

MEMORANDUM

Date: November 01, 2011
To: Water Right File 67-7929
From: cpalmer
Re: Licensing Memo

The permit did not include diversion to storage pursuant to the application for permit. The field examiner found that there is a diversion from the spring to the pond. It appears there is some type of ditch in place nearly 50 feet north of the pond that is identified as the point of diversion. By adding a diversion to storage component to this right, no one will be injured since the water rises and sinks on the right holders property. In addition this is merely a clarification to the water right and does not require an amendment.

Since the permit did not include a diversion to storage component I had to estimate a diversion rate that makes the most sense. To do so I reviewed the size of the pond and came up with a few possibilities:

Pond is capable of holding 1.6 af pursuant to the field examiners finding but the estimated diversion rate will only consider a capacity of 1 af since this is the most that can be allocated under this right.

0.01 cfs x 1.9835 x 50 days = 1 af (or 0.02 af/day)
0.02 cfs x 1.9835 x 25 days = 1 af (or 0.04 af/day)
0.03 cfs x 1.9835 x 17.5 days = 1af (or 0.06 af/day)

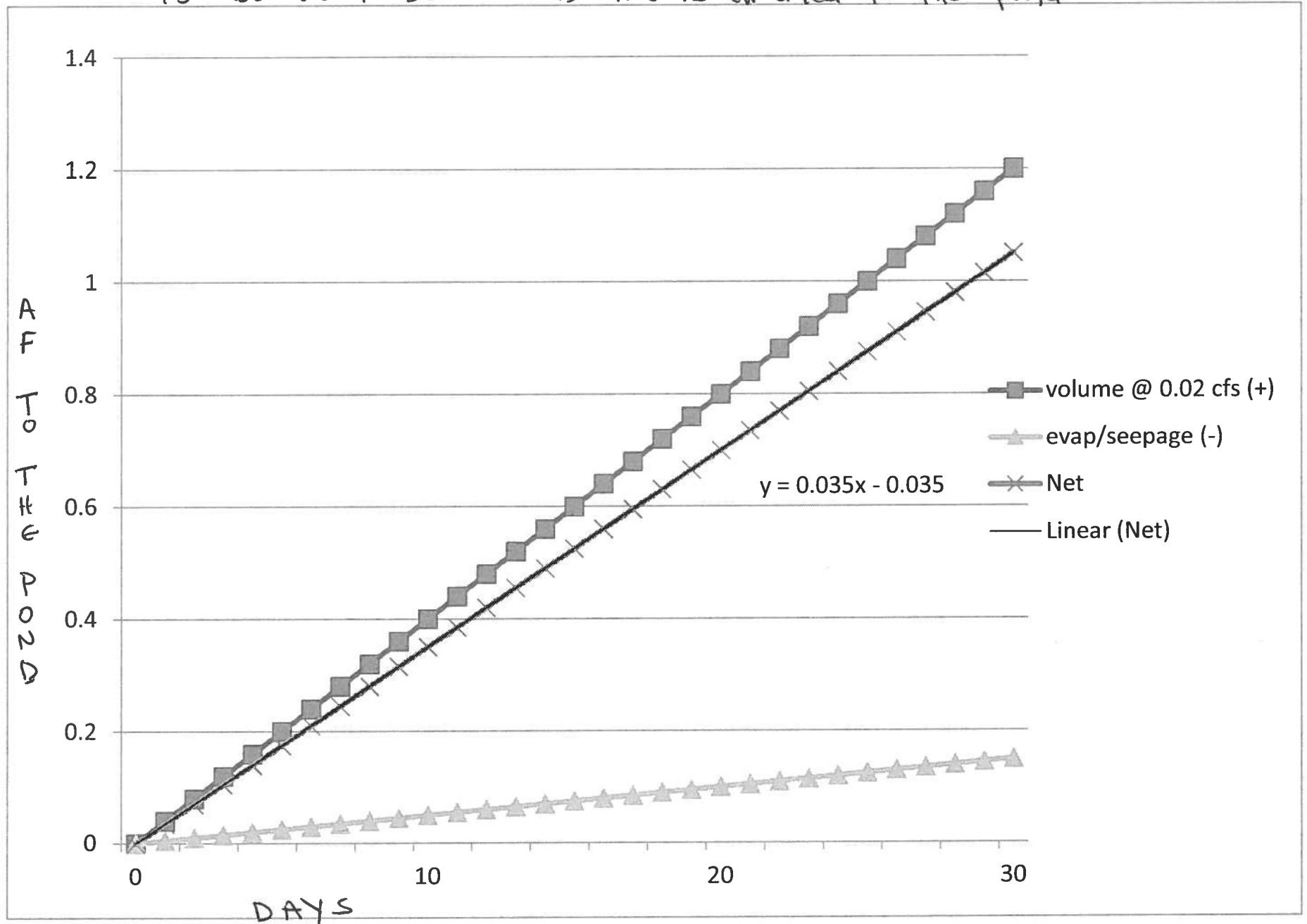
Evaporation/precip net and seepage losses=1.7 afa or 0.005 af/day

Field examiner found a 4" pipe. Pipe conversion for a 4" pipe = $Q = 5(3.14)0.028 = 0.44$ cfs (I wonder if the pipe is really 4")?

