

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

RECEIVED

AUG 13 2019

WATER SUPPLY BANK RENTAL AGREEMENT No. 368

DEPARTMENT OF
WATER RESOURCES

This is to certify that:

TETON ISLAND FEEDER CANAL CO
386 N 2400 E
ST ANTHONY, ID 83445

filed an application to rent water from the Water Supply Bank ("Bank"). The Idaho Water Resource Board ("Board"), being authorized to operate a Bank and to contract by and through the Director of the Idaho Department of Water Resources ("Director, Department") for rental of water from the Bank, agrees to rent water as follows:

Summary of Water Rights or Portions Rented from the Bank

Water Right No.	Priority Date	Source	Diversion Rate (CFS)	Diversion Volume (AF)	Acres (AC)	Rate Per Acre (CFS/AC)	Volume Per Acre (AF/AC)
22-12694	3/1/1883	TETON RIVER	0.194	10.70	151.50	0.001	0.07
22-288	5/15/1883	TETON RIVER	0.051	2.80	151.50	0.000	0.02
22-12695	5/22/1884	TETON RIVER	1.234	68.20	151.50	0.008	0.45
22-589B	6/1/1884	TETON RIVER	0.406	22.40	151.50	0.003	0.15
22-12696	6/1/1885	TETON RIVER	3.918	216.40	151.50	0.026	1.43
22-571	6/1/1888	TETON RIVER	0.054	3.00	151.50	0.000	0.02
22-12697	4/1/1898	TETON RIVER	3.745	206.80	151.50	0.025	1.37
Combined Limit Totals			9.602	530.30	151.50	0.063	3.50
Combined Rental Totals			9.602	530.30	151.50	0.063	3.50

Term of Rental: This rental agreement shall take effect when all parties have signed it and shall continue in effect until December 31, 2019. Use of rental water shall be authorized as of either the date this rental agreement takes effect or the first day of the rental season of use, in 2019, whichever occurs last.

Annual Rental Fee:

2019: \$1,060.60

The full fee for the rental of the above-described right(s) is \$1,060.60 for 2019. The rental fee includes an administrative fee of \$1,060.60 for 2019. Note that the renter is obligated to pay only the administrative fees associated with the water right(s): 22-12694, 22-288, 22-12695, 22-589 B, 22-12696, 22-571, 22-12697.

Total Water Use Authorized Under Rental Agreement

Beneficial Use	Diversion Rate (CFS)	Diversion Volume (AF)
GROUND WATER RECHARGE	9.602	500.00
Combined Total	9.602	500.00

** The authorized water usage reflects a reduction from the water right elements rented, to account for a maximum annual diversion volume calculated, based on 3.3 afa/ac, for irrigation purposes.*

Detailed water right conditions are attached.

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WATER SUPPLY BANK RENTAL AGREEMENT No. 368

The undersigned renter agrees to use the water rented under this agreement in accordance with the Water Supply Bank rules and in compliance with the limitations and conditions of use described in this agreement:

Rodney Dalling
Signature of Renter

8-12-19
Date

Rodney Dalling
Printed Name

President
Title

*Title required if signing on behalf of a company or organization or with power of attorney

Having determined that this agreement satisfied the provisions of Idaho Code § 42-1763 and IDAPA 37.02.03.030 (Water Supply Bank Rule 30), for the rental and use of water under the terms and condition herein provided, and none other, I hereby execute this Rental Agreement on behalf of the Idaho Water Resource Board.

By Brian Patton
BRIAN PATTON, Acting Administrator
Idaho Water Resource Board

Date 8/13/2019

Rental approved by IDWR Clay Webb

Date 8-13-2019

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WATER SUPPLY BANK RENTAL AGREEMENT No. 368

WATER USE DETAILS

LOCATION OF POINT(S) OF DIVERSION

TETON RIVER	SWNE	Sec. 36, Twp 07N, Rge 40E,	FREMONT County
TETON RIVER	SENW	Sec. 36, Twp 07N, Rge 40E,	FREMONT County

BENEFICIAL USE

GROUND WATER RECHARGE

DIVERSION RATE

9.60 CFS

VOLUME

530.30 AF

SEASON OF USE

Water Right No.	From	To
22-288	5/15	10/31
22-571	5/15	10/31
22-589B	5/15	10/31
22-12694	5/15	10/31
22-12695	5/15	10/31
22-12696	5/15	10/31
22-12697	5/15	10/31

RENTERS PLACE OF USE: GROUND WATER RECHARGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
06N	40E	5	X L1			X													X
06N	40E	7									X					X			X

RENTAL AGREEMENT CONDITIONS OF ACCEPTANCE

1. The use of water under this agreement shall be subject to the provisions of Idaho Code § 42-1766.
2. Rental of the specified right from the bank does not, in itself, confirm the validity of the right or any elements of the water right, or improve the status of the right including the notion of resumption of use. It does not preclude the opportunity for review of the validity of this water right in any other department application process.
3. Use of water under this agreement does not constitute a dedication of the water to renter's place of use, and upon expiration of this agreement, the points of diversion and place of use of the water shall revert to those authorized under the water right and/or again be available to rent from the bank.
4. Use of water under this agreement shall not prejudice any action of the Department in its consideration of an application for transfer or permit filed by the applicant for this same use.
5. Renter agrees to comply with all applicable state and federal laws while using water under this agreement.
6. Renter agrees to hold the Board, the Director and the state of Idaho harmless from all liability on account of negligent acts of the renter while using water.
7. Renter acknowledges and agrees that the Director may terminate authorization for the use of a water right based on a water right's priority date.
8. Failure of the renter to comply with the conditions of this agreement is cause for the Director to rescind approval of the rental agreement.

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DEPARTMENT OF WATER RESOURCES

WATER SUPPLY BANK RENTAL AGREEMENT No. 368

9. The right holder shall notify the watermaster when diversion water of this rental is required for beneficial use. They will also notify the watermaster when diversion for this the beneficial use is no longer required.
10. Water is delivered through Teton Island Feeder Canal.
11. Prior to the diversion and use of water under this approval, the renter shall comply with applicable water quality monitoring and/or permitting requirements administered by the Department of Environmental Quality or the Department of Agriculture.
12. The renter shall record the daily quantity of water diverted for ground water recharge at the rental location places of use and shall report the diversion data for the prior calendar year to the Department by February 1 each year. Reporting shall occur in a manner specified by the Department, consistent with Section 42-701 Idaho Code. To facilitate this reporting requirement, the renter shall install and maintain a totalizing measuring device approved by the Department at each point of diversion and at point where water is delivered from the conveyance system into a designated recharge site.
13. Renter is authorized to deliver water to the rental places of use for ground water recharge only when water is not being delivered to the rental places of use for other, non-recharge related activities. It is anticipated that water for recharge will be delivered to the rental places of use only after active irrigation-related deliveries of water to the rental places of use are concluded, in spring or early summer.
14. Renter will account for and discount from recharge deliveries, water delivered to the rental places of use for irrigation related activities, which is anticipated to occur one day per week, each week, between mid-May and mid-August, annually.
15. This rental is not an authorization for the described recharge effort to be used as mitigation or credit for any other purposes. The sufficiency of the recharge effort authorized under this rental for mitigation or credit for some other purpose may be determined by the Department upon proper submission of a mitigation plan pursuant to the Department's Rules of Conjunctive Management of Surface and Ground Water Resources, a mitigation plan to offset depletions in association with a water right application, a Management Program pursuant to Idaho Code Section 42-1416B, or any other proposal to utilize credit for the recharge effort.
16. The following rights are all diverted through point of diversion described above: 22-288, 22-571, 22-589B, 22-12694 through 22-12697.
17. The water rights rented under this agreement are appurtenant to irrigation of 151.5 acres.
18. Pursuant to Section 42-234(4), Idaho Code, to ensure that other water rights are not injured by the operations of the recharge projects authorized under this rental, the Director has authority to approve, disapprove, or require alterations in the methods employed to achieve ground water recharge.
19. Pursuant to Section 42-234(3), Idaho Code, the Director may reduce the amount of water that may be diverted for recharge purposes under this rental, even though there is sufficient water to supply the entire amount authorized for this rental.
20. Consistent with Section 42-234(5), Idaho Code, seepage from canals and associated ponds incidental to or coincident with delivery of irrigation water shall not be considered ground water recharge under this rental. Canal seepage will be considered to be ground water recharge only when the canals are not conveying water for irrigation or other beneficial uses.
21. Use of water under this agreement may be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, the water rights being rented are within State Water District No. 01.

