Entries for June 1-15, 2018

Market/Commercialization Information

CLEANUP HEXAVALENT CHROMIUM CONTAMINATION
Department of Energy, Office of Environmental Management, Oak Ridge, TN, Federal Business Opportunities, FBO-5977, Solicitation W9112R-18-S-00028, 2018

This acquisition is set aside 100% for HUBZone small business concerns under NAICS Code 562910, size standard 750. The contractor shall furnish all labor, equipment, and material to clean up areas found to be contaminated by hexavalent chromium (Cr(VI)) at 29 hazardous waste disposal facilities. The effort will include the design, development, operation, and maintenance of remediation treatments and equipment for the Department of Energy's Oak Ridge National Laboratory in Oak Ridge, Tennessee.

REMEDIATION OF ABANDONED MINING FEATURES, NEW MEXICO REGION
Bureau of Land Management, 1600 Clifton St., N.W., Suite 900, Denver, CO, Federal Business Opportunities, FBO-5994, Solicitation 140318IQ0012, 2018

This solicitation supports remediation of three abandoned mining features located in the New Mexico region: (1) New Lancers Mining District; (2) Lomita, Socorro West, Magdalenia; and (3) Humble, Socorro East. The remediation will be provided to the agency by the contractor in support of comprehensive subsurface investigation projects for projects requiring site characterization. The solicitation is being issued to determine the best approach to address all the mining features. The contractor will also assist with preparation of cost estimates for some of the projects.

WASHINGTON COUNTY OLDMINES/POTOS/FURNACE CREEK NPL SITES LEAD REMEDIATION ACTION
Environmental Protection Agency, Region VII, Lenexa, KS, Federal Business Opportunities, FBO-5913, Solicitation 68EE718R00014, 2018

U.S. EPA Region 7 seeks the services of an experienced firm to provide remedial action for lead-contaminated properties within Operable Unit 1 at the Washington County Lead Online Mining District (WCLM) and Furnace Creek Superfund Site (FCS). The project will be undertaken collectively in Washington County, Idaho, and Utah. Offers are due by 8:00 AM ET on August 6, 2018. Monitor FedConnect for updates at https://www.fedconnect.net/FedConnect?doc=588D718B80014&agency=EPA [Note: It might be necessary to copy and paste the URL into your browser for direct access.]

BROOKHAVEN NATIONAL LABORATORY STACK DEMOLITION
U.S. DOE, Environmental Management Complex, Oak Ridge, TN, Federal Business Opportunities, FBO-1975, Solicitation 8903318REB900036, 2018

DOE has determined that the procurement is in the Acquisition planning stage for demolition, deconstruction, and site clearance of the High Flux Beam Reactor (HFB and related buildings at the Brookhaven National Laboratory facility in Upton, NY. DOE seeks to demolish the HFR stack in a single effort. The deconstruction activities include isolation of utilities (electrical, water, sewer, gas), and procurement. This solicitation is being issued to determine the best approach to address the project. The solicitation is being issued to determine the best approach to address the project. The solicitation is being issued to determine the best approach to address the project. This notice solicits input via capability statements and comments from interested parties (including small business concerns) with the specialized capabilities necessary to perform all or part of the deconstruction or remediating the affected areas. Offers are to be submitted via email by 2:00 PM ET on August 6, 2018.

IDIQ CONTRACT FOR ECONOMICALLY DISADVANTAGED WOMAN-OWNED SMALL BUSINESS A/E ENVIRONMENTAL SERVICES
Department of the Army, U.S. Army Corps of Engineers, USACE District, Louisville, KY, Federal Business Opportunities, FBO-9796, Solicitation 130241B1889950, 2018

This notice is for submittal of SF330 packages and is open only to economically disadvantaged woman-owned small businesses under NAICS code 541330. The proposed A/E services, which will be obtained by a negotiated firm-fixed-price contract, are for environmental support projects primarily within the Great Lakes and Ohio River Division boundaries. Projects may include regulatory, environmental, and other environmental activities. The agency may consider independent environmental studies. Offers should be submitted via email by 2:00 PM ET on August 6, 2018.

