

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 57-11855

PRIORITY: July 09, 1991

Maximum Diversion Volume: 63.6 AF

It is hereby certified that:

ABBY SUTFIN And JEREMY SUTFIN 3393 PURDOM LN HOMEDALE ID 83628

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated March 8, 1991, and has submitted Proof of Beneficial Use on August 13, 1996. An examination confirms water is diverted from:

SOURCE: UNNAMED STREAM TRIBUTARY: SUCCOR CREEK

and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>ANNUAL DIVERSION VOLUME</u>
STOCKWATER FROM STORAGE	01/01 to 12/31	0.2 AF
STOCKWATER STORAGE	01/01 to 12/31	3.4 AF
IRRIGATION FROM STORAGE	03/01 to 11/15	60.0 AF
IRRIGATION STORAGE	01/01 to 12/31	60.0 AF

LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM SW¼NE¼ Sec. 7, Twp 03N, Rge 05W, B.M. OWYHEE County

PLACE OF USE: STOCKWATER STORAGE, STOCKWATER FROM STORAGE and
IRRIGATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	05W	7			X														

PLACE OF USE: IRRIGATION FROM STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	05W	7			12.0														12.0

Total Acres: 12

CONDITIONS OF APPROVAL

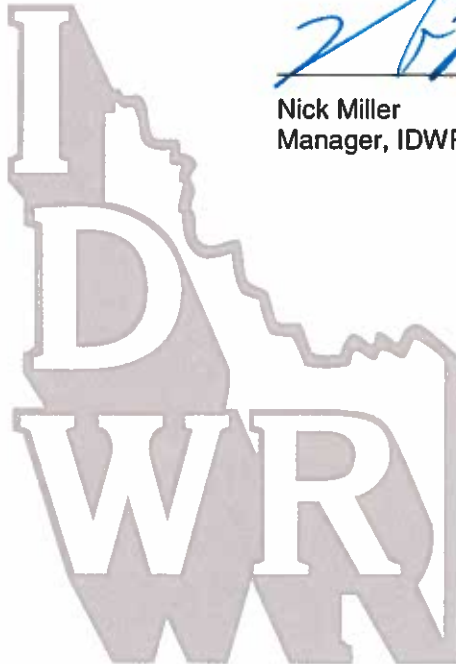
1. The one (1) pond established by the storage of water under this right shall not exceed a total capacity of 2.1 acre-feet or a total surface area of 0.4 acre.
2. This right authorize the storage of an annual total of 63.6 acre-feet, 1.3 acre-feet for the replacement of losses due to seepage and evaporation, and up to 60.2 acre-feet for additional refills for irrigation and stockwater from storage uses.
3. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.

State of Idaho
Department of Water Resources
Water Right License
WATER RIGHT NO. 57-11855

4. This right when combined with all other rights shall provide no more than 5.0 afa per acre for irrigation storage and irrigation from storage for the place of use.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed this 17th day of May, 2016.

