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REPORT CMS 84/12/20

AMS REC'D.....		08 JAN 1985	
ANS.....		FILE.....	
ATTENTION			
CJS		NEM	✓
EJS		AP	
BHC		RTQ	
JMF		DJS	
KCG		CS	
ACG		GCT	✓
AJH		AMH	✓
K			
JMK			

YOUR REFERENCE: Letter dated 18.12.1984
 DATE RECEIVED: 19th December, 1984
 SAMPLE NOS.: 315765 - 315772
 SUBMITTED BY: A.M. Hesper
 WORK REQUESTED: Petrology

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for 
H.W. Fander, M. Sc.

REPORT CMS 84/12/20

Mt. Charter (MC-11) Core Samples

Eight core samples from DDH MC-11 were received for petrographic study; thin-sections were prepared, and offcuts were subjected to K-feldspar stain tests. The rocks are described in the attached table.

Summary

All the rocks are volcanics, and include a range of types from basaltic glass to sodic rhyolite. The rocks classified as breccias and agglomerate are coarse-grained, and are therefore inadequately represented by single thin-sections; for instance, in sample 766, the thin-section was prepared specifically to show the pink patches, though the whole core length is predominantly green and thus mainly andesitic.

In general, light-coloured rocks (or fragments) can be equated with dominantly alkali-feldspathic types, i.e. sodic and sodi-potassic trachytes, ranging into rhyolite - though there is uncertainty whether the quartz in sample 770 is in fact primary. These trachytes contain cognate xenoliths of a coarser phase, referred to here as microsyenite, but possibly representing accumulations or aggregates of coarser alkali feldspar crystals.

Sample 772, which is strongly altered but appears to have been an amygdaloidal glassy basalt, is noteworthy in containing appreciable chromite, and in this respect is correlatable with previously described chromite-bearing basalts.

H.W. Fander, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
315-765 (T.S. 52350) 47.9m	<u>Altered ?Andesite Breccia</u> . Angular fragments of sericitised-chloritised-silicified andesite and ?dacite, with relict oligoclase phenocrysts, fine-grained groundmass. Carbonate veins.	Variable, fine-grained textures; some flow-banding, but most details obliterated.	Leucoxenised magnetite. Accessory apatite. Fine scattered pyrite.	Severe alteration of groundmass (and preservation of phenocrysts) suggests that rock was originally glassy. Possibly more dacitic than andesitic.
315-766 97.2m	<u>Agglomerate</u> . Large fragments of pinkish porphyritic rhyodacite and dark chloritised/epidotised andesite; patches of coarse adularia-calcite with chlorite and hydromuscovite flakes.	Largest fragments up to 30 mm in T.S. Andesite shows relict flow-banding.	Accessory apatite, leucoxene. Coarser epidote needles in adularia patches.	Pink areas are rhyodacite (with quartz-oligoclase phenocrysts). Yellowish mica is hydromuscovite. Augite occurs in andesite blocks.
315-767 143.5m	<u>Andesite/Trachyte</u> . Mainly a pale trachyte with albite phenocrysts in K-feldspar groundmass and a few chloritised amphiboles, microsyenite xenoliths. Bands of dark, fine-grained andesite(?).	The two rock types are intermingled, believed contemporaneously extruded.	Accessory apatite, leucoxene. Carbonate patches, veins. Fine pyrite throughout.	Dark andesite streaks thought to be incorporated during flow. Host rock is sodi-potassic and incorporates some microsyenite xenoliths (?cognate).
315-768 147.6m	<u>Lava Breccia</u> . Small and larger fragments of sodi-potassic microsyenite, with chloritised amphibole, in a lava matrix of small albite crystals in an epidotised, chloritised groundmass.	Extensive flow-brecciation on a small scale. Later fracturing and veining.	Chlorite-carbonate veins. Clusters of pyrite crystals and scattered fine grains.	Essentially a trachytic lava with xenoliths, showing flow-brecciation. Pyrite is part of deuteric alteration phase.
315-769 159.5m	<u>Porphyritic Trachyte</u> . Subparallel small albite phenocrysts in a felted mass of albite laths and K-feldspar, patchily sericitised. Clusters, veins of fine pyrite.	Well-developed flow fabric ("trachytic" fabric) with minor blocky flow-brecciation.	Fibrous quartz and sericite accompany pyrite in fractures. Accessory apatite.	Pyrite is definitely younger than host rock. The trachyte is similar to 767 and 768, but is "purer".
315-770 199.6m	<u>Porphyritic Sodic Rhyolite</u> . Scattered pink albite phenocrysts in a groundmass of abundant apparently primary quartz, fine albite laths and chlorite/sericite shreds.	Uniform, with weak preferred orientation. Possible devitrification textures in groundmass.	Dark chlorite patches and quartz-chlorite veins. Also carbonate veins.	Quartz may be late primary, perhaps related to devitrification of glassy groundmass; rock may verge on quartz-trachyte.
315-771 213.9m	<u>Altered Porphyritic Trachyte</u> . Stubby prismatic albite phenocrysts (pink) in a groundmass of albite laths, secondary quartz and fine kaolinite-illite (?altered glass).	Uniform, microgranular, weakly orientated fabric. Probably devitrified.	Conspicuous parallel veins of coarse quartz-siderite. Fine leucoxene grains in rock. Accessory apatite.	Similar to 770, but chlorite is absent and quartz appears introduced, though it may be a product of devitrification.
315-772 (T.S. 52357) 239.6m	<u>Altered ?Trachyte</u> . Thin parallel streaks of chlorite (penninite), matted ?illite, microgranular carbonate. Conspicuous large amygdales of coarse carbonate.	Strong preferred orientation, due to flow of low-viscosity glass. Relict lath textures.	Minute <u>chromite</u> crystals throughout. Fine pyrite. Leucoxene grains.	Believed to have been basic or even ultramafic glass with some crystallites, and large amygdales. Note chromite.