Permit No 95-17300

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES BENEFICIAL USE FIELD REPORT

GENERAL INFORMATION Α.

- 1. Current Owner: TED BLANKINSHIP PO BOX 714 LEWISTON ID 83501-0714
- 2. Accompanied by: Ted Blankinship Phone No: 509-751-6007 Address: Same as above Relationship to permit Holder: Permit Holder

3. SOURCE:	Tributary
SPRING	BENEWAH CREEK
UNNAMED STREAM	BENEWAH CREEK

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights w	vith the same place of use:	YES Overlap	
Water Right No.	Source	Purpose of Use	Basis
95-13821	UNNAMED STREAM	STOCKWATER	BENEFICIAL USE CLAIM
95-13822	UNNAMED STREAM	STOCKWATER	BENEFICIAL USE CLAIM

Comments: Water rights 95-12821 and 95-13822 are beneficial use claims by same applicant, for instream stockwater use along both unnamed streams identified in this water license. They are not a concern for overlap.

2. Other water rights w	vith the same point-of-diver	sion: <u>NO</u> Overlap		
Water Right No.	Source	Purpose of Use	Basis	

Comments:

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM SW1/4 SW1/4, Sec. 3, Twp 45N, Rge 03W, B.M. BENEWAH County UNNAMED STREAM SE¼ SE¼, Sec. 4, Twp 45N, Rge 03W, B.M. BENEWAH County SPRING NE¼ SE¼ SE¼, Sec. 4, Twp 45N, Rge 03W, B.M. BENEWAH County

Method of Determination: Arcmap and GPS. PODs located at the following:

Spring to pond 1: -116º42.902, 47º16.246. Unnamed stream to pond 2: -116º42.950, 47º16.188. Unnamed stream to pond 3: -116º42.749, 47º16.184.

PLACE OF USE: IRRIGATION STORAGE and STOCKWATER STORAGE

	See		N	IE			N١	N			SV	V			S	Ξ	_	Totals	
liwb	Ring	Sec	NE	NW	SW	SE													
45N	03W	3							-				X						
45N	03W	4																Х	

Page 1

Permit No: 95-17300 Exam Date: 06/20/2018

Permit No 95-17300

PLACE OF USE: IRRIGATION FROM STORAGE

Tur	Twp Rng Sec	Saa		N	IE			N١	N			SV	N			S	E		Totals		
rwp		Ring S	Ring	wp King	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE
45N	03W	3											1,1						1.1		
45N	03W	4																6.9	6.9		

Total Acres: 8.0

Method of Determination: Arcmap and GPS.

- 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 X 1:24,000 or greater.
- X Aerial Photo Attached (required for irrigation of 10+ acres).
- X Photo of Diversion and System Attached

4.

Well or Diversion	Motor Make	Нр	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

D. FLOW MEASUREMENTS

1.						
Measurement Equipment	Туре	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: N/A

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

 Volume Calculations for irrigation: Irrigation from storage pond 1 = 0.7 acres x 3 af = 2.1 af Irrigation from storage pond 2 = 6.2 acres x 3 af = 18.6 af Irrigation from storage pond 3 = 1.1 acres x 3 af = 3.3 af Total Irrigation from storage = (2.1 af + 18.6 af + 3.3 af) = 24.0 af Total acres irrigated = 0.7 ac + 6.2 ac + 1.1 ac = 8.0 acres

V_{LR} = (Acres Irrigated) x (Irrigation Requirement) =

V_{D.R} = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = N/A - no diversion rate applied.

V = Smaller of V_{LR} and $V_{D.R}$ = 24.0 af

2. Volume Calculations for Other Uses:

See 3ea attached pond analysis sheets.

Department Standard for Stockwater Storage = 100 head cattle x 12 gpd x 365 days = 438,000 gallons / 325,850 gal/af = 1.3 af.

Stockwater Storage for licensing purposes = 0.4 af (pond 1 capacity) + 0.2 af (pond 2 capacity) + 0.4 af (pond 3 capacity) + 0.4 af (3ea ponds combined evaporation loss) = **1.4 af**.

Total Annual Volume = 24.0 af (irrigation) + 1.4 af (stockwater) = 25.4 af.

