

APPENDIX 6e

Scan Logs – NCT002 to NCT004

(See Digital File EL20_2003_200505_13_Appendix6e.pdf)

DATE: 27 July 2004
TO: File
FROM: Ian J. Tedder
SUBJECT: Scan Log – NCT002.

NCT002 was targeted at a long narrow resistive CSAMT anomaly stretching from north of Line 15 down through Line 16. The anomaly was interpreted to occur within Tyndal Group close to the contact with the Central Volcanic Complex. Hole drilled at -60° towards 235° (mag) from a collar location 384690E/5322150N (AMG). HQ3 core to 149.5 m then NQ3 to end of hole.

0.0 m – 42.1 m: Strongly fractured and faulted sandy quartz phyric volcanoclastics with sparse angular lithic clasts. Rare granite clasts. Major fault (40.3 – 42.1 m) cuts off this unit from the underlying lithology.



Photo 1: Example of volcanoclastics from 29 m to 34 m (HQ core).



Photo 2 : Pink granite clasts in volcanoclastics at 15.5 metres. (HQ core).

42.1 m – 64.1 m: Moderately dark gray-green polymictic pebble-cobble volcanic breccia with relatively closed framework. Clasts angular to subrounded and dominated by chlorite altered volcanic siltstone. Some porphyritic rhyolite and jasper clasts. Slightly elevated copper compared to units above and below. Only minor quartz grains in matrix. Clast with trace of chalcopyrite noted at about 62.3 m. Sealed shear marks base of this unit.



Photo 3: Example of lithology from 55 m to 60 m. Note the dark reddish jasper clasts. (HQ core).

64.1 m – 72.9 m: Chlorite altered, feldspar-quartz polymictic volcanoclastic grit. Chlorite altered volcanoclastic siltstone clasts dominate the less common rhyolite clasts. Only 1 – 3% quartz phenocrysts in matrix. Distinctly lighter grey in colour. At 68.3 m a single volcanic siltstone clast with traces of disseminated chalcopyrite occurs.

72.9 m – 75.4 m: Dark grey-green polymictic coarse fragmental with pyrite sealed faulting. Earlier quartz-magnetite quartz veins are brecciated and sheared off by the faulting (refer to Photo 4 next page). A chalcopyrite mineralised feldspar porphyry clast occurs at 74.1m (Photo 5).

The zone is anomalous in gold between 73 and 75 m. It returned an average of 0.20 g/t Au (and slightly elevated Pb, Zn and As).

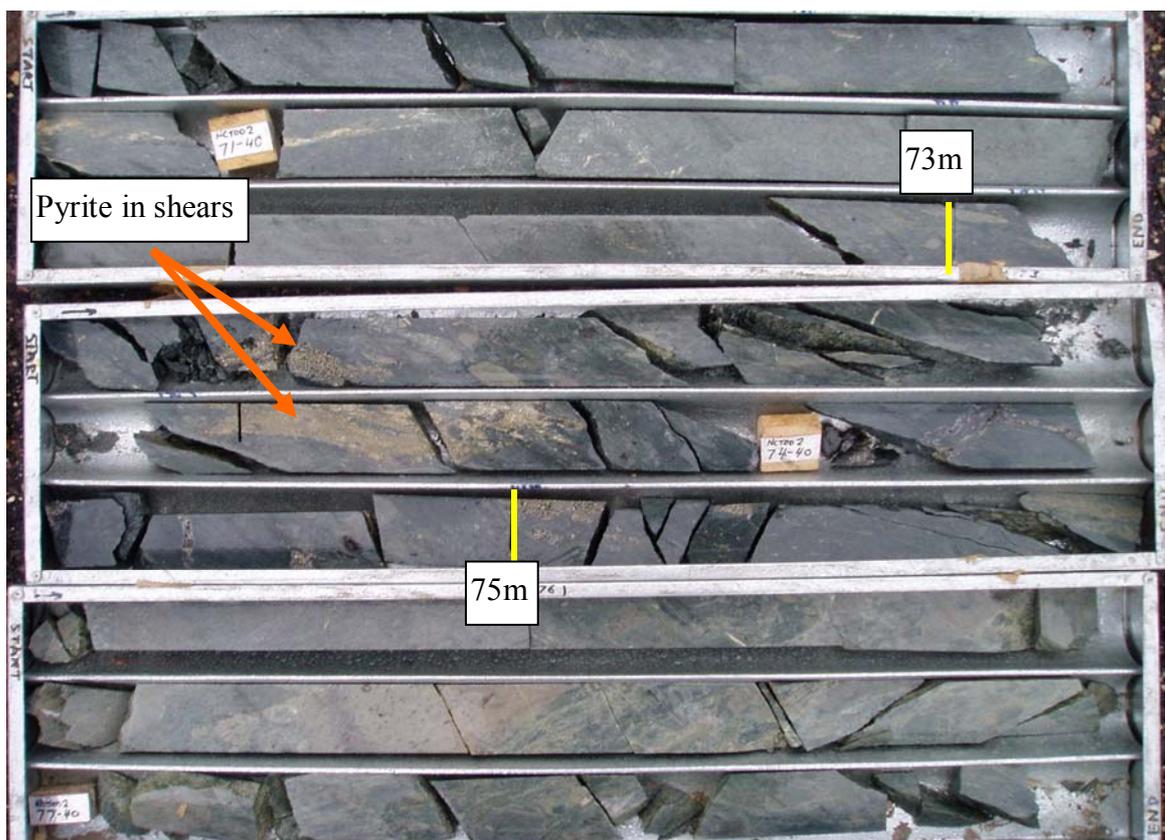


Photo 4: Sealed shear zone with pyrite-(magnetite) stringers and clasts in volcanoclastics. Zone from 73 to 75 m (as marked) is gold anomalous with 0.27ppm Au to 74 m and 0.13ppm Au to 75 m. (HQ core).



Photo 5: Part of the sealed shear zone at 74 m, here showing a feldspar porphyry clast with disseminated chalcopyrite in volcanoclastics. (HQ core).