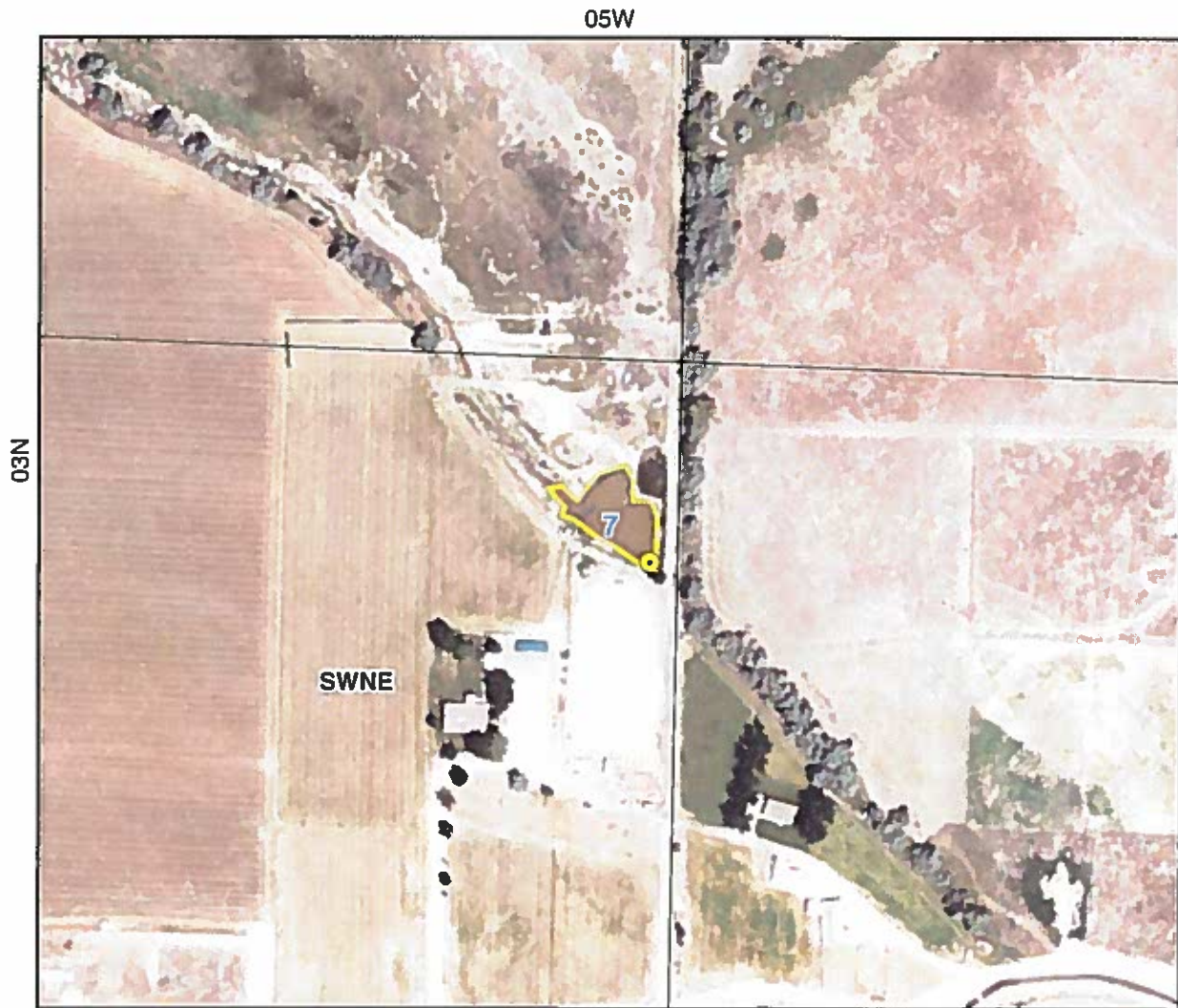


A handwritten signature in blue ink is written over a horizontal line. The signature appears to be 'Nick Miller'.

Nick Miller
Manager, IDWR Western Region

State of Idaho
Department of Water Resources
Attachment to Water Right License
57-11855

