UTC Project Information	
Project Title	MPC-498 – Development of Mixed Media Filtration for Stormwater Runoff Treatment
University	South Dakota State University
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Project Cost	$140,384
Start and End Dates	September 30, 2013 to September 30, 2018
Project Duration	September 30, 2013 to September 30, 2018
Brief Description of Research Project	Many surface water bodies in South Dakota are impaired by sediment, nutrients, and bacteria from point and non-point sources. Stormwater runoff has been identified as a source of contamination in surface waters. Mixed-media filtration is a highly promising treatment option that can reduce the concentrations of multiple contaminants in stromwater runoff generated from highways and urban areas. We propose to develop a low-maintenance, low-cost mixed-media filtration system for stormwater treatment in South Dakota.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	A mixed media filtration technology using steel chips and steel slag was developed in this study to remove E. coli and phosphate from stormwater runoff. Recycled steel chips and steel slag are cost-effective and readily available materials for environmental applications. The field study showed that the mixed media filtration is an effective technology for stormwater treatment. This media filtration technology can be applied in full scale stormwater treatment for E. coli and phosphate removal.

Impacts/Benefits of Implementation (actual, not anticipated)	Various contaminants carried by stormwater runoff can deteriorate the quality of surface waters. Bacteria and nutrients in the runoff present as a serious risk to aquatic ecosystem and public health. As we continue to expand the urbanization, contamination caused by stormwater is likely to worsen in the future. The mixed media filtration using steel chips and steel slag can be used as an effective treatment tool to remove E. coli and phosphate from stormwater runoff. The application of this filtration technology will improve the stormwater management and protect natural water resources.
Web Links • Reports • Project Website	• MPC Research Report – Development of Mixed Media Filtration for Stormwater Runoff Treatment • SDSU Master's Thesis – Escherichia Coli Removal from Stormwater Using Steel Chips Filter • SDSU Master's Thesis – Pilot Scale Evaluation of E. Coli Filtration Removal from Stormwater Using Recycled Steel • SDSU Master's Thesis – Evaluating Filter Materials for E. Coli Removal from Stormwater