STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
**BENEFICIAL USE FIELD REPORT**

**A. GENERAL INFORMATION**

**Permit No:** 95-17141
**Exam Date:** 09/27/2018

1. Current Owner:
JOHN GRIMM 11784 N TRACEY RD HAYDEN ID 83835 AND/OR
SARA GRIMM 11784 N TRACEY RD HAYDEN ID 83835

2. Accompanied by: John Grimm
Phone No⊗208) 772-3996
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:** UNNAMED STREAM

**Tributary** SINKS

**Method of Determination: Arcmap and GPS.**

**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: YES Overlap

| Water Right No. | Source | Purpose of Use | Basis |
|---|---|---|---|
| | | | |
| | | | |

Comments: POU is within the service area of North Kootenai Water District; there are too many water rights to list.

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 SYSTEM**

1. **LOCATION OF POINT(S) OF DIVERSION:**
UNNAMED STREAM SE¼ NE¼, Sec. 6, Twp 51N, Rge 03W, B.M. KOOTENAI County

Method of Determination: Arcmap and GPS. POD (dam) located at -116°44.843, 47°47.815.

**PLACE OF USE:** IRRIGATION STORAGE, WILDLIFE STORAGE, RECREATION 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 | |
| 51N | 03W | 6 | | | | 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 | |
| 51N | 03W | 6 | | | | 1.8 | | | | | | | | | | | | | 1.8 |

Total Acres: 1.8

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 ID No.* | Motor Make | Hp | Motor Serial No. | Pump Make | Pump Serial No. or Discharge Size |
|---|---|---|---|---|---|
| | Century | 3 | | | |

## 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:

$V_{I.R}$ = (Acres Irrigated) x (Irrigation Requirement) = 1.8 acres x 3 af = 5.4 af

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

V = Smaller of $V_{I.R}$ and $V_{D.R}$ = 5.4 af

2. Volume Calculations for Other Uses:

See attached pond analysis sheet.

## G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, John Grimm, showed a pond being used for multiple storage uses and irrigation use. At time of field exam the pond was being re-constructed. Applicant stated the pond, which was used the previous year, suffered construction failures from its first spring run-off. A new contractor had to come in and was in the final stages of repair. The repairs DID NOT cause enlargement of pond. Previous year diversion by applicant was by portable gas pump for irrigation purposes, but a more permanent irrigation system was being constructed in conjunction with pond repairs by new contractor (see photographs). The new irrigation system includes a 3 HP pump to draw water from pond for irrigation from storage. Original pond construction built-up banks 3-4 feet higher than original ground surface, with overflow pipes set 3-4 feet below the bank (developed to overcome spring run-off damages). There is no diversion rate applied to this license.

The pond on the applicant's property had a surface area of 0.3 acres with a maximum depth of 13 feet, which equals an average depth of 5.2 feet. Arcmap was used to trace out pond surface area, minus 0.07 acres for an island in the pond. Total surface area equaled 0.32 acres – 0.07 acres = 0.3 acres (rounded up for department significant figure standards). The pond had a seepage factor of 0.3 af, and an evaporation factor of 0.3 af. A new version of the pond analysis tool was used to issue this water right license (see attached).

At time of exam, irrigation was observed and annotated. During licensing review irrigation was traced out to equal 1.8 acres. At time of exam, applicant was not using water for stock, and there was no history of stock animal use. Stockwater and stockwater storage was removed from license. Because of the number of faucets/frost free hydrants/sprinklers identified at time of exam, and that these can be used for fire protection purposes, it will be licensed.

Conditions 082, 26A, and a text condition describing stockwater were removed from license. Condition 219 was replaced by condition 259 to describe pond storage, initial fill requirements, seepage and evaporation factors, and refills for irrigation values. Condition 220 was modified to reflect pond analysis computations for pond capacity and surface area requirements. All other conditions from permit will be carried forward to licensing.

There are several North Kootenai County Water District water rights that overlap, but there are no overlap concerns for this water right.

