STATE OF IDAHO DEPARTMENT OF WATER RESOURCES BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

- 1. Current Owner: MEADOWLAND ACRES FIRST ADDITION WATER ASSN 9889 WEST GALLOP LN POST FALLS ID 83854
- Accompanied by: W. Brant Morris
 Phone No: (208) 660-6902
 Address: 9889 W. Gallop Ln.
 Relationship to permit Holder: Permit Representative

3. SOURCE:

GROUND WATER

Method of Determination: Arcmap and GPS.

B. OVERLAP REVIEW

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

RECREATION STORAGE, L	ICENSE
RRIGATION STORAGE, RRIGATION FROM STORAGE, and RRIGATION.	
1	IRRIGATION FROM STORAGE, and IRRIGATION.

Comments: POU is within the service area of North Kootenai Water District; there are too many water rights to list.

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

YES Overlap

YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-9122	GROUNDWATER	RECREATION STORAGE, IRRIGATION STORAGE, IRRIGATION FROM STORAGE, and IRRIGATION.	LICENSE

Comments: 95-9122 is for use on the property of William Brant Morris. Condition X35 has been added to license to address overlap concerns.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE¼ SE¼, Sec. 23, Twp 51N, Rge 05W, B.M. KOOTENAI County

Method of Determination: Arcmap and GPS. POD located at -116°55.182, 47°44.946.

PLACE OF USE: IRRIGATION

WD KIU SEC										0.			1	U.			Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N 05W 23													7.2	11.0			18.2

Total Acres: 18.2

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Permit No: 95-14295 Exam Date: 08/23/2016

Permit No 95-14295

PLACE OF USE: IRRIGATION STORAGE

Two	Dea	See		N	E			N\	N			SI	N			S	Ε		Totals
Twp	Ring	Sec	NE	NW	SW	SE													
51N	05W	23				1	1								X				

PLACE OF USE: IRRIGATION FROM STORAGE

Tun Bog	Con		N	E		1	N\	N			SV	N			S	E		Totals
	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N 05W	23													7.2	11.0			18.2

Total Acres: 18.2

PLACE OF USE: STOCKWATER

Two Dog	See		N	E			N\	N			SV	V			SI	E		Totals
I wp Kng	Sec	NE	NW	SW	SE													
51N 05W	23													X	X			

PLACE OF USE: STOCKWATER STORAGE

Two	Dna	Soc		N	IE			N\	N			SV	N			S	Ξ		Totals
Iwp	Ring	Sec	NE	NW	SW	SE													
51N	05W	23				-						J			X				

PLACE OF USE: STOCKWATER FROM STORAGE

Tum	Dna	See		N	IE			N\	N	2	1	SV	V			S	E		Totals
Iwp	Ring	Sec	NE	NW	SW	SE													
51N	05W	23													Х	Х		_	

PLACE OF USE: FIRE PROTECTION

	Soc		N	IE			N\	N			S	V			SI	E .	_	Totals
I wp King	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N 05W	23													Х	X			

PLACE OF USE: FIRE PROTECTION STORAGE

	Soc		N	IE			N\	N			SI	N			SI	E		Totals
I wp King	Sec	NE	NW	SW	SE													
51N 05W	23										1			Х				

Method of Determination: Arcmap and Google Earth.

- 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 1:24,000 or greater.

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

X Photo of Diversion and System Attached

Well or Diversion	Motor Make	Нр	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0017645	FRANKLIN	7.5			

D. FLOW MEASUREMENTS

1.			4			
Measurement Equipment	Туре	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement due to inadequate piping requirements.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached Measured Method: See attached pump curve for 7.5 HP pump in well, that was also used on license 95-9122.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

V_{LR} = (Acres Irrigated) x (Irrigation Requirement) = 18.2 x 3 af per acre = 54.6 af.

 V_{DR} = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.19 cfs x 246 days x 1.9835 = 92.7 af. V = Smaller of V_{LR} and V_{DR} = 54.6 af.

2. Volume Calculations for Other Uses: See attached Pond Analysis Sheet.

STOCKWATER volume = 20 head x 12 gpd x 365 days = 87,600 gpy / 325850 gallons = 0.3 af

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant's representative, W. Brant Morris, showed a well being used for multiple uses. The well was not visible at time of exam, because it was in a vault that was covered with dirt and grass for aesthetic purposes. Water was diverted from well, into a pump house with a stilling well that was connected to a pond. There were no proper locations to perform a 5 gal bucket test or ultra-sonic flow meter test. Water Right 95-9122 is also located on the representative's property, and is for similar uses from the same well. A pump curve was used to license 95-9122 for a 7.5 HP Franklin pump, which was still being used at time of field exam. The pump curve will be used to license this water right for a diversion rate of 0,19 cfs.

