Real-Time Demonstration Project
Dynamic, Real-Time Characterization, Remediation, and Verification of Cleanup
for PCBs and Radionuclides in Soil/Sediment at the Paducah Gaseous Diffusion
Plant, Paducah, Kentucky

A project slated for field deployment in April 2008 at the Paducah Gaseous Diffusion Plant (PGDP) will utilize a single two-week field mobilization to characterize, assess, remediate, and verify cleanup of a 1-acre Area of Concern contaminated with polychlorinated biphenyls (PCBs), radioisotopes, uranium, and metals. The Real-Time Demonstration Project (RTD) will demonstrate field application of approaches developed by USEPA (TRIAD), the DOE, and Argonne National Laboratory (Adaptive Sampling and Analysis Plans). Non-destructive analytical (NDA) real-time field measurement technologies will be deployed for project field activities including waste characterization. NDA real-time and laboratory technologies to be deployed include:

- integrated radiation survey/GPS instrumentation (Gamma Mapping Walkover Survey),
- in-situ gamma spectroscopy for radioisotopes,
- in-situ and on-site XRF technology for metals and uranium,
- PCB field test kits, and
- Analysis of field samples by either mobile on-site or off-site laboratories utilizing appropriate analytical laboratory technologies for PCBs, radioisotopes, and metals.

Following soil removal activities intended to demonstrate the capability of the approach to cost-effectively achieve cleanup levels below established site risk thresholds and regulatory compliance levels, a final status verification survey of the Area of Concern will be conducted through the application of statistical sampling and real-time measurement technologies. The RTD is expected to demonstrate a significant increase in characterization coverage and significant cost/time savings relative to traditional and repetitive environmental-project cycles of planning, sampling, and analysis prior to the commencement and execution of field activities.

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