HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of January 8, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On December 19, 2006, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Karen Lumino with comments on a work plan modification for defining the extent of mobile NAPL at the Pine Street Canal Superfund Site in Burlington, VT. Generally, the modification appears acceptable, however, it was suggested that potentially mobile NAPL also be included in the plan. Other suggestions concerned the number and location of future sampling locations.
(94-R01-001) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region I: On December 21, 2006, Dr. Scott Huling (GWERD) provided RPMs Frank Gardner and Joseph Lemay with review comments on a scope of work for the additional assessment of remedial activities at the Wells G&H Superfund Site in Woburn, MA. The location, quantity, and frequency of $NaMnO_4$ well injection were discussed along with its distribution. Also discussed were $NaMnO_4$ laboratory analyses, concentration of oxidant being injected, and improving the injection strategy based on the findings of each injection event.
(05-R01-002) (S. Huling(GWERD)580-436-8610)

Technical Assistance to Region X: On January 3, 2007, Dr. David Burden, Dr. Robert Ford, and Steven Acree (GWERD) approved and provided RPM Dennis Faulk with a final report of the TETRAD benchmarking study for the DOE Idaho National Laboratory (INL) Facility near Idaho Falls, ID. The report, prepared by a contractor, provided a series of verification and benchmark problems to assess the reliability and functionality of the TETRAD Version 12.7ms computer code for simulating environmental fate and transport processes similar to those at the INL site.
(06-R10-002) (D. Burden(GWERD)580-436-8606)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of January 22, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region II: On January 4, 2007, Dr. Dominic DiGiulio (GWERD) provided RPM Richard Ho with review comments on monitoring program results from a biosparge ground-water treatment project at the JIS Landfill Site in South Brunswick, NJ. A number of issues were discussed including a temporary increase in contaminant concentration and treatment zone bypass resulting from the injection of gases into the saturated zone. Also discussed were the relative processes of biodegradation and volatilization with respect to contaminant removal and a method for evaluating their differentiation.
(07-R02-001) (D. DiGiulio(GWERD)580-436-8605)

Technical Assistance to Region VI: On January 16, 2007, Dr. Ann Keeley (GWERD) provided RPM Michael Hebert with comments on a number of reports prepared for the Oklahoma Refining Company Superfund Site in Cyril, OK, particularly with respect to ground-water remediation. The existence of free phase and residual phase LNAPL were discussed with respect to their affect on natural attenuation as well as the protracted time required for aquifer restoration. It was suggested that the development of a concise data base was essential in the evaluation of remediation activities and stressed the need to design a monitoring program for evaluating natural attenuation. A site visit with Region 6 and appropriate Oklahoma DEQ representatives was recommended.
(07-R06-001) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region IX: On January 12, 2007, Steven Acree, Dr. Robert Ford, and Dr. Randall Ross (GWERD) provided RPM James Sickles with review comments on a "Draft Second-Step Hydrogeologic Framework Assessment Work Plan" for the Yerington Mine Site in Yerington, NV. In general, the revised plan adequately responds to the majority of concerns expressed in previous comments. General comments concerned uranium concentrations with depth, oxidation conditions with contaminant mobility, and well screen placement. Specific comments were directed at well construction, sampling techniques, proposed isotope studies, and ground-water dating.
(01-R09-004) (GWERD: Acree 580-436-8609/Ford 580-435-8872/Ross 580-436-8611)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of February 19, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On January 25, 2007, Dr. Rick Wilkin (GWERD) provided RPM Desiree Moyer with an environmental assessment of lead at Camp Edwards, Massachusetts Small Arms Ranges, Massachusetts Military Reservation on Cape Cod, MA. Specifically, the objective of the review was to evaluate whether the substantial quantity of lead in the soil poses a threat to the quality of ground water at the site. A number of issues were discussed including lead geochemistry information from the literature and site-specific geochemistry, graphics presented in the report, sampling approaches, and problematic monitoring wells.
(07-R01-001) (R. Wilkin(GWERD)580-436-8874)

Technical Assistance to Region VI: On February 13, 2007, Dr. Ralph Ludwig, Steve Acree, Dr. Randall Ross, Dr. Rick Wilkin, and Dr. Ann Keeley (GWERD) provided RPM Katrina Coltrain with a PRB performance evaluation update for the Delatte Metals Superfund Site in Ponchatoula, LA. The report summarized three-year performance data collected from the full-scale permeable reactive barrier constructed of pasteurized cow manure and limestone gravel. The PRB was designed to raise the pH of the ground water through dissolution of the limestone and to remove lead through microbially-mediated sulfate reduction and subsequent lead sulfide precipitation. Copious tables and graphics summarize the data which suggest that lead impacts to ground water are effectively being mitigated by the PRB.
(03-R06-001) (GWERD 580-436)Ludwig 8603/Acree 8609/Ross 8611/ Wilkin 8874/Keeley 8890)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Huling, S.G. (GWERD) and B. Pivetz (Dynamac). "In-Situ Chemical Oxidation" Engineering Issue. (2006) EPA Report. EPA/600/R-06/072. National Risk Management Research Laboratory, Cincinnati, Ohio.
(S. Huling(GWERD)580-436-8610)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of March 12, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On February 23, 2007, in a continuing technical assistance effort at the Pine Street Superfund Site in Burlington, VT, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Karen Lumino with review comments on a "Preliminary NAPL Investigation Report" and a "Preliminary NAPL Controls Report." In general, the February 15, 2007, comments suggested that the conclusions and recommendations in the reports appeared acceptable and provided a great deal of useful information. Areas requiring clarification for incorporation in the final report included NAPL mobility, mass calculations, and removal strategies.
(94-R01-001) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region I: On February 15, 2007, Dr. Ann Keeley (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Byron Mah with comments on responses to earlier GWERD reviews of a draft ground-water fate and transport modeling report for the Davis Liquid Waste Superfund Site in Smithfield, RI. Although there was a general agreement on several issues regarding the remediation of ground water at the site, response comments centered on the efficacy of MNA and pump-and-treat technologies in reaching cleanup goals in a reasonable time frame.
(06-R01-003) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region V: On March 5, 2007, Dr. Mary Gonsoulin (GWERD) and Dr. Daniel Pope (Dynamac) provided RPM Mary Tierney with review comments on a work proposal for future remediation and monitoring activities, and for abandoning certain monitoring wells at the Aircraft Components Superfund Site in Benton Harbor, MI. Although the work plan appeared reasonable considering the proposed remedial activities and usage of the site (currently being developed for a golf course), it was suggested that some details be considered in greater depth including the use of HRC compounds and the long-rang affect of a dissolved-phase plume. Also discussed was the elimination and replacement of selected monitoring well sites.
(06-R05-002) (M. Gonsoulin(GWERD)580-436-8616)

