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Commentary

Additional Notes on the Use of Quantitative Analysis of Urine To Assess Exposure to Asbestos Fibers in Drinking Water in the Puget Sound Region

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I am happy to answer some questions that were raised following my presentation. I was asked for the ranges in counts per grid opening of the control water and urine analyses which appeared in Table 2. For Everett residents the counts for the urine samples ranged from no fibers in 20 grid openings to 2.0 fibers per grid opening (FGO) and 0.15 to 1.5 FGO for the control waters. In Seattle-Bellevue the counts for urine samples ranged from no fibers in 20 grid openings to 1.2 FGO and 0.15 to 0.45 FGO for the control waters.

I was also asked why I did not correct the urine data in Table 2 for the control counts before comparing long versus short residence time fiber concentrations in the urine. An inherent problem with the urine analysis that is distinct from the control water analysis is that often a residue of mucus material masks some unknown number of the asbestos fibers on the surface of the grid. Secondly, less fibers from the urine tend to give positive selected area diffraction patterns than do fibers from the control waters. Thus I did not think that the control water "background" counts could be directly subtracted from the urine analysis values. I agree that the control water counts are a function of the amount of water placed in the control container, but it should be noted that the amount of control water filtered was chosen to be comparable with the volume of urine filtered. Certainly the optimum methods for taking into account the "background" contamination in the analysis of urine for chrysotile remain to be determined. However, I do not think that any other way of expressing the control water data would change my conclusion that within the limits of sensitivity of the present methods we found no excess of chrysotile asbestos fibers in the urines of persons ingesting over 100 million fibers/L in their drinking water.

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