

Mapping in 1972 (McKibben, 1972) recorded uniformly westerly dips and facings in the Lower Cambrian sedimentary sequence along the eastern flank of the grid and in the Anthony River Gorge. Bedding is almost non-existent in the volcanics but the distribution of some rock types, notably the pyritic vitric tuffs of the eastern pyrite zone, show a consistent N-S strike. Locally, however, E-W strikes can occur, such as in the banded ash-fall tuffs between lines 152N and 160N, but these are probably due to minor folding.

The Jukes Formation mass on Mt. Selina is inferred to occupy the core of a north-plunging syncline on stratigraphic evidence. This interpretation is somewhat reinforced by E-W striking foliations in volcanic rocks along a ridge on line 120N, immediately west of the baseline. However, lack of reliable bedding data and crossfaulting have complicated the picture and there is no strong correlation apparent between volcanics either side of the Jukes.

#### 7. Mineralisation

The discovery of the eastern pyrite zone, between 184N, 450 mE, and 136N, 180 mE, was the most significant result of the 1980-81 programme in the Selina-Dora area. Mapping in 1970-71 had noted outcrops containing pyrite on line 144N and the similarity between ground magnetic profiles over the western pyrite zone and the area east of the Jukes Formation suggested that an eastern mineralised zone may exist. The gradient array I.P. survey early in 1981 and subsequent pit blasting confirmed its existence.

"Veins" of massive pyrite, about 10-20 cm wide, were found on lines 144N and 184N but in general the pyrite occurs as disseminations in fine-grained sericitised and chloritised vitric tuffs. There is no evidence as yet to determine whether the pyrite is syngenetic with the tuffs. Black shales found within the zone on line 168N, however, suggest a subaqueous origin.

By contrast the western pyrite zone mostly occurs as veinlets and patchy replacements in massive pink rhyolites and this may be a feeder zone within the volcanic pile.

Magnetite is common in the western zone, especially north of line 120N where more oxidising conditions may have prevailed, assuming that the magnetite and pyrite are due to a single mineralising event. In the banded ash-fall tuffs between lines 152N and 160N magnetite veins are common and malachite was also found coating fracture surfaces in a road cutting about 20 m north of 152N, 2600'W. A specimen of banded tuffs from the road 40 m north of 152N, 2600'W contained possible syngenetic bands of magnetite and pyrite plus minor hematite.

Other mineralised occurrences located in 1980-81 include several old workings on the Rolleston and Dora Grids. At 48N, 730'E disseminated galena and pyrite was found in a granoblastic intrusive which may be related to the Murchison Granite. A similar galena occurrence was found in a mine dump near 96N, 2900'W. At 72S, 900'W highly chloritised volcanics (quartz crystal tuffs?) containing disseminated to sub-massive pyrite-magnetite and minor chalcopyrite were found in a large mine dump. Trenches at 76S, 050'E, and 78S, 500'W, also contained pyrite plus minor galena and ? sphalerite. Pits and trenches near 120S, 1700'W, contained veinlet and disseminated pyrite in chloritised felsic lavas.