Technical Assistance to Region VIII: During January 22-26, 2007, Dr. Randall Ross and Steven Acree (GWERD) conducted a thermal tracer study within a pilot-scale PRB at the Asarco East Helena Montana Superfund Site in Helena, MT. The study was performed within a zero-valent iron PRB, which was installed to treat arsenic contamination in ground water, to aid in defining the hydraulic parameters necessary to perform tracer studies using a conservative tracer such as a bromide.
(01-R08-002) (GWERD: Ross 580-436-8611/Acree 580-436-8609)

HIGHLIGHTS

National Risk Management Research Laboratory
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Robert S. Kerr Environmental Research Center

Status Report for the Week of March 19, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region VI: During February 12-16, 2007, Dr. Randall Ross and Steven Acree (GWERD) visited the Delatte Metals Superfund Site in Ponchatoula, LA, to characterize hydraulic conductivity within and adjacent to a PRB. The focus of the current study was to investigate the effect of the limestone/manure composite PRB on the ground-water flow field and identify changes in hydraulic conductivity with time.
(03-R06-001) (GWERD: Ross 580-436-8611/Acree 580-436-8609)

Technical Assistance to Region VI: On March 16, 2007, Dr. Ann Keeley (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Michael Hebert with comments on ground-water remediation at the Oklahoma Refining Company Superfund Site in Cyril, OK. The focus of the review was an evaluation of the occurrence of natural attenuation at the site and the potential use of monitored natural attenuation (MNA) as a remedial technology. The review also addressed contaminants other than petroleum hydrocarbons as well as caustic and acid seeps into a surface stream. The comments, based on an extensive review of eight site-specific documents, responded to specific Oklahoma DEQ questions concerning the geology and hydrology of the site, previous ground-water monitoring results, and the current ground-water monitoring sampling plan. Recommendations were offered in a number of areas including additional monitoring rounds; contaminant travel times; the need for additional monitoring wells; and the extent, mobility, and recovery of LNAPL.
(07-R06-001) (A. Keeley(GWERD)580-436-8890)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of April 2, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On March 22, 2007, Drs. Ann Keeley and David Burden (GWERD), Dr. Bruce Pivetz (Dynamac), and Rob Earle and Dr. Noman Ahsanuzzaman (Shaw Env.) participated in a four-hour conference call with RPM Byron Mah, contractors and State representatives regarding the remediation of ground water at the Davis Liquid Waste Superfund Site in Smithfield, RI. Issues discussed in detail included fate and transport modeling, earlier GWERD review comments, the Feasibility Study process and alternatives, role of modeling in the FS, mechanisms for continuing technical assistance, and the inclusion of other PRPs.
(06-R01-003) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region IX: On March 20, 2007, Steven Acree, Dr. Robert Ford, and Dr. Randall Ross (GWERD) provided RPM James Sickles with comments on the "Second-Step Hydrogeologic Framework Assessment Work Plan" for the Yerington Mine Site in Yerington, NV. In general, the revised plan adequately responds to concerns expressed in previous review comments. Suggestions were offered for improving the investigation including the benefits of additional boreholes and wells, hydraulic communication between hydrostratigraphic units, data base presentation, and sampling procedures.
(01-R09-004) (GWERD 580-436)Acree 8609/Ford 8872/Ross 8611)

PUBLIC SERVICE ACTIVITIES

On March 30, 2007, the following individuals served as judges at the 2007 Oklahoma State Science and Engineering Fair at East Central University: Special Award Judges: Dr. Ann Keeley and Dr. Scott Huling (GWERD); and Category Award Judges: Dr. John Wilson, Mr. Joe Williams, Dr. Paul Mayer, Dr. Mary Gonsoulin, Mr. Bart Faulkner, Tim Canfield, and Dr. Yolanda Olivas (GWERD), and Dr. Dan Pope (Dynamac Corp.).

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of April 16, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: In a continuing technical assistance effort at the Solvent Recovery Service of New England Site in Southington, CT, Dr. Ann Keeley (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Karen Lumino with comments on the selection of parameters to evaluate the effectiveness of monitored natural attenuation (MNA) with respect to the remediation of DNAPLs. The April 12, 2007 comments suggested that, in general, the proposed parameters seem appropriate, however, the list should include the contaminants of concern (COCs), alkalinity, and sulfide if the concentrations of sulfate are high.
(99-R01-004) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region I: On April 10, 2007, Dr. David Burden (GWERD) and Dr. Noman Ahsanuzzaman and Rob Earle (Shaw Env.) provided RPM Byron Mah with review comments on a fate and transport model for the Davis Liquid Waste Superfund Site in Smithfield, RI. The purpose of the model was to evaluate the effectiveness of three remedial alternatives including monitored natural attenuation, ground-water extraction, and ground-water extraction and re-injection. A major concern was the concepts used in model calibration. It was suggested that adjusting the soil-water partitioning coefficient resulted in unrealistically high Kd values for the source area which significantly underestimate future plume concentrations. Comments on the model along with recommendations to improve the model calibration were provided.
(06-R01-006) (D. Burden(GWERD)580-436-8606)

Technical Assistance to Region II: On April 2, 2007, Dr. Richard Wilkin GWERD) provided RPM Richard Ho with review comments on an "In-Situ Chemical Oxidation Treatability Study Work Plan" at the Quanta Resources Site in Edgewater, NJ. The objectives of the study are to evaluate ISCO for treating soil with pure phase coal tar, residual coal tar absorbed to soil, and dissolved phase coal tar constituents in ground water. A secondary goal is to evaluate whether ISCO will impact other contaminants in the subsurface such as arsenic. A list of monitoring parameters was suggested including As(III), As(V), and total Arsenic.
(07-R02-002) (R. Wilkin(GWERD)580-436-8874)

