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Sent: Tuesday, January 04, 2011 6:30 PM

To: Davidoff, Baryohay

Cc: Mike Wade; Brandon Souza

Subject: SBX 7-7 Discussion Paper Draft Range of Options for Ag Water Measurement

Baryohay:

I have a conflict and will be unable to attend the ASC meeting tomorrow. I talked with Mike Wade last week regarding the current status of the meetings following the last ASC meeting and tour of RD 108. Mike forwarded to me your preliminary draft Discussion Paper on Range of Options for Ag Water Measurement. I have read through the revised document. Following are some comments I wanted to share with you.

1. A general comment is made that irrigation occurs in pressured pipe, non-pressurized pipe, and open channel delivery systems. Typically flow meters or other devices are used for pressure pipe delivery. In the low head canal systems, the vast majority of turnouts throughout the valley are meter gate installations which provide the ability to measure the flow with tables and calculations based on the orifice equation. These devices have been used for over 60 years. The Range of Options for Ag Water Measurement needs to understand that meter gates are a primary and reliable option for measuring irrigation deliveries.
2. Concern regarding Measurement Options and the requirements which are up for discussion for implementation.
 - a. A 6%± standard in the laboratory which cannot be easily or reliably verified in the field is a concern. At the November meeting Dr. Burt mentioned the 6% ± accuracy established or incorporated in the USBR water conservation guidelines of the 1990's was a number he provided at that time but now feels it is not the correct accuracy that should be implemented at this time.
 - b. Why not provide more flexibility for water district suppliers? Implementing the proposed Range of Options for Ag Measurement will increase a water supplier's work load and costs. The proposed recalibration and record keeping requirements will be time consuming and burdensome to implement, not only for each District but also for DWR that will be overseeing the requirements. If the procedures and costs to implement the proposed measurement requirements are too restrictive or burdensome then many will question the value and cost of implementing them. If the farmers or District Board do not see a value or reason for a task they will generally tell staff to not worry about it. These are not the Regulations I want to see implemented. Water suppliers must have an incentive of some type if we expect them to implement the regulations, and at this time nothing in the law seems to provide much of an incentive.
 - c. I suggest increasing the accuracy requirement up to 15% ±. This is what the CALFED measurement study agreed to back in 2003. And if we are unable to agree on this then the ASC can discuss lowering it down to possibly 10%±.
 - d. Meter gate measuring was developed over the last 60 years as an accurate and inexpensive way to measure the flow of water. Joe Summers prepared for the USBR at their Hydraulic Laboratory in Denver, Colorado in 1951 Laboratory Report No. Hyd-314 titled "Flow Characteristics and Limitations of Armco Metergates". This report discussed the limitations of metergates which affect their accuracy. This lab report and additional reports the USBR have done through the years outline the proper installation requirements necessary for accurate readings. The current USBR Water Measurement Manual provides a good discussion on the proper installation and limitations which affect accurate measurement of metergates. I would suggest the installation of metergates in accordance with the recommendations provided in the USBR Water Measurement Manual is acceptable in meeting the proposed measurement requirements. Even if the

accuracy of a given turnout is off a little bit, as long as everyone is measured in the same or similar manner, then water users would generally be satisfied and pricing options can be developed which include some aspect of volumetric measurement.

- e. Recalibration & Maintenance Records – The proposed requirement of recalibrating a measuring device in the field once every 5 years and maintaining records would be excessive and burdensome task for any water supplier. For a metergate a visual inspection of each device would allow an engineer and/or ditch tender to confirm whether or not the device is able to operate as originally intended. It would be less burdensome if a list was required of only those measuring devices which were found not working properly each year and therefore had to be fixed or modified. However, the proposal discusses keeping maintenance records for all work or calibration activities on each measuring device. This would be a difficult requirement for many water districts or agencies to readily implement. It would be time consuming and require additional staff to accomplish. If a District has 300 turnouts we are talking about the need to create and update on an annual basis nearly 300 to 600 pages of record data. This is a significant amount of paper work that would be generated each year and the proposal suggests this paperwork should be maintained for 10 years. Many Districts are not high tech and they would be keeping their maintenance records in paper files. Keeping maintenance records for vehicles and electronic equipment is already troublesome for many agencies and if we are talking about keeping the records for 10 years and then preparing a summary of these reports for inclusion in the 5 yr WMP reports, then I would state we are creating a bureaucratic nightmare. As a proposal, I would suggest requiring Districts to summarize the maintenance activities on water measurement devices they have had to implement in the past 5 years. The response provided would give DWR or another WMP reviewer with the ability to know whether or not any maintenance is occurring.
- f. There is not a simple method to verify or recalibrate an existing meter gate installation. It can be done, but it would be expensive to do once every 5 years for every turnout in a District. A visual site visit to compare whether or not the installation meets the USBR Water Measurement Manual guidelines would be sufficient. I would also suggest only a representative sample, a small percentage of the gates be reviewed every 5 years, and this representative sample be rotated every 5 years. This would reduce the work load and the burden of implementing the regulations as proposed. If landowners or farmers are aware water measurement devices are not accurately measuring the water delivered to them, then they will complain.
I don't recall in an Urban District a recalibration on a 5 year schedule implemented for water meters. I believe the only time staff come out to check a meter is if they have received some type of complaint that the meter is not working accurately.
- g. Oversight provided by professional district staff or consultants will be needed to oversee the current proposed program. This will increase operational costs for water suppliers in the future. Farmers and board members will have to believe there is a benefit for them to do this or many will not.

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