

Sample Number : 10962

418120  
R.H.16 232.5m.

Identification : Sericite-quartz-carbonate schist with traces  
of sphalerite and pyrite

Description :

The hand specimen is a drill core sample of finely foliated, light olive grey rock with suggestions of a thin yellowish grey bed or band folded tightly about the foliation. The foliation is inclined at about 30° to the core axis.

A cobaltinitrite staining test revealed no K-feldspar and produced no stain at all.

In thin section much of the sample is seen to consist of crudely laminated to lenticular alterations of foliated sericite and microcrystalline to cryptocrystalline "cherty" quartz. There are disseminated subrounded grains of quartz, about 0.1 to 0.5mm in size and now variously strained and partly recrystallized. Stretched aggregates of carbonate (apparently calcite), similar in size to the quartz clasts, are common and may represent former feldspar. There are a few specks and small aggregates of opaques, including anhedral sphalerite (translucent brown to opaque) and subhedral sphalerite; some opaques could be Fe-Ti oxides. Some carbonate and quartz occurs as nodular aggregates, up to 8mm in size and composed of sutured grains about 0.1 to 0.5mm in size. There are some late carbonate veinlets.

An approximate mode is :

2-4%	sand-sized quartz grains
25-30%	"cherty" quartz
2-4%	quartz in nodules
4-6%	carbonate in disseminated clasts, possibly after feldspar
4-8%	carbonate in nodules
50-60%	sericite
0.1-0.2%	opaques, including sphalerite, pyrite and possibly Fe-Ti oxides

Comments and Interpretation :

The remnant textures of this rock are not conclusive, but it seems fairly likely that the original rock was a laminated shale with disseminated sand-sized fragments of quartz and probably feldspar. It is not possible to discriminate clearly between mineralogical alteration attributable to post-depositional hydrothermal alteration and that attributable to low grade regional metamorphism, but it seems possible that there was hydrothermal alteration involving sericitization and carbonation, then regional metamorphism which produced a foliation in the sericite and some nodular segregation of quartz and carbonate. The trace quantities of sphalerite and pyrite are disseminated in a fashion which suggests that they were either original constituents of the sediment or were introduced hydrothermally prior to metamorphism.