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MEMORANDUM

The following descriptions apply to specimens collected by geologist Kerry Burns at Iron Cliffs near Penguin.

Specimens 2 and 3 both described as mudstones, differ greatly in the amount of quartz present, No. 2 contains much quartz which is the most abundant mineral, whereas in No. 3 there are only occasional grains in a dense sericitic matrix.

Specimens 1 and 4 are very different. Specimen No. 1 is anindurated quartzose mudstone intermediate between 2 and 3 with the addition of pebble-like masses of recrystallised quartz, whereas No. 4 contains various rock fragments in addition to grains of quartz. However no fragments of specimens Nos. 1 and 2 could be identified In No. 4.

Specimen No. 7 may be a recrystallised version of No. 5, its palimpsest structures representing the rounded grains seen in No. 5. Specimen No. 6 has quite a different structure.

1. Iron Cliffs D.D.H. 190'

Fine grained pale grey siliceous rock, stained with haematite and limonite.

In thin section the rock consists of a matrix of sericite and quartz containing larger angular grains of quartz about .1 mm. across, and masses of quartz mosaic of much coarser granularity, and about 1 mm. in length. These latter have the appearance of recrystallised stretched pebbles. Granules of opaque white clay material are disseminated through the rock, which also contains irregular patches of haematite largely altered to limonite and small grains of the same mineral.

The rock is an indurated quartzose mudstone.

2. 210' D.D.H. No. 1 Iron Cliffs

Fine grained, moderately soft, pale grey rock with carbonate veinlets.

In thin section the rock is a fine grained mosaic of irregular quartz grains interlaced with laths of sericite. . Small aggregates of carbonate are plentiful and there is much disseminated, white opaque clay mineral and black opaque iron ores.

The rock is a quartzose mudstone.

3. Mudstone from No. 5 Adit, Iron Cliffs

Pale grey, fine grained rock, well bedded and jointed.

In thin section the rock is an extremely fine grained mass of sericite, with much opaque white clayey material and scattered larger grains of quartz and opaque iron ore.

4. No. 5 Adit Iron Cliffs

Pale grey, fine grained rock containing angular and sub-rounded grains both dark and light.

In thin section the rock consists of a very fine sericitic matrix containing much very fine opaque yellow coloured material. The angular fragments, averaging about 1 mm. across, consists of quartz, quartzite, mudstone and graphitic shale. Some fragments contain minute biotite plates and there are also inclusions of iron ores.

The rock is a greywacke.

5. Station 12, Iron Cliffs

Pale coloured, fine grained rock, stained brown and red by weathering. Many small fragments, rather less than 1 mm. across can be seen in hand specimen.

In thin section the rock is a mass of roughly rounded sericitic and quartz grains separated by thin layers of fine grained material stained brown by limonite. There are occasional irregular larger grains up to 2 mm.

The rock is an indurated arkosic greywacke.

6. 78' from portal Adit No. 3 Iron Cliffs

Pale grey, fine to medium grained rock which scratches fairly easily. Different minerals cannot be distinguished except for a few small scattered crystals of pyrite. Small squarish holes show where pyrite has been weathered out.

In thin section the rock is a mass of interlocking allotriomorphic grains of felspar, heavily charged with fine flakes of sericite. Occasional larger irregular grains and idimorphic crystals are completely sericitised. There are rare clear rounded grains of quartz and irregular masses of secondary quartz, with inclusions and a fibrous tendency. Opaque white material and limonite are common.

The specimen is a recrystallised felspathic rock much sericitised.

7. Extreme end of No. 2 Adit, Iron Cliffs

The specimen is a whitish coloured rock, consisting of a fine grained matrix in which are scattered relatively darker crystals averaging 1 mm. across.

In thin section the darker crystals appear as felspar completely altered to sericite. The matrix consists of quartz and sericite. There are a few opaque irregular crystals of black iron ore minerals and white leucoxene.

The quartz and sericite of the matrix are mingled together with blades of sericite penetrating the individual grains of an interlocking mosaic of quartz. The whole matrix is covered with rough rings of opaque white clay mineral about . 1 mm. across, i.e. about the same size as the quartz grains but not corresponding exactly with them. It may be a palimpsest structure and represent original grains, the whole having subsequently recrystallised.

The specimen is a recrystallised quartz-sericite rock.

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