

Engelhaupt, David [KDA]

From: Barfield, David
Sent: Thursday, July 13, 2017 2:35 PM
To: Orrin Feril
Cc: Letourneau, Lane; Beightel, Chris; Lanterman, Jeff
Subject: FW: Additional explanation on Quivira slides
Attachments: ReductionEvaluated_FromQuiviraJuly2017meeting.pdf

Orrin,

At last week's meeting there were questions regarding the pumping reductions in DWR's future model runs used to estimate the effect of various levels of pumping reductions on future streamflows. Below is a explanation of the numbers provided on slide on the bottom half of page 6 of the PowerPoint (see attached):

- The acres and average pumping in the parenthetical that is part of the description of each zone are based on average acres irrigated and average water use for 2003-2012 period within each zone. These values were provided for reference.
- The average reductions listed in each bullet represent the average reduction in **NET** pumping for each of our future model runs evaluating the effect of future reductions in use. As we understand it, Balleau's "Baseline A" future pumping was based on 1991-2007 irrigated acres and irrigation efficiencies projected into the future based on a repeat of the 1940-2007 climatic conditions. As irrigation returns flows average approx. 14-15% for the future simulation; gross pumping reductions would average approx. 15% higher than shown.

As it turns out, average pumping in the Balleau futures are virtually the same as the 2003-2012 average pumping.

We are working on a refinement to our zone map that will address your questions on the negative values on the edges of the map. More on this when we complete the refinement. The principle effect will be on the fringes; we do not believe this refinement will effect Zones A and B much.

Let us know if you have any further questions. I have a 3:00 call coming up. I will try to call you before or after.

David

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What level of pumping reductions would be required to stabilize the groundwater flows?

- We reviewed the benefit of pumping reductions of 10, 20 and 30% within two zones.
 - **Zone A** – area of 10% or greater long-term impact (approx. 135,000 acres with 160,000 AF of average pumping).
 - 10% reduction, averaging 13,500 AF
 - 20% reduction, averaging 27,000 AF
 - 30% reduction, averaging 40,700 AF
 - **Zone B** – area of 20% or greater long-term impact (approx. 85,000 acres with 100,000 AF of average pumping).
 - 10% reduction, averaging 8,500 AF
 - 20% reduction, averaging 17,000 AF
 - 30% reduction, averaging 25,500 AF