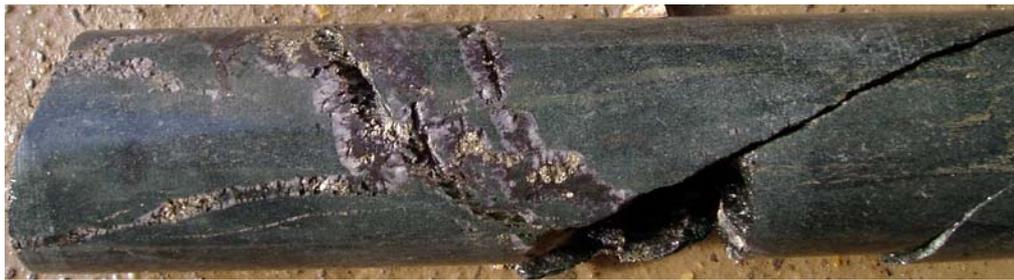


Photo 6: Quartz-magnetite veins in volcanoclastics, 74.5 m(HQ core).



Photo 7: Quartz-magnetite veins in volcanoclastics cut by later sealed shearing, 75 m (HQ core).

75.4 m – 96.9 m: Series of coarser, grey to darker grey polymictic volcanoclastics units with relatively closed framework, separated by thinner sandy volcanoclastic units. Some units dominated by felsic clasts, others by the more common chloritic altered volcanic siltstone clasts. Some short intervals contain hematite-magnetite clasts (see Photo 9) below. One clast of feldspar porphyry with traces of disseminated chalcopyrite. Another rare granite clast at 77.5 m.



Photo 8: Example of heterogeneous volcaniclastics between 75.4 m and 96.9 m.



Photo 9: Dark magnetite clasts over 30 cm of core. (HQ core).



Photo 10: Pink granite clasts at 77.5 m(HQ core).

96.9 m – 103.8 m: Mid to dark grey-green polymictic volcaniclastic characterised by presence of collapsed dark coloured porphyritic pumice fragments. (Photo 11).

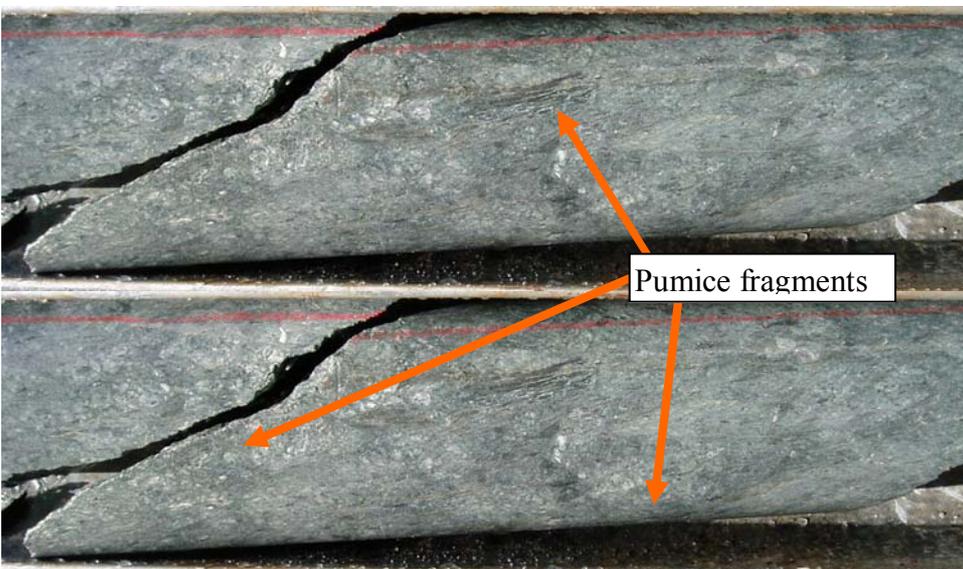


Photo 11: Collapsed pumice fragments (99.3 – 100.4m (HQ core)).

103.8 m – 109.4 m: Fine grained pale tan-grey coloured volcanic with small intervals of monomict conglomerate and breccia. Possible hyaloclastites?

109.4 m – 145.7 m: Sandy quartz phyric volcaniclastics dominated by grit sized clasts. Most clasts are of fine grained chlorite altered volcanic siltstone but some rare pink rhyolite fragments. Lithology looks most similar to the ‘Tyndal’ Group lithology seen in the upper half of NCT001. A major fault zone occurs between 125.4 and 130.5 m with clay gouge and a considerable amount of core was lost. No analytical sample from 129-130 m.



Photo 12: Example of clastics between 112 m and 116 m (HQ core)

145.7 m – 155.3 m: Dark green pebbly volcaniclastic with typical quartz feldspar phyric matrix. Sealed faults at 149.7-150.1 and 150.4-150.8m.

155.3 m – 193.8 m: Polymictic pebbly to gritty volcaniclastics with open framework. Considerable variation in density of clasts and minor changes in alteration intensity which is dominated by chlorite-sericite.

193.8 m – 201.1 m: Polymictic pebbly volcaniclastic with almost closed framework. Contains one clast(?) or thin layer of strongly foliated fragmentals intensely altered by sericite-pyrite between 198.55 – 198.65 m. (Refer to Photo 17 at end of document).

201.1 m – 205.1 m: Zone petrologically identified by Doug Mason (Petrology report #2993) as a “foliated high-intensity sericite-sulphide altered meta-fragmental”. It was originally interpreted to be a mineralised fault zone but the petrology report suggests it is a primary volcaniclastic fragmental partly composed of re-deposited sericite-sulphide clasts eroded(?) from a nearby VHMS deposit. Refer to close up photos next page (Photo 13) and Photo 17 at end of document.

The interval is anomalous in gold, lead and zinc. The zone from 203 – 205 m has an average of 0.75 g/t Au, 272 ppm Cu, 0.34% Zn, 0.67% Zn and 55 ppm As. The highest assay is in the interval 204 – 205 m with 1.33 g/t Au, 0.45% Pb and 0.89% Zn.