Idaho Water Resource Board
Attachment to Water Supply Bank Rental Agreement No. 368

Effective until December 31, 2019

This map depicts the **rental place of use** pursuant to the rental agreement and is attached to the agreement solely for illustrative purposes.



-  Authorized Rental Point of Diversion
-  Authorized Rental Place of Use
-  Township/Range
-  Sections

0 1 2 Miles

STATE OF IDAHO
WATER RESOURCE BOARD

**APPLICATION TO RENT WATER
FROM THE BOARD'S WATER SUPPLY BANK**

RECEIVED

AUG 08 2019

DEPARTMENT OF
WATER RESOURCESApplicant Name: Teton Island Feeder Canal Company

Is this application being submitted with a lease application as a lease/rental package?

Yes ☒ No ☐

If yes, specify companion water rights in Section 4

This application must be completed according to the minimum requirement checklist below. This checklist is part of the rental application and must be included with the rental application. Applications that do not meet the minimum requirements will not be placed in the processing queue and may be returned until all minimum requirements have been met.

Rental applications should be submitted well in advance of the desired start date for the use of rental water. Rental applications may be processed as early as November 1 of the year prior to the intended use of rental water. Any rental application received on or before November 1 for use in the next year will be assigned a received date of November 1. Rental applications submitted more than one year in advance of the proposed start date for the use of rental water will not be accepted and will be returned to applicants. Rental applications may be returned to applicants if the desired start date for the use of rental water cannot be accommodated by the Water Supply Bank. Rental requests will not be accepted once the rental season of use period has concluded.

One rental application per beneficial use of water. For multiple beneficial uses of water, separate rental requests should be submitted for each unique beneficial use of water. One rental application can be submitted if you propose to rent water from multiple sources.

For additional instructions on completing a rental application, visit the Bank's website at http://idwr.idaho.gov/water_supply_bank.

MINIMUM REQUIREMENT CHECKLIST

Check All Items as Either Attached (Yes) or Not Applicable (N/A)

Yes

- ☒ Completed *Application to Rent Water from the Board's Water Supply Bank*
- ☒ Confirmation that this form has been printed single sided, per requirement of the Water Supply Bank

Attachment N/A Yes

- | | | |
|----|-------------------------------------|--|
| 2 | ☒ | A map showing the proposed point(s) of diversion, place(s) of use, and water diversion and distribution systems proposed to be used with your rental request |
| 3A | ☐ | ☒ Detailed information on a proposed use of rental water |
| 3F | ☒ | ☐ Authorization from the owner/operator of the rental point(s) of diversion |
| 3H | ☒ | ☐ Water modeling to account for the impacts of the rental request |
| 3J | ☒ | ☐ Documents justifying a rate of flow greater than 0.02 cfs/acre |
| 3K | ☐ | ☒ Authorization from the owner/operator of the property at the proposed rental place(s) of use |
| 4B | ☒ | ☐ Explanation of how the rental water will sufficiently accomplish your rental purposes |
| 4C | ☒ | ☐ Explanation of consumptive use amounts for water rights experiencing a change in nature of use |

Department Use Only – Proposed Water Right(s)

22-288	22-589	22-12695	22-12697
22-571	22-12694	22-12696	

1453

**STATE OF IDAHO
WATER RESOURCE BOARD**

Application to Rent Water (Continued)

1. CONTACT INFORMATION

A. Applicant Teton Island Feeder Canal Company

Mailing Address 386 North 2400 East St. Anthony Idaho 83445
Street City State Zip Code
 Email Address aaron.fmid@myidahomail.com Phone Number 208-624-3381

B. Is this application being completed by an authorized representative on behalf of the applicant? Yes ☒ No ☐
 If yes, representatives (includes company employees if the applicant is a corporation, as well as legal counsel or consultants) should provide their information below if they desire to be included on correspondence with the rental applicant.

Representative Aaron Dalling Professional Title 208-624-3381
 Organization FMID Relationship to Applicant _____
 Mailing Address PO BOX 15 St. Anthony, Idaho 83445
 Email Address aaron.fmid@myidahomail.com Phone Number 208-624-3381

2. MAP

Create a map of the proposed point(s) of diversion, place(s) of use and water diversion, delivery and distribution systems. Make sure the rental place of use is outlined and annotated with legal land descriptions (Township, Range, Section and Quarter-Quarters) or with GPS coordinates. For irrigation purposes, mark the number of acres you desire to irrigate. Attach the map to this application and label it **Attachment 2**.

3. DESCRIPTION OF PROPOSED USE FOR RENTAL WATER

A. Describe why you desire to rent water and provide a detailed description of your proposed use. If the proposed use is not for irrigation, describe in detail how you determined the amount of rental water required. If the space below is insufficient, attach additional sheets as required and label them **Attachment 3A**:

We propose to rent our own natural flow water associated with acres that are not currently being irrigated back from the Water Supply Bank and recharge the water into the aquifer. We would like to recharge the water associated with 135.5 acres in our irrigated place of use that are not currently being irrigated in 2019.

B. Enter the desired and/or minimum rates of flow, volume, or irrigable acres requested for your rental purposes:

Desired Rate (Cubic Feet/Second)	Desired Volume (Acre-Foot)	Minimum Rate* (Cubic Feet/Second)	Minimum Volume* (Acre-Foot)	Desired Acres (if applicable)
8.59 CFS	1425 AF	CFS	AF	135.5 AC

* Sometimes water rights provide an exceptionally low rate per acre and/or low volume per acre. This section is meant to establish an acceptable range of water sufficient for your proposed water use. Please see question 4B and complete if necessary.

C. This section must be completed in full. Enter the proposed start date and latest possible start date for using rental water as well as the number of years you would like to rent water. The latest possible start is the latest possible date by which you would be willing to pay for a rental and be able to benefit from utilizing rental water.

Desired Start Date (month/day/year)	Latest Possible Start Date (month/day/year)	*Mark Desired Rental Duration (Calendar Years)					**Applicant's preference if rental application cannot be processed prior to the latest possible start?	
6/1/2019	8/1/2019	☐ 1	☒ 2	☐ 3	☐ 4	☐ 5	☒ Process application as soon as possible	☐ Return application to applicant

* The number of years permissible for a rental is subject to the lease contract duration for the water right(s) being rented.

** Per Idaho Code 42-201, it is unlawful to divert or use water without a valid water right. Water Supply Bank rental applicants are not authorized to utilize rental water prior to the execution of an approved rental agreement. Rental requests may be returned to applicants if no water is available from the Bank to fulfill a rental request.

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WATER RESOURCE BOARD

Application to Rent Water (Continued)

- D. Describe your water distribution system and how rental water will be delivered from the point(s) of diversion (POD) to the proposed place of use (POU):

The water will be diverted at the Teton Island Feeder Canal diversion and will be delivered to Sunset Lake (See attachment 2)

- E. Describe the physical type (pump, headgate, etc.) and location of the POD from which rental water is proposed to be diverted:

POD Description	Water Source	Other Water Rights Diverted from this POD
TIFCC Headgate	North Fork Teton River	None

If the POD(s) above are located where water is turned into a canal, lateral or ditch, or if they are located on your property but are serviced by water that is delivered via a canal, lateral or ditch, your rental request must include documented authorization from all relevant canal companies, irrigation districts and/or water delivery entities, confirming that they consent to your diversion of water from their system.

- F. Has documented consent from all relevant water delivery entities been obtained? Yes ☐ N/A ☒
If yes, include documented consent as Attachment 3F.

- G. Do any POD(s) identified in Question 3E divert from a water source that may require water modeling? Yes ☐ No ☒
Refer to the Water Modeling Requirements Information Sheet to determine if a rental POD may require water modeling.

- H. Has water modeling been provided with your rental request? Yes ☐ N/A ☒
If yes, label modeling Attachment 3 H.
Rental applications that require modeling will be returned if modeling is not provided.

- I. Specify the desired beneficial use of water and the requested season of use or number of acres required:

- ☐ Irrigation _____ (number of acres) Duration: Subject to IDWR standard seasons of use
- ☐ Commercial from: _____ (mm/dd) to: _____ (mm/dd)
- ☐ Stockwater from: _____ (mm/dd) to: _____ (mm/dd)
- ☐ Industrial from: _____ (mm/dd) to: _____ (mm/dd)
- ☒ Other: Aquifer Recharge from: 04/01 (mm/dd) to: 10/31 (mm/dd)

- J. For irrigation uses, do you propose to divert water at a rate greater than 0.02 cfs/acre? N/A ☒ Yes ☐ No ☐
If yes, justify the rate of flow and attach any supporting documents as Attachment 3J. Justification may include information on soil composition, conveyance losses, crop type, irrigation systems, public access areas, etc. A rate of 0.03 cfs/acre is permissible for irrigation of 5 acres or less.

