

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-10409
Exam Date: 09/24/2023

1. Current Owner:
TIM AHLERS 246 AHLERS RD PRIEST RIVER ID 83856-9319 AND/OR
PATTI AHLERS 246 AHLERS RD PRIEST RIVER ID 83856-9319
2. Accompanied by: Tim Ahlers
Phone No: 208-597-2802
Address: Same as above
Relationship to permit Holder: Permit holder.

3. **SOURCE:**
UNNAMED STREAM

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:**

UNNAMED STREAM L1 (NE¼ NE¼), Sec. 5, Twp 54N, Rge 04W, B.M. BONNER County
UNNAMED STREAM L1 (NE¼ NE¼), Sec. 5, Twp 54N, Rge 04W, B.M. BONNER County

Method of Determination: GPS. Upper pond dam located at -116°51.157, 48°3.842.
Lower pond dam located at -116°51.097, 48°3.834.

PLACE OF USE: IRRIGATION STORAGE & 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	
54N	04W	5	X L1																

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	
54N	04W	5	1.0 L1																1.0

Total Acres: 1.0

Method of Determination: Beneficial use field examination 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
2ea Earthen Pond Dam(s)					

D. FLOW MEASUREMENTS

1.

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

2. Measurements: NONE

E. FLOW CALCULATIONS

Measured Method: in-stream ponds, permit incorporates irrigation from storage beneficial use and there is no diversion rate recommended for licensing purposes.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3.0 \text{ afa} = 3.0 \text{ af.}$$

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

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 3.0 \text{ af}$$

2. Volume Calculations for Other Uses: See 2ea attached pond analysis worksheets.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/24/2023 with the applicant, Tim Ahlers, showed water from an unnamed stream being impounded for Irrigation Storage, Fire Protection Storage, & Irrigation from Storage purposes. At the upper pond POD, an earthen dam with rocked overflow channel allows unnamed stream water to flow downstream directly to the lower pond. The lower pond POD is also an earthen dam with an overflow channel that allows excess water to drain into a small basin on the applicant's property where it sinks naturally. The unnamed stream doesn't show up on the ArcMap DRG layer, but headwaters at a higher elevation where multiple spring sources daylight forming the stream channel. There isn't a diversion rate associated with the in-stream pond(s) as developed.

During the exam photographs were taken and the storage pond POU(s) for irrigation & fire protection were sketched on field maps. During licensing review ArcMap aerial imagery and Bonner County GIS tax parcel maps were used to accurately trace out the two pond's surface area(s) and assign the POD(s). Volumetric data for the ponds are described below:

- Lower Pond No.1: surface area = 0.3 acres, maximum depth = 11 ft, average depth = 4.4 ft, pond capacity = 1.3 af, seepage and evaporation rate loss = 0.5 af, irrigation storage/from storage multiple fill volume = 3.0 af, and total volume required annually = 4.8 af.
- Upper Pond No.2: surface area = 0.1 acres, maximum depth = 6 ft, average depth = 2.4 ft, pond capacity = 0.2 af, seepage and evaporation rate loss = 0.5 af, and total volume required annually = 0.7 af.

Based on pond analysis sheets the annual volume developed for Fire Protection Storage in the two ponds equals sum of capacity(s) + seepage + evaporation values, which equals (1.3 af + 0.2 af) + (0.3 af + 0.3 af) + (0.2 af + 0.2 af) = **2.5 af**, which is recommended as the fire protection storage volume for licensing purposes.

During the exam I walked the Irrigation from Storage POU with Mr. Ahlers, which consists of lawn spaces, grass areas around ponds, and various orchard trees located on the parcel. The irrigation system uses a portable Honda 79 cc generator framed water transfer pump and hoses to flood irrigate throughout the season. I traced out the small-scale irrigation occurring using ArcMap aerial imagery during licensing review, which equals 1.0 acres. The annual volume authorized for irrigation storage & irrigation from storage equals **3.0 af**, which is not additive toward the maximum diversion volume which equals 2.5 af (fire protection) + 3.0 af (irrigation) = **5.5 af** total volume.

The permit authorized a year-round season of use for irrigation from storage, which I have clarified during licensing review to reflect **4/1 to 10/31** based on the department's standard irrigation season of use for the region the applicant's parcel is found in. Aerial imagery shows what appears to be historic tree farm and/or orchard tree crop plots scattered throughout the applicant's property, but Mr. Ahlers asserts since they have owned the property water is used sparingly with the majority kept in fire protection reserves.

