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 12, 2014

TECHNICAL ASSISTANCE

Technical Assistance Region IV: On April 16, 2014, Dr. Bruce Pivetz (Dynamac Corp.), under the direction of Dr. Scott Huling (GWERD), provided technical review comments to RPM Lila Llamas on the *Draft Work Plan, Pre-Design Investigation, Site 27/55 Motor-T Area/Equipment Parade Deck, MCRD Parris Island, Parris Island, South Carolina, Revision No. 00,* for the Parris Island Marine Corps Recruit Depot. In general, the overall concept of the work described in the Draft Work Plan appears reasonable. However, there are several flaws either in how some of the proposed work will be conducted, or in how the work is discussed in the Draft Work Plan. The Draft Work Plan is very detailed regarding many aspects of the pre-design investigation (such as decontamination and investigation-derived waste), but much less so in a few aspects (e.g., the ISCO bench-scale study, or the LIF probe operation and methodology). It is recommended that this information be provided before the investigation or in a final report. It is acknowledged that there may be light non-aqueous phase liquid (LNAPL) in the saturated zone, it appears that the laser-induced fluorescence (LIF) survey and soil sampling may not include any of the unsaturated or saturated soils beneath the clay layer/smear zone. It is strongly recommended that the LIF survey and associated soil sampling include some of the zone beneath the clay layer and also include the top of the saturated zone, perhaps for one or two feet at a minimum.
(14-R04-003) (S. Huling (GWERD) 580-436-8610)

Technical Assistance Region III: On May 6, 2014, Dr. Scott Huling (GWERD) provided technical review comments to RPMs Laura Mohollen and Darius Ostruaskas on the "Fike/Artel Superfund Site, Limited Scale Pilot Test Workplan – Response to US EPA Comments," Nitro, West Virginia. The Responses by the Fike/Artel Trust do not address several of the deficiencies previously provided in EPA comments and recommendations. The main point of disagreement is that persulfate concentrations were non-detect in all nearby monitoring wells indicating a radius of influence (ROI) could not be evaluated. There are several technical issues raised in the responses to the review comments and recommendations that address topics regarding the overall feasibility of ISCO at the site. The technical concern is that site specific chemical factors (i.e., oxidant persistence), and hydrodynamics (i.e., dispersion, diffusion, advection), including realistic estimates of the radius of influence derived from site specific data and information were not considered in this calculation and that a smaller volume of the aquifer will be targeted than projected. The basis for dispersion of oxidant into the remaining 75% of the "estimated treatment zone radius" should be explained specifically. In summary, the concentration of sodium persulfate (SP) must be determined in nearby monitoring wells to assess the oxidant ROI, which in turn can be used to help assess treatment performance. Despite these multiple pilot-scale oxidant injection events, a reliable estimate of the ROI has not been achieved.
(14-R03-002) (S. Huling (GWERD) 580-436-8610)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Huang, Junqi (GWERD), Mark Neil Goltz (Air Force Institute of Technology, Wright-Patterson AFB, OH). 2014. Spatial Moment Equations for a Groundwater Plume with Degradation and Rate-Limited Sorption. *Journal of Hydrologic Engineering,* Vol. 19, No. 5, pgs 1053-1058, May 1, 2014. © ASCE, ISSN 1084-0699/2914/5-1053-1058. DOI: 10.1061/(ASCE)HE.1943-5584.0000885. © 2014 *American Society of Civil Engineers.*
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