**Resolution Agreement of the Formal Dispute**
**for the D2 *Feasibility Study for the Burial Grounds Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky***
**(DOE/LX/07-0130&D2)**

## BACKGROUND

In accordance with Section XX.I. of the Federal Facility Agreement (FFA) for the Paducah Gaseous Diffusion Plant (PGDP), the U.S. Environmental Protection Agency, Region 4 and the Kentucky Division of Waste Management (KDWM) disapproved the D2 Feasibility Study (FS) for the Burial Grounds Operable Unit (BGOU) [DOE/LX/07-0130&D2] and invoked informal dispute as well as jointly provided 116 comments that served as conditions that must be addressed before they could approve a revised FS. The Parties conducted a period of informal dispute under Section XXV.A. of the FFA between January 14, 2011, and September 26, 2011. During this informal dispute resolution period, the Parties reached mutually acceptable resolution on the majority of concerns raised by EPA and KDWM in their comments. However, the Parties were unable to resolve informally the EPA and KDWM comments related to documentation in the FS of the presence of principal threat waste (PTW) at solid waste management units (SWMUs) 2, 4, and 7.

On September 27, 2011, EPA elevated this remaining disputed matter for resolution by the Dispute Resolution Committee (DRC) through the FFA's formal dispute process and issued a written statement of dispute (SOD) in accordance with FFA Section XXV.B. The SOD set forth EPA's position with respect to identification in the FS of PTW in SWMUs 2, 4, and 7 in consideration of the CERCLA Section 121(b)(1) provisions, the National Contingency Plan (NCP) requirements, and Agency's expectation to treat principal threat wastes, wherever practicable. The SOD included EPA's basis for identifying the source materials at SWMUs 2, 4, and 7 as PTW in consideration of EPA guidance such as the Superfund Publication 9380.3-06FS, *A Guide to Principal Threat and Low-Level Threat Wastes* as well as historical information provided in the administrative record file documents on the types of disposed wastes and nature and extent of contamination.

On October 17, 2011, the DRC representatives held a teleconference to discuss the disputed matter. The DRC was not able to unanimously resolve the dispute, and EPA and KDWM issued a joint decision (DRC Decision) on October 25, 2011. Although SWMU 3 was not included in EPA's January 14, 2011 non-concurrence letter invoking dispute, the DRC Decision provided additional rationale for classifying the uranium waste as PTW and required the BGOU FS to document it as such. On November 4, 2011, DOE issued a letter of disagreement with the DRC Decision and requested elevation of the dispute to the Senior Executive Committee (SEC) in accordance with Section XXV.B.3 of the FFA. The SEC discussed the dispute in the course of several telephone calls and subsequently met on January 30, 2012. The SEC successfully resolved the formal dispute and reached unanimous decision regarding PTW determinations in SWMUs 2, 3, 4, and 7 that will be included in BGOU FS and related CERCLA documents. The terms of the dispute resolution agreement (DRA) are set forth below.

## BGOU PTW DETERMINATIONS

### SWMU 4

- The FS for SWMU 4 will identify the TCE dense, non-aqueous phase liquids (DNAPL) and high concentration TCE in soils as PTW.

- The FS for SWMU 4 will document that SWMU 4 is a primary source of TCE contamination to the Southwest Plume.

- Prior to the dispute, the FFA parties agreed to conduct additional remedial investigation (RI) to better delineate the extent of TCE. *Addendum to the Work Plan for the Burial Grounds Operable Unit Remedial Investigation and Feasibility Study at the Paducah Gaseous Diffusion Plan, Paducah, Kentucky, SWMU 4 Sampling and Analysis Plan* (DOE/OR/07-2179&D2/A2) has been submitted by DOE to EPA and KDWM for review and approval. Results of the investigation will be documented in an addendum to the BGOU RI Report and a revised FS for SWMU 4.

- The Parties recognize the potential for high concentration uranium waste to be present at SWMU 4 (possibly in the form of sludge) that was intended for disposal at SWMU 3 based upon site history and process knowledge.

- The record is inconclusive as to whether the uranium present in SWMU 4 constitutes PTW. As noted above, additional investigation has been agreed to, the scope of which includes determining the nature and extent of uranium contamination. The PTW determination will be made after evaluation of the results of the investigation and documented in the addendum to the RI Report. As stated below, DOE will initiate the investigation field work no later than September 30, 2012.

