

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 94-08736

Exam Date: 6/30/2017

1. Current Owner:

CARL R NORDSTROM 404 KLETTE RD KINGSTON ID 83839 (208) 682-2660

And

SALLY J NORDSTROM 404 KLETTE RD KINGSTON ID 83839 (208) 682-2660

2. Accompanied by: Carl Nordstrom

3. **SOURCE:**

UNNAMED STREAM

TRIBUTARY:

COEUR D ALENE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point-of-diversion: 94-2125

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

UNNAMED STREAM NW¼SW¼ Sec. 9, Twp 49N, Rge 02E, B.M. SHOSHONE County

Method of Determination: Maps and GPS. POD located -116° 13.166, 47° 36.420

2.

PLACE OF USE: FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
49N	02E	8				X													

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
49N	02E	8				X													

PLACE OF USE: WILDLIFE STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
49N	02E	8				X													

DIVERSION TO STORAGE same as WILDLIFE STORAGE

Method of Determination: Google Earth and Arcmap.

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

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5 GALLON BUCKET						

2. Measurements: 5 gallon bucket test performed in 32 seconds

5 gal / 32 sec x 60 sec = 9.4 gpm or 0.02 cfs

E. FLOW CALCULATIONS

Measured Method: N/A

 Additional Computation Sheets Attached

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

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

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Carl Nordstrom, showed a diversion system from an unnamed stream that fed a pond. The diversion system was made up of a vertical culvert adjacent to the stream with the lower part being perforated. From there, a one inch line went down the hill to feed the pond. The applicant said the water use to supply the home and was still hooked up, but was no longer used. That use is covered under water right 94-2125. The POD for that right was located in a different location and I made the change to show my GPS located POD. A well had been drilled since to supply the home. The supply line had an on/off valve at the pond's edge with 10 feet of pipe running into the pond. We pulled the pipe over to the edge and performed a 5 gallon bucket test in 32 seconds or 9.4gpm.

** Spatial data location*

The pond was well maintained with gravel for the surface and a retaining wall around the edges. A small 2-3 inch pvc overflow pipe was built into the dam that returned water to the stream. Mr. Nordstrom said they never ran water through there unless it was raining and the pond filled above capacity. He said they usually just topped the pond off a couple times during the summer for the frogs and then would let it go dry in August and September. Because there was no flow through, recreation as a cfs will be removed from license. The pond surface area was measured out to be 0.1 acres with a maximum depth of 12 feet or average depth of 4.8 feet. Pond analysis calculated pond capacity to be 0.5 acre-feet with 0.2 acre-feet combined for seepage and evaporation. The license will be issued for a diversion rate of 0.02 cfs with an annual volume of 0.7 acre-feet.

During license review, it was determined the unnamed stream did not sink and was actually tributary to the Coeur d' Alene River. The DRG layer and stream layer both confirm this. The tributary will be changed on the license to reflect this and as a result condition 227 will be added. Condition 227 will protect flows in the Coeur d' Alene River during times of low flow. For some reason there were numerous conditions missing from the permit. Condition X15, 219, and 220 were all added to license in relation to the POD and POU for this right. Condition F06 will be added to show the POD is shared by this right and 94-2125. Condition 004 will remain and there are no overlap concerns.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FIRE PROTECTION STORAGE	01/01 to 12/31		0.7 AF
RECREATION STORAGE	01/01 to 12/31		0.7 AF
WILDLIFE STORAGE	01/01 to 12/31		0.7 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.02 CFS	
	<u>Totals:</u>	0.020 CFS	0.70 AF

