

July 1995

Additional Soil and Water Sampling

The additional sampling focused on radionuclide contamination. As part of its additional sampling, Rocketdyne collected more than 120 soil samples and two additional surface water samples in March of 1994. Rocketdyne also collected an additional 40 background samples from eight different areas, in addition to resampling background areas from the initial study. This time, EPA, Cal DHS, and Brandeis-Bardin independently analyzed 54 samples collected by Rocketdyne.

Results and Conclusions

The additional study identified two impacted areas. These areas, or watersheds, are downhill from Rocketdyne facilities that caused the contamination. The first facility, Building 59, formerly housed a developmental nuclear reactor. The second, the Radioactive Materials Disposal Facility (RMDF), was used primarily for packaging and shipping radioactive waste off-site for treatment or disposal. For this study, the soil concentrations were measured in picoCuries per gram of

soil (pCi/g) or per liter of water (pCi/L) contained within the soil.

Table 1 lists the concentrations of radionuclides in each impacted area, corresponding local background concentrations and typical concentrations for uncontaminated (except from worldwide fallout) areas throughout the United States. Although the impacted areas are above the local background levels, they are below typical levels found throughout the United States.

Furthermore, based on EPA's calculations, the theoretical cancer probability or risk to campers and camp counselors is less than EPA's threshold level for action of one in 1,000,000. A one in 1,000,000 risk means that one potential excess cancer case might occur if one million people were exposed to the contamination for long periods of time. EPA's calculation is based on two scenarios: (1) children camping one month a year for four years directly on the area of contamination and (2) camp counselors walking through the contamination repeatedly for ten years. For a more thorough discussion of the risk posed by the contamination, EPA encourages

you to attend the meeting on August 10. See the last page of this update for more information on the meeting.

For tritium, EPA has yet to approve a test method to measure soil concentrations in pCi/g. Consequently, Rocketdyne measured tritium in pCi/L, which indicates the amount of tritium in water extracted from surface soil. For comparison purposes, EPA's existing standard for tritium in drinking water is 20,000 pCi/L. The water contained within this soil is not drinking water, but even if it were, the contamination would not exceed EPA's standard for tritium.

What's Next

DTSC issued a post-closure permit to Rocketdyne in April of this year. A post-closure permit is required for facilities that close certain hazardous waste management units, if the facility cannot fully clean up chemical contamination at the units. As required by the post-closure permit, Rocketdyne is continuing to cleanup and monitor solvent-contaminated groundwater. Furthermore, it requires Rocketdyne to complete a site-wide study of

Table 1. A Comparison of Radionuclide Concentrations

Radionuclide	Sampling Area on Brandeis-Bardin	Average Soil Concentration	Average Local Background Concentration	Typical U.S. Background Concentration
Strontium	RMDF Watershed	0.103 pCi/g	0.052 pCi/g	0.7 pCi/g
Cesium	Bldg 59 Watershed	0.20 pCi/g	0.087 pCi/g	0.7 pCi/g
Tritium	Bldg 59 Watershed	2,250 pCi/L	~140 pCi/L	100-300 pCi/L

0.052 pCi/g