

QUARTERLY PROGRESS REPORT

April 1, 2017 - June 30, 2017

PROJECT TITLE: Characterization of Florida Landfills with Elevated Temperatures

PRINCIPAL INVESTIGATOR: Debra R. Reinhart, PhD, PE, BCEE

AFFILIATION: University of Central Florida

COMPLETION DATE: December 31, 2017

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PROJECT WEB SITE: <http://www.cece.ucf.edu/people/reinhart/research/Elevated-Temperature/index.html>

Work accomplished during this reporting period:

Task 1: Historical Gas Temperature Data Analysis

- Total of 15 landfills using gas collection systems has been characterized for temperature variation over time. Data source is primarily OCULUS. We have also reached out to individual landfill owners with less success. We continue to work on these additional sources.
- In addition to temperature data analysis, gas quality and composition of the associated landfills have been analyzed. However, the data provided are still limited for any conclusive analysis.

Task 2: Characterization of Florida Landfills with Elevated Temperatures

- An elevated temperature landfill in State of Florida has been studied for temperature and gas quality prior and during the elevated temperature issue. In addition, progression of elevated temperature through landfill over time was investigated.

Work to be completed next quarter

- More data will be acquired from the landfills with gas collection systems for historical gas data analysis and insight of the temperature progression in other elevated temperature landfills (Task 1 and 2).
- An energy calculation model will be implemented for heat generation modeling during aerobic and anaerobic exothermic reactions to better understand the heat sources and dissipation in the landfills (Task 3).

Metrics:

1. List graduate or postdoctoral researchers who were funded by this Hinkley Center project.

Name	Rank	Department	Professor	Institution
Amir Motlagh	Post Doc	Civil, Environmental, and Construction Engineering	Debra Reinhart	University of Central Florida

2. List undergraduate students who worked on this Hinkley Center project.

Name	Rank	Department	Professor	Institution
Ryan Joslyn	Senior	Civil, Environmental, and Construction Engineering	Debra Reinhart	University of Central Florida

3. List research publications resulting from this Hinkley Center project.
 - Abstract submitted to Global Waste Management Symposium 2018.
4. List research presentations resulting from this Hinkley Center project.
 - Proposal presentation to Hinkley Center research selection committee, May 31, 2017.
5. List who has referenced or cited your publications from this project?
N/A
6. How have the research results from this Hinkley Center project been leveraged to secure additional research funding?
N/A
7. What new collaborations were initiated based on this Hinkley Center project?
N/A
8. How have the results from this Hinkley Center funded project been used (not will be used) by the FDEP or other stakeholders?
 - None to date