

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-12246
Exam Date: 03/05/2021

1. Current Owner:
WILLIAM DERNELL 1164 SUNSET LN POTLATCH ID 83855-1101 AND/OR
NANCY DERNELL 1164 SUNSET LN POTLATCH ID 83855-1101
2. Accompanied by: Nancy Dernel
Phone No: 970-217-6917
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
SURFACE RUNOFF

Tributary
SINKS

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

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

SURFACE RUNOFF NW¼ NE¼, Sec. 21, Twp 41N, Rge 04W, B.M. LATAH County

Method of Determination: GPS; POD is an earthen dam located at -116°50.452, 46°53.212.

PLACE OF USE: WILDLIFE STORAGE, RECREATION STORAGE, and FIRE PROTECTION 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	
41N	04W	21		X															

Method of Determination: Field exam and Arcmap aerial imagery.

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
N/A					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: N/A

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

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

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

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

2. Volume Calculations for Other Uses:

See attached pond analysis worksheet.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 3/5/2021 with the applicant, Nancy Dernell, showed a pond that captured surface runoff water that is used for wildlife, recreation, and fire protection storage(s) purposes. The POD is an excavated earthen dam situated in a small draw designed to impound runoff water. A corrugated overflow discharge pipe is installed in the corner of the dam to allow overflow to route downgrade from the dam; additionally, a rocked in secondary overflow channel allows peak spring overflow water to route from the same area as the discharge pipe routing downgrade on the applicant's property. There is no diversion rate associated with this permit.

Photographs were taken during the field exam to illustrate the storage pond that serves as the POU for the three beneficial uses listed above. Following the exam, Arcmap aerial imagery was used to trace out the surface area of the pond equaling 0.3 acres. The pond has a maximum depth of 12 feet, an average depth of 4.8 feet, pond capacity of 1.4 af, and a seepage & evaporation loss of 1.0 af annually. The total volume required equals 2.4 af annually for each respective beneficial use on the permit. Wildlife storage, recreation storage, and fire protection storage annual volumes are not additive, resulting in a recommended maximum diversion volume for licensing purposes of **2.4 af**. During the exam, Nancy Dernell stated that following spring runoff season, the only water that flows as runoff from the small draw comes following substantial rain events, but that the inflow of runoff stays dry most of the summer months.

Condition 029 was removed from the permit during licensing review. All other conditions on the permit will be carried forward to licensing. There are no overlap conditions for this permit.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Annual Volume</u>
WILDLIFE STORAGE	01/01 to 12/31	2.4 AF
RECREATION STORAGE	01/01 to 12/31	2.4 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	2.4 AF

Totals: 2.4 AF

2. Recommended Amendments

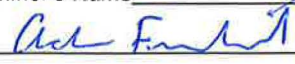
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

