

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 78-12448
Exam Date: 05/28/2019

1. Current Owner:
LYNN A MC DONALD PO BOX 654 NEW MEADOWS ID 83654
2. Accompanied by: Lynn McDonald
Phone No: 208-347-2500
Address: 3805 Shadowpine Circle, New Meadows, ID
Relationship to permit Holder: Same

3. SOURCE:
UNNAMED STREAM

Tributary
THREEMILE CREEK

Method of Determination: Field observation, USGS Topo Maps

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A	N/A	N/A	N/A

Comments: None

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

Water Right No.	Source	Purpose of Use	Basis
N/A	N/A	N/A	N/A

Comments: None

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

UNNAMED STREAM NE¼ SW¼, Sec. 9, Twp 19N, Rge 02E, B.M. ADAMS County

Method of Determination: Handheld Garmin GPS

PLACE OF USE: AESTHETIC STORAGE, FIRE PROTECTION STORAGE, and STOCKWATER 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	
19N	02E	9									X								

PLACE OF USE: FIRE PROTECTION 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	
19N	02E	9									X	X L3	X L4	X					

Method of Determination: Aerial Imagery, ArcMap, Field Observation, Handheld GPS

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.

NA 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	N/A	N/A	N/A	N/A	N/A

D. FLOW MEASUREMENTS

1.

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

2. Measurements: N/A

E. FLOW CALCULATIONS

x Additional Computation Sheets Attached

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses: Aesthetic Storage-

Pond dimensions were estimated during field exam and paired with information provided by the permit holder during the exam to calculate pond capacity. Estimated evaporation losses were calculated using the monthly precipitation deficit values at the New Meadows RS station for shallow pond systems. *See pond calculations spreadsheet attached.

Surface area = 0.037 ac

Average depth of pond = 3 ft

Pond Capacity = 0.1 af

Estimated Evaporation = 0.1 af

Total volume required = 0.2 af

Stockwater Storage- 5 head x 0.0134 = 0.067 af→0.1 af

G. NARRATIVE/REMARKS/COMMENTS

Field exam was conducted 5/28/2019 by WRA Justin Shearer. I was accompanied by Lynn McDonald during the field exam.

Ms. McDonald is the property owner and water user pertinent to permit 78-12448.

The Point of Diversion (POD) from 'Unnamed Stream' tributary to 'Threemile Creek' is located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 9, TWP 19N, Rge 02E and is accurately described by the permit. Water right overlap did not discover any other water rights associated with the unnamed stream. The unnamed stream flows into a dug out pit approximately 40'L x 40'W x 3'D in dimension upon where the flow of the stream is terminated. McDonald uses the pond for aesthetic storage, stockwater storage, and fire protection storage as described on the permit. The place of use for all storage uses are within the NE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 9, Twp 19N, Rge 02E, Adams County. The Fire Protection from Storage use can be accomplished with a portable gas powered pump that McDonald has in place near the pond. For stockwatering purposes, McDonald lets her horses drink directly from the pond as it is just uphill from their grazing pasture.

McDonald had applied and was permitted for 0.5 af of storage, however this volume was grounded upon the pond having an average depth of 10 feet and the field exam concluded that the average depth is approximately 3 feet deep in reality. As a result, the actual capacity of the pond is 0.3 af less than what was proposed in McDonald's application. Thus, the pond capacity is 0.1 af and the estimated evaporation loss is 0.1 af.

Condition 121 replaced with 103 as per department standards. Because the source is an intermittent stream that terminates on the applicant's property, and no specific request from IDFG for screening requirements exists in regards to this permit, condition 029 was removed. Condition x02 was removed as per licensing standards. Condition 220 were updated to reflect the actual pond parameters developed. Condition 219 was replaced by condition 259 to accurately describe the volume being used where the pond will remain full for Aesthetic Storage use while also being depleted by Stockwater Storage use.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
STOCKWATER STORAGE	01/01 to 12/31		0.1 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		0.2 AF
FIRE PROTECTION FROM STORAGE	01/01 to 12/31		0.2 AF
AESTHETIC STORAGE	01/01 to 12/31		0.2 AF

Totals: 0.3 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 Justin Shearer - Water Resource Agent, Senior

Field Examiner's Name Justin Shearer Date 8/7/2019
 Reviewer Patricia Wiley Date 8-7-2019

78-12448 System Diagram



Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	78-12448
REVIEWER	Justin Shearer
DATE	8/2/2019

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.037	AC.
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Pond Surface Area (SQ. FT.)	1612	SQ. FT.
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I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	CL	
Suggested Seepage Rate (FT./DAY)	0.0000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	0	GPD
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Total Seepage Loss (AFA)	0.0	AFA
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Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:

GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = **0.2 ft per day**

OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = **0.02 ft per day**

SC (clayey sands, sand clay mixtures) = **0.007 ft per day**

CL (Low to medium plasticity clays) = **0.003 ft per day**

MH, OH, PT and CH (high plasticity clays) = **0.0003 ft per day**

LINED PONDS (liners can be chemical, fabric, or bentonite) = **0 ft per day**

Ponds Intercepting Groundwater (excavated ponds filled by ground water) = **0 ft per day**

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1) , an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2) . Use "0" if the pond fill relies on the water table.

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

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User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

Found at: <http://data.kimberly.uidaho.edu/ETIdaho/>

Precipitation Deficit

Station: New Meadows RS (NWS -- USC00106388)

Month	mm/day ¹	Days per month	mm/Month
Jan	-1.87	31	0.00
Feb	-1.17	28	0.00
March	-0.66	31	0.00
April	0.85	30	25.50
May	1.91	31	59.21
June	2.67	30	80.10
July	4.60	31	142.60
August	4.19	31	129.89
September	2.43	30	72.90
October	0.53	31	16.43
November	-1.90	30	0.00
December	-2.25	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS – 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = 526.63

$$((526.63 \div 304.8) \times 0.04) = 0.1 \text{ AFA}$$

Total Storage Calculations

FILE NUMBER	78-12448
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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

Surface Area (AC.)	0.037	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	3	"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)	0.111	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 "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	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)	0.2	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.



Pic of Unnamed
Stream that feeds
the pond.



Pic of pond with
stream entering
pond in
background.



Pic looking at pond
from entrance of
stream.



Pic of portable
pump that can be
used for fire
protection from
storage.



State of Idaho

DEPARTMENT OF WATER RESOURCES

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BRAD LITTLE
Governor

GARY SPACKMAN
Director

April 29, 2019

LYNN A MC DONALD
PO BOX 654
NEW MEADOWS, ID 83654

COPY

RE: Scheduling Field Exam for Water Right Permit No. 78-12448

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **this season**. An examination is needed to verify the water use in order to issue a water right license.

The above-referenced permit authorizes **0.5 AF** from **UNNAMED STREAM** tributary to **THREEMILE CREEK** for **FIRE PROTECTION STORAGE, STOCKWATER STORAGE, FIRE PROTECTION FROM STORAGE & AESTHETIC STORAGE** uses. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

If you did develop a beneficial use of water under the permit, but you no longer own the place of use property identified in the permit, please submit the enclosed Assignment of Permit form with the applicable \$25 processing fee.

Please contact me within the next thirty (30) days at (208) 334-2190 to either schedule an examination or submit a relinquishment or assignment form. If you no longer own the place of use property and/or do not respond to this letter, the department will work with the current property owner to issue a license or void the permit.

Sincerely,

Justin Shearer
Water Resource Agent, Sr.

Enclosures: Relinquishment of Permit form
Assignment of Permit form
Water Permit Report and Map