

IN-OFFICE BENEFICIAL USE FIELD REPORT

Permit No: 67-15096

Examiner: A. Skinner

Date: 6/14/2017

In-office qualification (IDAPA 035.01.r):

- ☐ Irrigation $\leq$ 5 acres
☐ Stockwater storage $\leq$ 14.6 af
☐ Total diversion rate $\leq$ 0.24 cfs and not irrigation or storage
☒ Other (see narrative)

Current Owner Name: Howard Commers

Address: 7190 W Baron Ave., Boise, ID 83714

Beneficial Use Fee Paid: \$50.00

Receipt: W045357

Source: SPRING

Source change? ☒ N ☐ Y Change clarifies originally intended source.
If not – void permit.

Point of Diversion			NE				NW				SW				SE			
Twp	Rge	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE
16N	02W	30														X		

Method of Determination: Aerial Imagery verified with Howard during an in-office visit.

POD change? ☒ N ☐ Y

Place of Use			NE				NW				SW				SE				Totals
Twp	Rge	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
16N	02W	30														X			

Method of Determination: Aerial Imagery verified with Howard during an in-office visit.

POU change? ☒ N ☐ Y

Purpose of Use: WILDLIFE STORAGE, RECREATION STORAGE, AESTHETIC STORAGE

Purpose change? ☒ N ☐ Y

Method of Determination: Aerial imagery confirming in-office visit with Howard.

Standard Season of Use: 01/01 - 12/31

Update required on license? ☒ N ☐ YOverlap Review POD overlap? ☒ N ☐ Y WR's:Analysis Attached ☒ Comments:POU overlap? ☒ N ☐ Y WR's:

Comments:

Diversion Rate Permitted Rate: NA cfs BU Standard Limit: NA cfs
 BU Fee Limit: NA cfs Theoretical (optional): 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:

Pond Analysis:

Pond Capacity: 0.4 AF

Seepage Loss: N/A (Bentonite Layered)

Evaporation Loss: 0.2 AF

Total Volume: 0.6 AF

IN-OFFICE BENEFICIAL USE FIELD REPORT

Recommended Amounts

Beneficial Use	Season of Use	Diversion Rate (cfs)	Annual Volume (af)
AESTHETIC STORAGE	01/01 - 12/31		0.6 AF
RECREATIONAL STORAGE	01/01 - 12/31		0.6 AF
WILDLIFE STORAGE	01/01 - 12/31		0.6 AF
Totals		cfs	0.6 af

Amendments Required	☐ Change P.D.	☐ Add P.D	☒ None
	☐ Change P.U.	☐ Add P.U.	☐ Other:

Conditions:

Conditions 103, 086, 01P, R05, 219, and 220 were recommended for licensing.

Have conditions of permit been met? ☒ Y ☐ N

Narrative:

Permit 67-15096 authorized the annual volume limit of 1.0 AF from spring water for Wildlife Storage, Aesthetic Storage, and Recreation Storage use purposes. Based on the small permitted volume limit and POU, Beneficial Use Examination Rules 37.03.02-001 states the Director can evaluate any deviation from the field exam standards as necessary. Nothing would be gained by performing a field exam for this permit and resources would be inadequately used. An in-office visit by Mr. Commers provided satisfactory system details to perform an in-office exam. Therefore, an in-office exam was completed on June 14, 2017 by WRA Aaron Skinner.

System Description:

Water is diverted from the spring to the pond and overflow from the collection box from WR No. 67-15078 as outlined in the diagram included in the file. Although overflow water is captured from the collection box, water naturally flows down the stream/hill into the pond. Therefore, the POD is at the pond dam. The pond fills to a 5' maximum depth. There is a PVC riser set at 5' that controls the water level in the pond. As water overflows into the riser, water is diverted through the dam and back into the stream channel. The pond gradually increases in depth as you move southeast. Mr. Commers said the average depth is 4' and establishes a pond capacity of 0.4 AF.