- K. Do you own the land at the proposed rental place of use (POU)? Yes ☐ No ☒
If no, attach documentation from the POU owner/operator confirming your authorization to use the POU and label it Attachment 3K.

- L. List all other water rights and sources of water at the rental place of use for the same purpose, including privately owned water rights and water received from a municipal supplier, an irrigation district, a canal company or any other water delivery entity. Explain why additional water is required:

None

**STATE OF IDAHO
WATER RESOURCE BOARD**

Application to Rent Water (Continued)

4. RENTAL REQUESTS FOR SPECIFIC WATER RIGHTS

A. Are you requesting to rent specific water rights?

Yes ☒ No ☐

If yes, specify below the elements of the water rights you are requesting to rent. If no, continue to Question 4B.

Important Information: Diversion rates and volumes sought for rent must be proportionate to the per acre diversion rates and per acre volume limits of the water right under lease contract to the Water Supply Bank. Prior to completing this section, applicants should review all water right lease contracts and any active rental agreements to determine which elements of a water right are available to satisfy a rental request. Lease and rental documents are searchable via [IDWR's website](#).

Water rights identified below must either already be leased to the Bank or a lease proposal should accompany this rental request. **Rental requests for water rights not yet leased to the Bank will be returned if companion lease applications are not provided with the rental request.** For leased rights featuring combined limits, rentals must be consistent with combined diversion rate, volume or acre limits. Combined limits should be listed on a row below water right numbers.

Water Right Elements Leased to Water Supply Bank					Leased totals, minus water right elements involved in active rental agreements, equals water right elements available for rent	Water Supply Bank Rental Request		
Water Right Number (leave blank if sub-total of combined limits)	Nature of Use	Diversion Rate (CFS)	Volume (AF)	Acres (AC)		Diversion Rate (CFS)	Volume (AF)	Acres (AC)
22-288	Irrigation	.46	76.1	7.2		.05	8	.8
22-571	Irrigation	.48	79.9	7.6		.05	8	.8
22-589	Irrigation	3.63	601.8	57.2		.36	61	5.7
22-12694	Irrigation	1.73	286.6	27.2		.17	29	2.7
22-12695	Irrigation	11.03	1830.1	174		1.1	183	17.4
22-12696	Irrigation	35.01	5811.9	552.5		3.5	581	55.3
22-12697	Irrigation	33.47	5556.0	528.2		3.36	555	52.8
Applicants must ensure the requested rate per acre and volume per acre do not exceed the rate per acre and volume per acre limits of water rights leased to the Water Supply Bank					TOTAL	8.59	1425	135.5
						CFS	AF	AC

**Attach multiple copies of this page if space above is insufficient to list all water rights requested to be rented on this application.*

B. If water right conditions, combined limits, or the sum of all water right elements being requested provide an unconventional duty of water (e.g., an unusually low rate per acre or volume per acre for irrigation use), explain how your proposed rental will sufficiently accomplish your intended purposes. Attach a separate page if space is insufficient and label it **Attachment 4B**:

N/A

C. Does your rental request propose to change the nature of use for any water right(s) being rented?

Yes ☒ No ☐

If yes, explain how the water right(s) will be converted to new uses. Include the historic, consumptive use amounts for the water right being rented if you have it, as well as the new consumptive use amount for your proposed beneficial use. If space below is insufficient, attach a separate page and label it **Attachment 4C**:

It is proposed the nature of use for the water associated with this lease be changed from irrigation to aquifer recharge for the 2year term of the lease

**STATE OF IDAHO
WATER RESOURCE BOARD**

Application to Rent Water (Continued)

5. ADDITIONAL INFORMATION

- A. Is this the first time that rental water is being requested for this purpose at the rental place of use? Yes ☒ No ☐
If no, list previous rental requests/agreements and explain why you have not secured a permanent water right for your needs:

- B. Have you or do you intend to submit an application for permit or transfer proposing a similar use as this rental? Yes ☐ No ☒
If yes, describe:

- C. Was this rental application submitted in response to a Notice of Violation (NOV) or a pending NOV? Yes ☐ No ☒
If yes, describe the date and location of the NOV.

- D. Additional Information

DECLARATION

I hereby assert that the information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval. I understand that if this rental application is approved, it will be subject to the provisions of Section 42-1766, Idaho Code and all applicable state and federal laws. I understand that the submission of a rental application provides no guarantee for approval of a rental agreement. I also understand that, per Idaho Code 42-301, it is unlawful to divert or use water without a valid water right and that I am not authorized to utilize water as proposed in this application prior to the execution of an approved rental agreement.


Signature of Applicant

Rodney Dealling
Printed Name of Applicant

8-7-2019
Date

Signature of Representative

Printed Name of Representative

Date

Mail to:

Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098

**STATE OF IDAHO
WATER RESOURCE BOARD**

Water Modeling Requirement Information Sheet

Information on water modeling requirements for rental requests within special administrative areas

Important information on requesting rental water within special administrative areas: Refer to the information below to determine whether the modeling of potential impacts from your rental request is necessary. Use Section 4 of the rental application to identify selected water rights. **If you submit an application to rent water from within a special administrative area and water modeling is required, your rental request will be returned if water modeling is not provided.**

Water modeling may be required when an application to rent water involves one of two scenarios:

Scenario 1: The rental request proposes to divert water from a regulated water source and/or within a special administrative area AND the distance between the rental point(s) of diversion (POD) and the POD(s) for the leased water right(s) is greater than the administratively established, acceptable distance.

Regulated water sources may areas include:

- A. Ground water resources within the modeled area of the Eastern Snake Plain Aquifer (ESPA) and tributary aquifers;
- B. Ground water within Ground Water Management Areas (GWMAs) or Critical Ground Water Areas (CGWAs);
- C. Water resources within other specified administrative areas, as established by the Idaho Water Resource Board (IWRB) or the Idaho Department of Water Resources.

The distance between any rental POD(s) and the POD(s) for a leased water right to be rented is important. On the ESPA, distance is measured in terms of model cells that cover an area of one square mile. Ground water modeling is not required if lease POD(s) and rental POD(s) are located within the same model cell or within adjacent model cells. If the lease and rental PODs are separated by more than one model cell groundwater modeling must be completed using the IDWR ESPA Transfer Tool and modeling results must be submitted with the rental application. ESPA modeling tools can be accessed and freely downloaded from IDWR's website by visiting: www.idwr.idaho.gov/WaterManagement/WaterRights/WaterRightTransfers/resources.htm.

Ground water modeling may be required within GWMAs, CGWAs or other regulated administrative areas. Applicants who desire to rent water within an established GWMA, CGWA or other regulated administrative area should consult IDWR's website before submitting their application to review the current status of administrative orders related to regulated administrative areas. Consult www.idwr.idaho.gov/WaterInformation/GroundWaterManagement/designated_areas.htm for information on GWMAs or CGWAs, visit <https://idwr.maps.arcgis.com/home/> to use mapping tools to find other regulated areas.

Applicants interested in renting water within a GWMA, CGWA or other regulated administrative areas should request water rights that have been leased into the Bank from within the same administrative area. Generally, the Bank will not permit a rental of water within a regulated administrative area if the leased water rights are not located within that same administrative area.

Scenario 2: A rental request proposes to divert water from a different but hydraulically connected water source.

Modeling situations may include:

- A. Rental requests that propose to divert surface water rights via ground water POD(s) (wells); and
- B. Rental requests that propose to divert ground water from one aquifer when the right being rented authorizes the diversion of ground water from a hydraulically connected, tributary aquifer.

Rental requests that propose to divert surface water rights from ground water points of diversion may be considered if ground water modeling establishes that the surface and ground water resources are directly and immediately hydraulically connected. An acceptable hydraulic connection occurs when at least 50 percent of the total depletions from a well are detectable from the original water source within a 24 hour period. The existing (leased) POD and proposed (rental) POD must be proximate such that diversion and use of water from the proposed POD would have substantially the same effect on the hydraulically-connected source as diversion and use of water from the original POD.

Requests to rent ground water across tributary aquifer sources may be considered if ground water modeling is provided to demonstrate that two aquifers are hydraulically connected and the anticipated impacts of diverting ground water from one source through the other is modeled accordingly.

For more information about rental application requirements, contact IDWR at (208) 287-4800.



