

Table 11: Concentrations of Actinolite/Tremolite Asbestos Fibers > 5 μ m Detected During Activities and Simulations Conducted in Containment System and Vermont Attic

| Simulation or Day Number | Brief Description of Simulation or Activity Performed | PCM Equivalent (> 5 μ m) Airborne Asbestos Fibers | | | | | | | | | |
|---|--|---|------------|-------------------|------------|--|--|------------|---------------------|------------|------------|
| | | During Simulation | | | | | After Simulation | | | | |
| | | Inside Attic Space | | | | Inside Living Space | Inside Living Space | | Inside Change Room | | |
| | | Stationary Monitors | | Personal Monitors | | Stationary Monitors | Stationary Monitors | | Stationary Monitors | | |
| | | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) |
| Simple Simulations Conducted in Phase 1 Containment System | | | | | | | | | | | |
| 1 | Dry disturbance of Zonolite Brand Vermiculite; WRMI | overloaded | <0.0070 | overloaded | <0.0502 | For the Phase 1 simulations, the entire large containment was the "attic" space, and the small containment (6x6 change room) was the "living" space. | For the Phase 1 simulations, the entire large containment was the "attic" space, and the small containment (6x6 change room) was the "living" space. | overloaded | <0.0014 | | |
| | | overloaded | <0.0071 | overloaded | 0.0501 | | | overloaded | <0.0015 | | |
| 2 | Dry disturbance of Zonolite Vermiculite, Lot# 17K02-1 | 0.029 | 0.0531 | 0.248 | 0.3981 | | | overloaded | 0.0131 | | |
| | | 0.032 | 0.0227 | 0.312 | 0.3006 | | | 0.0200 | 0.0733 | | |
| 3 | Dry disturbance of Zonolite Vermiculite, Lot# 6B03-2 | 0.043 | <0.0080 | overloaded | 0.4968 | | | overloaded | 0.0150 | | |
| | | not analyzed | <0.2659 | overloaded | 0.5492 | | | 0.007 | <0.0016 | | |
| 4 | Dry disturbance of Zonolite Vermiculite, Lot# 21111-2 | overloaded | 0.1668 | 0.537 | 1.4628 | | | | | | |
| | | 0.124 | 0.0987 | 0.734 | 2.6373 | | | | | | |
| 5 | Dry disturbance of Zonolite Attic Insulation | 0.038 | 0.0724 | 0.148 | 0.1503 | | | | | | |
| | | 0.034 | 0.0290 | 0.187 | 0.3006 | | | | | | |
| 6 | Dry disturbance of Strong-Lite; Attic Insulation; Mica Flakes | 0.015 | <0.0071 | 0.050 | <0.0495 | | | | | | |
| | | overloaded | overloaded | 0.061 | <0.0492 | | | | | | |
| Complex Simulation Conducted in Phase 1 Containment System | | | | | | | | | | | |
| 1 | Installation of Vermiculite Attic Insulation | 0.027 | 0.0475 | 0.181 | 0.0932 | For the Phase 1 simulations, the entire large containment was the "attic" space, and the small containment (6x6 change room) was the "living" space. | For the Phase 1 simulations, the entire large containment was the "attic" space, and the small containment (6x6 change room) was the "living" space. | 0.007 | 0.0105 | | |
| | | 0.026 | 0.0397 | 0.147 | <0.0461 | | | 0.006 | 0.0078 | | |
| 2 | Residential Activities in the Attic | 0.037 | 0.0712 | 0.268 | 0.2466 | | | overloaded | overloaded | | |
| | | 0.034 | 0.0079 | 0.229 | 0.2412 | | | overloaded | overloaded | | |
| 3 | Removal of Vermiculite Attic Insulation | 0.020 | <0.0079 | 0.131 | <0.0494 | | | overloaded | overloaded | | |
| | | 0.018 | 0.0238 | 0.115 | 0.2471 | | | overloaded | overloaded | | |
| Simulations Conducted in Phase 2 Modified Containment System | | | | | | | | | | | |
| 1 | <u>Dry Disturbance - No cutting</u> | 0.194 | 0.0997 | 1.195 | 0.2000 | 0.250 | 0.0850 | 0.035 | 0.1063 | 0.008 | 0.0452 |
| | | 0.229 | 0.1842 | 1.308 | 2.6476 | 0.188 | 0.2422 | 0.029 | 0.0080 | 0.016 | 0.0267 |
| 2 | <u>Dry Disturbance - Hole cut in drywall from attic</u> | 0.135 | 0.1689 | 0.931 | <0.1019 | 0.185 | <0.0174 | 0.023 | <0.0027 | 0.003 | 0.0053 |
| | | 0.092 | 0.0844 | 0.855 | <0.1023 | 0.081 | 0.0174 | 0.020 | 0.0027 | 0.006 | <0.0027 |
| 3 | <u>Dry Disturbance - Hole cut in drywall from living space</u> | 0.127 | 0.0278 | 0.891 | 0.1994 | 0.106 | <0.0140 | 0.018 | 0.0109 | 0.018 | <0.0026 |
| | | 0.141 | 0.0698 | 1.092 | 0.1996 | 0.125 | 0.1401 | 0.017 | 0.0109 | 0.006 | <0.0027 |
| 4 | <u>Wet Disturbance - No cutting</u> | 0.198 | 0.1144 | 0.761 | 0.7000 | 0.168 | 0.0143 | 0.023 | 0.0026 | 0.021 | 0.0030 |
| | | 0.165 | 0.1568 | 0.907 | 1.0003 | 0.097 | 0.0285 | 0.019 | 0.0027 | 0.017 | 0.0081 |
| 5 | <u>Wet Disturbance - Hole cut in drywall from attic</u> | 0.164 | 0.2692 | 1.083 | 0.4967 | 0.074 | 0.0283 | 0.018 | 0.0160 | 0.010 | 0.0053 |
| | | 0.129 | 0.3657 | 0.928 | 0.1986 | 0.081 | 0.0711 | 0.016 | 0.0160 | 0.011 | <0.0026 |
| 6 | <u>Wet Disturbance - Hole cut in drywall from living space</u> | 0.150 | 0.1144 | 0.386 | <0.0993 | 0.061 | 0.0286 | 0.007 | <0.0027 | 0.002 | <0.0028 |
| | | 0.126 | 0.0286 | 0.462 | <0.0990 | 0.057 | <0.0142 | 0.006 | <0.0027 | 0.004 | <0.0027 |
| 7 | <u>Dry Vermiculite - Removal by Homeowner</u> | 0.107 | 0.2112 | 0.528 | 0.4001 | 0.046 | <0.0147 | 0.021 | 0.0440 | 0.009 | 0.0105 |
| | | 0.134 | 0.3954 | 0.950 | <0.1002 | 0.046 | 0.0885 | 0.022 | 0.0385 | 0.007 | <0.0026 |

