

Cascade Environmental Awarded U.S. Patent for Pathfinder™ Automated Injection Technology

Improves control, consistency, and amendment distribution in complex subsurface conditions

BOTHELL, WA, UNITED STATES, May 27, 2026 /EINPresswire.com/ -- [Cascade Environmental](https://www.einpresswire.com/) (Cascade), the leading field services contractor for drilling and remediation in the United States, has been awarded U.S. Patent No. 12,636,689 for [Pathfinder](#), its proprietary automated injection technology designed to improve the delivery and distribution of in situ remediation amendments.



Pathfinder Automated Injection System

For decades, industry research has shown that successful remediation depends on achieving effective distribution and contaminant contact in the subsurface. Despite this, injection methods have seen limited advancement. Pathfinder was developed to address this challenge through a fully automated system that enhances control, consistency, and amendment placement in complex subsurface conditions.

Pathfinder is engineered to deliver liquid and colloidal solid amendments, including Cascade's [ColloidalChem™](#) and Colloidal iZVI™ technologies, while continuously monitoring and adjusting injection performance in real time. The system tracks key parameters such as pressure, flow rate, and groundwater response, automatically adjusting injection conditions to maintain target set points and improve distribution.

By improving control over injection dynamics, Pathfinder helps minimize common field challenges, including excessive groundwater mounding, short-circuiting, and unintended fracturing. The result is more effective contact between amendments and contaminants, supporting more reliable treatment performance and improved remediation outcomes.

"Injection of remediation amendments no longer needs to be the weak link in groundwater cleanup. It can now be a critical success factor in the entire process as we transition to more



Automated injection of remediation amendments is increasingly a critical success factor in groundwater cleanup as standards tighten for PFAS, 1,4-dioxane, and vapor intrusion.”

Eliot Cooper, Remediation Technology Expert

stringent targets for PFAS, 1,4 Dioxane, and eliminating sources of vapor intrusion”, said Eliot Cooper, Remediation Technology Expert.

This achievement reinforces Cascade’s continued investment in technologies that enhance field execution and support more predictable remediation performance across a wide range of geologic settings.

About Cascade Environmental

Cascade is a field services contractor that partners with clients to provide seamless environmental and geotechnical solutions, from investigation and drilling to

remediation and site closure. With a nationwide footprint and deep technical expertise, Cascade helps clients manage complex subsurface challenges safely, efficiently, and sustainably.

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