

Outline for PFAS Fate and Transport Subgroup Meeting

April 18th, 2019

A. Review of ITRC Fate and Transport Fact Sheet

1. Intro
2. Major Sources
 - 2.1. AFFF
 - 2.2. Industrial
 - 2.3. Landfills
 - 2.4. WWTP
3. Fate and Transport
 - 3.1. Partitioning
 - 3.2. Transport
 - 3.2.1. Advection, Dispersion, Diffusion
 - 3.2.2. Deposition
 - 3.2.3. Leaching
 - 3.2.4. Surfactant Properties and Micelle Formation
 - 3.3. PFAS Transformation
 - 3.3.1. Abiotic Transformation
 - 3.3.2. Biotic Transformation
4. PFAS Occurrence by Medium
 - 4.1. Air
 - 4.2. Soil and Sediment
 - 4.3. Groundwater
 - 4.4. Surface Water
 - 4.5. Biota and Bioaccumulation
 - 4.5.1. Plants
 - 4.5.2. Invertebrates
 - 4.5.3. Fish
 - 4.5.4. Humans

B. Review of Technical Document Outlines from ITRC's Current Work Effort (attached)

1. Table of Contents Overview
2. Ch 5 Environmental Fate and Transport Processes

3. Ch 6 Media
4. Ch 10 Site Characterization

C. Identification and Strategy for future subgroup topics

- 5 Environmental Fate and Transport Processes
 - 5.1 Introduction
 - 5.1.1 Overview of PFAS Fate and Transport
 - 5.1.2 Factors Affecting PFAS Fate and Transport
 - 5.2 Phase Partitioning
 - 5.2.1 Introduction (importance in fate and transport, complexities, effects of environmental variables)
 - 5.2.2 Partitioning in water
 - 5.2.3 Partitioning to Solid Phases
 - 5.2.4 Partitioning to Air
 - 5.2.5 Partitioning to Air/water Interfaces
 - 5.2.6 NAPL as co-contaminant
 - 5.3 Media-Specific Migration Processes
 - 5.3.1 Diffusion In and Out of Lower-Permeability Materials
 - 5.3.2 PFAS Transport via Air
 - 5.3.3 Leaching
 - 5.4 Transformations
 - 5.4.1 Introduction
 - 5.4.2 PFAA precursors
 - 5.4.3 Atmospheric Transformations
 - 5.4.4 In Situ Transformations
 - 5.4.5 Polymer Transformation
 - 5.4.6 Practical implications
 - 5.5 PFAS Uptake into Aquatic Organisms
 - 5.5.1 Bioconcentration

5.5.2 Bioaccumulation

5.5.3 Biomagnification

5.6 PFAS Uptake into Plants

5.6.1 Bioconcentration

6 Media-Specific Occurrence

6.1 Air

6.2 Soil and Sediment

6.3 Groundwater

6.4 Surface Water

6.5 Biota – Fish and Wildlife

6.5.1 Plants

6.5.2 Invertebrates

6.5.3 Fish

6.5.4 Vertebrates

- 10 Site Characterization
 - 10.1 Site Characterization Issues Relevant to PFAS
 - 10.2 Initial Steps
 - 10.2.1 Initial Conceptual Site Model
 - 10.2.2 Receptor Identification
 - 10.2.3 Surface Water Body Secondary Sources
 - 10.3 Site Investigation
 - 10.3.1 Development of Site Investigation Work Plan
 - 10.3.2 Nature of PFAS Sources
 - 10.3.3 Extent of PFAS Sources
 - 10.4 Data Analysis and Interpretation
 - 10.4.1 Retardation Coefficients and Travel Time
 - 10.4.2 Mass Flux/Mass Discharge
 - 10.4.3 Contributions from different sources
 - 10.4.4 Transformation Pathways and Rates
 - 10.4.5 Assessing Plume Stability
 - 10.4.6 Modeling PFAS Fate and Transport
 - 10.4.7 Visualization Methods
 - 10.5 Source Identification
 - 10.5.1 Source Identification Tools
 - 10.5.2 Challenges and reasonable expectations