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 E Front Street, Suite 648 • PO Box 83720 • Boise ID 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700

Website: idwr.idaho.gov • Email: idwrinfo@idwr.idaho.gov

BRAD LITTLE
Governor

GARY SPACKMAN
Director

August 14, 2019

TETON ISLAND FEEDER CANAL CO
386 N 2400 E
ST ANTHONY ID 83445

**RE: RENTAL OF WATER FROM THE WATER SUPPLY BANK
WATER RIGHT NOS. 22-288, 22-571, 22-589B, 22-12694, 22-12695, 22-12696,
and 22-12697 - AGREEMENT 368**

Dear Renter:

Please find enclosed a receipt in the amount of **\$1,060.60** and a copy of a fully executed Water Supply Bank Rental Agreement in connection with the rental of 530.3 acre-feet of water for ground water recharge during 2019. Upon receipt of this fully executed agreement, you are authorized to divert water in compliance with the conditions of water use described in the agreement.

Pursuant to the Water Supply Bank Rules, the rental fee will be retained by the Department to offset administrative costs since you are the owner of the rights.

If you have any questions, please contact this office at (208) 287-4800.

Sincerely,


& Water Supply Bank

Enclosures: Receipt No. C107370
Rental Agreement (copy)

c: Sascha Marston – Fiscal
James Cefalo – IDWR Eastern Regional Office
Tony Olenichak – State Water District No. 01
Aaron Dalling – FMID

Buyer, Remington

From: Buyer, Remington
Sent: Thursday, August 8, 2019 4:50 PM
To: 'aaron.fmid@myidahomail.com'
Subject: RE: Teton Island Water Bank Rental
Attachments: Rental Agreement 348.pdf; Rental_Map - Agreement 348.pdf; Rental Agreement 368.pdf; Rental_Map Agreement 368.pdf

Aaron,

I've drafted a recharge rental agreement for TIFCC for 500 AF for 2019 (agreement 368), attached for your review. I'm also attaching rental agreement 348, now only for 2020, which has been updated slightly from the last iteration (diversion volumes adjusted slightly).

Please have a look at these documents. If they are acceptable, TIFCC can sign and return 368 with payment to IDWR and begin conducting recharge this year. If TIFCC believes that they will be able to conduct recharge during 2020 as authorized under agreement 348, that agreement can also be signed and returned to our office with payment for 2020, which will set TIFCC up to conduct recharge both this year, and next year.

Feel free to follow up with me if you have any questions,

Regards,

Remington

From: aaron.fmid@myidahomail.com [mailto:aaron.fmid@myidahomail.com]
Sent: Thursday, August 8, 2019 12:30 PM
To: Buyer, Remington <Remington.Buyer@idwr.idaho.gov>
Subject: RE: Teton Island Water Bank Rental

Remington,

Thanks for being willing to work with us on this. TIFCC would like to reduce the rental down to around 500 AF this year and see how it goes. They plan to be better set up for the full volume next year. I reduced all the numbers in the application down to about 10% of what they were in the original application. Let's try to push this through as quickly as possible.

Let me know if you have any questions or concerns.

Thanks,

Aaron

From: Buyer, Remington <Remington.Buyer@idwr.idaho.gov>
Sent: Tuesday, August 6, 2019 1:29 PM
To: aaron.fmid@myidahomail.com
Subject: RE: Teton Island Water Bank Rental

Aaron,

Water Supply Bank Rental Agreement 348 authorizes up to 4,738.7 acre feet for recharge in 2019 and 2020. If TIFCC wants to be able to divert up to 4,738.7 acre feet during 2020, but will divert less than 4,738.7 during 2019, we can approve Agreement 348 for 2020 only, and we can approve a different, new rental agreement for 2019. Because the analysis on this rental request has already been completed, I don't foresee that it will take more than a few days to generate a new rental agreement for a 2019-specific rental request.

Here's my recommendation: complete and submit a new rental application to IDWR (emailing it to me is fine) and request a diversion rate and volume for recharge that TIFCC thinks they can successfully recharge during 2019. We'll turn around the rental paperwork as quickly as possible on our end, and provide you with a reduced rental authorization for 2019, likely by the end of August. IDWR will levy a rental fee of \$2/acre foot, so the rental price would be whatever your recharge volume is intended to be, multiplied by \$2.00.

Hope that makes sense. Call on me if you have any questions, else, I'll look forward to receiving from you a reduced rental application for 2019.

Remington
(208) 287-4918

From: aaron.fmid@myidahomail.com [<mailto:aaron.fmid@myidahomail.com>]
Sent: Sunday, August 4, 2019 9:17 PM
To: Buyer, Remington <Remington.Buyer@idwr.idaho.gov>
Subject: Teton Island Water Bank Rental

Hi Remington,

Teton Island Feeder does not think they can recharge the full amount of the rental this year. Can they just rent back a portion of the total amount this year? They are concerned if they pay the full fee they will have trouble breaking even this year.

Let me know what you think.

Thanks,

Aaron

MEMORANDUM FOR AGREEMENT # 368

To: Water Right(s) 22-288, 22-571, 22-589, 2212694, 22-12695, 22-12696 and 22-12697
From: Remington Buyer
Date: August 8, 2019
Re: Review & Analysis of Application to Rent Water from the State Water Supply Bank

PURPOSE/NARRATIVE: On March 12, 2019, IDWR received from the Teton Island Feeder Canal Company (TIFCC), an application to rent from the Water Supply Bank the leased extent of the above listed water rights, for the purposes of ground water recharge. It was proposed that ground water recharge be accomplished by diverting water from the Teton River via TIFCC infrastructure, for delivery to "Sunset Lake" and "Cornelison Pond" where diverted water will be ponded and allowed to settle into the ground.

IDWR ultimately approved a rental of 4,468.2 af for recharge in July 2019, however TIFCC felt that they would be unable to actually recharge this amount from July through October, 2019, and so a second rental application was submitted on August 8, 2019 (application 1453) in which TIFCC requested a rental specifically for 500.0 for recharge during 2019. This rental pertains specifically to the 2019 rental (application 1453).

AUTHORITY TO FILE: The applications have been submitted by Rodney and Aaron Dalling, who respectively have represented themselves as the president and executive officer of the canal company. It was not possible to discern the specific organizational structure of TIFCC, however it is assumed the Dallings hold the self-described positions with the canal company and are authorized to conduct administrative matters on behalf of the canal company.

Sunset Lake is located on lands owned by Sunset Lake Farms, LLC, while Cornelison Pond is located on lands owned by Keith and Karen Cornelison. Sunset Lake Farms, LLC is an incorporated business which lists Jeffrey and Sherri Parkison as manager and member, respectively. Both the Parkinsons and the Cornelisons have provided documented approval for the TIFCC to conduct recharge in their ponds via the requested rental. No concerns about the authority of the TIFCC to file this rental request.

WATER RIGHT VALIDITY: There are no storage water rights associated with the two ponds. Per applicant-provided information, the ponds have historically been filled to irrigate agricultural lands; effectively, prior to the irrigation season, canal water is delivered to the ponds for "subirrigation" (charging ground water tables), while during the irrigation season, water is spilled into the ponds as part of the management and operation of the canal system. The water rights proposed to be rented are the same water rights that authorize subirrigation and delivery of canal water to the ponds for irrigation purposes. No concerns about water right validity.

INJURY: Because recharge under this rental will be restricted to the two aforementioned ponds, which have historically received water during the irrigation season in past years, it is not apparent that any additional injury might occur by delivering recharge water to these ponds. Also, because the rental requests the delivery of water via the infrastructure system into which TIFCC water rights are typically diverted, it is not anticipated that this rental will cause injury through a change in return flows to downstream users, however, this rental will be conditioned to acknowledge that recharge cannot injury prior appropriators. This rental will also include a condition to acknowledge that water quality monitoring may be required.

ENLARGEMENT OF USE: Because this rental proposes a change in nature of use, avoiding enlargement in the overall water use authorized for the rental requires consideration of the consumptive use extent of the leased portions of the TIFCC irrigation water rights. Enlargement should be avoided if the consumptive use of water authorized for the recharge rental does not exceed the consumptive use volume limits set for the leased portions of the TIFCC water rights. Similarly, enlargement should also be avoided if the overall diversion volume of the rental does not exceed the diversion volume limits set for the TIFCC water right lease.

Validating that no enlargement will occur under this rental thus requires evaluating consumptive and overall diversionary volumes of water associated with TIFCC irrigation practices, as well as consumptive and diversionary volumes attributable to recharge activities proposed for the rental.

