

MEMORANDUM

To: Files 63-145, 63-31134, 63-31135, 63-31136

From: Cynthia Bridge Clark

Date: January 6, 2004

Re: Revised Quantification of Recharge or Mitigation Requirements Due to Creation of Ponds.

Direction from Director Karl Dreyer was offered with regard to quantification of evaporative losses due to the creation of ponds on lands that have been irrigated historically. The Eureka Water Company Transfer application on water right 63-145 was discussed as an example of a canal company changing a portion of their water right to a use other than irrigation (amended application for transfer was received by the Department on December 30, 2003). The transfer proposes changing water previously used for irrigation to groundwater recharge to compensate for evaporative losses incurred through the creation of several ponds.

Calculations of the anticipated loss were compiled in evaluating the initial transfer application based on historic crop mix data, the historic irrigation requirement, and the annual free water surface (evaporation). Results indicated that 10.4 acres would be required to mitigate for the evaporative losses. Since that time, procedures for determining loss requirements have been clarified by Karl Dreyer:

1. In general, one acre of historically irrigated land will mitigate for one acre of land converted to ponds (1 to 1 swap) as long as the previously irrigated land was reasonably productive cropland. If there are indications that land was marginal pasture, the one to one swap would not be appropriate and the applicant would be required to provide data to support the consumptive use (CU) for the cropland in comparison to the CU for the pond.
2. If calculations are submitted instead of using a one to one swap, calculations for CU of irrigated cropland should be based on the evapotranspiration minus effective precipitation. Consumptive use for the ponds should be calculated on a monthly basis for the entire year, and monthly precipitation can only be subtracted to the extent of the evaporation of the corresponding month. If precipitation exceeds evaporation, there will be zero loss rather than a negative loss.

Crop mix data provided for this transfer indicates this was productive cropland. The Eureka Water Company may want to change their transfer application in accordance with the above described criteria.