

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 94-9627
Exam Date: 09/20/2021

1. Current Owner:
LYNETTE MYHRE PO BOX 328 HARRISON ID 83833-0328 AND/OR
JOHN MYHRE PO BOX 328 HARRISON ID 83833-0328
2. Accompanied by: John Myhre
Phone No: 208-689-9868
Address: Same as above
Relationship to permit Holder: Permit holder

3. SOURCE:
UNNAMED STREAM
GROUND WATER

Tributary
COEUR D ALENE LAKE
COEUR D ALENE LAKE

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

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

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

GROUND WATER NW¼ NW¼, Sec. 26, Twp 47N, Rge 03W, B.M. KOOTENAI County (**POND 1**)
UNNAMED STREAM SW¼ NW¼, Sec. 26, Twp 47N, Rge 03W, B.M. KOOTENAI County (**POND 2 DAM**)
GROUND WATER SW¼ NW¼, Sec. 26, Twp 47N, Rge 03W, B.M. KOOTENAI County (**POND 2**)

Method of Determination: Field exam and GPS. One each GW POD is located within the high-water mark for each storage pond with Pond 1 at approximately -116°41.270, 47°23.817 & Pond 2 at approximately -116°41.289, 47°23.662. The Unnamed Stream POD is Pond 2 dam located at -116°41.288, 47°23.670.

PLACE OF USE: IRRIGATION 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	
47N	03W	26						X	X										

PLACE OF USE: IRRIGATION FROM 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	
47N	03W	23											4.8	1.3					6.1
47N	03W	26						13.0	18.0										31.0
47N	03W	27	11.0	32.0															43.0

Total Acres: 80.1

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
NONE					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: N/A; this is an irrigation storage & from storage water right that does not include diversion to storage.

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: Permissible Place of Use for Irrigation from Storage limited to 20 acres per irrigation season.

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 20.0 \text{ ac} \times 3.0 \text{ afa} = 60.0 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{No diversion rate, not applicable}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 60.0 \text{ af}$$

2. Volume Calculations for Other Uses:

See attached Pond Analysis worksheets (2ea)

G. NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 9/20/2021 with the applicant, Jon Myhre, shows two irrigation storage ponds that receive groundwater along with pond #2 being an instream pond that captures unnamed stream water. Pond 1 located in the NW¼NW¼ of Section 26 impounds groundwater; Pond 2 located in the SW¼NW¼ of Section 26 impounds groundwater and unnamed stream flow. There is no diversion rate associated with this water right, as the applicant only uses irrigation from storage water for a Christmas tree farm. Each pond drafts water for irrigation from storage using ½ hp pumps using 1200-1300 Watt solar pump systems and 1 ½ inch main poly pipe irrigation trunk lines with approximately 40,000 feet of main trunk line installed at time of exam.

The irrigation storage POU is two ponds, each with overflow discharge pipes that allow excess water to route down grade into a common basin and unnamed stream tributary to Coeur D'Alene Lake. Pond 2 also incorporates a transfer pipe and similar solar pump system to move water to Pond 1 depending on which acreage is being focused on in the PPU for that year. Pond analysis worksheets were developed for the two ponds as follows:

- Pond 1: surface area of the pond equals 0.6 acres. The pond has a maximum depth of 10 feet, an average depth of 4 feet, pond capacity of 2.4 af, and a seepage & evaporation loss of 1.5 af annually.
- Pond 2: surface area of the pond equals 0.9 acres. The pond has a maximum depth of 13 feet, an average depth of 5.2 feet, pond capacity of 2.4 af, and a seepage & evaporation loss of 2.3 af annually.
- Both ponds have a combined use multiple fill value equal to **24.0 af** for irrigation from storage use annually.
- The combined pond total volume required with multiple fill value included equals **34.9 af**.

The irrigation from storage POU has been designated as a Permissible Place of use (PPU) based on the cyclic irrigation practices used during the development period of the permit. The irrigation from storage POU was walked/drove with Mr. Myhre and consists of multiple fields of row trees. The POU was sketched on field maps, and during licensing review Arcmap aerial imagery was used to trace out the POU equaling 80.1 acres. As an example, the fields located near the applicant's home have four separate zones, with up to 5,000 drip lines installed. Mr. Myhre asserts groups of trees are irrigated for three years, after which they are considered established and no longer irrigated & will be harvested within a couple years. As a result, approximately 20 acres of the entire PPU-POU is irrigated each year.

Generally, irrigation from storage occurring in this region would be limited to 3.0 af per acre, but as this right incorporates a PPU, the applicant uses approximately 1.2 af per year up to 24.0 af annually on 20 acres of the property. Use of micro emitters and soaker hoses have refined the applicant's irrigation system and enables water conservation practices to reduce waste from evaporation and runoff throughout the irrigation season.

