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**AWRA 2011 ANNUAL WATER RESOURCES CONFERENCE**  
**Albuquerque, New Mexico**

November 7-10, 2011

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**DOMESTIC CONSUMPTIVE USE AND POTENTIAL GROUNDWATER RECHARGE FROM SEWAGE DISPOSAL FIELDS IN THE EAST MOUNTAIN AREA, BERNALILLO COUNTY, NEW MEXICO**

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**ABSTRACT:** Groundwater is primarily recharged by the infiltration of precipitation; however, in semi-arid regions potential evaporation can exceed precipitation, resulting in little or no recharge. In these regions, the infiltration of effluent from domestic sewage disposal fields can be a significant contribution to groundwater recharge; however, not many data exist to quantify evapotranspiration (ET) losses from septic disposal fields in semi-arid areas. The East Mountain Area of Bernalillo County, New Mexico is part of the Albuquerque metropolitan area and has been growing rapidly in population for the past 40 years. Increasing water use in this semi-arid area has raised concerns about the effect of development on the availability of water resources. A better understanding of water use, consumptive use, and the amount of recharge from domestic sewage disposal fields is critical to managing the water resources of the area. The purpose of this study is to quantify domestic consumptive water use at two residences in the East Mountain Area and to estimate potential groundwater recharge from sewage disposal fields. Domestic consumptive use is the portion of the household water budget that is lost through ET and human or plant consumption and includes losses from indoor and outdoor water use, and sewage disposal fields. Indoor consumptive use was estimated as the amount of indoor water use in excess of the amount of water dosed to the sewage disposal field. Outdoor water use, metered at each residence, was assumed to all be lost through ET. The amount of water lost through ET from the sewage disposal field was estimated as the amount of potential ET from the disposal field in excess of ET from the surrounding terrain. Potential ET of the sewage disposal field and the surrounding terrain was modeled using continuous surface and atmospheric data recorded at on-site weather stations. Model calculations of potential ET were calibrated with actual ET measurements collected using an instrumented hemispherical ET chamber. These estimates of ET will be used to determine the amount of effluent from the disposal field that is potentially available for groundwater recharge in the East Mountain Area.

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