Radon concentrations in abandoned mines, Cumbria, UK: health implications for industrial archaeologists.

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This paper presents a number of surveys performed in a nominally ‘low radon risk’ geographical area of the UK. The Cumbrian region was identified by the Building Research Establishment in its 1999 guide as an area without a significant radon problem in terms of installing radon protection in new homes. The geology of the region is varied, being within the Northern Pennine Orefield, but consists of granites, andesites, tuffs, carbonates, sandstones and shales. Mineralisation has taken place (mostly lead and copper ores) primarily along fault and fracture zones, one example being Copper Valley, northwest of Coniston village. This work quantifies the risk of radioactive exposure in a number of abandoned mine environments. High radon levels, up to 28,589 Bq m-3, have been measured in parts of one mine.

This study demonstrates that industrial archaeologists (such as the Cumbrian Amenity Trust Mining History Society members) and explorers of abandoned mines are at risk from radon exposure, and proposes a management scheme to allow industrial archaeologists to continue exploration whilst minimising risk to health.