

**State University System of Florida
Hinkley Center for Solid and Hazardous Waste Management**

PROGRESS REPORT 2

May 8, 2023

TITLE: PFAS in e-waste: Occurrence, types, and estimated quantities of PFAS in e-waste and appropriate management strategies for PFAS containing e-waste components

COMPLETION DATE: August 31, 2023 (anticipated)

>> Note: 4 month extension requested until Dec 31, 2023

Due to the late start of the project, it will be necessary to request a 4-month no-cost extension for the planned end date.

PRINCIPAL INVESTIGATORS:

- Berrin Tansel, Ph.D., P.E., Professor, Civil and Environmental Engineering Department, Florida International University
- Yelena Katsenovich, Senior Research Scientist, Applied Research Center (ARC), Florida International University
- Natalia Soares Quinete, Assistant Professor, Environmental and Bioanalytical Chemistry, Florida International University

During the first quarter of this project, the following activities have been performed:

The contract was finalized on December 19, 2023. Therefore, the notice to proceed came later than the planned project start date of Sept 1, 2022.

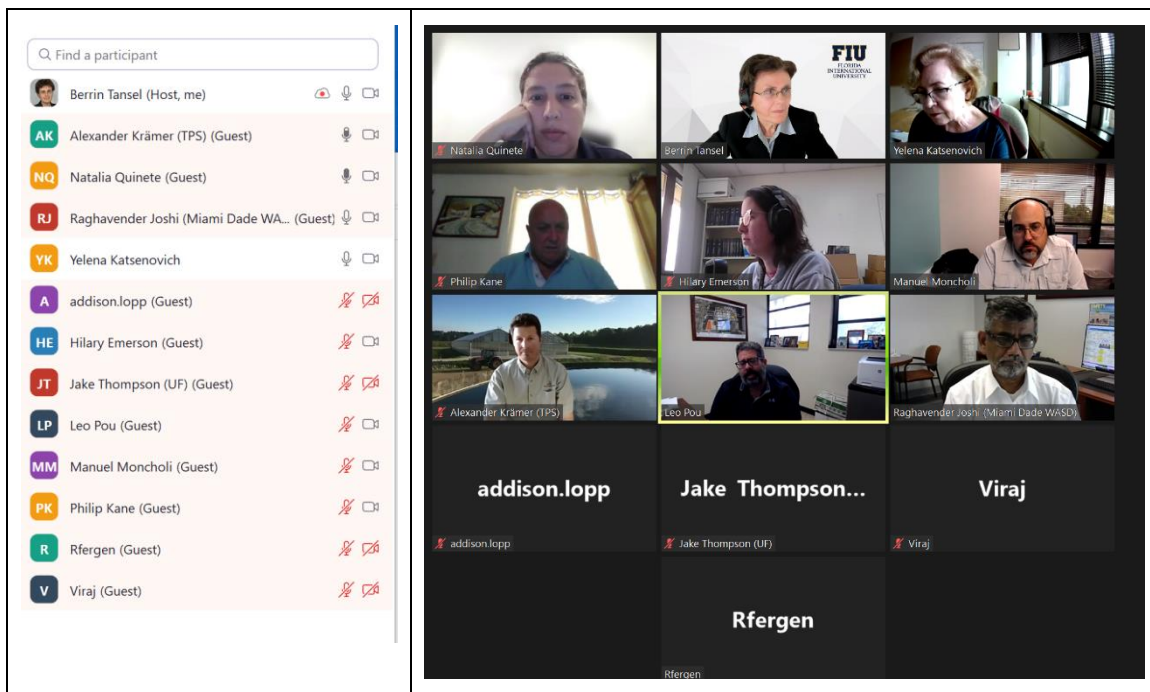
During this initial period, the following activities have been performed:

1. The TAG meeting was held on March 20, 2023 via Zoom. During the TAG meeting the following project objectives were presented and discussed by the members:
 - Conduct **sampling of e-waste**).
 - Analyze selected e-waste samples for **PFAS content and component profile**; determine the prevalent PFAS compounds.
 - Conduct **leaching experiments** to evaluate the release of PFAS from e-waste under site-specific conditions.

- Estimate **time dependent solubilization and the release** characteristics of the PFAS homologues from selected e-waste samples.
- Further scientific understanding of **PFAS originating from e-waste as a source in the environment**, potential exposure pathways for human health and ecological effects.
- Provide **recommendations** for appropriate testing of e-waste for appropriate management.

The TAG meeting attendees included representatives from Miami-Dade Water and Sewer Department, US EPA, National Labs., representatives from private companies who distribute biosolids, technical experts from Florida Water Environment Federation biosolids group.

We are still working to identify representatives who handle e-waste to join the TAG.



During the discussions, sampling protocol and locations were discussed and agreed.

Additional funding possibilities for students working on the project were discussed. Members agreed that they would be willing to identify additional funds for the research activities.

2. Potential members from industry in the areas of PFAS and e-waste have been contacted to confirm their interest and potential contribution to the project.
3. The project activities are conducted in parallel with the PFAS in Biosolids project. The two undergraduate students who would be working on the biosolids project will also be working on this project activities.

4. Regular weekly progress meetings have been taking place with the co-PIs.
5. A project web page has been developed at the following address:
ewaste.fiu.edu
6. Literature review for PFAS is on-going.
7. Test plans for leaching experiments, PFAS analyses (expanded for 40 PFAS compounds), e-waste characterization, identification appropriate components, and sample preparation needs (e.g., crushing and pulverization) for PFAS testing is on-going.

Planned activities for the next 3 months:

1. Continue contacting potential TAG members from groups associated with e-waste management.
2. Investigate PFAS related data and information as well as e-waste components and PFAS use in parts (for coating or otherwise) and potential runoff and partitioning data for e-waste related contaminants.
3. Initiate preliminary tests and analyses.
4. Continue development of database for compiling and organizing the available data for in-depth analyses.

Planned activities for Quarter 2:

- Continue leaching experiments
- Initiate PFAS fate related simulations.
- Develop abstracts for submittal to biosolids conference.
- Develop abstracts for submittal to solid waste conference.

Months	Planned Activities	Status
June	<ul style="list-style-type: none"> • Weekly project update meetings • Conduct leaching experiments 	<ul style="list-style-type: none"> • Continuing • Continuing
July	<ul style="list-style-type: none"> • Analysis of data from preliminary tests • Conduct leaching experiments • Weekly project update meetings • Conduct PFAS analyses for solid and liquid samples 	<ul style="list-style-type: none"> • Continuing • Continuing • Continuing • Continuing
August	<ul style="list-style-type: none"> • Weekly project update meeting • Develop modeling methodology for partitioning and leaching of different types of PFAS 	<ul style="list-style-type: none"> • Continuing • Planned