## *Entries for June 1-15, 2026*

### Market/Commercialization Information

#### C -- ARCHITECT-ENGINEER (AE) SERVICES TO SUPPORT HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) MULTIPLE AWARD TASK ORDER CONTRACT (MATOC) (COMBINE)

U.S. Army Corps of Engineers, South Atlantic Engineer Division, Mobile District, Mobile, AL
Opportunities on SAM.gov W9127826RA018, 2026

This is a full and open competition under NAICS code 541330. The U.S. Army Corps of Engineers Mobile District, requires a qualified contractor to support a full range of Architect and Engineering (AE) services for the Mobile District's Environmental Restoration Program. AE services will be performed primarily within Mobile District's Area of Responsibility (AOR), but will also include Central and South America, Puerto Rico, and the U.S. Virgin Islands. AE services may also be used to support the Environmental Response Program outside of the Mobile District's AOR. The services provided will include a full range of comprehensive support environmental services. The services will include analyzing and evaluating environmental regulations for implementing studies, designs, and program initiatives; providing comprehensive programmatic support of policies, guidance and regulations for various stakeholders and agencies; Hazardous, Toxic, and Radioactive Waste (HTRW) investigations and studies; remedial design; feasibility study, proposed plan, public meeting, and record of decision; vapor intrusion investigation and/or vapor intrusion remedial design; pilot study and/or bench study site investigations/assessments; treatability studies; pilot studies; risk assessments; sampling and analyses; data validation; electronic data management; geotechnical investigations; monitoring well installation; groundwater modeling; groundwater and surface water quality assessments; water reuse initiatives; vapor intrusion monitoring, assessment and modeling; environmental site assessments; surveys/inspections for asbestos, leaded paint, and other HTRW materials; and investigation/study/assessment of emerging contaminants such as per and polyfluoroalkyl substances (PFAS). The USACE intends to award an AE MATOC with a shared capacity of $249M and an ordering period of five years with up to two option years. Offers are due by 2:00 PM CDT on July 30, 2026.
https://sam.gov/workspace/contract/opp/011a54ca654244799a912bbcbffae98e/view

#### INDEFINITE-DELIVERY/INDEFINITE-QUANTITY (ID/IQ) SMALL BUSINESS ENVIRONMENTAL REMEDIAL ACTION CONTRACT FOR SITES IN HAWAII, GUAM, AND OTHER AREAS WITHIN THE NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND PACIFIC AREA OF RESPONSIBILITY VI (SBRAC VI) (SOL)

U.S. Department of the Navy, NAVFAC Pacific Command, Joint Base Pearl Harbor-Hickam, HI
Opportunities on SAM.gov N62742-26-R-1801, 2026

This is a total small business set-aside under NAICS code 562910. The Naval Facilities Engineering Systems Command (NAVFAC) Pacific seeks a contractor to perform remedial actions at environmentally contaminated sites, predominantly located at Navy and Marine Corps installations and other Government agency sites. The sites will consist of those ranked on the Superfund NPL and non-NPL sites and Base Realignment and Closure sites regulated under CERCLA, RCRA, UST regulations, state-specific regulations, and other sites that might require remedial action. The work to be ordered under this contract will be performed at various locations within the NAVFAC Pacific area of responsibility (AOR). Work may also be added and performed anywhere outside of the NAVFAC Pacific AOR, as required by the Government. The exact location of the required effort will be specified in the individual Contract Task Orders. The Contractor may also, on occasion, be tasked to perform work for other NAVFAC Components, DoD, or federal agencies as required by the Government. This contract may include work on private, county, or state lands that are associated with the environmental sites identified above. Contaminants to be addressed are predominantly solvents, petroleum, oils and lubricants, metals, acids, bases, reactives, non-explosive ordnance residues or compounds, PAHs, PCBs, PFAS, MEC (including all types of discarded military munitions and unexploded ordnance), emerging contaminants, pesticides, and G-RAM. Contaminants may be present in soils, marine or freshwater sediments, groundwater, air, sludge, surface water, and manmade structures. Contaminated sites include, but are not limited to, landfills, hazardous waste treatment, storage and disposal facilities, tanks, lagoons, firefighting training areas, and small arms ranges. The Contractor must have anti-terrorist/force protection hazardous material release incident response and remediation capabilities. This includes the capability to assist with or conduct decontamination following a release of ATFP-related hazardous materials such as anthrax or any chemical, biological, or radiological agent. Work may include emergency or expedited contamination assessment and subsequent decontamination and remediation before returning facilities to normal operations, as well as preparing work plans and coordinating with applicable agencies. Task order values will range from $5,000 to $100,000,000. The period of performance will be five years. Offers are due by 2:00 PM HST on September 9, 2026.
https://sam.gov/workspace/contract/opp/c421505c230f4196a2f5a3298dee424a/view