2. Recommended Amendments

 Change P.D. as reflected above Add P.D. as reflected above X None

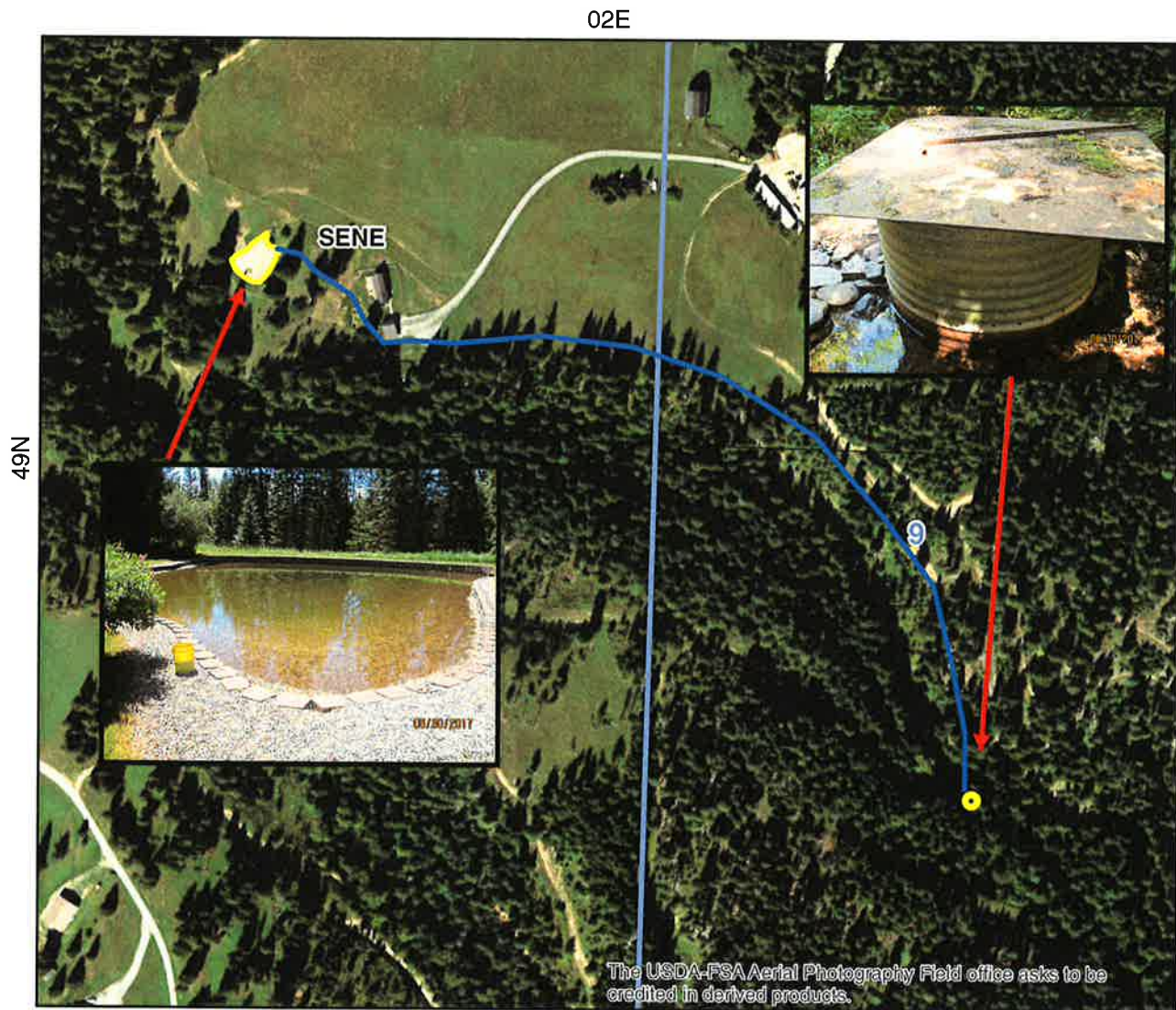
 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION

Field Examiner's Name Gordon Finkel Date 3/1/2018
Reviewer Douglas Jones Date 4/21/2018

