

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34238
Exam Date: 6/21/2022

1. Current Owner:
MUNN WEST PROPERTY OWNERS ASSN INC 20061 MONTE WAY CALDWELL ID 83607
2. Accompanied by: Jim Crowe
Phone No:
Address:
Relationship to permit Holder: Same

3. SOURCE:
GROUND WATER

Method of Determination: Site visit, aerial imagery, pond intercepts shallow groundwater

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 SE¼ NE¼, Sec. 22, Twp 04N, Rge 04W, B.M. CANYON County
GROUND WATER SW¼ NW¼, Sec. 23, Twp 04N, Rge 04W, B.M. CANYON County

Method of Determination: Site visit, aerial imagery

PLACE OF USE: FIRE PROTECTION 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	
04N	04W	22				X													
04N	04W	23							X										

PLACE OF USE: FIRE PROTECTION FROM 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	
04N	04W	22				X													
04N	04W	23							X										

Method of Determination: Site visit, aerial imagery

3. Delivery System Diagram Attached (required). Indicate all major components and distances between components.
X 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
X 1:24,000 or greater.
- N/A 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
N/A	N/A	N/A	N/A	N/A	N/A

D. FLOW MEASUREMENTS

1.

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

2. Measurements: No flow rate to measure

E. FLOW CALCULATIONS

N/A Additional Computation Sheets Attached

Measured Method: Flow calculations not required. Permit issued in volume only.

F. VOLUME CALCULATIONS

- Volume Calculations for irrigation: None
- Volume Calculations for Other Uses:

Fire Protection Storage: Using the submitted Pond Loss Calculation Spreadsheet, GIS tracing and measurement tools, information collected at the field exam, and depth approximations the following theoretical calculations were determined:

Surface area (GIS): 0.5 acres

Average pond depth: 18 feet

Losses: 1.3 AF Pond Evaporation $[(770.61 \text{ mm/yr} / 304.8) \times 0.5\text{-acre surface area} = 1.3\text{-acre feet annual evap loss}]$

Pond Capacity: 9 AF (18 feet avg depth $\times$ 0.5-acre surface area = 9 AF pond capacity)

9 AF Pond Capacity + 1.3 AF Losses = 10.3 AF

Theoretical Aesthetic Storage Volume: 10.3 AF

Permitted Aesthetic Storage Volume: 10.3 AF

License Recommendation: 10.3 AF

G. NARRATIVE/REMARKS/COMMENTS

A field exam was conducted on June 21, 2022, by Water Resource Agent Aaron Olson who was accompanied by Jim Crowe. Jim is a representative and Director for the current owner of the permit. The permit was issued on October 18, 2016, and proof of beneficial use was submitted on September 16, 2021. An Assignment of Permit was filed and processed on August 19, 2020 changing the ownership from original owner Munn Development LLC to Munn Development Property Owner's Association, Inc and a second Assignment of Permit was filed and processed December 28, 2020 which changed the ownership to current owner Munn West Property Owners Association Inc.

Two ponds with a total surface area of 0.5 acres were excavated to an average depth of 18 feet and intercept shallow groundwater. The ponds are used for storage that is to be utilized for fire protection in the event of any fires or emergencies. There are no seepage losses from these ponds since they intercept shallow groundwater. ArcMap tools and aerial imagery, supported by observations and photos taken during the field exam, were used to verify the POU area, or fire protection storage ponds. The ponds are connected to hydrants that will be utilized to pump and deliver water if they are needed for fire suppression.

Condition 26A was removed as per department licensing standards. Condition 121 was updated to 103 as per department licensing standards. Conditions 219 and 220 were updated to reflect pond capacity and evaporation calculations.