Photo 13: Examples of intensely sericite-pyrite altered volcaniclastic with traces of sphalerite and galena (202.5-7 m and 202.7-8 m).

205.1 m – 222.2 m: Medium grey-green polymictic volcaniclastics. Moderately intense sericite-pyrite alteration down to 214 m or so. At 208.1 to 208.9 is a narrow zone of sericite-pyrite altered fragmental that could be interpreted as a fault but may be a thin bedded unit similar to that at 201.1 – 205.1m. No analytical sample taken between 219-220m because of lost core.

Timing of some of the deformation events can be ascertained from one sample (Photo 14) where typical Devonian style quartz-chlorite-carbonate veins cut across pale brown sericite-pyrite (Au-Zn-Pb) altered lithologies. To make it more complex though, the quartz-chlorite-carbonate is mineralised with one blob of red-brown sphalerite.



Photo 14: 222.2 m. Layer of pale brown intensely sericite-pyrite altered volcaniclastic is cut by Devonian style quartz-chlorite-carbonate veins. NQ core.

222.2 m – 224.0 m: Smaller interval of intense sericite-pyrite altered fragmentals with traces of sphalerite and galena. Similar to that at 201.1 – 205.1 m. Anomalous in gold with 222 to 223 m assaying 0.11 g/t Au (0.46% Pb and 0.68% Zn) and 223 to 224 m assaying 0.15 g/t Au (0.11% Pb and 0.62% Zn).

224.0 m – 234.0 m: Medium grey-green polymictic volcaniclastics similar to unit 205.1-222.2m.

234.0 m – 250.5 m: Medium grey-green polymictic gritty to pebbly volcaniclastics. Scattering of flattened dark porphyritic pumice fragments. One thin straight quartz vein occurs at 447.8 m with some pale (low Fe) sphalerite.



Photo 15: Devonian (?) quartz vein with minor sphalerite 447.8 m



Photo 16: Examples of flattened pumice fragments in volcaniclastics between 234.0 and 250.5 m.

250.5 m – 266.8 m: Medium grey-green, generally coarser (than last unit) polymictic pebbly volcaniclastics. Scattering of flattened dark porphyritic pumice fragments.

266.8 m – 268.2 m: Massive milky white quartz-chlorite vein.

268.2 m – 389.0 m: A thick sequence of grey-green polymictic gritty to pebbly volcaniclastic units. Minor flattened dark porphyritic pumice fragments found in most. Contacts of units not convincingly identified. Attempts were made to pick boundaries on the basis of coarser fragmentals (base) followed by finer grained unit (top).

389.0 m – 489.5 m EOH: Generally fine grained dark grey-green (sericite-chlorite altered) massive volcaniclastic sandstones (crystal rich fragmentals) with only occasional pebble size clast. Limited petrology shows these units to be dominated by crystal rich lithic 'tuffs' with a large felsic component. Feldspar porphyry dykes at 413.45 - 416.5 m and 469.4 - 472.0 m.

