

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-32600

1. Owner The Preserve LLC Phone No. _____
 Current address 3103 W Sheryl Dr. Ste 100, Meridian, ID 83642
2. Examiner's name Cody Parker EXAM DATE 10/19/2017
3. Accompanied by Don Reynolds Email dreynolds@tollbrothers.com
 Address same
- Relationship to permit holder Assistant Land Development Manager Phone No. 208-424-0020
4. Source Groundwater tributary to Boise River

B. OVERLAP REVIEW

1. Other water rights with the same place of use 63-2813C, 63-32356, and 63-198AC (mitigation)
2. Other water rights with the same source and point of diversion None

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
			NE	SE	11	04N	01W	Ada	pond centroids x3
			NW	SE	11	04N	01W	Ada	pond centroids x3
			NE	SW	11	04N	01W	Ada	pond centroids x2

2. Place(s) of Use: Method of determination _____

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
04N	01W	11									X				X	X			

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.

Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ 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
NA					

*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
NA						

2. Measurements:

Pond 1 => 0.16 acres, 3.5 ft deep Pond 4 => 0.59 acres, 5.5 ft deep Pond 7 => 0.41 acres, 5.5 ft deep
Pond 2 => 0.09 acres, 3.5 ft deep Pond 5 => 0.23 acres, 3.5 ft deep Pond 8 => 0.03 acres, 3.5 ft deep
Pond 3 => 0.53 acres, 5.5 ft deep Pond 6 => 1.52 acres, 5.5 ft deep

E. NARRATIVE/REMARKS/COMMENTS

See Attached

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

NA => ponds intercepting groundwater

From Storage use is for re-circulation within the system.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

Aesthetic Storage = pond capacity = 18.6 afa

no seepage => ponds excavated below water table

evaporation => mitigated using surface water shares from Middleton Mill 63-198AC

H. RECOMMENDATIONS

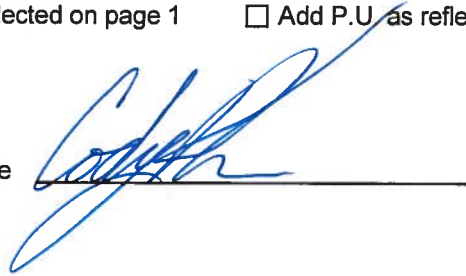
1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Aesthetic Storage	01/01	12/31		18.6 afa
Totals:				18.6 afa

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature



Date

10/25/17

SEAL

Reviewer

Date

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

NARRATIVE

Permit 63-32600 was approved on April 16, 2010 authorizing the diversion and storage of 35 af from groundwater for aesthetic uses. The permit authorized the construction of up to 16 ponds which were to be filled by intercepting shallow groundwater. The ponds are in the Bs 63 GW Restricted Area, so 12.3 af of evaporation losses from the ponds were mitigated by right 63-198AC. On October 19, 2017, I completed the field examination for this permit. I was accompanied by Don Reynolds, a representative for the property management company.

8 ponds were developed compared to the 16 that were described on the permit. Aerial imagery and digital PLS mapping shows that the ponds are located in the NESE, NWSE, and NESW of Sec 11, T04N, R01W, B.M. The permit does not list the NESW for the place of use description, so the right requires an amendment at licensing. The ponds combine for a total surface area of 3.5 acres. Average depths range from 3.5 ft for the smaller ponds and 5.5 ft for the larger ponds. The total pond capacity is 18.6 afa.

The ponds are filled by intercepting groundwater. As I mentioned above, the evaporation from the ponds is covered by surface water shares from Middleton Mill Ditch Co. according to right 63-198AC. The subdivision also maintains additional shares, and diverts irrigation water through the pond system. The irrigation water is pumped from pond 4. Water from the ditch company is diverted west from the main ditch near Linder Rd, to the ponds. The water flows into pond 3 (see map) and then is conveyed to ponds 4, 7, and 8. Extra water is sent west through a buried line to meet up with the same ditch downstream.

At the location where surface water is diverted west from the main Middleton Mill ditch, there is an artesian well that dumps water into the lateral ditch. That artesian well water runs through the ditch and into the ponds. However, the water is not beneficially used and is being diverted back into the ditch at the downstream end of the system. Therefore, the artesian well is not listed as a point of diversion. That well is not owned by the permit holder and was not intended to be part of the system. Similarly, there is a Municipal well in the NWSE, apparently owned by the City of Eagle, which has an overflow system that drains into pond 6. As above, this water moves through and is diverted into the ditch at the end of the system. The City of Eagle well is also not being listed as a point-of-diversion.

Points of diversion for this permit are centroids for each of the 8 ponds that have been developed. The PODs are located in the NESE, NWSE, and NESW of Sec 11, T04N, R01W. The ponds fill with shallow groundwater within the boundary of the Bs 63 GW Restricted area. I have updated the source to show that the ground water appropriated is tributary to the Boise River.