Technical Assistance to Region IV: On March 29, 2007, Dr. John Wilson (GWERD) provided RPM Keriema Newman with comments on long-term monitoring data at the Arlington Blending and Packaging Site in Arlington, TN. The focus of the review was to determine if the concentration of contaminants in the ground water plume are decreasing. A statistical evaluation was made of the data using the geometric mean of concentrations to compare the earliest four-year period (1998-2001) to the most recent period (2003-2006). Based on an analysis using pentachlorophenol and benzene it was determined that at most monitoring sites there was no statistical confidence that reductions had occurred nor that concentrations would meet MCLs in 2027 or 2047. Another question which was discussed concerned whether some downgradient wells were located properly to monitor the plume.
(07-R04-003) (J. Wilson(GWERD)580-436-8534)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of April 23, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On April 13, 2007, Dr. Robert Ford (GWERD) provided Project Scientist Cornell Rosiu and RPM Anna Krasko with comments on ground-water investigations at the Centredale Manor Restoration Project Superfund Site in North Providence, RI. The comments focused on the potential migration of TCDD in ground water and if the contaminated plume could be an ongoing source or migration pathway from the site to a receiving river. It was pointed out that the existing data appear to be of use only in a qualitative sense with a high degree of uncertainty for the calculation of actual contaminant concentrations reaching the river. Insufficiencies contributing to uncertainty include data to evaluate the annual variability in ground-water flux to the river and the spatial extent of the contaminated plume. Suggestions were offered with respect to supplemental approaches to addressing the problem.
(07-R01-002) (R. Ford(GWERD)580-436-8872)

Technical Assistance to Region IV: On April 12, 2007, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Galo Jackson with comments on the "Draft Final Report, Phase II Remedial Investigation (RI) Report" for the Alaric Superfund Site in Tampa FL. The focus of the review included the potential applicability of a Technical Impracticability waiver and evaluation of RI recommendations regarding the need for additional characterizations as well as the general technical aspects of the document. Specific recommendations concerned the determination of target cleanup levels, source area soil and plume delineations, and aquifer properties. Other comments addressed site and transport conceptual models.
(07-R04-004) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region V: In a continuing technical assistance effort at the Chem-Dyne Superfund Site in Hamilton, OH, Dr. Randall Ross (GWERD) and Dr. Milovan Beljin (Dynamac) provided RPM Lolita Hill with comments on Step-Test data collected from redeveloped monitoring wells at the site. The April 18, 2007, comments addressed several problems including the time required for each step test, the importance of equal time durations during the tests, proper recovery period between steps, decreases in well efficiency with time, and data reporting.
(01-R05-001) (R. Ross(GWERD)580-436-8611)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
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Status Report for the Week of May 7, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: During April 23-27, 2007, Steven Acree, Dr. Robert Ford, Dr. Randall Ross, and Brad Scroggins (GWERD), and Pat Clark, Bob Lien, and Kirk Scheckel (NRMRL) participated in an interdisciplinary research project at Fort Devens Superfund Site in Devens, MA. The activities are part of an ongoing characterization of ground-water/surface-water interactions at the Red Cove study site. Specifically, sediment cores, ground-water samples, and surface-water samples were collected. In addition, lake bed piezometers were installed to measure hydraulic gradients between the lake sediments while an advective flux meter was deployed to measure water flux through the sediments. An improved network of wells was also installed on land adjacent to Red Cove to allow further delineation of arsenic concentrations within the ground water and to map hydraulic gradients near the cove. These data, combined with ground-water elevations monitored using dataloggers and vertical profiles of water quality data from existing well clusters, will be used to estimate arsenic flux to Red Cove.
(05-R01-001) (S, Acree(GWERD)580-436-8609)

Technical Assistance to Region IX: On April 20, 2007, Steven Acree and Dr. Robert Ford (GWERD) provided RPM James Sickles with a review of responses to earlier GWERD comments on a hydrogeologic framework assessment work plan at the Yerington Mine Site in Yerington, NV. With few exceptions, the responses and revised work plan addressed the earlier concerns. The focus of the responses included purge volumes before sampling, problems caused by electrode fouling, reduced screen intervals, additional sampling locations, and the hydraulic-testing program.
(01-R09-004) (GWERD 580-436)Acree 8609/Ford 8872)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

De Las Casas, C.L. (Univ. of AZ), K.G. Bishop (Univ. of AZ), L.M. Bercik (Tetra Tech), M. Johnson (Univ. of AZ), M. Potzler (Univ. of AZ), W.P. Ela (Univ. of AZ), A.E. Sáez (Univ. of AZ), S.G. Huling (GWERD), and R.G. Arnold (Univ. of AZ). "In-Place Regeneration of Granular Activated Carbon Using Fenton's Reagents." ACS Symposium Series 940, Remediation of Hazardous Waste in the Subsurface: Bridging Flask and Field. Physicochemical Methods of Subsurface Remediation, Chapter 4, pgs 43-65.

(S. Huling(GWERD)580-436-8610)

Eighmy, T.T., J.C.M. Spear, J. Case, M. Marbet, J. Casas, W. Bothner, J. Coulburn, L.S. Tisa, M. Majko, E. Sullivan, M. Mills, K. Newman, and N.E. Kinner (Univ of NH). "Microfracture Surface Characterizations: Implications for In Situ Remedial Methods in Fractured Rock." (2006) EPA Report. EPA/600/R-05/121. National Risk Management Research Laboratory, Cincinnati, Ohio.