State of Idaho
Department of Water Resources
Attachment to Field Exam
94-8736

FIRE PROTECTION STORAGE, RECREATION STORAGE, and WILDLIFE STORAGE / SYSTEM DIAGRAM



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

0 0.0425 0.085 0.17 Miles



Total Storage Calculations

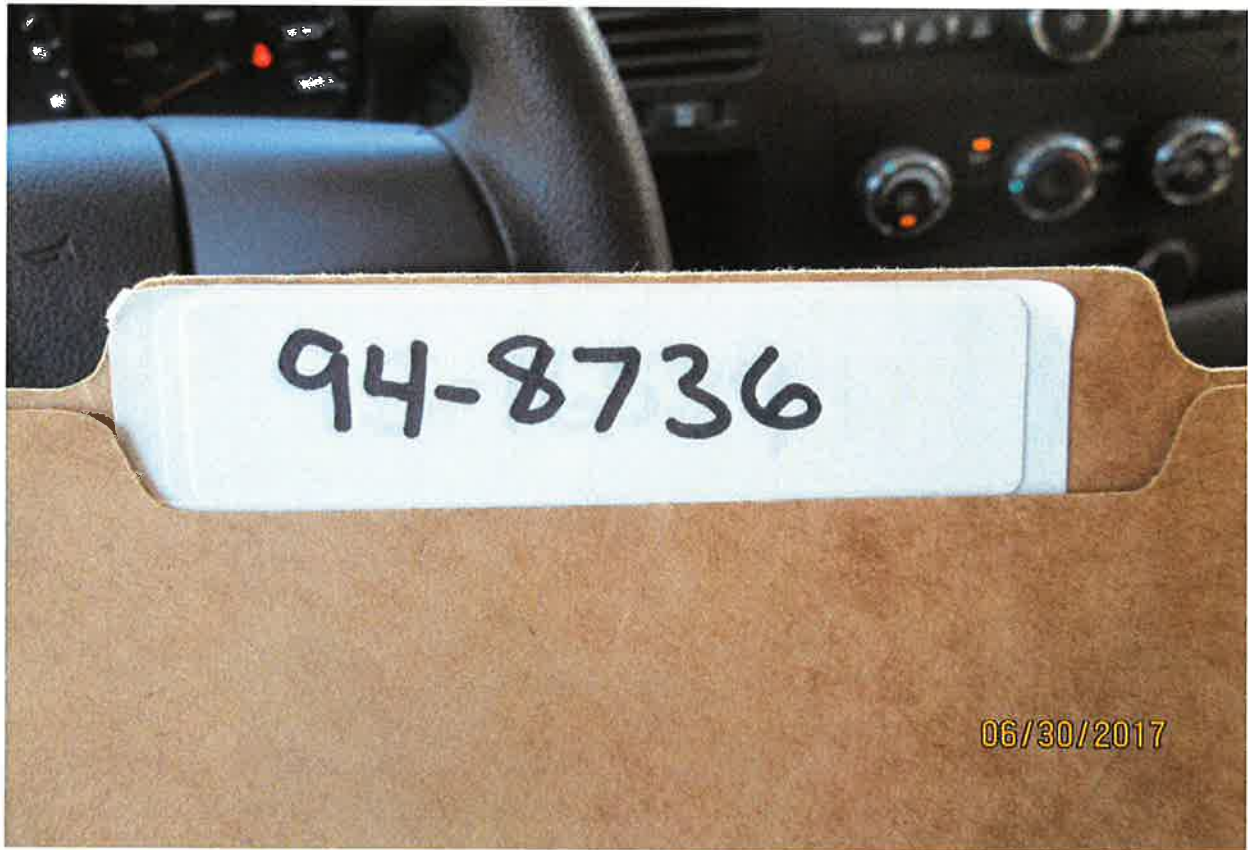
FILE NUMBER	94-8736
REVIEWER	Adam Frederick
DATE	3/1/2018

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.)	0.1	"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)	0.5	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. <i>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.</i>
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). <i>Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.</i>
Estimated Seepage Loss (AF)	0.1	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.1	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.

Flow Rate into Pond (CFS)	0.02	The "Flow Rate into Pond" depicts the actual flow, either measured or estimated, into the pond. For offstream facilities, this will be equivalent to "diversion to storage" rate.
Highest Daily Evaporation Rate From Evaporation Tab. (mm/Day)	3.56	This number is carried over from the "Evaporation Loss" sheet. It is the highest recorded number in the "Precipitation Deficit Table".
Required Daily Maintenance Volume (AF/Day)	0.00	"Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year to maintain pond volume. It is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (CFS)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	13	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond.
Days Required to Fill the Pond at 13,000 Gallons per Day	12	Some water users may want to fill a pond under the 13,000 gallons per day domestic exemption. The "Days Required to Fill the Pond at 13,000 Gallons per Day" is calculated by converting the "Pond Capacity" and the "Required Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Required Daily Maintenance Volume" in gallons to determine the number of days to fill pond. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond. Negative values indicate that the supply of 13,000 gallons per day is not enough volume to overcome the required daily maintenance volume; the pond will never fill.



