

Ernest Carlson
Idaho Dept. of Water Resources
900 N. Skyline Dr., Suite A
Idaho Falls, Idaho 83402

Re: Mitigation Plan for Pond Permit 27-7582

Dear Mr. Carlson,

As per our recent conversation, I would like to finalize a mitigation plan to allow approval of the application for pond permit 27-7582. We are recent owners of property listed on 1577 E. Wolverine Rd, Firth, Idaho. The previous owner of said property applied for a pond permit on March 20, 1998. The pond had been in place for 15 years prior to the application. The pond is 1 acre in size and is fed by a spring as a tributary of Wolverine Creek and is located at 5400 ft. The spring is located SWNWNW Sec 11, Township 02S, Range 38E, in Bingham County. The permit is for Recreation Storage and Diversion to Storage for a total diversion rate of 5 CFS.

We also have Water Rights number 27-51B and 27-11919, which are used to irrigate 5.6 acres of ground in a single irrigation season. We understand that by having a pond that there is evapotranspiration that must be taken into consideration. We should note that the pond is located on historically irrigated grounds. The actual Annual Evapotranspiration, as per the Kimberly Research and Extension Center at the University of Idaho, is used for the Fort Hall Indian Agency listed at 4500 feet. This appears to be the closest vicinity for the calculated amount of evapotranspiration. The Actual Annual amount of loss is 919 mm or 36.18 inches/acre/yr (See attached exhibit A). We would believe that the actual evapotranspiration of this pond is less, as it is located 1000 feet higher. The pond is also on grounds that have historically been irrigated.

Water rights 27-51B and 27-11919 provides for a total of 0.17 CFS for 5.6 acres, which calculates to 657 acre inches/6 months (the irrigation season). That amounts to 133 inches/acre. (See attached exhibit B for calculations). (Calculations based on Water Measurement article by D. C. Larsen).

Given the amount of evapotranspiration for the acre pond (36.18 acre inches/year), we are willing to remove 0.27 acre of irrigated ground to

mitigate for the loss. We are also in the process of installing a HDPE pipe for the inflow from the spring to mitigate any seepage and evaporative loss, as is now occurring with the diversion ditch. We are also abiding with the request for installation of a new headgate and measuring device, as per Idaho Code, Section 42-701 to measure the inflow to the pond. We have reviewed this with Watermaster, James Cefalo.

We hope that this mitigation plan will suffice to allow acceptance of pond permit 27-7582.

Sincerely,

Louis and Susan Morales
1577 E. Wolverine Rd.
Firth, Idaho 83236

ET_{Idaho} --- Evapotranspiration and Consumptive Irrigation

Water Requirements for Idaho

Please send suggestions for improving this site to robison at kimberly dot uidaho dot edu Copyright 2007, University of Idaho.

Fort Hall Indian Agency (NWS NOAA--103297)

Statistics based on 30 years between 1971 to 2004

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)														
Actual Evapotranspiration (Click here for a graph)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Annual
Mean	mm/day												mm	
Monthly ^b	0.53	0.91	1.79	2.94	3.70	4.39	4.66	4.19	3.20	2.35	0.96	0.50	919	919
15-Day Moving Average ^c	0.52	0.89	1.80	2.99	3.72	4.37	4.64	4.17	3.15	2.35	0.95	0.50		
7-Day Moving Average ^d	0.53	0.90	1.79	2.95	3.71	4.37	4.65	4.18	3.17	2.36	0.95	0.50		
3-Day Moving Average ^e	0.53	0.91	1.79	2.95	3.70	4.38	4.65	4.19	3.19	2.35	0.96	0.50		
Standard Deviation	mm/day												mm	
Monthly	0.19	0.22	0.46	0.43	0.59	0.34	0.47	0.42	0.36	0.42	0.25	0.18	52	52
15-Day Moving Average	0.17	0.23	0.41	0.53	0.57	0.45	0.38	0.41	0.45	0.46	0.33	0.14		
7-Day Moving Average	0.22	0.32	0.51	0.72	0.79	0.66	0.48	0.53	0.60	0.65	0.41	0.20		
3-Day Moving Average	0.29	0.43	0.65	0.93	1.01	0.88	0.66	0.66	0.77	0.81	0.51	0.28		
20% Exceedance	mm/day												mm	
Monthly	0.64	1.06	2.12	3.34	4.07	4.62	4.89	4.36	3.45	2.55	1.12	0.64	968	968
15-Day Moving Average	0.75	1.30	2.64	3.82	4.63	5.07	5.10	4.77	3.81	3.12	1.44	0.74		
7-Day Moving Average	0.94	1.54	2.86	4.50	5.32	5.53	5.42	4.96	4.20	3.59	1.73	0.93		
3-Day Moving Average	1.21	1.91	3.41	5.27	5.88	6.02	5.81	5.33	4.54	4.14	2.24	1.13		
80% Exceedance	mm/day												mm	
Monthly	0.41	0.74	1.49	2.57	3.23	3.93	4.34	3.95	2.92	2.01	0.73	0.37	883	883
15-Day Moving	0.26	0.61	1.24	2.20	2.76	3.55	4.00	3.45	2.33	1.50	0.47	0.29		

Exhibit B:

Calculations for Water Rights 27-51B and 27-11919

Total diversion for irrigation season is 0.17 CFS

0.1 CFS = 0.1 acre inches/hour), therefore 0.17 CFS = 0.17 acre inches/hr or
4.1 acre inches/day or 1489 acre inches/year

Since the irrigation season is for 6 months, so $\frac{1}{2}$ of 1489 is 744 acre inches/6 months

Since 744 acre inches is used for 5.6 acres then each acre has 133 inches per irrigation season

Since 36.18 inches/acre is lost by evapotranspiration from the pond, then to mitigate its loss then 0.27 acres can be set aside to not be irrigated.