



ENERGY AND ENVIRONMENT CABINET

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June 14, 2016

Ms. Tracey Duncan
U.S. Department of Energy
Portsmouth/Paducah Project Site Office
5501 Hobbs Road
Kevil, Kentucky 42053

RE: Submittal of Comments to the Addendum to the Soils Operable Unit Remedial Investigation 2 Report for SWMU 229 (DOE/LX/07-2306&D2/A1)
Paducah Site
Paducah, McCracken County, Kentucky
KY8-890-008-982

Ms. Duncan:

The Division of Waste Management (Division) has completed its review of the *Addendum to the Soils Operable Unit Remedial Investigation 2 Report for SWMU 229*, dated March 18, 2016. Please address the attached comments in a D2 version of the document.

If you have any questions or require additional information, please contact Gaye Brewer at (270) 898-8468, or e-mail at gaye.brewer@ky.gov.

Sincerely,

For April J. Webb, P.E., Manager
Hazardous Waste Branch

AJW:gb:lww

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DWM File: #1110-D; Graybar: AIN20160005 (Soils OU RI 2 Rpt – SWMU 229 Add)

**Kentucky Division of Waste Management Comments to the
Addendum to the Soils Operable Unit Remedial Investigation 2 Report for SWMU 229
Paducah Site, Paducah, Kentucky**

DOE/LX/07-2306&D2/A1

June 13, 2016

General Comment:

1. In numerous locations throughout the document there are references to historical data. Figure 5.2, SWMU 229 Sample Locations for Surface Soil and Figure 5.5, SWMU 229 Sample Locations for Subsurface Soil only reference samples generated for the first Soils RI and the judgmental rad samples. If there are no other historical samples from other projects taken in SWMU 229, please revise the text referencing historical data because it is needlessly confusing to the reader. If there are historical samples for SWMU 229, please revise the appropriate figure and reference the project that the samples were taken for in the RI addendum.

Specific Comments:

1. **Characterize nature and extent of Source Zone, Pg. ES-3, 3rd paragraph and Section 5.1, Pg. 5-1 last paragraph**

Please conclude these paragraphs with a statement that includes the year when all the DMSA materials were removed from SWMU 229, and what the SWMU contains now, if anything. The paragraph as written leaves the reader with the impression that the remainder of the DMSA material is still in the SWMU, which is not the case.

2. **Table B.2, Pg. B-12**

Please revise the title of the table to reflect SWMU 229.

3. **Table C3.1, Pg. C3-7**

The first order decay coefficient parameter value differs from the one listed in the Soils RI2 Report. The reader could not find the value in the referenced document, the 2010 Burial Grounds RI Report. If necessary, please revise the document or provide an explanation for the difference.

4. **Table C3.1, Pg. C3-8**

The continuous release parameter value differs from the one listed in the Soils RI 2 Report. The simulation was run for 41 years for SWMU 229 and for 1,000 years for RI 2. Please explain the difference and revise as necessary.

5. **Figure D.3, Pg. D-45**

Please revise the footnotes to address SWMU 229, as necessary.

6. **D.5.7.4, Pg. D-65**

Please revise the last sentence of the paragraph as appropriate.

**Kentucky Risk Assessment Section Comments to the
Addendum to the Soils Operable Unit Remedial Investigation 2 Report for SWMU 229
Paducah Site, Paducah, Kentucky**

DOE/LX/07-2306&D2/A1

May 16, 2016

General Comment:

- 1 The constituents with a hazard quotient exceeding 1.0 using the maximum value were retained as constituents of potential ecological concern (COPEC). These include aluminum, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, uranium, vanadium, zinc, uranium-238, and high molecular weight PAHs. Calcium, sodium, and 2-methylnaphthalene were retained as COPECs because no ecological screening values were available for them. While agreeing with the conclusions of the screening ecological risk assessment, there are two specific comments that arise from inconsistencies noted between Table 5.1, Table E3.1, and Appendix F.

Specific Comments:

1. The maximum detected results for chromium, mercury, selenium, silver, and total PAH in Table 5.1 appear to be incorrect. Please explain or correct.
2. The maximum screening values for 2-methylnaphthalene, dibenzofuran, and fluorene in Table E3.1 appear to be incorrect. Please explain or correct.

**Additional Kentucky Risk Assessment Section Comments to the
Addendum to the Soils Operable Unit Remedial Investigation 2 Report for SWMU 229
Paducah Site, Paducah, Kentucky**

DOE/LX/07-2306&D2/A1

June 8, 2016

Note: Comment #1 applies to the SWMU 229 Addendum, but the same issue was also found in the Risk Methods Document and the full Soils OU RI, which was not noticed before.

Specific Comments:

1. The parameters “Time of shower” (0.1 hour) and “Time after shower” (0.1 hour) appear to be in error. These are not consistent with the Exposure time in the shower of 0.71 hours/day (adult resident) and 0.54 hours/day (child resident), but rather correspond to the older (Krag recommended value) of 0.2 hours/day as the Exposure time in the shower.
 - Adding the “Time of shower” and “Time after shower” should result in the Exposure time in the shower of 0.71 hours/day (adult resident) and 0.54 hours/day (child resident)
 - Using the EFH, it appears that the “Time of shower” is ~60% of the total time and “Time after shower” is ~40% of the total time.

Note: Since it was agreed that this SWMU meets the criteria to be evaluated further in the FS, Comments #2 through #6 are primarily for incorporation into future documents, but do not change the conclusions of the RI.

2. **Table 5.1. Surface Soil Data Summary: SWMU 229**

Barium – minimum detected concentration should be 61.6 mg/kg (SOU229-001), not 3.16E+02 mg/kg as listed in the table.

Uranium – minimum detected concentration should be 7.39 mg/kg (SOU229-015), not 8.57E+00 mg/kg as listed in the table.

Zinc – minimum detected concentration should be 28.19 mg/kg (SOU229-015), not 3.82E+02 mg/kg as listed in the table.

3. **Table 5.2. Subsurface Soil Data Summary: SWMU 229**

As noted in previous comments, the Subsurface Soil table includes only data from below 1’ bgs, although data from the entire soil column is included in calculations of EPCs for Excavation Worker/Outdoor Worker exposed to Subsurface Soil. This is potentially confusing, and for other SWMUs where lead is a COC, may lead to the erroneous

screening out of this constituent in subsurface soil, even when present above risk-based values in surface soil.

4. D.2.1 Sources of Data

It is stated in this section that “[d]ata used in the BHHRA describing current contaminant concentrations in surface and subsurface soil at SWMU 229 that were sampled during the summer of 2010 and the summer of 2014 were derived from the recently completed Soils OU RI (*DOE 2010*) sampling and RI 2 (*DOE 2014*) sampling acquired from the Paducah Oak Ridge Environmental Information System (OREIS) database.” However, it appears that all but two samples were taken in the summer 2010. The two other samples were taken in October 2010 (SOU229-014) and October 2015 (SOU229-012).

5. Table D.4. Surface Soil COPCs for SWMU 229

The data in this table does not match the data in Table 5.1. Surface Soil Data Summary, including maximum concentrations, # of analyses, and # detects. Please clarify.

6. Table D.5. Subsurface Soil COPCs for SWMU 229

The data in this table does not match the data in Table 5.2. Subsurface Soil Data Summary, including maximum concentrations, # of analyses, and # detects. Please clarify.