

## 6th Quarterly Report – Public Page

Date of Report: February 28, 2015

Contract Number: DTPH56-13-T-000002

Prepared for: DOT Pipeline and Hazardous Material Safety Administration

Project Title: Real-Time Multiple Utility Detection During Pipe Installation Using Horizontal Directional Drilling (HDD) System

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### Results and Conclusions:

The second local area tests were conducted with improved noise source to detect buried pipes with the acoustic system. The total of 285 data sets were collected and analyzed. The data analysis was performed as recorded in the field and post processing. Overall, the acoustic pipe detection system was able to achieve a detection accuracy of  $\pm 2.1'$  on average for pipe and sensor separations of less than 10 feet. For the detection ranges greater than 10 feet, the detection accuracy degraded. The acoustic system mechanically and electrically operated well and achieved better than 84% (240/285) success rate in calculating a location solution. Several recommendations were suggested for continuation of the project.

### Plans for Future Activity:

- With the PHMSA agreement, revise the current tasks for proceeding with a stand-alone acoustic system.
  - Implement a rotary hammer noise source powered by a mud motor
  - Improve the real-time processing of the acoustic system data
  - Demonstrate the system performance in a semi-field environment.
- Write the next milestone reports.
- Write monthly and quarterly reports.