Binocular Microscope Descriptions of 2 to 6 mm Crusher Rejects of a Suite of Rock Samples for BCGS, Ferbey, from the Woodjam Porphyry Cu District, British Columbia, by S. A. Averill, April 2014

N054565: PORPHYRITIC DIORITE. Hematite-stained salmon-pink, black-flecked, very weakly magnetic, massive but significantly fractured and sulphidized, porphyritic intrusive rock of intermediate composition consisting of 40% crowded, 1 to 2.5 mm, variably fresh white and albite-twinned to deeply hematite-stained plagioclase phenocrysts and 1% hornblende and <1% quartz phenocrysts of similar-size in a much finer-grained (0.1-0.4 mm), inequigranular, feldspathic groundmass containing 25% hornblende, up to 10% quartz, 3% leucoxene and 0.5% magnetite. Rock is weakly but not pervasively fractured and contains 3% pyrite and 0.1% chalcopyrite in fracture-hosted sulphide veinlets up to 1 mm wide. Hornblende is mostly chloritized and replaced by 3% calcite, 0.5% specular hematite and 0.5% pyrite.

N054566: PORPHYRITIC DIORITE. Hematite-stained salmon-pink, black-flecked, massive, strongly magnetic, distinctly porphyritic intrusive rock of intermediate composition consisting of 1% large (5 mm), euhedral, relatively fresh, perthitic alkali feldspar phenocrysts, 40% smaller (1.5-2 mm), crowded, relatively fresh and commonly albite-twinned plagioclase phenocrysts and 5% similar-sized, dark green hornblende phenocrysts in a finer-grained (0.1-0.4 mm), inequigranular, more strongly hematite-stained feldspathic groundmass containing 20% hornblende, 3% titanite (mostly altered to leucoxene) and 2% magnetite. Hornblende is partially chloritized and replaced by 1% calcite, 0.2% pyrite and 0.1% chalcopyrite. Magnetite is not sulphidized.

P372492: DACITE. Bleached pale buff-grey, massive, nonmagnetic, finely porphyritic volcanic rock consisting of 10% small (0.5-1.0 mm), subhedral, randomly oriented, clay-altered (soft) plagioclase phenocrysts in a fine-grained (0.1-0.2 mm), quartz-poor (<10 percent) mafic-depleted (hydrothermally altered), feldspathic groundmass containing 5% fine-grained (0.05-0.3 mm), disseminated to fracture-hosted, fresh to mostly black, hematite-coated (hematite SEM confirmed; no pyrolusite or chalcocite present) pyrite.

P372493: DACITE. Bleached pale buff-grey with 2% white, late-stage quartz-calcite veinlets. Massive, nonmagnetic, finely porphyritic volcanic rock consisting of 10% small (0.5-1.0 mm), subhedral, randomly oriented, clay-altered (soft) plagioclase phenocrysts in a very fine-grained (0.1 mm), hard (possibly silicified), mafic-depleted (hydrothermally altered), feldspathic groundmass containing 3% fine-grained (0.1-0.3 mm), disseminated to fracture-hosted, fresh to black, hematite-coated pyrite and 10% fracture-hosted ankerite. White quartz-calcite veins have brown siderite (SEM confirmed) selvages.

N085401: PORPHYRITIC DIORITE. Finely speckled dark green and white, massive to weakly fractured, moderately magnetic, finely porphyritic, hypabassal intrusive rock consisting of 50% small (0.5-1.5 mm), subhedral, cloudy white plagioclase and 1% similar-sized hornblende phenocrysts in a fine-grained (0.2-0.3 mm) groundmass containing 60% plagioclase, 30% hornblende, 10% quartz and 1% magnetite. Hornblende is mostly altered to chlorite and rock contains 1% fracture-hosted calcite and is mineralized with 1% each of chalcopyrite and pyrite, also mainly fracture-hosted.