Conditions 029 & 220 were removed from the permit during licensing review. 220 was removed based on licensing guidance from Shelley Keen – IDWR Deputy Director. Condition 259 was revised to reflect accurate pond volume & irrigation from storage volume data derived during licensing review. All other conditions on the permit shall be carried to licensing. The applicants have a second active Permit No. 96-10410 which is being licensed congruently with this permit. 96-10410 uses one of the spring sources for domestic and small irrigation around the primary residence, but the applicant doesn't use spring and unnamed stream water to irrigation the same acreage on the parcel. As such, I found no overlap between 96-10409 & 96-10410 during the examination. There is no concern for overlap toward licensing this right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Annual Volume
IRRIGATION STORAGE	01/01 to 12/31	3.0 AF
IRRIGATION FROM STORAGE	04/01 to 10/31	3.0 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	2.5 AF

Totals: 5.5 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

I. AUTHENTICATION

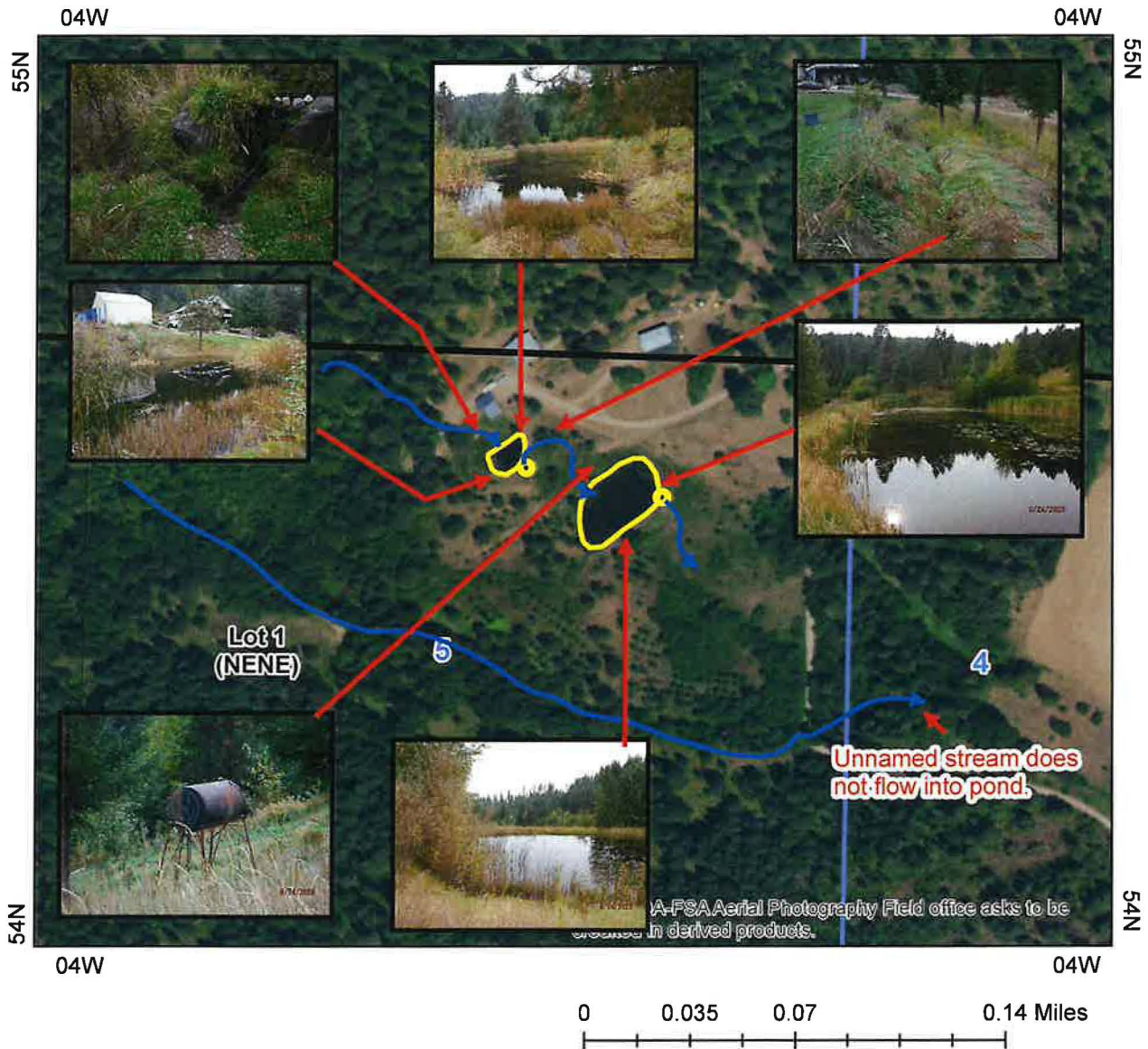
Luke Bates -

Field Examiner's Name *L. Bates* Date 12/11/2023

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-10409

This map depicts the IRRIGATION STORAGE & FIRE PROTECTION STORAGE system diagram.

