

MEMORANDUM

TO: Water Right Permit File 37-22769

FROM: Daniel A. Nelson

DATE: January 24, 2020

SUBJECT: Power Record Review

On January 23, 2020, I received the power records for the irrigation pump system from Mr. Powell. I created a spreadsheet to determine the volume of water pumped from the system using the PCC calculation (see attached sheet). During this exercise, I found that the pumps supplied approximately 1 acre foot of water or 0.25 af of water per acre. Mr. Powell performed an ET analysis that shows irrigated wildland pasture has an evapotranspiration (ET) requirement of 1.72 af and sagebrush has an ET value of 0.93 af. I am not sure if this estimates were on a per acre standard or for the entire 3.9 acres. The difference between the ET rates for wildland pasture and sagebrush according to Mr. Powell is 0.79 af.

I also took the opportunity to review the metric data using the ET Viewer on the Department's website. According to our data on the website, it shows that more possible irrigation (CIR) took place in 2015 and 2017 than what was done in 2016. I have always been concerned about working with such a small area, so I also did an analysis on an area that I know was not irrigated, and came up with very similar results when comparing the 3 separate years, but I did see a significantly smaller CIR amount. I also performed another analysis on a pasture that clearly looks like it was irrigated. I found a significant difference in the CIR amounts for this pasture.

My review of this metric data using the ET Viewer confirms my concerns that this area is much too small to do a metric analysis on the 3.9 acres associated with this permit. It also confirms that there is approximately 45 acre feet per acre of difference between the place of use location and the sagebrush location used in my analysis. Mr. Powell stated that there was approximately 0.8 af difference between sagebrush and wild pasture, which suggests that Mr. Powell's comparison was based on per acre amount. Therefore the 0.8 af difference in Mr. Powell's analysis would show approximate 3.12 af difference for the entire 3.9 acres.

The estimated PCC I performed suggests that approximately 1 af of water was diverted in 2016. The ET Viewer analysis suggests that approximately 0.55 af/acre or 2.1 af for the entire 3.9 acres was applied in irrigation water. I am very concerned that the field examiner stated that no irrigation was done in 2015 or 2017, but we clearly seeing higher irrigation rates in those years than what is being shown in 2016.

Taking all of this information into account, I am comfortable saying that water was applied to the 3.9 acres based on the power records supplied by the field examiner, but I don't think we can count on the metric data to estimate the amount of water applied to the ground. Without knowing the exact flow rate of the irrigation system, I am not totally confident in the PCC calculations either, but I do think the PCC calculation is reasonably close to the total volume diverted. Photos show 6 to 8 sprinklers being used, and the type of sprinkler usually has a diversion rate of 1.35 to 9.63 gpm depending on the pressure and nozzle size, and the flow rate used was recommended by the field examiner, and it is within the flow rates needed to operate those sprinklers. I also found that a 5 Hp pump is able to pump approximately 32 gpm with 40 psi and 5 feet of lift, so the flow rate recommended by the field examiner does seem reasonable.

Taking this information into account, I would say approximately 1 af of water was diverted in 2016, which would be approximately 0.25 af per acre. With the volume requirement supplied by Mr. Powell, I don't believe that this diversion rate would provide the 1.72 af of water per acre needed to grow a viable wildland pasture described by Mr. Powell.