Consistent with previous reviews of rental requests for recharge, an analysis was conducted by IDWR's Hydrology Section staff to ascertain the overall and consumptive use diversion volumes associated with the leased portions of the TIFCC water rights that have been requested for this rental. The report, titled: **Determining Irrigation Water Volume Diversions Associated with Lease Contract 990**, affirmed that during the most recent five year period (2014 through 2018), a maximum of 8,337.5 acres (out of a possible 9,448.2 acres) were irrigated (during 2014). The report also affirmed that the most water consumptive year for irrigation of lands within the TIFCC service area was during 2016, when 19,217 af of water was consumed, from an overall diversion volume amount of 26,904 af.

Because the Water Supply Bank's review of TIFCC's lease proposal did not find that partial forfeiture had occurred on portions of their irrigation water rights portfolio, portion of TIFCC's irrigation water rights equivalent to 1,354.0 acres were accepted for lease to the Bank. Subtracting this amount from TIFCC's maximum irrigable area (9,448.2 acres) leaves a balance of 8,094.2 acres that can be irrigated annually during the term of their lease, which is close to the maximum 8,337.5 acre area calculated as irrigated during 2014. If a maximum regional headgate standard of 3.5 afa/ac were realized on all 8,094.2 acres during the term of the lease, potentially as much as 28,329.7 af might be diverted by TIFCC just for irrigation, which would exceed the maximum diversion volume of 26,904 af calculated as having occurred in 2016.

However, overall and consumptive irrigation diversion volumes are a function of many factors, such as precipitation deficits, cropping practices, land uses, etc, and it therefore might not constitute enlargement if actual diversion volumes increased during the term of a lease and/or rental. As such, even if 28,329.7 af were diverted by TIFCC solely for irrigation practices and additional water volumes above and beyond the 28,329.7 were diverted by TIFCC for recharge purposes under this rental, it could be posited that enlargement might not occur. Still, an overall and consumptive use diversion volume limit needs to be assigned to the leased portions of TIFCC's irrigation water right.

In 2016, average consumptive irrigation water use volumes were calculated as 2.4 afa/acre, or 19,217 af for 8,090 acres, within the canal company service area. This per-acre consumptive use diversion volume was approximately equivalent to the 2.5 afa/acre consumptive use volume calculated in 2016 for a specific 526 acres identified as irrigated (with 1,310 af) on lands within the place of use proposed to be idled during the term of TIFCC's water right lease. As such, to avoid enlargement, it is proposed that the maximum consumptive use volume for the rental should be limited to the sum of the lesser of the two per-acre consumptive use headgate volumes (2.4 afa/acre), multiplied by 151.5 acres of the 1,354.0 irrigable acres accepted for lease to the Bank, which is the amount of the leased extent of TIFCC's that TIFCC requested be rented for recharge specifically during 2019.

The math on the previous page provides a maximum permissible consumptive use volume for the 2019 rental of 363.6 af. A maximum permissible diversion volume limit of 500.0 af was calculated for the rental by multiplying the overall maximum field headgate diversion volume for 2016 (3.3 afa/ac) by 151.5 acres. Based on this information, enlargement in water use under the rental will not occur if the rental is limited to a maximum consumptive use volume of 363.6 af, and an overall diversion volume limit of 500.0 af. A review of the anticipated consumptive use of water under the rental was done to ensure these water use limits were not expected to be exceeded.

Per information provided by the applicant, the ponds where recharge water will be delivered are typically filled during the start of the irrigation season, between mid-April through mid-May, after which, the ponds are topped up over the course of a day, one day each week, from mid-May through mid-August. The applicant has proposed to both measure and discount any deliveries of water to the ponds for the period of April through mid-May, and for one day each week (approximately 14.3% of the time) during the period of mid-May through mid-August. If no further irrigation-related top ups of the ponds occur after mid-August, deliveries of water to the ponds after this period of time through the end of the irrigation season can be considered specifically for recharge and not for irrigation water delivery purposes.

Ground water recharge is a largely non-consumptive water use and the consumptive use of water under this rental is anticipated to come from pond evaporation. Because water is already present in the ponds at the start of (and during) the irrigation season, determining the evaporative loss of water specific to recharge use requires subtracting evaporative losses of pond water attributable to standard irrigation-related deliveries of water to the pond from overall annual evaporative losses of water, attributable to multiple fills of the pond, above and beyond standard irrigation-related deliveries. This number, the consumptive use (evaporative) loss for the rental is anticipated to be low as pond loss calculations indicate the maximum annual evaporative loss of water from both ponds would be around 64.1 af/year.¹ Because this rental consumptive use of water is vastly smaller than the 363.6 af consumptive use authorized by the rental of leased portions of the TIFCC water rights, this 2019 recharge rental is not expected to cause an enlargement in water use, and the recharge rental volume can be limited to the proportionate diversion volume of 500.0 af, and not restricted to the lesser consumptive use volume of 363.6 af.

LOCAL PUBLIC INTEREST: Staff have no information to suggest this rental is inconsistent with local public interests.

BENEFICIAL USE/CONSERVATION OF WATER RESOURCES: Ground water recharge is a beneficial use of water. However, the extent to which this rental approval will enable an actual beneficial use of water specific to ground water recharge at the two ponds will be a function of:

- a) the efficiency of the two ponds as locations for conducting recharge; and
- b) the incremental, additional recharge of the ground water that will occur via the ponds, over and above any incidental recharge that would already be occurring in the ponds through subirrigation and canal management practices.

Information about the recharge potential of the ponds was requested from the applicant and they responded with soil survey data from the Natural Resource Conservation Service (NRCS). Per NRCS data, the soils under the ponds are predominantly "withers silty loam clay" (unified soil classification system: "CL") and "labenzo gravelly loam" (unified soil classification system: "ML"). NRCS data included information about "saturated hydraulic conductivity" (how quickly water travels through pores in saturated soils) and "available water capacity" (the quantity of water that can be stored in soil) for the ponds.

¹ See the attachments A & B of this memo for information on how seepage and evaporation losses were calculated.

The following summarizes relevant NRCS findings for the ponds:

	Moist Bulk Density (less than 1.4 g/cc)	Saturated Hydraulic Connectivity (micrometers/second)	Calculated Hydraulic Connectivity (cubic feet per second)	Available Water Capacity (inches of water per inch of soil)
Sunset Lake	0 - 30 feet	1.41 - 14.1 micro m/sec	4.84 - 49.43 cfs	0.19 – 0.21 inches/inch
Cornelison Pond	0 - 13 feet	1.41 - 14.1 micro m/sec	2.50 - 25.06 cfs	0.13 – 0.15 inches/inch

Based on the above, it appears a beneficial use of water for ground water recharge might be possible in both Sunset Lake and Cornelison Pond. However, use of IDWR's pond seepage calculation tool did not provide similarly high rates of seepage/infiltration.

Inputting CL and ML soil classification values (and other parameters) into IDWR's pond calculation tool resulted in an annual calculated seepage and evaporation loss in the ponds as follows:

Pond	Storage Capacity	Annual Seepage (af/year)	Instant Seepage (cfs)	Annual Evaporation (af/year)	Annual Losses (af/year)	Drainage Time (years)
Sunset Lake	288 af	26.3 af	0.04 cfs	42.3 af	68.6 af	4.2
Cornellison Pond	124 af	13.6 af	0.02 cfs	21.8 af	35.4 af	3.5
Totals	412 af	39.9 af	0.06 cfs	64.1 af	104 af	4.0

It is presumed that the seepage rates are too low within IDWR's pond seepage calculation tool, because information from the applicant, and a review of satellite imagery, confirms water is lost from the ponds over the course of a year, not four years, as calculated above. Taking the lower of the hydraulic connectivity values derived from USDA soil survey data (4.84 cfs for Sunset Lake and 2.5 cfs for Cornelison Pond), one would expect Sunset Lake to lose 9.6 af/day to seepage and be drained within 29 days, while Cornelison Pond would lose 5.0 af/day and be empty within 24 days. It may be necessary to further ascertain a more exact seepage rate for the ponds, however based on the above, the ponds appear to be appropriate locations for conducting ground water recharge. However, ascertaining the real beneficial use of water (via recharge) that might occur under this rental also requires considering how the ponds are currently being filled and operated, based on irrigation-related activities of the TIFCC.

Presuming the ponds empty within 24-29 days, they would need to be topped up with water multiple times during the course of the irrigation season to maintain storage contents. This is consistent with information provided by the applicant, who affirmed that the ponds are typically filled during the start of the irrigation season, from mid-April through mid-May, after which, water is delivered to the ponds to maintain storage contents, one day each week, from mid-May through mid-August. Presumably, following mid-August, water is no longer delivered to the ponds to maintain storage contents for irrigation-related activities.

