From: Bob Siegfried
To: Berbach, Martin@DWR
Cc: Brostrom, Peter@DWR
Subject: RE: comments on final draft / 2
Date: Sunday, January 25, 2015 9:13:11 PM

Marty,

One bit I overlooked: The request for percolation rates is not meaningful without specification of the quality of the infiltrating water. Multiple orders of magnitude differences in infiltration rates can be attributed to water quality interaction with a soil. This observation is relevant to irrigation with recycled water. The decrease in infiltration rate is an effect of damage to soils by most recycled waters produced in this state. The damage is not entirely reversible. Infiltration rates approaching zero are also characteristic of unamended California Aqueduct water and other surface waters derived from the Sierras. Again, reduced infiltration rates are an effect of soil structural damage caused by water quality.

Requesting total cation concentration, sodium adsorption ratio and the soil series will give you enough information to make the infiltration rate data you collect useful in future.

The soil series is important because series containing free lime will be less susceptible to structural degradation, at least until the lime in the surface few millimeters is leached. In these cases, the combination of lime soil and low infiltration indicate the lime is no longer available in sufficient concentration to compensate for water quality effects.

Bob

On Jan 23, 2015 8:40 AM, "Berbach, Martin@DWR" <Martin.Berbach@water.ca.gov> wrote:

> Thank you Bob!
>
> Marty
>
> -----Original Message-----
> From: Bob Siegfried [mailto:robtsiegfried@gmail.com]
> Sent: Friday, January 23, 2015 2:37 AM
> To: Berbach, Martin@DWR
> Subject: comments on final draft
>
> Marty,
>
> I'm filing comments on the final draft Andria sent out recently. This is precautionary in case I don't make the meeting.
>
> Hopefully, somebody will be watching for comments being typed in. My communications setup is a bit challenged.
>
> Comments:

Section II, A, 3 - Terrain and soils: This section along with Worksheet 7 should be revised to be hydraulically meaningful. Rather than fill out boxes, the districts should be strongly encouraged to file soil survey maps. (More so than in the guidance on page 49.) Then DWR will have meaningful data on limiting soil horizons, infiltration rates and soil water holding capacity. Much work is being carried out on digital soil mapping, beyond SoilWeb. "Percolation rate" should be should be "Infiltration rate".
"Effect on Water Operations and Drainage" is kind of Rohrshach-like. DWR need to formulate questions in such a manner as to elicit actionable responses. I suggest you engage the USGS/NRCS folks at Davis to help you focus this section of the worksheet.

III, A: "Agricultural" rather than "Agriculture"

V, B; Quantification of Water Uses: Encourage districts to report measured values for crop and environmental Et by using METRIC or similar energy balance tools. Doing so will imoprove accuracy and take advantage of recent developments.

3.3 (p. 52) It is important to measure Et as well as amounts applied for ag and environmental purposes. Doing so will result in better quality assurance, and should produce some meaningful relationships. For example, average ETcrop assumes soils not short of water and uniformity of ET, which are not the case. Actual ETcrop will generally be less than measured ETcrop when ETcrop is estimated from CIMIS, say.

3.5 C; Overall water budget: Should include ET of uncultivated areas.
Doing so will align better with sustainability indicators that are currently being developed.

3.6 Climate Change: Agricultural water supplier should also list actions planned to facilitate adaptation to climate change: crops likely to become unprofitable (e.g. due to lack of chilling requirements being met), criteria for fallowing land in an equitable manner, etc.

Thanks,
Bob