Return to top

## *Cleanup News*

#### COMBINED ISTR TECHNOLOGIES AT FOUR RECENT FUND LEAD SUPERFUND SITES

Hauber, E. | DCHWS West 2025 Winter Symposium, 26-28 January, Denver, CO, 22 slides, 2026

This presentation highlights the successful application of combined ISTR technologies at four Superfund sites, demonstrating how integrated thermal treatment approaches can overcome challenging subsurface conditions and accelerate contaminant mass removal. The design, implementation, and performance of multiple ISTR technologies, including electrical resistance heating, thermal conductive heating, and steam-enhanced extraction, used individually or in combination to address chlorinated solvents, coal tar, creosote, and other recalcitrant contaminants, are examined. Case studies illustrate how remedy selection was tailored to varying geologic settings, contaminant distributions, and cleanup objectives while integrating complementary technologies, such as soil vapor extraction, multiphase extraction, groundwater recovery, and vapor treatment systems. Results from each project are presented, including contaminant mass removal, achievement of remedial goals, construction considerations, system optimization, and transition to post-treatment management. The presentation also discusses lessons learned related to remedy design, stakeholder coordination, performance monitoring, and risk reduction, emphasizing the advantages of combining multiple thermal technologies to maximize treatment efficiency, while minimizing long-term remediation timeframes. Practical insights into the planning, implementation, and performance of integrated ISTR remedies are provided that can be applied to future complex Superfund source-area cleanups. Https://mediacdn.guidebook.com/upload/213717/ZGjZ6MvQtNYiZEyZlRoik9Y5I7KKfF0gRiDB.pdf

#### REMEDY RESILIENCY IN THE RD/RA FOR THE WHITE SWAN/SUN CLEANERS AREA GROUNDWATER CONTAMINATION SUPERFUND SITE

Khan, M. | DCHWS West 2025 Winter Symposium, 26-28 January, Denver, CO, 17 slides, 2026

This presentation examines the evolution of the groundwater remedy at the White Swan/Sun Cleaners Area Groundwater Contamination Superfund site in New Jersey, highlighting how design modifications improved constructability, resiliency, and implementation efficiency without compromising remedial performance. It reviews the site's history, major remediation milestones, and the transition from the original 2020 remedial design to the revised 2024 design. Key engineering modifications, including replacing conventional trenching with horizontal directional drilling, transitioning from a traditional treatment facility to a modular groundwater treatment plant, optimizing extraction and treatment system components, and streamlining construction sequencing, are discussed in detail. Side-by-side comparisons illustrate how these revisions reduced construction duration, minimized community disruption, improved operational flexibility, and enhanced long-term system reliability. The presentation emphasizes proactive stakeholder communication and resilient engineering solutions during implementation.
Https://mediacdn.guidebook.com/upload/213717/7W0fXGWDtUFGlspBAEHsrHWfd61pC4KY9C20.pdf

#### MANAGING REMEDIATION RISK THROUGH MULTI-CRITERIA DECISION MAKING

Cole, J. | DCHWS West 2025 Winter Symposium, 26-28 January, Denver, CO, 17 slides, 2026

This presentation describes how a multi-criteria decision-making framework can reduce technical and financial risk by integrating multiple lines of evidence to determine when the capacity of ISTT to remove contaminants from soil or groundwater has been reached. Using the Arrowhead Superfund site as a case study, the presentation illustrates how operational data were combined to support defensible and cost-effective system shutdown decisions. The design and performance of an electrical resistance heating remedy that incorporated co-located vapor extraction, groundwater monitoring, and comprehensive temperature monitoring to achieve treatment objectives, including contaminant removal, hydraulic and pneumatic control, and subsurface heating targets, is reviewed. Multiple performance indicators, including contaminant mass recovery, temperature distribution, energy input, vapor recovery, and groundwater concentration trends, were evaluated throughout system operation to determine when contaminant removal had reached an asymptotic rate and additional heating would provide diminishing returns. Results demonstrated that contaminant recovery plateaued despite maintaining target temperatures, indicating that the practical treatment capacity of the system had been achieved. Lessons learned emphasize the value of incorporating endpoint decision criteria during remedy planning, engaging stakeholders early in the design process, and using readily available operational data to support transparent, technically defensible decisions. Practical guidance is provided for applying multi-criteria decision-making frameworks to optimize ISTT performance, minimize unnecessary energy consumption, and improve risk management during thermal remediation projects. Https://mediacdn.guidebook.com/upload/213717/6tPrwutYpDkRbA3gU2zkscXBjWRuEUQdzMI7.pdf