Presently, review staff are unaware of any Department of Water Resources and/or Idaho Water Resource Board (IWRB) policy to distinguish between when diverting additional water to a recharge location, on top of water that is already enabling incidental recharge, should or should not constitute a beneficial use of water. Absent a policy to distinguish between beneficial and non-beneficial additional diversions of water for recharge, this rental request might be considered to constitute a beneficial use. However, to be considered a beneficial use, this rental must enable deliveries of water to the ponds, above and beyond and distinctly different to and separate from diversions of water into the ponds that would have otherwise have occurred absent the rental, through typical canal operations managed by TIFCC.

Stated differently: if the volume of water that is on average delivered to the ponds in association with TIFCC irrigation-related activities can be established, then it may be possible to calculate the volume of water going to the ponds for recharge, as the annual diversion volumes minus the irrigation-related delivery volumes.

The applicant has stated that the TIFCC delivers water to the ponds, on average, one day per week, each week, from mid-May through mid-August, for irrigation-related activities. Presuming that, but for one day each week from mid-May through mid-August, all other deliveries to the ponds are for recharge, a beneficial use is likely to occur if additional water delivered to the ponds results in increased seepage and ground water recharge from the ponds. As a condition of approval, the renter should be required to measure daily, and to report annually, the overall total volumes of water diverted into the pond, and to distinguish between the volumes diverted into the ponds that are attributable to natural canal operations versus diversions that are specifically attributable to this recharge rental.

It is anticipated that 85.7% of all deliveries to the ponds will be considered as ground water recharge deliveries, and that 14.3 % (equivalent to one out of seven) of deliveries will be for irrigation-related activities. To ensure that the renter remains aware that the beneficial use of their rental might be called into question in the future, the rental agreement should also include conditional language to affirm that Departmental approval of this rental does not give rise to the notion that the Department will recognize or give credit for any recharge activities, in any other administrative process.

DEPARTMENT STAFF OR WATERMASTER COMMENTS: Comments were requested from IDWR's Eastern Regional Office and Water District 1 staff, who did not object to IDWR's prior approval of rental agreement 348. Because this rental (agreement 368) is derived from the already-approved agreement 348, but for a lesser amount, it is expected that there will be no objections to the approval of this rental for 2019 and comments specific to application 1453 are not being requested.

Attachment A – Pond Loss Calculations for Sunset Lake

Seepage Loss Calculations

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

FILE NUMBER	WSB1365A
REVIEWER	Remington Buyer
DATE	6/19/2019

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	24	AC.
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Pond Surface Area (SQ. FT.)	1045440	SQ. FT.
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I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	CL	
Suggested Seepage Rate (FT./DAY)	0.0030	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	23460	GPD
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Total Seepage Loss (AFA)	26.3	AFA
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Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.2 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
MH, OH, PT and CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled by ground water) = 0 ft per day

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.

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	WSB1365A
REVIEWER	Remington Buyer
DATE	6/19/2019

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: Rexburg (RXGI)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.49	31	0.00
Feb	0.05	28	1.40
March	0.77	31	23.87
April	1.72	30	51.60
May	2.02	31	62.62
June	2.62	30	78.60
July	3.63	31	112.53
August	3.59	31	111.29
September	2.30	30	69.00
October	0.75	31	23.25
November	0.09	30	2.70
December	-0.41	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 = **536.86**

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

$$\left(\frac{536.86}{304.8} \right) \times 24.00 = 42.3 \text{ AFA}$$

Total Storage Calculations

FILE NUMBER	WSB1365A
REVIEWER	Remington Buyer
DATE	6/19/2019

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.)	24	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	12	"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)	288	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 " <u>From Storage</u> " component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	26.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	42.3	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	356.6	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.

Attachment B – Pond Loss Calculations for Cornelison Pond

Seepage Loss Calculations

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

FILE NUMBER	WSB13658
REVIEWER	Remington Buyer
DATE	6/19/2019

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	12.4	AC.
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Pond Surface Area (SQ. FT.)	540144	SQ. FT.
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I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	ML	
Suggested Seepage Rate (FT./DAY)	0.0200	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
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Convert to GPD	80806	GPD
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Total Seepage Loss (AFA)	90.5	AFA
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Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.2 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
MH, OH, PT and CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled by ground water) = 0 ft per day

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.

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	WS81365B
REVIEWER	Remington Buyer
DATE	6/19/2019

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: Rexburg (RXGI)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.49	31	0.00
Feb	0.05	28	1.40
March	0.77	31	23.87
April	1.72	30	51.60
May	2.02	31	62.62
June	2.62	30	78.60
July	3.63	31	112.53
August	3.59	31	111.29
September	2.30	30	69.00
October	0.75	31	23.25
November	0.09	30	2.70
December	-0.41	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 = 536.86

$$\left(\frac{536.86}{304.8} \right) \times 12.40 = 21.8 \text{ AFA}$$

Total Storage Calculations

FILE NUMBER	WSB1365B
REVIEWER	Remington Buyer
DATE	6/19/2019

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.)	12.4	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	10	"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)	124	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 " <u>From Storage</u> " component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	90.5	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	21.8	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	236.4	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.

Date: August 8, 2019
To: Water Supply Bank Application 1453
From: Kara Ferguson, Staff Hydrologist
Remington Buyer, Water Supply Bank Coordinator
Subject: Determining Irrigation Water Volume Diversions Associated with Lease Contract 990

Overview

On March 12, 2019 IDWR received from Teton Island Feeder Canal Company (TIFCC) applications to lease into the Water Supply Bank portions of irrigation usage under seven water rights, coupled with an application to rent the water rights from the Bank, to authorize ground water recharge by TIFCC. This memo documents an IDWR procedure for evaluating the maximum volume of water that may have been diverted by TIFCC for irrigation purposes during recent years, as well as the diversion volumes that might be appropriate for a ground water recharge rental. The process utilizes the following steps:

- 1) Determine regionally-specific evapotranspiration values for specific crops in specific years;
- 2) Determine regionally-specific precipitation values;
 - a. Determine monthly precipitation values;
 - b. Determine the effectiveness of observed monthly precipitation values;
- 3) Determine regionally-specific consumptive irrigation requirement (non-precipitation) values for specific crops in specific years;
- 4) Determine regionally-specific crop mixes and associated diversion volume requirements;
 - a. Determine regionally-specific diversion volumes for specific crops in specific years;
 - b. Determine crop-specific acreages within water right irrigation places of use;
 - c. Determine crop-specific acreages within water right irrigation places of use being leased;
 - d. Determine consumptive irrigation and overall diversion volumes for places of use;
- 5) Determine overall and consumptive use diversion volumes for the irrigation water rights;
- 6) Establish appropriate rental volume limits

Step 1: Determining Evapotranspiration Data

Rexburg (RXGI) is the closest AgriMet climate station and daily evapotranspiration (ET) data for the Rexburg AgriMet climate station were downloaded for the years 2014 to 2018 from the AgriMet website (<http://www.usbr.gov/pn/agrimet/etsummary.html>). These data were imported into Microsoft Excel and the daily ET values for each crop type reported were tabulated into total ET values for the irrigation season for each crop type.

Year	ETr	ALFP	ALFM	PAST	LAWN	WGRN	SGRN	POTA	FCRN
2014	43.21	36.61	31.81	26.00	31.59	26.27	22.90	22.90	20.52
2015	45.10	38.56	33.46	27.11	33.24	24.56	20.90	24.56	23.55
2016	47.73	43.24	37.29	30.65	36.92	26.99	25.51	27.15	24.99
2017	41.03	36.29	31.52	25.58	30.99	20.34	16.86	23.04	21.06
2018	46.13	39.33	34.19	27.50	33.78	26.87	22.98	24.25	25.07

Table 1. ET values (inches) for the Rexburg (RXGI) Idaho AgriMet weather station.

Step 2: Determining Precipitation Data

Monthly precipitation data (Parameter: PP – Daily (24 hour) Precipitation (in)) for the Rexburg AgriMet weather station were downloaded from the AgriMet website (<https://www.usbr.gov/pn/agrimet/webarcread.html>). The time period of the precipitation data downloaded was equivalent to the time period of the ET data. The precipitation data were for the years 2014 to 2018 and for the months April to September for years 2014 to 2017 and April to October 4 for 2018. The precipitation data were imported into Microsoft Excel and effective precipitation was calculated by multiplying the monthly precipitation values by the “Percent Effective” from Table 3 in USDA Technical Bulletin 1275.

