

October 5, 2010

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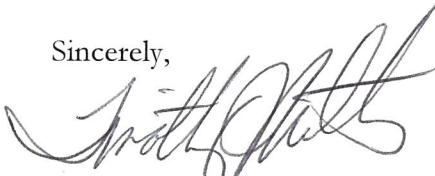
**SUBJECT: COMMENTS ON THE U.S. ARMY CORPS OF ENGINEERS'
RESPONSE TO COMMENTS FOR THE SHALLOW LAND DISPOSAL
AREA FINAL STATUS SURVEY PLAN (RFTA NO. 10-005)
DCN: 2012-TR-02-0**

Dear Mr. Watson:

ORISE has completed the review of the U.S. Corps of Engineers' draft response to comments that pertain to the *Shallow Land Disposal Area (SLDA) Site Final Status Survey Plan, December 22, 2009*. You provided these responses in a September 13, 2010 email. Enclosed are comments regarding these responses.

You may contact me at 865.576.5073 or Erika Bailey at 865.576.6659 if we may provide additional information.

Sincerely,



Timothy J. Vitkus, CHP
Survey Operations Director
Independent Environmental
Assessment and Verification

TJV:fr

Enclosure

c: S. Nesmith, NRC/NMSS/TWFN 8A23 E. Bailey, ORISE
T. Carter, NRC/FSME/DWMEP T-8F5 S. Roberts, ORISE
File/2012

Distribution approval and concurrence:	Initials
Technical Review	ENB

**COMMENTS ON THE
U.S. ARMY CORPS OF ENGINEERS' (USACE) RESPONSE TO COMMENTS FOR
THE SHALLOW LAND DISPOSAL AREA FINAL STATUS SURVEY PLAN**

At the request of the U.S. Nuclear Regulatory Commission (NRC), the Oak Ridge Institute for Science and Education (ORISE) performed a technical review of the USACEs' response to NRC comments that NRC provided to the USACE in the April 29, 2010 technical report entitled:

Final – Independent Technical Evaluation and Recommendations for the Application of Composite Soil Sampling in Demonstrating compliance with Release Criteria when Implementing the MARSSIM Guidance (RFTA NO. 10-005) DCN: 2012-TR-01-0.

Comments on the USACE responses are provided below. Because the USACE did not include a sequential numbering system, the comments below have been numbered to correspond with the order of the USACE responses.

Response 1

The technical review determined that the USACE has not provided an adequate response to the initial comment. Because of the multiple radionuclides, the USACE should provide definitive demonstration that the plan adequately accounts for the elevated measurement comparison of multiple radionuclides in the sample spacing process. The response states that each of the radionuclides would be detectable at their respective 100 m² DCGL_{EMC}s. However, similar to the requirement for applying the unity rule [sum-of-the-ratios (SOR)], to demonstrate compliance with the DCGL_W for the survey unit, the USACE should clarify that their scan sensitivities would not only detect individual radionuclide DCGL_{EMC} exceedance, but also mixtures whereby the hot spot SOR would be identified. Also, refer to the comments on Response No. 4, Bullet No. 2 below regarding the tabulated scan MDCs.

Response 2

No comments identified.

Response 3

No comments identified.

Response 4

Overall, the response to this comment indicates that the USACE may not have a complete understanding of the original comment. A number of statements provided are correct and the reviewer agrees with the statement. However, in several cases, the responses did not address the original comment regarding revising the action level for composite sample data quality assessment (DQA) in Class 2 and 3 areas.

Bullet 1: Agree with response.

Bullet 2: The primary response subject in Bullet 2 relates to the scan MDC values provided in Table 2 for ensuring the $DCGL_w$ has not been exceeded for any single radionuclide in Class 2 and 3 areas. The reviewer's comments regarding this response are as follows:

Table 2 is referenced as providing the scan MDCs for the FIDLER and the 3-in \times 3-in NaI detectors. The scan MDCs listed, particularly for Th-232 and Am-241, would be difficult to substantiate. The basis for this is simply a function of statistical background fluctuations of the detector response. For example, the FIDLER scan MDC of 0.2 pCi/g for Th-232 is well within the typical background distribution of Th-232 and in the reviewer's opinion, would not be detectable with any control of false negatives or false positive results. The 0.2 is well below the upper tail of the Th-232 background normal distribution. This same comment applies to the 3-in \times 3-in NaI scan MDC of 0.56. Similarly, although Am-241 is not expected in the background contribution, the number of background counts expected from 0.57 pCi/g of Am-241 is well below the FIDLER background distribution and again it is unlikely that this could be discerned from background with any acceptable probability. These initially identified overly optimistic scan MDCs requires the reviewer to question the validity of the derivation of all reported scan MDCs.

Bullet 3: No comments identified.

Bullets 4 through 6: The reviewer is in complete agreement that a composite sampling approach will provide a better estimate of the mean concentrations as well as reduce the overall variability. However, the response does not address the original comment regarding the DQA of sample results for Class 2 and 3 areas. The original comment requested required information as to how the USACE intended to address the information that is lost with composite sampling. Specifically, the requested information was for accounting for outliers, potentially above the $DCGL_w$, that are masked by composite sampling. Industry guidance addresses this concern via a modified investigation level. Therefore, the comment remains as to how the USACE will ensure that none of the composite sample increments will have exceed the SOR of 1.