



A Shower Water Reclamation System to Address Colorado House Bill 18-1069

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Abstract

Water conservation methods are slowly being implemented in most parts of the western world, but other, more drastic, measures are likely required to reduce household water consumption. A recent Colorado legislation (House Bill 18-1069) signed into law in April 2018 allows for the reuse of grey water within the household. A system is described that reclaims shower grey water for use in flushing toilets. The shower water reclamation system (SWRS) collects water below a shower and then pumps the grey water to a storage facility above or behind the toilet. Water quality experiments were performed to illustrate that the shower grey water did not require treatment for use in the SWRS. Water quality issues, engineering, and the use of grey water from other sources are discussed. The feasibility of implementing the SWRS in regards to the legalization of grey water use is also discussed. Further, the cost and malleability of the system across economic classes is explored. Depending upon the toilet system used in a specific household, a reduction of 17 to 27% of the household water usage can be achieved, which depending upon the cost of water, translates into a return on investment of at minimum 9 years. The importance of this study is laid upon the foundation of concern for water conservation and the promotion of sustainability.