PFAS SERVICES FOR THE OIL AND GAS INDUSTRY

DELIVERING IN THE MARKET

Groundbreaker. Game changer. Innovator.

TRC is a global firm providing environmentally focused and digitally powered solutions that address local needs. For more than 50 years, we have set the bar for clients who require consulting, construction, engineering and management services, combining science with the latest technology to devise solutions that stand the test of time. TRC's more than 7,000 professionals serve a broad range of public and private clients, guiding complex projects from conception to completion to help solve the toughest challenges. We break through barriers for our clients and help them follow through for sustainable results.

MARKETS WE SERVE

Power & Utilities

Transportation

Real Estate

Water

Government

Environmental & Sustainability

Digital Solutions

PFAS SERVICES FOR THE OIL AND GAS INDUSTRY

PFAS are a group of more than 5,000 man-made chemicals that are found in a variety of products including firefighting foams, lubricants and hydraulic fluids. The regulatory framework and science of PFAS are rapidly evolving, creating business and environmental risks related to storage, management and use of PFAS-containing materials.

In petroleum production and refining, PFAS-containing materials may be present in firefighting foam, currently or historically used for fire and vapor suppression response and training. PFAS can be present in chemicals used to prevent evaporative loss in petroleum storage tanks, as well as fracturing fluids and surfactants utilized during the drilling process. PFAS may also be in chemicals and lubricants utilized for maintenance and operating purposes.

An increasing number of states and municipalities are conducting groundwater, surface water, and soil sampling to determine PFAS levels in these media, and EPA has conducted two rounds of drinking water supply sampling under the Safe Drinking Water Act. Many states and municipalities are also requiring facilities that discharge stormwater and wastewater to sample receiving streams for PFAS compounds to identify potential sources of PFAS.

What Do You Care About?	
Question	**TRC's Solutions**
Do I have PFAS?	· Risk management reviews/ planning · Site investigations · Water and wastewater testing · Air testing
Is it really mine?	· Forensics · Fate and transport modeling · Background sampling
How much is it going to cost?	· Risk assessment · Alternative remedies · Cost/scenario modeling
When will I be done?	· Regulatory negotiations · Smart closure strategies

OUR SERVICES

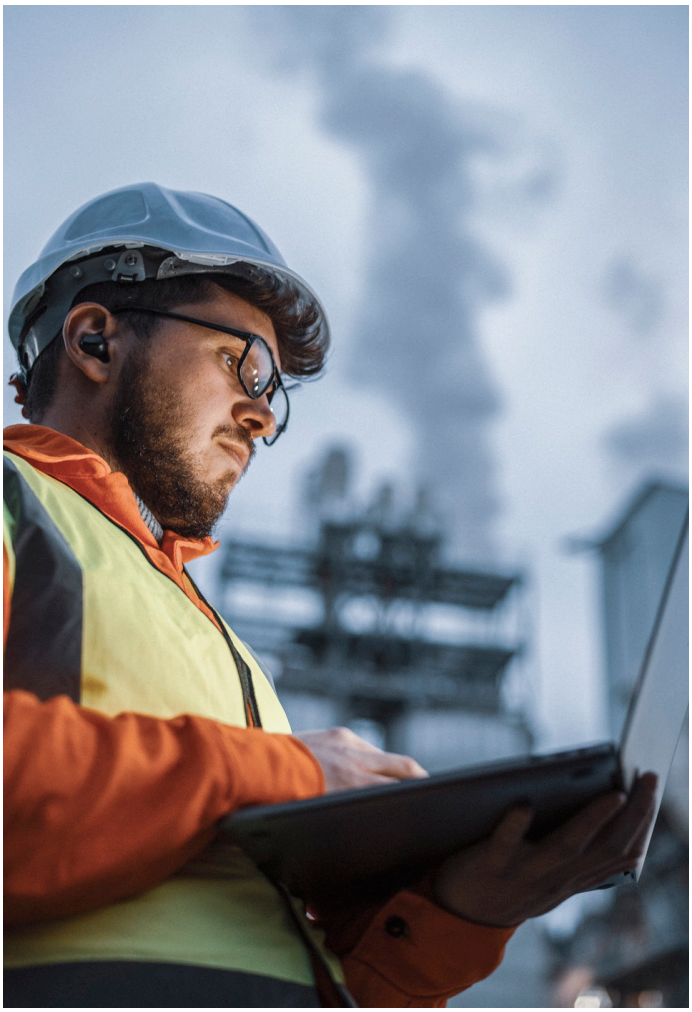
Oil producers, midstream, refineries and marketing terminals are advised to create proactive response strategies to better understand current and historical use of fluorinated chemicals in their operations. Some potential action items that TRC can support you with are as follows:

- Conduct a facility or company-wide risk management review to understand potential PFAS exposure
  - Review chemical inventories to identify potential PFAS-containing materials
  - Evaluate the supply chain with regard to the presence of PFAS; work with suppliers, if possible, for verification statements of PFAS compliance
  - Create an inventory of current and historic locations of emergency responses, fire training areas, vapor suppression activities, and AFFF storage sites: review containment/response actions and determine how close these areas are to environmental receptors
  - Review records of historical AFFF use, storage, training, and maintenance practices; review records of prior spills
  - Track regulations in applicable states and understand PFAS/AFFF waste disposal requirements at different locations
  - Follow new enforcement and compliance obligations involving PFAS and PFAS-containing products
  - Document potential areas of PFAS impacts
- Implement a plan and schedule for switching out materials that contain PFAS, if possible
- Update standard operating procedures to address minimizing PFAS-associated risks, such as spill response procedures, firefighting training, etc.
- Create and implement a transition plan for switching from AFFF to fluorine-free foam
- Develop goal-oriented sampling plans of stormwater, wastewater, soil, groundwater, and air, as appropriate
- Develop a plan for disposal of PFAS-containing materials, including legacy AFFF

Nationwide Expertise in PFAS Research and Regulation

TRC's Center of Research and Expertise (CORE) is a national leader in PFAS risk management, regulatory support, toxicity evaluation, forensics, fate and transport, sampling, testing and remediation methods. TRC will bring our extensive experience to your project to help you manage your concerns, solve your problems and move on to your next priority with confidence.

TRC's overall goal is to help clients manage their risks at a time of regulatory uncertainty. With staff located throughout the country, we bring both a national and local perspective to PFAS-related issues and how developing legislation will impact the future.



TRC

TRCcompanies.com