CleanUp News

RAB MEETING MINUTES: FORMER GALENA FORWARD OPERATING LOCATION, ALASKA
Galena Restoration Advisory Board, 34 pp, 25 Oct 2017

The performance-based remediation contract for the Former Galena Forward Operating Location encompasses the cleanup of 32 sites. Five sites have been closed to date. Installation of remedial systems has begun at 22 sites and will continue until 2048. Under the contract, the remedial systems will remove the contamination at the 32 sites to the applicable Target Risk Levels. The name of the contractor for this task is Martin Marietta Alaska Inc. in accordance with a 2016 administrative order on consent. As part of the 2016 agreement, Martin Marietta implemented a pilot-scale soil vapor extraction (SVE) system aimed at reducing soil and vadose zone contaminant mass. This technical memorandum summarizes the field methodologies and results demonstrating the effectiveness of the biosparging pilot study. A biosparging pilot study was conducted at the Hartland 36 Gas Plant, a former natural gas processing plant that operated from 1999 to 2015 in Hartland Township, Livingston County, Michigan. Hartland Township, 341 pp, 2017

REMEDIATION AND CONSTRUCTION COMPLETION REPORT — CLUSTER 6, FORMER KAST PROPERTY, CARSON, CALIFORNIA
California Regional Water Quality Control Board, Los Angeles Region. 1676 pp, 2018

The performance-based remediation contract for the Former Galena Forward Operating Location encompasses the cleanup of 32 sites. Five sites have been closed to date. Installation of remedial systems has begun at 22 sites and will continue until 2048. Under the contract, the remedial systems will remove the contamination at the 32 sites to the applicable Target Risk Levels. The name of the contractor for this task is Martin Marietta Alaska Inc. in accordance with a 2016 administrative order on consent. As part of the 2016 agreement, Martin Marietta implemented a pilot-scale soil vapor extraction (SVE) system aimed at reducing soil and vadose zone contaminant mass. This technical memorandum summarizes the field methodologies and results demonstrating the effectiveness of the biosparging pilot study. A biosparging pilot study was conducted at the Hartland 36 Gas Plant, a former natural gas processing plant that operated from 1999 to 2015 in Hartland Township, Livingston County, Michigan. Hartland Township, 341 pp, 2017

Demonstrations / Feasibility Studies

IN SITU BIOREMEDIATION OF A GASOLINE-CONTAMINATED VADOSE ZONE: IMPLICATIONS FROM DIRECT OBSERVATIONS
Mohsinah, E., Z. Rohen, F. Gelman, and O. Bahar. Vadose Zone Journal 17(1);(2018)

Enhanced biostimulation of indigenous bacteria through infiltration of nutrient- and oxygen-mediated water in a gasoline-contaminated deep vadose zone was observed at a gas station affected by underground storage tank leakage in the city of Tel Aviv, Israel. A vadose zone monitoring system (VHS) provided real-time observations of the treatment process's effect on hydrocarbon attenuation. The VHS data included continuous measurements of water content, concentrations and isotopic compositions of MIBK and ETBE in pore-water and gas phases, and concentrations of Cr and Co in the vadose zone gas phase. Real-time observations from the treated zone suggested interactive adjustment of the remediation strategy and improved biodegradation of deeper fuel contamination in saturated soil, biotreading for Site FT001, and enhanced anaerobic bioremediation injections for dissolved-phase TCE at two sites. See PDF pages 13-20 for additional details.

REMEDIATION AND CONSTRUCTION COMPLETION REPORT — CLUSTER 6, FORMER KAST PROPERTY, CARSON, CALIFORNIA
California Regional Water Quality Control Board, Los Angeles Region. 1676 pp, 2018

This report documents remediation and restoration activities for Cluster 6 of the former Kast Property, which is now the Carousel housing tract in Carson, California. Remedial activities included excavation and off-site disposal of petroleum hydrocarbon-impacted soil at a depth of 5 ft to 50 ft at five residential properties and further excavation to a maximum depth of 10 ft at two located residential properties. The site includes Soil Vapor Extraction (SVE) systems installed at six properties. SVE header piping and well installation within Ravenna and Panama Avenues. Site preparation activities began on October 30, 2017. Remediation activities were generally complete by March 26, 2018. About 10,000 tons of contaminated soil were removed from site Cluster 6 properties and disposed of at a hazardous waste disposal facility. The approach is described in theCluster 6 Former Kast Property Final Remediation Project Report, dated 25 Oct 2017. The decommissioning activities include isolation of utilities and remedial systems. The decommissioning activities began on May 9, 2017 and were completed by November 14, 2017.