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Ted Blankinship, showed 3ea ponds being used for stockwater and irrigation storage, and irrigation from storage water use. Pond No.1 is fed from a ground water spring, Pond No.2 and No.3 are fed from unnamed streams. Pond analysis sheets were drafted for each of the ponds, and labeled for identification in backfile. There is no diversion rate applied to this license. At time of exam, only three PODs were identified feeding ponds, and two spring PODs not connected to pond No.2 and No.3 respectively, were removed from license.

Applicant used gravity flood irrigation from ponds using piping that pulled water from each pond, and watered down grade from ponds in semi-fluvial shaped areas to keep grass growing for 100 head of cattle use. At time of exam, applicant discussed the desire to focus his irrigation acreage down grade from pond No.2 in a large pasture. Acreage was roughly traced out during field exam of POU irrigation areas, and then updated using arcmap to trace out irrigation areas from each of the three ponds. The total acreage authorized at time of permit remains the same at time of licensing.

Pond No.1 has a surface area of 0.07 acres (rounded up to 0.1 acres rounded up for department significant figure standards) with a maximum depth of 10 feet, with an average depth of 4 feet. Arcmap was used to trace out pond surface area. Pond No.1 has a capacity of 0.4 af, and an evaporation factor of 0.1 af. Due to irrigation from storage component on license, 2.4 af is used for multiple fill volume for a 0.8 acre field associated with the pond, and the pond has a total volume of 2.9 af. Ground water influences this pond, and as such there is not a seepage rate applied to pond analysis sheet.

Pond No.2 has a surface area of 0.08 acres (rounded up to 0.1 acres rounded up for department significant figure standards) with a maximum depth of 6 feet, with an average depth of 2.4 feet. Arcmap was used to trace out pond surface area. Pond No.2 has a capacity of 0.2 af, and an evaporation factor of 0.2 af. Due to irrigation from storage component on license, 17.1 af is used for multiple fill volume as applicant focuses irrigation acreage equal to 5.7 acres associated with this pond, and the pond has a total volume of 17.5 af. Ground water influences this pond, and as such there is not a seepage rate applied to pond analysis sheet.

Pond No.3 has a surface area of 0.05 acres (rounded up to 0.1 acres rounded up for department significant figure standards) with a maximum depth of 10 feet, with an average depth of 4 feet. Arcmap was used to trace out pond surface area. Pond No.1 has a capacity of 0.4 af, and an evaporation factor of 0.1 af. Due to irrigation from storage component on license, 4.5 af is used for multiple fill volume for a 1.5 acre field associated with the pond, and the pond has a total volume of 5.0 af.

The total volume required (AF) from 3ea pond analysis sheets equals 25.4 af. This value plus the stockwater storage component equal to 1.4 af (see calculation below) equates to a total annual volume of 25.4 af.

At time of exam, irrigation was observed with pipes used for gravity flood irrigation located (see photographs). During licensing review, irrigation was traced out to equal 8.0 acres. Irrigation annual volume was determined using the calculations below:

20

Irrigation from storage pond 1 = 0.8 acres x 3 af = 2.4 af Irrigation from storage pond 2 = 5.7 acres x 3 af = 17.1 af Irrigation from storage pond 3 = 1.5 acres x 3 af = 4.5 af Total Irrigation from storage = (2.4 af + 17.1 af + 4.5 af) = 24.0 afTotal acres irrigated = 0.8ac + 5.7 ac + 1.5 ac = 8.0 acres

At time of exam, stock use was evident in pastures. Stockwater volume permitted for equaled 3.0 af, but using department stockwater allowances at time of licensing, stockwater annual volume was determined using the calculations below:

100 head cattle x 12 gpd x 365 days = 438,000 gallons / 325,850 gal per af = 1.3 af.

Although department standard for stockwater storage volume equals 1.3 af, the recommended volume applied to license is larger due to cattle drinking directly from pond. As such the total pond(s) capacity + total pond(s) evaporation loss rate equal 1.0 af (3ea pond combined capacity) + 0.4 af (3ea pond combined evaporation loss rate) = **1.4 af**, which will be applied to license.

The total annual volume that will be applied to license equals 25.4; total annual volume is calculated below:

24.0 af (irrigation from storage) + 1.4 af (stockwater storage) = 25.4 af.