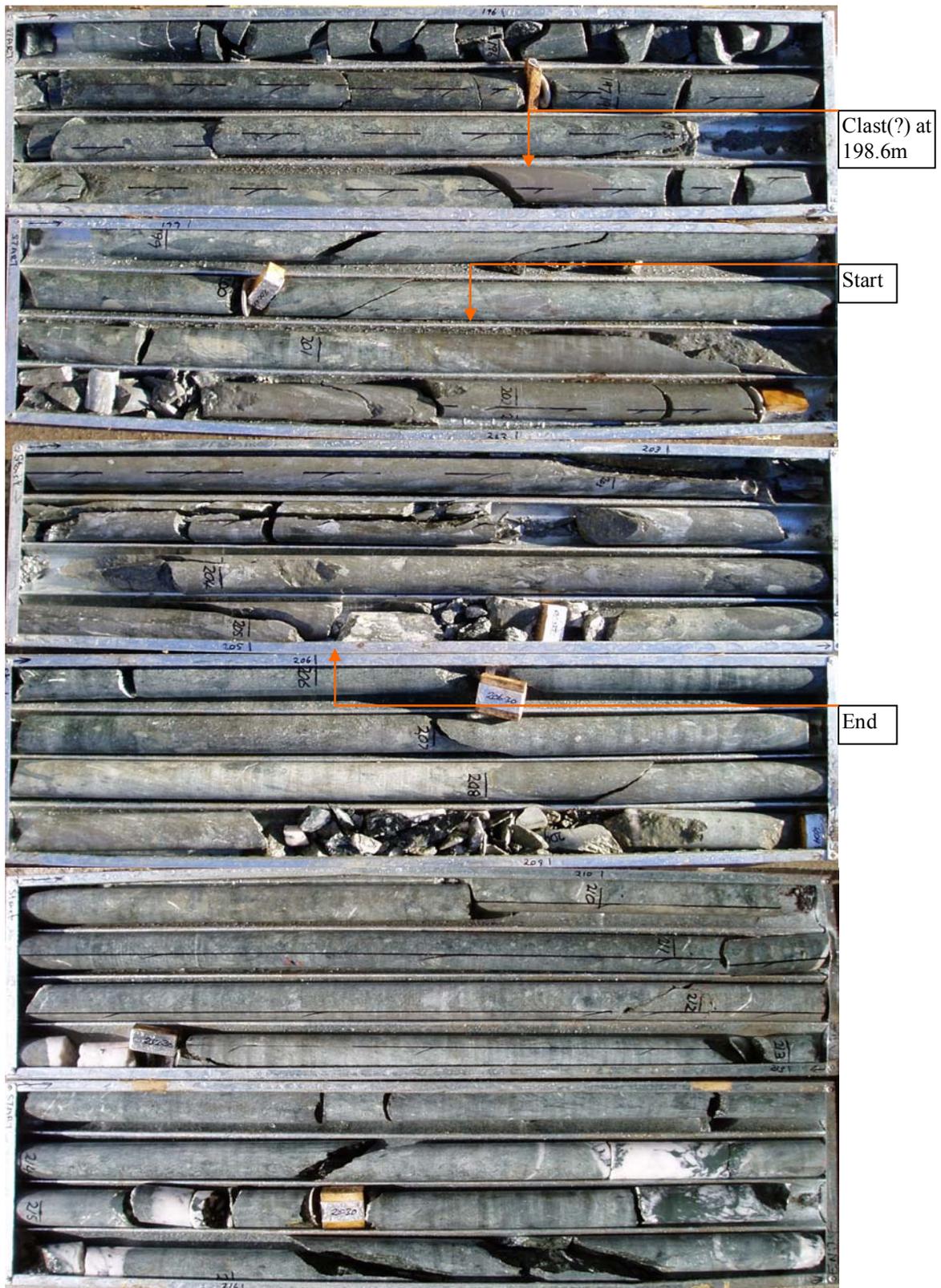


Photo 17: Interval from 195.4m to 216.7m which includes the intensely altered sericite-pyrite zone ('start' at 201.1 to 'end' at 205.1 m) which is anomalous in gold, zinc and lead.

DATE: 28 January 2005
TO: File
FROM: Ian J. Tedder
SUBJECT: Scan Log of NCT003.

NCT003 drilled from Nasty Nob (383160E/5337400N AMG) to a depth of 800 m. The target was an extensive zone of lead-silver anomalous iron and manganese oxidised stained volcanoclastic siltstone within Mount Read Volcanics adjacent to the Great Lyell Fault equivalent.

0.0 – 68.7m: Medium red-brown massive feldspar-quartz phyric rhyolite. Feldspar phenocryst have slight pink colour and are up to 3-4 mm long. Minor fractures with stronger orange alteration envelope attests to later alteration. Fine quartz veinlets sub-parallel the orange fractures cut through but may or may not be earlier. Some ep-chl in larger quartz veinlets along with some k-feldspar and iron rich carbonate.



Photo 1: Typical feldspar (\pm quartz) phyric rhyolite



Photo 2: 61 m depth. Lapilli fragmental with dominant rhyolite clasts.

51 – 68.7m: More heterogeneous darker grey overall colour includes some clastics (Photo 2). Fractured parts have iron carbonate vein – irregular with a lighter greyish wash in the surrounding wall rocks.

59.3 – 60.7: Major fault with sealed sericite-chlorite parts. Contains red rhyolite breccia in chlorite – sericite matrix. No significant lithological change across fault which is predominantly unsealed.

68.7 – 104.25m: Conformable change to dark green strongly cleaved fine grained volcanoclastic siltstone. Some darker grey grit sized clasts come in around 80 m. Scattered red rhyolite pebbles.



Photo 3: 72 m dh depth. Typical chlorite altered volcanic siltstone – occasional rhyolite clast.

71.7m: Traces of chalcopyrite in close association with ‘dirty’ (greyish-brown) iron carbonate infilling irregular fractures.

74.3m: Rare millimetre thick red feldspar thick layers with slight pulled apart texture in boudinage fashion are cut by later quartz-iron carbonate veins and fractures. Not sure of origin of the feldspar rich layers.



Photo 4: 77.7 m dh depth. Another example of chlorite altered volcanic siltstone with siltstone clasts.

78.9m: Rare rounded clast of coarse grained gritty quartz-feldspar sandstone. Some grains (which are predominantly of feldspar porphyry) are mineralised with pyrite. See photo 5 below.



Photo 5: Rounded grit clast in chlorite altered matrix (78.9m).

86.7 – 104.25: Unit becomes more of a open framework conglomerate with dark sub-spherical to elliptical dark grey clasts in chlorite altered volcanic siltstone matrix. Rare red feldspar-quartz rhyolite clasts.



Photo 6: 99.2 m dh depth. Lapilli clastic with dark chlorite altered siltstone clasts in chlorite altered matrix.

104.25 – 105.6m: Volcanic grit composed of pink-orange feldspar rich rhyolite clasts (<5mm up to 1cm) in matrix rich in sericite. Matrix may be of devitrified volcanic glass and pumice fragments. Unit ends at fault.



Photo 7: Gritty volcaniclastic sandstone at 104.9m with minor darker green pumice (?) fragments.

105.4 – 105.6: Fault

105.6 – 109.3m: Sealed breccia of rhyolite derivation. Could be autobrecciated extrusive. Some clasts appear to be primary origin (rather than tectonic).

109.3 – 110.85m: Similar type of grit as at 104.25 – 105.6m but coarser grained. Photo 8 below.



Photo 8: Polymictic volcaniclastic at 110.1 m.

110.85 – 119.0m: Breccia as at 105.6 – 109.3m but less obvious as fragmental.

119.0 – 121.5m: Grit to medium to coarse grained feldspathic sandstone grades to fine grained chlorite altered volcanic siltstone. Some sericite evident in the sandstone.

121.5 – 249.4m: Large sequence of apparent volcanic monomict breccia composed predominantly of red-orange feldspar-quartz phyric rhyolite 'clasts'. Irregularity of shapes and the continuity of phenocrysts from clast to matrix suggests patchy alteration has invaded a brecciated massive rhyolite. Apparent 'clast' sizes ranging from grit to cobbles – becoming larger and more irregular down hole. A component of true clastics may be present particularly in upper part of the unit. Dark red-brown colour overall.

160 – 163: Poorly defined boundaries to this unit apparently made up of feldspar-quartz grit and rhyolite fragments in a very dark green-black fine grained chlorite matrix.

170 – 249.4: Predominantly massive and autobrecciated unit (i.e. monomict) of red-orange feldspar-quartz rhyolite. Patches of k-feldspar-quartz and iron carbonate chlorite quartz veining up to 5cm across. Dark patches in the rhyolite appear to be chlorite – at least in part.



Photo 9: Pseudobreccia at 206.7m. Note irregularity of 'clasts' and density of phenocrysts.



Photo 10: Pseudobreccia at 232.4m

249.4 – 252.3m: Major shear – clays, chlorite in open breccia – some strong centimetre wide strong cleavage zones.

