



Bryce Contor <bcontor.uidaho@gmail.com>

Water budget considerations

8 messages

Bryce Contor <bcontor.uidaho@gmail.com>**Wed, Jun 9, 2010 at 5:18 PM**

To: Allan Wylie <allan.wylie@idwr.idaho.gov>

Cc: Stacey Taylor <taylsl@if.uidaho.edu>, Rick Raymondi <Rick.Raymondi@idwr.idaho.gov>

Allan -

Regarding the unexpectedly high heads in your last modeling run, here's what we've been able to discover on our end, for P100527A, P100604A and P100608A. Of these we think P100608A is the most reliable. They differ only in treatment of non-irrigated recharge.

1) If we have understood Willem's output correctly, the following are within reason:

- a) ET on irrigated lands
- b) Diversions to SW irrigated lands
- c) Irrigated acreage
- d) Canal seepage

However at this level of analysis a discrepancy of +/- 1,000,000 acre feet per year could be hiding in these values. This is about 20% of net spring discharges and reach gains.

2) If we understand Willem's output correctly, non-irrigated recharge is about 2x to 3x the ESPAM1.1 levels. This is odd because P100608A should use ESPAM1.1 algorithms. The potential difference approaches 1,000,000 acre feet per year.

3) We haven't yet determined the impact of precipitation on irrigated lands from Willem's output. In round figures this could approach 1,000,000 acre feet per year also.

4) Perched river seepage is about 2x the ESPAM1.1 levels, but because of changes in calculations in the Big Wood this may be offset by reduction in reported diversion volume in IESW059. If not offset, this is a potential difference of 200,000 - 300,000 acre feet per year.

5) Fixed-point pumping is less in the new budgets by about 70,000 acre feet per year.

6) Tributary underflow and offsite pumping are about the same as ESPAM1.1 levels.

7) Your targets looked reasonable to me -

- a) Above Milner, average net discharge from aquifer to river of 1,100,000 acre feet per year or 1,600 cfs
- b) Kimberly to King Hill, average discharge from aquifer of 4,100,000 acre feet per year or 5,700 cfs.

I didn't look further than this in your targets.

We still want to better understand Willem's output. While overall irrigation results made sense, some individual entities had very odd results. Also we were working from a run where I had not turned on the On-Farm algorithm, due to ignorance in running the tool.

While there are a few differences that all seem to point to more water than in ESPAM1.1, I haven't found anything that looks like a smoking gun. It seems like a combination of a few feet of head change, a slight increase in transmissivity and perhaps not hitting the spring targets right on the head would accommodate the water-budget differences we see.

Bryce

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Wylie, Allan <Allan.Wylie@idwr.idaho.gov>
To: Bryce Contor <bcontor.uidaho@gmail.com>

Mon, Jun 14, 2010 at 8:59 AM

I think I found my problem last weekend, it was in a conversion factor I was using.

Allan

From: Bryce Contor [mailto:bcontor.uidaho@gmail.com]
Sent: Wednesday, June 09, 2010 5:19 PM
To: Wylie, Allan
Cc: Stacey Taylor; Raymondi, Rick
Subject: Water budget considerations

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Bryce Contor <bcontor.uidaho@gmail.com>

Mon, Jun 14, 2010 at 9:25 AM

To: "Wylie, Allan" <Allan.Wylie@idwr.idaho.gov>
Cc: Stacey Taylor <taylsl@if.uidaho.edu>, Rick Raymondi <Rick.Raymondi@idwr.idaho.gov>

I'm glad you found it. On this end we're getting closer to being able to quickly visualize the spatial distribution, time distribution and average magnitude of all the water-budget components.

Bryce

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Bryce Contor <bcontor.uidaho@gmail.com>

Tue, Jun 15, 2010 at 9:25 AM

To: "Wylie, Allan" <Allan.Wylie@idwr.idaho.gov>
Cc: Stacey Taylor <taylsl@if.uidaho.edu>, Rick Raymondi <Rick.Raymondi@idwr.idaho.gov>

Allan -

Does this mean you are not using the water-budget packages as we send them? For instance, when we sent you P100608A, I assumed you would use every file in the folder exactly as we sent it. We make sure they run in MKMOD4 before we send them, and assume the multipliers etc. will be all derived from the files as we presented them to MKMOD4.

If this is not so, please let me know. We want to be able to assess the water budgets as you are using them.

Thanks,

Bryce

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Wylie, Allan <Allan.Wylie@idwr.idaho.gov>
To: Bryce Contor <bcontor.uidaho@gmail.com>

Tue, Jun 15, 2010 at 9:46 AM

Bryce

I am now using the raw output from mkmod4. I was previously converting the well files into recharge arrays, and was using the same conversion factor for the monthly as for 6mo. My bad. I am now using the well file.

Allan

From: Bryce Contor [mailto:bcontor.uidaho@gmail.com]
Sent: Tuesday, June 15, 2010 9:25 AM
To: Wylie, Allan
Cc: Stacey Taylor; Raymondi, Rick
Subject: Re: Water budget considerations

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Bryce Contor <bcontor.uidaho@gmail.com>
To: "Wylie, Allan" <Allan.Wylie@idwr.idaho.gov>

Tue, Jun 15, 2010 at 9:57 AM

OK. So you are not modifying the input files, nor providing additional files (such as a separate table of PEST multipliers?) that would affect our summarization of the water budget?

Thanks,

B

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Wylie, Allan <Allan.Wylie@idwr.idaho.gov>
To: Bryce Contor <bcontor.uidaho@gmail.com>

Tue, Jun 15, 2010 at 11:07 AM

No, I am not modifying anything now.

From: Bryce Contor [mailto:bcontor.uidaho@gmail.com]
Sent: Tuesday, June 15, 2010 9:57 AM
To: Wylie, Allan
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Bryce Contor <bcontor.uidaho@gmail.com>
To: "Wylie, Allan" <Allan.Wylie@idwr.idaho.gov>

Tue, Jun 15, 2010 at 11:11 AM

Que Bueno. Thanks.

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