HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystems Restoration Division
Robert S. Kerr Environmental Research Center
Status Report for the week of May 11, 2015

TECHNICAL ASSISTANCE

Technical Assistance Region VIII: On April 22, 2015, Dr. Eva Davis (GWERD) provided technical review comments to RPM Kathryn Hernandez on the "Draft Final Workplan (WP) for the Pilot Test for Steam Enhanced Extraction (SEE) followed by Biosparging for the Libby Groundwater Site in Libby, Montana," and the response to comments provided by International Paper. In general, the responses address previous concerns raised on the November 21, 2014 Draft WP. However, some significant concerns remain on the energy balance for the SEE, and additional questions are raised by some of the responses to comments received. The WP should provide an energy balance which includes a table which quantifies the amount of energy needed to heat the target treatment zone from ambient temperature to the target temperature, the energy input rate as steam during the planned 20 day heatup period, the extraction rate of energy as hot water and as steam, and heat losses to the overburden and underburden. The table should show that the planned energy input is sufficient to heat the target treatment area in 20 days, as called for in the design of the SEE pilot. All calculations should also be included. Additionally, the WP should clarify that the SEE pilot will not be terminated before at least three pressure cycles have been completed even if NAPL recovery ends before pressure cycling is initiated.
(15-R08-002) (E. Davis (GWERD) 580-436-8548)

Technical Assistance Region I: On April 23, 2015, Dr. Scott Huling (GWERD), provided technical review comments to RPM Darryl Luce on the "Technical Specifications for In-Situ Chemical Oxidation (ISCO) via Soil Mixing (Draft, 15 April 2015)," Kearsarge Metallurgical Corp. Superfund Site, Conway, New Hampshire. Comments and recommendations address several technical issues. Consideration of these matters in subsequent revisions to the technical specifications report could be useful in the development of this ISCO-related remedy. There are various requirements that have been specified in the report, but oxidant volume is not included. Since the persulfate solution is colorless, it will be difficult to assess the extent to which the persulfate oxidant is adequately mixed into each treatment cell. Additionally, there are no field methods that are proposed to assess and confirm oxidant distribution in the aquifer. It is recommended that a quantitative descriptor be developed that establishes a correlation between the volume of oxidant injected relative to the targeted zone of each treatment cell. The objective is to establish a general guideline in the volume of oxidant required to be injected into each cell, in conjunction with soil mixing, to establish sufficient oxidant coverage.
(15-R01-007) (S. Huling (GWERD) 580-436-8610)

TECHNICAL SUPPORT VIDEO CONFERENCE

Technical Assistance to Region IV: On April 21, 2015, Dr. Scott Huling, (GWERD) provided a presentation to RPM Lila Llamas, and staff from the US Navy, US Marine Corp, South Carolina Department of Health and Environmental Control, TetraTech Inc., and EnSafe Inc. The presentation was a summary of in-situ chemical oxidation (ISCO) research activities at the Parris Island Marine Corp Recruit Depot, Site 45, Beaufort, South Carolina. Site characterization activities included pre- and post-oxidation collection and analysis of soil cores, and installation of micro-wells and pre- and post-oxidation ground water sample collection and analysis. The ISCO pilot scale demonstration study involved three rounds of sodium permanganate oxidant injection utilizing various injection methods. A low cost, mobile, injection system was designed, built, and deployed, and oxidant injections occurred over a 10 month period in a PCE source area where numerous subsurface and surface utility impediments were present. The oxidant injection design involved heavy oxidant loading (mass, volume), and the injection strategy included short vertical injection intervals, narrow ROI's, low injection pressure, top-down/outside-in injection to minimize the role of heterogeneities and to achieve greater probability of oxidant delivery to targeted zones. While significant destruction of CVOCs was achieved, post-pilot study oxidant injection was recommended to further achieve treatment objectives.
(S. Huling (GWERD) 580-436-8610)

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