The pond's legal description falls in the NWNWSE not the permitted SENWSE of Section 30. The dam falls very close to the center of the NWSE and is consistent with maps submitted with the application for permit. This change is noted as a clarification, so no amendment is necessary.

Volume:

The permit authorized a volume of 1.0 AF. A pond analysis was completed and is outlined in the "Volume" section of this report. The ponds surface area was calculated with ArcMap tools and totaled 0.10 acres. Seepage analysis were not applicable as the pond is lined with 2" thick bentonite plaster and cloth as a barrier. Evaporation loss was determined using the Kimberly Research Center's website. The precipitation deficit station used is in Cambridge (NWS - 101408) that determined the annual evaporation loss to be 0.2 AF. The total volume sufficient to maintain the pond was estimated to be 0.6 AF (0.4 AF + 0.2 AF). **The recommended volume limit for this permit will be 0.6 AF rather than the permitted 1.0 AF.**

Overlap:

There are no POD or POU overlaps associated to this right.

Ownership:

The current taxlot data for Adams County shows the Commers as the parcel owner matching the permit.

Conditions:

Conditions 004 and 26A were dropped for licensing. Condition 121 was updated to 103 for licensing. Condition 086 and 01P were recommended for licensing. Condition R05 was modified to read "may be regulated..." for licensing. Conditions 219 and 220 were recommended for licensing to established pond capacity, surface area, and consumptive values.

IN-OFFICE BENEFICIAL USE FIELD REPORT

Workflow

Exam Date Entered ☒
POU/POD shapes ☒
Combined Rights Entry ☐
Wild & Scenic Entry ☐
Draft License and Map ☒
FE Database (N: drive) ☒

Supporting Documents

Aerial Photograph ☒ Well Log ☐
POU/POD Map ☒ Diagrams ☒
LandSat ☐ Theoretical ☐
Photographs ☐ Other: ☐
Site Visit Date: _____

Authentication

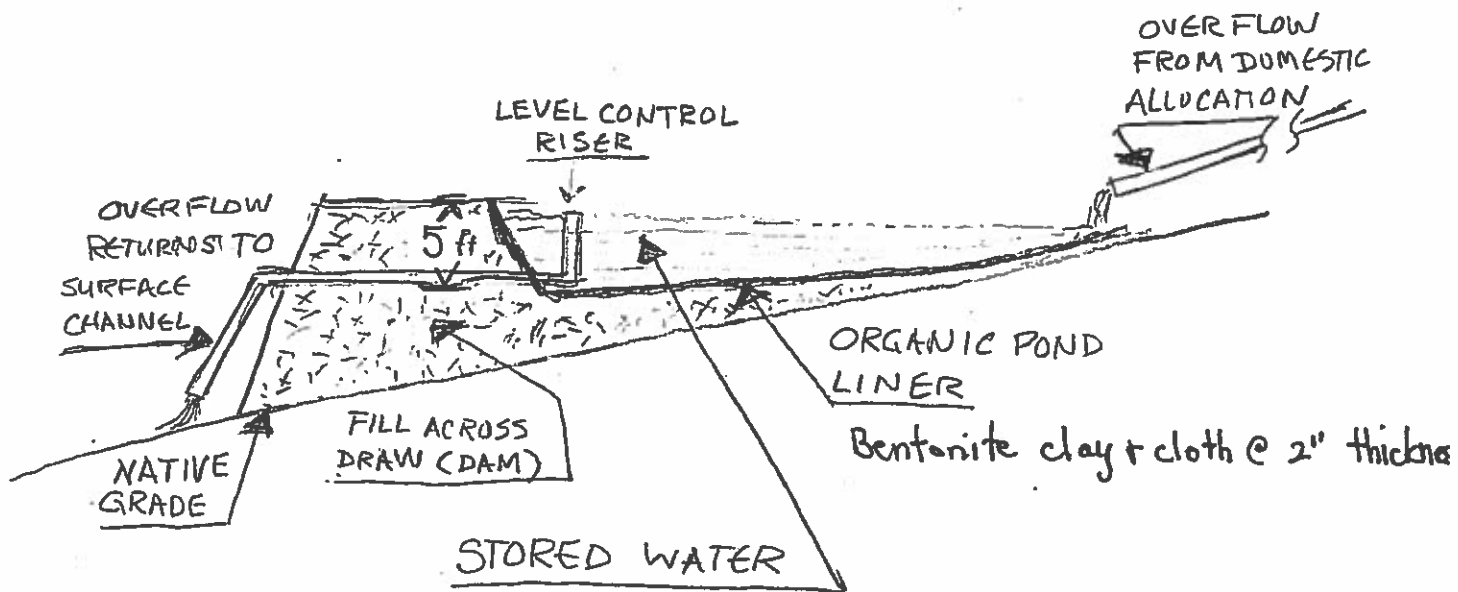
Field Examiner's Name: Aaron Skinner Date: 6/14/2017