### SWMU 3

- The FS for SWMU 3 will identify the estimated 3,200 tons of bulk uranium disposed in the former surface impoundment at SWMU 3 to be PTW.

- There are contradictory statements in the historical records regarding the potential presence of pyrophoric uranium in SWMU 3. The FS for SWMU 3 will acknowledge it is inconclusive as to whether pyrophoric uranium is present in SWMU 3.

### SWMU 2

- The FS for SWMU 2 will identify the following as PTW:
    - the estimated 270 tons of uranium (e.g., shavings and sawdust packed in oil) disposed in burial pits in SWMU 2,
    - buried drums of uranium-contaminated TCE and any high soil concentrations of TCE present under and adjacent to the drums,

- buried drums (thirty-five 30-gallon drums documented) of uranyl fluoride solution and high soil concentrations of uranyl fluoride solution present under and adjacent to the drums, and
- high concentrations of TCE and cis-1,2 dichloroethene (a toxic degradation product of TCE) in soil on the eastern side of SWMU 2.

- The FS for SWMU 2 will state that there is the potential that the 59,000 gallons of oil with which the uranium was packaged in drums contains PCBs at concentrations greater than 500 ppm considering sample results of 7900 ppm PCB from a drum excavated from SWMU 2. The drum came from Area 9 and contained TCE sludge as well as uranium contamination which suggests that it is likely not from the same waste stream as the pyrophoric uranium. The FS for SWMU 2 will state that under EPA guidance, PCBs greater than 500 ppm are generally considered PTW. Parties acknowledge that absent additional characterization (sampling and analysis) of the buried waste, it is uncertain whether PCBs are widely present in SWMU 2 at levels greater than 500 ppm. Notwithstanding the uncertainty, the FS will state that the 59,000 gallons of oil could contain PCBs in excess of 500 ppm and thus be considered PTW.

**SWMU 7**

- The FS for SWMU 7 will document that TCE (including degradation products) is present in Upper Continental Recharge System as DNAPL and/or high-concentration TCE residual soil contamination and constitute PTW.

- The FS for SWMU7 will document analytical results of waste in drums removed from TP-5 area of SWMU 7 during the 1992 site investigation and if results support, declare the waste PTW.

**RELATED DECISIONS**

- The resolution of 109 comments/conditions (as documented in DOE's February 2, 2012, letter to KDWM and EPA) that was achieved by the FFA parties during the informal dispute period is incorporated by reference into the DRA and will be addressed in the respective BGOU FSs as applicable. For those responses for which specific replacement language was not agreed to by the FFA parties, DOE will make its best effort to incorporate the path forward as agreed. If during FS development, DOE believes that changes or deviations to comment resolution are warranted, DOE will gain agreement from KDWM and EPA prior to effecting changes.

- The Parties agree to the schedule below for submittal of the following BGOU documents.

  - 04/29/12 – Revised BGOU FS for SWMUs 2, 3, 7 and 30
    (90 days for EPA and KDWM review and comment as a D1 document in accordance with the FFA)
  - 02/29/12 – Revised (D2/R1) FS for SWMUs 5 & 6 (review and comment as a D2 document in accordance with the FFA)

- 05/31/12 – D1 Proposed Plan for SWMUs 5 & 6
- 10/30/12 – D1 Record of Decision for SWMUs 5 & 6
- 09/30/12 – Field start for additional investigation of SWMU 4 (mobilization documented by letter to EPA and KDWM)

- Additional milestones and target dates for the BGOU project documents (e.g., RI Addendum and revised FS for SWMU 4, etc.) will be included in the revised FY 12 Site Management Plan in accordance with PGDP FFA Section XVIII, to be submitted by DOE for review and approval by EPA and KDWM.

Nothing in this DRA shall prevent any of the Parties from disputing under the FFA, any other matters related to the aforementioned projects. Nor does the DRA modify the terms and conditions of the FFA (e.g., related to review and comment on Primary Documents, Extension Requests and Dispute Resolution) except as specifically stated above. Failure to abide by the terms of the DRA may result in one or more of the Parties taking any action authorized under the FFA.

The undersigned agree that the formal dispute invoked on September 26, 2011, is hereby resolved by this Decision.

Gwendolyn Keyes Fleming
Regional Administrator
U.S. Environmental Protection Agency, Region 4

Date 2/10/12

William E. Murphie
Manager
DOE Portsmouth/Paducah Project Office

Date 2/10/12

Bruce Scott
Commissioner
Kentucky Department for Environmental Protection

Date 2/10/12