Preliminary Hydrogeologic Investigation into the Effects of Managed Recharge on Water Quality, Lower South Platte River, CO

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Abstract. Managed recharge along the lower South Platte River Basin is being used as a method for flow augmentation. The site is located on the Colorado Division of Wildlife’s Tamarack Ranch State Wildlife Area in northeastern Colorado. Currently, water is being pumped from the alluvial aquifer into recharge ponds approximately 1 km away. The goal is to have water return to the river during low flow periods in order to augment in-stream flows for endangered species in Nebraska. In this talk, we will present preliminary findings on the areal and temporal distribution of water quality parameters within the alluvial aquifer between the recharge pond and the South Platte River. Data collected to date suggest a zone of higher nitrate levels along the alluvial aquifer than in the aquifer nearer the recharge pond and in the river. In addition, we will present the preliminary results of a tracer test performed to address recharge pathways and timing. The understanding of the pathways and flow rates is important in determining the influence of the recharge water on groundwater and surface water quality, especially in light of the increasing use of flow augmentation along the length of the lower South Platte River.