

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23524

Exam Date: 24-Aug-2012

1. Current Owner: GEM COUNTY
415 E MAIN ST
EMMETT ID 83617
(208) 365-4561

2. Accompanied by: Verl Schmidt

Phone No: none. Supervisor Chuck Shambaugh – cshambauth@co.gem.id.us

Address:

Relationship to Permit Holder: Maintenance person

3. SOURCE

GROUND WATER

TRIBUTARY

PAYETT RIVER

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 SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE1/4Se1/4 Sec. 1, Twp 06N, Rge 02W, B.M. GEM County

Method of Determination: **GPS and visual inspection**

2.

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
06N	01W	6											X L 7						
06N	01W	7						X L 6											
06N	02W	1																X	
06N	02W	12	X L 1																

Method of Determination: **GIS analysis using 2009, Bing and 2011 Imagery.**

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

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

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

Yes Photo of Diversion and System Attached

4.

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

**Code to correspond with No. on map and aerial photo*

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Theoretical						

2. Measurements: None. This pond intercepts the shallow ground water in the area. There is no inlet into the pond, flow through the pond or exit of water from the pond.

E. FLOW CALCULATIONSX Additional Computation Sheets Attached

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

D.R.

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

Recreation Storage = 1.5 acres x 5 feet deep = 7.5 AF**Seepage = None – pond intercepts shallow ground water****Evaporation loss = 4.06 AFA (See worksheet)****Total volume = 7.35 AF + 4.06 AF = 11.4 AF****Permit allows for 40 AF, recommend 11.4 AF****G. NARRATIVE/REMARKS/COMMENTS**

After meeting with Shelley, Craig and Dan, it was decided to split 65-13775 into three children and associate Irrigation, Domestic and Recreation Storage with the child. The three new numbers are:

65-23522 Irrigation
 65-23523 Domestic
65-23524 Recreation Storage

According to file notes, the pond was excavated during construction of the park and was intended to be used as a recreation pond. The pond filled with shallow ground water, there is no inlet or outlet. At the time of the field exam, the pond was almost full, with some algae growing around the edges. Plants and trees are located around the pond. There were birds nesting in the trees and under the foot bridge across one leg of the pond.

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 STORAGE	01/01 to 12/31		11.4 AF
<u>Totals:</u>			11.4 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 ☐ Other