The permit also lists an "Aesthetic from Storage" component. Apparently, this use describes the recirculation of water within the pond system. Water is recirculated by pumping from ponds to waterfall features that lead back into the same ponds. It doesn't seem that this recirculation is a use "from storage". I have recommended the license without an aesthetic from storage component.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REORT

The permit carried condition 01M which requires the right owner to install a measuring device at the diversion upon specific notification by the Department. However, the ponds fill by intercepting groundwater so installing a measuring device is probably not possible. I have removed this condition from the recommended license.

Condition 220 was updated to reflect the actual dimensions of the pond system as it was developed. It defines the maximum capacity and surface area allowed for these 8 ponds. 219 was added to state the total volume associated with the system and to show that the ponds are authorized under multiple rights. Condition 936 follows 219 and further states that water lost due to evaporation is covered by right 63-198AC (as authorized by the transfer). 63-198AC is an irrigation district right owned by the Middleton Mill Ditch Co. So, condition 937 is also necessary to ensure that the right holder maintains the surface water shares from the Ditch Co. which are used for evaporation in the pond.

Right 63-198AC allows for 0.07 cfs and 12.3 afa to cover the evaporation from the ponds. The consumptive use for irrigation in this area is defined as 3.5 afa/acre. Transfer 72611 changed 3.5 acres of irrigation of 63-198AC to aesthetic storage when those acres were to be converted to pond surface area. The total consumptive volume available for transfer then was 12.3 afa. Using the Department pond analysis spreadsheet, and precipitation deficit data from the Caldwell NWS—101380 station, I determined the evaporation loss to be 9.2 afa. Thus it appears the transferred water is sufficient to cover evaporative losses from the ponds. Over-“mitigation” in this case is acceptable because the acres taken from irrigation for 63-198AC is equal to the surface area of the ponds, i.e. they could not choose to reduce the irrigation by a smaller number of acres to match the evaporative volume of the ponds. Conditions 219 and 936 on the draft license both reflect the 12.3 afa for evaporation.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT



Figure 1 A view of pond 1 (as numbered on map). There are waterfalls at each pond that recirculate water within the same pond.



Figure 2 Pond 2 as seen from the road. A plastic pond liner was visible at the edges of this pond, though it is supposedly filled by intercepting groundwater. There may be a pipe connection between this pond and pond 1.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT



Figure 3 The concrete diversion box where water is diverted from the main irrigation ditch into the lateral that feeds the ponds. The Houfburg artesian wells enters the lateral ditch at the location shown in the picture (though it is hard to see)



Figure 4 The lateral ditch where water is conveyed from the main ditch to the ponds.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT



Figure 5 Pond 4, this is the northernmost pond in the NWSE. Irrigation water conveyed through the pond system is pumped from pond 4 to irrigate the subdivision.



Figure 6 The downstream end of the lateral ditch as it enters the pond system.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT



Figure 5 Pond 5, a long and narrow pond at the far west edge of the subdivision.



Figure 6 Apparently, a municipal well owned by the City of Eagle has an overflow outlet (shown here) that leads into the pond system. The overflow was not developed as part of the system and has been excluded from the license.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

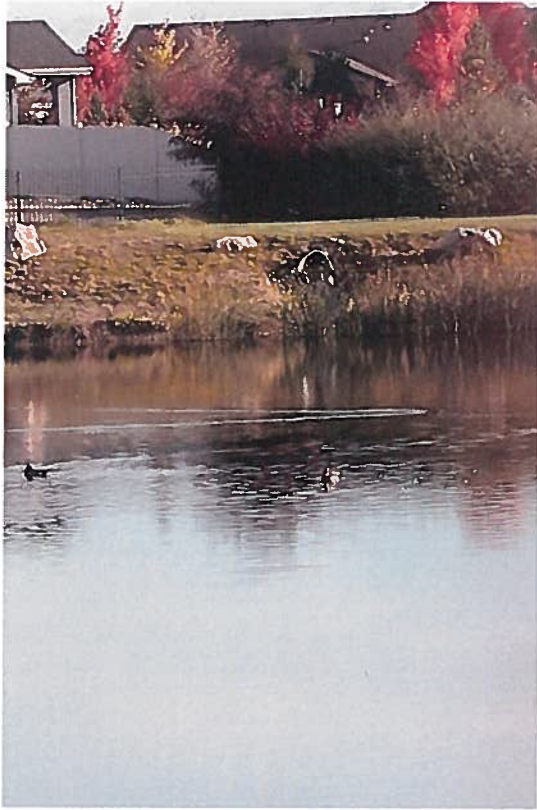


Figure 7 A long-distance photo of the inlet from the municipal well overflow into pond 6. Pond 6 is the largest of the 8 ponds and is centrally located in the subdivision.

State of Idaho
Department of Water Resources
Attachment to Water Right License
63-32600

This map depicts the AESTHETIC 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.