Year	Apr	May	Jun	Jul	Aug	Sep	Oct
2014	1.13	0.51	0.73	0.6	3.67	3	-
2015	0.53	2.88	0.78	0.87	0.54	0.37	-
2016	0.89	1.81	0.16	0.21	0	1.54	-
2017	1.87	1.02	1.59	0.13	0.08	1.75	-
2018	2.21	3.38	3.14	0.13	0.27	0	0.24

Table 2. Monthly Precipitation (inches) for the Rexburg (RXGI) Idaho AgriMet weather station.

Total Monthly Precipitation (in)	Percent Effective	Total Monthly Effective Precipitation (in)
1	95%	0.95
2	90%	1.85
3	82%	2.67
4	65%	3.32
5	45%	3.77
6	25%	4.02
>6	5%	

Table 3. Percent Effective Precipitation: Recreated from USDA Technical Bulletin 1275 Table 3.

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Totals
2014	1.07	0.48	0.69	0.57	3.11	2.67	-	8.59
2015	0.50	2.57	0.74	0.83	0.51	0.35	-	5.51
2016	0.85	1.68	0.15	0.20	0.00	1.44	-	4.31
2017	1.73	0.97	1.48	0.12	0.08	1.63	-	6.01
2018	2.02	2.92	2.76	0.12	0.26	0.00	0.23	8.31

Table 4. Monthly Effective Precipitation (inches) for the RXGI Idaho AgriMet weather station.

Step 3: Determining Consumptive Irrigation (CIR) (non-precipitation) Data

The Consumptive Irrigation Requirement (CIR) was calculated in Excel by subtracting the effective precipitation for the irrigation season (Table 4 values) from the ET values for the irrigation season for each crop type (Table 1 values).

Year	ETr	ALFP	ALFM	PAST	LAWN	WGRN	SGRN	POTA	FCRN
2014	34.62	28.02	23.22	17.41	23.00	17.68	14.31	14.31	11.93
2015	39.59	33.05	27.95	21.60	27.73	19.05	15.39	19.05	18.04
2016	43.42	38.93	32.98	26.34	32.61	22.68	21.20	22.84	20.68
2017	35.02	30.28	25.51	19.57	24.98	14.33	10.85	17.03	15.05
2018	37.82	31.02	25.88	19.19	25.47	18.56	14.67	15.94	16.76

Table 5. CIR (Inches) for the Rexburg (RXGI) Idaho AgriMet weather station.

The Consumptive Irrigation Requirement values for each crop type (Table 5 values) were then divided by 12 to convert from inches to feet.

Year	ETr	ALFP	ALFM	PAST	LAWN	WGRN	SGRN	POTA	FCRN
2014	2.88	2.33	1.93	1.45	1.92	1.47	1.19	1.19	0.99
2015	3.30	2.75	1.19	1.80	2.31	1.59	1.28	1.59	1.50
2016	3.62	3.24	2.75	2.19	2.72	1.89	1.77	1.90	1.72
2017	2.92	2.52	2.13	1.63	2.08	1.19	0.90	1.42	1.25
2018	3.15	2.59	2.16	1.60	2.12	1.55	1.22	1.33	1.40

Table 6. CIR (Feet) for the Rexburg (RXGI) Idaho AgriMet weather station.

Step 4: Evaluating Crop Mixes

The United States Department of Agriculture's (USDA) Cropland Data Layer (CDL) datasets for the most recent five years (2014-2018), the same five-year period as the ET and precipitation data, were downloaded from the NASS website (<http://nassgeodata.gmu.edu/CropScape>). Speckling in the CDLs was removed in ArcGIS using Zonal Statistics to assign the majority crop within the boundaries of polygons delineated by IDWR in an irrigated lands dataset. There were no IDWR irrigated lands datasets available for the years 2012-2018 so the 2011 IDWR Irrigated Lands dataset was utilized.

The irrigated lands proposed to be idled by the Teton Island Feeder Canal Company (through a lease of their water rights) were delineated in a shapefile submitted by TIFCC. The above steps enabled IDWR to calculate within ArcGIS the irrigated land crop mixes within the TIFCC irrigation water right place of use (POU) proposed to be idled, as well as within the within the entire service area for the canal company.

To ensure processing in ArcGIS was consistent for each CDL, a "geoprocessing" model named "WSB_CD_L_Recharge" in the "WSB_CD_L_Toolbox.tbx" was utilized. A subset of each CDL was created by extracting (clipping) the portion of the CDL that corresponded to the lease POU shapefiles. Crop types in the CDL that didn't match were grouped with a crop in the CDL of similar consumptive use. Crop types in the CDL that are not related to agriculture, such as "developed/open space", "deciduous forest", and "shrubland", were combined into a group named "z_Non-Crop". The acres for each crop type were calculated and the results are output into a Microsoft Excel spreadsheet.

CDL Value	CDL Crop Name	Assigned to AgriMet Crop Code	AgriMet Crop Description
1	Corn	FCRN	Field Corn
21	Barley	SGRN	Spring Grain
23	Spring Wheat	SGRN	Spring Grain
24	Winter Wheat	WGRN	Winter Grain
28	Oats	SGRN	Spring Grain
31	Canola	SGRN	Spring Grain
32	Flaxseed	SGRN	Spring Grain
35	Mustard	SGRN	Spring Grain
36	Alfalfa	ALFM	Mean Alfalfa
37	Other Hay/Non Alfalfa	PAST	Pasture
43	Potatoes	POTA	Potatoes
53	Peas	SGRN	Spring Grain
61	Fallow/Idle Cropland	z_Non-Crop	---
111	Open Water	z_Non-Crop	---
121	Developed/Open Space	z_Non-Crop	---
122	Developed/Low Intensity	z_Non-Crop	---
123	Developed/Med Intensity	z_Non-Crop	---
131	Barren	z_Non-Crop	---
141	Deciduous Forest	z_Non-Crop	---
142	Evergreen Forest	z_Non-Crop	---
152	Shrubland	z_Non-Crop	---
176	Grass/Pasture	PAST	Pasture
190	Woody Wetlands	z_Non-Crop	---
195	Herbaceous Wetlands	z_Non-Crop	---

Table. 7 Cross Reference of CDL and Rexburg (RXGI) AgriMet Weather Station Crop Types.

Step 5: Determining Diversion Volumes

The total field headgate volume for the years 2014 through 2018 were calculated in Microsoft Excel for both the entire TIFCC POU as well as the acres proposed to be leased to the Bank. For each year analyzed, the number of acres of a particular crop type and the consumptive irrigation requirements of the crop (as obtained step 3 above) were input into Excel. The total consumptive irrigation requirement was calculated by multiplying the consumptive irrigation requirement for the crop with the total acres upon which a crop was grown in a given year. The result provided the total consumptive irrigation requirement for a specific crop, in a given year, for the entire Teton Island Feeder Canal Company POU as well as for the proposed acres to be idled within the Teton Island Feeder Canal Company POU.

Field headgate volumes and consumptive irrigation requirement field headgate volumes were calculated by dividing the annual totals of these variables by the acres where crops were observed, in a given year.

Year	Crop	Acres	Consumptive Irrigation Requirement (Feet)	Consumptive Irrigation Requirement (AF)	Average Consumptive Use Volume (AF/Acre)	Efficiency (3.5 AF / 2.5 AF)	Field Headgate Volume (AF)	Field Headgate Volume (AF/Acre)
2014	ALFM	4959.6	1.93	9,597		1.4	13,435	
2014	FCRN	4.4	0.99	4		1.4	6	
2014	PAST	491.5	1.45	713		1.4	998	
2014	POTA	231.3	1.19	276		1.4	386	
2014	SGRN	2555.8	1.19	3,048		1.4	4,267	
2014	WGRN	95.0	1.47	140		1.4	196	
	Total	8,338		13,777	1.7		19,288	2.3
2015	ALFM	5152.6	1.19	6,144		1.4	8,602	
2015	FCRN	4.9	1.50	7		1.4	10	
2015	PAST	38.9	1.80	70		1.4	98	
2015	POTA	23.1	1.59	37		1.4	51	
2015	SGRN	2825.3	1.28	3,624		1.4	5,074	
2015	WGRN	93.2	1.59	148		1.4	207	
	Total	8,138		10,031	1.2		14,043	1.7
2016	ALFM	4971.2	2.75	13,662		1.4	19,126	
2016	FCRN	38.3	1.72	66		1.4	92	
2016	PAST	24.0	2.19	53		1.4	74	
2016	POTA	263.8	1.90	502		1.4	703	
2016	SGRN	2774.4	1.77	4,901		1.4	6,861	
2016	WGRN	18.0	1.89	34		1.4	48	
	Total	8,090		19,217	2.4		26,904	3.3
2017	ALFM	5003.0	2.13	10,637		1.4	14,892	
2017	FCRN	14.7	1.25	18		1.4	26	
2017	PAST	337.6	1.63	551		1.4	771	
2017	POTA	59.2	1.42	84		1.4	118	
2017	SGRN	2677.8	0.90	2,422		1.4	3,391	
2017	WGRN	1.8	1.19	2		1.4	3	
	Total	8,094		13,714	1.7		19,200	2.4
2018	ALFM	5198.5	2.15	11,183		1.4	15,657	
2018	FCRN	20.0	1.39	28		1.4	39	
2018	PAST	283.1	1.59	451		1.4	632	
2018	POTA	196.6	1.32	260		1.4	364	
2018	SGRN	2446.6	1.22	2978		1.4	4,169	
	Total	8,145		14,900	1.8		20,860	2.6
	Minimum	8,089.6		10,030.5	1.2		14,042.7	1.7
	Maximum	8,337.5		19,217.2	2.4		26,904.0	3.3
	Average	8,160.8		14,327.9	1.8		20,059.0	2.5
	Median	8,138.1		13,777.4	1.7		19,288.4	2.4

