

## Central Mineralogical Services

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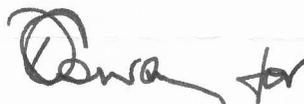
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22nd August, 1984

### REPORT CMS 84/8/11

YOUR REFERENCE: Letter dated 2.8.1984  
DATE RECEIVED: 8th August, 1984  
SAMPLE NOS.: 315701 - 315712  
SUBMITTED BY: A.M. Hespe  
WORK REQUESTED: Petrology



H.W. Fander, M. Sc.

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REPORT CMS 84/8/11

Twelve drill core samples, from drill hole MC-5, were received for petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with the respective offcuts, in oblique incident light. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

With the single exception of sample 315709, an altered rhyolitic pitchstone-derived sedimentary breccia which may represent a mass flow breccia, this suite comprises entirely altered lavas ranging from leuco-andesitic to trachy-andesitic and dacitic to rhyodacitic. Andesitic rocks characterise the shallower sections, with apparently massive acid lavas at depth. The drilled sequence thus appears closely analogous to that intersected in drill hole MC-8 (refer CMS 84/8/12).

Some andesitic (strictly trachyandesitic) rocks include essentially fresh phenocrystal clinopyroxene and may be compared with similar types developed in the Que River mine sequence. This group includes differentially silicified clastic lavas, although this phenomenon is not as marked as in the MC-8 sequence. Samples 315702 and 315703 represent hydrothermally brecciated andesitic rocks characterised by feldspathisation as the major alteration feature. This phase may be correlated with the temporally intermediate to late, but pre-tectonic feldspathic veinlets in the MC-8 suite and appears to overprint the more or less ubiquitous chloritic assemblages.

The acid volcanics are mainly pitchstones (i.e. primarily weakly porphyritic glassy types) and exhibit relatively simple sericitic alteration assemblages, in part a reflection of their relatively felsic characteristics in comparison with the relatively chloritic andesites.

In common with the MC-8 sequence, this suite carries essentially ubiquitous fine to ultrafine pyrite, with local concentrations in siliceous "stringers". Variations in the proportions of fine pyrite present are partly reflected in subtle mesoscopic colour contrasts between individual samples.