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>
FIRE PROTECTION STORAGE	01/01 to 12/31		10.3 AF
FIRE PROTECTION FROM STORAGE	01/01 to 12/31		10.3 AF

Totals: 10.3 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 Aaron Olson -

Field Examiner's Name  Date 12/19/2023

Reviewer  Date 12/19/2023

DELIVERY SYSTEM DIAGRAM

Water Right No. 63-34238



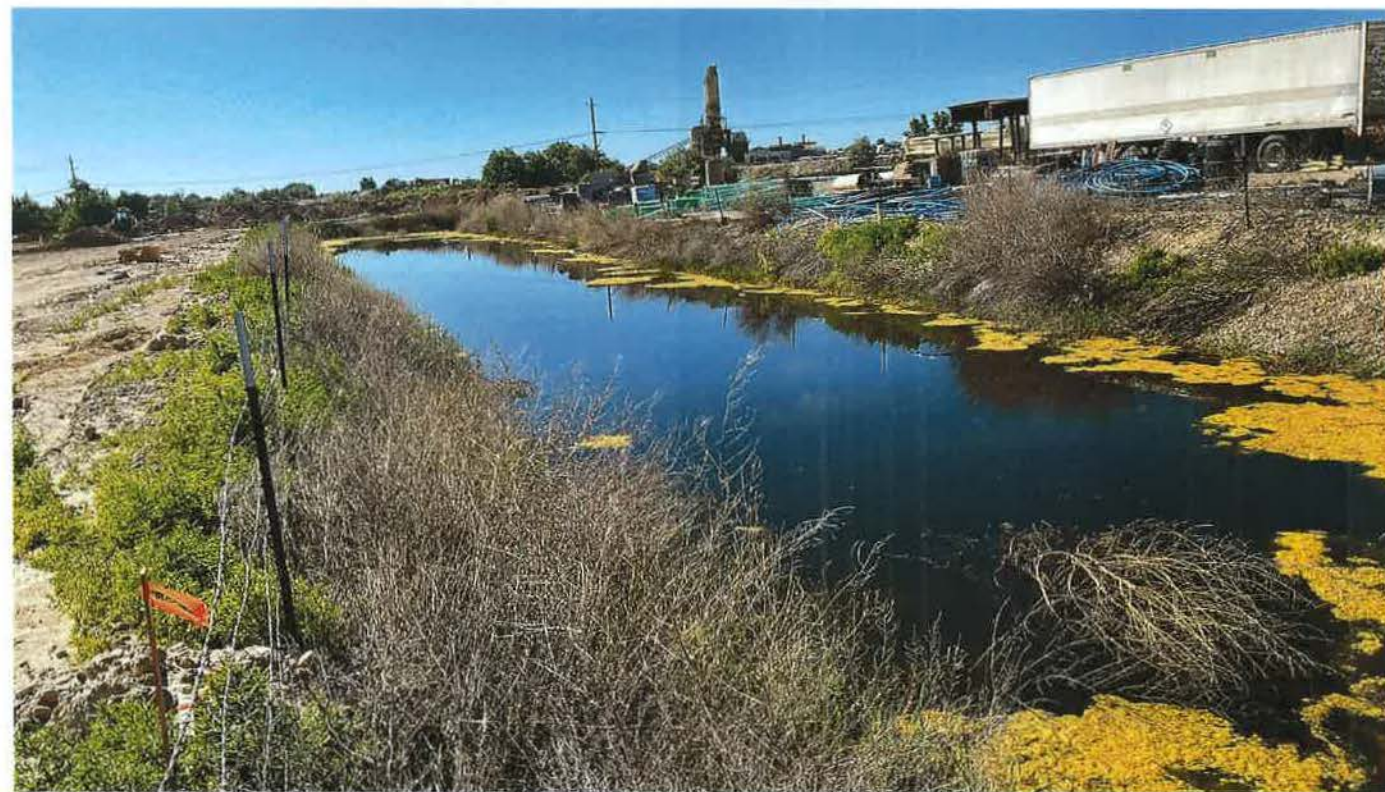


Fig. 1 & 2 – Eastern pond facing SE



Fig. 3 & 4 – Eastern pond facing NW



Fig. 5 – Eastern pond hydrant



Fig. 6 & 7 – Western pond facing S



Fig. 8 & 9 – Western pond facing N

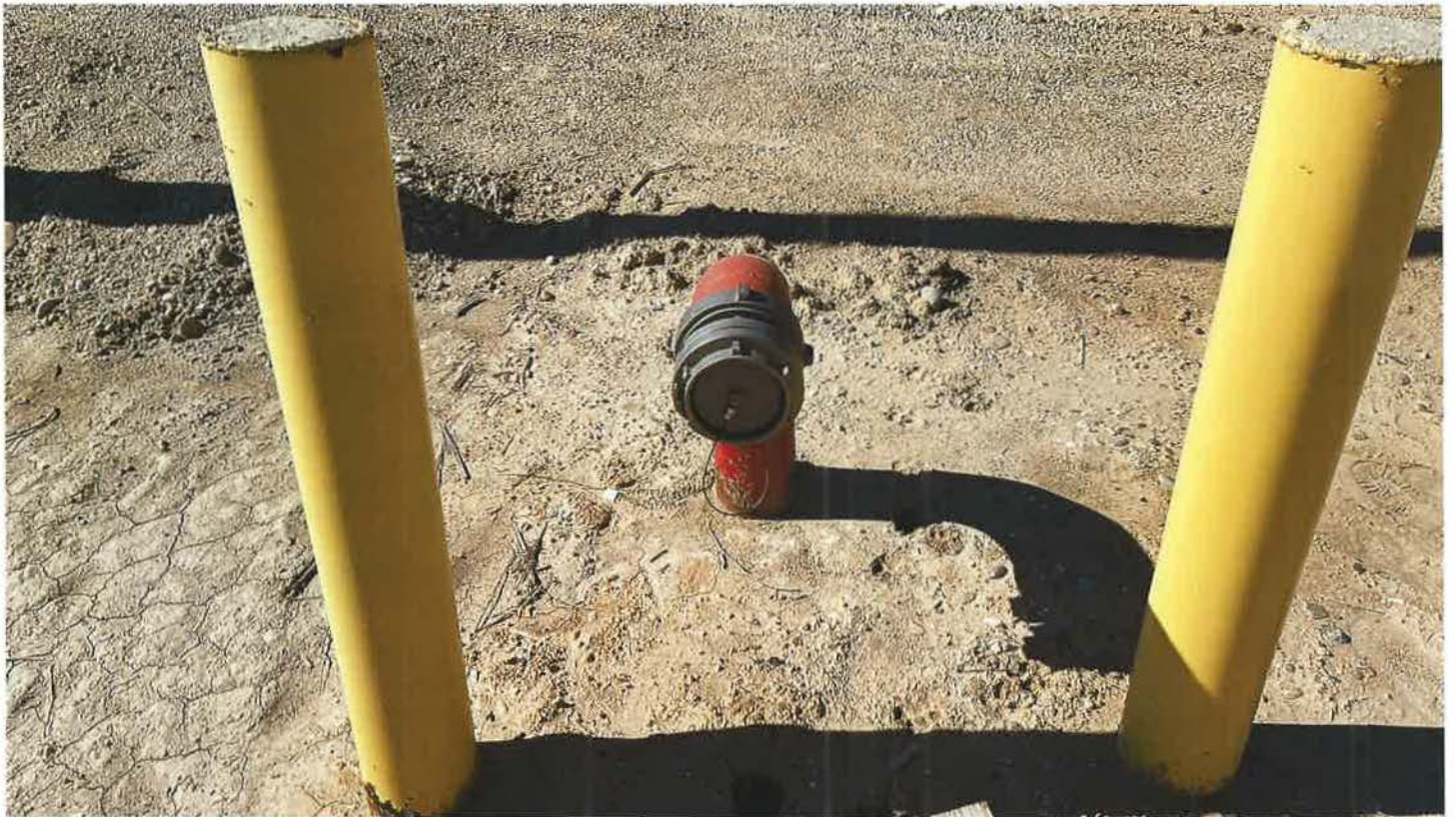


Fig. 10 – Western pond hydrant

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	63-34238
REVIEWER	AO
DATE	12/14/2023

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 -- USC00101380)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.84	31	0.00
Feb	0.12	28	3.36
March	1.17	31	36.27
April	2.54	30	76.20
May	3.69	31	114.39
June	4.21	30	126.30
July	4.81	31	149.11
August	4.05	31	125.55
September	2.86	30	85.80
October	1.73	31	53.63
November	-0.08	30	0.00
December	-0.75	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 = 770.61

$$\left(\frac{770.61}{304.8} \right) \times 0.50 = 1.3 \text{ AFA}$$

((mm/yr) ÷ (convert to feet)) X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

Total Storage Calculations

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This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	0.5	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	18	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	9	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	1.3	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	10.3	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.