Entries for August 1-15, 2016

Market/Commercialization Information

ENVIRONMENTAL REMEDIATION SERVICES

Naval Facilities Engineering Command NAVFAC Southwest, Environmental Contract Core
Federal Business Opportunities, FBO-1496, Solicitation N6247316R2418, 2016

Naval Facilities Engineering Command Southwest is conducting market research to evaluate the interest and availability of potentially qualified small businesses to perform environmental restoration services at various locations in Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Idaho, New Mexico, Oregon, Pennsylvania, South Carolina, Texas, Washington, and West Virginia. NAICS code 562916. Requirements will focus primarily on environmental remediation projects but could involve other environmental work, such as environmental compliance. Award of Task Orders will be on a cost-plus-award-fee basis. The proposed multiple-award contract period and four-year options. The estimated aggregate value of all contracts awarded is about $240M. Submit capabilities packages via email by 2:00 PM PT on October 10, 2016. [https://www.fbo.gov/spg/DOE/NEE/NEE%2714/NEE274516R2418/Issuing.html]

ENVIRONMENTAL ENGINEERING

National Science Foundation Funding Opportunity PD-16-1440, 2016

The goal of the NSF Environmental Engineering program is to support transformative research that applies scientific and engineering principles to avoid or minimize solid, liquid, and gaseous discharges; to identify, evaluate, and monitor the waste assimilative capacity of the natural environment; and to remove or reduce contaminants in polluted air, water, and soils. Major areas of interest include (1) enhancing the availability of high-quality water supplies via the development of innovative biological, chemical and physical treatment; investigating processes that remove and degrade contaminants from drinking water and groundwater; and convert wastewaters into water suitable for reuse; and investigating biogeochemical and transport processes that affect the fate and transport of contaminants in the environment; and (2) determining the fate and transport of contaminants of emerging concern in air, water, solid waste, and soils. The duration of the unsolicited awards is generally one to three years, and the typical annual award size per the program is around $100,000 per year. The window of opportunity for submitting applications is October 1-20, 2016, [http://www.grants.gov/web/grants/Guidance/Application-Year-by-Year.html?year=2016]

Cleanup News

SUPPLEMENTAL IN-SITU TREATMENT OF SHALLOW GROUNDWATER, 2016 IMPLEMENTATION REPORT, FORMER REMCO HYDRAULICS FACILITY, WILLS, CALIFORNIA

Wills Environmental Remediation Trust, 107 pp, 2016

Supplemental injection implementation activities were completed during April 18-22, 2016, to continue the in situ reduction of chlorinated VOCs (e.g., 1,1,1-trichloroethane, 1,1-dichloroethane, tetrachloroethene, and trichloroethene) using the NZVI injection system. This was the 2nd remediation system to be injected into the aquifer. NZVI technology was used to provide additional nutrients to stimulate microbial activity in reducing the VOCs. In addition, a buffer solution (sodium bicarbonate) was used to regulate the pH to optimize conditions for VOC degradation. The NZVI injection system was the 2nd remediation system to be injected into the aquifer, and the first of 41 injection locations within the pilot area. The injection system will continue to be used to stimulate native anaerobic microorganisms to biologically degrade residual chlorinated organics in the treated groundwater. The ZVI injection system will provide additional capability to remediate the groundwater throughout the Pilot Area.

