



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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Mr. William M. Rupert, P.E.  
Technical Specialist - Environmental  
BP Chemicals, Inc.  
Ft. Amanda Road  
P.O. Box 628  
Lima, Ohio 45802-0628

SUBJECT: RELEASE SURVEY REPORT FOR V-1 POND DATED JANUARY 21, 1994

Dear Mr. Rupert:

I am responding to your letter dated January 21, 1994, addressed to Mr. M. (Sam) Nalluswami of our staff. The letter enclosed 4 copies of the report entitled Radiological Status Survey of the V-1 Pond Site, Mixed Waste Pond Closure Project, BP Chemicals, Inc., Lima, Ohio, January 21, 1994. The report was reviewed by the Nuclear Regulatory Commission staff and the Oak Ridge Institute for Science and Education (ORISE).

In general, the contents of the report are well organized and contain the information addressing the radiological status of the facility. A few items requiring clarification and additional information are listed below.

1. Groundwater: Please include a summary of the groundwater sampling and analytical results.
2. Cross Calibration: A SPA-3 probe with an Eberline ASP-1 meter were used to make measurements and report exposure rates. Please describe the method used to cross-calibrate the survey meter with an exposure rate meter.
3. Guidelines: Throughout the report, U-238 concentrations are compared to the guideline value of 35 pCi/g which is total uranium concentration. Please provide results in terms of total uranium in the findings section.
4. Background Exposure Rate: The background exposure rate is reported as 2  $\mu$ R/h. This appears to be an underestimation. Background exposure rates, measured at 1 meter above surface, typically range from 3 to 5 times higher than the reported value of 2  $\mu$ R/h. The data previously obtained by the Oak Ridge Institute for Science and Education (ORISE) indicate a background exposure rate in the range of 7 to 9  $\mu$ R/h.

Furthermore, the background count rate of the SPA-3 probe is reported to be 1,800-1,900 cpm. Measurements of up to 7,300 cpm (ie., 4 times background) are reported for the site of excavation. Again, the background count rate of SPA-3 probe (typically around 7,000-8,000 cpm) appears to have been underestimated.

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The underestimated background exposure rate results in the misleading conclusion that site (pond area) exposure rates are 2 to 4 times higher than the background exposure rate.

5. Appendix D: In this Appendix, Phase III results of the gamma exposure rates measured for the V-1 Pond Survey Unit 2 (Test Pad Area) are detailed. Please include the Phase III gamma exposure rate data for Survey Unit 1 (total excavation site). These are the data corresponding to the measurement locations which are shown in Figure 3, Appendix A.
6. Minor Corrections:
  - a) Page 12, Section 3.5.4, last paragraph. Depth of the undisturbed soil from boreholes should be 42" - 48" instead of 40" - 48".
  - b) Page 15, Section 3.8, first paragraph. "dose rate" should be "exposure rate".
  - c) Page 22, Section 4.2.4, next to the last paragraph. Information describing the 26 samples taken from the intermediate depths appears to be missing.
  - d) Appendix D. On several data sheets (e.g., survey numbers 596 (Page 1 of 3), 603, 608), the background for Ludlum Model 19 meter is listed as 2 mR/h instead of 2  $\mu$ R/h.

If you have any questions, please contact Sam Nalluswami of my staff on (301)504-2502.

*Original Signed by*

John H. Austin, Chief  
 Decommissioning and Regulatory  
 Issues Branch  
 Division of Low-Level Waste Management  
 and Decommissioning  
 Office of Nuclear Material Safety  
 and Safeguards

cc: A. J. Ansari, ORISE  
 Ticket No.D-940006

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