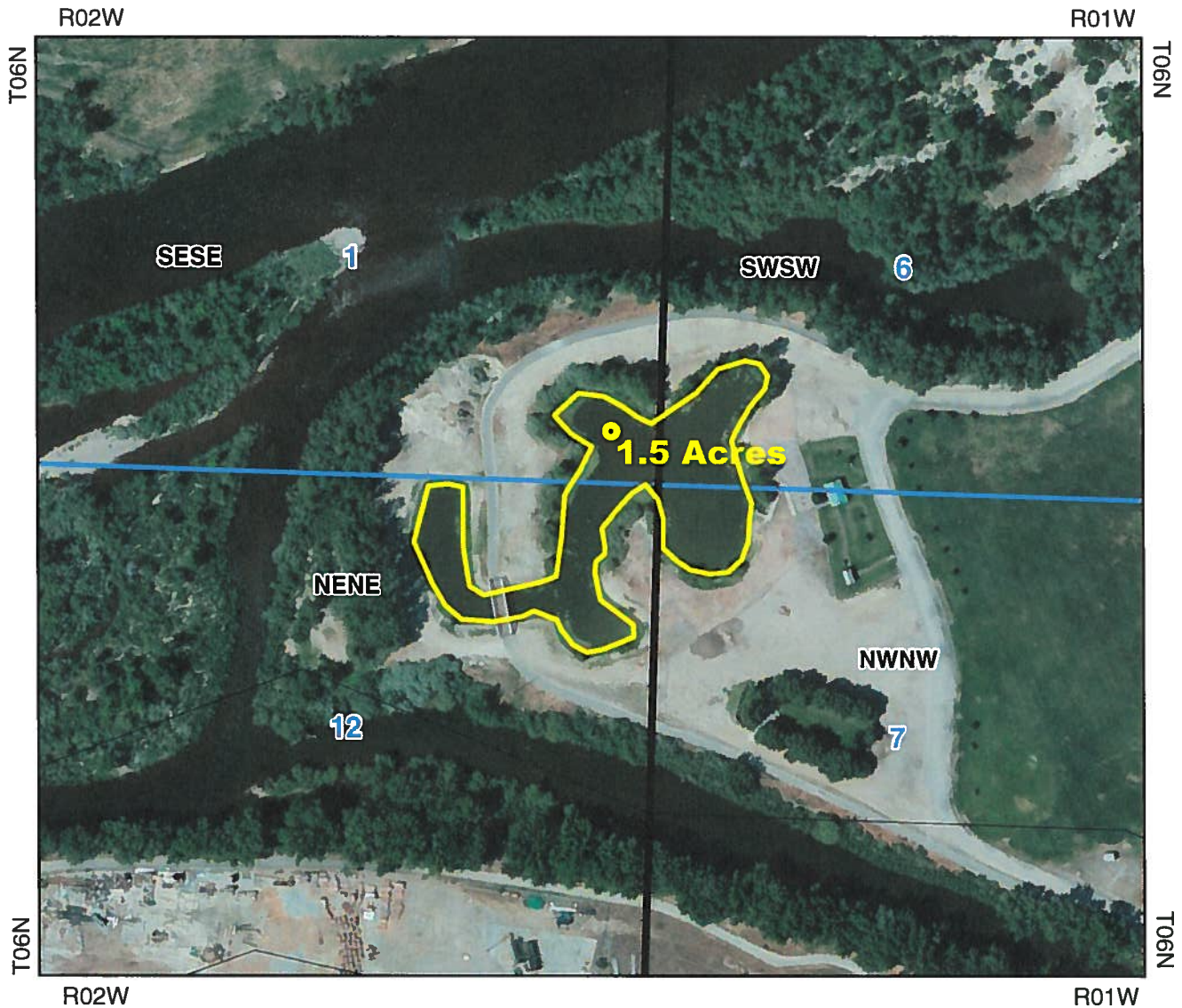
I. AUTHENTICATION

Field Examiner's Name Eden Gardner Date 31 Aug 2012

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment To Water Right License
65-23524

This map depicts the RECREATION STORAGE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