Return to top

## *Demonstrations / Feasibility Studies*

#### IS A LINEAR LOW-DENSITY POLYETHYLENE PASSIVE SAMPLER SUITABLE FOR LONG-TERM MONITORING OF POLYCYCLIC AROMATIC HYDROCARBONS IN SEAWATER? A CASE STUDY OF MASAN BAY WITH BIOAVAILABILITY ASSESSMENT

Kim, N.Y., H. Jung, M. Kang, and G.B. Kim. Environmental Pollution 397:127987(2026)

Masan Bay, a semi-enclosed industrial embayment in South Korea, has been continuously impacted by urban and industrial inputs of PAHs. Although passive samplers are widely used to determine freely dissolved concentrations, the long-term applicability of linear low-density polyethylene (LLDPE) in marine environments has not been systematically evaluated. To address this gap, LLDPE and low-density polyethylene (LDPE) were simultaneously deployed for 7 months at Samgwi (SG) and Yangdeok (YD) to determine time-weighted average concentrations (CTWA) and seasonal variability. CTWA values ranged from 1.2 to 6.5 ng/L at SG and from 2.0 to 6.7 ng/L at YD. Seasonal contributions of individual PAHs showed no substantial differences between the two samplers. Compared with previous studies, sediment PAH concentrations exhibited a declining trend. Porewater concentrations ranged from 1.5 to 16 ng/L and did not exceed toxicity-based benchmarks. Diffusive fluxes were predominantly directed from sediments to the overlying seawater. Findings demonstrate that LLDPE can be effectively applied alongside LDPE for long-term monitoring of PAHs and indicate relatively low ecological risk under current conditions in Masan Bay.
Https://www.sciencedirect.com/science/article/pii/S026974912600357X/pdfft?md5=53671b5538a0872ebb68905efda7c09c&pid=1-s2.0-S026974912600357X-main.pdf

#### INTEGRATED THERMAL AND BIOSTIMULANT ENHANCED BIOREMEDIATION OF CAHS AND BTEX CO-CONTAMINANTS IN GROUNDWATER: CHEMICAL AND MOLECULAR EVIDENCE IN LABORATORY AND PILOT-SCALE STUDIES

Zhang, Z., Q. Wang, X. Liu, X. Zhang, and X. Song. Water Research 297:125751(2026)

A series of lab microcosm experiments and a pilot-scale study were conducted to evaluate the performance of integrated thermal and biostimulant-enhanced bioremediation (ITBEB) to treat groundwater co-contaminated with chlorinated aliphatic hydrocarbons (CAHs) and BTEX. The microcosm results showed that compared to the control groups at 15 °C without biostimulation, ITBEB using emulsified vegetable oil (EVO) at 30°C increased the TCE dechlorination rate by 2.2-fold, while cDCE stalling occurred; however, benzene degradation efficiency was not significantly improved. Both TCE and benzene biodegradation were inhibited at 45°C. Upon shifting back to room temperature, TCE degradation recovered, whereas benzene degradation did not, likely due to differential thermal tolerance between organohalide-respiring and benzene-degrading microorganisms. In contrast, the pilot-scale study demonstrated that simultaneous CAH and BTEX biodegradation was achieved following EVO amendment and aquifer heating to the target temperature range of 35-40°C via electrical resistive heating. cDCE stalling was alleviated in situ, as evidenced by VC and ethene formation, accompanied by the markedly elevated ratio of abundances of *vcrA* to *Dhc* 16S rRNA gene, providing strong molecular support for complete reductive dechlorination. Concurrently, rapid BTEX biodegradation was observed under optimal thermal conditions and was closely linked to iron- and sulfate-reduction. However, BTEX removal efficiency reached a plateau during the later heating stage, owing to electron acceptor depletion and thermal inhibition of sulfate- and iron-reducing activities. In addition, the dominating bacteria shifted from contaminant-degrading genera *Sulfurospirillum* and *Pseudomonas* to a fermentative group following EVO injection, then to thermophilic taxa after aquifer heating. The study demonstrated that ITBEB can effectively promote the biodegradation of CAHs and BTEX in co-contaminated groundwater when TOC amendment was coupled with moderate thermal stimulation.