Have conditions of permit approval been met? _X_ Yes ____ No

## H. RECOMMENDATIONS

### 1. Recommended Amounts

| Beneficial Use | Period of Use | Rate of Diversion | Annual Volume |
|---|---|---|---|
| IRRIGATION STORAGE | 01/01 to 12/31 | | 5.4 AF |
| IRRIGATION FROM STORAGE | 03/15 to 11/15 | | 5.4 AF |
| WILDLIFE STORAGE | 01/01 to 12/31 | | 2.2 AF |
| RECREATION STORAGE | 01/01 to 12/31 | | 2.2 AF |
| FIRE PROTECTION STORAGE | 01/01 to 12/31 | | 2.2 AF |
| | **Totals:** | | 7.6 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 - Water Resource Agent

Field Examiner's Name Adam Forbush Date 4/13/2020

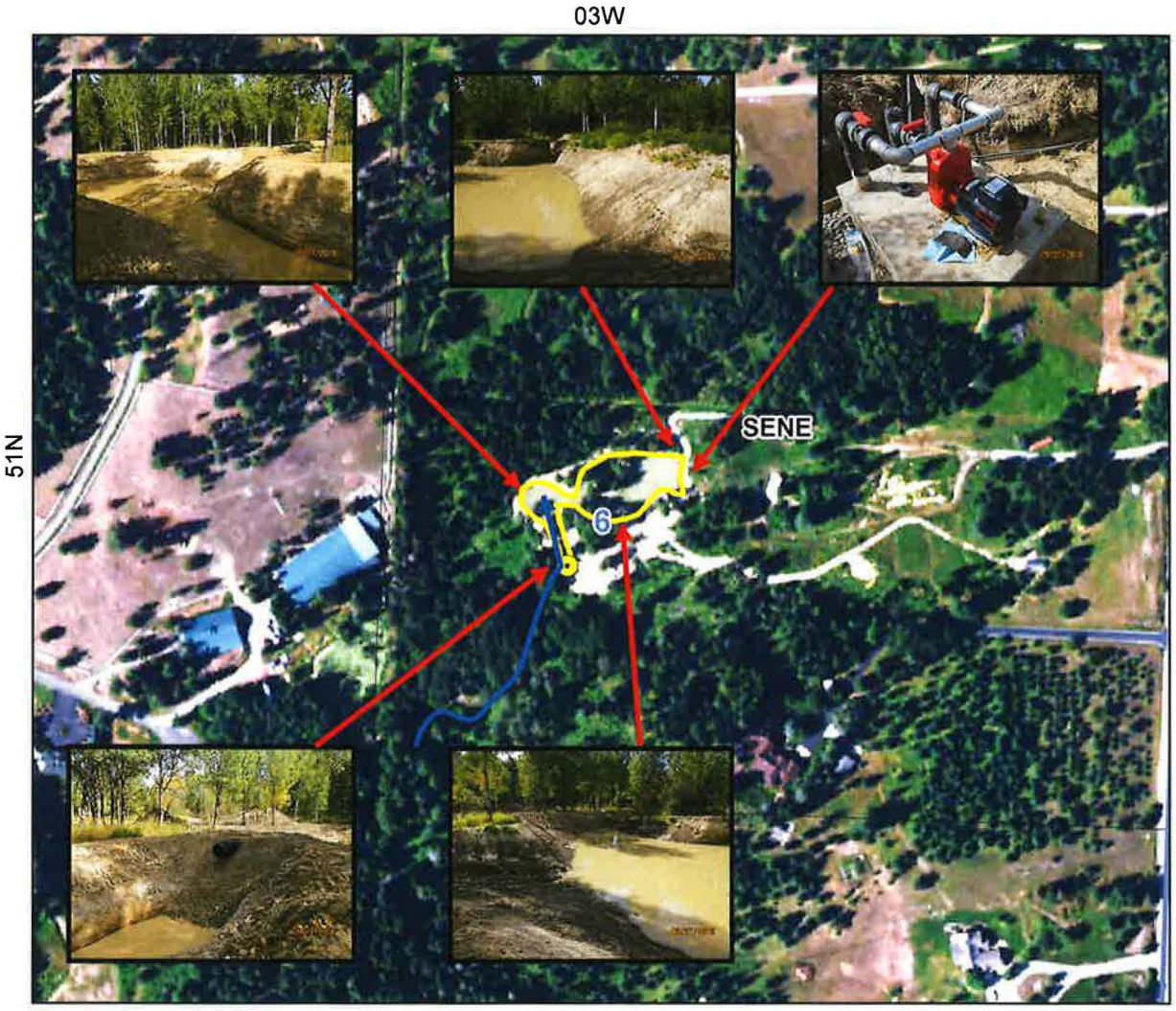
Reviewer [signature] Date 4/7/2020

State of Idaho
Department of Water Resources

# Attachment to Field Exam

**95-17141**

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

N

State of Idaho
Department of Water Resources

# Attachment to Field Exam

95-17141

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

N

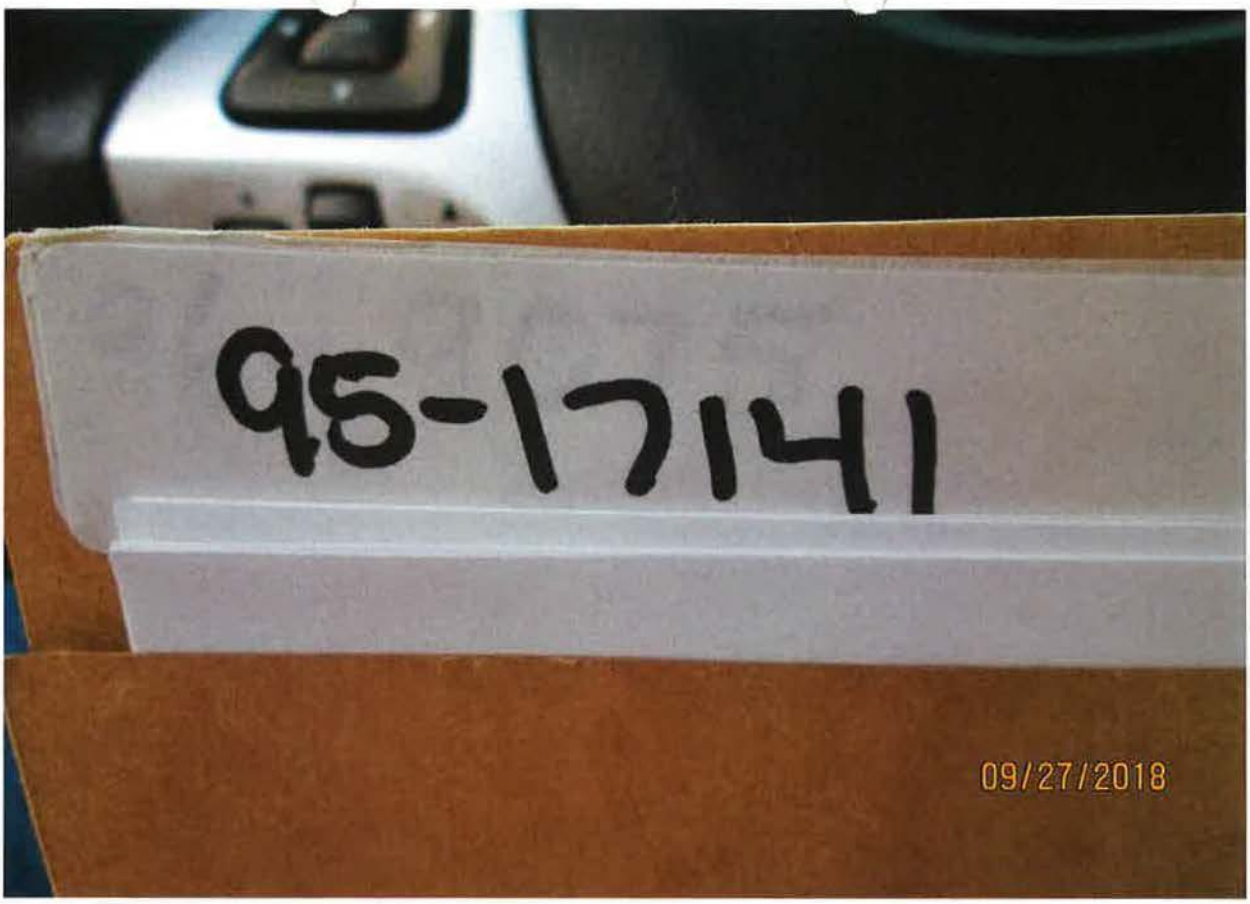
# Total Storage Calculations

| | |
|---|---|
| FILE NUMBER | 95-17141 |
| REVIEWER | Luke Bates |
| DATE | 4/2/2020 |