37-22769 -- PCC Calculations for Volume

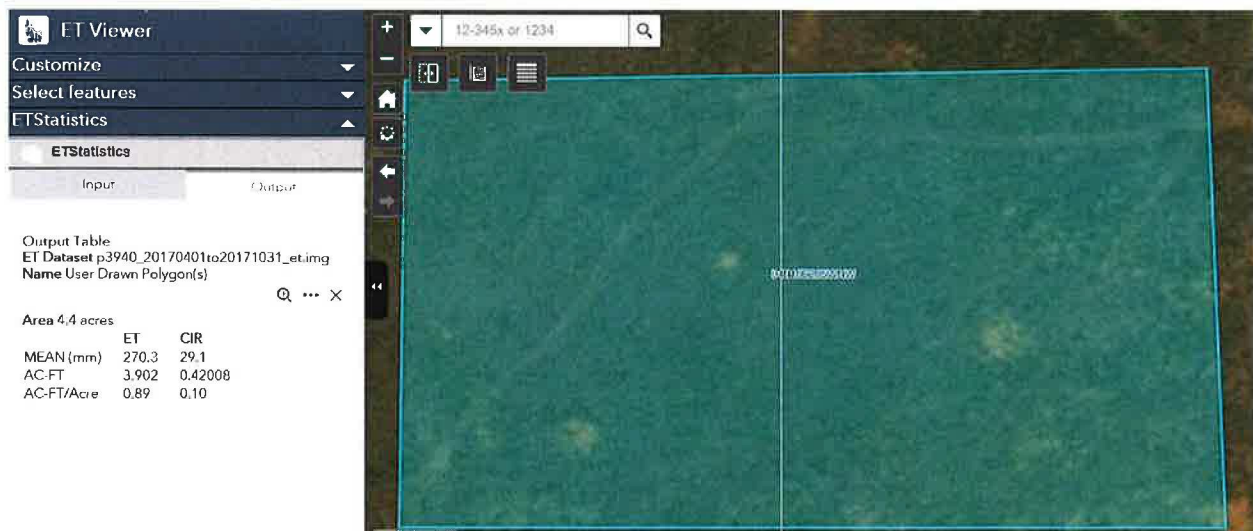
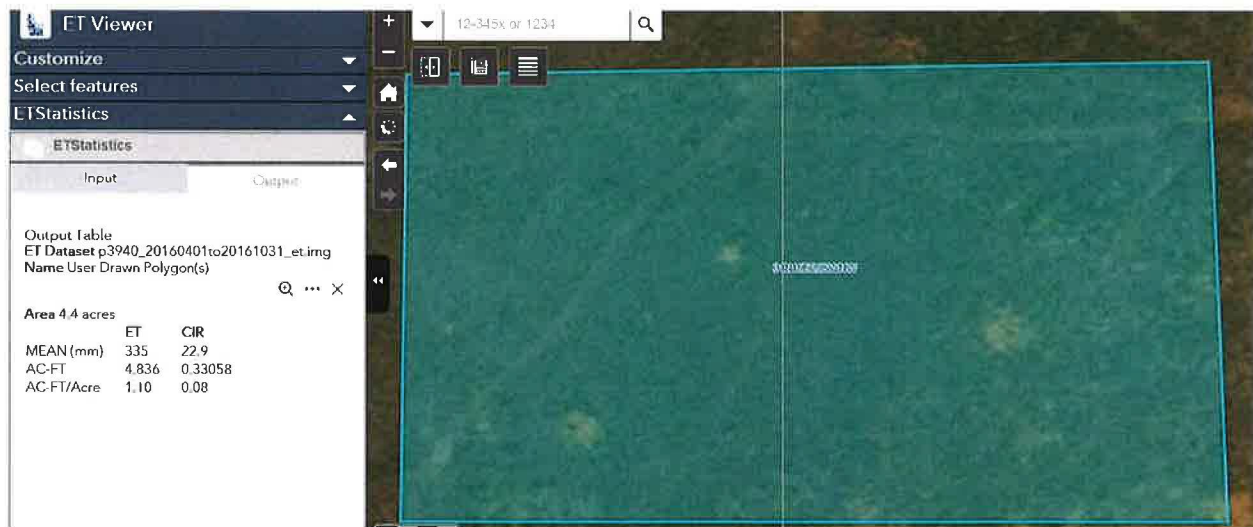
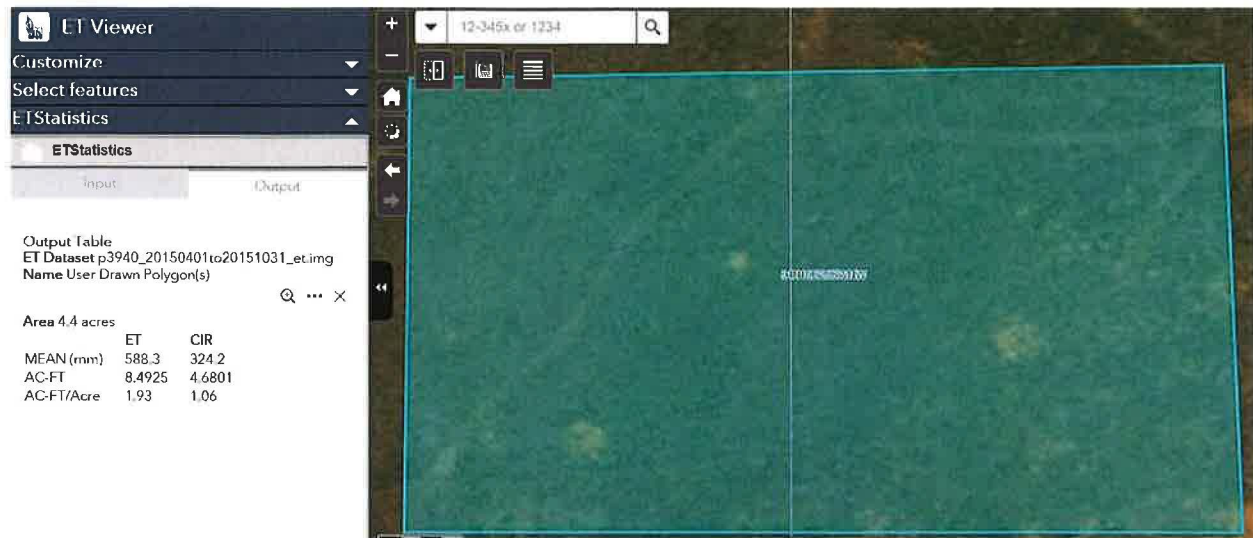
Date	KW	Flow in gpm	KWH	KWH/Ac.ft.	Total AF
5/26/2016	4	31	10	700.77419	0.01427
6/28/2016	4	31	223	700.77419	0.318219
7/28/2016	5	31	142	875.96774	0.162106
8/29/2016	5	31	194	875.96774	0.221469
9/28/2016	5	31	150	875.96774	0.171239
10/27/2016	5	31	94	875.96774	0.10731
TOTAL					0.994614