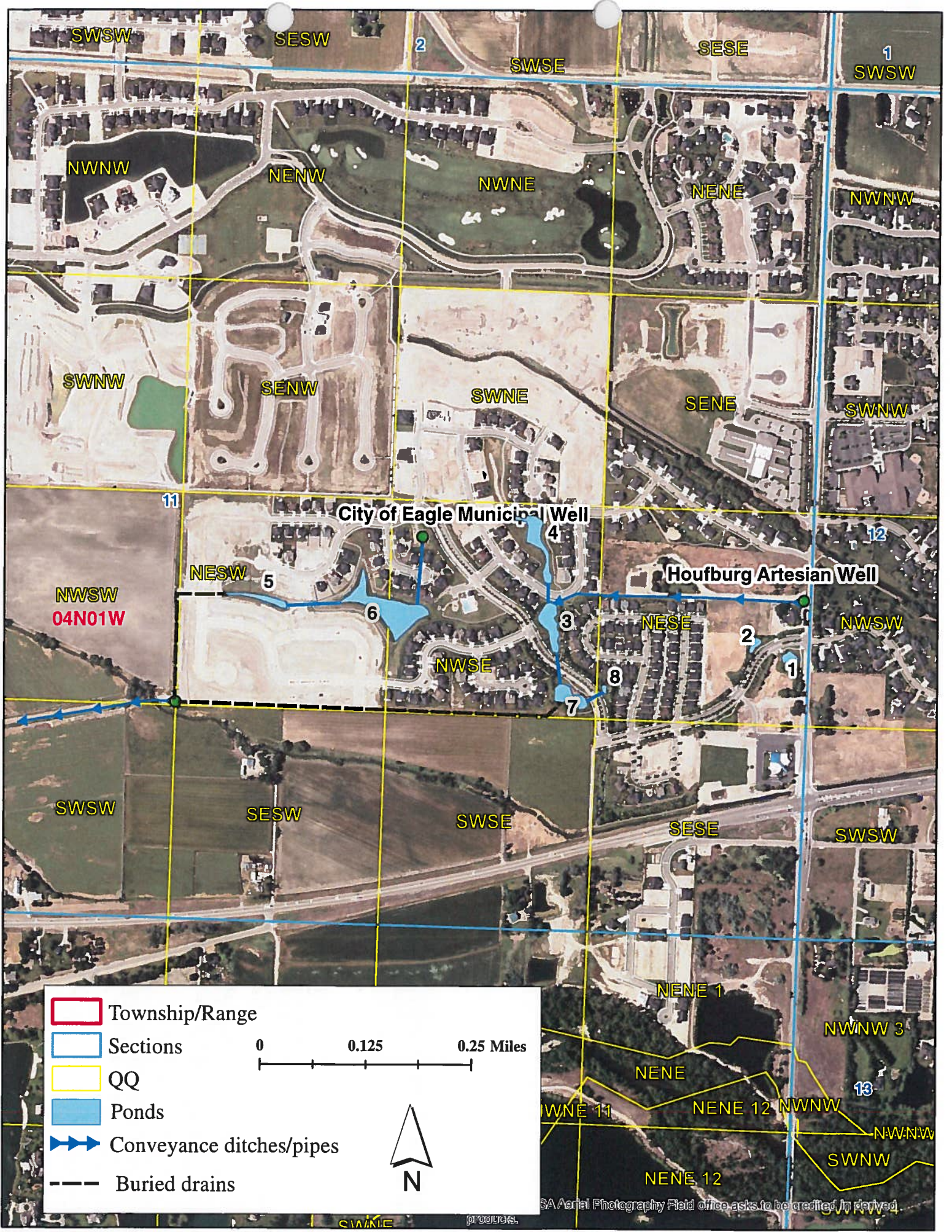
01W



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

0 0.1 0.2 0.4 Miles





Township/Range

Sections

QQ

Ponds

Conveyance ditches/pipes

Buried drains

0

0.125

0.25 Miles

N

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER	63-32600
REVIEWER	Cody Parker
DATE	10/19/2017

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:
P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

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

Precipitation Deficit

Station: Caldwell (NWS -- 101380)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.83	31	0.00
Feb	0.18	28	5.04
March	1.22	31	37.82
April	2.51	30	75.30
May	3.74	31	115.94
June	4.22	30	126.60
July	5.01	31	155.31
August	4.27	31	132.37
September	3.06	30	91.80
October	1.89	31	58.59
November	-0.12	30	0.00
December	-0.78	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = 798.77

$$((\text{mm/yr}) \div (\text{convert to feet})) \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$$

$$((798.77 \div 304.8)) \times 3.50 = 9.2 \text{ AFA}$$



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

May 8, 2017

THE PRESERVE LLC
3103 W SHERYL DR STE 100
MERIDIAN ID 83642

RE: Scheduling Field Exam for Water Right Permit No. 63-32600

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **this season**. An examination is needed to verify the water use in order to issue a water right license.

The above-referenced permit authorizes **35.0 afa** of **GROUND WATER** for **aesthetic storage and aesthetic from storage** uses. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

If you did develop a beneficial use of water under the permit, but you no longer own the place of use property identified in the permit, please submit the enclosed Assignment of Permit form with the applicable \$25 processing fee.

Please contact me within the next thirty (30) days at (208) 334-2190 to either schedule an examination or submit a relinquishment or assignment form. If you no longer own the place of use property and/or do not respond to this letter, the department will work with the current property owner to issue a license or void the permit.

Sincerely,

Cody Parker
Water Resource Agent

Enclosures: Relinquishment of Permit form
Assignment of Permit form
Water Permit Report and Map