**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 Explanations |

| | | |
|---|---|---|
| **Surface Area (AC.)** | 0.3 | "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)** | 1.6 | 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)** | 5.4 | The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a *from storage* component if the *from storage* 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)** | 0.3 | 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. |





EXCAVATED POND


POND


POND


POND OUTFLOW CULVERT


POND OUTFLOW CULVERT


STORAGE POU

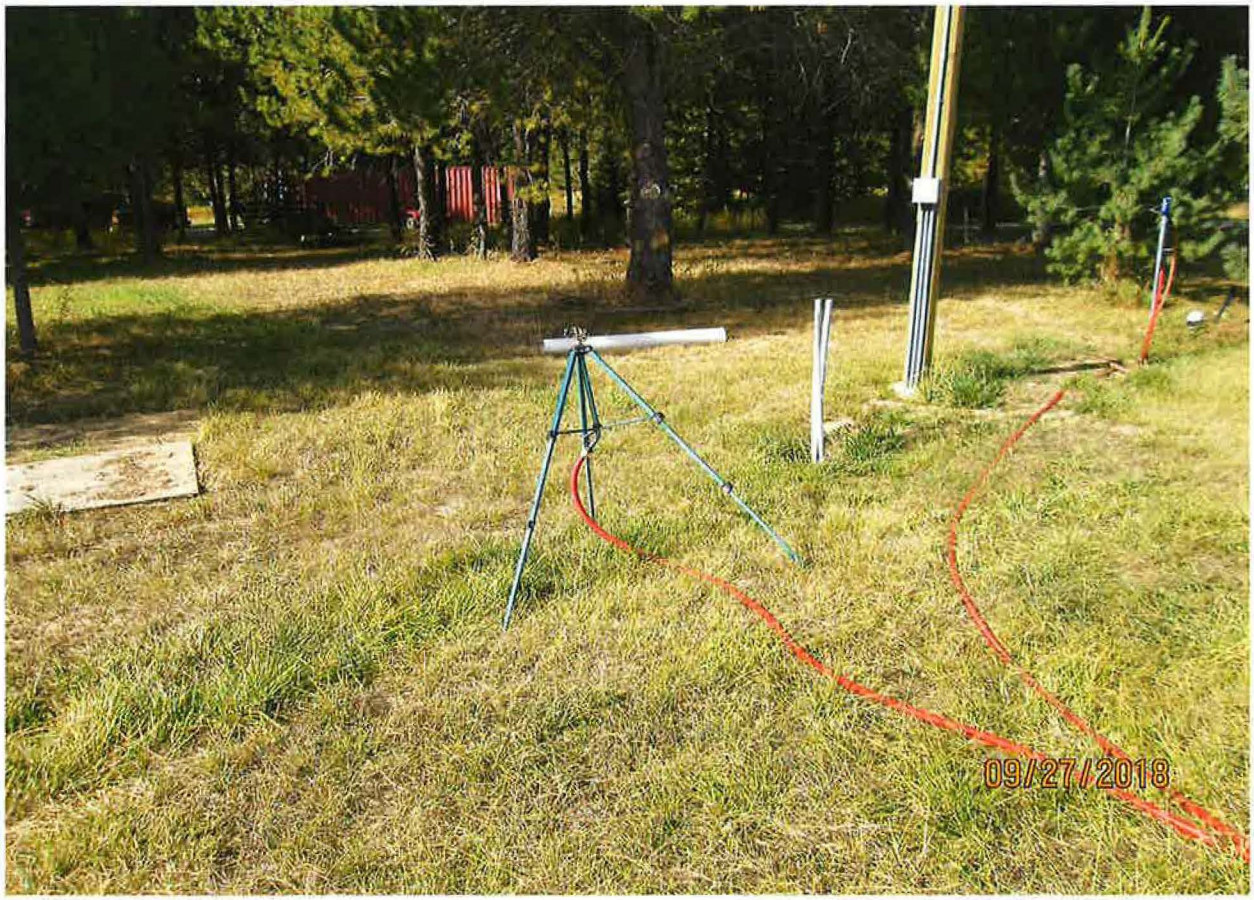

3 HP PUMP FOR IRRIGATION FROM STORAGE


CENTURY 3 HP PUMP


IRRIGATION POU


IRRIGATION POU – FROST FREE HYDRANT AND HOSE FED SPRINKLER


IRRIGATION POU




IRRIGATION POU – FROST FREE HYDRANT