The field examiner supplied the power records for the irrigation of this project. Using the standard PPC equation that uses the formula $(KWX5431) / GPM = kWh/af.ft.$ Using this formula I also used the recommended diversion rate recommended by the field examiner. Using these formulas, I determined that the total amount of water diverted in 2016 was 1 af for 3.9 acres. The amount of water diverted would be approximately 0.25 af per acre. I still don't feel this is enough water to adequately irrigate this ground for pasture.

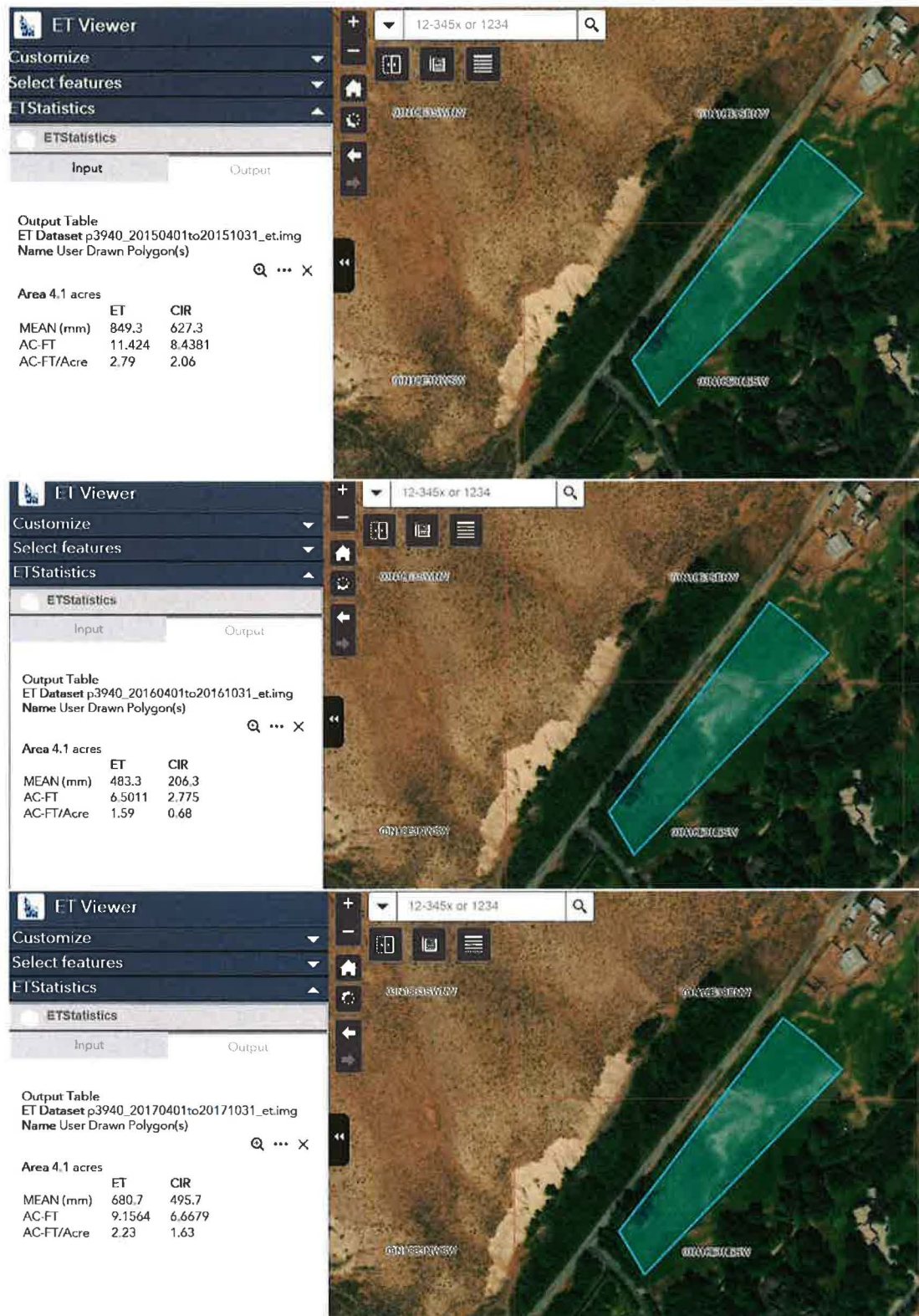
Permit 37-22769 – ET Viewer Review – Place of Use Irrigation.



