

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-12041
Exam Date: 06/10/2021

1. Current Owner:
KAREN CHOJNACKI 1240 ORCHARD LOOP RD TROY ID 83871 AND/OR
NICHOLAS CHOJNACKI 1240 ORCHARD LOOP RD TROY ID 83871
2. Accompanied by: Karen Chojnacki
Phone No: 509-339-5131
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
RUNOFF

Tributary
SINKS

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 SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

RUNOFF SW¼ SE¼, Sec. 30, Twp 40N, Rge 03W, B.M. LATAH County
RUNOFF SW¼ SE¼, Sec. 30, Twp 40N, Rge 03W, B.M. LATAH County

Method of Determination: GPS. Pond No.1 earthen dam location -116°45.5167, 46°46.5161 and Pond No.2 earthen dam location -116°45.5001, 46°46.4809.

PLACE OF USE: IRRIGATION STORAGE, 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	
40N	03W	30															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	
40N	03W	30															3.0		3.0

Total Acres: 3.0

Method of Determination: Field examination and Arcmap aerial imagery.

- 3.
- X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- X 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

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: IRRIGATION FROM STORAGE USE

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.0 \text{ ac} \times 3.0 \text{ afa} = 9.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{N/A, there is no diversion rate applied.}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{9.0 \text{ af}}$$

2. Volume Calculations for Other Uses:

See attached pond analysis worksheets 2ea.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 6/10/2021 with the applicant, Karen Chojnacki, showed two storage ponds impounding water from surface runoff source(s). The applicant uses the pond(s) for irrigation storage, wildlife storage, recreation storage, fire protection storage, & irrigation from storage purposes. The POD for each pond is an earthen dam; pond No.1 has an overflow channel that allows water to discharge down slope to pond No.2, and pond No.2 has a natural overflow channel that allows water to discharge down slope where it sinks on the property. There are no diversion rate(s) applied to this water right.

Both ponds collectively serve as the multiple storage POU, which was sketched on field maps during the exam and accurately traced out using Arcmap aerial imagery during licensing review. The pond(s) combined total volume, not including the multiple fill requirement for irrigation storage/from storage, equals **6.7 af** that is recommended as the annual volume for the wildlife storage, recreation storage, & fire protection storage respectively. This volume is not additive per beneficial use toward the maximum diversion volume. Listed below are the pond size and volume factors:

- Pond No.1 has a surface area of 0.4 acres and a pond capacity of 2.1 af. The pond has a maximum depth of 13 feet, an average depth of 5.2 feet, a seepage rate of 0.4 af, and an evaporation rate of 0.6 af. The total volume required for pond equals 3.1 af.
- Pond No.2 has a surface area of 0.4 acres and a pond capacity of 2.6 af. The pond has a maximum depth of 16 feet, an average depth of 6.4 feet, a seepage rate of 0.4 af, and an evaporation rate of 0.6 af. The total volume required for pond equals 3.6 af.

The irrigation from storage POU was walked with the applicant during the field exam and sketched out on field maps. During licensing review Arcmap aerial imagery was used to trace out the POU which consists of 3.0 acres of fenced in row crops, hoop sheltered grow plats, open field assorted row crops, and lawn/trees throughout the property. The irrigation storage & irrigation from storage beneficial use(s) annual volume equals 3.0 ac x 3.0 afa = **9.0 af**. The maximum diversion volume recommended to license this right equal 6.7 af (multiple storage uses) + 9.0 af (irrigation use) = **15.7 af**. At the time of exam, pond No.2 half full, and the applicant stated this spring a leak had been found and was draining the pond faster than it could collect water. Their intent was to allow it to drain fully and then reinforce the pond with bentonite to plug any leaks. As the pond wasn't developed with an impermeable lining a seepage factor is still recommended for licensing.

The applicant uses a portable pump to pull water from pond No.2, and a two 1 ½ HP pumps to draft water from Pond No.1 for irrigation from storage purposes. One pump delivers water to 4ea 3,000-gallon storage tanks located around the applicants' home which then deliver water to multiple irrigated fields. The second pump drafts direct to drip line irrigation systems in a large fenced in garden on the eastern side of the property. In addition to drip irrigation, the applicants use micro emitters and tripod sprinklers to provide irrigation for an oat field between the ponds and garden, trees, shrubs, and lawn around the home.