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



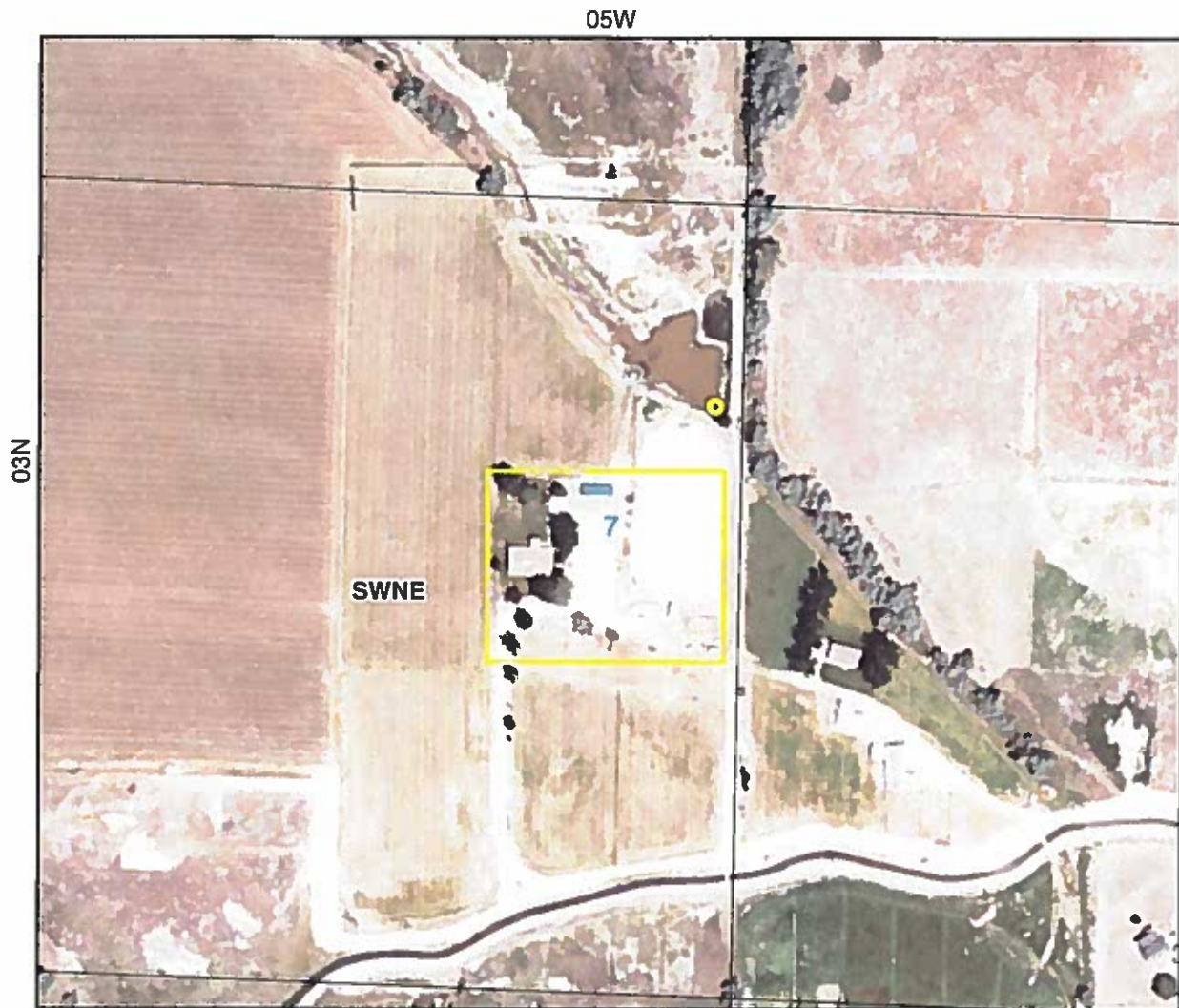
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections

0 0.035 0.07 0.14 Miles



State of Idaho
Department of Water Resources
Attachment to Water Right License
57-11855