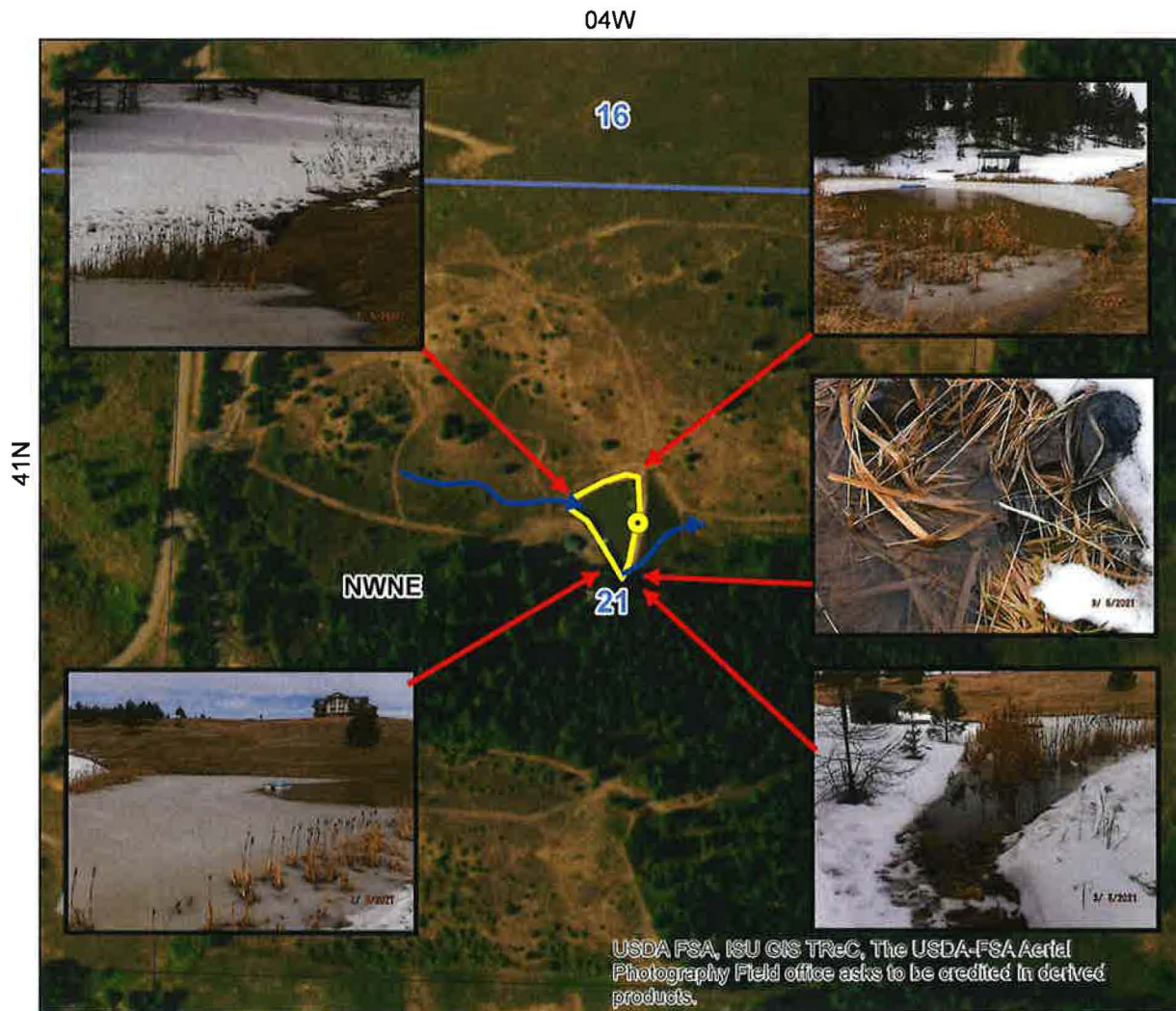
Luke Bates - Water Resource Agent

Field Examiner's Name  Date 3/8/2021

Reviewer  Date 3/15/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
87-12246

WILDLIFE STORAGE, RECREATION STORAGE, and FIRE PROTECTION STORAGE system diagram.



