Comments Received on Central Valley Water Board Staff Report
Utilizing Hoffman Model to Develop Site Specific EC Water Quality Objectives

Overview of Policy-Related Comments

MUN

- There are no existing drinking water uses in the LSJR or South Delta
- Drinking water use in those water bodies would require DPH permission

AGR

- Selecting crops to protect – water intensive crops in regions with low water supply reliability
- Level of Crop Protection – is 100% protection reasonable?
- How does periodic use of other higher quality water supplies affect crops' long-term yield?
- There is no need for an independent boron analysis. The entire study area is enriched in boron due to marine sediments. Boron sensitivity is most pronounced in orchard crops, including apricots, but the entire western Stanislaus County is being converted to orchard crops and Patterson is known as the "Apricot Capital of the World". This is sufficient to show it is not a problem in the area.

Over-arching Policy

- Protection during varying precipitation levels, including droughts
- Point of Compliance and Related Cost to Dischargers – compliance should be at points of diversion not throughout the entire water body and consideration should be given to the cost to dischargers of application of end-of-pipe effluent limits
- A more integrated approach to regulation should be used instead of a traditional CWA one pollutant loading approach
- Shorter time scale and impermanence of salinity impairment
- Consideration should be given to existing water rights and the conditions under which they can be exercised

Overview of Technically-Related Comments:

Models

- Final report should include recommendations regarding which model to use and why other models should not be used
- Concern regarding the level of conservatism of the Hoffman model
- The report should include a list of conservative assumptions made
- The transient modeling approach should be used, or, if steady state modeling is used, the specific model should be carefully chosen.

Leaching Fractions

- Given the uncertainty regarding the leaching fraction assumptions and the significance of the leaching fraction input, CVSC should consider funding studies
- A portion of the modeling uses a leaching fraction of 7 - 10%, which is impossible to achieve using technology currently available in the study area
- Actual leaching fractions may be higher than assumed. Additional data available in Regional Board files should be used
- A leaching fraction of 20 – 25% should be assumed when water conservation is assumed
- The leaching fraction is closer to 20% and should have been included in Chapter 6 and Table 6.1

Planting/Harvesting Dates

- Dry beans are not planted before the first weeks of May, but are assumed to be planted as early as April 1
- The first cutting of alfalfa is assumed to occur by March 13th. This needs to be confirmed with growers in the area
- The dates for almond production need to be confirmed with growers
- While you can define the growing season, you need to focus the steady state modeling on the irrigation season, which generally does not start until April 1st

Soil Water Uptake Pattern

- The 40-30-20-10 uptake pattern does not appear as well suited for the South Delta as the exponential pattern and the report should recommend the use of exponential model over the 40-30-20-10 model

Temporal Scale

- Pages 6 and 8, It would be better if the analysis was conducted by water-year types , but this would require a larger data set

Spatial Scale

- Page 17, There is no need to develop information for San Joaquin County as it represents only 2% of the area

Cropping Patterns

- Pages 18, 26, and 28, Care should be taken in making assumptions based on only 2 surveys

Effective Rainfall

- The role of effective rainfall during the winter irrigation season and this analysis needs to be done

Factors influencing effective rainfall

- Page 79, Effective rainfall would be increased when surface evaporation is reduced due to dry soil surface and would be reduced by bypass flow and runoff
- Page 48, Soil evaporation rates do not reflect reality during the winter period

Pre-irrigation

- There is a need to verify and consider that present day practices include pre-irrigation

Groundwater

- Page 59, Well level data from DWR may not reflect the depth to shallow groundwater
- Page 64, There is no discussion of depth to groundwater or the design and depth of drains

Soils

- Pages 13 – 16, Table 2.1, The limiting layer (slowest hydraulic conductivity) should be reported
- Page 34, Soil chemical data collected and provided with more recent soil surveys should be reviewed to determine if there are potentially saline and/or sodic soils in a greater portion of the irrigation use area
- Page 40, Review of the coefficient of linear extensibility (COLE) for soils mapped in 1964 would allow for evaluation of shrink-swell potential
- Page 40 Section 3.4.2 -- Shrink-swell and bypass flow are a major process affecting water movement in the use area and needs to be addressed with respect to irrigation and soil salinity management
- Page 46 Section 3.5.2 -- Based on widespread shrink swell potential in the use area, initial rainy season storms may be ineffective in providing moisture to the root zone, high clay content may increase surface runoff and reduce effective precipitation, and subsurface drains may remove precipitation that would otherwise be stored in the root zone

Follow-up Studies

- The final report should clearly make recommendations regarding the additional studies needed and provisions that the objectives should be reconsidered once the new information becomes available.
- Follow-up studies should include:
  1. Field studies of bean accompanied by comparison of uptake models to determine if one more closely predicts bean water uptake
  2. Potential leaching fractions as well as actual leaching fractions in the LSJR area to determine possible potential salinity control measures
  3. The extent of subsurface drains in the LSJR area since several soils could not be properly managed for salinity if artificial drainage was not provided, and
  4. The effects of soil salinity management on LSJR salinity