Permit 37-22769 – ET Viewer Review – Non-Irrigated Field



Permit 37-22769 – ET Viewer Review – Irrigated Field



Nelson, Dan

From: Erick Powell <erick.powell@brockwayeng.com>
Sent: Friday, January 24, 2020 11:09 AM
To: Nelson, Dan; Grimm, Angie
Cc: zach.latham@brockwayeng.com; Keen, Shelley
Subject: RE: Field Report for Permit 37-22769

Hi Dan,

Thanks for the response. Unfortunately, I have no record of a 30-day response period deadline following our 11/22/2019 phone call. We requested additional information from the permittee and provided to IDWR as soon as it was obtained. Please keep me posted on the discussion of the power records and provide us with an amended draft license for our review prior to IDWR issuing a license. Another telephone conference, including Angie and Shelley, may be necessary when we have reviewed the draft license. We would prefer to prevent a petition for reconsideration to the Director.

Regards,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Thursday, January 23, 2020 1:14 PM
To: Erick Powell <erick.powell@brockwayeng.com>; Grimm, Angie <Angie.Grimm@idwr.idaho.gov>
Cc: zach.latham@brockwayeng.com
Subject: RE: Field Report for Permit 37-22769

Hello Erick,

According to my notes from the meeting on the November 22, 2019, we agreed that you would contact the permit holder and have the permit holder provide information that would help us determine the expectations for the irrigation in 2016. We also suggested that you supply the amount of time they irrigated and how often they irrigated. We gave you 30 days to supply that information from the date of that meeting. When no information was received I completed a draft license without the irrigation use included and submitted it for final review. The final review is still taking place and additional analyzing the information you submitted is being worked on. I will make sure the attachment you sent with this email is included in the documentation. We will discuss this new information and make a determination on how to proceed from here.

Respectfully,

Daniel Nelson
Water Right Analyst 3
Idaho Department of Water Resources
Telephone (208) 287-4856
Fax (208) 287-6700 (attn: Dan Nelson)

From: Erick Powell [<mailto:erick.powell@brockwayeng.com>]
Sent: Thursday, January 23, 2020 11:56 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>; Grimm, Angie <Angie.Grimm@idwr.idaho.gov>
Cc: zach.latham@brockwayeng.com
Subject: RE: Field Report for Permit 37-22769

Dan and Angie,

It has been over two months since we discussed water right permit no. 37-22769. We are unsure at where we are in the licensure process. As I recall, IDWR did not have questions regarding the pond, but did question the irrigation use that occurred in 2016.