Minor sphalerite disseminations, generally veinlet-controlled, appear in the andesitic rocks and may be compared with those in MC-8. This disseminated zinc mineralisation appears analogous to the marginal "subore" haloes around typical "Rosebery-type" volcanogenic ore zones.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
315-701 (T.S. 51096) 19.65m	Amygdaloidal Trachyandesite. Phenocrysts of saussuritic/albitised plagioclase, clinopyroxene, with a sub- to minor sanidine in a weakly/pervasively chlorite-epidote-stained alkali feldspar microlitic groundmass. Disseminated quartz-chlorite amygdaloids.	Finely porphyritic, trachytic groundmass; flow-orientated amygdaloids.	Sporadic irregular quartz-prehnite-chlorite veinlets with traces of pyrite, pyrrhotite, quartz xenocrysts. Rare sphalerite.	Moderately saussurite-chlorite-altered quartz-chlorite amygdaloidal trachyandesite. Includes rare corroded pyrite, quartz xenocrysts. Amygdaloids are incipiently pyritic.
315-702 51.4m	Brecciated, Altered Trachyandesite. Clasts of weakly chlorite-amygdales trachyandesite (sim. 315701, relatively chloritised), marginally to semi-pervasively albitised/K-feldspathised. Matrix/veinlets of microcrystalline feldspar, chlorite, Late coarse vugs of albite, prehnite.	Randomly sorted angular to irregular clasts; corrosive matrix grading into late albite-prehnite veinlets/vugs.	Rare ultrafine chalcopyrite, oxidised pyrite, albite, siderite.	Brecciated, chloritised/marginally feldspathised trachyandesite with close affinities to 315701. Albite-prehnite veinlets, vugs include minor colourless pumpellyite.
315-703 95.2m	Brecciated, Altered Trachyandesite. Clasts of weakly chlorite-amygdales trachyandesite (sim. 315701, 702, relatively pyroxenic); marginally to pervasively feldspathised. Matrix of albite, quartz, adularia. Sporadic late veinlets of quartz, epidote.	Analogous to 315702, but with coarse chloritic clasts interspersed with zones of finer-grained feldspathised breccia.	Minor cloudy poikilitic clots of pale sphalerite in ill-defined temporally intermediate quartz veinlets, impregnations.	Affinities with 315701 and particularly 702. The pinkish matrix/impregnations reflect subtle Fe-pigmentation of the secondary alkali feldspars.
315-704 131.5m	Altered Andesite. Frequent sericitic/chlorite-stained plagioclase phenocrysts in a chloritic groundmass of felsitic and microlitic feldspar. Sporadic pyritic microfractures. Frequent late chlorite-quartz veinlets.	"Andesitic" with a perlitic to locally subtrachytic groundmass. Locally brecciated, albitised; quartz-albite-veined.	Rare sericitic quartz amygdaloids. Disseminated leucoxenitic opaques. Late discontinuous quartz veinlets.	Textural, compositional affinities with 315713, 714 (CMS 84/8/12). Alteration is chlorite(-sericite-pyrite)/albite-quartz veinlets/chlorite-quartz veinlets/late quartz veinlets.
315-705 148.0m	Altered Andesite. Zones of chloritic/weakly silicified/sericitised andesite (sim. 315704) in a "matrix" of relatively strongly cherty-silicified andesite. Semi-pervasive fine to ultrafine pyrite (concentrated in matrix).	Breccia-like on micro- to macroscale, with perlitic andesitic clasts, relatively altered microlitic andesitic matrix.	Leucoxenised opaques. Minor cloudy sideritic carbonate in silicified zones.	Coarsely clastic leuco-andesitic lava ("agglomerate lava") with semi-selectively silicified microlitic matrix; chloritic, perlitic clasts. Affinities with 315713, 714.
315-706 163.2m	Altered Tuff Lava. Clasts of thoroughly sericitised porphyritic ?leuco-andesite. Matrix of thoroughly silicified/sericite-chlorite-stained felsitic (devitrified) pitchstone with thinly disseminated sericitic quartz-pseudomorphed feldspar phenocrysts.	Random angular to irregular, millimetric to centimetric clasts; coarsely perlitic felsite matrix.	Pervasive fine to ultrafine pyrite. Disseminated leucoxenised opaques, apatite. Minor late chlorite veinlets.	Differentially altered clastic lava with sericitised "andesitic" clasts, selectively silicified pitchstone matrix. Possibly hybrid (?dacitic matrix), but critical detail obscured.
315-707 177.2m	Altered Pitchstone. Sericite with thinly disseminated to conspicuous semi- to sericitic white mica-pseudomorphed feldspar phenocrysts, minor relict quartz phenocrysts. Conspicuous fine pyrite concentrated in crude lenses of fine-grained quartz, sericite.	Resheared sericitic slate (sim. 315718), vaguely relict perlitic-textured.	Conspicuous evenly disseminated leucoxenised opaques, apatite. Minor clots of sideritic carbonate.	Thoroughly sericitised, relatively sheared acid pitchstone (?dacitic) with affinities to 315718, 719 (CMS 84/8/12). Pyrite concentrated in boudinaged siliceous "stringers".
315-708 198.1m	Altered Pitchstone. Sericite with pervasive felsitic-textured quartz, thinly disseminated quartz, variably sericitised albite phenocrysts. Thinly, pervasively disseminated fine pyrite, leucoxenitic semi-opaques.	Weakly banded, felsitic, locally vaguely flow-brecciated.	Rare late quartz-calcite veinlets. Rare relict sanidine microphenocrysts.	Sericitised/mildly silicified dacitic-rhyodacitic pitchstone. Affinities with 315707, 315718, 315719; similarly altered.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
315-709 230.6m	Altered "Breccia". Framework of angular to subround pervasively sericitic/variably silicified rhyolitic lava (pitchstone) clasts. Matrix of sericite and subordinate to minor microcrystalline quartz. Disseminated fine to <sup>ultrafine</sup> pyrite.	Poorly sorted (sandy to pebbly), weakly dimensionally orientated framework. Sheared, with secondary fracturing of <sup>clasts</sup> .	Minor leucogenised opaques, sericitised ferromags in clasts. Patchy vague relict shardy microtextures <sup>in matrix</sup> .	Sericitised/silicified "sedimentary" breccia composite of rhyolitic lava, minor tuff components. Reflects shearing-related secondary brecciation. "Mass" or "debris" flow-type characteristics.
315-710 272.8m	Altered "Rhyodacite". Sericite with corroded relics of microfelsitic to microlitic alkali feldspar; disseminated sericitised feldspar, leucogenenic sericite-pseudomorphed ?amphibole microphenocrysts. Sporadic irregular clots of <sup>pyrite, quartz, semi-sericitic muscovite</sup> .	Relict microporphyrritic massive lava-like, with a semi-felsitic groundmass. Mildly sheared.	Leucogenised opaques, minor traces apatite. Minor clots, films ankeritic carbonate (white in hand specimen).	"Skeletally" crystallized microporphyrritic acid lava. The dark "clasts" are semi-boudinaged/pressure-shadowed pyritic quartz-sericite veinlets, impregnations.
315-711 294.2m	Altered "Dacite". Sericite and sericite-stained microfelsitic quartz with thinly disseminated sericitised feldspar and leucogenenic sericitised amphibole microphenocrysts, minor relict corroded quartz phenocrysts. Pervasive	Analogous to 315710, relatively microfelsitic, relatively sheared. <sup>fine pyrite</sup> .	Conspicuous leucogenised opaques. Minor ill-defined sheared pyritic sericite veinlets.	Close affinities with 315710. Appears slightly relatively "basic" in comparison (hence dacitic). Strictly a devitrified, sericitised pitchstone. No pyroclastic features.
315-712 (T.S. 51107) 299.5m	Altered "Dacite". Sericite and microfelsitic quartz with disseminated sericitised feldspar, leucogenenic sericite-pseudomorphed amphibole, minor relict corroded quartz microphenocrysts. Pervasive fine to ultrafine pyrite.	Near-identical with 315711, weakly flow-banded.	Conspicuous leucogenised opaques. Minor discontinuous sheared pyritic, sericitic "stringers".	This rock is near-identical with 315711 and similarly altered (sericitised)/mildly sheared. Subtle contrast in colouration reflects enhanced pyrite content.