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Information Quality Guidelines Staff
United States Environmental Protection Agency
Mail Code 28221T
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Re: Request for Reconsideration of EPA's Decision on the Doe Run Company's Request for Correction of Information Regarding Soil Sampling at its Herculaneum Lead Smelter Site (RFC No. 07001)

Dear Madam or Sir:

This Request for Reconsideration ("RFR") is filed under the Data Quality Act, (Treasury and General Government Appropriation Act for Fiscal Year 2001, Pub. L. No. 106-554, § 515 Appendix C, 114 Stat. 2763A-153) ("DQA"), and EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency*, EPA/260R-02-008, October 2002 ("EPA Information Quality Guidelines"), on behalf of the Doe Run Company ("Doe Run"). Doe Run seeks an appeal of and modifications to EPA's decision dated May 14, 2007 (*see Tab 1*) on Doe Run's Request for Correction ("RFC") of information previously submitted on October 19, 2006 (*see Tab 2*).

DISCUSSION

I. SUMMARY OF DOE RUN'S RFC AND EPA'S RESPONSE

On October 19, 2006, Doe Run filed an RFC (RFC No. 07001) seeking corrective action for the dissemination of soil recontamination data collected from Doe Run's Herculaneum Lead Smelter ("HLS") site that fail to comply with the DQA and EPA Information Quality Guidelines. Doe Run identified at least three significant potential violations of the DQA and EPA Information Quality Guidelines regarding the soil sampling procedures EPA used at the site. Specifically, Doe Run noted the following violations:

1. EPA ignored or abandoned a more recent and specific Quality Assurance Project Plan ("QAPP") dated August 2002 governing soil recontamination sampling procedures in favor of an older QAPP dated September 2001 without justification and without adhering to the requirements of the EPA Quality Manual;

2. EPA failed to properly implement either the 2001 or 2002 QAPPs by disregarding the specifications and procedures provided in the QAPPs; and
3. EPA's *ex post facto* amendment of the 2001 QAPP in September 2006 is in direct violation of QAPP revision procedures specified in the EPA Quality Manual.

These violations resulted when EPA decreased the sampling depth for soil recontamination monitoring at HLS. EPA failed to follow its own mandated data quality procedures or vet the technical implications of the change. As Doe Run noted in the RFC, the effect of sampling anything less than the QAPP-specified full one-inch of soil is to make the test for lead recontamination more variable than intended by the QAPP and potentially more sensitive.

Doe Run requested that EPA implement several corrective actions to address these violations including: (1) adhering to a sampling depth of one inch until there has been shown to be an adequate and demonstrated basis for changing the sampling depth, (2) reconsider any regulatory decisions EPA has made based on data affected by the violations, and (3) issue notification to the public and cease disseminating data collected in violation of data quality guidelines until and unless EPA conducts a scientific review to determine what sampling depth is appropriate for determining soil recontamination.

EPA's May 14, 2007 response, however, fails to acknowledge that EPA improperly changed the sampling depth used at HLS or that this change affects the quality of the sampling results. Instead, EPA acknowledges "that there are documents in the record which may cause confusion as to the soil sampling collection procedures utilized by EPA," but ultimately maintains that "the soil recontamination data was, and still is being properly collected." (*See* EPA's Decision, **Tab 1** at p. 1). As a result, EPA does not plan to take any corrective actions to address the impact of varying soil sampling depths at HLS. Doe Run asks the EPA to reconsider its decision.

II. DISCUSSION OF DISAGREEMENT WITH EPA'S RESPONSE

Doe Run believes EPA's conclusions that "the methodology used to obtain soil recontamination data is consistent with EPA's objectives of quality, objectivity, utility, and integrity" and that "no corrections to the data obtained from that methodology are warranted" are erroneous because they are based on EPA's flawed interpretation of what "upper one inch of soil" means. (*Id.* at p. 3). Moreover, the steps EPA took to "clarify any potentially confusing statements" regarding soil sampling procedures¹ are not sufficient to address concerns over the quality of soil recontamination data. (*Id.*)

¹ EPA's response included two accompanying memoranda to "clarify" confusing statements in record: (1) memorandum from B. Morrison, EPA Region VII Project Manager, to the Site File and Administrative Record stating that EPA's Focus Group Report is inaccurate when it reports that EPA changed its sampling procedure from one inch samples to "surface scraping" after finding no evidence of recontamination from initial samples collected at one inch, *see*

A. Interpretation of “Upper One Inch”

At the heart of the controversy is the specification in the 2001 QAPP that soil “samples will be collected from the upper 1 inch of soil.” (2001 QAPP, **Tab 3** at p. 7). Doe Run interprets this specification to require sampling the entire top one inch of soil (or rough equivalent, consistent with practice in the field when measuring devices are not available).

In contrast, EPA’s response to Doe Run’s RFC continues to support a flawed interpretation of “upper one inch” and states as follows: “[i]t is to be noted that the 2001 QAPP envisions collection of soil samples from the upper inch of soil; it does not specify where, within that upper inch, the sample is to be collected.” (EPA’s Decision, **Tab 1** at p. 2). Essentially, EPA contends that “upper 1 inch” allows the collection of soil samples using any part of the soil within the top inch.