(M. Gonsoulin(GWERD)580-436-8616)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of May 14, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On May 9, 2007, Dr. Richard Wilkin (GWERD) provided RPM Desiree Moyer with review comments on a report titled "Lead at Camp Edwards" prepared for the Massachusetts Military Reservation on Cape Cod, MA. In general, the report has been significantly revised in response to earlier GWERD suggestions. The report is improved and the important conclusions are reasonable. Several follow-up comments were offered with respect to variables governing lead mobility in aquatic systems.
(07-R01-001) (R. Wilkin(GWERD)580-436-8874)

Technical Assistance to Region VI: On May 7, 2007, Steven Acree (GWERD), Dr. Bruce Pivetz (Dynamac), and Dr. Robert Ford (GWERD) provided RPM Sue Westbrook with comments on an interim measures implementation work plan at the El Paso Corporation RCRA Site in Corpus Christi, TX. Although the current extraction system has significant influence on the ground-water flow, the existing data are not sufficient to determine whether complete capture of the contaminant plumes in the upper water-bearing zone is maintained under all conditions. Detailed comments regarding this issue were provided with respect to hydraulic gradients, increased salinity, and a flow budget analysis.
(06RC06-001) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region IX: In a continuing technical assistance effort at the Yerington Mine Site in Yerington, NV, Steven Acree (GWERD) provided RPM James Sickles with a review of the second series of responses to earlier GWERD comments on the "Second-Step Hydrogeologic Framework Assessment Work Plan." The May 1, 2007 review stated that, with the exception of purge volumes prior to sampling, the responses are adequate to address the expressed concerns.
(01-R09-004) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region X: On May 8, 2007, Dr. Randall Ross (GWERD) and Dr. Milovan Beljin (Dynamac) provided RPM Carla Fisher with review comments regarding modeling at the Chemical Waste Management of the Northwest, Inc. Landfill RCRA Site in Arlington, OR. Several concerns were expressed with respect to the models selected for the investigation including an unrealistic Kv assumption, over-simplification of the vertical conceptual flow model, boundary conditions, need for an adequate monitoring system, and the abandonment and replacement of some existing monitoring wells.
(07RC10-001) (R. Ross(GWERD)580-436-8611)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of May 21, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region II: On May 17, 2007, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Mark Granger with review comments on a draft source characterization work plan (SCWP) for the Cortese Landfill Superfund Site in Narrowsburg, NY. In general, the SCWP will provide additional information for refining the source conceptual model as well as assessing potential source area remedial technologies. It will also assist with the design of potential pilot-scale treatability studies. Detailed comments were provided with respect to the preparation of a bench-scale in situ chemical oxidations work plan.
(06-R02-002) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region IX: On May 16, 2007, Steven Acree and Dr. Eva Davis (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Kathy Setian with review comments on various documents pertinent to remediation activities at the Lawrence Livermore National Laboratory in Livermore, CA. A site visit was conducted on April 17, 2007. The restoration program appears to have been highly successful at remediating dissolved contaminant plumes distal to the contaminant source areas. It appears that this portion of the restoration program is relatively mature and proceeding effectively. Suggestions were offered with respect to the selection process of technologies for the remediation of source areas.
(07-R09-002) (GWERD 580-436)Acree 8609/Davis8548)

Technical Assistance to the Department of Toxic Substances Control in Sacramento, CA: On May 16, 2007, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided Geologic Services Unit Chief Brian Lewis with comments on a document describing an investigation of purging methods used prior to ground-water sample collection from monitoring wells at the Kettleman Hills Facility in Kettleman, CA. The purpose of the review was to evaluate both the pre-sample purge techniques and methods used in the evaluation of the data. Recommendations were offered concerning purge volumes and stabilization periods prior to sample collection.
(Misc.) (S. Acree(GWERD)580-436-8609)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
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Status Report for the Week of June 4, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region IV: On May 21, 2007, Dr. David Burden (GWERD), and Dr. Noman Ahsanuzzaman and Rob Earle (Shaw Env.) provided RPM Keriema Newman with review comments on a ground-water modeling report for the Arlington Blending & Packaging Site in Arlington, TN. The GWERD Center for Subsurface Modeling Support (CSMoS) completed a review of a report titled "Response to USEPA Comments on the 2005 Annual Report" dated December 2006. The comments specifically addressed the issues of the contaminant plumes decreasing in size and mass, and if the existing monitoring system is adequate to identify the extent of the plumes.
(07-R04-008) (D. Burden(GWERD)580-436-8606)

Technical Assistance to Region V: During a conference call on May 7, 2007, Dr Mary Gonsoulin (GWERD) and Dr. Daniel Pope (Dynamac) discussed a number of issues relative to the Aircraft Components Superfund Site in Benton Harbor, MI, which is currently being developed as a golf course. In addition to abandoning some monitoring well clusters, the location and construction of replacement wells was discussed along with the promotion of reductive dechlorination of VOCs, substrate injection frequency, and possible locations for a push-probe sampling round.
(06-R05-002) (M. Gonsoulin(GWERD)580-436-8616)

Technical Assistance to Region IX: On May 18, 2007, Dr. Ann Keeley (GWERD) provided RPM Bonnie Arthur with review comments on an April 17, 2007, Technical Memorandum prepared for the Frontier Fertilizer Site in Davis, CA. A number of issues were discussed including the continuity between an injection well and downgradient monitoring well as evidenced by the results of a tracer test, selection of the electron donor, and the elevated temperature of the injected water. These issues were also discussed in the contractor's report along with proposed plans for future activities.
(07-R09-003) (A. Keeley(GWERD)580-436-8890)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of June 18, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region IV: On June 7, 2007, Dr. Ralph Ludwig (GWERD) provided RPM Ken Mallary with review comments on the "Phase II Pre-Design Investigation Report and Groundwater Non-Time-Critical Removal Action 30 Percent Design" for the Former Swift Agri-Chem Corporation Site in Charleston, SC. Although there is general agreement with the site conceptual model and proposed remedial approach, suggestions were offered with respect to the report's discussion of the vertical distribution and mobility of arsenic, monitoring well locations, and sampling frequency for performance evaluation.
(07-R04-005) (R. Ludwig(GWERD)580-436-8603)

Technical Assistance to Region V: On June 14, 2007, Dr. David Burden (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Pamela Molitor with technical review comments for the ChemCentral/GrandRapids Superfund Site in Wyoming, MI. The comments, based on a review of four site-specific reports, focused on the possibility of another contamination source and changes in contaminant concentrations over time. It was suggested that there is insufficient data to indicate the presence of a second source or secondary plume. Although contaminant concentrations generally appear to have decreased with time, the plume footprint appears to have remained about the same. Contaminant mass has apparently decreased through remedial measures, discharges to surface water, and potentially through naturally occurring degradative processes.
(07-R05-001) (D. Burden(GWERD)580-436-8606)