Based on the maximum diversion volume of 1 af/yr, the diversion rate of 0.02 cfs seems reasonable for a small recreation pond. It takes nearly 25 days to fill the pond, or 28 days if the seepage/evap are accounted for, at this rate which seems about right if they are stocking the pond with fish (0.01 would take 50 days to fill the pond and wouldn't provide good habitat for fish). If they are diverting at a higher rate they can file another right to cover both the additional volume ($1.6 \text{ af} + 1.7 - 1.0 = 2.3$ acre-foot) and the additional rate.

Note the field examiner PD in the wrong QPQ, the PD was developed as permitted.

of DAYS TO REACH the Maximum volume of 1 AF under
Right 67-7927 — seepage/evap is accounted for and the rate
is assumed to be 0.02 cfs that is diverted to the pond.



FILE NUMBER 67-7929
REVIEWER epalmer
DATE 10/31/11

MAXIMUM DAILY WATER USE FOR DOMESTIC PURPOSES

INPUTS

RESULTS

FORMULAS

POND

SURFACE AREA (SQFT) 17424

SEEPAGE RATE (FT/DAY) 0.01

SUGGESTED CONVERT TO GPD 1303 GPD

0 = NATURALLY FILLED FROM GW, OR LINED

0.5 = CLAY SOILS

1.5 = LOAMS

3.0 = GRAVELS

FORMULA: $SA * SEEPAGE\ LOSS = POND\ SEEPAGE\ (CUFT/D)$

CONVERSION: 1 CUFT = 7.48 G

NOTE: ASSUMES CONTINUOUS REPLACEMENT RATE

TOTAL Seepage Loss (AFA) 1.5 AFA

TOTAL = FILL RATE + EVAP + SEEPAGE + FLOW THROUGH

1.5 af / annual of seepage (@ the minimum based on seepage rate)
+ 0.2 af net evap/precip.
1.7 af/yr losses from pond

ET_{Idaho} 2009: Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to [robison at kimberly dot uidaho dot edu](mailto:robison@kimberly.uidaho.edu) Copyright 2010, University of Idaho.

New Meadows Ranger Stn (NWS --106388)

Statistics based on thirty

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
Mean	mm/day												mm	
Monthly ^c	-2.59	-1.29	-0.48	0.69	1.66	2.27	4.06	3.32	1.72	0.36	-1.61	-2.24	180	0
15-Day Moving Average ^d	-2.76	-1.39	-0.49	0.73	1.80	2.33	4.12	3.23	1.54	0.36	-1.63	-2.24	$184/25.4/(12)$ $= 0.6 \text{ /acre}$ $\times 0.4$ $0.24 \text{ or } 0.2 \text{ af/yr}$	
7-Day Moving Average ^e	-2.70	-1.33	-0.54	0.68	1.71	2.27	4.11	3.26	1.58	0.32	-1.68	-2.25		
3-Day Moving Average ^f	-2.61	-1.25	-0.49	0.69	1.65	2.25	4.08	3.31	1.66	0.36	-1.64	-2.24		
Standard Deviation	mm/day												mm	
Monthly	2.64	1.22	1.50	1.16	1.41	1.15	0.91	1.26	1.42	2.06	1.57	1.93	146	0
15-Day Moving Average	2.64	1.71	1.41	1.34	1.47	1.50	0.86	1.22	2.01	1.79	1.81	1.92		
7-Day Moving Average	3.38	2.20	1.98	1.96	2.18	2.45	1.19	1.56	2.51	2.36	2.26	2.58		
3-Day Moving Average	4.32	2.97	2.84	2.70	3.08	3.46	1.67	1.91	3.24	3.11	3.11	3.61		
20% Exceedance	mm/day												mm	
Monthly	-0.97	-0.47	0.19	1.41	2.44	3.44	4.58	4.05	3.10	1.53	-0.61	-1.18	265	0
15-Day Moving Average	0.13	0.39	1.31	2.55	3.99	4.46	4.94	4.44	3.52	2.23	0.53	0.10		
7-Day Moving Average	0.46	0.96	1.75	3.17	4.67	5.04	5.18	4.76	3.81	2.64	0.79	0.30		
3-Day Moving Average	0.57	1.15	2.05	3.73	5.11	5.43	5.43	4.99	4.08	2.88	1.04	0.40		