BIOSPARGING PILOT STUDY: TECHNICAL MEMORANDUM
Hartland Township, 341 pp, 2017

A biosparging pilot study was conducted at the valve 36 Gas Plant, a former natural gas processing plant that operated from 1999 to 2015 in Hartland Township, Livingston County, Michigan. The objective of the study was to evaluate the effectiveness of bioremediation in enhancing biodegradation in the groundwater and to ultimately provide data for use in full-scale remediation system design. This technical memorandum summarizes the field methodologies and results demonstrating the effectiveness of the biosparging pilot study. It also describes the field results demonstrating the effectiveness of the biosparging pilot study. In addition, the technical memorandum provides information on the pilot-scale soil vapor extraction system used in the study. The pilot-scale system was designed and built with funding from the Federal Business Opportunities, FBO-5913, Solicitation 68EE718R00014, 2018

TECHNICAL MEMORANDUM: SVE SYSTEM OPERATION UPDATE, MULLINS RUBBER PRODUCTS
U.S. EPA Region 9, 32 pp, 2018

The Valley Pike VOCs site, located in Riverside, Ohio, is a mixed industrial and residential site where groundwater contaminated with PCE and TCE was discovered in 2013. The site was added to the National Priorities List on September 9, 2016. U.S. EPA is coordinating with the Ohio EPA to oversee investigations and responses to the contamination at the site by Mullins Rubber Products Inc. in accordance with a 2016 administrative order on consent. As part of the 2016 agreement, Mullins implemented a pilot-scale soil vapor extraction (SVE) system aimed at reducing soil and vadose zone contaminant mass. This technical memorandum summarizes the field methodologies and results demonstrating the effectiveness of the biosparging pilot study. The Valley Pike VOCs site, located in Riverside, Ohio, is a mixed industrial and residential site where groundwater contaminated with PCE and TCE was discovered in 2013. The site was added to the National Priorities List on September 9, 2016. U.S. EPA is coordinating with the Ohio EPA to oversee investigations and responses to the contamination at the site by Mullins Rubber Products Inc. in accordance with a 2016 administrative order on consent. As part of the 2016 agreement, Mullins implemented a pilot-scale soil vapor extraction (SVE) system aimed at reducing soil and vadose zone contaminant mass.
ENUBIODECHELOR XL™: REMEDIATION SOLVENT FOR CHLORINATED SOLVENT CONTAMINATED SITES


Sustainable Development Technology Canada funding is focused on the development and demonstration of new technologies, such as EnuBioDechelor XL™ (Products Enuchem Inc.), a remediation product. EnubioDechelor XL™ is a liquid treatment offered in separate 5-7 L cans. It contains PFOS and PFOA. Treatment of the PFAS-contaminated water was investigated using Calgon Filtrasorb® 600 granular activated carbon (GAC) and Zifitk RemBund™ mixed media. The contaminated water was pumped through treatment media and then emptied into the septic tank. The goal was to assess the respective performance of the two products to reduce the PFAS concentration before disposal of the water (e.g., in a sewer).


Research

TREATMENT OF PERFLUOROALKYL ALKYL SUBSTANCES IN WASH WATER USING GRANULAR ACTIVATED CARBON AND MIXED-MEDIA

Zbabo, J., I. Hall, M. Magnudson, S. Panguluri, and G. Meiners.

http://www.eng.tau.ac.il/~paster/AsafResearch.html

APPLICATION OF SHORT-DURATION PULSES AS A MEAN TO ENHANCE VOLATILE ORGANIC COMPOUNDS REMOVAL BY AIR SPARGING


APPLICATION OF SOIL AMENDMENTS TO IMMOBILIZE ANTIMONY AND LEAD IN MODERATELY CONTAMINATED SHOOTING RANGE SOILS

Avathal, L., H. Seibner, G. Dahan, and Z. Ronen.