Technical Assistance to Region VII: On May 22, 2007, Dr. David Burden (GWERD), and Rob Earle, Dr. Mingyu Wang, and Dr. Norman Ahsanuzzaman (Shaw Env.) provided RPM Scott Marquess with review comments on the "2006 Groundwater Modeling Report for the Former Nebraska Ordnance Plant (FNOP)" in Mead, NE. Although the selected ground-water flow and fate and transport models seemed appropriate for the site, recommendations were offered to improve their utility in areas including calibration, convergence, fate and transport parameter values, and sensitivity analysis.
(07-R07-001) (D. Burden(GWERD)580-436-8606)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

The in-situ chemical oxidation (ISCO) Engineering Issue Paper is a comprehensive up-to-date summary of the state of the science of ISCO involving the four most commonly used oxidants (permanganate, Fenton's, persulfate, ozone). The Issue Paper includes process fundamentals, bench-and pilot-scale study guidelines, site specific requirements and considerations for deployment, engineering design, performance monitoring, and limitations and interferences. Subsurface fate and transport mechanisms of the oxidants used in ISCO, and the impact of ISCO on natural attenuation, concerns shared by many decision-makers, have been critically analyzed. The Issue Paper can be downloaded from the GWERD web site via the "Publications" link (http://www.epa.gov/ada/issue.html) or from the Engineering Technical Support Center website link (http://intranet.epa.gov/nrmintra/etsc/papers.html). Hard copies are available.

Huling, S.G. (GWERD) and B. Pivetz (Dynamac). "In-Situ Chemical Oxidation" Engineering Issue. (2006) EPA Report. EPA/600/R-06/072. National Risk Management Research Laboratory, Cincinnati, Ohio.
(S. Huling(GWERD)580-436-8610)

Huling, S.G., K.P. Jones, and T. Lee (GWERD). "Iron Optimization for Fenton-Driven Oxidation of MTBE-Spent Granular Activated Carbon." (2007) Environ. Sci. Technol. 41(11), 4090-4096.
(S. Huling(GWERD)580-436-8610)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of July 2, 2207

TECHNICAL ASSISTANCE

Technical Assistance to Region IV: In a continuing technical assistance effort at the Hollingsworth Solderless Terminal Site in Ft. Lauderdale, FL, Dr. Scott Huling (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Galo Jackson with technical review comments on a number of documents related to remediation activities with a focus on lactate injection. The June 21, 2007, response recommended that an additional lactate injection be done in conjunction with modifications to the injection procedures. Additional comments concerned injection system information, persistence of cis-DCE and VC, alternate remedial strategies, and the recommended remedial approach.
(03-R04-004) (S. Huling(GWERD)580-436-8610)

Technical Assistance to Region IX: On June 18, 2007, Dr. Richard Wilkin (GWERD) provided RPM David Stensby with comments on a treatability study work plan for in-situ reduction of hexavalent chromium at the Alark Hard Chrome Superfund Site in Riverside, CA. It was suggested that there is general agreement that treatment of the hexavalent chromium contamination using calcium polysulfide as a reductant is a reasonable approach for the vadose and saturated zones at the site. Detailed comments were provided with respect to the collection of samples from soil as well as the vadose and saturated zones.
(07-R09-004) (R. Wilkin(GWERD)580-435-8874)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of July 30, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: In a continuing technical assistance effort at the Pine Street Canal Superfund Site in Burlington, VT, Steven Acree (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Karen Lumino with review comments on the "Final NAPL Investigation Report" and the "Final NAPL Controls Report." The July 24, 2007, comments suggested that the investigation report generally appeared acceptable, however, there may still be unresolved issues about some assumptions and parameter values used in the calculations of NAPL masses and seepage. In the controls report, concerns were expressed with respect to the number of reactive core mat placements that would be potentially required for an adequate design life.
(94-R01-001) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region IV: On July 23, 2007, Steven Acree and Dr. Robert Ford (GWERD) provided RPM Robert Pope with review comments on a FY 2006 Annual Review for the Savannah River Site, E-Area in Aiken, SC. In general, the available information was found to be insufficient to independently evaluate the monitoring program including the monitor system design, established action levels, and the reported evaluation of the monitoring results. Concerns were expressed concerning the extent to which modeling may have been used as a substitute for ground-water monitoring. Also, it was noted that there is no information to assess how the ground-water flow and contaminant transport model has been constructed, calibrated against site data, and subsequently validated.
(06-R04-007) (GWERD 580-436)Acree 8609/Ford8872)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Faulkner, Barton R. (GWERD) and Michael E. Campana (Oregon St. Univ.). "Compartmental model of nitrate retention in streams." (2007) Water Resources Research, Vol. 43, Pgs 1-8.

(B. Faulkner(GWERD)580-436-8530)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of August 13, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region VIII: During July 12 - 20, 2007, Steven Acree, Dr. Rick Wilkin, Dr. Randall Ross, Dr. Doug Beak, and Tony Lee (GWERD) visited the Asarco Smelter Site in Helena, MT, to perform ground-water sampling and gather hydrogeologic characterization information to investigate the performance of a pilot-scale zero-valent iron permeable reactive barrier (PRB) installed to treat arsenic in ground water migrating from the site. The investigation also included a characterization of the hydraulic conductivity distribution within the PRB using borehole flowmeter techniques.
(01-R08-002) (S. Acree(GWERD)580-436-8609)

Technical Assistance to Region X: On August 7, 2007, Steven Acree (GWERD) provided RPM Dennis Faulk with a "Draft Report: Conceptual Design and Budgetary Costs for a Pump and Treat Remedy" which was prepared by a contractor for the Moses Lake Wellfield Contamination Superfund Site in Moses Lake, CA. The document described a conceptual design and cost estimate for a ground-water extraction/ reinjection system based on many assumptions which are stated in the report.
(07-R10-001) (S. Acree(GWERD)580-436-8609)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Mayer, Paul M. and Timothy J. Canfield (GWERD), Steven K. Reynolds, Jr., (Lake Erie College), and Marshall D. McCutchen (Univ. of Okla.). "Meta-Analysis of Nitrogen Removal in Riparian Buffers." (2007) Journal of Environmental Quality. 36:1172-1180.