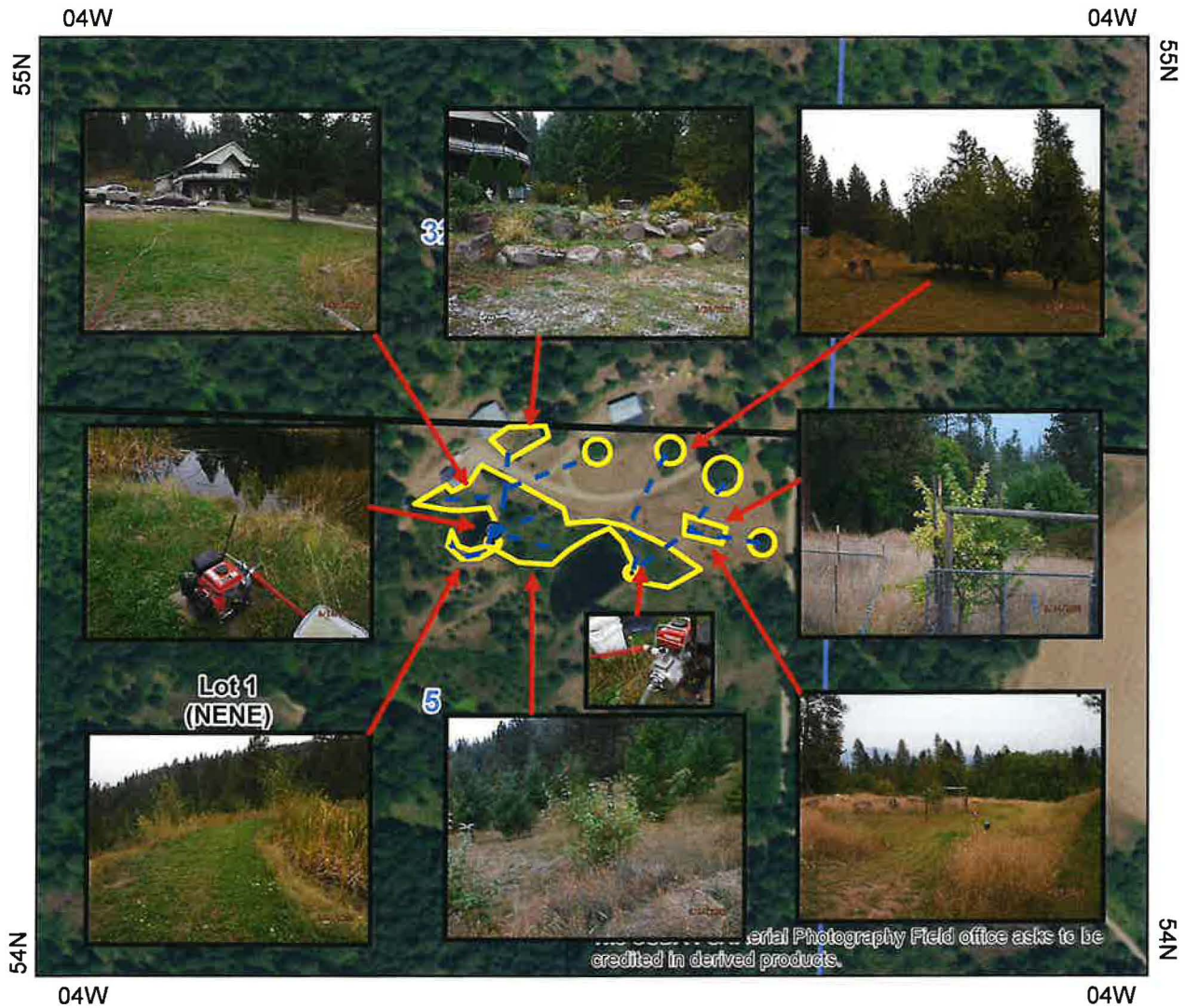


- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion



State of Idaho
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This map depicts the IRRIGATION FROM STORAGE system diagram.



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

Total Storage Calculations

FILE NUMBER	96-10409
REVIEWER	Luke Bates
DATE	12/11/2023

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

LOWER POND No.1

Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4.4	"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)	1.3	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)	3	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)	0.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	4.8	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.