Table 8. Historical Volumes Calculated for the Entire Teton Island Feeder Canal Company POU

Year	Crop	Acres	Consumptive Irrigation Requirement (Feet)	Consumptive Irrigation Requirement (AF)	Average Consumptive Use Volume (AF/Acre)	Efficiency (3.5 AF / 2.5 AF)	Field Headgate Volume (AF)	Field Headgate Volume (AF/Acre)
2014	ALFM	415.7	1.93	804		1.4	1,126	
2014	PAST	82.1	1.45	119		1.4	167	
2014	SGRN	155.7	1.19	186		1.4	260	
	Total	653		1,109	1.7		1,553	2.4
2015	ALFM	373.8	1.19	446		1.4	624	
2015	SGRN	156.3	1.28	201		1.4	281	
2015	WGRN	0.4	1.59	1		1.4	1	
	Total	531		647	1.2		906	1.7
2016	ALFM	387.6	2.75	1,065		1.4	1,491	
2016	FCRN	3.3	1.72	6		1.4	8	
2016	SGRN	132.8	1.77	235		1.4	328	
2016	WGRN	2.4	1.89	5		1.4	6	
	Total	526		1,310	2.5		1,834	3.5
2017	ALFM	364.7	2.13	775		1.4	1,086	
2017	FCRN	3.3	1.25	4		1.4	6	
2017	PAST	129.9	1.63	212		1.4	297	
2017	POTA	0.9	1.42	1		1.4	2	
2017	SGRN	32.9	0.90	30		1.4	42	
2017	WGRN	0.4	1.19	1		1.4	1	
	Total	532		1,023	1.9		1,432	2.7
2018	ALFM	375.2	2.15	807		1.4	1,130	
2018	FCRN	3.3	1.39	5		1.4	6	
2018	PAST	107.2	1.59	171		1.4	239	
2018	POTA	0.9	1.32	1		1.4	2	
2018	SGRN	31.8	1.22	39		1.4	54	
	Total	518		1,022	2.0		1,431	2.8
	Minimum	518.4		647.0	1.2		905.9	1.7
	Maximum	653.4		1,310.2	2.5		1,834.3	3.5
	Average	552.2		1,022.3	1.9		1,431.3	2.6
	Median	530.6		1,023.0	1.9		1,432.3	2.7

Table 9. Historical Volumes Calculated for the Teton Island Feeder Canal Company Lease POU

Step 6: Establish Rental Volume Limits

The highest average annual field headgate diversion volume observed during recent years was in 2016, when a consumptive irrigation requirement (based on crop type, temperature and precipitation deficit information) was calculated as 2.4 afa/acre, or 19,217 af for the overall canal company service area. Specific to the lease place of use, during 2016, an approximately equivalent field headgate standard for the consumptive use volume (2.5 afa/ac) was calculated, which provided overall consumptive use diversion volume of 1,310 acre feet for the portions of the water rights that have been leased to the Bank.

The use of portions of TIFCC's irrigation water rights for recharge is not expected to result in significant changes to return flows (during the rental) that would otherwise historically have occurred when TIFCC used their water rights to irrigate their overall place of use. Because TIFCC's recharge rental is expected to be largely non-consumptive, limiting the rental to historic consumptive use was not considered as required, because the non-consumptive use extent of overall diversion volumes relied upon by TIFCC for irrigation use can be dedicated to a recharge rental without necessarily causing injury or enlargement.

The TIFCC irrigation water rights do not feature a volume limit, however one was established for the lease of portions of these water rights, by multiplying the lease acres (1354.0) by the regional headgate standard (3.5) to establish a maximum irrigation rental volume.

Summary of the TIFCC water right elements leased under contract to the WSB

	Leased Diversion Rate (cfs)	Leased Annual Diversion Volume (AF)	Leased Acres
Lease Totals	85.81 cfs	4,739.0 af	1,353.9 ac

The maximum annual average field headgate standard observed and calculated for TIFCC for their entire service area was in 2016 (3.3 afa/ac). The diversion volume limit authorized for TIFCC's recharge rental was calculated by multiplying this amount by the total acres leased to the Bank by TIFCC (1354.0 acres). The diversion volume limit for TIFCC's rental was calculated to be 4,468.2 AF.

Summary of the maximum extent of TIFCC's recharge rental from the WSB

	Rented Diversion Rate (cfs)	Rented Annual Diversion Volume (AF)	Rental Acres
Rental Totals	85.81 cfs	4,468.2 af	0 ac

Although TIFCC desired to recharge up to the maximum extent permissible during 2019 (4,468.2 af), because they were unable to begin irrigating until the middle of summer, they estimated that they would be limited to recharge of approximately 500.0 af during 2019, which would be equivalent to a lease as follows:

Summary of the maximum extent of TIFCC's recharge rental from the WSB for 2019

	Rented Diversion Rate (cfs)	Rented Annual Diversion Volume (AF)	Rental Acres
Rental Totals	9.602 cfs	500.0 af	0 ac

Buyer, Remington

From: aaron.fmid@myidahomail.com
Sent: Thursday, August 8, 2019 12:30 PM
To: Buyer, Remington
Subject: RE: Teton Island Water Bank Rental
Attachments: Teton Island Feeder Rental Application 8-2019.pdf

Remington,

Thanks for being willing to work with us on this. TIFCC would like to reduce the rental down to around 500 AF this year and see how it goes. They plan to be better set up for the full volume next year. I reduced all the numbers in the application down to about 10% of what they were in the original application. Let's try to push this through as quickly as possible.

Let me know if you have any questions or concerns.

Thanks,

Aaron

From: Buyer, Remington <Remington.Buyer@idwr.idaho.gov>
Sent: Tuesday, August 6, 2019 1:29 PM
To: aaron.fmid@myidahomail.com
Subject: RE: Teton Island Water Bank Rental

Aaron,

Water Supply Bank Rental Agreement 348 authorizes up to 4,738.7 acre feet for recharge in 2019 and 2020. If TIFCC wants to be able to divert up to 4,738.7 acre feet during 2020, but will divert less than 4,738.7 during 2019, we can approve Agreement 348 for 2020 only, and we can approve a different, new rental agreement for 2019. Because the analysis on this rental request has already been completed, I don't foresee that it will take more than a few days to generate a new rental agreement for a 2019-specific rental request.

Here's my recommendation: complete and submit a new rental application to IDWR (emailing it to me is fine) and request a diversion rate and volume for recharge that TIFCC thinks they can successfully recharge during 2019. We'll turn around the rental paperwork as quickly as possible on our end, and provide you with a reduced rental authorization for 2019, likely by the end of August. IDWR will levy a rental fee of \$2/acre foot, so the rental price would be whatever your recharge volume is intended to be, multiplied by \$2.00.

Hope that makes sense. Call on me if you have any questions, else, I'll look forward to receiving from you a reduced rental application for 2019.

Remington
(208) 287-4918

From: aaron.fmid@myidahomail.com [<mailto:aaron.fmid@myidahomail.com>]
Sent: Sunday, August 4, 2019 9:17 PM
To: Buyer, Remington <Remington.Buyer@idwr.idaho.gov>
Subject: Teton Island Water Bank Rental

Hi Remington,

Teton Island Feeder does not think they can recharge the full amount of the rental this year. Can they just rent back a portion of the total amount this year? They are concerned if they pay the full fee they will have trouble breaking even this year.

Let me know what you think.

Thanks,

Aaron