USE OF SOIL AMENDMENTS TO IMMOBILIZE ANTIMONY AND LEAD IN MODERATELY CONTAMINATED SHOOTING RANGE SOILS

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APPLICATION OF SHORT-DURATION PULSES AS A MEAN TO ENHANCE VOLATILE ORGANIC COMPOUNDS REMOVAL BY AIR SPARGING


A low-permeability keyed encasement was built at the location of hexachlorobutadiene DNAPL source zone to isolate a finite volume of soil. A 3-month pulsed-pumping process was applied inside the enclosure to extract the DNAPL. Source zone was recovered. By using the 3D and multiphase flow simulator TRWDMC, a conceptual model was elaborated and generated with the prepost-processing tool review. Numerical simulations reproduced the pulsed pumping process and showed an excellent match between simulated and field data of DNAPL cumulative pumped volume, and reasonable agreement between modeled and observed data for the evolution of the water/DNAPL interface elevation at the two wells. These results may be relevant to DNAPL pumping system optimization.

TEMPORAL ABUNDANCE AND ACTIVITY TRENDS OF VINYL CHLORIDE (VC)-DEGRADING BACTERIA IN A DILUTE VC PLUME AT NAVAL AIR STATION OCEANA


In a long-term field study, researchers tracked the abundance and activity of microbial VC degraders in three monitoring wells along a dilute VC plume at Naval Air Station Oceana. High-throughput sequencing of partial 16S rRNA genes and transcripts revealed diverse groundwater microbial communities and showed that methanotrophs and anaerobic respirers (e.g., methanogens, sulfate reducers, and iron reducers) were among the most active and abundant microbial. Ethene-oxidizing bacterial populations were less abundant and relatively inactive compared to VC-degrading populations. The implication of functional genes associated with both aerobic VC oxidation and anaerobic VC reduction was observed in one well. The groundwater community was found to contain diverse active bacterial guilds largely associated with metabolic and cometabolic VC degradation processes under either aerobic or anaerobic conditions that might have contributed to the slowly decreasing VC concentrations at the NAAOC on site over the 6-year study period.

LABORATORY SCALE STUDY FOR REMEDIATION OF POLLUTED GROUNDWATER BY FERRATE TREATMENT

Microchemical Journal 133:231-238(2017)

The goal of this experiment was to achieve simultaneous degradation of different organic contaminants in industrial groundwater by addition of freshly prepared, electrochemically produced ferrate solution and its rapid distribution by mixing. The degradation rates of 44 organic contaminants in the groundwater were determined by head-space gas chromatograph mass spectrometer method. These experimental data form the basis of a proposed industrial-scale technology for applying ferrate solution produced on site.


General News

SUPERFUND X-RAY FLUORESCENCE FIELD OPERATIONS GUIDE

U.S. EPA, Region 4 Superfund Division, Atlanta, GA. SPFUDID-001-R0, 23 pp, 19 Jul 2017

This guide was developed for consideration by Region 4 On-Scene Coordinators (OSC) and Remedial Project Managers (RPM) to provide the OSCs/RPMs with a methodology to collect definitive data on metals and arsenic (and possibly other elements) in soil samples. The technical information provided for measuring concentrations of contaminants in soil in a practical, cost-effective, and timely manner does not constitute rulemaking by the Agency; the purpose of the guide is to aid in the collection of high-quality soil data for select contaminants that can be used in risk assessments. https://www.epa.gov/iaeaconference/field-guides-2018-04/documents/supfund-field-operations-guide-001-r0_xrf_fog_sup.pdf

STANDARD OPERATING PROCEDURE FOR AN IN VITRO BIOACCESSIBILITY ASSAY FOR LEAD AND ARSENIC IN SOIL

U.S. EPA, Office of Land and Emergency Management. OLEM 970.2-144, 33 pp, Apr 2017

The purpose of this standard operating procedure (SOP) is to define the proper analytical procedure for the validated in vitro bioaccessibility (IVBA) assay for lead and arsenic in soil, to describe the typical working range and limits of the assay and quality assurance factors, and to indicate potential interferences. The method has been validated only for lead and arsenic in soil, not for other contaminants or matrices (e.g., water, air, amended soils, dust, flood, etc.). This SOP is intended to be used as a reference for developing site-specific quality assurance project plans and sampling analysis plans. https://r6emcp.eeas.europa.eu/sites/rs/105750.pdf

VALIDATION ASSESSMENT OF IN VITRO ARSENIC BIOACCESSIBILITY ASSAY FOR PREDICTING RELATIVE BIOAVAILABILITY OF ARSENIC IN SOILS AND SOIL-LIKE MATERIALS AT SUPERFUND SITES