□ 11 Feet Maximum Depth of Pond. *(JSD)*

Total Storage Calculations

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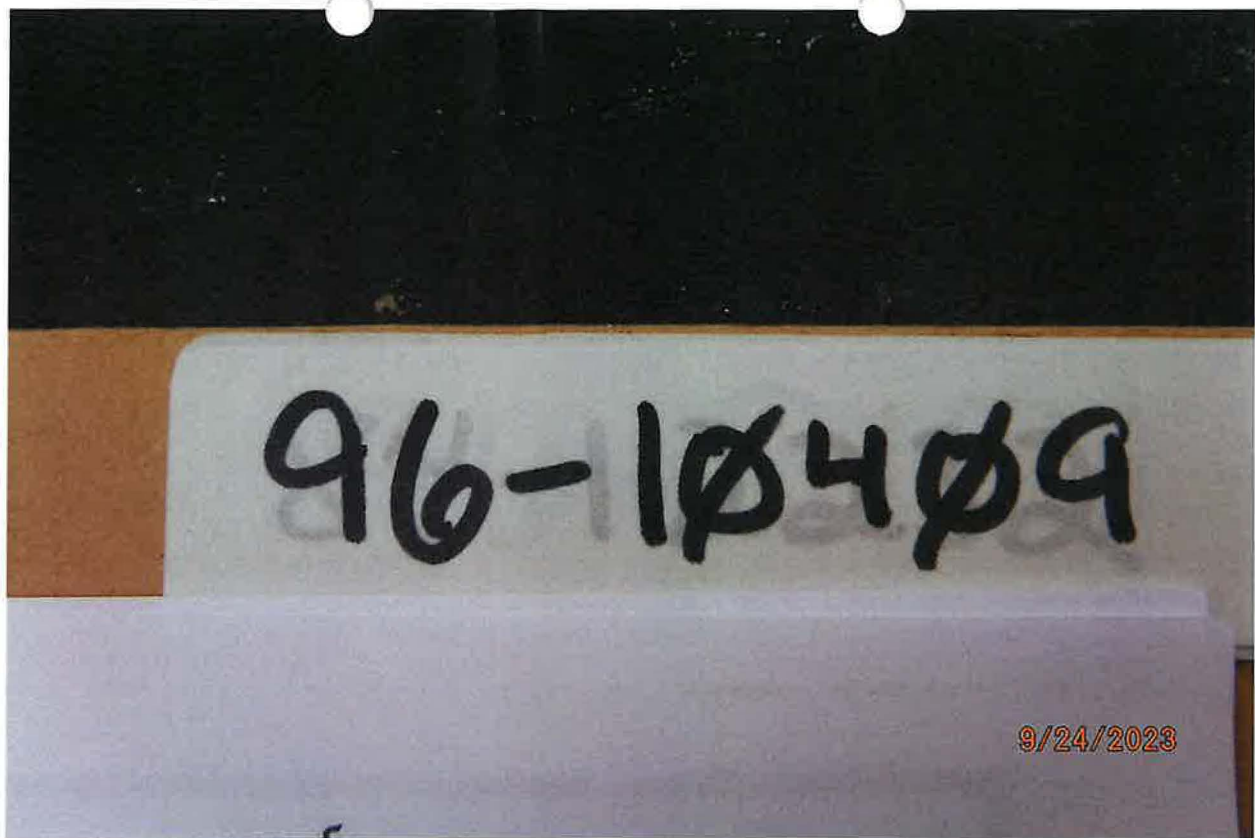
This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

UPPER 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 to attain average depth.
Pond Capacity (AF)	0.2	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 " <u>From Storage</u> " component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	0.7	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.

□ 6 feet Maximum Depth of Pond. JBd



BENEFICIAL USE FIELD EXAMINATION DATE 9/24/2023



SMALL (UPPER) POND POD – EARTHEN DAM IMPOUNDING UNNAMED STREAM WATER



FIRE PROTECTION STORAGE & IRRIGATION STORAGE POU – SMALL (UPPER) POND





OVERFLOW DISCHARGE CHANNEL ROUTES WATER FROM THE UPPER POND DOWN A DITCH TO THE LOWER POND



OVERFLOW PIPE LOCATED IN POND DISCHARGES TO DITCH



POD & POU – EARTHEN DAM ON LOWER (LARGE) FIRE PROTECTION STORAGE & IRRIGATION STORAGE POND





IRRIGATION FROM STORAGE WATER TRANSFER PUMP





IRRIGATION FROM STORAGE POU – LAWN SPACES & TREES





IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU





IRRIGATION FROM STORAGE POU – TREE WATERING

