

1157

**RESPONSES TO OEPA COMMENTS ON THE K-65  
SILO BERM VERTICAL BORING SAMPLING  
PLAN**

1-1-91

2  
**RESPONSE**

Responses to OEPA comments on the K-65 SILO BERM VERTICAL BORING SAMPLING PLAN, dated January, 1991.

- 1. Page 2, Section 1.2.2, first paragraph: DOE must provide further justification for boring to a maximum depth of 20 feet, when the OU4 RI states that the silo walls are 26 feet high. In order to determine possible leakage from the silos the boring should be extended to at least penetrate to a depth equal to the bottom of the silos and preferably below that level.

**RESPONSE:** The 20-ft. depth limit for the vertical silo berm borings was established due to a perceived depth limitation of 20-ft. on the vibracore equipment. While it is possible to achieve sampling depths greater than 20-ft. with the vibracore, the probability for full sample recovery is reduced when sampling at depths greater than 20-ft. The K-65 subsoils borings are intended to evaluate possible silo content leakage into the soils beneath the silos. Reference: RI/FS WORK PLAN ADDENDUM: K-65 SILO SUBSOILS SAMPLING AND ANALYSIS PLAN, dated November 13, 1990.

The DOE will make attempts to collect samples to a depth of 30-ft. on each of the four vertical borings as suggested by OEPA. The frequency and type of analyses performed on the additional core material will be as specified for the shallower intervals described in K-65 SILO BERM VERTICAL BORING SAMPLING AND ANALYSIS PLAN, dated January, 1991.

- 2. Page 2, Section 1.2.2, last paragraph: It is confusing as to whether DOE intends to analyze the berm soils for Po-210. Bullet two of Section 1.3 suggests that it is possible to sample for Po-210, but analysis is only being conducted for Pb-210. DOE needs to justify why they will not analyze for Po-210, since this sampling is aimed at characterizing the nature and extent of contamination in the K-65 silo berm soils and Po-210 is a suspected contaminant.

**RESPONSE:** Po-210 will not be analyzed for because it is considered to be in equilibrium with Pb-210 in the berm material. By analyzing for Pb-210, one can assume the same quantitative result for Po-210, since the material has been undisturbed, the nuclides have had time to reach equilibrium.

Once the source material (the silo contents ) have been removed, no more radon will be present to produce Po-210 and the Po-210 will decay to Pb-210.

- 3. Page 3, Section 1.3, first bullet: It is not readily apparent from reviewing the March 31, 1988 "RI/FS FMPC, Quality Assurance Project Plan" what the definition of full radiological analysis is. DOE should provide a page number for the definition in the QAPP or provide further detail as to the constituents included in "full radiological analysis."

Ac-227 and Pa-231 are not included in the "RI/FS FMPC, Quality Assurance Project Plan" (3/31/88) and thus are probably not a part of the "full radiological analysis." These radioisotopes have been found in Silo 3 but were not analyzed for in the K-65 silos. It is most likely these isotopes are contaminants of the K-65 silos and thus should be included in the suite of radiological parameters to be sampled. If Ac-227 and Pa-231 are not already a part of the sampling planned, they should be added.

**RESPONSE:** Full radiological analysis includes all parameters listed in Table 4-3 of the RI/FS Work Plan, Volume V, Section 4.0, pages 19 and 20.

Ac-227 and Pa-231 were analyzed for in the 1989 silo content sampling and analysis effort. These nuclides were hidden by a matrix effect caused by the high levels of radium in the silo material. The nuclides may be present, but at such a low level they are covered by the radium peak in the gamma spectroscopy analysis. Another method for separating the spectra is not available.

If Ac-227 and Pa-231 are detected in the gamma spectroscopy analysis, they will be reported.

4. Page 4, Section 1.4, first paragraph: The reference to Table 3 in this paragraph should be corrected to refer to Table 2, "Geotechnical Properties".

**RESPONSE:** Agree, the reference to Table 3 will be changed to Table 2.