

FluxTracer® – Advanced Mass Flux Characterization and Performance Verification

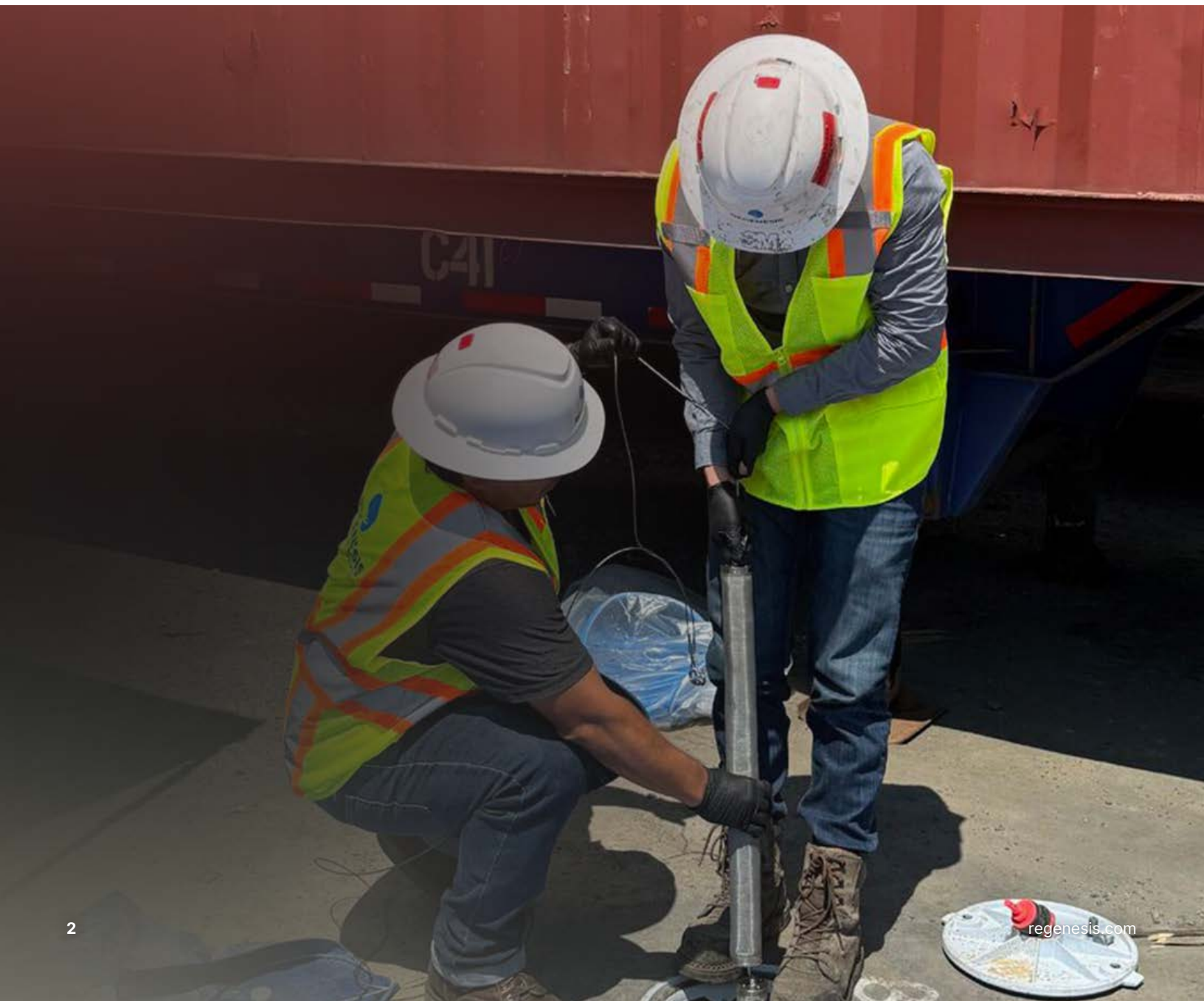
Effective Tool for Targeting Mass Flux in Support of Site Investigation, Remedial Design, and Performance Validation