Condition 259 was modified to reflect 3ea pond analysis sheet combined values. Condition 220 was modified to reflect 3ea combined pond capacity and surface area requirements. All other conditions will remain on license. Overlap POUs from water rights 95-12821 and 95-13822 are beneficial use claims by same applicant, for in-stream stockwater use along both unnamed streams identified in this water license. They are not a concern for overlap.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Annual Volume	
IRRIGATION STORAGE	01/01 to 12/31	24.0 AF	
IRRIGATION FROM STORAGE	04/01 to 10/31	24.0 AF	
STOCKWATER STORAGE	01/01 to 12/31	1.4 AF	
	<u>Totals:</u>	25.4 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	-
AUTHENTICATION	Luke Bates - Water Resou	rce Agent	
Field Examiner's Name	- Full	Date 5/17	12
Reviewer	× DBatos	Data 5/22/	120



45N

The USDA-FSA Aertal Photography Field office asks to be stedlied in derived products.

Point of Diversion
 Place Of Use Boundary
 Townships
 PLS Sections
 Quarter Quarters



Total Storage Calculations

	95-17300 Luke Bates	This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seenage evaporation and fill canacity	User Input Calculated value
DATE	4/22/2020	required for a pond.	Formula Explanations
POND	No. 1		
Surface Area (AC.)	0.1	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.	S. S. Salah
Average Pond Depth (FT.)	4	"Average Pond Depth" depicts the actual depth of the pond either measured or of know the maximum depth and not the average depth, the Field Examiner's Hand the maximum depth by 0.4 to get the average depth, or you can use any method attain average depth.	estimated. Note: If you lbook suggests multiplying I that seems reasonable to
Pond Capacity (AF)	0.4	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average the capacity, divide the capacity by surface area and enter the average pond dep Note: If pond capacity is determined using a method shown on the "Pond Capaci need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the the formula will be altered for future use.	Pond Depth. If you know oth in the space above. ity" sheet, the user may value is modified manually,
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	2.4	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to component if the <i>from storage</i> component exceeds a one time fill. This section amount of water needed to fill the pond initially or the amount of water needed due to evaporation or seepage. For example: if a pond has a capacity of 5 acre for seepage and evaporation, but the pond is used for irrigation that requires 10 acre the irrigation use, then you would insert 5 acre feet into this location (10 acre feet the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the volume in this space.	meet a <i>from storage</i> should not include the to maintain the pond level eet and 2.5 acre feet of e feet of from storage for et needed - 5 acre feet from e permit to include a
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage L	oss" sheet.
Estimated Evaporation Loss (AF)	0.1	The "Estimated Evaporation Loss" is automatically carried over from the "Evapor	ation Loss" sheet.
Total Volume Required (AF)	2.9	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Evaporation Loss amounts to determine the total amount of storage required.	e Fills, Seepage Loss, and

Total Storage Calculations

FILE NUMBER REVIEWER DATE	95-17300 Luke Bates 4/22/2020	This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond. User Input Calculated value Formula Explanation	s
POND	No. 2		
Surface Area (AC.)	0.1	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.	
Average Pond Depth (FT.)	2.4	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable attain average depth.	ng to
Pond Capacity (AF)	0.2	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you knot the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manual the formula will be altered for future use.	w ally,
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	17.1	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond le due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet fit the initial fill = 5 acre feet of additional storage needed). Note: You must have a " <u>From Storage</u> " component exceeding the initial fill on the permit to include a volume in this space.	vel vr rom
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.	1
Estimated Evaporation Loss (AF)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.	
Total Volume Required (AF)	17.5	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.	I

Total Storage Calculations

FILE NUMBER REVIEWER	95-17300 Luke Bates	This spreadsheet has been designed by Idaho Department of Water User Input Resources to estimate the total seepage, evaporation and fill capacity Calculated value
DATE	4/22/2020	required for a pond. Formula Explanations
POND	No. 3	
Surface Area (AC.)	0.1	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	0.4	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	4.5	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.1	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	5.0	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

)







POND #1





POND #2



OUTFLOW FROM POND #2



INFLOW TO POND #2





DAM FOR POND #3



POND #3



OUTFLOW POND #3





FLOOD IRRIGATION PIPE





POU – IRRIGATION FEED PIPE