EPA’s interpretation presents data quality issues. First, regulatory decision points are based on air deposition modeling in the top inch of soil. For example, the 2002 QAPP specifies the “action level set in this plan [for lead recontamination] is 25 ppm/yr *in the top 1 in. of soil*” (emphasis added, 2002 QAPP, **Tab 4** at § 2.5). Allowing samples to be collected from anywhere within the one inch sample horizon allows EPA to pick and choose a sampling depth to achieve almost any desired lead concentration. In a public meeting with City of Herculaneum on March 16, 2004, Bruce Morrison, EPA Region VII Project Manager, said that EPA will use surface scrapings samples ranging from 1/8 inch to ¼ inch because taking a one-inch scoop sample would “dilute” lead concentrations in the soil. (*See* Affidavit of Aaron W. Miller, **Tab 5** at ¶ 9). In another example, EPA’s September 2006 amendment to the 2001 QAPP attempted to interpret “upper 1 inch” to mean surface scrapings “not to exceed 0.5 inches in depth” based on the “nature of an ongoing source of lead at the site which is identified as the emissions from the lead smelter in Herculaneum.” (*see* QAPP Amendment, **Tab 5**). EPA withdrew the amendment to the 2001 QAPP as part of its response to Doe Run’s RFC, but the example nonetheless illustrates the potential dangers of allowing such a vague interpretation of “upper 1 inch.” (*See* Attachment 2 to EPA’s Decision, **Tab 1**).

Doe Run believes such an interpretation also would violate EPA’s *Quality Manual for Environmental Programs*, EPA Order 5360 A1, May 5, 2000 (“EPA Quality Manual,” available at <http://www.epa.gov/QUALITY/qs-docs/5360.pdf>, last visited July 10, 2007). EPA Quality Manual § 5.3.1 states that the QAPP must provide sufficient detail to demonstrate that “the intended measurements or data acquisition methods are appropriate for achieving the project objectives.” In this case, EPA intends to compare soil recontamination data against specific regulatory action levels that are based on modeling of concentrations in the top one inch of soil. It would be difficult for EPA to make a valid assessment of soil concentrations against these regulatory action levels if the soil sample is not also taken from the entire top one inch of soil.

Attachment 1 to EPA’s Decision, **Tab 1**; and (2) memorandum from B. Morrison, EPA Region VII Program Manager, to EPA Quality Assurance Branch withdrawing a September 2006 amendment to the 2001 QAPP which interpreted “upper 1 inch” in the 2001 QAPP to mean surface soil scrapings “not to exceed 0.5 inches in depth,” *see* Attachment 2 to EPA’s Decision, **Tab 1**.

Failure to interpret “upper 1 inch” to mean sampling the entire top inch of soil or rough equivalent calls into question the validity of the comparison and the objectivity and utility of the data.

A second data quality issue is the reproducibility of soil recontamination data if EPA allows sampling depths to vary. Until the concentration profile of lead at different sampling depths as a function of distance from the facility is well understood, we have no way of knowing the extent to which variability in sampling depths would compromise the ability to analyze recontamination trends. In theory, collection of samples shallower than one inch would result in an effective concentration of detected lead levels, which could make the test for lead recontamination more sensitive than intended. Increased variability and the lack of reproducibility would affect the utility of the data.

1. Proposed Corrective Actions

Doe Run proposes that EPA interpret “upper 1 inch” to require sampling the entire top one inch of soil (or rough equivalent, consistent with practice in the field when measuring devices are not available) for all future sampling. EPA should issue notification to the public and withdraw any affected data from the public docket. If EPA believes a different sampling depth might be a more appropriate representation of lead exposure for future sampling, EPA should initiate an investigation to determine the most representative sampling depth. This investigation also should address other issues that could affect exposure assessments such as speciation.

B. Accuracy of the Focus Group Report

Doe Run’s RFC cites statements in EPA’s *Technical Report for Focus Group Recommendations, Herculaneum, MO*, dated October 6, 2003 (“Focus Group Report”) that document a material change in the soil sampling procedure EPA used to monitor soil recontamination at Herculaneum. The Focus Group Report states that initial recontamination study results collected in 2002 using one-inch soil sampling depths found “no evidence that the replaced soil is becoming contaminated during the first year since said replacement.” (*See Focus Group Report, Tab 6* at p. 11). EPA staff then decided that “[s]urface scraping samples are a more sensitive indicator of contamination of the replaced soil by lead dust” and the surface scraping procedures “were instituted by the EPA in Herculaneum in 2003.” (*Id.*). Doe Run’s RFC asserts that EPA violated the DQA and EPA Information Quality Guidelines by making this material change in sampling procedure without following EPA-mandated data quality procedures or vetting the technical implications of the change.

In its response, EPA states that the Focus Group Report is inaccurate and that “[s]ince implementation of the QAPP, EPA has not altered the manner in which it has collected soil samples at the Site, whether for purposes of soil characterization or soil recontamination monitoring, despite any statements that suggest otherwise in the Technical Report for Focus Group Recommendations, Herculaneum, MO.” Concurrent with its response, EPA provided a memorandum to the administrative record from Bruce Morrison (EPA Region VII Program Manager) announcing that statements in the Focus Group Report asserting that EPA changed its sampling procedures in 2003 are inaccurate.

