

HIGHLAND BELL - URANIUM SPECIMENS

- 6 core specimens submitted
- 4 slabbed and polished
- 3 thin sections (2 from one specimen)
- 4 autoradiographs - 24 hr. exposure - of polished specimens

- 2 whole rock X-ray powder photos
- 2 heavy concentrate X-ray powder photographs

The specimens are all sandstones. The grey ones have micaceous matrix; the brownish ones generally a calcareous matrix. Some shale bands and sharpstones occur in the grey sandstones.

In general the grey sandstones seem less radioactive (see autoradiographs). The others have two types of occurrence (1) along bedding and parallel to fractures and spreading from them. Uranium mineralization appears concentrated as very fine prisms replacing carbonate matrix. So much so that in heavy media separation the calcite is sunk. However X-ray powder photos of whole rock and heavy concentrates do not give an unequivocal identification. At first it was believed soddyite ($5\text{UO}_3 \cdot 2\text{SiO}_2 \cdot 6\text{H}_2\text{O}$?) was present but a critical line cannot be identified so that it is unlikely. Furthermore no mineral seems to fit well the patterns obtained. Uranium mineralization was confirmed by spec. analyses, but at present we cannot identify the mineral.

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