We previously provided photographic evidence of irrigation occurring in 2016. We have testimony of the permittee and Zach Latham, Brockway Engineering, who witnessed the irrigation occurring. We provided METRIC data for 2016, that showed this area had higher CU than other native ground. Yesterday, we received power records for the Idaho Power meter that is attached to the pump. The irrigation pump is the only power use on this meter. The 2016 records show that the pump was used in May, June, July, August, September and October. All of this evidence supports irrigation beneficial use.

Please provide us an update on where we are in the process, so we can inform the water right permit holder.

Thanks,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Monday, November 18, 2019 8:28 AM
To: Erick Powell <erick.powell@brockwayeng.com>
Subject: RE: Field Report for Permit 37-22769

Sounds good. We are looking forward to the call. I also want to let you know that Shelley may not be able to attend. He has a number of meetings scheduled with the Regional Manager's this week.

Dan Nelson

From: Erick Powell [<mailto:erick.powell@brockwayeng.com>]
Sent: Monday, November 18, 2019 8:22 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Subject: RE: Field Report for Permit 37-22769

Our office number is 208-736-8543.

Thanks,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Monday, November 18, 2019 7:06 AM
To: Erick Powell <erick.powell@brockwayeng.com>
Subject: RE: Field Report for Permit 37-22769

Hello Erick,

I have received confirmation back from my supervisor Angie Grimm, but I haven't heard back yet from Shelley. At this point, Angie and I will meet with you at 10:30 this Friday, November 22, 2019. We will call your office. What number would you like us to call?

Dan Nelson

From: Erick Powell [<mailto:erick.powell@brockwayeng.com>]
Sent: Friday, November 15, 2019 10:57 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Subject: RE: Field Report for Permit 37-22769

Dan,
Friday, 11/22 at 10:30 am works for me. I will plan on that.
Thanks,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Friday, November 15, 2019 10:48 AM
To: Erick Powell <erick.powell@brockwayeng.com>
Subject: RE: Field Report for Permit 37-22769

Erick,

I just got lucky. Angie said she was good with a meeting between with you. Everyone's schedule is pretty full next week, but we have time at 10:30 am on Friday the 22nd. The next earliest meeting time available would be the afternoon (2:00 to 3:00) of Wednesday the 27th. If these two dates don't work, I will look into December to see if we can't find some time when everyone is free.

Dan Nelson

From: Erick Powell [<mailto:erick.powell@brockwayeng.com>]
Sent: Friday, November 15, 2019 10:33 AM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Cc: zach.latham@brockwayeng.com
Subject: RE: Field Report for Permit 37-22769

Dear Dan,
Thank you for your message and comments. I would prefer to use our numbers for the pond volumes, because I know where they came from. Your pond spreadsheet references the Twin Falls 2 NNE station, and we would not want this station to be used as the source for evaporation for this permit.

As for the irrigation recommendation, I'm having difficulty understanding your position. You state that "the Department generally does not recognize water natural/native vegetation as an irrigation beneficial use..." and "have a system installed and usable doesn't constitute a beneficial use." This is contrary to numerous cases that we are aware of or have been involved with in the past. IDWR has never required cultivation or planted seed to be considered irrigation, and I was unable to find that definition in the IDAPA rules or code. Natural/native vegetation is irrigated throughout the State, and IDWR always requires a water right to perform irrigation of native and/or cultivated vegetation. It should also be noted that beneficial use of irrigation does not require harvesting, grazing, or selling of the vegetation growth, otherwise everyone's lawns would not be considered irrigation.

To give you additional data, I compared the 2016 METRIC ET values of this area with the ET Idaho estimates. The April 1 through October 31, 2016 METRIC ET data (Path 39 and 40) shows that this area had 1.63 ft of ET. The Actual ET estimate based on ET Idaho (Ketchum RS) for low maintenance pasture grass is 1.72 ft, where the actual ET for sagebrush is 0.93 ft. Based on this comparison, I conclude that the area more adequately reflects low maintenance pasture (which is irrigated) rather than sagebrush.

Would you like to set up a conference call with you, your supervisor, and Shelley Keen to discuss this further? Please let us know how you would like to proceed, thank you for your time and assistance.

