

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-14482
Exam Date: 7/23/2019

1. Current Owner:
KURT CATMULL AND/OR TERRIL CATMULL
PO BOX 131
ALBION ID 83311

2. Accompanied by: Allison Inouye, IDWR Sr. Agent

3. SOURCE:
GROUND WATER

Method of Determination: ArcMap aerial imagery, and site visit

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
45-4274	Unnamed Stream	Irrigation/Mitigation	Decree

Comments: The irrigation right mitigates for this permit.

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
45-4274	Unnamed Stream	Irrigation/Mitigation	Decree

Comments: The irrigation right is diverted from the pond.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER L1 (NE¼ NE¼), Sec. 6, Twp 12S, Rge 25E, B.M. CASSIA County

Method of Determination: ArcMap aerial imagery, and site visit

PLACE OF USE: AESTHETIC STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	25E	6	X L1																

Method of Determination: ArcMap aerial imagery, and site visit

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
NA					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: Storage occurs naturally

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: Storage occurs naturally

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$

2. Volume Calculations for Other Uses: Volume of the pond is calculated by multiplying the estimated average pond depth of 4 feet by the surface area of 0.5 acres for a total volume of approximately 2.0 acre-feet.

Data from the University of Idaho, Kimberly Research and Extension Center, evapotranspiration and consumptive irrigation water requirements for open water- small stock ponds for the Malta area shows evaporative loss to be approximately 1.4 acre-feet.

Evaporative loss equates to $2.795 \text{ AF/A} \times 0.5 \text{ acres} = 1.3975 = 1.4 \text{ AF}$ evaporative loss. For a total volume of 3.4 AF

G. NARRATIVE/REMARKS/COMMENTS

Application for Permit 45-14482 was submitted on August 30, 2016 by Kurt and Terrill Catmull to appropriate 3.4 acre feet of water for an existing pond. As part of the application, 0.5 acre of irrigation right 45-4274 was utilized as mitigation to mitigate for the evaporative losses of the pond. The 0.5 acre of irrigation converted to mitigation use corresponded to the surface area of the foot-print of the home and driveway constructed on the property.

Permit 45-14482 was approved on October 6, 2016, and proof of beneficial was due by October 1, 2017. The applicant submitted a request for extension of time which was approved extending the time to submit proof to October 1, 2019. Proof of beneficial use was submitted by the applicant on June 24, 2019.

A field exam for Permit 45-14482 was conducted on July 23, 2019, with IDWR senior water resource agent Allison Inouye present. This area was historically the City of Albion sewer lagoons. The applicant excavated and cleaned out the lagoons thus creating the pond. The ground water level in this area is very shallow and seeps into the pond. The surface area of the pond is approximately 0.5 acres and the average depth is estimated to be approximately 4 feet, for a volume of 2.0 acre-feet. The estimated open water evaporation from the 0.5 acre pond is 1.4 AF, therefore it is recommended to license Permit 45-14482 with a volume of 3.4 acre-feet.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
AESTHETIC STORAGE	01/01 to 12/31		3.4 AF

Totals:

3.4 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 ☒ None

I. AUTHENTICATION

Benny Walker - Water Resource Agent, Senior

Field Examiner's Name Benny Walker Date 7/26/2019

Reviewer _____ Date _____

Permit 45-14482



View of Pond looking east to west



Field Exam 45-14482





University of Idaho

Kimberly Research
and Extension Center

[Water Resources Program](#)

ET_{Idaho} 2017

Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for
improving this site to robison at
uidaho dot edu

2019-07-26 13:56

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Malta (PN-AM -- MALI)

Statistics based on thirty year normal spans 1990 to 2016 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 - small stock ponds 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 ⁱ	mm/day												mm		
Monthly ^c	0.20	0.77	1.53	2.08	2.61	4.33	5.64	4.86	3.57	1.78	0.66	-0.17	852	0	852
15-Day Moving Average ^d	0.15	0.71	1.54	2.17	2.54	4.36	5.67	4.91	3.56	1.96	0.70	-0.09			
7-Day Moving Average ^e	0.19	0.74	1.54	2.12	2.55	4.32	5.64	4.88	3.58	1.88	0.68	-0.18			
3-Day Moving Average ^f	0.20	0.76	1.51	2.10	2.58	4.32	5.65	4.86	3.58	1.78	0.67	-0.16			
	mm/day												mm		

