

IN-OFFICE BENEFICIAL USE FIELD REPORT

Permit No. 78-7379 Date 3-10-16 Examiner: Patrick Kelly

Name/Address X Taxlot / S.O.S. record: Whitney Ranch Sub.
 Source ✓ Does change clarify original intended source? If not, void permit.
 Nature of Use ✓
 Season of Use ✓
 Point of Diversion ✓ NE SW
 Place of Use ✓ NE SW

Overlap Review POD Right(s) NONE
 Worksheet Attached ☐ POU Right(s) NONE

Diversion Rate Permitted Rate _____ cfs Theoretical _____ cfs (Worksheet Attached ☐)
 BU Fee Limit _____ cfs Rate/Acre Limit _____ cfs
 Recommended Total Div Rate NA cfs

Annual Volume

for Irrigation: _____ cfs x 1.9835 x _____ days = _____ af
 _____ acres x _____ af/ac (FHR) = _____ af
 Smaller of two volumes = _____ af

for other uses:

surface area = 0.2 acres
average depth = 4 ft (estimated by 40% 10 ft.)
pond capacity = 0.8 af
evaporation = 0.3 af seepage = 3.6 af RECOMMEND PERMIT LIMIT: 2.0 af

Recommended Amounts

Beneficial Use	Season of Use	Diversion Rate	Annual Volume
<u>WILDLIFE STORAGE</u>	<u>1-1 to 12-31</u>		<u>2.0</u>
<u>FIRE PROTECTION STORAGE</u>	<u>" "</u>		<u>" "</u>
<u>FIRE PROTECTION FROM STORAGE</u>	<u>" "</u>		<u>" "</u>
<u>Totals</u>		_____ cfs	<u>2.0</u> af

Amendments Required

☐ Change P.D. ☐ Add P.D. ☒ None
☐ Change P.U. ☐ Add P.U. ☐ Other: _____

Conditions: Waiver from the WM was recieved to waive low-level outlet works. Modified to require in the future, if necessary.

Remarks: - Pond not used in a few years but visible during B.U. period.
- F.E. by Rick Collingwood for 78-7379 completed on wrong pond (voided application 78-7378). Ownership to be addressed after license is issued by current land owners.

Workflow

Exam Date Entered ✓
 POU/POD shapes ✓
 Combined Rights Entry -
 Wild & Scenic Entry -
 Draft License and Map ✓
 Other: _____

Supporting Documents

Historical Imagery ✓ Well Log _____
 Photographs _____ Diagrams _____
 LandSat _____ Theoretical _____
 Other: Pond Spreadsheet.

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	78-7379
REVIEWER	Patrick Kelly
DATE	7/25/2016

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.2	AC.
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Pond Surface Area (SQ. FT.)	8712	SQ. FT.
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My Soil Classification is	GC-GM	
Suggested Seepage Rate (FT./DAY)	0.2000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	13033	GPD
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Total Seepage Loss (4/1 to 6/30)	3.6	AF
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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 <X:\Spatial\Soils\USCS\PondSoils.lyr>. 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: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	-2.62	31	0.00
Feb	-1.19	28	0.00
March	-0.43	31	0.00
April	0.67	30	20.10
May	1.68	31	52.08
June	2.21	30	66.30
July	3.96	31	122.76
August	3.26	31	101.06
September	1.85	30	55.50
October	0.38	31	11.78
November	-1.55	30	0.00
December	-2.26	31	0.00

Total mm/year = 429.58

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.

$$((\text{mm/yr}) \div (\text{convert to feet})) \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$$

(429.58 ÷ 304.8) X 0.20 = 0.3 AFA

Total Storage Calculations

FILE NUMBER	78-7379
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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.)	0.2	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	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)	0.8	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)	3.6	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)	4.7	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.



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

August 7, 2013

Johnson Roehler Trust
P.O. Box 207
New Meadows, ID 83654-0207

RE: Scheduling Field Exam for Water Right Permit No. 78-7379

We are planning to **conduct water right field examinations** in the vicinity of the above-referenced permit **during the week of August 12, 2013**. An examination is needed to verify your water use in order to issue a water right license.

Please be advised that you will need to operate your system under normal operating conditions during the examination. The permit authorizes the diversion of water from Thrush Creek for 2.0 AF of wildlife and fire protection storage.

In order to conduct your exam as efficiently as possible, we ask that you call this office to schedule a day and time convenient for you. **Please call me at 208-334-2190 by August 9, 2013, to conduct the exam during the week of August 12, 2013.** If there is a problem with scheduling or conducting the examination at this time, please let me know so we can reschedule or make other arrangements.

I appreciate your attention to this matter and I look forward to hearing from you.

Sincerely,

A handwritten signature in black ink that reads "Rick Collingwood". The signature is written in a cursive, flowing style.

Rick Collingwood, P.E.
Water Resource Agent, Sr.



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C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

July 25, 2013

Johnson Roehler Trust
C/O W.D. Fairfield
290 Maple Ct., Ste. 200
Ventura, CA 93003

RE: Scheduling Field Exam for Water Right Permit No. 78-7379

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