Regards,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Sent: Wednesday, November 13, 2019 3:46 PM
To: Erick Powell <erick.powell@brockwayeng.com>
Subject: RE: Field Report for Permit 37-22769

Hello Erick,

I met with my supervisor regarding the irrigation recommendation that evidence of irrigation you supplied, and we both agree that we need more to show actual irrigation. In speaking with my supervisor, she told me we should send out request for clarification letter. I have attached a copy of the letter with this email, and the original will go out in the mail tomorrow morning.

I went over the calculations you sent for the wildlife, recreation, and aesthetic uses, and I believe they are reasonable. I will apply these volumes to these uses. Using our standards, I used a different ET station to calculate the evaporation and came up with a different evaporation volume. I have included one of our pond spreadsheets to show my calculations. Please let me know if you want to use my calculations or if you want to use yours. Either one is acceptable, but mine gives them a bit more volume for the storage components.

If you have any questions, please don't hesitate to contact me.

Respectfully,

Daniel Nelson
Water Right Analyst 3
Idaho Department of Water Resources
Telephone (208) 287-4856
Fax (208) 287-6700 (attn: Dan Nelson)

From: Erick Powell [<mailto:erick.powell@brockwayeng.com>]
Sent: Tuesday, November 12, 2019 4:13 PM
To: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>
Cc: zach.latham@brockwayeng.com
Subject: RE: Field Report for Permit 37-22769

Hi Dan,

Thanks for your email. The annual volumes associated with wildlife, recreation, and aesthetic uses are unclear to us, because of the different approaches that IDWR has used to license/recommend pond water rights in the past. I appreciate your clarification on this issue – as we want to conform with the current IDWR approach on this license of the pond.

Total volume diverted: 50.5 acft (Continuous flow rate of 0.07 cfs)
Pond Storage: 1.5 acft (although the pond is full)

Evaporation: 0.4 acft

Seepage: 0 acft (lined pond)

Irrigation Volume: 13.7 acft (3.9 acres with maximum irrigation diversion volume allowed of 3.5 ft/acre)

Volume for Wildlife, Recreation, and/or Aesthetic Uses: 34.9 acft

You are correct that there is a pipeline that allows water to flow through the pond and the narrative discusses this set up. Please do not hesitate to contact us if you have further questions.

Regards,
Erick

From: Nelson, Dan <Dan.Nelson@idwr.idaho.gov>

Sent: Tuesday, November 12, 2019 10:27 AM

To: Erick Powell <erick.powell@brockwayeng.com>

Subject: Field Report for Permit 37-22769

Hello Erick,

I just did an initial review of the field report for permit 37-22769. In this quick review, I discovered that you didn't include a volume for the wildlife, recreation, and aesthetic uses. A volume is required for these uses. The volume associated with these uses is for water flowing through the ponds to keep the ponds fresh. We generally calculate this volume as follows:

Total Volume Diverted – Pond Storage including Evaporation and Seepage – Irrigation Volume = Water Flowing Through the Ponds for Wildlife, Recreation, and Aesthetic Uses.

My initial review of the aerial photos you supplied don't suggest any water flowing through the ponds, but there could be a pipeline there that I can't see from the aerial imagery. I want to give you a chance to correct this as I start to go through the information you provided.

Respectfully,

Daniel Nelson
Water Right Analyst 3
Idaho Department of Water Resources
Telephone (208) 287-4856
Fax (208) 287-6700 (attn: Dan Nelson)



Premise Billing History

1/16/2020

To: LINDA OCONNOR / ACCOUNT#2221803881

Re: 708 E FORK RD HAILEY ID 83333

Read Date	Days	Rate	KW Demand	KWH Usage	Amount
11/29/2016	33	I01	0	0	\$ 5.20
10/27/2016	29	I01	5	94	\$ 13.86
09/28/2016	30	I01	5	150	\$ 19.07
08/29/2016	32	I01	5	194	\$ 24.30
07/28/2016	30	I01	5	142	\$ 19.18
06/28/2016	33	I01	4	223	\$ 26.82
05/26/2016	28	I01	4	10	\$ 6.08

If you have any questions, please call our business office at 1-800-488-6151.

Thank you.

Idaho Power Co
Customer Service Center

Po Box 70 (83707)
1221 W Idaho St.
Boise, ID 83713