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



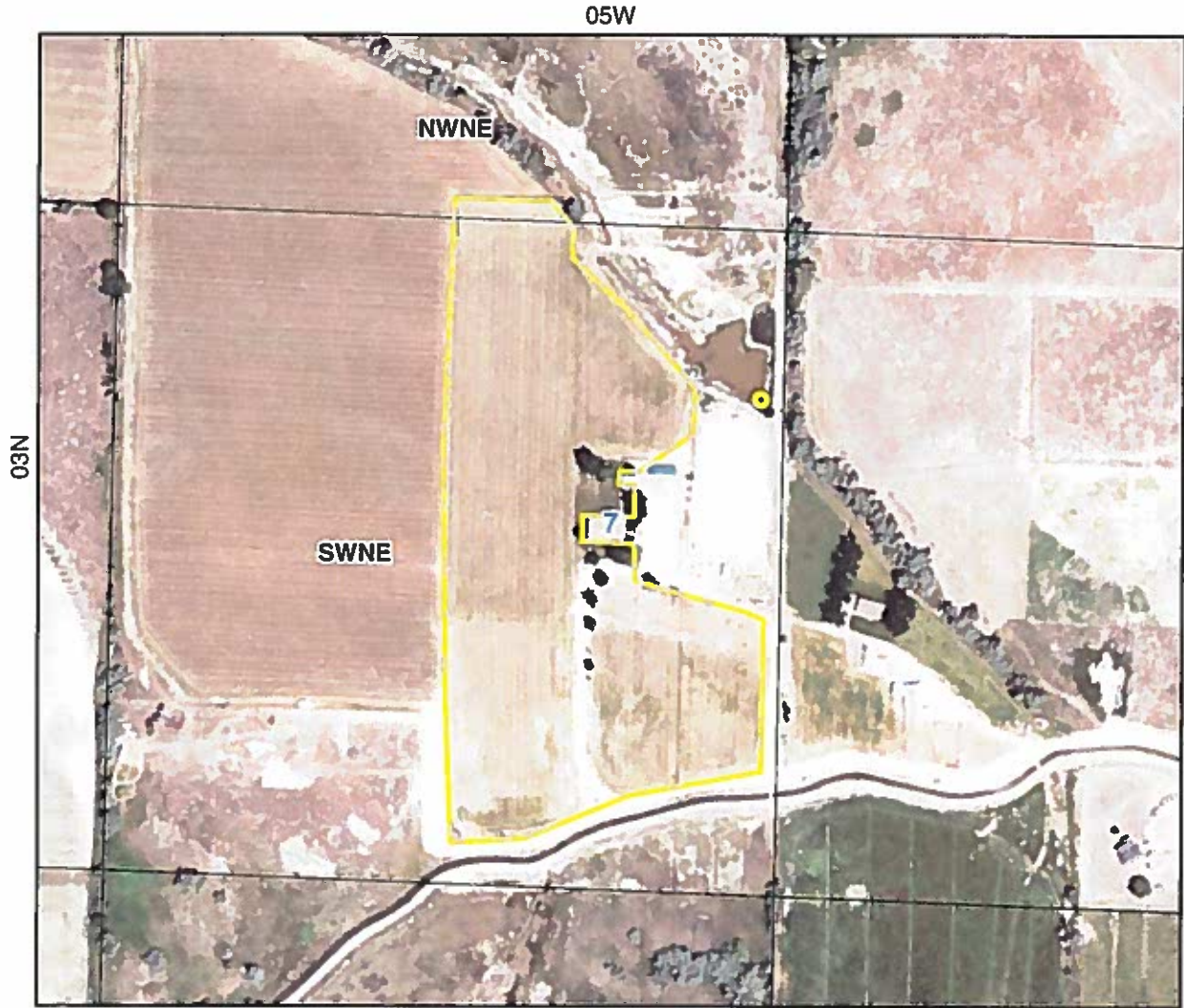
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.035 0.07 0.14 Miles

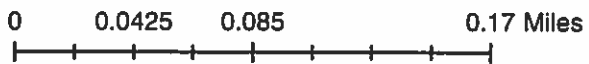


State of Idaho
Department of Water Resources
Attachment to Water Right License
57-11855

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



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



State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 57-11855

RECEIVED

MAY 02 2016

WATER RESOURCES
WESTERN REGION

PRIORITY: July 09, 1991

Maximum Diversion Volume: 63.6 AF

Comes now

ABBY SUTFIN 3393 PURDOM LN HOMEDALE ID 83628 And

JEREMY SUTFIN 3393 PURDOM LN HOMEDALE ID 83628

and represents to the Idaho Department of Water Resources that he is the owner and holder of Permit to Appropriate the Public Waters of the State of Idaho No. 57-11855, and requests that the permit be changed as follows:

SOURCE: UNNAMED STREAM

TRIBUTARY: SUCCOR CREEK

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>ANNUAL DIVERSION VOLUME</u>
STOCKWATER FROM STORAGE	01/01 to 12/31	0.2 AF
STOCKWATER STORAGE	01/01 to 12/31	3.4 AF
IRRIGATION FROM STORAGE	03/01 to 11/15	60.0 AF
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LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM SW¼NE¼ Sec. 7, Twp 03N, Rge 05W, B.M. OWYHEE County

PLACE OF USE: STOCKWATER STORAGE, STOCKWATER FROM STORAGE
and IRRIGATION STORAGE

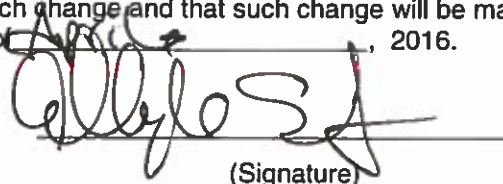
Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	05W	7			X														

PLACE OF USE: IRRIGATION FROM STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	05W	7			12.0														12.0

Total Acres: 12

Permit holder asserts that no one will be injured by such change and that such change will be made at permit holder's own risk. Signed this 28 day of April, 2016.