During licensing review Arcmap aerial imagery and the DRG layer were reviewed, and a minor shift in imagery was found that causes the irrigation from storage POU to extend NW in the imagery layer. The irrigation from storage POU was traced as found during the exam, and easily identifiable using Arcmap, but no amendment to permit is recommended based on the shifting of imagery layer versus DRG layer found at time of licensing. There is a small < 0.05 ac pond that shows up in aerial imagery in the NE corner of the applicant's property that was not part of this permit's development plan. During the exam, the applicant stated they had scraped the area to capture minor surface runoff to stop erosion from occurring downslope from the crest of the property where the small ponding is located. The scraped area was observed during the field exam and is less than 2 ft deep in the center. The applicant was notified if they intend to further develop the pond, they will need to apply for a new water right, but the applicant stated they did not intend to use the muddy pondage area, just wanted to reduce spring erosion from occurring.

Stockwater storage & stockwater from storage beneficial uses was not developed during the permit's development period and were removed during licensing review. Conditions 26A, 082, & X02 were removed from the permit during licensing review. Conditions R58 was revised to reflect 3.0 afa as authorized by the department in that region for irrigation from storage use. Condition 219 was replaced with 259 to better describe the multiple fill volume requirements. Condition 220 was revised to describe the ponds size and capacity following the field exam. All other conditions on the permit shall be carried to the license. There are no overlap concerns for this water right.

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	9.0 AF
IRRIGATION FROM STORAGE	04/01 to 10/31	9.0 AF
WILDLIFE STORAGE	01/01 to 12/31	6.7 AF
RECREATION STORAGE	01/01 to 12/31	6.7 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	6.7 AF

Totals: 15.7 AF

2. Recommended Amendments

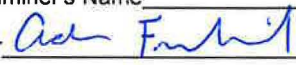
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