252.3 – 254.2m: Similar rhyolitic rock unit as from 121.5 – 249.4m but darker due to higher chloritic component. It grades into the next unit.

254.2 m – 289.1m: Dark chloritic altered volcanoclastic made up of grit and sand sized grains of porphyritic rhyolite in a chlorite matrix which is probably derived from flattened pumice fragments.



Photo 11: Example of darker volcanoclastic unit as seen at 270.2 m



Photo 12: Sample from 278.7m. Same rock unit as shown in Photo 11.

289.1 – 307.3 m: Greyish volcanoclastic rock, very similar to last unit contains scattered red-orange fragments but does not have chlorite (pumice) component.

307.3 – 309.9 m: More massive rhyolite breccia very like the 121 – 249 m unit. Has dark grey green, very irregular matrix grading into very irregular shaped red-orange ‘clasts’.



Photo 13: Apparently zoned 'clast' in feldspar phyric massive volcanic - at 309.1 m

309.9 – 359.05 m: Fine grained dark green volcanic siltstone. Only rare bedding e.g. at 330.7m. Variations throughout this unit include:

313.1 – 315 m: Zone of sheeted centimetre thick quartz veins with iron-carbonate enclosed by pervasive alteration envelope of orange-red hematite dusting (slightly siliceous) of the host volcanic siltstone.

328.3 – 330.7 m: Another zone of quartz veining enclosed by salmon pink alteration envelope.

330.7 – 333.1 m: Quartz phyric, fine grained dark green massive volcanic with bedding parallel contacts suggesting it is a sill or extrusive. High hematite component in groundmass.

350.5 m: Ten centimetre thick zone of intraclastic siltstone – possibly hyaloclastites with laminated siltstones immediately above and below.

352 – 353 m: Quartz veins with pink siliceous alteration envelope.

357 – 358 m: Thinly flattened pumice (chl-ser) in volcanic siltstone.

359.05 – 405 m: Massive generally orange-red occasionally feldspar-quartz phyric rhyolite. Ends at fault.



Photo 14: Example of massive feldspar-quartz phyric rhyolite at 378.2 m.

405 – 423 m: Mixed unit of volcanic sediments – initially predominantly gritty but becomes fine grained silt with sharp but disrupted laminations. Gritty part is dominant and has ser-chl slivers which are interpreted to represent flattened pumice.

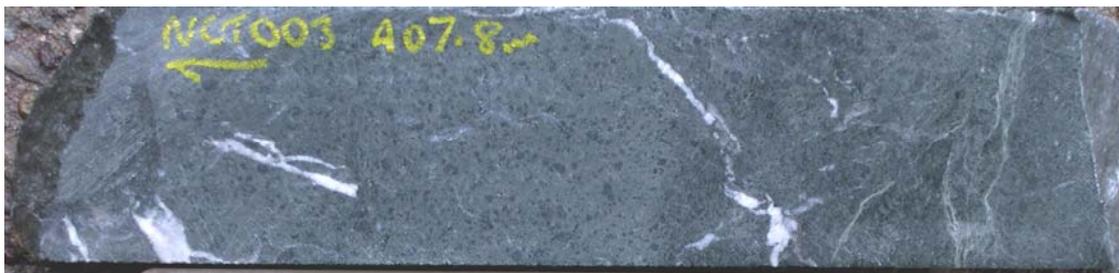


Photo 15: 407.8 m. Possibly a gritty volcaniclastic sandstone



Photo 16: Lapilli volcaniclastics from 417.8 m.

423 – 428.8 m: Greenish-red feldspar (\pm quartz) phyric rhyolite.

428.8 – 440.2 m: Light greyish green lapilli clastic. Less than 10% of clasts are red rhyolite. There is about 20% ser-chl altered pumice. Some feldspar phyric clasts appear to be preferentially mineralised with sphalerite (e.g. 434.5m). The sphalerite is generally a red-brown colour.



Photo 17: Lapilli volcaniclastic from 434.4 m.

440.2 – 442.6 m: Very fine grained slightly laminated volcanic siltstone.

442.6 – 447.7 m: Major open fault.

447.7 – 491.8 m: Lumped together a predominantly sedimentary unit. Mostly fine grained volcanic silt to gritty volcanic siltstone. Generally chlorite (\pm sericite) alteration. Some patchy very fine grained pervasive calcite alteration – may increase in the next unit. Variation is due to the presence of rare disrupted laminations (455 – 457m), pale tan alteration wash grading in around 461 m and out again by 467m. Alteration unidentified (not calcite or obvious iron carbonate). At 471 – 473 m some quartz-carbonate veins (Dev?) with pale grey wash to the wall rocks. From 478.5 – 481.5 is a pinkish green feldspar phyric rhyolite with sericite-chlorite patches (pumice?) – so fragmental.



Photo 18: Finely bedded volcaniclastic siltstone from 456.3 m.

Unit looks overall like a green pyroxene phyric rock but not green enough and the 'phenocrysts' are actually clasts, subrounded sometimes cusped, irregular, variable in size and have internal variation in composition.

491.8 – 535.3 m: Generally pale pink to pale grey 'fluffy' textured lapilli clastics. Clasts are irregular rounded drawn out blobs with diffuse boundaries into greyer/greener matrix of silica-feldspar and chlorite-sericite.

Minor disseminated sphalerite and rare galena in little patches in the groundmass. Occasional clear clast – some cherty (\pm pyrite) fine grained, some rich in reddish brown sphalerite implying the mineralisation developed elsewhere. No hint of sphalerite in the previous unit. Sphalerite distribution is sparse, particularly down hole in this unit. Generally <1% pyrite throughout the hole and no increase or close association evident with the sphalerite.

Overall alteration appears to be calcite (pervasive) and zones of more intense sericite (523 – 530m). Pervasive iron carbonate is moderately intense throughout this unit.

