

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 13-7601

Exam Date: 9/12/2012

1. Current Owner: KENT CLEGG
2372 CLEGG LN
GRACE ID 83241-5284
(208)425-3071
2. Accompanied by: Kent Clegg
Phone No:
Address:
Relationship to Permit Holder: Same

3. **SOURCE**

CHEATBECK CREEK

TRIBUTARY

SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

CHEATBECK CREEK SE1/4NE1/4 Sec. 4, Twp 11S, Rge 41E, B.M.

CARIBOU County

Method of Determination: Site Visit

2.

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
11S	41E	4				X													

Method of Determination: Site Visit

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

Well or Diversion

<u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
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*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement

<u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
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2. Measurements:

E. FLOW CALCULATIONS

___x___ Additional Computation Sheets Attached

Measured Method: It was not possible to get measurements, the diversion from the creek is in a pipeline and buried the outlet from the pond is also in a pipe and buried. The pipe measures 6" in diameter; a theoretical calculation was completed using the Hazen Williams Equation for a closed conduit system. The theoretical calculation exceeded the authorized diversion and the license was limited based on the approved permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

2. Volume Calculations for Other Uses: See attached pond calculation spread sheet.

G. NARRATIVE/REMARKS/COMMENTS

There is a 6" pipeline from Cheatback Creek, the pipe enters a cement tank and flows through to pond #1. There is a dam for the pond and the outlet is an 8" pipe to pond #2 (13-7610 & 13-7612). An 8" pipe from Trout Creek is plumbed into the outlet from Pond #1 (North of the dam for pond #1) supplementing Pond #2 flow with water from Trout Creek. In the original permit storage was not listed as a beneficial use. However, the permit included a condition that specifically referred to the pond and the storage component authorized. The license was corrected to reflect the use as authorized in the permit. In addition, the source was corrected to Cheatback Creek.

Have conditions of permit approval been met? ☒ Yes ☐ No**H. RECOMMENDATIONS****1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
RECREATION	01/01 to 12/31	0.500 CFS	
RECREATION STORAGE	01/01 to 12/31		1.00 AF
<u>Totals:</u>		0.500 CFS	1.00 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 ☒ Other**I. AUTHENTICATION**Field Examiner's Name Kevin Mathew Date _____

Reviewer _____ Date _____



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

13-7601



0 0.01 0.02 0.04 Miles

PRECIPITATION DEFICIT CALCULATIONS FOR PONDS

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL EVAP IN AF
mm/Day *	0.0	0.0	0.3	1.4	1.5	2.9	3.6	2.8	1.8	0.6	0.0	0.0	
mm/Month	0.0	0.0	7.8	42.6	45.9	88.2	110.7	87.7	53.1	17.7	0.0	0.0	
ft/Month	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.2	0.1	0.0	0.0	
Surface Area in Acres	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
acre-feet	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.6

* Based on precipitation deficits provided by University of Idaho, <http://data.kimberly.uidaho.edu/ETIdaho/>

POND SIZE:	WIDTH X LENGTH	SQ FT	ACRES
			0.4

mm to ft 0.0032808

JAN	FEB	MAR	APR
31.0	28.0	31.0	30.0
MAY	JUN	JUL	AUG
31.0	30.0	31.0	31.0
SEPT	OCT	NOV	DEC
30.0	31.0	31.0	31.0

Crop type = Grass Pasture

CIR in AF/ACRE 16.6

If applicable, acres need to dry up for evaporation

0.1

$$2.5 * .4 = 1.0$$

$$\text{Average depth} = \text{max depth} \times .40$$

Pond size in acres	0.4
Average depth in ft	1.0
AF needed to Fill	0.4

TOTAL AF FOR POND	1.0
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Data entry in green

[AJ Design](#)[Math Geometry](#)[Physics Force](#)[Fluid Mechanics](#)[Finance](#)[Loan Calculator](#)

Hazen Williams Equations Formulas Calculator

Hydraulics and Fluid Mechanics

Solving for flow rate or discharge

$$Q = 0.285 C D^{2.63} s^{0.54}$$

Note: Valid only for ambient temperatures and turbulent flow

Inputs:

Hazen Williams friction coefficient
(C)

pipe diameter (D)

hydraulic grade line slope (s)

Conversions:

Hazen Williams friction coefficient (C)

= 150

= 150

pipe diameter (D)

= 6

inch

= 6

inch

hydraulic grade line slope (s)

= 3

= 3

Solution:

flow rate or discharge (Q)

= 8612.3046708134 gallon/minute

Other Units:

= 0.54335199313825 meter³/second



Pond #1



Outlet Pond #1

ET_{Idaho} 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison at kimberly dot uidaho dot edu Copyright 2012, University of Idaho.

Grace (NWS -- 103732)

Statistics based on thirty year normal spans 1973 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
Mean ^j	mm/day												mm	
Monthly ^c	0.61	0.18	0.25	1.42	1.48	2.94	3.57	2.83	1.77	0.57	0.27	0.53	406	0
15-Day Moving Average ^d	0.65	0.27	0.24	1.42	1.53	2.94	3.64	2.73	1.73	0.63	0.33	0.50		
7-Day Moving Average ^e	0.64	0.23	0.24	1.43	1.49	2.91	3.59	2.79	1.73	0.61	0.33	0.48		
3-Day Moving Average ^f	0.60	0.18	0.24	1.43	1.47	2.93	3.58	2.83	1.78	0.57	0.30	0.51		
Standard Deviation ^k	mm/day												mm	
Monthly ^c	0.95	0.58	0.83	0.74	2.07	0.83	1.33	1.25	1.04	1.04	0.61	0.81	131	0
15-Day Moving Average ^d	1.00	0.72	0.83	1.05	1.94	1.29	1.16	1.38	1.21	1.22	0.85	0.71		
7-Day Moving Average ^e	1.35	0.96	1.14	1.49	2.52	1.90	1.51	1.84	1.77	1.73	1.12	0.92		
3-Day Moving Average ^f	1.74	1.34	1.69	2.04	3.36	2.57	2.09	2.39	2.43	2.44	1.53	1.31		
20% Exceedance ^l	mm/day												mm	
Monthly ^c	0.08	0.33	0.79	2.03	2.73	3.84	4.26	3.51	2.55	1.25	0.28	0.21	518	0
15-Day Moving Average ^d	0.34	0.59	1.38	2.85	3.71	4.63	4.68	4.10	3.11	2.10	0.72	0.33		
7-Day Moving Average ^e	0.51	1.02	1.82	3.63	4.37	4.95	5.15	4.52	3.43	2.43	0.96	0.53		
3-Day Moving	0.68	1.12	2.16	3.96	4.66	5.21	5.41	4.74	3.72	2.70	1.31	0.60		

^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 (slenderness)*. 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.

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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 [Richard G. Allen](#), University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610