The pond located on representative's property had a surface area of 1.3 acres and an average depth of 8 feet. ArcMap was used to trace out pond surface area, minus .04 acres for an island in the pond. Total surface area equaled 1.37 acres – 0.04 acres = 1.3 acres. The pond was lined and doesn't have a seepage factor, but does have 1.3 af of evaporation. A new version of the pond analysis tool was used to issue this water right license, and thus the volumes are smaller than the older version used at time of application. Water was diverted into a stilling well, which was connected to the pond. The water could either be used directly from the well for uses, or be pumped from the stilling well/pond also for uses.

Permit No 95-14295

At time of exam, wide spread irrigation was observed. During licensing review irrigation was traced out to equal 18.2 acres. As mentioned above, water could be used directly from well for irrigation, or from the pond/stilling well. Water was also diverted for stockwater purposes. At time of exam, stock was observed below the 20 head applied for, but the number of stock fluctuated each year up to 20 head maximum. Because of the number of faucets/frost free hydrants/sprinklers identified, and that these can be used for fire protection purposes, it will be licensed.

Conditions 26A and 046 were removed from license. Condition 220 was modified to update pond capacity and surface area. Condition 219 was changed to condition 259 to describe the from storage uses. An IDWR text condition was changed to condition X35 to describe a combined total diversion rate of 0.19 cfs, and a total annual volume of 66.6 af, and the irrigation of 18.2 acres for both water rights 95-9122 and 95-14295. Condition 221 was added to describe a pond liner. Condition 175 was added because the water right is within the Rathdrum Prairie Ground Water Management Area. Conditions F06 was added to describe two water rights (95-9122 and 95-14295) for the same POD. Condition X59 was added to describe the subdivision and lot where POD is located, and condition X60 was added to describe the subdivision and lots where POU(s) are located.

Water Right 95-9122 and 95-14295 overlap, and are for the same pond and irrigation on the representative's property. This water right was licensed for everything that was found because there were different volumes from the older water right the new one being licensed. Condition X35 will limit both licenses to the maximum diversion rate and volume found on this right. There are several North Kootenai County Water District water rights that overlap, but there are no overlap concerns.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	03/15 to 11/15	0.19 CFS	54.6 AF
IRRIGATION STORAGE	01/01 to 12/31		54.6 AF
IRRIGATION FROM STORAGE	03/15 to 11/15		54.6 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.3 AF
STOCKWATER STORAGE	01/01 to 12/31		0.3 AF
STOCKWATER FROM STORAGE	01/01 to 12/31		0.3 AF
FIRE PROTECTION	01/01 to 12/31	0.19 CFS	
FIRE PROTECTION STORAGE	01/01 to 12/31		11.7 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.19 CFS	
		de-	

Totals: 0.19 CFS 66.6 AF

2. Recommended Amendments

 Change P.D. as reflected above	Add P.D. as reflected above	<u> </u>	None
 Change P.U. as reflected above	Add P.U. as reflected above	_ <u>x</u> _	None

1.	AUTHENTICATION	Luke Bates - Water Resource Agent				
	Field Examiner's Name_0.0	- Emhil	Date	3/30	12026	
	Reviewer 30	8>	Date	3/3	0/2020	_









1

Total Storage Calculations

FILE NUMBER	95-14295
REVIEWER	Luke Bates
DATE	3/30/2020

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
1	Formula Explanations

Surface Area (AC.)	1.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	8	"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)	10.4	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 Initlal Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	54.9	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)	66.6	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.

Flow Rate into		The "Flow Rate into Pond" depicts the actual flow, either measured or estimated, into the pond. For
Pond (CFS)	0.19	offstream facilities, this will be equivalent to "diversion to storage" rate.
Highest Daily Evaporation Rate From Evaporation Tab. (mm/Day)	3.05	This number is carried over from the "Evaporation Loss" sheet. It is the highest recorded number in the "Precipitation Deficit Table".
Required Daily Maintenance Volume (AF/Day)	0.01	"Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year to maintain pond volume. It is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (CFS)	0.01	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	29	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. If this number is <i>approximately</i> 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond.
Days Required to Fill the Pond at 13,000 Gallons per Day	287	Some water users may want to fill a pond under the 13,000 gallons per day domestic exemption. The "Days Required to Fill the Pond at 13,000 Gallons per Day" is calculated by converting the "Pond Capacity" and the "Required Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Required Daily Maintenance Volume" in gallons to determine the number of days to fill pond. If this number is <i>approximately</i> 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond. Negative values indicate that the supply of 13,000 gallons per day is not enough volume to overcome the required daily maintenance volume; the pond will never fill.



POND – MEADOWLAND ACRES 1ST ADD, LT 3 AND 4 BLK 1



STILLING WELL





WELL IS LOCATED BENEATH GRASS IN CONCRETE VAULT



FRANKLIN ELECTRIC 7.5 HP PUMP



IRRIGATION POU - LOT 1 BLK 1





IRRIGATION POU - LOT 2 BLK 1



IRRIGATION POU - LOT 3 BLK 1



IRRIGATION POU - LT 4 BLK 1



IRRIGATION POU -LOT 5 BLK 1



POU - IRRIGATION





POU - IRRIGATION





POU



IRRIGATION POU - LOTS 7 & 8 BLK 1



IRRIGATION POU