U.S. Environmental Protection Agency, 4 pp, 21 June 2018

This report summarizes the basis for EPA’s determination that the in vitro bioaccessibility (IVBA) method for arsenic has satisfied the validation and regulatory acceptance criteria for application of the method. The IVBA method compares site-specific relative bioavailability (RBA) of arsenic in soils quickly and inexpensively relative to in vivo methods and is well suited for regulatory use in arsenic risk assessment. https://www.epa.gov/sites/production/files/2018-09/documents/arsenic_rba_validation_report.pdf

BIFURCATING REMEDIAL DESIGN AND REMEDIAL ACTION TO ACCELERATE REMEDIAL DESIGN STARTS AT PRP-LEAD SUPERFUND SITES

U.S. Environmental Protection Agency, 4 pp, 21 June 2018

EPA has developed a new guidance memorandum to recommend that the EPA Regions consider using separate settlement tracks for remedial design and remedial action where negotiations for a single settlement are not possible. The new guidance memorandum is available on the Agency’s website at https://www.epa.gov/regions/region-4/superfund-design-action-accelerate-design-starts-prp-lead-superfund-sites. More information on the Superfund Task Force Recommendations is available at https://www.epa.gov/regions/region-4/superfund-design-action-accelerate-design-starts-prp-lead-superfund-sites

NETWORK FOR INDUSTRIALLY CONTAMINATED LAND IN AFRICA (NICOLA)

NICOLA was established in October 2014 with the aim of providing a knowledge exchange platform for regulators, industry, service providers, and other stakeholders involved in contaminated land in Africa. The NICOLA forum promotes cooperation among industry, academia, and service providers on the development and application of sustainable technologies. The overall objective is to promote the application of sustainable technologies in Africa and improve soil and ground contamination. NICOLA’s network comprises 20 African countries. NICOLA is an open community and encourages participation by any individual or organization interested in the management of contaminated land in Africa. The 4th annual NICOLA conference is scheduled for October 30–31, 2018, in Midrand, South Africa. https://nicola.africa

EVALUATION AND MANAGEMENT STRATEGIES FOR PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN DRINKING WATER AQUIFIERS: PERSPECTIVES FROM IMPACTED U.S. NORTHEAST COMMUNITIES

Environmental Health Perspectives 126(6):063001(2018)

Management challenges faced by stakeholders in regions experiencing PFAS releases were identified during stakeholder engagement events that connected attendees with PFAS experts in focus areas for fate and transport, toxicology, and regulation. Review of the literature provided perspective on challenges in all focus areas. In a case study, publicly available data were used to characterize sources of PFAS impacts to groundwater and to conduct a geospatial case study of potential source locations relative to drinking water aquifers in Rhode Island. The case study illustrates how risk-based geospatial methods can help address knowledge gaps regarding potential sources of PFAS in drinking water aquifers and evaluation of exposure risks. https://ehp.niehs.nih.gov/EHP2727/


This conference had several sessions on Environmental Protection that offered presentations on radiation treatment (e.g., electron beam techniques) for remediation of gaseous pollutants, industrial wastewaters, municipal wastewater, sludge, and emerging organic pollutants in addition to uses of radioactive tracers for monitoring applications. https://www.pcap.aiaa.org/aeametnet/5814_International-Conferece-on-Applications-of-Radiation-Science-and-Technology-ICARST-2017

ICCE 2017: 16TH INTERNATIONAL CONFERENCE ON CHEMISTRY AND THE ENVIRONMENT, 18-22 JUNE 2017, OSLO, NORWAY

The abstracts (420 pages) and presentations of ICCE 2017 are available at https://ecce2017.no/download/ The Detailed Program agenda file identifies the day, session, and time each presentation is scheduled. More information is needed to schedule the appropriate presentation. Preprints are ordered according to their date, venue, and block of time. Follow the links on the left-hand side of the website to find the presentation of interest. Many studies on per- and polyfluoroalkyl compounds were presented at this conference.

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 Remediation and Technology Innovation at edward.mike.adam@epa.gov or (703) 603-9915 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.

Technology Innovation News Survey
Entries for June 1-15, 2018

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