(P. Mayer(GWERD)580-436-8647)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of August 27, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region III: On August 21, 2007, Dr. Ann Keeley (GWERD) and Dr. Bruce Pivetz (Dynamac) provided RPM Charlie Root with review comments of the "Bioremediation Pilot Test Update" for the Malvern TCE Superfund Site in Malvern, PA. The review was conducted to provide an opinion as to whether the reported information supports PRP claims that the "Accelerated In Situ Bioremediation" (AISB) pilot study has proven successful and should be expanded as the treatment portion of the remedial design, and is sufficient to base a decision on including the AISB approach into the final design. It was suggested that the over all amount of information and level of analysis developed during the AISB pilot study is significant and commendable. At some future time, it is likely that additional pilot results will allow final decisions on the inclusion of AISB in the remedy.
(05-R03-002) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region IX: On August 17, 2007, Dr. Eva Davis (GWERD) provided RPM Jeff Dhont with review comments on a number of technical documents pertaining to the Montrose Superfund Site in Torrence, CA. The review focused on the extent of DNAPL in the vadose and saturated zones. Detailed calculations were made using soil chlorobenzene concentrations provided in the report to determine the possible or confirmed presence of DNAPL. The calculations were performed for each of three lithologic units involved in the investigation with consideration given to the moisture content of each unit. Despite uncertainties that still exist with respect to the actual extent of DNAPL at the site, it was suggested that the level of understanding is adequate for the delineation of DNAPL in determining the area to be treated by thermal remediation should that technology be chosen as the remedial alternative.
(95-R09-015) (E. Davis(GWERD)580-436-8548)

Technical Assistance to Region IX: On August 14, 2007, Steven Acree (GWERD) and Dr. Robert Ford (LRPCD) provided RPM James Sickles with review comments on the "Remedial Investigation Work Plan, Site-Wide Groundwater" for the Yerington Mine Site in Yerington, NV. General issues that were discussed included a better definition of the ground-water flow field to support the remediation effort, proposed sites for the assessment of ground-water contamination and source loading, use of slug tests to determine the rate of flow in the alluvial aquifer, ground and surface water interactions, and aquifer solids characterization. A number of specific comments were offered with some emphasis on laboratory testing methods.
(01-R09-004) (GWERD 580-436)Acree 8609/
(LRPCD 513-569) Ford 7501)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Doheny, E.J. (USGS), R.J. Starsoneck (Formerly of USGS), E.A. Striz (GWERD), and P.M. Mayer (GWERD). "Watershed Characteristics and Pre-Restoration Surface-Water Hydrology of Minebank Run, Baltimore County, Maryland, Water Years 2002-2004." 2006. U.S. Geological Survey Scientific Investigations Report 2006-5179, 42 p. (Available on the Internet at http://md.water.usgs.gov/publications/sir-2006-5179/)
(P. Mayer(GWERD)580-436-8647)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of September 3, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On August 27, 2007, Dr. Ann Keeley (GWERD) provided RPM Dick Goehlert with comments concerning the possible processes involved in the degradation of 1,1,1-TCA at the Kearsarge Metallurgical Corporation Superfund Site in Conway, NH. Issues discussed in some depth were the production and degradation of daughter products, the possibility that the solvent used at the site contained TCA, TCE and 1,1-DCE, relative degradation rates of the COCs, and the biotic and abiotic degradation processes involved under anaerobic conditions.
(07-R01-004) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region IV: During August 8-9, 2007, Dr. Ralph Ludwig (GWERD) attended a meeting in Atlanta, GA, to discuss remediation options for the Port of Baldwin Superfund Site in Port Royal, SC. The site is a former phosphate fertilizer production plant. Attendees included representatives from EPA Region 4, Exxon-Mobil, Arcadis-BBL, Battelle, and the State of South Carolina. The discussions focused on the fate of lead and arsenic in ground water and proposed measures to mitigate the migration of these contaminants in the subsurface. One proposed remedial alternative will involve the removal of additional source areas followed by a comprehensive program to monitor the effectiveness of this action.
(07-R04-009) (R. Ludwig(GWERD)580-436-8603)

Technical Assistance to Region IV: During August 16-17, 2007, Dr. Ralph Ludwig (GWERD) attended a meeting and site tour to discuss remediation options for the Koppers portion of the Cabot Carbon - Koppers Superfund Site in Gainesville, FL. Also attending the meeting were representatives from EPA Region 4, Koppers, the State of Florida, and Geo Trans. Discussions focused on DNAPL contamination at the site and its vertical migration in the subsurface. Dissolved phase contamination has been detected in a lower drinking water aquifer previously believed to be isolated from the above contamination. The aquifer serves as the drinking water source for the City of Gainesville.
(07-R04-010) (R. Ludwig(GWERD)580-436-8603)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
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Status Report for the Week of September 10, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region IV: On September 4, 2007, Dr. Eva Davis (GWERD) provided RPM Stephen Ball with comments on the thermal remediation portions of a corrective measures study report for the Cape Canaveral Air Station, FL. It was pointed out that the thermal remediation demonstrations, which were carried out in 1999-2000, were not particularly successful and do not accurately reflect improvements that have been made resulting in more effective applications since that time. Concern was also expressed that the evaluation of the demonstration results contain errors resulting in the erroneous conclusion that thermal remediation caused vertical and horizontal contaminant migration. A large number of specific and detailed comments were provided regarding various aspects of the technology.
(00-R04-006) (E. Davis(GWERD)580-436-8548)

