

CAAP Quarterly Report

Date of Report: October 28, 2016

Contract Number: DTPH56-15-H-CAP05

Prepared for: U.S. Department of Transportation

Project Title: Application of Amorphous Metals for Plastic Pipeline Detection

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For Quarterly Period Ending: September 30, 2016

Business and Activity Section

(a) Generated Commitments

None to report.

(b) Status Update of Past Quarter Activities

- Magnetic field distortion experiments were completed this quarter. Based on the detectability of the amorphous metal foil, the preferred use of the foil was determined to be as a locating tape separate from the pipe as opposed to a wrap or a strip applied directly to the pipe. Furthermore, the preferred orientation for this amorphous metal-based tape was in a vertical plane, perpendicular to the ground's surface. This orientation makes it appear compatible with trenchless installation using a vibratory plow.
- A patterning arrangement for an amorphous metal-based locating tape was designed. Several alternatives were modeled, and the selected design's performance was verified with gradiometer measurements of a handmade prototype.
- Dr. Eric Theisen of Metglas began evaluating methods and vendors to produce a limited run of the prototype locating tape.

(c) Description of Any Problems/Challenges

None to report.

(d) Planned Activities for the Next Quarter

- Details regarding the production of the prototype locating tape will be finalized, and it is expected that the industrial cost-share partner, Metglas, will produce samples for evaluation.
- The principal investigator, Dr. Christopher Martin, and the student researcher, Daniel Sprengelmeyer, will present a poster at the Pipeline and Hazardous Materials Safety Administration's research forum in Cleveland, Ohio.
- Preparation of the final report and wrap-up presentation will also begin next quarter.