

The Summer Undergraduate Research Fellowship (SURF) Symposium
4 August 2016
Purdue University, West Lafayette, Indiana, USA

Developing Methods to Characterize Cured-in-Place Pipe (CIPP)

Emily Conkling, Mahboobeh Teimouri, Andrew J. Whelton, Division of Environmental and Ecological Engineering, Purdue University

ABSTRACT

Cured-in-place pipe (CIPP) is quickly growing as a method to repair aging water pipes. It's an attractive option for states' Departments of Transportation, as CIPP doesn't require any long term or invasive construction. The exact composition of CIPP is poorly understood, even though CIPP leaching is assumed to be the cause of algal blooms, fish kills, and some human illnesses. The goal of this study was to develop methods to characterize what chemicals are present in uncured and cured CIPP resin and at what magnitude. An exhaust capture system was designed, and the condensate collected from this was extracted using dichloromethane and hexane. Additionally, a photoionization detector was used during field sampling to detect styrene, a major component of CIPP. Preliminary results indicate that the chemicals in the CIPP resin and the exhaust dispersion pattern are highly complex and require further study.

KEYWORDS

Water, air, pipe