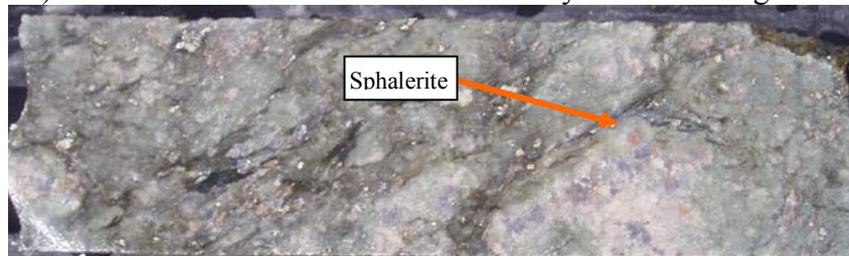


Photo 19: Dark brown sphalerite mineralised pumice rich lapilli clastics at 492.8m



Photo 20: Sphalerite mineralised pumice rich lapilli clastics from 495.2 to 495.5 m

Unit ends at a fault which runs over 3 m to 535.3 m.

535.3 – 540.1 m: Pale grey green fine grained volcanoclastic sandstone to siltstone. Much finer grained down hole, though not obviously graded. Conformable contact to next unit.

540.1 – 638.0 m: A thick sequence of ‘fluffy’ textured pumice breccia – pale grey-tan coloured feldspar-silica blobs with the usual chlorite-sericite flattened fiamme bands forming 10 – 20% of the rock. Distinct alignment of the chlorite-sericite layers which are irregular and wavy. Variations due to faults and density of the chlorite-sericite bands. This unit is virtually exactly the same as the first mineralised zone from 491.8 – 535.3 m.



Photo 21: Example of pumice rich lapilli volcaniclastic at 559.8 m

Very minor disseminated sphalerite and pyrite throughout most of the unit – decreases after about 610 m.

Couple of irregular zones with fracture and bedding controlled goethite-limonite from 577 – 580m and 581 – 593m. The goethite may be after specular hematite. Evidently oxidation extending from the surface.



Photo 22: Example of iron stained pumice rich volcaniclastic at 589.1 m

From 571 through to 596 (the zone with that includes the goethite) the rock looks more massive with less chlorite-sericite bands.



Photo 23: Another example of pumice rich volcaniclastic – this sample from 629 m.

638.0 – 662.2 m: Somewhat heterogeneous unit of predominantly feldspar phyric volcanic and volcaniclastics. Difficult to tell where volcanics stops and volcaniclastics start. Variable colour – mauve to grey-green. Generally chlorite (\pm sericite) alteration but zone from 657 – 660 has more sericite. Traces (<1%) of coarser euhedral disseminated pyrite.

662.2 – 664.9 m: Massive coarse quartz-K-feldspar-chlorite-rock fragments vein.

664.9 – 690.3 m: Pale grey-green fine grained volcanic sandstone to slightly gritty unite. May have fine pumice shards of usual chlorite-sericite composition.

690.3 – 719.5 m: Pale grey-green feldspar crystal rich sandstone has a strong foliation due to cleavage, some slight textural and colour variation due to varying lithic composition.

719.5 – 737.7 m: Similar pale grey green crystal rich clastic rock (feldspar dominant) but with mm to cm sized elongate chlorite altered clots ($\pm 20\%$ of rock) which appear to be ‘augens’ of feldspar porphyry less altered and deformed than the microscopically stressed groundmass.



Photo 24: Example of polymictic clastic at 724.4 m

737.7 – 738.7 m: Coarse quartz-chlorite-K-feldspar calcite vein.

738.7 – 744.8 m: Green feldspar rich almost andesitic looking volcanic sandstone.

744.8 – 756.2 m: Pale grey-green volcanoclastic sandstone, gritty to pebbly volcanoclastics. From 747 – 748.1 m is a very finely laminated volcanic siltstone.

756.2 – 779 m: Lapilli clastic with dark chlorite altered irregular pumice (?) fragments up to 3 cm in size. Less of a foliated texture.

779 – 800 m: Back to pale green-grey-tan volcanoclastic sandstone with gritty composition, visually dominated by chlorite altered fragments of elongate form parallel to foliation.



Photo 25: Example of volcanoclastic (gritty) sandstone at 794.8 m.

DATE: 6 March 2005
TO: File
FROM: Ian J. Tedder
SUBJECT: Scan Log – NCT004.

NCT004 was drilled at Mountain Maid prospect, on the northern slopes of Mt Huxley. The hole was designed to intersect a package of fine grained pyritic cherty volcanoclastic sediments that from previous explorers surface sampling was slightly anomalous in gold. The hole was collared at 383579E/5334611N (AMG) and with an azimuth of 214° (mag) drilled at -60° to a depth of 749.3 without intersecting the target zone.

0.00 – 3.2 m: Feldspar porphyry breccia with a mix of feldspar porphyry lapilli clasts and green chloritic contorted and disrupted laminated fine grained groundmass. No significant oxidation.

3.2 – 9.0 m: Pale greyish pink feldspar porphyry (rhyolite).

9.0 – 15.7 m: Disrupted grey-green volcanoclastic sediments – fine grained matrix, minor feldspar phyrlic intervals and minor patches of disrupted irregular silica-albite (?) alteration.

15.7 – 29.7 m: Fine grained occasionally laminated grey-green volcanic siltstone grading into volcanic sandstone around 22.7 m. There are laminated bands in the siltstone – bedding less obvious in the sandstone.



Photo 1: Bedded volcanoclastic siltstone at 21.3m.

29.7 – 37.7 m: Pale grey-green feldspar phyrlic rhyolites. Variable alteration of feldspars to chlorites or iron stained (pinkish) or white (relatively unaltered).

37.7 – 39.8 m: Fault. Steep to core axis with limonite stained slip surfaces. Devonian quartz veins associated – very pink k-feldspar rich.