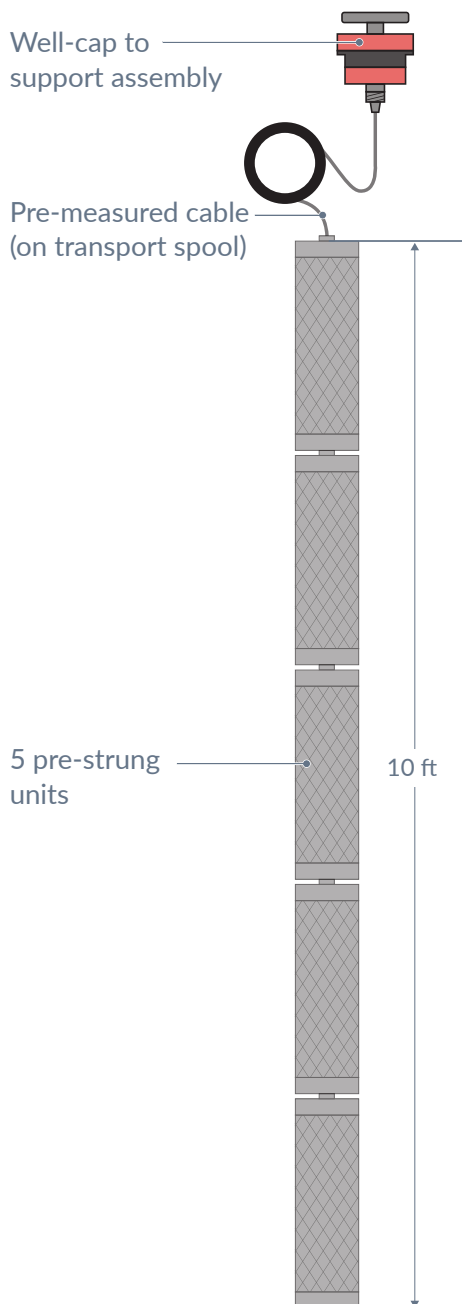


Overview



FluxTracer® is a tracer-based groundwater assessment tool used to evaluate contaminant mass flux within aquifer systems. The method provides information on contaminant mass movement that is not readily captured through concentration-only monitoring, supporting site characterization, remedial design, and post-remediation performance assessment. FluxTracer has been applied at sites impacted by PFAS, chlorinated solvents, petroleum hydrocarbons, and mixed contaminant plumes, particularly where complex hydrogeology or heterogeneous source conditions complicate interpretation of traditional monitoring data.





Flux measurement for remedial characterization

Traditional groundwater monitoring measures concentration trends at discrete locations and averaging across well-screen intervals which can obscure true plume behavior and remedial progress. FluxTracer addresses this limitation by:

- Quantifying contaminant mass loading, not just concentration
- Identifying high-impact plume segments and preferential flow paths
- Distinguishing between plume stability, expansion, or contraction
- Providing a defensible metric for remedy performance and risk reduction

This approach supports better decision-making and reduces uncertainty throughout the remediation lifecycle.

Applications across the project

Where FluxTracer fits in the project

Project Stage	Key Objective	FluxTracer Role
Site Investigation	Characterize contaminant distribution and migration pathways	Quantifies contaminant mass flux, identifies high-risk zones, and reveals preferential flow paths not apparent from concentration data alone
Remedial Design	Develop targeted design solutions and ID remediation zones	Confirms treatment zones and mass loading to refine injection locations, remedy footprint, and application rates
Performance Verification	Verify remedy effectiveness and long-term risk reduction	Provides quantitative, defensible metrics to demonstrate mass flux reduction and plume stability

Identifiable contaminants:

CVOCs	Including PCE, TCE, Cis-DCE, Trans-DCE, and 1,1-DCE.
PFAS	All analytes listed in EPA method 1633
BTEX-MTBE	Including Benzene, Toluene, Ethylbenzene, O-Xylene, M-&P-Xylene, and MTBE
Darcy Velocity	Suitable for measurement of Darcy Velocity independent of contaminants

Benefits

FluxTracer directly supports regulatory and programmatic goals by:

- ✓ Providing verifiable, quantitative performance metrics
- ✓ Reducing reliance on long-term monitoring based solely on concentration trends
- ✓ Supporting demonstrations of plume control and risk reduction
- ✓ Improving confidence in decisions to transition sites toward Response Complete status
- ✓ Improves confidence in vertical delineation, site characterization, and remedy selection
- ✓ Reduces uncertainty and long-term monitoring burden
- ✓ Supports data-driven decision-making and regulatory acceptance
- ✓ Enhances collaboration among owners, regulators, and project teams

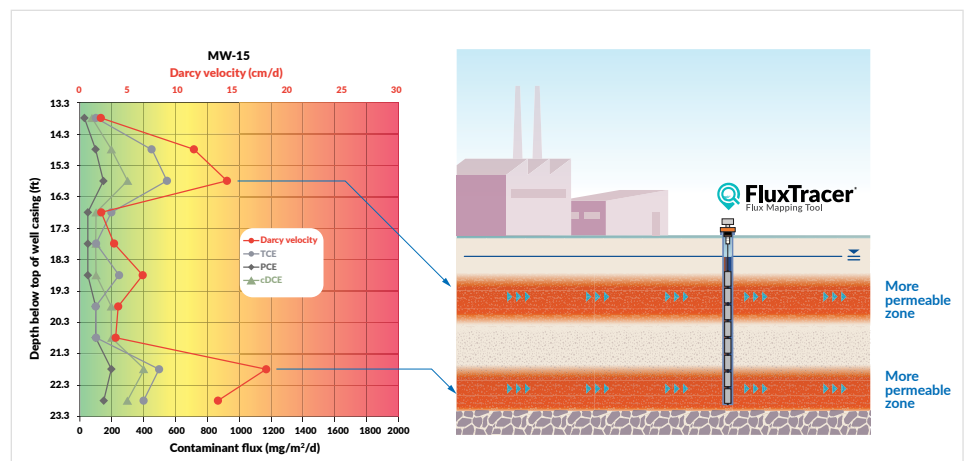
These benefits align closely with regulatory expectations for environmental surveillance, remediation effectiveness monitoring, and lifecycle cost control.

Integration with in situ remediation

FluxTracer is commonly used in conjunction with in situ remediation technologies to:

- Validate amendment distribution following injection
- Confirm mass reduction following source treatment or plume stabilization
- Support adaptive management where conditions evolve over time

The technology is compatible with remedies addressing PFAS, chlorinated solvents, petroleum hydrocarbons, and mixed contaminant plumes, making it well suited for a wide variety of sites.



