S 446; PSD6781

Location:
DDH 8 at 334.6 m

Hand Specimen:
The host rock is dark grey and predominantly very fine-grained but contains small pale-coloured crystals which may be phenocrysts of quartz. Some zones in the rock have a streaky appearance but there does not appear to be any continuous banding.

Parts of the rock contain concentrations of fine-grained pyrite and some of this has filled interstices and fractures in a brecciated zone.

Polished Section:
This was cut from a zone containing a high concentration of sulphide.

The sulphide is almost entirely pyrite with minute traces of galena and pyrrhotite and very minute traces of chalcopyrite and marcasite. There is also a little fine-grained magnetite similar to that in sample S 444.

Most of the pyrite crystals are between 0.2 mm and 0.5 mm in size with a few up to 1 mm but in places they are intergrown to form crystalline aggregate several millimetres in size. Some of these pyrite crystals contain a few small inclusions of pyrrhotite mainly 5 to 20 microns in size and a few contain groups of small magnetite inclusions. In a few of the pyrite crystals there are small inclusions now composed mainly of fine-grained marcasite and, as these are similar in size and shape to some of the pyrrhotite inclusions it is suggested that they represent inclusions of pyrrhotite which have been replaced by marcasite. In one pyrite crystal there is in fact one pyrrhotite inclusion which shows slight alteration to marcasite along a boundary. Very few of the pyrite crystals contain very small patches or inclusions of chalcopyrite and some of this chalcopyrite is associated with marcasite in one of ?altered inclusions of pyrrhotite.

Many of the pyrite crystals have been extensively fractured and in general the fractures have been invaded by non-opaque minerals. There are a few areas, however, where some small fractures in crystals and aggregates of pyrite now contain thin films of galena. In two of the pyrite crystals containing films of galena a trace of chalcopyrite is associated with some of the galena in small fractures.

Conclusion:
The sulphide in this rock is almost entirely pyrite and this contains a few small inclusions of magnetite and pyrrhotite. The pyrite has been extensively fractured and in some zones some small fractures contain films of galena locally associated with traces of chalcopyrite.