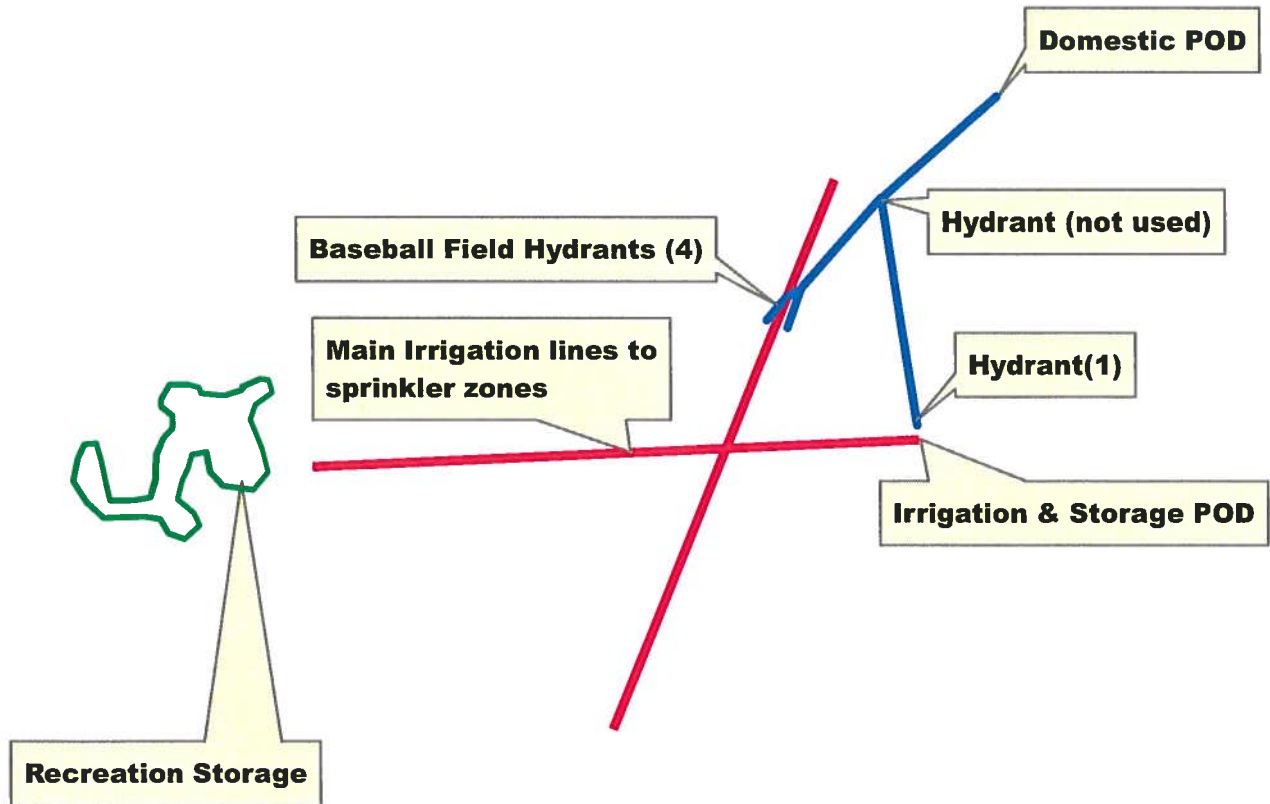


0 0.0275 0.055 0.11 Miles

-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters



Field Exam System Diagram for 65-23524 (parent 65-13775) Glen Gardiner, August 24, 2012



Recreation Storage is for the pond which intercepts shallow ground water and is a tributary of the Payette River. The pond was dredged in gravel beds located within 50 feet of the river. (65-23524)

The 2nd well line (in Blue) supplies (6) "Bury" type hydrants which are padlocked when not in use. Four of the hydrants supply water to the four baseball fields and are used to wet the field before games. One hydrant is never used and the last hydrant is located at the maintenance shed and used to clean equipment, mix chemicals and general maintenance usage. All hydrants are labeled "non-potable". (65-23523)

The main irrigation lines (in Red) supply 19 sprinkler zones to water all grass areas in the park. The POD is located at the right end of the horizontal main line. Sprinkler types are all Rainbird Model 6504 with #12 nozzles. Flow calculations were made using

Precipitation Loss Calculation

Date: August 24, 2012
Prepared by: Glen Gardiner
Water Right No: 65-23524

P = Precipitation
ET= Evapotranspiration
 P_d = Precipitation deficit
 P_d = P- ET

P_d

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/>

$$P_d = \text{convert to AFA: } \frac{(\text{mm/yr})}{304.8} \times \# \text{ acres} =$$

824	304.8	1.5
(From ET Idaho)		

$P_d = 4.06 \text{ AFA}$

* Use the Precipitation Deficit for 'P' value

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.

