

Lithological characteristics of units found during core logging,
 Grum extension drilling.
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UNIT:

ORES:

- 2 RIBBON BANDED QUARTZITE: normally a medium to dark grey colour with up to 15% black graphitic septa banded on a 2 to 4cm scale. Bronze and purple bands indicate fine to medium-fine grained sulphide mineralization, reaching up to 6% pyrite, 6% sphalerite and 3% galena. Minor qtz veins and veinlets, usually less than 3% overall, both parallel to and cross-cutting foliation. Generally a moderately hard unit with weaker segments depending on graphite content. Substantial qtzite fault gouge and breccia was observed in DDH G-5 from 205.7 to 209.9m, indicating brittle deformation, possibly near a fold nose.
- 3 PYRITIC QUARTZITE: tends to be a bleached creamy white to grey colour without any significant graphite content. Sulphide content is similar to ribbon banded qtzite. This unit tends to be more brittle than unit 2, probably due to the lack of graphite slip planes.
- 4 SILICEOUS PYRITIC SULPHIDES: at first glance appears to be massive pyrite +/- sphalerite and galena, but closer observation shows a background matrix of quartz. This unit may be confused with baritic sulphides if no hardness test is done (baritic unit is softer). Sulphide content varies from approximately 20 to 50 % pyrite, with up to 15% aphanitic sphalerite and 5% fine grained galena appearing as alternating "zones" or bands within the unit (this may be bedding within the sulphides). Good examples were seen in DDH G-5 near 252 and 260m, and in DDH G-9 near 235m.
- 5 MASSIVE PYRITIC SULPHIDES: massive pyrite mineralization ranging from approximately 60 to 80 % pyrite, with up to 20% fine-grained sphalerite and 6 to 8% galena occurring as gradational bands up to 4cm wide, similar to unit 4.

METASEDIMENTS:

- 20 NON-CALCAREOUS MUSCOVITE/CHLORITE PHYLLITE: generally a medium to medium-dark grey colour, well foliated with or without qtz veining. Moderately hard in comparison to the other phyllites. Mineralization includes trace to 1% pyrite as thin stringers or blebs that follow foliation, and traces of pyrhotite and chalcopyrite that normally occur in zones of silicification. Graphite content is variable, from trace amounts to 5 or 10% overall. It is distinguishable from unit 30 as it doesn't leave a black smear on fingers. Distinguishable from unit 40 as there is no reaction when acid is applied. However, minor calcite-enriched zones were encountered in Grizzly East drilling, giving a "calc. phyllite" impression !

- 30** GRAPHITIC (CARBONACEOUS) PHYLLITE: dark grey to black in colour, with a moderate to very high graphite content. Usually well foliated, possibly sheared or faulted due to its weak characteristics and softer texture. May have 2 to 5% pyrite, trace to 2% sphalerite and traces of galena, as well as 1 to 2% qtz and/or qtz/carbonate veining with minor ankerite. Sub-units of graphitic phyllite within calcareous units have been found to have weak to moderate pervasive carbonate. Weak silicification of this unit was seen in DDH G-5 near 173m.
 * The majority of the faults seen in the drill holes were located within this unit; some assays ran as high as approximately 5% Pb/Zn for fault gouge material !
- 40** CALCAREOUS PHYLLITE: colour ranges from a light grey/green to a medium dark grey colour, easily distinguished from unit 20 by the fizzing of 10% acid. However, calcite is removed near metabasite intrusions, giving a non-calcareous impression ! Fracture surfaces generally have a good silver sheen due to a well developed S2 fabric. Sulphide mineralization includes trace to 1% pyrite and traces of pyrrhotite. Qtz and qtz/calcite veining ranges from 1 to 15%, with weak to moderate chlorite content.
- 44** METABASITE: intrusive unit with a wide variety of colours, from a medium grey/green to pale bleached yellow with increasing sericite content. Hardness changes from moderately strong to fairly soft with an increase in talc minerals as alteration increases, occasionally occurring as fault gouge. Most easily distinguished from the other phyllites by the green chloritic fracture surfaces. May also have relict igneous textures such as coarser grain size and spotty textures that resemble porridge oats. Sulphides include pyrite up to 2%, pyrrhotite up to 2%, and occasionally trace to 1% sphalerite; significant sulphides put this unit into the "48" category (mineralized igneous units).
 * Individual "fingers" may traceable from section to section by using "fuchsite" presence.
 ** This unit type was most commonly seen near contacts between calcareous and graphitic phyllites, non-calcareous and graphitic phyllites, and within massive and semi-massive sulphide zones. Multiple "fingers" give a repeating pattern of ore and waste over several meters as seen in DDH G-5 near 252 and 260m and DDH G-9 near 235m.
- 47** CHLORITIC PHYLLITE: possibly a higher-grade metamorphosed metabasite; generally a pale to medium green +/- grey due to a high chlorite content. Usually well foliated, occasionally as fault gouge, with weak to moderate sericite development depending on alteration or deformation. This unit can have as much as 2 or 3% sphalerite, up to 1% galena and 2% pyrite; again, any significant mineralization moves it into the unit 48 category. Weak to moderate silicification may occur, but generally it is not present (silicification puts it in the unit 54 range).
- 52** MUSCOVITE>CHLORITE QUARTZ PHYLLITE: appears to be a silicified version of either a calcareous or non-calcareous phyllite; usually a pale bleached grey to pale green colour, with up to 10% pyrite, 5% sphalerite and 2% galena occurring as disseminated crystals and semi-massive form. This unit is very similar to unit 3 except that it generally has a higher chlorite content and is more uniformly foliated (not as massive or qtz-rich).

- 54 CHLORITE>MUSCOVITE QUARTZ PHYLLITE: this unit was not seen in core but probably represents a silicified chloritic phyllite member. The colour is probably a pale to medium green, with good chlorite visible along fracture surfaces. Sulphide content would most likely be in accordance with the precursor; up to 2% pyrite, 2% sphalerite and 1% galena. It is possible that enrichment from fluids could occur and boost the mineral content.

UNLISTED UNIT:

- 48 "GNOME'S CAP" MINERALIZED METABASITE: this unit may be a sericite or muscovite-rich pyritic qtzite; the unit seen in DDH G-3 was a medium green with moderate sericite development and weak to moderate chlorite content. Mineralization includes pyrite from 2 to 15%, sphalerite to 3% and up to 2% galena. Qtz veins up to 9cm wide with traces of globular galena were also noted.