

Appendix C
Radiation Surveys in 2003

Appendix C

Radiation Surveys in 2003

The *Operations and Maintenance Plan for the Final Selected Remedies and Institutional Controls at Test Reactor Area, Operable Unit 2-13* (DOE-ID 2000a) requires radiological monitoring of:

- The Test Reactor Area (TRA)-03 Warm Waste Pond boundary
- The TRA-13 Sewage Leach Pond cover
- The TRA-13 Soil Contamination Area boundary.

This monitoring is conducted on an annual basis to identify potential contaminant migration and to ensure that existing institutional controls are protective of occupational exposure.

In 2000, 2001, and 2002, the environmental monitoring gamma ray measurements were performed using a vehicle-mounted scintillation detector (Global Positioning Radiometric Scanner). This equipment was unavailable in the spring of 2003. The monitoring was performed using the Remote All-Terrain Vehicle on April 22, 2003, and May 22, 2003, to collect gross count rate data around the perimeter of the TRA-03 Warm Waste Pond and around the perimeter and on the cover of the TRA-13 Sewage Leach Pond. Monitoring results are shown in Figure C-1 and Figure C-2 of this appendix. The Remote All-Terrain Vehicle survey results for the Sewage Leach Pond did not reveal any unexpected elevated count rates. No anomalies were found in 2003.

As in the preceding years, the 2003 survey showed elevated count rates along the west border of the TRA-03 Warm Waste Pond. This location borders the east fence line of the TRA facility and inside the fence is a storage location called the Boxyard Storage Area. A second system, the in situ radiometric scanner, was used to obtain further field measurements adjacent to the Boxyard Storage Area. By performing measurements with a detector that allowed both collimated and uncollimated readings, the hot waste storage area was identified as the source of higher count rates rather than the Warm Waste Pond. Table C-1 shows the readings for Co-60 summarized from ten locations along the west border of TRA-03 over three years. Table C-1 confirms the decrease in the mean Co-60 concentrations from year 2002 to year 2003. The 2003 values are, however, still higher than the mean values from 2001. The readings are attributed to the reduction in hot waste within the storage area at the time of the surveys.

Table C-1. Summary Statistics for Co-60 (pCi/g) for 2001, 2002 and 2003

Year	Mean Co-60 (collimated)	Mean Co-60 (uncollimated)
2001	0.3	0.4
2002	3.6	9.8
2003	1.5	4.3