Standard Deviation^k															
Monthly ^c	0.71	0.46	1.88	1.45	2.54	1.75	1.36	1.87	0.81	1.54	0.62	1.27	172	0	172
15-Day Moving Average ^d	0.75	0.60	1.67	1.22	2.46	1.99	1.21	1.57	1.14	1.23	0.74	1.11			
7-Day Moving Average ^e	0.99	0.81	1.88	1.95	2.85	2.58	1.57	1.83	1.58	1.76	1.14	1.64			
3-Day Moving Average ^f	1.30	1.07	2.57	2.93	3.52	3.27	2.08	2.41	2.06	2.69	1.62	2.33			
20% Exceedance^l	mm/day												mm		
Monthly ^c	0.63	1.14	2.32	2.84	3.82	5.52	6.44	5.50	4.18	2.55	1.14	0.49	1014	0	1014
15-Day Moving Average ^d	1.10	1.41	2.96	3.78	5.16	6.59	6.88	6.35	4.86	3.51	1.60	0.85			
7-Day Moving Average ^e	1.51	1.94	3.66	4.72	5.83	7.06	7.70	6.94	5.68	4.01	2.10	1.20			
3-Day Moving Average ^f	1.85	2.32	4.43	5.56	6.36	8.06	8.58	7.48	6.20	4.79	2.65	1.84			
80% Exceedance^m	mm/day												mm		
Monthly ^c	-0.37	0.28	0.31	1.50	1.16	2.39	4.82	4.25	2.91	1.04	0.26	-0.95	686	0	686
15-Day Moving Average ^d	-1.03	-0.11	-0.29	0.12	-0.64	0.89	3.02	2.77	1.36	-0.40	-0.46	-2.11			
7-Day Moving Average ^e	-2.16	-0.78	-1.62	-1.82	-2.48	-2.41	1.39	1.47	0.16	-1.92	-1.92	-4.29			
3-Day Moving Average ^f	-4.46	-2.33	-5.64	-6.54	-6.66	-7.99	-1.80	-2.84	-2.88	-5.93	-4.24	-7.33			
Ave Highest P_{def}	mm/day												--		
15-Day Moving Average ^g	0.69	1.10	2.42	3.25	4.06	5.54	6.36	5.76	4.44	2.91	1.24	0.57			
7-Day Moving Average ^h	1.03	1.61	3.13	4.28	4.95	6.41	7.08	6.41	5.25	3.45	1.80	0.90			
3-Day Moving Average ⁱ	1.38	1.99	3.84	5.08	5.74	7.17	7.84	7.07	5.96	4.36	2.27	1.39			
Ave Lowest P_{def}	mm/day												--		
15-Day Moving Average ^g	-0.29	0.35	0.74	1.08	1.18	3.10	4.88	4.02	2.71	0.82	0.13	-0.84			
	-1.08	-0.22	-0.28	-0.83	-0.86	1.34	3.79	2.94	1.45	-0.44	-0.77	-1.94			

7-Day Moving Average ^h															
3-Day Moving Average ⁱ	-2.51	-1.34	-2.26	-3.64	-4.30	-1.52	1.61	0.54	-0.90	-3.21	-2.38	-4.15			
Special normal distribution parameters for monthly, seasonal, and annual intervals															
Skew ^m	-0.10	0.37	-0.86	-3.10	-0.30	-1.09	-0.23	-0.85	-0.88	-0.28	-0.93	-0.40	-0.53	0.00	-0.53
Kurtosis ^o	0.72	2.46	2.60	15.04	0.88	3.53	0.77	2.54	4.18	1.09	5.34	1.16	3.15	0.00	3.14

^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.

^oThis 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.

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 (ret.), 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, 2017. **Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho: Supplement updating the Time Series through December 2017**, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.*

Questions regarding the data should be addressed to [Richard G. Allen](#), or [Clarence W. Robison](#) University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610

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