



ATMOSPHERIC PFAS REGULATORY SUPPORT



Project: Atmospheric PFAS Regulatory Support, State Regulatory Agency

Brownfield Science & Technology, Inc. (BSTI) was retained by a state regulatory agency to provide technical support to their existing air permitting program as it addresses new PFAS air emissions.

Activities included performing research on national best practices in several areas of PFAS management. This research included an extensive review of published literature as well as soliciting input from other state and federal regulators. Findings were summarized within a series of technical memoranda covering: 1) the definitions of PFAS used within various regulatory programs, 2) the current understanding of PFAS toxicity through the inhalation pathway, 3) read-across methodologies for estimating PFAS toxicity, 4) methodologies used for modeling of PFAS atmospheric transport and deposition, and 5) the destruction efficiencies documented for thermal treatment methods for air emissions of PFAS.

Significant findings from this effort included the broad definition of PFAS applied in some regulatory contexts and the challenges associated with estimating toxicity for such a wide range of compounds with reference concentrations which can vary over many orders of magnitude. Additionally, the importance of chemical transformation processes like hydrolysis to modeling atmospheric transport and deposition of PFAS, and the relatively large variation in destruction efficiency observed across different PFAS during some field studies of thermal treatment have important implications for management of PFAS emissions.

Results of this work are being incorporated into ongoing permitting activities and the design of future state-lead studies of the regional impact of air emissions of PFAS on air, soil, groundwater and surface water quality.

Objectives

- Define best practices for identification of PFAS air emissions
- Model PFAS exposure in ambient air and PFAS deposition
- Develop inhalation screening levels and emissions control methods

Services

- Research and synthesis of published literature on PFAS
- Outreach to state and federal regulators/subject matter experts
- Interpretation of findings in context of permitting and regional groundwater quality issues

Applied Science/Technologies

- Evaluation of methodologies for grouping of PFAS based on structural and physiochemical properties
- Assessment of atmospheric transport and deposition modeling methodologies
- Review of thermal treatment efficiency

