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Work plan for Perfluorinated alkane substances in Cape Fear River

Objective 1. Work on existing contract with Cape Fear Public Utility Authority to analyze both raw and treated water for per- and poly-fluorinated alkane substances (PFAS).

Goal 1: Develop methods for the analysis of PFAS in raw and finished drinking water.

Goal 2: Sample raw and finished drinking water for PFAS monthly and characterize and quantify PFAS present.

Research performed by MACRL.

Objective 2: Develop and implement the analysis of sediments, as in HB56



- Question: What is the fate of sedimentary bound GenX in the Cape Fear River?
- Importance: The sedimentary fate of GenX is currently unknown and poses a potential risk to the citizens of North Carolina. This research will shed light into the potential reintroduction of legacy GenX into the water column of the Cape Fear River and potentially into CFPUA input water even if current discharge is eliminated.
- Research performed by MACRL.

Objective 3: Conduct biodegradation studies in sediments, as in HB56

- Question: If GenX is present in sediments, how long will it persist?
- Importance: If GenX is very stable, as hypothesized, it may persist for an extended period of time in river sediments and therefore pose a potential vector to drinking water.
- Research performed by MACRL.

Objective #4: Bioaccumulation in ecosystem, as in HB56



- Question: Does GenX bioaccumulate in oysters of the Lower Cape Fear River Estuary?
- Importance: If GenX bioaccumulates in oysters it may indicate bioaccumulation in other organisms of the Cape Fear River estuarine food chain.
- This research would be conducted in collaboration with faculty in departments of Biology and Marine Biology and Chemistry and Biochemistry.

Possible research directions in relationship to human health and behaviors:



- How effective are various consumer/home filtration systems in removing GenX?
- What are the household perceptions of Gen-X risks, household behavioral responses, and the economic impacts of behavioral adaptations?



Questions?