Technical Assistance to Region IV: On September 4, 2007, Dr. Randall Ross (GWERD) and Dr. Milovan Beljin (Dynamac) provided RPM David Williams with review comments for the "Site Investigation Report for the Southwest Groundwater Plume" at the Paducah Gaseous Diffusion Plant in Paducah, KY. A review of the conceptual model suggests that, in this case, the probabilistic approach to solute transport using an analytical model was not warranted. The analytical model should have been used only as a screening tool. If a high value of an input parameter, selected from an acceptable range, does not produce results that are of concern (e.g., concentration values that are significantly lower than MCL), there would be no need to run Monte Carlo simulations on that parameter. Other issues involved the vertical transport of contaminants from the sources, effective porosity estimates, and the effect of river stages on the hydraulic gradient.
(07-R04-002) (R. Ross(GWERD)580-436-8611)

Technical Assistance to Region V: In a continuing technical assistance effort at the Chem-Dyne Superfund Site in Hamilton, OH, Dr. Randall Ross (GWERD) and Dr. Milovan Beljin (Dynamac) provided RPM Lolita Hill with review comments on a field sampling work plan. In the August 29, 2007, review it appeared that, in general, the plan presents a logical next step in understanding the potential for residual contaminants at selected locations related to the site. However, if residual contaminants are indicated by the described methods, additional characterization points may be required to better delineate the extent of the residual sources. It was suggested that it may be necessary to conduct vertical profiling at deeper depths if residual NAPL is indicated for the deepest sampling intervals.
(01-R05-001) (R. Ross(GWERD)580-436-8611)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
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Status Report for the Week of September 17, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region II: On September 6, 2007, Dr. Richard Wilkin (GWERD) provided RPM Richard Ho with review comments on a feasibility study and a technical memo prepared for the Quanta Resources Superfund Site in Edgewater, NJ. In general, concerns were expressed that not enough time has elapsed (2005-2006) to make proper conclusions regarding long-term contaminant attenuation trends. While statements made that the behavior of arsenic in ground-water systems are generally consistent with the known science, it was suggested that the existing site-specific data is insufficient to determine whether arsenic is being attenuated and whether attenuated arsenic is expected to remain stable in the solid phase. On the other hand, the "Cinder/Ash Investigation" study provides a wealth of analytical and characterization data.

(07-R02-002) (R. Wilkin(GWERD)580-436-8874)

Training Seminars: GWERD staff and contractors recently conducted a one day training seminar in Regions 2, 5, and 6 on the topic of capture zone analysis. The course was taught at Region 6 on August 2nd, in Region 2 on August 21st, and in Region 5 on August 28th. The course was attended by approximately 30 federal, state, or private consultants at each location. This training seminar was for project managers and hydrogeologists who work on sites with active pump and treat systems or sites where such systems are in the design phase. The training seminar presented a systematic six-step approach for the evaluation of capture zones generated by pump and treat systems, and introduced a new guidance document on the topic being developed by EPA's Office of Research and Development. The use of "converging lines of evidence" and the iterative nature of the systematic approach were explained. The course was taught by Mr. Rob Greenwald (GeoTrans Inc.) and Dr. Milovan Beljin (Dynamac Corp). A presentation on ORD's Ground Water Technical Support Center was also presented by Dr. David Burden (GWERD) at Regions 5 and 6, and by Dr. Randall Ross (GWERD) at Region 2.

(Misc.) (D. Burden (GWERD) 580-332-7651)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of September 24, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region IV: On September 13, 2007, Dr. Ralph Ludwig (GWERD) provided RPM Craig Zeller with review comments on a supplemental investigation report for the Port of Baldwin Mine Site in Port Royal, SC. In general, the conclusions reached in the report regarding the status of contamination and proposed remediation plans are reasonable. It was suggested that the conceptual model is technically sound and that the proposed removal of additional source material should improve conditions at the site. A rigorous post-treatment monitoring program will serve to evaluate the effectiveness of the removal.
(07-R04-009) (R. Ludwig(GWERD)580-436-8603)

Technical Assistance to Region IV: On September 14, 2007, Dr. Ann Keeley (GWERD) provided RPM Turpin Ballard with a review of remedial design documents for the Memphis Depot NPL Site in Memphis, TN. The review was focused on microcosm studies and associated conclusions. In general, the documents were found to be well structured and written. The logic and approach to design are well presented as were the identification and solution to problems. The few issues that were mentioned concerned referencing errors and minor typos.
(07-R04-011) (A. Keeley(GWERD)580-436-8890)

Technical Assistance to Region IX: In a continuing technical assistance effort at the Yerington Mine Site in Yerington, NV, Steven Acree (GWERD) and Dr. Robert Ford (LRPCD) provided RPM James Sickles with comments on a "Site-Wide Groundwater Monitoring Plan." The September 7, 2007, comments stated that, in general, the proposed plan significantly upgrades procedures for monitoring the historical well network and consolidates monitoring previously performed under different efforts. Specific comments were offered in a number of areas including sampling frequency and procedures.
(01-R09-004) (S. Acree(GWERD)580-436-8609)
(R. Ford(LRPCD)513-569-7501)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Ludwig, Ralph D., Chunming Su, Tony R. Lee, Richard T. Wilkin, Steven D. Acree, Randall R. Ross, and Ann Keeley (GWERD). "In Situ Chemical Reduction of Cr(VI) in Groundwater Using a Combination of Ferrous Sulfate and Sodium Dithionite: A Field Investigation. (2007) ES&T Journal. Vol. 41, No. 15, 5299-5305.