Reviewer: _____ Date: _____

Application for Permit

COMMERS

Sketch of purposed dam and pond.



surface area: 0.10 acres per pond analysis
average depth: 4 ft.
est. volume : 0.6 AF per pond analysis

* * adjustments and clarification was done during Mr. Commers in-office visit on 6/7/17.

NO SCALE

Place of Use and Point of Diversion for Permit No. 67-15096



Legend

67-15096 POD

Pond

0 125 250 500 Feet

The USDA-FSA Aerial Photography Field office asks to be credited in derived products.

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	67-15096
REVIEWER	Aaron Skinner
DATE	6/21/2017

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.1	AC.
-------------------------	-----	-----

Pond Surface Area (SQ. FT.)	4356	SQ. FT.
-----------------------------	------	---------

I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	Lined	
Suggested Seepage Rate (FT./DAY)	0.0000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
--

Convert to GPD	0	GPD
----------------	---	-----

Total Seepage Loss (AFA)	0.0	AFA
--------------------------	-----	-----

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.

FILE NUMBER	67-15096
REVIEWER	Aaron Skinner
DATE	6/21/2017

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: Cambridge (NWS -- 101408)

Month	mm/day ¹	Days per month	mm/Month
Jan	-1.98	31	0.00
Feb	-1.49	28	0.00
March	-0.04	31	0.00
April	1.72	30	51.60
May	2.20	31	68.20
June	3.18	30	95.40
July	4.27	31	132.37
August	3.58	31	110.98
September	2.23	30	66.90
October	0.69	31	21.39
November	-1.77	30	0.00
December	-2.80	31	0.00

Total mm/year = 546.84

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.

$$\left(\frac{546.84}{304.8} \right) \times 0.10 = 0.2 \text{ AFA}$$

((mm/yr) ÷ (convert to feet)) X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

Total Storage Calculations

FILE NUMBER	67-15096
REVIEWER	Aaron Skinner
DATE	6/21/2017

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	"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)	0.4	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)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	0.6	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.

Flow Rate into Pond (CFS)	1.00	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)	4.27	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	0	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. <i>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.</i>
Days Required to Fill the Pond at 13,000 Gallons per Day	10	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. <i>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.</i> 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.

[Contact Us](#)
[Subscribe](#)
[Archived Soil Surveys](#)
[Soil Survey Status](#)
[Glossary](#)
[Preferences](#)
[Link](#)
[Logout](#)
[Help](#)

[Area of Interest \(AOI\)](#)
[Soil Map](#)
[Soil Data Explorer](#)
[Download Soils Data](#)
[Shopping Cart \(Free\)](#)

[View Soil Information By Use: All Uses](#)

[Printable Version](#)
[Add to Shopping Cart](#)

[Intro to Soils](#)
[Suitabilities and Limitations for Use](#)
[Soil Properties and Qualities](#)
[Ecological Site Assessment](#)
[Soil Reports](#)

Search

Soil Reports

[Open All](#)
[Close All](#)