#### BIOREMEDIATION OF CVOC CONTAMINATION IN THE SUBSURFACE OF UTRECHT, THE NETHERLANDS, AND ITS INTERACTION WITH AQUIFER THERMAL ENERGY STORAGE TO PROTECT DRINKING WATER SOURCES

van Ras, N., M. Henssen, and T. Grotenhuis. Frontiers in Water 8:1771734(2026)

Aquifer Thermal Energy Storage (ATES), a new sustainable energy technology, was combined with in situ bioremediation (ISB) into RemediaTES. Lab and pilot studies at the municipality of Utrecht, the Netherlands, were combined to demonstrate the effectiveness of the proposed combination of technologies. At this site, relatively high concentrations of CVOC are present (mainly

cis-DCE and VC with concentrations up to ~1,800 and 1,600 µg/L, respectively). The pilot started with groundwater circulation. A groundwater extraction and an infiltration well were installed within the contaminated area. Between the wells, several injection and monitoring wells were installed to infiltrate a concentrated DHC culture or a slow-release carbon source and to monitor the degradation process. A volume of 8 m³ of DHC culture was cultivated using a mobile TCE system and injected into the pilot area. By applying a pumping flow rate of approximately 4-6 m³/day, the retention time in the bioactive zone was reduced from 2.5 months to ~2-4 days, which is more representative of the retention time in RemediaTES applications. Monitoring included periodic groundwater sampling and analyses for CVOCs and degradation products ethene and ethane, molecular DNA analysis to investigate the development and migration of DHC, and Membrane Filtration Index (MFI) to determine the number of particles (inorganic and bacterial) in the groundwater. Results showed that a generally applicable area-oriented strategy that focuses on preventing CVOC transport to the receptor is most cost-effective in the long term. The combined technologies have the potential to become a breakthrough in the redevelopment of contaminated sites. *This article is* ***Open Access*** *at* https://www.frontiersin.org/journals/water/articles/10.3389/frwa.2026.1771734/full

Return to top

## *Research*

### PATHWAYS FOR THE MINERALIZATION OF PERFLUOROOCTANESULFONIC ACID UNDER A SMOLDERING REDUCTIVE ATMOSPHERE

Zhan, M., Z. Zhang, Y. Shan, J. Fu, P. Cai, and W. Jiao.
Environmental Science & Technology 60(4):3668-3680(2026)

PFOS smoldering degradation pathways and relative bond cleavage mechanisms were deduced from lab-scale byproduct profiles and supported by reactive force field simulations and quantum-chemical calculations. Smoldering was self-sustained at a calorific value of 0.79 MJ/kg and an air Darcy velocity of 1.5-2.5 cm/s. The PFOS removal rate reached 98.1%, with only ~50% energy consumption compared with that of conventional incineration under equivalent degradation conditions. Investigations revealed distinct degradation pathways in smoldering compared with traditional approaches: in a CO atmosphere, early C-C bond scission and CO-coupled sulfur transformation were predicted (potentially evolving toward COS). This pathway played a dominant role in PFOS degradation, providing more efficient sulfur-group transformation, less toxic byproducts, and better compatibility with oxygen-limited conditions. Pilot-scale experiments further validated the feasibility for field applications, achieving 98.6% PFOS removal. Findings provide mechanistic insights into improved smoldering-based PFAS remediation under reductive conditions and optimization of treatment strategies toward higher efficiency and environmental safety.

