67	3.59	2.20	0.33	-0.78			

-2.83
AF

Field Exam 36-16948