39.8 – 177.2 m: Unit of feldspar phyrlic rhyolite with variable colours principally due to oxidation state of iron. Dominantly orange and mauve colours with pale shades between. The unit is characterised by light coloured ‘psuedo-phenocrysts’ of what turns out to be carbonate (often iron carbonate), quartz and sometimes feldspar. The shape of these are occasionally dictated by local stress (on a scale of 10’s of

centimetres) so are often elongate lens shaped up to 1 cm long. Otherwise they are generally equant and a couple of millimetres across. Origin of these ‘psuedo-phenocrysts’ is possibly through devitrification of glassy volcanics, creation of vugs that are lined initially with quartz and later infilled with carbonate.



Photo 2: Typical un-stressed ‘psuedo-phenocrysts’ in perlitic textured rhyolite 73.9m.



Photo 3: Typical strained ‘psuedo-phenocrysts’ in perlitic textured rhyolite 87.1m.

One zone from around 138 to 143m is of coarse sandy texture which may be related to devitrification of more glassy rhyolite rather than a real clastic.

Texturally relatively massive but variably fractured throughout. Earlier stress resulted in fine microfractured anastomosing networks of sericite through incipient spherilitic/perlitic textured rhyolite. Occasional intervals of later more conventional fractures and shears – some associated with quartz-chlorite-iron carbonate veining.

Most obvious alteration is a dark mauve iron staining that in places appears to be centred on open fractures or even quartz veins. However, generally no controlling structure is apparent. Zones range from centimetres to several metres wide. There is a slight magnetic response in some iron stained zones suggestive of the presence of specular hematite.



Photo 4: Example of localised iron staining at 54.2m.

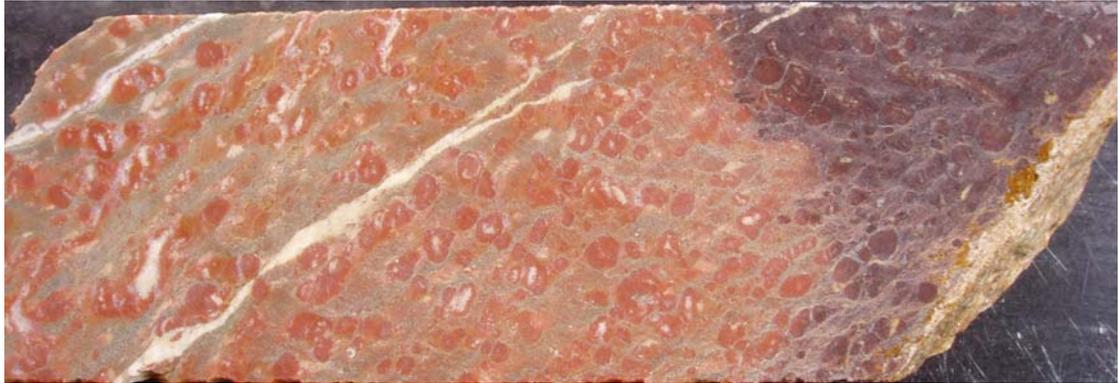


Photo 5: Rhyolite with spheroidal texture centred on aligned quartz-carbonate 'psuedo-phenocrysts' (65.4m). Dispersion of the mauve coloured iron stain does not appear to have been influenced by either the spheroids or microfracturing between the spheroids.

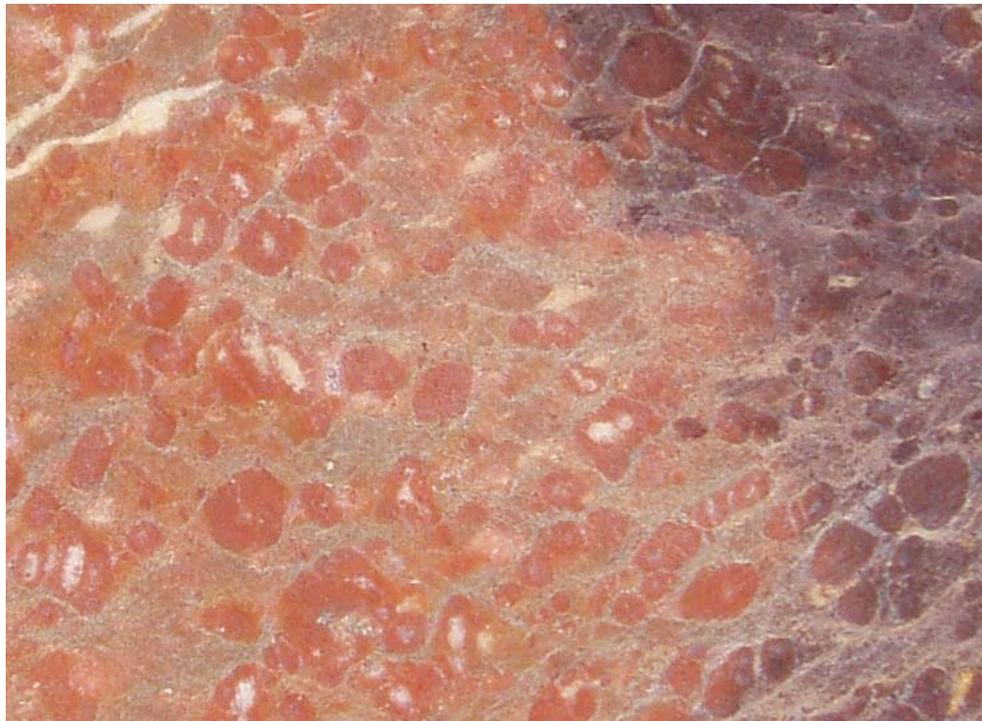


Photo 6: Blown up to show detail of spherulitic rhyolite (65.4m).