### DISSOLVED ORGANIC CARBON SOURCE IMPACT ON PERFLUOROALKYL SUBSTANCES REMOVAL FROM STORMWATER USING ACTIVATED CARBON AND ION EXCHANGE RESIN

Brown, C.A., J.T. Swenson, Y.-M. Cho, J.C. Pritchard, R.P. Milstead, C.K. Remucal, and R.G. Luthy. | Environmental Science & Technology 60(1):1063-1072(2026)

A study assessed the removal of six PFAS from synthetic stormwater with dissolved organic carbon (DOC) derived from straw and compost, which are representative materials observed in stormwater catch basins. Activated carbon (AC) and ion-exchange resin (IX) alone or in tandem were used to assess the impact of DOC on sorbent performance and lifetime. PFAS breakthrough profiles in column studies were used to model contaminant removal via a 1-D intraparticle pore diffusion model, which was then used to predict contaminant removal under varying environmental conditions. PFAS removal was least effective when biodegradable straw DOC was present, indicating larger kinetic limitations to sorption than nonbiodegradable compost DOC. Using AC and IX in combination shows additive improvements over using the sorbents individually. Modeled parameters from replicate tests show consistency in the predicted breakthrough. With 3 mg/L compost DOC and 80 cm/h face velocity, models show that 50-100 cm AC followed by 12.5-50 cm IX provides long-term PFAS removal, ca. 10 years or 90,000 empty bed volumes. Https://pubs.acs.org/doi/pdf/10.1021/acs.est.5c08252?ref=article_openPDF

### EVALUATING DUPLICATE RESULTS DEMONSTRATES DIFFERENCES BETWEEN DIRECT AND CANISTER SAMPLING METHODS

Kullmann, J.A.P. and I. Polenghi-Gross.
Groundwater Monitoring & Remediation 46(2):22-32(2026)

A study used field duplicate results to assess whether VOC samples collected with reusable summa canisters exhibit carryover contamination compared with samples collected by direct sampling methods (e.g., soil gas collected by mobile labs via dedicated tubing and syringes, or groundwater collected using disposable vials). This study used groundwater, soil gas, and indoor air datasets from samples collected between 2000 and 2024 from multiple project sites and analyzed by different labs. VOC data were evaluated by sampling method (direct or reusable canister), analytical method, and medium following a similar approach to one described in a prior study by McHugh et al. (2018). The evaluation included assessing the magnitude of the differences between primary and duplicate sample results by calculating percent differences and comparing the number of single-detect pairs versus non-detect pairs, which could be an indication of carryover contamination. Results showed that water samples collected using disposable vials and soil gas samples collected using direct sampling methods had greater precision (i.e., lower percent differences) and lower occurrences of single-detect pairs compared to soil gas or indoor air samples collected using evacuated canisters, confirming that reusable canisters may contain carryover contamination. Other factors contributing to uncertainty (i.e., low detected concentrations, sampling equipment certification process, quality control procedures, and laboratory best practices) were also considered to explain the discrepancies identified in this study.

### EFFECT OF MODERATE HEAT ON TCE REDUCTIVE DECHLORINATION RATES IN GROUNDWATER

Freedman, D.L., N. Cotter, C. Divine, and S. Justicia-Leone.
Groundwater Monitoring & Remediation 46(2):44-54(2026)

A study evaluated the effect of temperature on the kinetics of TCE dechlorination. Groundwater and soil samples were collected from a site in southern California undergoing biostimulation treatment for a plume consisting of TCE and other chlorinated volatile organic compounds (VOCs) and where a Thermal In Situ Sustainable Remediation (TISR®) field test is being conducted. Microcosms were prepared in an anaerobic chamber with ~92 g of wet sediment and ~93 mL of groundwater with ~5.4 mg/L of TCE. Treatments included unamended and lactate-amended microcosms incubated at 18, 25, 30, 35, 40, and 50°C. For the unamended microcosms, activity was limited to TCE reduction to cDCE, indicating that at the time and location of sample collection, the aquifer was electron donor limited. The first-order rate of TCE reduction to cDCE increased by ~6-fold from 0.078/d at 18°C to 0.48/d at 25°C and then declined to <0.11/d at temperatures ≥30°C. Complete dechlorination of TCE to ethene occurred for lactate-amended treatment. First-order dechlorination rate constants were determined based on a chloride mass balance. The rate constants increased ~2.5-fold from 0.12/d at 18°C to 0.30/d at 25°C, and 3.8-fold from 18°C to 0.46/d at 35°C. No dechlorination occurred at 40 or 50°C. Molecular analysis of the lactate-amended microcosms confirmed the presence of microbes capable of TCE reduction to cDCE (e.g., *Desulfitobacterium* and *Dehalobacter*) and complete reduction of TCE to ethene (*Dehalococcoides* and *Dehalogenimonas*), as well as the genes for key dehalogenases (PCE Reductase, tceA Reductase, and Vinyl Chloride Reductase). Results confirm the potential for significant improvements to the rate of complete biotic reductive dechlorination of TCE in response to moderate heating and biostimulation of an aquifer. Https://ngwa.onlinelibrary.wiley.com/doi/epdf/10.1111/gwmr.70032

