Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 20/1	Graz 2014
PANGEO AUSTRIA 2014	Graz, 14. September 2014 – 19. September 2014		

Tectonically driven talc mineralizations in the Veitsch nappe of the Eastern Greywacke Zone

WÖLFLER, A.[1], PROCHASKA, W.[1], FRITZ, H.[2]

[1] Montanuniversität Leoben, Chair of Geology and Economic Geology, Peter-Tunner-Straße 5, 8700 Leoben, Austria, email: anke.woelfler@unileoben.ac.at
[2] University of Graz, Institute of Earth Sciences, NAWI Graz, Heinrichstraße 26, 8010 Graz, Austria

Shear zones are zones of enhanced fluid flow and may act as pathways for mineralizing fluids. The occurrence of talc may be related to such shear zones. Magnesite and talc deposits in the Eastern Greywacke zone were investigated to understand the role of faults to the occurrence of talc. The deposits Veitsch, Wald am Schober and Lassing are of Mg carbonate hostrocks and vary in their talc content. Geochemical analysis, Stable isotopes and fluid inclusion study were performed to yield indications on kind, origin and temperature of the talc mineralizing fluid. The study has shown that the precipitation of talc in the Eastern Greywacke zone is related to increasing deformation and temperature along fault zones. The magnesite deposit of Veitsch is characterized by brittle low temperature deformation features and analyses have shown that fluid temperatures are commonly low (~180°C) similar to samples of hostrocks outside the deposits. The magnesite deposit of Wald am Schober contains minor occurrences of talc along discrete shear zones. The deposit is characterized by ductile deformation features. Analyses show that temperatures of the mineralizing fluids are significantly higher (~250°C). At the former Lassing talc mine talc occurs within large shear zones and yield features of high deformation. All three deposits are related to fault zones (Mur-Mürz-Fault, Paltental-Liesingtal-Fault, SEMP) that were active during Miocence escape tectonics. In the case of Wald am Schober extensional tectonics following Eo-alpine orogeny may have played an important role.