AQI Inventory

Building Site Development

Construction Materials

Disaster Recovery Planning

Land Classifications

Land Management

Recreational Development

Sanitary Facilities

Soil Chemical Properties

Soil Erosion

Soil Health

Soil Physical Properties

Engineering Properties

Options

Particle Size and Coarse Fragments

Physical Soil Properties

Soil Qualities and Features

Vegetative Productivity

Waste Management

Water Features

Water Management

Soil Map

[Scale](#) (not to scale)

Report — Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Adams-Washington Area, Parts of Adams and Washington Counties, Idaho

Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth in	USDA texture	Classification	Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index	
						>10 inches	3-10 inches	4	10	40	200			
					Unified AASHTO	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	
177—Riggins extremely stony loam, 30 to 50 percent slopes														
Riggins, stony surface	90	D	0-4	Extremely stony loam	SC, GC A-2, A-6, A-7, A-4	20-28 35	25-35 45	65- 73- 80	60- 68- 75	50- 60- 70	35- 43- 50	29-36 -43	9-13-17	
			4-19	Very cobbly clay loam	CL, GC, SC	A-6, A-7, A-2	0-3-5 70	30-50- 70	55- 70- 85	50- 65- 80	45- 60- 75	35- 45- 55	36-41 -45	18-21-25
			19-29	Bedrock										

Description — Engineering Properties

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

ETIdaho 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robbison@kimberly.uidaho.edu Copyright 2012, University of Idaho

Cambridge (NWS -- 101408)

Statistics based on thirty year normal spans 1979 to 2010 years

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data

Open water - shallow systems (ponds, streams)															
Precipitation Deficit (Click here for a graph)															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean^c	mm/day												mm		
Month ^c	-1.98	-1.49	-0.04	1.72	2.26	3.18	4.27	3.59	2.23	0.67	-1.77	-2.81	30	0	30
15-Day Moving Average ^d	-1.99	-1.90	-0.09	1.76	2.23	3.22	4.33	3.53	2.10	0.71	-1.74	-2.61			
7-Day Moving Average ^e	-2.01	-1.71	-0.09	1.72	2.23	3.21	4.30	3.59	2.15	0.69	-1.80	-2.71			
3-Day Moving Average ^f	-1.99	-1.55	-0.05	1.72	2.26	3.16	4.27	3.59	2.22	0.67	-1.79	-2.79			
Standard Deviation^g	mm/day												mm		
Month ^g	1.70	1.52	1.76	0.75	2.12	0.93	0.64	0.79	1.01	1.11	1.37	2.33	12	0	12
15-Day Moving Average ^d	1.64	1.88	1.64	1.04	2.10	1.21	0.54	0.81	1.35	1.22	1.74	2.06			
7-Day Moving Average ^e	2.27	2.57	2.16	1.58	2.54	1.82	0.76	1.11	1.71	1.78	2.42	3.09			
3-Day Moving Average ^f	3.03	3.38	2.68	2.28	3.20	2.68	1.01	1.54	2.29	2.43	3.31	4.27			
20% Exceedance^h	mm/day												mm		
Month ^h	-1.02	-0.28	0.73	2.48	3.06	3.98	4.63	4.03	3.01	1.44	-0.72	-1.52	39	0	39
15-Day Moving Average ^d	0.13	0.18	2.05	3.25	4.51	4.78	4.93	4.35	3.41	2.23	0.57	0.18			
7-Day Moving Average ^e	0.18	1.02	2.62	4.13	5.08	5.23	5.18	4.72	3.75	2.76	0.97	0.38			
3-Day Moving Average ^f	0.46	1.24	3.06	4.57	5.60	5.67	5.48	5.03	4.20	3.03	1.34	0.48			
80% Exceedanceⁱ	mm/day												mm		
Month ⁱ	-2.77	-2.23	-0.79	0.85	1.08	2.57	3.83	2.99	1.47	-0.03	-3.06	-3.99	18	0	18
15-Day Moving Average ^d	-4.46	-4.64	-3.10	-0.30	-1.24	1.23	3.28	1.84	0.10	-1.43	-5.56	-6.04			
7-Day Moving Average ^e	-7.27	-8.64	-5.41	-2.10	-3.38	-1.44	2.23	0.02	-1.68	-3.64	-8.13	-9.74			
3-Day Moving Average ^f	-12.15	-12.26	-9.23	-5.52	-7.08	-6.12	0.28	-2.44	-6.84	-7.61	-11.98	-15.95			
Ave Highest Per^j	mm/day												mm		
15-Day Moving Average ^d	0.07	0.12	1.13	2.73	3.53	4.26	4.69	4.12	2.93	1.71	0.22	0.06			
7-Day Moving Average ^e	0.25	0.75	1.94	3.58	4.49	4.97	4.94	4.49	3.46	2.31	0.64	0.26			
3-Day Moving Average ^f	0.39	1.03	2.66	4.24	5.18	5.41	5.32	4.81	3.95	2.59	1.01	0.39			
Ave Lowest Per^k	mm/day												mm		
15-Day Moving Average ^d	-3.20	-2.78	-1.17	0.81	0.86	2.12	3.87	3.03	1.36	-0.29	-3.05	-4.47			
7-Day Moving Average ^e	-5.33	-4.94	-2.72	-0.65	-1.17	0.35	3.24	2.20	0.23	-1.91	-5.18	-7.50			
3-Day Moving Average ^f	-8.65	-8.45	-5.18	-3.00	-4.29	-2.91	2.01	0.48	-2.31	-4.77	-8.98	-12.25			
Special normal distribution parameters for monthly, seasonal, and annual intervals															
Skew ^m	-0.15	-2.14	-0.23	-0.06	-0.67	-1.31	-0.39	-0.33	-1.50	0.05	-0.74	-0.19	-0.57	0.08	-0.57
Kurtosis ⁿ	0.78	9.06	0.93	2.04	1.93	4.47	1.19	0.73	4.74	0.64	2.99	1.08	2.81	0.08	2.81

