

Anderson, Chris (ECY)

From: Larry Martin [larrym@halversonlaw.com]
Sent: Sunday, June 10, 2007 5:50 AM
To: Carron Helberg
Cc: Paul Dempsey
Subject: FW: Greene Acreage Irrigable from Teanaway Ridge WaterRightTransfer

Carron:

Can you please forward the email exchange below out to the WTWG. We plan on amending our Court Order to reflect the numbers worked out below.

Thanks,

Larry Martin

-----Original Message-----

From: Stan Isley [mailto:sisley@pn.usbr.gov]
Sent: Friday, June 08, 2007 5:16 PM
To: Paul Dempsey
Cc: Larry Martin
Subject: RE: Greene Acreage Irrigable from Teanaway Ridge WaterRightTransfer

6-08-07

Hi Paul;

I think your logic is impeccable. I agree with your conclusions with only one minor change:

I do think you transposed one number, leading to a VERY minor error. In 2. below, you came up with the 108.93 af of total annual CU allowing flood irrigation of 41.01 acres of timothy hay on the Greene property from May 1 through Sept 15 each year (2008, et seq.).

I think that should be 41.10 acres of Clover/Timothy Hay on the Greene property from May 1 - Sept. 15 each year, flood irrigated.

My calculation:

From the text below, 43.31 acres of pasture/turf can be flood irrigated for the full May 1 - Sept. 15 irrigation season with the 108.93 af/yr of total CU. Then, dividing that acreage (43.31 acres) by the 0.949 conversion factor (Timothy Hay requires a little more water than pasture/turf), I got 41.10 acres of Timothy Hay that can be flood irrigated for the full May 1 - Sept. 15 irrigation season each year at Ellensburg.

I think your client's entitled to flood irrigate 41.10 acres in 2008, et seq.

Let me know if I can help further Paul. Take care - and good work.

Stan
(509) 575-5848, ext. 281

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>>> "Paul Dempsey" <pdempsey@halversonlaw.com> 6/8/2007 2:37 PM >>>
Stan,

Sorry for the delay in getting back to you regarding the Consumptive Use issue under the proposed transfer of the former Bugni right.

We've gone over your work and generally concur with you. I plan to prepare a revised, proposed Order for the court, which would include the acreage limitations as you've specified for flood irrigation of Timothy hay at the downstream location, to wit:

1. For the balance of 2007 (i.e., commencing June 15 and continuing through September 15), 97.8 acre feet for irrigation of 47.65 acres of Timothy hay. [2.05 acre-feet/acre CU]
2. For the entire 2008 irrigation season (May 1 through September 15) and any subsequent seasons under the temporary order, 108.93 acre feet for irrigation of 41.01 acres of Timothy hay. [2.66 acre-feet/acre CU]

Stan, just so we're on the same page, I don't think you provided a full-season acreage number for flood irrigation of Timothy hay, but I generated that number based on your 0.949 conversion factor from pasture turf to clover/hay. Please confirm that I'm correctly interpreting this.

Give me a call or send a confirming email by early next week. Otherwise, I'll assume everyone is good to go for the June 14 Oversight Hearing.

Best,

Paul

-----Original Message-----

From: Stan Isley [mailto:sisley@pn.usbr.gov]
Sent: Monday, May 21, 2007 9:26 PM
To: Larry Martin; Paul Dempsey
Subject: Greene Acreage Irrigable from Teanaway Ridge Water Right Transfer

5-21-07

Hi Paul, Larry;

I just spent a couple of hours calculating (estimating) the consumptive use (CU) water amount that is embodied in the Teanaway Ridge water right and how many acres that transferable CU amount will irrigate on the Greene property on the Olson Ditch via the Ellensburg Water Company canal. I can fax you a copy of my calculation notes and worksheet if you want. Let me know. My scribbles are probably not too decipherable without the Rosetta Stone though, but I'd still be happy to share them with you.

Summary of my findings/estimates:

- Transferring the Teanaway Ridge water right from the Teanaway subbasin (1.52 cfs, 304 af/yr, for irrigation of 76 acres of flood-irrigated pasture) for the whole May 1 - September 15 authorized season of use, provides:
a transferable CU water amount of 108.93 af/yr for use on the Greene property.

This is based on the Washington Irrigation Guide (WIG) crop irrigation water requirement (CIR) of 18.11 inches/acre for pasture/turf at Cle Elum (actual CIR is in June, July, August, and September), less the last half of September CIR of 1.73 in/acre, which is outside the water right's season of use. Therefore, 1.73 inches/acre of CIR are not available to Teanaway River water rights to use. 18.11 in./acre minus 1.73 in./acre = 16.38 inches/acre CIR divided by 12 inches per foot and times 76 acres totals 103.74 af/yr CIR. Then times 1.05 (i.e., adding a 5% evaporative loss associated with the historic flood irrigation) yields 108.93 af/yr (May 1 - Sept 15) of transferable total CU water from the Teanaway Ridge water right.

NOW to calculate the CU per acre for the Greene property on the Olson Ditch:

First, I did a standard WIG CIR analysis for pasture/turf at Ellensburg

from May 1 - Sept. 15th.