(Signature)

State of Idaho
Department of Water Resources
APPLICATION FOR AMENDMENT
(For Licensing Purposes)
WATER RIGHT NO. 57-11855

FOR DEPARTMENT USE ONLY

Preliminary check by PK Fee = \$100⁰⁰ Received by CD # W044152 Date 5/2/16

ACTION OF THE DEPARTMENT OF WATER RESOURCES

The Idaho Department of Water Resources hereby approves the above Application for Amendment for Permit No. 57-11855 with the following:

CONDITIONS OF APPROVAL

1. The one (1) pond established by the storage of water under this right shall not exceed a total capacity of 2.1 acre-feet or a total surface area of 0.4 acre.
2. This right authorize the storage of an annual total of 63.6 acre-feet, 1.3 acre-feet for the replacement of losses due to seepage and evaporation, and up to 60.2 acre-feet for additional refills for irrigation and stockwater from storage uses.
3. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
4. This right when combined with all other rights shall provide no more than 5.0 afa per acre for irrigation storage and irrigation from storage for the place of use.

This amendment is issued pursuant to the provisions of Section 42-211, Idaho Code.

Signed this 28th day of April, 2016.
170 MAY



NICK MILLER
Western Regional Manager



State of Idaho

DEPARTMENT OF WATER RESOURCES

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

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

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

May 18, 2016

ABBY SUTFIN
JEREMY SUTFIN
3393 PURDOM LN
HOMEDALE ID 83628

RE: License No. 57-11855

Issuance of License

Dear Water Right Holder(s):

The Department of Water Resources has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review the conditions of approval and remarks listed on your license.

The license is a PRELIMINARY ORDER issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at (208)334-2190.

Sincerely,

Nick Miller
Western Regional Manager

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on May 18, 2016 I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER(Approved License) to the person(s) listed below:

RE: WATER RIGHT NO.

57-11855

**ABBY SUTFIN
JEREMY SUTFIN
3393 PURDOM LN
HOMEDALE ID 83628**



**Rachel Neely
Administrative Assistant**

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.



State of Idaho

DEPARTMENT OF WATER RESOURCES

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

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

April 26, 2016

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

JEREMY AND ABBY SUTFIN
3393 PURDOM LN
HOMEDALE ID 83628

COPY

RE: Water Right Permit No. 57-11855

Notice of Pending Order to Void Permit

Dear Permit Holders:

On August 5, 2014, the Department of Water Resources (IDWR) received the Assignment of Permit form you submitted for Permit 57-11855, which authorized you to establish a right to divert surface water in the SW $\frac{1}{4}$ NE $\frac{1}{4}$, Section 7, Township 3 North, Range 5 West, for irrigation, stockwater and storage purposes. On July 1, 2014 IDWR personnel conducted an examination to verify your water use. It has been reported that you divert stock water and irrigate from the pond on the property described above.

The final step in the water appropriation process is the issuance of a Water Right License. By issuing a license, IDWR recognizes that all the requirements for establishing a water right were met and that the appropriation of water is fully described. On March 30, 2016, IDWR sent a licensing amendment application to accurately describe the use for water right 57-11855. A timeline of 14 days was given to return the document to the Department. As of the date of this letter, no response has been received.

If you believe a water right was developed in accordance with the permit, please sign and return the application for amendment with the \$100 fee to my office. If I do not hear from you within thirty days, I will assume you no longer have any interest in establishing a water right, and I will take action to void the permit.

Please contact me by telephone at 208-334-2190 or by mail at the address on the letterhead.

Respectfully,

Patrick Kelly
Water Resource Agent, Sr.

Enclosure(s): Application for Amendment



State of Idaho

DEPARTMENT OF WATER RESOURCES

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

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

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

March 30, 2016

COPY

JEREMY AND ABBY SUTFIN
3393 PURDOM LN
HOMEDALE ID 83628

RE: Water Right Permit No. 57-11855

Dear Permit Holder(s):

The Department of Water Resources is reviewing the permit(s) referenced above prior to issuing water right license(s). By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit.

The examiner who verified your water use reported that certain elements of the permit(s) have been developed differently than described on your permit(s). Changes that do not increase the authorized use of water under the permit(s) can be requested and approved in accordance with Section 42-211, Idaho Code. Before license(s) can be issued, your permit(s) must be amended to depict your water use as it was actually developed.

Based on the examiner's report, the following elements were developed differently than described on your permit(s):

_____ Point(s) of Diversion

_____ Place(s) of Use

 X Other

The enclosed Application for Amendment form(s) depicts the elements of the water right(s) as they will appear on the license(s) when issued. Please review the amendment form(s) carefully. If you concur with the information presented, please sign and return the form(s) with the \$100.00 filing fee within 14 days.