Doe Run questions the accuracy of EPA's clarification with respect to the Focus Group Report and asks EPA to reconsider its assessment. Doe Run has documentation, independent of the Focus Group Report, demonstrating that EPA Region VII shifted from one-inch samples to surface scrapings following recommendations from the Focus Group. Doe Run has an affidavit from Mr. Aaron Miller, Doe Run's Environmental Director of Missouri Operations, documenting a March 16, 2004 conversation between Mr. Miller and Mr. Ryan Schuler, EPA's sampling contractor, and a March 16, 2004 conversation between Mr. Miller and Mr. Bruce Morrison, EPA Region VII Program Manager, regarding soil sampling at HLS. (*See* Affidavit of Aaron W. Miller, **Tab 7**). During Mr. Miller's conversation with Mr. Schuler, Mr. Schuler stated he collected most of the soil samples at a depth less than ¼ inch with only a few samples going deeper to a maximum depth of ½ inch. (*Id.* at ¶ 4). Mr. Schuler also acknowledged that he knew the 2001 QAPP required a one-inch sampling depth. (*Id.* at ¶ 5). Mr. Miller's affidavit notes that when EPA began sampling for lead recontamination in July 2002, EPA had collected soil samples at a one-inch depth. (*Id.* at ¶ 2).

At a public meeting with the City of Herculaneum that same evening, Mr. Morrison approached Mr. Miller to discuss Doe Run's concerns regarding EPA's use of ¼ inch soil scrapings. (*Id.* at ¶ 6). Mr. Morrison responded that Dr. Clark who co-authored the Focus Group Report recommended that EPA take surface scrapings instead of the traditional one-inch sample for monitoring recontamination from air deposition. (*Id.* at ¶ 8). Mr. Morrison told Mr. Miller that the recommendation to take surface scrapings appears in the Focus Group Report. (*Id.*). During the meeting, Mr. Morrison described EPA's soil sampling procedure as "scraping the top 1/8 to ¼ inch of the soil." (*Id.* at ¶ 9). Mr. Miller's affidavit describing the conversations between Mr. Miller and Mr. Schuler and between Mr. Miller and Mr. Morrison supports the Focus Group Report's account of EPA's change in soil sampling procedure in 2003.

In addition, EPA's withdrawn September 2006 Amendment to the 2001 QAPP corroborates EPA's intention to require a shallower sampling depth for monitoring soil recontamination (*i.e.*, less than ½ inch). EPA believed the "nature of an ongoing source of lead at the site which is identified as the emissions from the lead smelter in Herculaneum" warranted the change. (*See* QAPP Amendment, **Tab 5**). As discussed in the RFC, EPA failed to follow proper data quality procedures and vet the implications of the change before making either the change in sampling procedure in 2003 as described in the Focus Group Report or the 2006 Amendment to the 2001 QAPP. These data quality deficiencies likely led, in part, to EPA's decision to withdraw the 2006 Amendment.

EPA's assertion that it did not change its sampling procedure appears to be based solely on EPA's flawed interpretation that the 2001 QAPP allows collection of a soil sample at any depth less than one inch rather than specifically at one inch. Under its interpretation of the QAPP, EPA would argue that collecting a sample at ¼ inch is the same as collecting a one-inch sample and that both sampling depths fall within its interpretation of QAPP soil sampling specifications. As discussed above, EPA's interpretation of the QAPP raises significant data quality concerns.

1. Proposed Corrective Actions

Doe Run proposes that EPA acknowledge that it materially changed its soil sampling procedure from one-inch samples to surface scrapings in 2003 without following EPA-mandated data quality procedures. EPA should issue notification to the public and withdraw any affected data from the public docket. As suggested above, if EPA believes a different sampling depth might be a more appropriate representation of lead exposure for future sampling, EPA should initiate an investigation to determine the most appropriate sampling depth and vet this change through the required data quality procedures. The appropriate depth study should be related to the applicable risk assessment methodology, the validation of that risk assessment methodology, and to models against which the collected data are being compared.

III. CONTACT INFORMATION

Contact persons for this RFR are:

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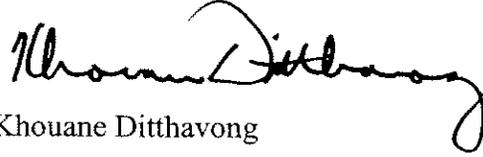
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IV. CONCLUSION

Doe Run asks that EPA reconsider its response to Doe Run's RFC and adopt the proposed corrective actions. EPA's May 14, 2007 response continues sampling practices that undermine the quality, objectivity, utility, and integrity of the soil sampling data collected at HLS. EPA's acknowledgement of the deficiency of its current soil sampling protocol and associated data is required to maintain the credibility of the sampling program.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Khouane Ditthavong". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Khouane Ditthavong

KD

Enclosures

cc: Louis Maruchau