(R. Ludwig(GWERD)580-436-8603)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of October 22, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region II: On October 2, 2007, Dr. Scott Huling (GWERD) provided RPM Mark Granger with several comments and recommendations regarding bench-scale testing of aquifer material collected from the Cortese Superfund Site in Narrowsburg, NY. It was recommended that enhanced DNAPL recovery be fully evaluated prior to the implementation of ISCO activities due to cost efficiency. Identifying lithologic features that may be responsible for the accumulation of DNAPLs was also encouraged. Specific comments concerned the selection of a proper ISCO remedial activity due to complex mixtures of target organic compounds, soil and ground-water sample collection, total soil oxidant demand, soil alkalinity buffering tests, and persulfate treatment effectiveness tests and procedures.
(06-R02-002) (S, Huling(GWERD)580-436-8610)

Technical Assistance to Region X: On October 5, 2007, Steven Acree (GWERD) provided RPM Dennis Faulk with a report prepared by Geo Trans, Inc. describing a conceptual design and cost estimate for a ground-water extraction/reinjection system at the Moses Lake Site in Moses Lake, WA. It was noted that the conceptual design is based on many assumptions due to a lack of design-level information regarding actual site parameters. For some parameters, the difference between assumed and actual values will likely have a negligible effect on the system design and performance. For other parameters, however, the degree of uncertainty is greater and the differences may be more significant in terms of design and performance. Therefore, additional investigations will be needed during the remedial design phase to verify key design parameters and assumptions prior to implementing the remedial action.
(07-R10-001) (S. Acree(GWERD)580-436-8609)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of November 5, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region II: On October 22, 2007, Dr. Richard Wilkin (GWERD) provided RPM Richard Ho with review comments on the "Characterization of Cinder/ Ash and Reddish-Purple Soils - Field Work Summary and Analytical Results Discussion" prepared for the Quanta Resources Superfund Site in Edgewater, NJ. The objective of the study was to provide additional information on the nature and extent of contaminated soils that are potential sources of arsenic to ground water. The geochemistry of soils at the site was discussed in considerable detail. It was concluded that whether these soils are related to past sulfuric acid production or not, they clearly are a concern in terms of representing a source of arsenic contamination to ground water.
(07-R02-002) (R. Wilkin(GWERD)580-436-8874)

Technical Assistance to Region IX: During October 23-26, 2007, Steven Acree (GWERD) and Dr. Robert Ford (LRPCD) met with representatives from Region 9 and others to observe ground- water and aquifer solids sampling at the Yerington Mine Site in Yerington, NV. Activities included field reconnaissance of sites for initial characterization of surface water influence from West Campbell Ditch and Wabuska Drain. In addition, RPM Jim Sickles provided a tour of previous mining operations and associated waste areas at the site. Additional action by GWERD and LRPCD personnel is anticipated in review of documents describing results of the hydrogeologic framework characterization as well as remedial investigation work plans and reports.
(01-R09-004) (S. Acree(GWERD)580-436-8609)
(R. Ford(LRPCD)513-569-7501)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Eighmy, T. Taylor, Jean C.M. Spear, Julia Case, Hallie Marbet, Jose Casas, Wallace Bothner, Joanne Coulburn, Louis S. Tisa, Michelle Majko, and Elsie R. Sullivan (Univ. of NH), Mary E. Gonsoulin (GWERD), and Michelle Mills, Kimberly Newman, and Nancy E. Kinner (Univ. of NH). "Microfracture Surface Geochemistry and Adherent Microbial Population Metabolism in TCE-Contaminated Competent Bedrock." (2007) Geomicrobiology Journal. 24:307-330.

(M. Gonsoulin(GWERD)580-436-8616)

HIGHLIGHTS

National Risk Management Research Laboratory
Ground Water and Ecosystem Restoration Division
Robert S. Kerr Environmental Research Center

Status Report for the Week of November 12, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region IX: On September 7, 2007, Dr. Eva Davis (GWERD) provided RPM Jeff Dhont with review comments on a draft revised work plan for a two-dimensional bench-scale evaluation of DNAPL mobility during steam flushing at the Montrose Superfund Site in Torrance CA. In general, the work plan does not describe laboratory experiments that will provide information that can be interpreted directly to field applications. The experiments are supposed to provide insight into the effects of gravity in a water/DNAPL/steam flow system, and the importance of the effects of gravity which are sensitive to the scale of the system and the flow rates. The proposed experiments are not scaled properly to represent field conditions for multiphase flow and heat movement, and may lead to erroneous conclusions about the flow of these fluids in the field. Copious general and specific comments were offered in a variety of areas.
(95-R09-015) (E. Davis(GWERD)580-436-8548)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Doheny, Edward J. (USGS), Roger J. Starsoneck (Formerly USGS), Paul M. Mayer (GWERD), and Elise A. Striz (Formerly GWERD). "Pre-Restoration Geomorphic Characteristics of Minebank Run, Baltimore County, Maryland, 2002-04." (2007) USGS Publication 5127. http://md.water.usgs.gov/publications/sir-2007-5127/
(P. Mayer(GWERD)580-436-8647)

HIGHLIGHTS

National Risk Management Research Laboratory
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Status Report for the Week of December 3, 2007

TECHNICAL ASSISTANCE

Technical Assistance to Region I: On November 26, 2007, Dr. Richard Wilkin (GWERD) provided RPM Juan Pérez with comments on the status of a Permeable Reactive Barrier (PRB) at the Former Medallic Arts Facility in Danbury, CT. The PRB was constructed in December 2003 for the treatment of ground water contaminated with chlorinated ethenes, primarily PCE and TCE. One concern expressed about the performance of the PRB is that at a downgradient monitoring well contaminant levels have not significantly changed. Other concerns about the effectiveness of the PRB included water level and geochemical data as well as the availability of adequate sampling locations. Recommendations included the installation of additional monitoring wells and the consideration of a more active form of remediation such as in situ chemical oxidation if the speed of the cleanup process is a issue.
(08-R01-001) (R. Wilkins(GWERD)580-436-8874)

Technical Assistance to Region VI: On November 30, 2007, Dr. Ann Keeley (GWERD) provided RPM Gary Miller with responses to specific questions concerning analytical methods and geochemical parameters used in data evaluation/comparison at the Gulfco Marine Maintenance Superfund Site in Freeport, TX. It was pointed out that methods RSK 175/3 and RSK 194/3 were developed by the GWERD for the preparation and analysis of water samples for dissolved gases by micro gas chromatographs. Although at the present time there are no “official EPA approved methods” available for the analysis of methane, ethane, and ethene in ground water, they have been used at numerous Superfund and RCRA sites especially in connection with monitored natural attenuation (MNA). With respect to geochemical parameters, it was recommended that spatial and temporal analysis should include both sulfate and sulfide since biodegradation of some of the COCs are conducive to sulfate-reducing conditions. Furthermore, the relationship between sulfate and sulfide concentrations is routinely considered to interpret activity or the lack thereof.
(08-R06-001) (A. Keeley(GWERD)580-436-8890)