FINAL PROJECT SUMMARY REPORT

1. BUSINESS AND FIRM ADDRESS

   Innerspec Technologies, Inc.

   Global Headquarters

   2940 Perrowville Rd

   Forest, VA 24551, USA

2. DOT SBIR PROGRAM

   U.S. Department of Transportation/OST-R

3. DOT CONTRACT

   6913G618P800116

4. PERIOD OF PERFORMANCE

   09/10/2018 to 03/09/2019

5. PROJECT TITLE

   NON-DESTRUCTIVE COERCIMETRY FRACTURE TOUGHNESS ASSESSMENT FOR STEEL PIPELINES

SUMMARY OF COMPLETED PROJECT

COMET has been conducted without deviations or delays over planed execution, compensating setbacks from previous periods, leveraging from corrective measurements taken on Period 2, and successfully achieving all project objectives.

Innerspec, with support from external research facilities, has completed all destructive testing activities planned for the project. Furthermore, an extensive testing campaign has been conducted, measuring coercivity at 8 positions on each broken sample. Results have been compared to those obtained before destructive testing, assessing a slight decrease in consistency between samples and between positions, and no significant variation in repeatability. Coercivity values showed a variable shift in positions close to the crack propagation area, compared to positions D and E in the samples.

The coefficient of determination has been calculated at 85-95%, proving that a correlation between the two variables of interest does exist. This approach appears to be exhibiting variation that are qualitatively reasonable, but the establishment of a fine correlation model requires a wider set of data.

For upcoming Phase II, Innerspec will develop and validate a non-destructive pipeline fracture toughness assessment tool while increasing the size of the sample population, producing samples with a wider range of coercivity and fracture toughness values in order to refine the models established here.

APPROVAL SIGNATURES

PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR (Signature)

Syed Ali