### MONITORING HEAT TRANSFER AND RECHARGE MECHANISMS IN A KARST SYSTEM USING FIBER OPTIC DISTRIBUTED TEMPERATURE SENSING

Nader, A.A., J. Albaric, J.-P. Malet, M. Steinmann, K. Susanto, J. Ducasse, G. Ferhat, H. Celle, B. Pohl, J. Labbe, C. Sue, C. Fontaine, M. Bertin, and A. Boetsch. Groundwater 64(3):363-374(2026)

An 800-m-long fiber-optic cable was deployed within the unsaturated zone of a karst system in the Jura Mountains (eastern France) to investigate the spatial and temporal variability of cavity air and underground river water temperatures over a 6-month monitoring period. Results highlight a gradual increase in cavity air temperature and cavity river temperature over the study period, consistent with the diffusion of surface air temperature. Superimposed on this long-term influence, short-term temperature fluctuations linked to precipitation events reveal the role of advective heat transfer associated with rapid infiltration and mixing in the main conduit. Temperature and electrical conductivity contrasts between the underground river and a lateral tributary indicate that multiple reservoirs contribute to aquifer recharge.

### RESPONSE CHARACTERISTICS OF MICROBIAL COMMUNITY IN SOIL COCONTAMINATED WITH HEAVY METALS AND CHLORINATED HYDROCARBONS: A FIELD STUDY AT A DEMOLISHED ELECTROPLATING PLANT SITE

Gou, Y., H. Pang, N. Wu, J. Zhang, X. Li, J. Wang, L. Zeng, L. Wei, R. Kang, W. Wei, and P. Li. | International Biodeterioration & Biodegradation 206:106211(2026)

A study examined the distribution of pollutants and the response characteristics of bacteria and organohalide-respiring bacteria (OHRB) in CH-HM-contaminated soil collected from a former electroplating plant. The two pollutant types exhibited distinct vertical spatial distributions. Soil bacterial communities were affected primarily by depth, followed by soil texture and pollutant concentration. TCE, VC, chromium, zinc, nickel, and $Cr^{6+}$ levels in the soil were key factors influencing the relative abundance of bacterial phyla. However, the abundance of OHRB (Geobacter) was more indicative of CH contamination than of HM presence. Moreover, soil bacterial functions across different depths, textures, and pollutant concentrations showed no significant differences. The bacterial network was divided into 20 modules, with cooperative (positive) interactions outnumbering competitive (negative) interactions. In total, four bacterial genera within Proteobacteria played a key role in this co-contaminated environment. Findings provide a scientific basis for developing bioremediation strategies for sites affected by CHs and HMs. Https://www.sciencedirect.com/science/article/pii/S096483052500215X/pdfft?md5=ca56e30de34da9413e7ee0499739a03e&pid=1-s2.0-S096483052500215X-main.pdf

Return to top

## *General News*

### REMEDIATING AND REDUCING THE ENVIRONMENTAL IMPACT OF FIRE SUPPRESSION SYSTEMS CONTAMINATED WITH PER- AND POLYFLUOROALKYL SUBSTANCES: PERSPECTIVES ON CURRENT GUIDELINES

Magnuson, M.L., T. Sleight, and W.F. Harper Jr. | Fire Safety Journal 163:104811(2026)

This document provides overall technical framework guidelines toward remediation of fire suppression systems containing certain PFAS originating from AFFF use, which are being replaced with fluorine-free foam (F3) alternatives. PFAS remediation from AFFF-contaminated surfaces is a complex and multi-disciplinary technical topic, and this framework is intended to help practitioners navigate the many intertwined details. As practical application of these details can vary greatly from system to system, this document discusses the implications of PFAS persistence and a comprehensive range of considerations regarding remediation of fire suppression systems contaminated with PFAS. This document can help owners take substantial steps toward the goal of reducing PFAS contamination in fire suppression systems.