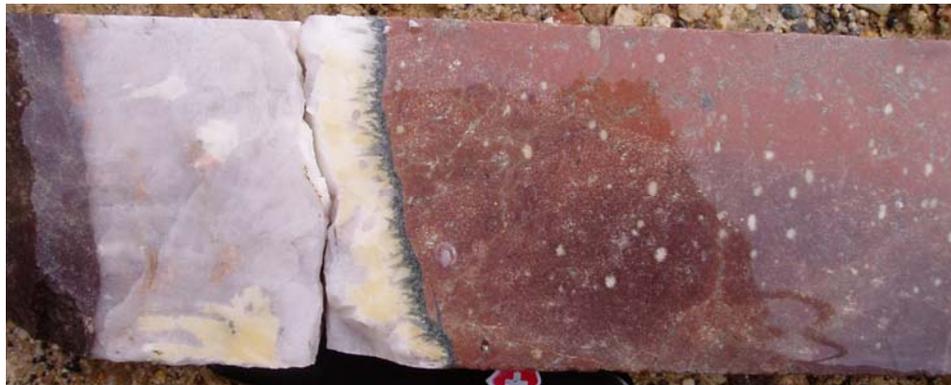


Photo 7: Unusual assymmetrically zoned quartz-carbonate-chlorite-pyrite vein in 'psuedo-phenocrysts' textured rhyolite. Traces of pyrite coated the open fracture between the carbonate rich side and the quartz side of the vein.

177.2 – 224.7 m: Unit of porphyritic rhyolite characterised initially by overall pervasive dark mauve colour. Towards the base of this unit, mixed mauve and orange intervals with more common shearing appears. Phenocrysts are predominantly clusters of feldspar-quartz and generally smaller than the 'psuedo-phenocrysts' in the previous unit. Alteration of these phenocrysts is variable – from pinkish to off white and sometimes chlorite green. Texture massive with common intervals of microfracturing and shearing some of which results in very local sericite-chlorite alteration of wall rock.



Photo 9: Mauve coloured feldspar-quartz phyric rhyolite at 194 m.



Photo 10: Strained mauve coloured feldspar-quartz phyric rhyolite at 185 m.

224.7 – 252.5 m: Rhyolite unit very similar to the last unit but the phenocrysts clusters, while present, are not obvious due to their reddish colour blending in more with the mauve matrix.



Photo 11: 245.3 m. Example of strained feldspar phyric rhyolite with both orange and mauve iron staining.

252.5 – 254.5 m: Sericite altered shear starts the top of the next unit.

252.5 – 270.0 m: Pale grey green feldspar phyric rhyolite. Phenocrysts often anhedral and altered partially or totally to chlorite. Generally massive. One interval (254.5 – 255.0m) with apparently milled pink rhyolite clasts up to a centimetre or so in a green sericite rich sheared rock flour matrix.



Photo 12: Example of pale grey green feldspar phyric rhyolite at 255.1 m.

270.0 – 311.2 m: Feldspar phyric pale mauve to grey-green coloured rhyolite. Gradual transition to the next unit.

311.2 – 441 m: Medium grey green feldspar phyric rhyolite. Predominantly in form of monomict breccia with lesser amounts of massive rock. Breccia texture formed possibly by autobrecciation and as hyaloclastics. Iron-carbonate sometimes clustered with feldspar and quartz to form 'psuedo-phenocrysts' texture. Feldspars can be pink to white coloured. Matrix of the rhyolite is generally massive with pervasive chlorite alteration.

Down to about 351m there are distinctive patches of pale tan coloured irregular silica-feldspar that resemble clasts and in other places more like an alteration feature. Size range from mm up to 5 cm locally forming up to 5% of the rock. Below 351 m the clastic texture is due to darker green feldspar phyric ragged elongate clasts up to 5 cm in size.



Photo : 354.3 m Fairly typical example of the unit from 311 to 441m



Photo : Sample from 404 m.

There are a couple of small (± 5 cm) zones of localised silica-albite(?) alteration which is preferentially veined with short iron carbonate veins due to its competency relative to the surrounding rock. (Photo 13).



Photo 13: Silica-albite altered zone with iron carbonate veins at 332.7m

441 – 518.9 m: Generally a mid green monomict occasionally polymictic lapilli breccia. Clasts and matrix of chlorite-calcite altered feldspar-quartz phyric rhyolite. Clasts often have cusped edges suggesting hyaloclastic origin. Irregular contorted pale green banding is common in some intervals. Interpreted to be chilled flow banded margins of larger clasts. Always very contorted and uneven band thickness. Unit ends on a fault at 518.8-518.9.



Photo : Interpreted flow banding at 485.1m



Photo : Interpreted chill contacts of autobrecciated (?) volcanics at 514.2.

518.9 – 749.3 m: A relatively heterogeneous grey-green unit, similar to the last in being predominantly clastic of rhyolite composition and chlorite-calcite alteration overall.



Photo : Fairly typical example (from 681.3 m) of the unit from 519 to end of hole.



Photo : Example of possible hyaloclastic from 533.4 m



Photo : Another example of possible hyaloclastic from 584.8 m

Subunits identified on the basis of texture and alteration are;-

570.7 – 572.0: Possible volcanoclastic sandstone

574.0 – 578.0: Ditto

586.2 – 587.7: Ditto

630.5 – 630.7: Red-brown coarsely spherulitic rhyolite clast(?)

632.8 – 638.0: Mauve-grey feldspar phyric clastic unit with gradational upper and lower contacts. Features elevated amounts of generally coarse disseminated pyrite (1 – 2%).

645.3 – 647.5: Mauve-grey feldspar phyric clastic unit again with elevated pyrite content.

651.2 – 652.8: Spherulitic interval



Photo : Example of spherulites at 651.5 m

658.0 – 659.3: Second spherulitic interval.

694.7 – 695.7: Mauve coloured clastic unit with elevated pyrite.

727.0 – 734.0: Mauve coloured polymictic clastics.



Photo : Example of mauve coloured clastics with disseminated pyrite from 732.9 m.



Photo : The more polymictic nature of the unit below 707 m is evident in this example from 735.3 m.

743.3 – 743.5: Dark orange-brown interval.

Generally from around 707 m to end of hole the clastics appear to be more polymictic with some red rhyolite clasts being distinctive.

The mauve coloured units are related to an alteration event that appears to be centred on minor structures (open faults and/or iron carbonate veins). It is interpreted that the

alteration fluids are iron rich depositing either pyrite and hematite depending on oxidation conditions at the time.