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XRD

X-Ray Diffraction (XRD) analyses of WTC samples (Table 1, on the [Integration of Results](#) page) indicate that most samples contain varying amounts of crystalline quartz, gypsum, calcite, and anhydrite. Other phases identified in small amounts are: muscovite, feldspar, magnesiohornblende, lizardite (non-asbestiform serpentine), dolomite, bassanite, illite, portlandite, larnite, polymorphs of calcium silicates, possible asbestiform chrysotile, and others. The results are reported as major (>20% by weight), minor (>5% <20% by weight), and trace (<5% by weight). These ranges were determined by operator experience for the purpose of informing analysts and other interested parties of the relative concentrations of the phases present for the sample that was analysed.

All of the above mentioned phases can be components of the building dry wall material, the concrete foundation, and/or the insulation. Determining the presence of chrysotile at very small concentration levels by XRD is difficult due to the amount of other crystalline substances and the increased background due to large amounts of X-ray amorphous "rock wool" (fibreglass), which all of these samples contain. It was determined that small amounts of chrysotile (probably <0.5%) might be present in a few samples (see Table 1 on the [Integration of Results](#) page). The presence of chrysotile can sometimes be verified by other analytical methods but due to the heterogeneity of the samples, the splits that were made may not be representative, so results may vary. More work may be necessary to try to separate the chrysotile from the other material to determine if chrysotile is indeed present in any of the samples especially if its presence can be verified by only one method.

For further information concerning XRD analyses, contact:

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