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| | | During Simulation | | | | After Simulation | | | | |
| | | Inside Attic Space | | Inside Living Space | | Inside Living Space | | Inside Change Room | | |
| | | Stationary Monitors | Personal Monitors | Stationary Monitors | Personal Monitors | Stationary Monitors | Personal Monitors | Stationary Monitors | Personal Monitors | |
| PCM (f/cc) | | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | TEM (s/cc) | PCM (f/cc) | |
| Simulations and Activities Conducted in Attic of Unoccupied House in Bethel, Vermont | | | | | | | | | | |
| 1 | <u>Dry Disturbance - No cutting</u> | 0.203 | 0.0985 | 1.841 | 0.2017 | 0.039 | 0.0408 | 0.019 | <0.0026 | |
| | | 0.155 | 0.0284 | 1.814 | 0.4053 | 0.106 | 0.0271 | 0.018 | <0.0027 | |
| 2 | <u>Wet Disturbance - No cutting</u> | 0.165 | 0.0566 | 0.803 | <0.0994 | 0.036 | <0.0135 | 0.011 | <0.0026 | |
| | | 0.135 | 0.0142 | 0.990 | <0.1011 | 0.025 | <0.0136 | 0.011 | <0.0026 | |
| 3 | <u>Dry Disturbance - Hole cut in plaster from attic</u> | 0.067 | <0.0133 | 1.472 | <0.1004 | <0.006 | <0.0130 | <0.001 | <0.0026 | |
| | | 0.084 | 0.0133 | 0.709 | 0.1013 | 0.007 | <0.0130 | <0.001 | <0.0026 | |
| 4 | <u>Blower Door Test¹ - No Vermiculite Disturbance</u> | <0.006 | <0.0142 | <0.042 | <0.0979 | <0.006 | <0.0133 | <0.001 | <0.0026 | |
| | | <0.006 | <0.0142 | <0.043 | <0.1007 | <0.006 | <0.0133 | <0.001 | <0.0026 | |
| 5 | <u>Dry Vermiculite - Removal by Homeowner</u> | 0.123 | 0.0427 | 0.609 | 0.3013 | <0.006 | 0.0142 | 0.009 | 0.0026 | |
| | | 0.087 | 0.0852 | 0.662 | <0.1003 | <0.006 | <0.0142 | 0.006 | 0.0026 | |
| 6 | <u>Dry Vermiculite - Removal by Contractor</u> | 0.009 | <0.0139 | 0.293 | <0.0992 | 0.013 | <0.0141 | <0.001 | <0.0025 | |
| | | 0.008 | <0.0138 | 0.093 | <0.0996 | <0.006 | <0.0142 | 0.001 | <0.0025 | |

1 Note: For the blower door test, the personal monitors were located in the living space, not the attic.

For the simulations conducted in the house in Bethel, Vermont, there was not a change room, separate from the living space.