



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

N62661 AR 001455
NAVSTA NEWPORT RI
5090.3a

August 17, 2001

James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Review of additional Human Health Risk Assessment Groundwater Exposure Parameter Tables for the Old Fire Fighting Training Area at Naval Station Newport, RI

Dear Mr. Shafer:

EPA reviewed the exposure parameter tables for compliance with Region 1 risk assessment guidance and general EPA risk assessment guidance. I understand that the exposure parameters are intended to generate the Reasonable Maximum Exposure (RME) and Central Tendency Exposure (CTE). In general, the exposure parameters presented in Tables 4-1 through 4-5 are acceptable. The exposure parameters selected are in compliance EPA Region 1 risk assessment guidance and general EPA risk assessment guidance. Any discrepancies are noted in Attachment A.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the cleanup of the Old Fire Fighting Training Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

Kimberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachments

- cc: Paul Kulpa, RIDEM, Providence, RI
Melissa Griffin, NETC, Newport, RI
Jennifer Stump, Gannet Fleming, Harrisburg, PA
Mary Philcox, URI, Portsmouth, RI
David Egan, TAG recipient, East Greenwich, RI

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
Table 4-1	The reference for the RME and CTE exposure durations for the child resident should be EPA, 1994. Please correct this reference.
Table 4-2	Please provide the calculations for deriving the age-adjusted skin surface area/body weight ratio (SA-ADJ) value for children between 1 and 6 years old. From the 2000 EPA interim Dermal Guidance, the skin surface area for child exposure is 6,600 cm ² for both reasonable maximum exposure (RME) and central tendency exposure (CTE). Please use this value to derive the SA-ADJ value in the equation for dermal absorbed dose.
Table 4-2	The reference for the RME and CTE exposure durations and exposure frequency should be EPA, 1994. Please correct this reference.
Table 4-2	Table 4-2 presents 0.33 hr/day or 20 minutes as the RME exposure time for a child bathing and 0.17 hr/day or 10 minutes as the CTE exposure time for a child bathing. These exposure times do not correspond with those presented in the cited reference. Chapter 15 of the Exposure Factors Handbook (EPA, 1997) recommends 20 minutes (0.33 hr/day) as the 50 th percentile value for time spent bathing and 45 minutes (0.75 hr/day) as the 90 th percentile value for time spent bathing. Typically, the 90 th percentile value is used for RME exposure and the 50 th percentile value is used for CTE exposure. These recommended values are supported by the 2000 EPA interim Dermal Guidance, as well. Please verify that the correct exposure times are used in the dermal evaluation for this receptor.
Table 4-3	The reference for the RME and CTE exposure durations for the adult resident should be EPA, 1994. Please correct this reference.
Table 4-4	Table 4-4 presents 15 minutes/day as the RME exposure time for an adult showering and 10 minutes/day as the CTE exposure time for an adult showering. These exposure times do not correspond with those presented in the cited reference. Chapter 15 of the Exposure Factors Handbook (EPA, 1997) recommends 15 minutes/day as the 50 th percentile value for time spent showering and 35 minutes/day as the 90 th percentile value for time spent showering. Typically, the 90 th percentile value is used for RME exposure and the 50 th percentile value is used for CTE exposure. These recommended values are supported by the 2000

EPA interim Dermal Guidance, as well. Please verify that the correct exposure times are used in the dermal evaluation for this receptor.

Table 4-4 Table 4-4 presents a total body surface area of 18,150 cm² for the adult resident with a cited reference of "EPA, 1998". This reference is not provided in the table.

The Exposure Factors Handbook (EPA, 1997) recommends a total body surface area of 20,000 cm² for an adult. The 2000 EPA Interim Dermal Guidance recommends a total surface body area of 18,000 cm² for an adult. Please verify that the correct total body surface area and cited reference are used in this evaluation.

Table 4-4 Please provide an additional table of dermal permeability constants for all the chemicals of potential concern (COPCs) that are evaluated quantitatively for the dermal exposure pathway. It is important to ensure that the calculated dermal absorbed doses are correct.

Table 4-5 According to EPA Region I's Risk Update number 3 (dated August 1995), the systemic dose from inhalation of volatile organic compounds (VOCs) during household use (including showering) can be evaluated qualitatively by doubling the VOC risks from groundwater ingestion. Thus, it is unnecessary to quantitatively evaluate risk for VOC inhalation from showering in Table 4-5.

Table 4-5 The reference for the RME and CTE exposure durations and exposure frequency should be EPA, 1994. Please correct this reference.

Table 4-5 Table 4-5 presents 15 minutes/day as the RME exposure time for an adult showering and 10 minutes/day as the CTE exposure time for an adult showering. These exposure times do not correspond with those presented in the cited reference.

Chapter 15 of the Exposure Factors Handbook (EPA, 1997) recommends 15 minutes/day as the 50th percentile value for time spent showering and 35 minutes/day as the 90th percentile value for time spent showering. Typically, the 90th percentile value is used for RME exposure and the 50th percentile value is used for CTE exposure. These recommended values are supported by the 2000 EPA interim Dermal Guidance, as well. Please verify that the correct exposure times are used in the dermal evaluation for this receptor.

REFERENCES:

EPA, 1994: USEPA Region I Waste Management Division, USEPA Risk Update No. 2, August 1994.

EPA, 1997: Exposure Factors Handbook. Volume I, Aug. 1997, EPA/600/P-25/002FA.

EPA, 2000: working draft, Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance.