KANSAS DOT RESEARCH PROJECTS
QUARTERLY PROGRESS REPORT

Lead Agency (University or Contractor): Kansas DOT

INSTRUCTIONS:
Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

KDOT Project Number RE-0738-01	**Transportation Pooled Fund Program - Report Period:** ☐Quarter 1 (January 1 – March 31, 2020) ☐Quarter 2 (April 1- June 30,2020) ☐Quarter 3 (July 1 – Sept 30, 2020) XQuarter 4 (October – December 31, 2020)
Project Title: Utilization of Laser Induced Breakdown Spectroscopy for Real-Time Quality Control Monitoring and Characterization of Aggregate Materials Used in Highway Construction using	
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Lead Agency Project ID: RE-0738-01	**Other Project ID (i.e., contract**	**Project Start Date:** July 1, 2017
Original Project End Date: **June 30, 2020**	**Current Project End Date:** **June 30, 2021**	**Number of Extensions:** 2

Project schedule status:

☐ On schedule XOn revised schedule ☐ Ahead of schedule X Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Total Percentage of Work Completed
$870,000.	$809235	96.0 %

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$870,000.	$0 .	3%

Project Description:

The primary objectives of this research effort is to develop a near-real-time laser-scanning system to rapidly classify aggregates used in highway construction. The intent is to employ this classification process to

- Quantify specific engineering properties (e.g., acid insoluble residue, soundness, LA Loss, etc.)
- Assess whether an aggregate will pass or fail a defined engineering property test
- Identify and/or quantify the presence of deleterious materials (e.g., ASR, chert, shale, reactive aggregate)
- Determine the composition of blends in stockpiled aggregate
- Determine the source of an unknown aggregate

Six states are part of this TPF program. They include: KS, MD, OK, OH, NY and NM.
Each State is supplying aggregates that will be tested and evaluated to determine the efficacy of the technology

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):
During this period, revised analysis and draft report preparation activities were initiated. The draft report is presently approximately 75% complete.

Anticipated work next quarter:
A draft report will be submitted for State review and comment. Reviews and final report modifications may be completed during next quarter or could extend into the 2nd quarter of 2021.

Significant Results:
Laser scanning can successfully predict acid insoluble residue, D-cracking, Dynamic Friction Values and can identify the source of unknown materials within a State quarry system. A laser scanning system has been installed in the KDOT materials testing laboratory in Topeka for State operations. This is the first laser scanning system used for aggregate quality control in the nation.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, with recommended solutions to those problems).
Due to Covid-19 the project schedule was severely impacted. A new 2nd quarter of 2021 project end date is currently projected. The project team is trying to complete all activities within the existing budget.