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

I. AUTHENTICATION

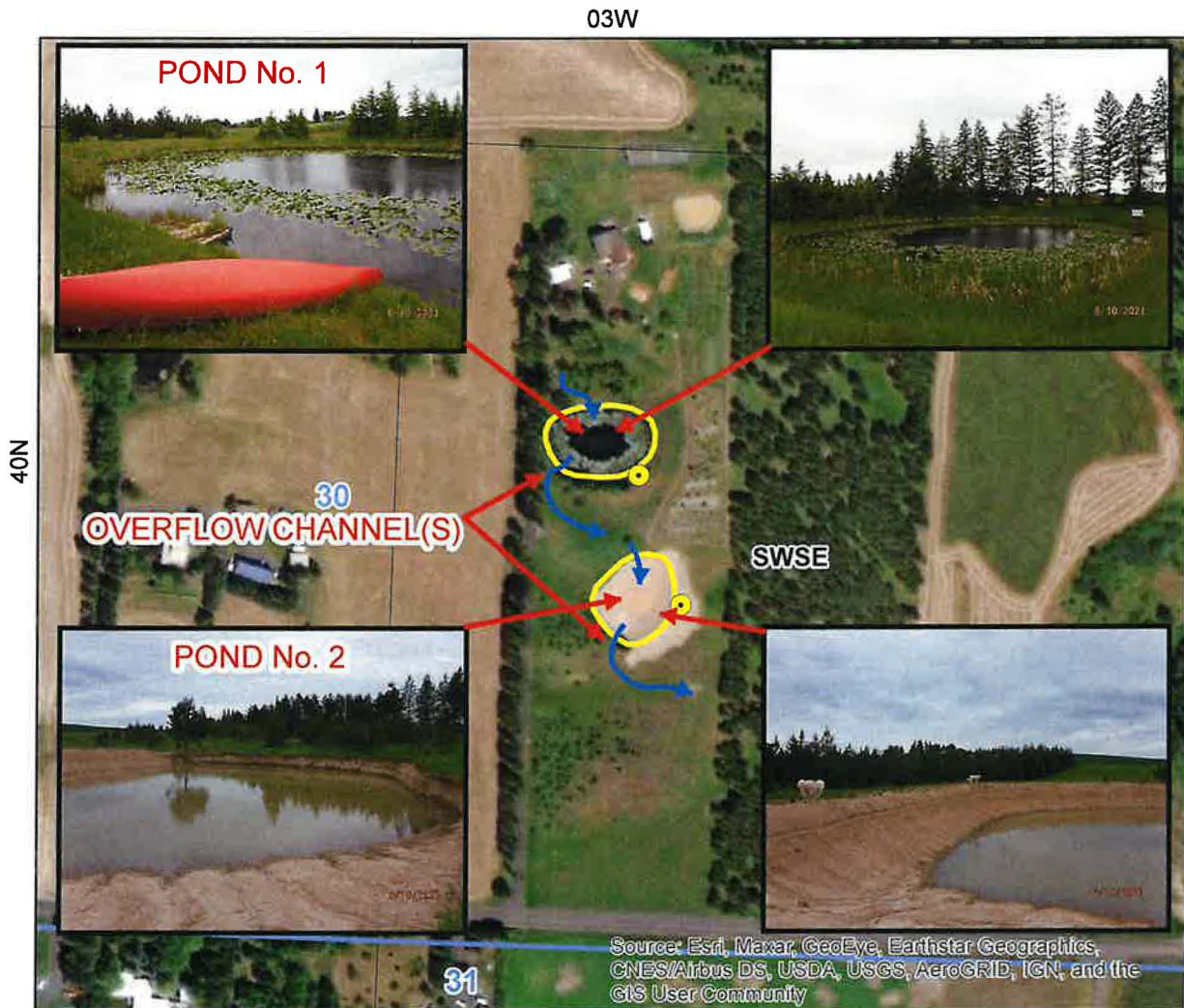
Luke Bates -

Field Examiner's Name  Date 11/16/2021

Reviewer  Date 1/31/2022

State of Idaho
Department of Water Resources
Attachment to Field Exam
86-12041

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



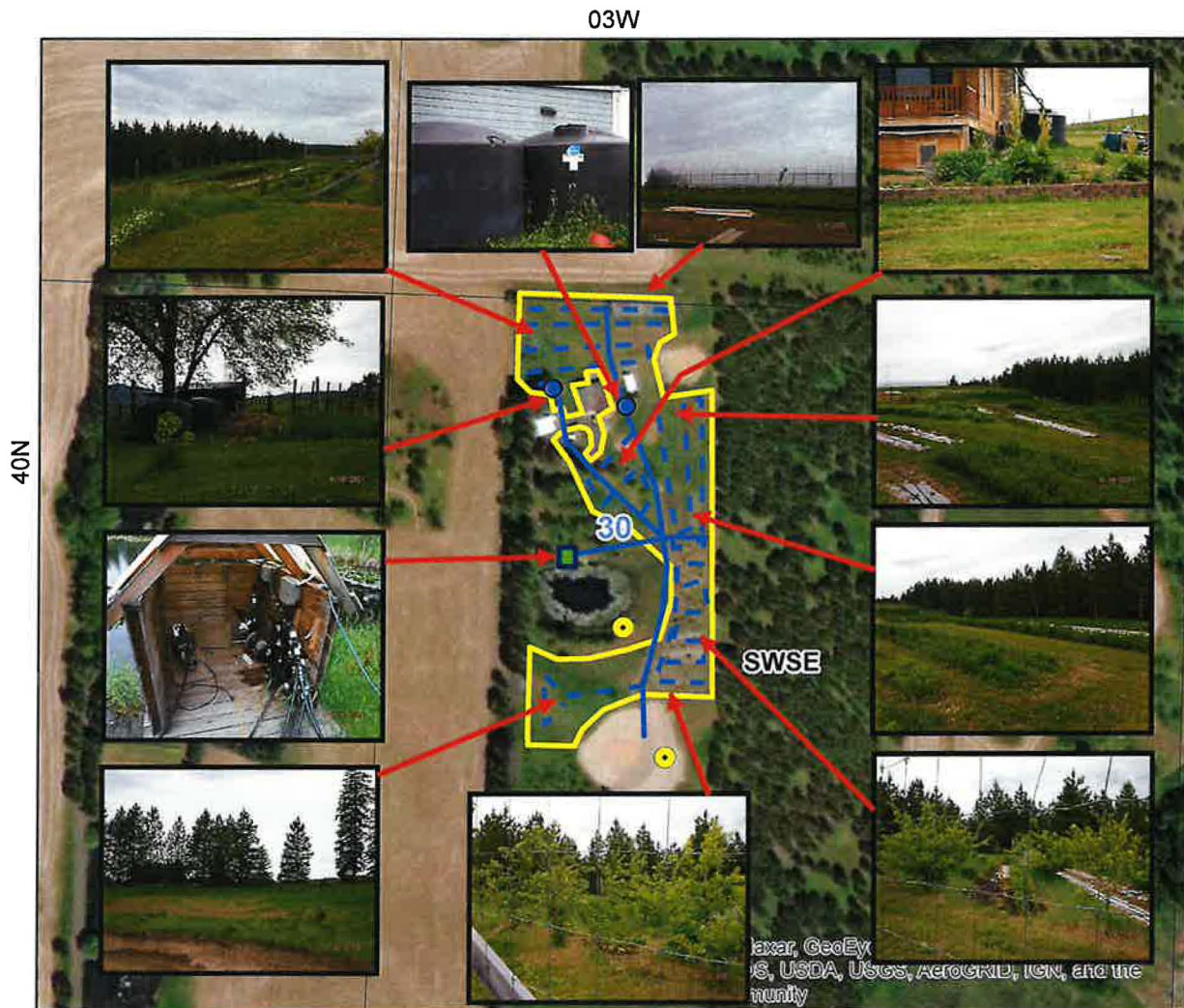
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
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IRRIGATION FROM 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	86-12041
REVIEWER	LUKE BATES
DATE	11/9/2021

