

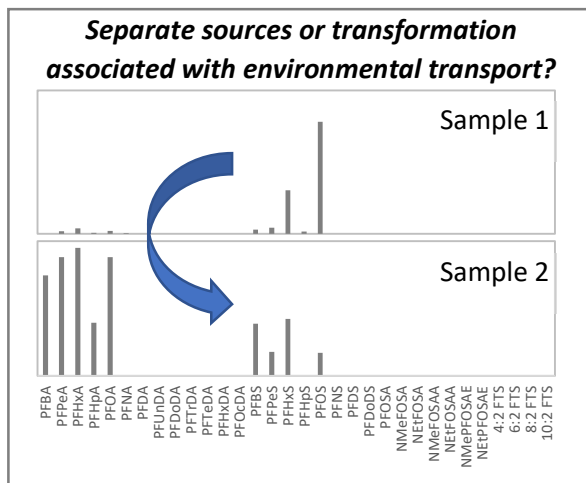


NewFields Note

PFAS Series: PFAS Forensics

NewFields Note: Technical information in a condensed, easily digestible format that is intended to promote environmental science education, knowledge transfer, and empowerment ... *one note at a time.*

PFAS forensics is a rapidly developing field, and there is no single approach to PFAS forensic investigations. Each investigation relies upon the conceptual site model to inform how to interpret site-specific data. At oil and gas sites, PFAS contamination typically stems from the storage, handling and use of aqueous film forming foam (AFFF). The source attribution of PFAS typically involves a comparison of PFAS data between contaminated areas and known or suspected source areas. In general terms, PFAS concentrations decrease moving away from a source area, and the patterns of PFAS change in manner consistent with environmental fate and transport. Where concentrations increase away from a source area, and where the patterns of PFAS change in a manner that cannot be explained by fate and transport, one or more additional PFAS sources may be present.



There are steps that can be taken early in a site investigation to provide the best information for a forensic investigation and maximize the likelihood of success. NewFields recommends choosing an analytical method that has a large analyte list that include PFAS that are not typically associated with AFFF, and measuring their presence is an indication of one or more non-AFFF sources. Additionally, comparing patterns of PFAS always benefits from more analytes because the pattern of PFAS in a sample is the chemical fingerprint of the sample, and measuring more analytes produces a higher resolution chemical fingerprint.

There are considerations when choosing an analytical methodology for a PFAS investigation:

1. Methods with larger analyte lists, which provide more forensic information tend to cost more. While it is always desirable to minimize sampling costs, investigators should balance the short-term cost savings with the long-term risk of not having a more comprehensive chemical fingerprint.
2. Legal advisors might be wary of collecting more information than what is required or regulated. While this is prudent legal advice, such an approach would limit a forensic investigation and the potential for distinguishing other sources of PFAS within an impacted area.

PFAS investigations are always site specific and no two projects are the same. For additional information, please contact your NewFields Technical Lead. Or send us an email at Science_Info@newfields.com!