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

0 0.035 0.07 0.14 Miles



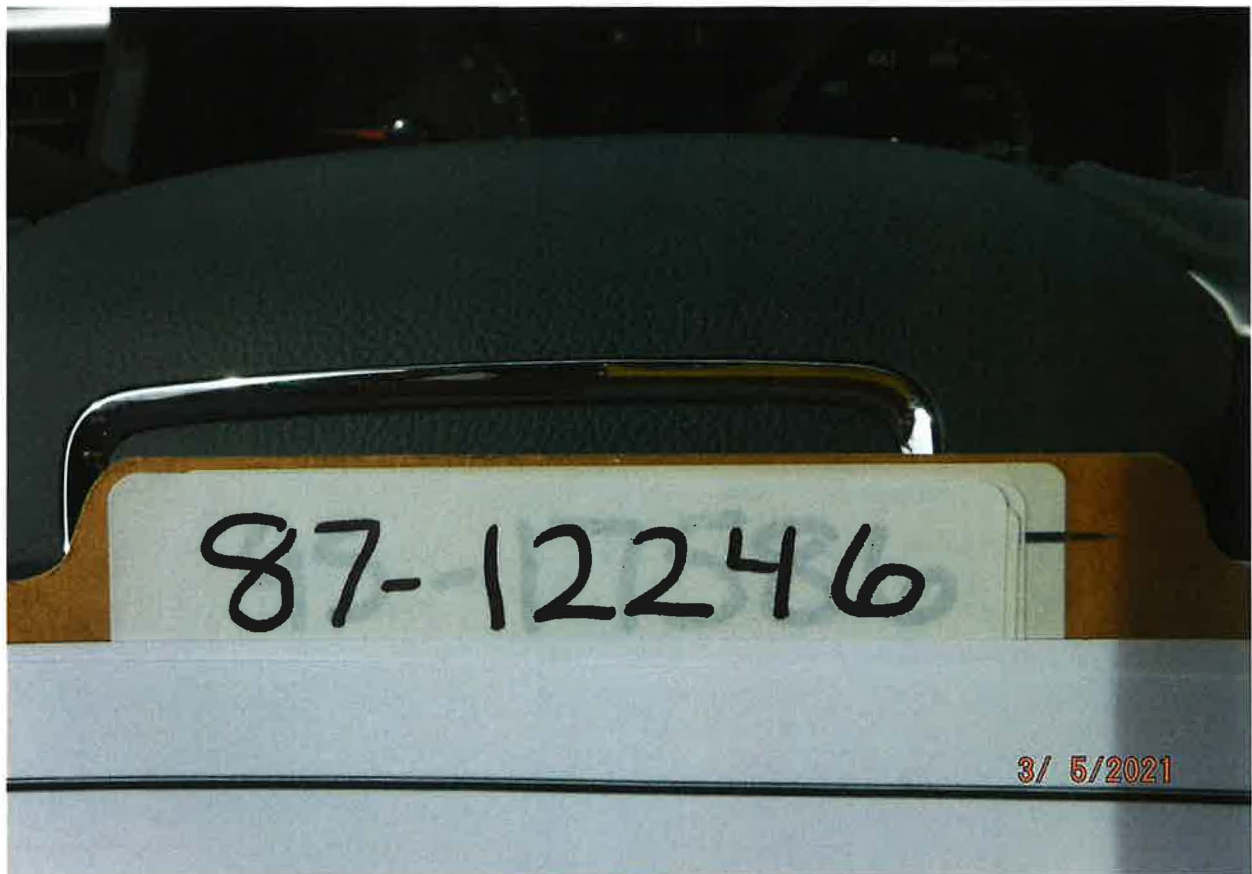
Total Storage Calculations

FILE NUMBER	87-12746
REVIEWER	Luke Bates
DATE	3/8/2021

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 Explanations

Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4.8	"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)	1.4	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)	0	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)	0.4	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	2.4	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.



F.E. DATE – 3/5/2021



POD – EARTHEN DAM CAPTURES SURFACE RUNOFF



SECONDARY OVERFLOW FROM POND – ROCKED IN CHANNEL



PRIMARY OVERFLOW DISCHARGE FROM POND – 4 INCH CORRUGATED FLEX PIPE



SECONDARY OVERFLOW CHANNEL ROUTES DOWN GRADE IN SMALL BASIN



EXIT AREA FOR PRIMARY OVERFLOW DISCHARGE PIPE



POU – WILDLIFE STORAGE, RECREATION STORAGE, AND FIRE PROTECTION STORAGE





POU – WILDLIFE STORAGE, RECREATION STORAGE, AND FIRE PROTECTION STORAGE



SURFACE RUNOFF WATER INFLOW TO POND