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.^c Mean of the average daily value for month.^d Mean of the fourteen 15-day period averages contained in the month.^e Mean of the twenty three 7-day period averages contained in the month.^f Mean of the twenty seven 3-day period averages contained in the month.^g Mean of the highest/lowest 15-day period average in month.^h Mean of the highest/lowest 7-day period average in month.ⁱ Mean of the highest/lowest 3-day period average in month.^j This value represents the mean value for the parameter for the month over the 'normal' period of record. Generally, the 'normal' period is the last thirty years with data.^k This value represents the standard deviation for the parameter for the month over the 'normal' period.^l This value represents the value for the parameter that has a 20% chance of being exceeded that month during any particular year. Conversely, there is an 80% chance that the parameter value will be less than the value shown.^m This value represents the value for the parameter that has a 80% chance of being exceeded that month during any particular year. Conversely, there is an 20% chance that the parameter value will be less than the value shown.ⁿ This value represents the skewness (asymmetry) of the distribution of the parameter values for the month (year) over the 'normal' period. A value near zero indicates that the distribution approximates a normal (Gaussian) and symmetrical distribution. A negative skew indicates that the parameter distribution has relatively few low values compared to high values. A positive skew indicates that the distribution has relatively few high values compared to the number of low values. A skew value near 1 indicates that the underlying distribution approximates a lognormal distribution.^o This value represents the kurtosis of the parameter value distribution for the month (year) over the 'normal' period. Kurtosis is a measurement of the height to width ratio of the probability distribution, or the peakedness (steepness). A normal (Gaussian) distribution has a kurtosis of 3. A high kurtosis distribution has a sharper peak and longer tails, while a low kurtosis distribution has a more rounded peak and shorter tails.

This work and report were prepared by the University of Idaho Research and Extension Center at Kimberly, Idaho under contract with the Idaho Department of Water Resources. Work was supported by funding from IDWR and the Idaho Agricultural Experiment Station and Idaho Engineering Experiment Station. The authors gratefully acknowledge the long-term evapotranspiration data collection and long-standing advice provided by Dr. James L. Wright, USDA-ARS Kimberly, ID. The more than two decades of high quality agricultural weather data collection by the U.S. Bureau of Reclamation Agrimet system, and the very long-standing, routine data collection by the hundreds of cooperative weather station volunteers across the state who, for more than one-hundred years, have faithfully observed daily air temperature and precipitation.