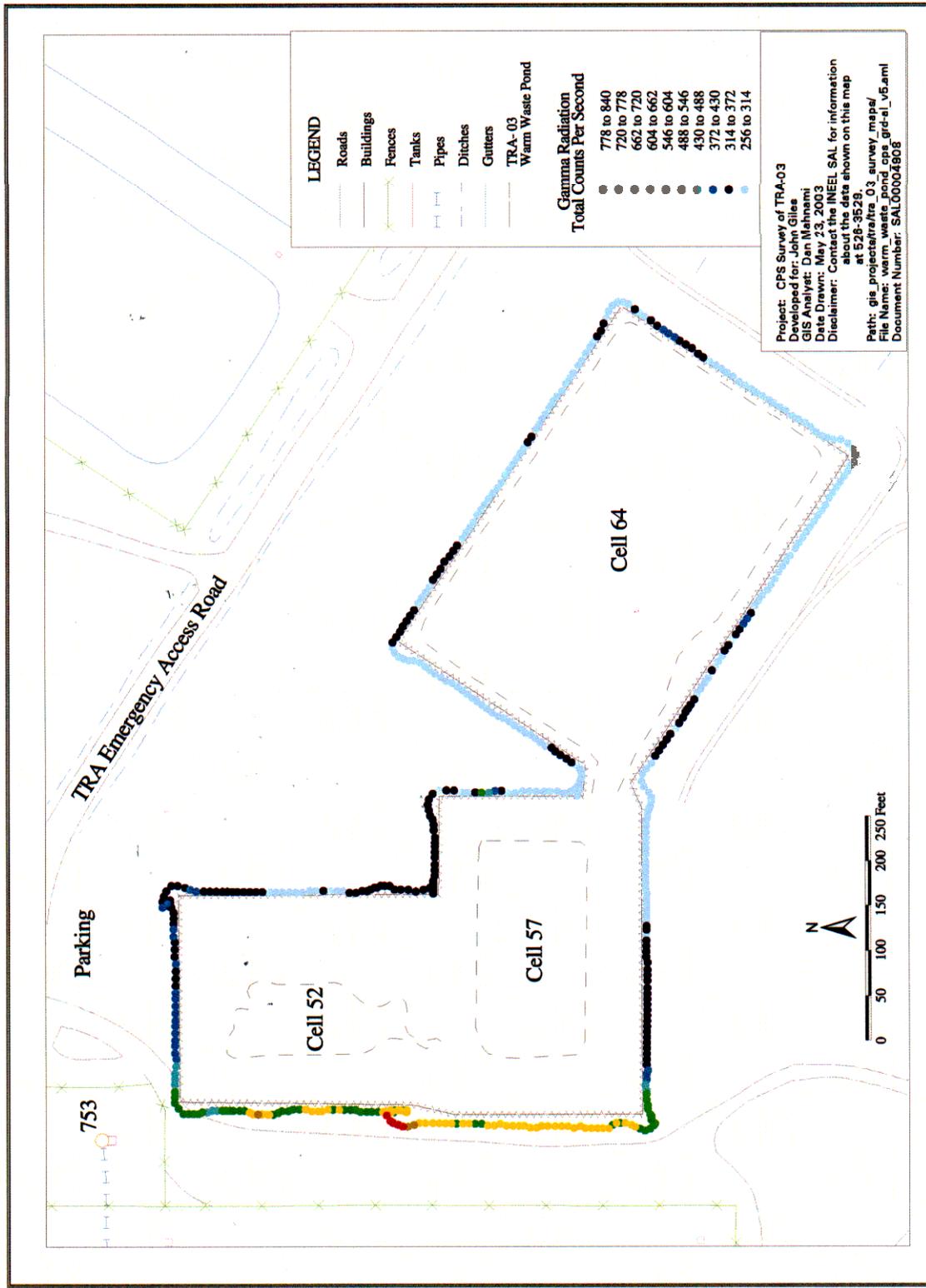


Figure C-1. 2003 Remote All-Terrain Vehicle radiation survey results at Test Reactor Area-03 Warm Waste Pond.

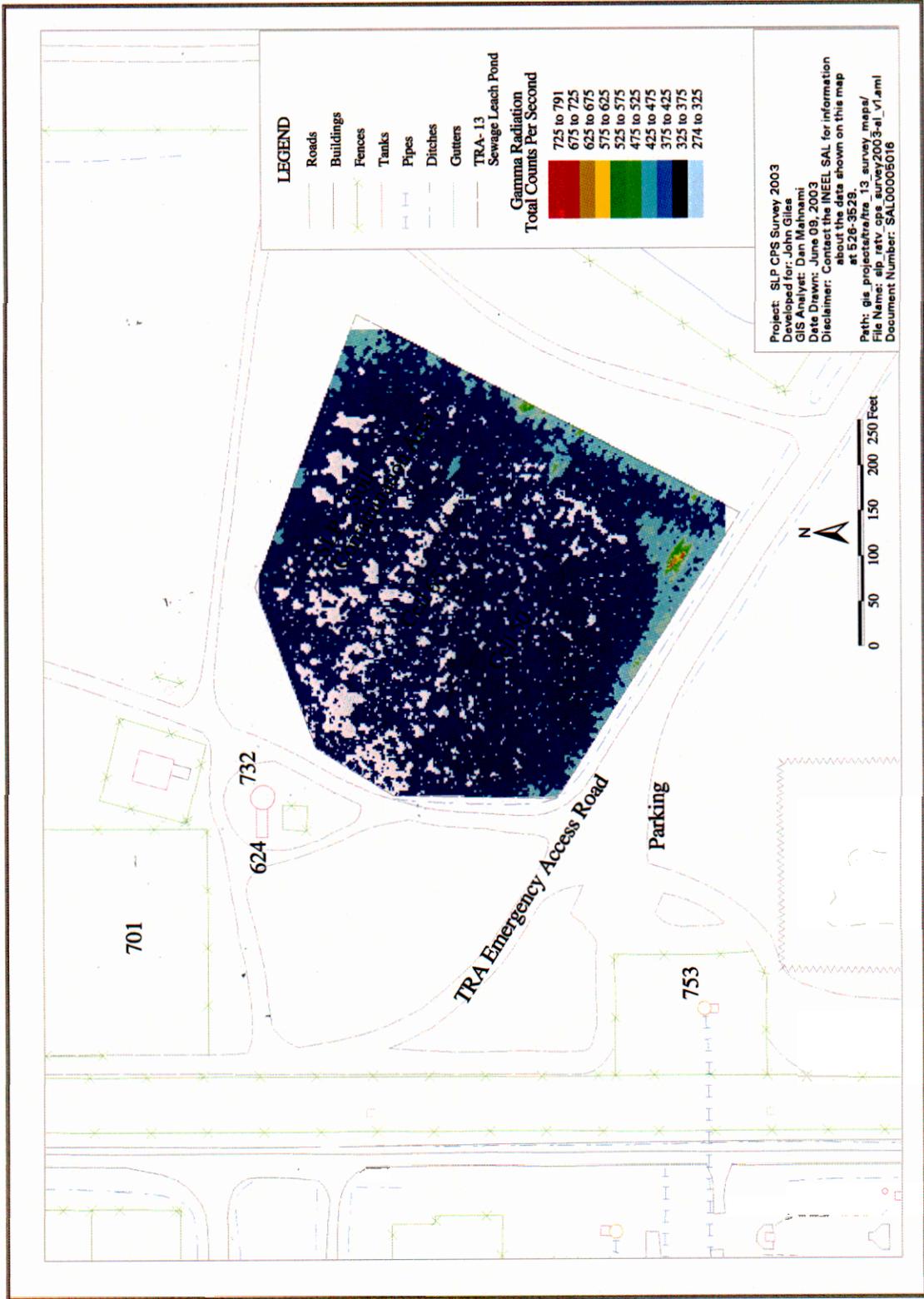


Figure C-2. 2003 Remote All-Terrain Vehicle radiation survey at Test Reactor Area-13 Sewage Leach Pond and Soil Contamination Area.