TREATMENT OF NITROGEN METHANE, CONVERSION TO WATER, BIOAVAILABILITY, AND TOXICITY IN SOLIDS

Research

| Technology Innovation News Survey | Entries for August 1-15, 2016 | 1 of 3 | clu-in.org/newsletters |
In lab experiments performed to determine the coupled effects of hydrodynamics, biostimulation, and biodegradation processes on the transformation, mobility, bioavailability, and toxicity of contaminants, it was observed that bioremediation and sorption are mutually beneficial processes. The sorption of hydrophobic contaminants to sediments can enhance their bioavailability, whereas biodegradation processes can increase the mobility and bioavailability of contaminants by altering their physical and chemical properties. Bioavailability of contaminants is a crucial factor in determining their bioaccumulation and toxicity to aquatic organisms. Therefore, the development of effective remediation strategies that integrate bioremediation and sorption processes could lead to enhanced contaminant remediation efficiency and reduced environmental impacts. Further research is needed to optimize the integration of these processes in real-world remediation scenarios.
MERCURY REMEDIATION TECHNOLOGY DEVELOPMENT FOR LOWER EAST FORK POPPLAR CREEK: FY 2015 PROGRESS REPORT
This document presents results from characterization and experimental studies conducted in FY 2015 in support of developing new options for mercury (Hg) remediation. Task 1, Soil and Groundwater Source Control, focuses on addressing downstream Hg sources to the creek (especially floodplain and bank soils) and groundwater. Task 2, Surface Water and Sediment Manipulation, centers on potential manipulation of in-stream processes, including the many water and sediment chemistry factors that affect Hg methylation. Task 3, Ecological Manipulation, investigates methods to manipulate the food chain at both lower and higher levels of organization to decrease Hg concentrations in fish. Together, the three study tasks focus on manipulating the key factors that affect Hg concentrations in fish: the amount of inorganic Hg available to an ecosystem, the conversion of inorganic Hg to methylmercury (MeHg), and the bioaccumulation of MeHg via the food web.

ELectrokinetic Delivery of Persulfate to RemEDIATE PCBs Polluted Soils: Effect of Different Activation Methods
Electrokinetic remediation (EK) can be used to transport persulfate in low-permeability soil. In this study, different activation methods—zero-valent iron (ZVI), citric acid-chelated Fe²⁺, iron electrode, alkaline pH, and peroxide—were evaluated to enhance the activity of EK-delivered persulfate in PCB-contaminated soil. All the activators and the persulfate were added in the anolyte. The addition of activators accelerated persulfate decomposition, thereby decreasing soil pH. The mass of persulfate delivered into the soil declined with continuous persulfate decomposition by activation. PCBs removal efficiency in soil followed the activation order of alkaline (40.5%) > peroxide (36.6%) > citric acid-chelated Fe²⁺ (34.1%) > ZVI (32.4%) > no activation (30.8%) > iron electrode (30.5%). The activation effect was highly dependent on the ratio of activator and persulfate.

General News
CLEANING UP BROWNFIELDS UNDER STATE RESPONSE PROGRAMS: GETTING TO “NO FURTHER ACTION”
This report provides information on certain aspects of state response programs available to owners and prospective purchasers of brownfields. It is a guide for owners of brownfield properties on the general requirements for entering a brownfield into a state cleanup program and the process for attaining a state decision or certification of the need for “no further action” under each state response program. This report is a central source of information regarding the process available in each state for attaining a state decision or certification of the need for no further action under each state response program. The report summarizes information gathered from state response program contacts and state response program websites.

HEALTH-BASED MAXIMUM CONTAMINANT LEVEL SUPPORT DOCUMENT: PERFLUOROOCTANOIC ACID (PFOA) — PUBLIC REVIEW DRAFT
A health-based maximum contaminant level for PFOA (also referred to as C8) of 14 ng/L was developed by the New Jersey Health Effects Subcommittee using a risk assessment approach intended to protect for chronic (lifetime) drinking water exposure. See additional material on this topic at http://www.epa.gov/safewater/pfoa_index.html.

CONTAMINATED SEDIMENTS IN FRESHWATER SYSTEMS
Spellman, F.R.
Assessment of freshwater sediments can determine whether chemical concentrations are sufficient to cause adverse effects on aquatic organisms or organisms higher in the food chain, including humans. This book presents methods for assessing sediments and includes an integration of physical, chemical, and biological information. It examines the elements of quality assurance and control programs, considerations for the conduct of field surveys, screening-level analyses, chemical analyses, toxicology tests for assessing biological impacts, assessments of benthic invertebrate community structure, surveys of fish tumors and abnormalities, and data presentation and interpretation techniques.

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 adam.michael@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.