Sample FluxTracer data output



Experience and implementation

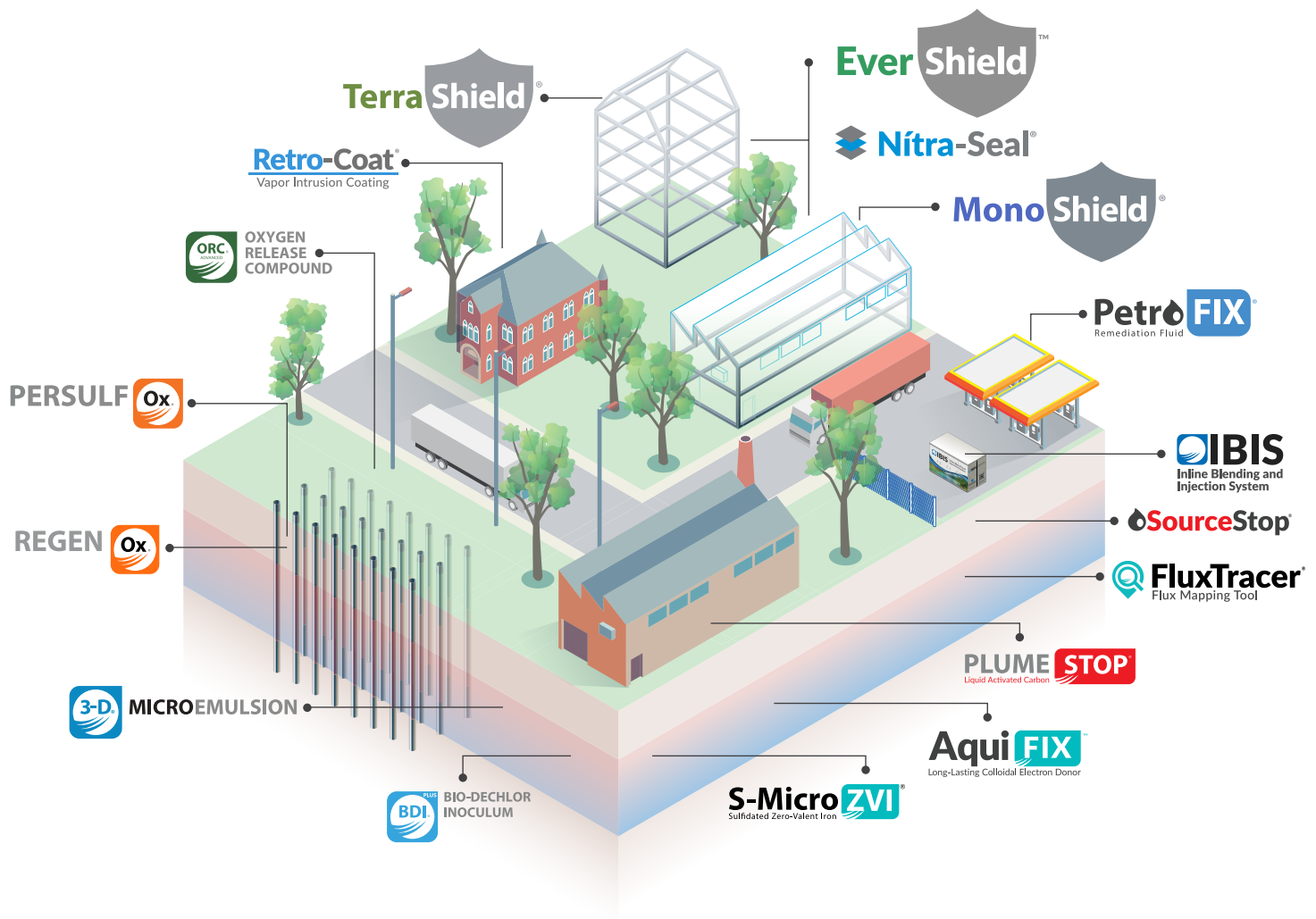
FluxTracer has been applied at sites to support:

- Remedial investigations and feasibility evaluations
- In situ remedy design and optimization
- Post-remediation performance monitoring

The approach has proven particularly valuable at sites where traditional monitoring results are ambiguous or where stakeholders require higher confidence in remedial outcomes.

Availability

FluxTracer is available as a standalone characterization tool or integrated into broader remediation programs supporting site investigation, remedy implementation, and closure activities across North America.



About REGENESIS

At REGENESIS we value innovation, technology, expertise and people which together form the unique framework we operate in as an organization. We see innovation and technology as inseparably linked with one being born out of the other.

Inherently, innovation imparts new and better ways of thinking and doing. For us, this means delivering expert environmental solutions in the form of the most advanced and effective technologies and services available today.