N058438: VARITEXTURED DIORITE. Texturally inhomogeneous with a main, finely speckled dark green and white, massive, weakly magnetic phase and 20% coarser, pale pink, strongly magnetic vein-breccia zones. Main massive phase is inequigranular with a grain size of mostly 0.2-0.5 mm but locally with discrete plagioclase microphenocrysts up to 0.8 mm. It consists of 70% plagioclase, 25% chloritized hornblende, <10% quartz, 0.3% magnetite and trace titanite. Vein-breccia zones are coarser-grained (0.5-2.0 mm) with diffuse margins and are more leucocratic and mineralogically heterogeneous, averaging 40% cloudy white plagioclase, 15% pink perthitic K-spar (potassic alteration), 10% quartz, 10% chloritized hornblende, 20% magnetite, 3% calcite, 2% chalcopyrite and 1% pyrite.

258404: PORPHYRITIC QUARTZ MONZONITE: Hematite-stained pale salmon-pink, black flecked, massive, nonmagnetic to locally very weakly magnetic, distinctly porphyritic, felsic intrusive rock consisting of 15% small (1-2 mm), euhedral, fresh grey and commonly albite-twinned plagioclase phenocrysts and 5% similar-sized biotite phenocrysts in a finer-grained (0.2-0.5 mm), leucocratic and distinctly granophyric groundmass consisting of 65% feldspar of visually indeterminate but probably mostly alkalic (perthite) composition, 30% quartz and 5% biotite. Biotite is mostly altered to chlorite. Rock is incipiently fractured and contains 2% chalcopyrite and 0.2% pyrrhotite (magnetic variety), mainly in hairline fractures or in selvages of 1 mm quartz veinlets lining these fractures. Fractures also contain 1% calcite.

258405: VARITEXTURED QUARTZ MONZONITE. Hematite-stained pale salmon-pink, black-flecked, massive, nonmagnetic to locally strongly magnetic, felsic intrusive rock with two apparently gradational textural phases in a 60:40 ratio: (a) coarsely equigranular, consisting of 40% euhedral, 1-2 mm, fresh grey-white and often albite-twinned plagioclase crystals, 35% interstitial, anhedral, pink, perthitic (feathery type) alkali feldspar crystals, 20% quartz and 5% biotite; and (b) porphyritic, consisting of 30% plagioclase and 5% biotite crystals as above in a leucocratic, inequigranular (0.15-0.4 mm) and distinctly granophyric groundmass consisting of 65% undifferentiable but mostly pink and probably alkalic feldspar, 30% quartz and 0 to 1% (variable) magnetite. Biotite is mostly altered to chlorite. Rock is almost inperceptibly fractured and contains 1% chalcopyrite (but no pyrite) which occurs both directly within hairline fractures and as a cement in fractured quartz veinlets up to 5 mm thick. Rock also contains 1% calcite which is hosted within younger, unmineralized fractures.

Binocular Microscope Descriptions of 2 to 6 mm Crusher Rejects of samples P384901 and P384902 for Travis Ferbey, BCGS, by K. MacNeil, February 9, 2017

P384901 DACITE. Pale grey, massive, weakly magnetic, finely porphyritic volcanic rock consisting of 1%, or less, small (maximum 1.5 mm) quartz phenocrysts and 5% 0.2-1.2 mm biotite phenocrysts in a fine grained (0.1-0.2 mm) quartz + feldspar (SEM confirmed K-Spar) groundmass with minor (2%) pale yellow-green, soft chlorite (SEM confirmed) – calcite alteration. Sample also contains 1-2% very finely disseminated magnetite and a trace of leucoxene but no sulphides.

P384902 PROTOLITH INDETERMINATE (possibly altered dacite). Bleached buff to white, nonmagnetic, mafic-free, hydrothermally altered. The rare least altered chips appear to have a relict equigranular volcanic texture but most chips are pervasively altered by a combination of sericite ± kaolinite (both minerals, SEM confirmed) + calcite + quartz + pyrite. The calcite + quartz + pyrite may occur in part as indistinct veining. Pyrite forms ~2% of the entire sample as 0.1-1.0 mm disseminated crystals.