The citation for the evapotranspiration data used from this site should be: Allen, Richard G. and Clarence W. Robison, 2012. *Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho: Supplement updating the Time Series through December 2008*. Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.

Questions regarding the data should be addressed to Clarence W. Robison or Robison@kimberly.uidaho.edu, University of Idaho, Kimberly Research and Extension Center, 3791 North 3600 East, Kimberly, ID 83341. Telephone: (208)-423-6610.

University of Idaho
A LEGACY OF LEARNING
Copyright 2012, University of Idaho

ETIdaho web site powered by [Debian](#), [Apache](#), [MySQL](#), [PHP](#), [Python](#), with [matplotlib](#), and [Landscape](#)

Overlap Analysis for Permit No. 67-15096 POD

Process	BasinSequence	Draft	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	TotalAcres
Water Right	67-12553	N	UNITED STATES OF AMERICA ACTING THROUGH	UNNAMED STREAM																		
Water Right	67-12554	N	UNITED STATES OF AMERICA ACTING THROUGH	UNNAMED STREAM																		
Water Right	67-14255	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING																		
Water Right	67-14277	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM																		
Water Right	67-14278	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM																		
Water Right	67-15078	N	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING																		
Water Right	67-15084	N	NAY, GAYLE M; NAY, RONALD D	SPRING																		
Water Right	67-15096	Y	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING																		
Water Right	67-15147	N	NAY, GAYLE M; NAY, RONALD D	SPRING																		
Water Right	67-2337	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING																		
Water Right	67-7114	N	AGGAS, JAMES REED; GOODMAN, MELODY D; GOODMAN, I	SPRING																		
Water Right	67-7752	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING																		

POD North of 67-15096
no overlap.

Overlap Analysis for Permit No. 67-15096 POU

Process	BasinSequence	Draft	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	TotalAcres
Water Right	67-12553	N	UNITED STATES OF AMERICA ACTING THROUGH	UNNAMED STREAM	STOCKWATER																	
Water Right	67-12554	N	UNITED STATES OF AMERICA ACTING THROUGH	UNNAMED STREAM	STOCKWATER																	
Water Right	67-14255	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING	STOCKWATER STORAGE																	
Water Right	67-14277	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	FIRE PROTECTION STORAGE																	
Water Right	67-14277	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	STOCKWATER STORAGE																	
Water Right	67-14278	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	FIRE PROTECTION																	
Water Right	67-14278	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	FIRE PROTECTION STORAGE																	
Water Right	67-14278	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	STOCKWATER STORAGE																	
Water Right	67-15078	N	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING	DOMESTIC																	
Water Right	67-15084	N	NAY, GAYLE M; NAY, RONALD D	SPRING	STOCKWATER																	
Water Right	67-15096	Y	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING	AESTHETIC STORAGE																	
Water Right	67-15096	Y	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING	RECREATION STORAGE																	
Water Right	67-15096	Y	COMMERS, HOWARD S; COMMERS, SHANNON M	SPRING	WILDLIFE STORAGE																	
Water Right	67-15147	N	NAY, GAYLE M; NAY, RONALD D	SPRING	DOMESTIC																	
Water Right	67-2337	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING	DOMESTIC																	
Water Right	67-7114	N	AGGAS, JAMES REED; GOODMAN, MELODY D; GOODMAN, I	SPRING	DOMESTIC																	
Water Right	67-7752	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING	DOMESTIC																	
Water Right	67-7752	N	WILSON, CLAYTON A; WILSON, E CATHERINE	SPRING	IRRIGATION																	
Water Right	67-7791	N	WILSON, CLAYTON A; WILSON, E CATHERINE	UNNAMED STREAM	IRRIGATION																	

POU is north of pond
no overlap.