Condition 26A was removed from the permit during licensing review, and condition X27 was added describing the Permissible Place of Use acreage limitations in a single irrigation season. All other conditions on the permit will be carried to licensing. There are no overlap concerns for this water right. The applicant has two prior decreed water rights 94-9072 & 94-9073 which use a spring & groundwater respectively for domestic uses that include up to ½ acre of irrigation. At time of exam, the tree farm plantation fields are clearly separate from the domestic use acreage and thus not included in this water rights POU and are not a concern for overlap.

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>
IRRIGATION STORAGE	01/01 to 12/31	34.9 AF
IRRIGATION FROM STORAGE	04/01 to 10/31	24.0 AF

Totals: 34.9 AF

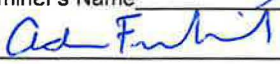
2. Recommended Amendments

☐ 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

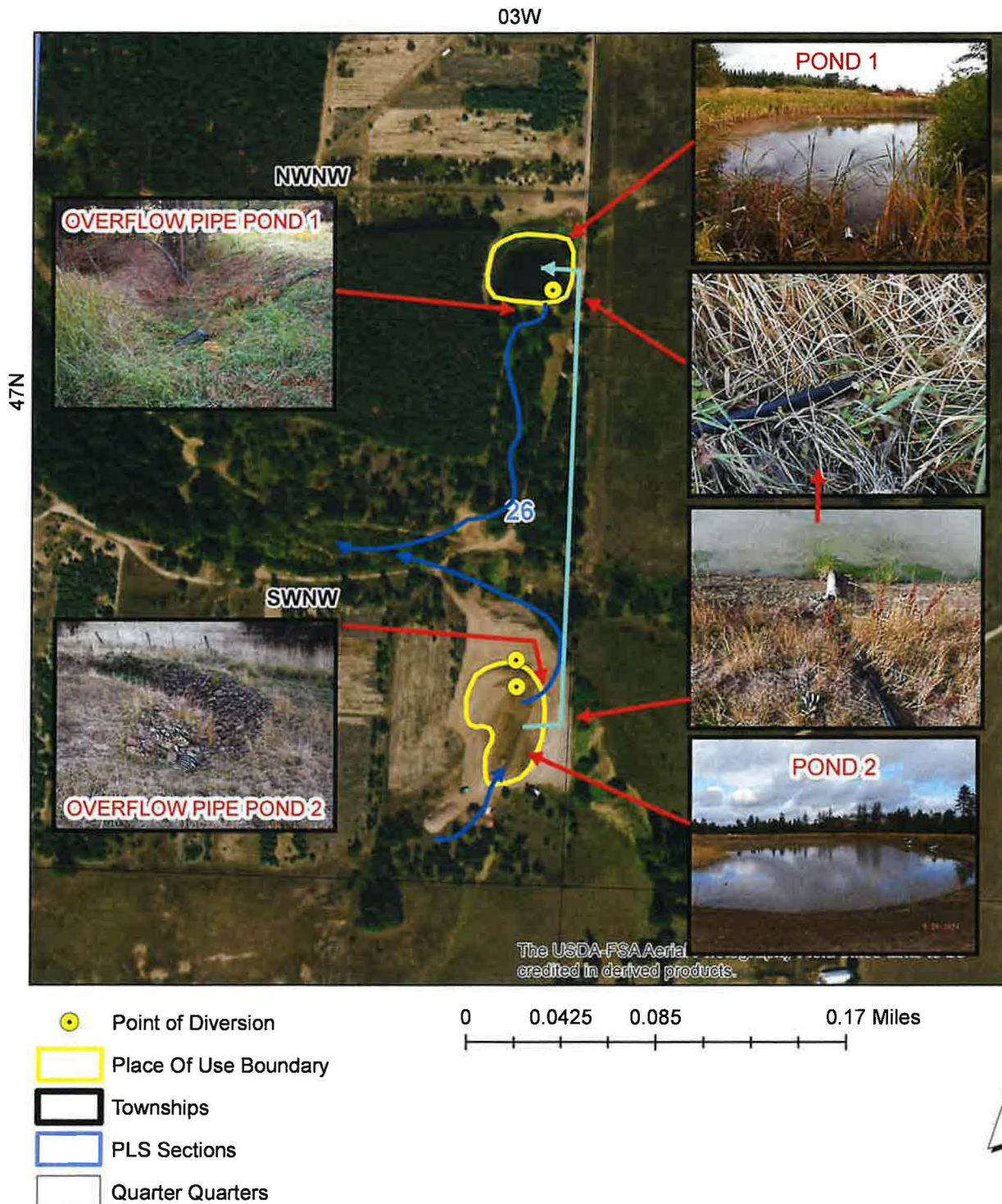
I. AUTHENTICATION Luke Bates -

Field Examiner's Name  Date 11/8/2021

Reviewer  Date 2/11/2022

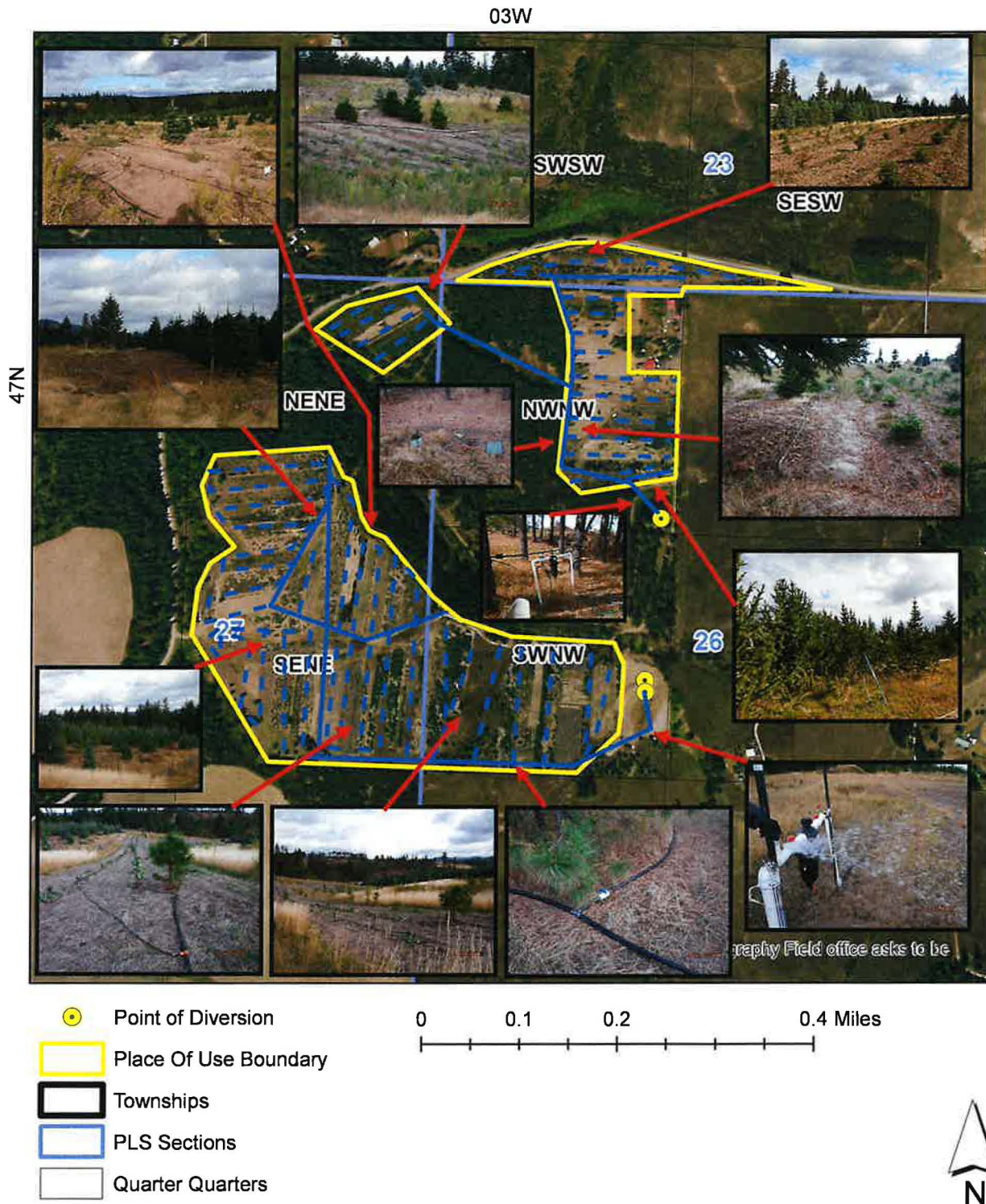
State of Idaho
Department of Water Resources
Attachment to Field Exam
94-9627

IRRIGATION STORAGE system diagram.



State of Idaho
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IRRIGATION FROM STORAGE system diagram.



Total Storage Calculations

FILE NUMBER	94-9627
REVIEWER	LUKE BATES
DATE	11/8/2021

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

POND 1

Surface Area (AC.)	0.6	"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)	2.4	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)	12	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)	0.6	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.9	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	15.9	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.