[PLEASE NOTE: the irrigation on the Greene property with this Teanaway Ridge water right will be limited to the same May 1 - Sept. 15 season of use as the Teanaway Ridge water right has.]

I estimate the pasture/turf CIR for the Greene property from May 1 - Sept. 15 is 28.74 inches/acre. [This is approximately 91.4% of the WIG full irrigation season CIR estimate of 31.46 in/acre at Ellensburg.]

If the Greens flood irrigate their pasture, we must add a 5% evaporative loss as follows:
 $28.74 \text{ in/acre} \times 1.05 = 30.18 \text{ in/acre}$ total CU for pasture/flood from May 1 - Sept 15 (divided by 12 inches per foot = 2.515 ft/acre).

If the Greens sprinkler irrigate their pasture, we must add a 10% evaporative loss as follows:
 $28.74 \text{ in/acre} \times 1.1 = 31.61 \text{ in/acre}$ total CU for pasture/sprinkler from May 1 - Sept 15 (divided by 12 inches per foot = 2.6341666 ft/acre).

Therefore, if 108.93 af total CU are transferable from the Teanaway to the Greene property (May 1 - Sept 15), then:

- 43.31 acres of pasture/turf may be flood irrigated on the Greene property from May 1 through September 15, consuming 2.515 af/acre of CU water. [$2.515 \times 43.31 = 108.93$ af total CU.]
- Or, 41.35 acres of pasture/turf may be sprinkler irrigated on the Greene property from May 1 - Sept 15, consuming 2.6341666 af/acre of CU water. [$2.6341666 \times 41.35 = 108.93$ af total CU.]

HOWEVER, if the transfer is not approved by the Yakima Adjudication Court until June 14, 2007 and irrigation commences on the Greene property on June 15th, then only the June 15 - Sept 15 portion of the Teanaway Ridge "run-of-the-river" water right is transferable for irrigation use on the Greene property. Subtracting the Teanaway Ridge water right's CU water quantity that's attributable to the first half of June (11.10 af) means 97.83 af total CU ($108.93 - 11.10 = 97.83$) are transferable to the Greene property for irrigation from June 15 - Sept 15.

Subtracting the CIR for May and the first half of June (which total 6.47 in/acre) from the Greene property's CIR for May 1 - Sept 15 (28.74 in/acre) leaves 22.27 inches/acre CIR for pasture/turf from June 15 - Sept 15 on the Greene property.

If the Greens flood irrigate their pasture, we must add a 5% evaporative loss as follows:
 $22.27 \text{ in/acre} \times 1.05 = 23.38 \text{ in/acre}$ total CU for pasture/flood from June 15 - Sept. 15 (divided by 12 inches per foot = 1.9483333 ft/acre).

If the Greens sprinkler irrigate their pasture, we must add a 10% evaporative loss as follows:
 $22.27 \text{ in/acre} \times 1.1 = 24.50 \text{ in/acre}$ total CU for pasture/sprinkler from May 1 - Sept 15 (divided by 12 inches per foot = 2.0416666 ft/acre).

Therefore, if 97.83 af total CU from June 15 - Sept 15 are transferable from the Teanaway to the Greene property, then:

- 50.21 acres of pasture/turf may be flood irrigated on the Greene property from June 15 through September 15, consuming 1.9483333 af/acre of CU water. [$1.9483333 \times 50.21 = 97.83$ af total CU.]
- Or, 47.92 acres of pasture/turf may be sprinkler irrigated on the Greene property from June 15 - Sept 15, consuming 2.0416666 af/acre of CU water. [$2.0416666 \times 47.92 = 97.83$ af total CU.]

Finally, from comparing the Clover (Timothy) CIR to the pasture/turf CIR

in the WIG at the Ellensburg climatic station, I've established that the Clover/Timothy crop total CU is 1.054 times the pasture/turf total CU.

So, if the Greenes are irrigating Clover/Timothy on their property instead pasture/turf (all the acreage calculations above are based on pasture/turf), then the Clover/Timothy acreage that can be irrigated is just 0.949 times the pasture/turf acreage that can be irrigated on the Greene property.

For instance, if the Greenes are irrigating Clover/Timothy, and their transfer authorization for the Teanaway Ridge water right is approved by the Court on June 14th and they start flood irrigating on June 15th, they will have 97.83 af of total CU water to consume on their acreage on the Olson Ditch. This 97.83 af of total CU water would supply the total CU water for 50.21 acres of pasture/turf. But they are irrigating Clover/Timothy, which takes a little more CU water per acre. So, the adjustment needed is to multiply the 50.21 acres of pasture/turf times 0.949, which yields a total of 47.65 acres of Clover/Timothy that the Greenes can irrigate from June 15 - Sept 15 with their 97.83 af of transferred total CU water.

This ratio holds for converting all of the pasture/turf scenarios to Clover/Timothy.

Well, I hope this e-mail gives you enough information to finish up your calculations for this transfer, once you find out what crop the Greenes are irrigating (pasture/turf or Clover/Timothy) and whether they flood irrigate (5% evap. loss) or sprinkler irrigate (10% evap. loss).

Let me know if you have any questions. Take care.

Stan
(509) 575-5848 ext. 281