Applicant had put in culvert adjacent to stream for diversion system.

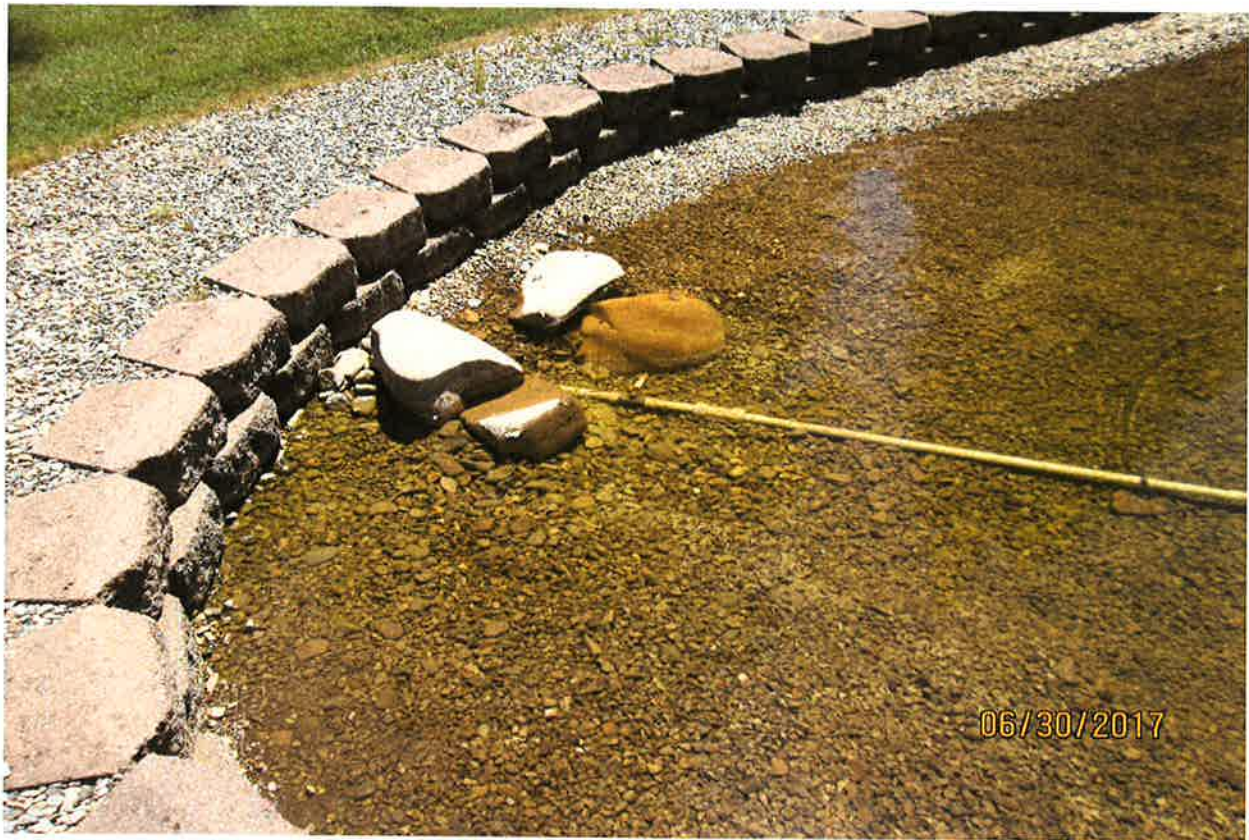


View inside culvert with 1 inch line.



Storage POU.





Water line.



Overflow pipe.



Creek looking downhill from dam and overflow pipe.



Storage POU.