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.)	0.4	"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)	2.1	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)	0.4	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)	7.6	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

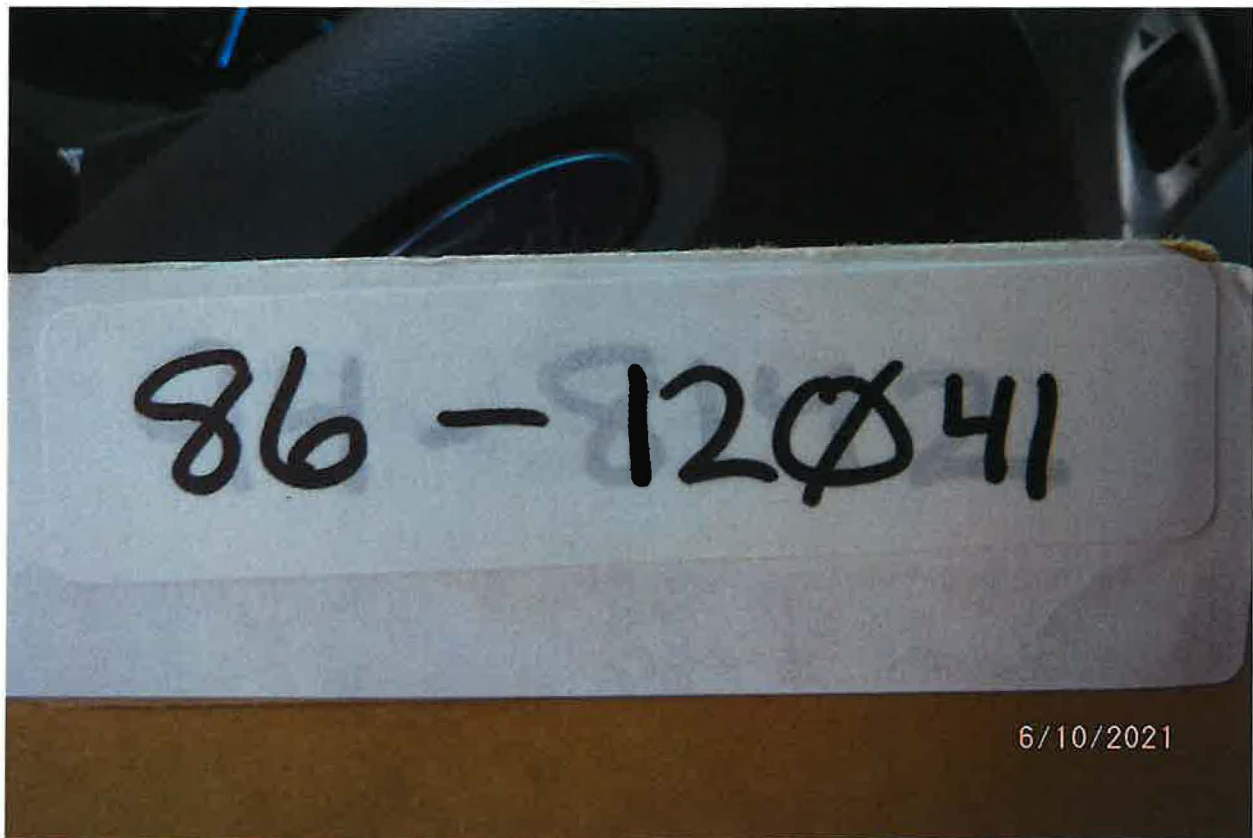
FILE NUMBER	86-12041
REVIEWER	LUKE BATES
DATE	11/9/2021

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 2

Surface Area (AC.)	0.4	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6.4	"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)	2.6	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)	0.4	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)	8.1	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 6/10/2021



STORAGE POND 1 POD – EARTHEN DAM; POU – MULTIPLE STORAGE BENEFICIAL USES



IRRIGATION FROM STORAGE SYSTEM FROM POND 1 – 2EA 1 ½ HP FLOTEC PUMPS





STORAGE POND 2 POD – EARTHEN DAM; POU – MULTIPLE STORAGE BENEFICIAL USES





WILDLIFE STORAGE, RECREATION STORAGE, FIRE PROTECTION STORAGE, IRRIGATION STORAGE POU – 2 PONDS





IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU





6/10/2021

IRRIGATION FROM STORAGE POU



6/10/2021



IRRIGATION FROM STORAGE 24HR IMPOUNDMENT TANKS



IRRIGATION SYSTEM DIVERTING WORKS



IRRIGATION FROM STORAGE 24 HR IMPOUNDMENT TANKS



IRRIGATION FROM STORAGE POU