Total Storage Calculations

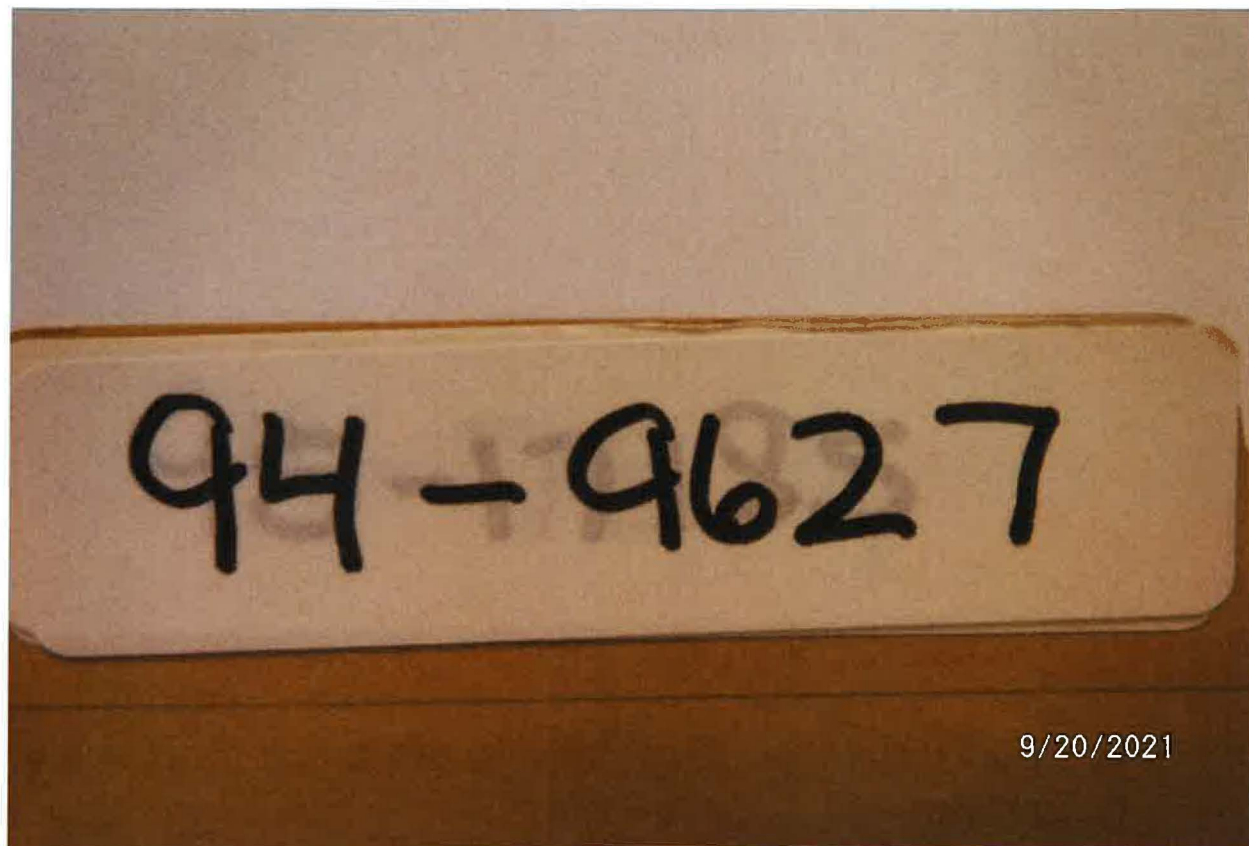
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This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

POND 2

Surface Area (AC.)	0.9	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	5.2	"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)	4.7	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)	12	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)	1.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	1.3	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	19.0	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.



FIELD EXAM DATE 9/20/2021



POD – NORTHERN POND DAM



POD – SOUTHERN POND DAM



NORTHERN POND ½ HP SOLAR POWERED PUMP USED FOR IRRIGATION FROM STORAGE USE



NORTHERN POND OVERFLOW DEVICE OUTFLOW CHANNEL W/PIPE



SOUTHERN POND – 1 HP TRANSFER PUMP ROUTES WATER TO NORTHERN POND FOR USE



1 INCH POLY PIPE SERVICE PIPE TO TRANSFER WATER FROM SOUTH TO NORTH POND



SOUTHERN POND – 1 HP SOLAR POWERED PUMP FOR IRRIGATION FROM STORAGE USE



SOUTHERN POND – OVERFLOW DEVICE & ROCK CHANNEL





IRRIGATION STORAGE POU – NORTHERN POND



IRRIGATION POU – SOUTHERN POND



IRRIGATION FROM STORAGE POU – TEE JUNCTIONS FROM MAIN TRUNK LINE TO SOAKER HOSE PIPES





IRRIGATION FROM STORAGE POU – SOUTH POND MAIN TRUNK POLY PIPE WITH TEE JUNCTION PIPE



IRRIGATION FROM STORAGE POU – SOAKER HOSES USED FOR SEEDLING TREES



IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU

