

9187

CT.2 Booz-Allen

memorandum

CT.02 - 65

DATE: DEC 21 1992
REPLY TO: EM-421 (W. A. Williams, 903-8149)
ATTN OF:
SUBJECT: Soil Cleanup at the Seymour, Connecticut, Sites
TO: L. Price, OR

During the expedited characterization and cleanup of the Seymour, Connecticut, Site, two small areas of contaminated soil were discovered and remediated. This memo is to approve the cleanup levels that were accomplished, pursuant to the applicable requirements in DOE Order 5400.5, Chapter IV.

The larger of the areas is approximately 10 meters square and was excavated to a depth of approximately 6 inches. The smaller of the areas was approximately 2 meters square. After excavation, the highest measured uranium-238 concentration above background was 7 picoCuries per gram. Both excavations were filled following verification of the cleanup.

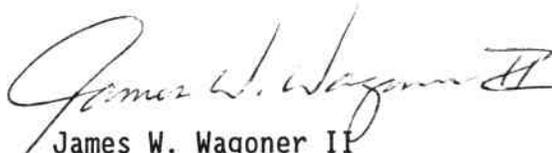
My staff has utilized version 4.3 of the RESidual RADioactivity code to calculate the doses which might result from the residual uranium in the soil. For the purposes of the calculation, the following assumptions were made:

Area of contamination	100 square meters
Thickness of contamination	1 meter
Cover depth	.15 meter (six inches of fill)
Uranium-238 concentration	7 pCi/g (assumes background level of .8)
Uranium-234 concentration	7 pCi/g (based on U-238)
Uranium-235 concentration	.32 pCi/g (based on U-238)

An assumption was made that off-site water was used for a residential farmer at the site; this assumption is reasonable because the area is presently served by a public water supply. If the public water supply were discontinued for any reason, the most likely source of water to a resident would be the river immediately adjacent to the site. Using these very conservative assumptions, the total calculated dose was less than 1 millirem per year. A graph showing the total calculated dose for the site as a function of time is attached for your information.

According to DOE Order 5400.5, Chapter IV, radiation doses to the maximum exposed individual for all plausible land uses must be less than 100 millirem per year. Further, the DOE Order requires appropriate measures to reduce exposure levels to those "As Low As Reasonably Achievable." The cleanup clearly accomplishes these requirements since the exposures are below the applicable limit by a factor of 100. Further cleanup is clearly unnecessary because of the low exposures.

As a result, the cleanup of the contaminated soil areas is approved and meets the requirements for release without radiological controls pursuant to DOE Order 5400.5, Chapter IV.



James W. Wagoner II
Director
Division of Off-Site Programs
Office of Eastern Area Programs
Office of Environmental Restoration

Attachment

bcc:
Weston
Booz, Allen and Hamilton, Inc.

Distribution:

EM-40 (2)

EM-42 (3)

Williams Reader

[Handwritten signature]

EM-421:wagoner:djn:903-8145:12/8/92:uguide5.waw

P. Hevner Review: pk WLP

Williams

EM-421

12/9/92

[Handwritten signature]

Wagoner

EM-421

12/16/92

Fulmer

EM-42

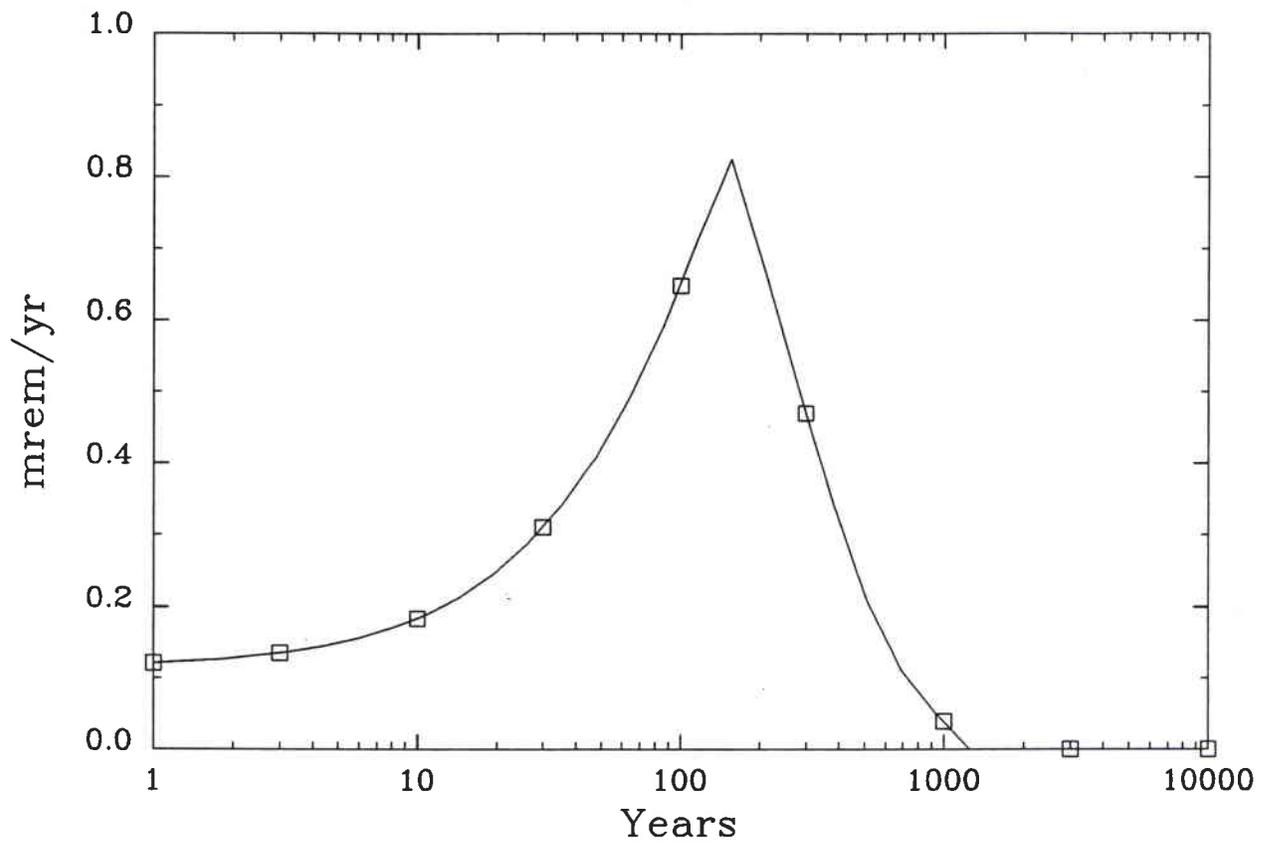
12/18/92

Fiore

for EM-42

12/18/92

TOTAL DOSE: All Isotopes and Pathways Summed



SEYMOUR

12/03/92 12:51