If you have any questions, please call me at (208) 334-2190.

Sincerely,

Patrick Kelly
Water Resource Agent, Sr.

Enclosure(s): Application for Amendment
cc:

MEMORANDUM

TO: Water Right File – 57-11855
FROM: Patrick Kelly; Sr. Water Resource Agent
DATE: March 30, 2016
SUBJECT: Review of Water Right File for Licensing

Proof of beneficial use was submitted on August 13, 1996 for irrigation and storage use for a combined 1.00 cfs and 4.0 af. A field exam was completed by Vicki Music on July 1, 2014.

After review of the field exam and the water right file, the following changes are recommended for issuing a water right license:

Point of Diversion: An amendment was recommended to add a second POD to 57-11855; one for the damming of water, and a second for the irrigation pump in the pond. This is incorrect, since the water in the pond is already appropriated, we do not acknowledge the irrigation pump because it does not divert directly from a natural source. An amendment will not be sought for this case, and only one POD will be recognized on license.

Diversion Volume: Stockwater Storage = $12 \text{ g/h/d} * 15 \text{ mixed stock} = 180 \text{ gpd} = 0.2 \text{ afa}$.

Discussion: The irrigation from storage could be up to 60 af when associated with the 12 acres of irrigated land. The permit limits that use to 4.0 af. This would suggest that much of the irrigation use is coming directly from the unnamed stream. This is likely not the case, since the pond capacity exceeds the 24 hour rule limit. The implied value of the permit (after we remove 12 acres for 57-7533) = $24 \text{ acres} * 3.5 \text{ af/acre} = 84 \text{ af}$. 60 af of that can be used for Irrigation storage and Irrigation from Storage ($12 \text{ ac} * 5.0 \text{ af}$). This leaves 24 af available to still be used for the stockwater purposes and pond capacity.

Vicki assumes a stockwater storage volume of 3.0 af with a surface area of 0.7 ac and a depth of 15 ft. A measurement of the pond using satellite imagery finds a surface area of 0.35 acres. Using the pond calculation under department guidance memo 76, a total capacity with seepage and evaporation of 3.4 af is found. The right will identify 3.4 af capacity covered by stockwater storage and 0.2 af to fill troughs. Pond calculation attached.

The recommendation implies that the full 60 af is removed for irrigation purposes, and the pond capacity and maintenance is covered by the stockwater storage component. An amendment will be required to correct the nature of use.

Recommended Amounts:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Irrigation Storage	01/01 – 12/31		60.0 af
Irrigation from Storage	03/15 – 11/15		60.0 af
Stockwater Storage	01/01 – 12/31		3.4 af
Stockwater from Storage	01/01 – 12/31		0.2 af
	<u>Totals</u>	---	63.6 af

Recommended Amendments: Nature of Use change.

Total Storage Calculations

FILE NUMBER	57-11855
REVIEWER	Patrick Kelly
DATE	3/21/2016

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

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	0.35	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6	"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)	2.1	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. <i>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.</i>
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	52.32	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). <i>Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.</i>
Estimated Seepage Loss (AF)	0.4	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.9	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	55.7	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.

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	57-11855
REVIEWER	Patrick Kelly
DATE	3/21/2016

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: Deer Flat Dam (NWS - 102444)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.53	31	0.00
Feb	0.34	28	9.52
March	1.29	31	39.99
April	2.38	30	71.40
May	3.45	31	106.95
June	3.81	30	114.30
July	4.56	31	141.36
August	3.85	31	119.35
September	3.01	30	90.30
October	1.67	31	51.77
November	-0.14	30	0.00
December	-0.58	31	0.00

Total mm/year = 744.94

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.

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

$$\left(\frac{744.94}{304.8} \right) \times 0.35 = 0.9 \text{ AFA}$$

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	57-11855
REVIEWER	Patrick Kelly
DATE	3/21/2016

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.35	AC.
-------------------------	------	-----

Pond Surface Area (SQ. FT.)	15246	SQ. FT.
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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
--

Convert to GPD	342	GPD
----------------	-----	-----

Total Seepage Loss (AFA)	0.4	AFA
--------------------------	-----	-----

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 <X:\Spatial\Soils\USCS\PondSoils.lyr>. Use "0" if the pond fill relies on the water table.