Emmett 2 E (NWS -- 102942)

Statistics based on thirty year normal spans 1970 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)															
Actual Evapotranspiration (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 ^j	mm/day												mm		
Monthly ^c	0.34	0.84	1.81	2.85	3.65	4.06	4.29	3.75	2.69	1.70	0.70	0.32	824	0	824
15-Day Moving Average ^d	0.33	0.83	1.84	2.83	3.67	4.05	4.31	3.75	2.65	1.72	0.68	0.31			
7-Day Moving Average ^e	0.34	0.83	1.83	2.84	3.65	4.05	4.31	3.75	2.66	1.71	0.69	0.31			
3-Day Moving Average ^f	0.34	0.84	1.81	2.85	3.65	4.05	4.30	3.75	2.68	1.70	0.69	0.32			
Standard Deviation ^k	mm/day												mm		
Monthly ^c	0.09	0.13	0.33	0.31	0.55	0.28	0.36	0.35	0.18	0.22	0.10	0.06	31	0	31
15-Day Moving Average ^d	0.08	0.19	0.31	0.37	0.52	0.40	0.29	0.34	0.32	0.25	0.15	0.06			
7-Day Moving Average ^e	0.11	0.26	0.40	0.50	0.66	0.58	0.35	0.45	0.44	0.36	0.20	0.09			
3-Day Moving Average ^f	0.14	0.32	0.51	0.67	0.83	0.75	0.49	0.54	0.56	0.44	0.24	0.13			
20 % Exceedance ^l	mm/day												mm		
Monthly ^c	0.38	0.93	1.98	3.06	3.94	4.27	4.50	3.94	2.77	1.76	0.79	0.35	848	0	848
15-Day Moving Average ^d	0.46	1.15	2.41	3.42	4.49	4.68	4.68	4.26	3.18	2.17	0.94	0.41			
7-Day Moving Average ^e	0.54	1.40	2.55	3.94	4.86	4.99	4.89	4.48	3.45	2.43	1.10	0.51			
3-Day Moving Average ^f	0.64	1.60	2.94	4.43	5.38	5.37	5.25	4.73	3.84	2.69	1.30	0.62			

80% Exceedance ^m	mm/day												mm		
Monthly ^c	0.29	0.71	1.62	2.64	3.26	3.72	4.02	3.49	2.61	1.61	0.59	0.28	801	0	801
15-Day Moving Average ^d	0.22	0.56	1.36	2.21	2.86	3.46	3.87	3.04	2.13	1.28	0.48	0.21			
7-Day Moving Average ^e	0.14	0.40	1.10	1.96	2.48	2.92	3.59	2.87	1.88	1.02	0.34	0.13			
3-Day Moving Average ^f	0.07	0.26	0.86	1.61	2.09	2.34	3.01	2.26	1.55	0.84	0.26	0.06			
Ave Highest ET _{act}	mm/day												--		
15-Day Moving Average ^g	0.40	1.02	2.13	3.17	4.05	4.43	4.49	4.05	3.00	1.99	0.84	0.38			
7-Day Moving Average ^h	0.48	1.21	2.36	3.58	4.55	4.78	4.70	4.28	3.28	2.18	0.99	0.46			
3-Day Moving Average ⁱ	0.58	1.37	2.73	4.07	4.98	5.18	5.00	4.53	3.59	2.40	1.15	0.56			
Ave Lowest ET _{act}	mm/day												--		
15-Day Moving Average ^g	0.27	0.66	1.53	2.49	3.29	3.68	4.11	3.44	2.33	1.42	0.55	0.25			
7-Day Moving Average ^h	0.20	0.53	1.29	2.18	2.84	3.22	3.87	3.22	2.07	1.22	0.45	0.19			
3-Day Moving Average ⁱ	0.14	0.40	1.06	1.86	2.38	2.72	3.40	2.81	1.75	1.03	0.36	0.12			
Special normal distribution parameters for monthly, seasonal, and annual intervals															
Skew ^m	0.01	0.51	0.15	1.20	-0.06	0.52	0.30	0.08	0.74	0.33	0.57	0.08	-0.54	0.00	-0.54
Kurtosis ^o	0.80	3.75	0.59	4.46	0.63	2.94	0.99	0.63	5.22	1.17	2.80	0.80	3.39	0.00	3.39

^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 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 (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, 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

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Photographer and date of Photos Glen Gardiner Aug 24, 2012
File Number 65-23524



Pond at west end of park looking west towards the river which is located directly behind the trees.