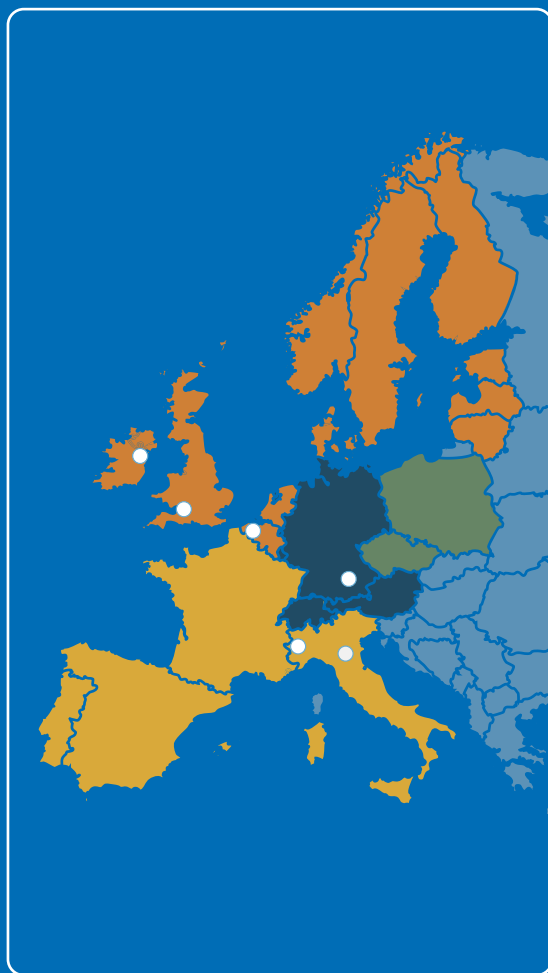
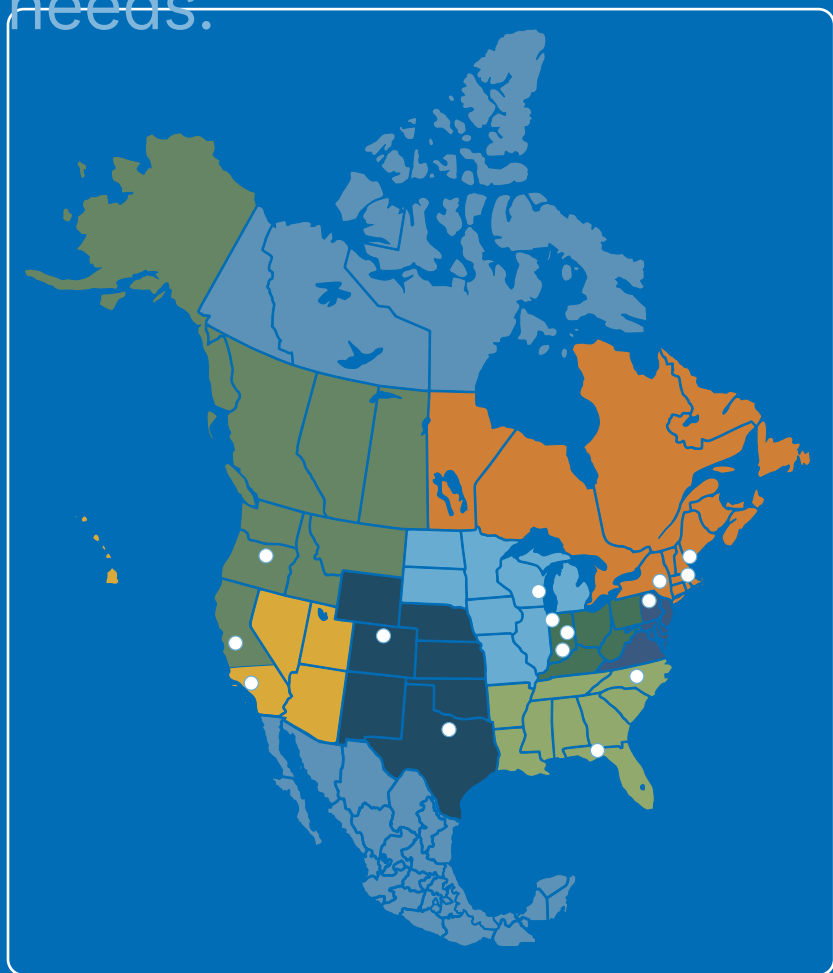
We value expertise, both our customers' and our own. We find that when our experienced staff collaborates directly with customers on complex problems, there is a high potential for success including savings in time, resources and cost.

We are driven by a strong sense of responsibility to the people charged with managing the complex environmental problems we encounter and to the people involved in developing and implementing our technology-based solutions. We are committed to investing in lasting relationships by taking time to understand the people we work with and their circumstances. We believe this is a key factor in achieving successful project outcomes.

We believe that by acting under this set of values, we can work with our customers to achieve a cleaner, healthier, and more prosperous world.

Have a challenge? Let's solve it together.

Contact us today to discuss your specific needs.



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