### A PORTABLE MULTI-PARAMETER FLUID MONITORING UNIT FOR REAL-TIME MEASUREMENTS DURING WELL DEVELOPMENT AND GEOTHERMAL OPERATIONS

Virchow, L., J.F. Ludicke, R. Peksa, T. Ballerstedt, S. Kranz, and S. Regenspurg.
Groundwater Monitoring & Remediation 46(2):89-97(2026)

*FluMoMax*, a portable fluid monitoring unit, can measure several physicochemical parameters in real time to monitor fluid characteristics and enable early detection of geochemical processes such as scaling, corrosion, particle mobilization, and oxygen intrusion. *FluMoMax* integrates sensors to continuously measure pH, oxidation-reduction potential, specific electrical conductivity, dissolved oxygen, temperature, turbidity, and density. Optical fluid changes can be visually observed through a sighting tube. Various valves are installed for fluid sampling or connecting additional monitoring devices. Particle filters can be connected for high-turbidity water. The inline pump regulates the flow rate and ensures backflow without pressure loss into the main production or injection flow line. The device is designed for use in the field and can operate at process temperatures of up to 120°C and pressures of up to 10 bar. It was first tested at a drilling site in Berlin under temperatures of up to 107°C and pressures of up to 7 bar, demonstrating operational reliability for field deployment. *FluMoMax* provides a robust and modular solution for multi-parameter monitoring, thereby improving the understanding of hydrogeochemical dynamics during groundwater extraction and injection. Https://ngwa.onlinelibrary.wiley.com/doi/epdf/10.1111/gwmr.70041

### ENCAPSULATION OF PFAS IN LANDFILL LEACHATE FORMING AN ALTERNATE DAILY COVER

Ruehl, P. | PFAS Forum VI, 13-15 May, Orlando, FL, 24 minutes, 2026

The state-of-practice and typical results of the successful use of cement products for solidification/stabilization (S/S) of landfill leachate concentrate are described in this presentation. A typical landfill may have 10,000-100,000 gal or more of leachate to manage, with as much as one-third of a landfill's operating costs devoted to leachate management. The concentrated leachate almost always contains significant amounts of PFAS. A patented method was developed for encapsulating PFAS from the concentrate, dramatically reducing the availability of PFAS to the environment. Typical analytical results indicate two to five orders of magnitude reduction between the concentration of PFAS in the concentrate and the extraction fluid. The method describes how PFAS is encapsulated in an inorganic matrix formed by mixing the contaminated concentrate with a mineral binder. The slurried concentrate can be sprayed onto the landfill working face shortly after it has been treated. The landfill can then increase its capacity and extend its useful life by using the treated leachate as an Alternate Daily Cover instead of the usual six inches of

"free" dirt from onsite. This increased capacity can significantly offset the price of the binder and provide a permanent solution to recapturing PFAS-contaminated leachate. The method eliminates offsite disposal costs for leachate and the need to recirculate leachate into the landfill. This process eliminates the endless cycle of PFAS from landfill to POTW and back again, constituting 100% resource recovery. *See times 48:00-1:11:57* https://www.youtube.com/watch?v=D2wCC4H_Fa4

### RESEARCH PROGRESS ON THE MIGRATION OF DNAPL POLLUTANTS IN FRACTURED MEDIA

Xian, L., C. Zheng, Y. Yuan, Y. Yang, and Y. La. | Sustainability 18:3289(2026)

This paper provides an overview of mathematical models for multiphase flow migration in fractured media, followed by a systematic analysis and classification of DNAPL migration mechanisms based on lab experiments and numerical simulations. Key challenges in current DNAPL remediation practices are discussed, including difficulties in monitoring and characterizing fractured aquifers, limited delivery and utilization efficiency of remedial agents, and the back-diffusion of DNAPL from low-permeability zones. Based on the analysis, three primary DNAPL remediation approaches, including physical, chemical, and biological methods, are reviewed and evaluated. Future research directions for understanding DNAPL migration and improving remediation strategies in fractured media are proposed. The review bridges mechanistic knowledge, simulation research, and remediation practice, providing insights that contribute to future technological progress and management decision-making in DNAPL-contaminated fractured aquifers. *This article is* ***Open Access*** *at* https://www.mdpi.com/2071-1050/18/7/3289.

The Technology Innovation News Survey welcomes your comments and suggestions, as well as information about errors for correction. Please contact Michael Adam of the U.S. EPA Office of Superfund and Emergency Management at adam.michael@epa.gov or (703) 399-4268 with any comments, suggestions, or corrections.

Mention of non-EPA documents, presentations, or papers does not constitute a U.S. EPA endorsement of their contents, only an acknowledgment that they exist and may be relevant to the Technology Innovation News Survey audience.