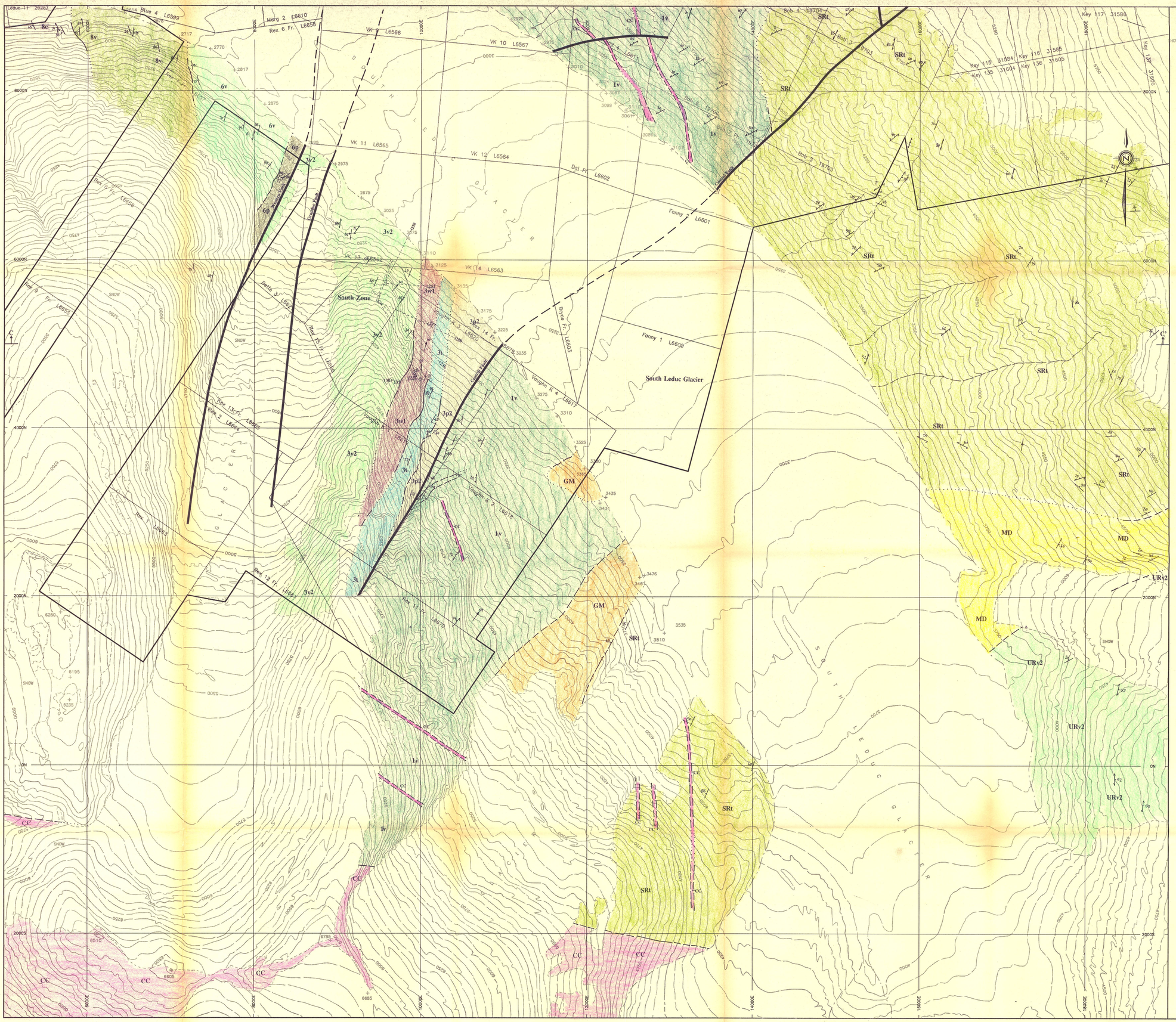


LEGEND

INTRUSIVE ROCKS

Eocene

COAST COMPLEX:

QD	Granitoid batholithic and stocks. Medium to coarse grained biotite granite; biotite+/-hornblende granodiorite; minor quartz diorite.

Early to Middle Jurassic

GM	GRANDUC MOUNTAIN INTRUSIONS: Fine to medium grained dioritic to monzodiorite, locally foliated.
BG	BUCKE GLACIER STOCK: Light grey, granitic to foliated, medium grained hornblende-biotite quartz diorite.
SL	SUMMIT LAKE STOCK: Coarse grained hornblende monzodiorite (192.8 +/- 6 Ma, U-Pb zircon).
TC	TEXAS CREEK BATHOLITH: Coarse grained hornblende granodiorite (206.5 +/- 6 Ma, U-Pb zircon).

VOLCANIC AND SEDIMENTARY ROCKS

Triassic to Jurassic

SALMON RIVER FORMATION (Toarcian to Bajocian):

SRt	Undifferentiated; argillite, siltstone, phyllite, tuff, andesite, volcanic and ultramafic rock.
SRa	Interbedded argillite, siltstone, phyllite, sandstone, conglomerate, and minor volcanic rocks.
SRtf	Andesite tuff, breccia and agglomerate.
SRf	Andesite massive flows, pillowed flows, ultramafic rocks, and minor interflow sedimentary rocks.
SRhw	GRANDUC HANGING WALL UNITS (units 4 to 8): Undifferentiated; tuff, argillite, phyllite, mafic wacke, siliceous wacke, chert, and volcanic rocks.

SRhw GRANDUC HANGING WALL UNITS (units 4 to 8):

GRANDUC HANGING WALL: UPPER VOLCANIC SEQUENCE

8c	Grey, white, and black chert interbedded with green volcanics.
8v	Green foliated volcanics; feldspar and augite-bearing andesite flows, green foliated tuff.

GRANDUC HANGING WALL: SILICEOUS WACKE

7w	Light grey to brown bedded siliceous wacke, some pyritic clots.

GRANDUC HANGING WALL: MAFIC WACKE SEQUENCE

6w3	Dark grey phyllite and wacke, minor sulphidic argillite, siliceous wacke, and minor feldspar porphyry flows.
6t	Light purplish-grey calcareous tuff and limestone.
6w2	Dark green, grey, and purple, medium to fine grained wacke.
6a	Bedded green felspathic arenite.
6c2	Cream to light green laminated chert and siliceous argillite; grades laterally into 6c1.
6c1	Laminated white chert horizon.
6v	Dark green, foliated amphibole-bearing tuff characterized by very thin white stringers.
6w1	Grey, foliated tuff and wacke; laminated chert, minor argillite.
6p	Light green, bedded argillite, minor black argillite.

GRANDUC HANGING WALL: VARIED SEQUENCE

5p6	Light green and grey siliceous argillite, black pyritic argillite.
5p5	Light green bedded argillite, local calcareous horizons.
5l3	Light grey to black limestone.
5p4	Light brown to dark grey, well bedded siliceous argillite.
5p3	Grey siliceous argillite, locally well bedded.
5v2	Dark green foliated volcanic rocks; locally with green acicular amphibole.
5w2	Light grey siliceous wacke.
5ss	Light grey to green, tuffaceous sandstone with a medial felsite unit.
5v1	Green chloritic schist.
5p2	Green bedded argillite, black pyritic argillite.
5l2	Light grey limestone, local lenses of tuffaceous rock.
5p1	Light brown and grey laminated siliceous argillite; minor foliated green volcanic rock.
5l1	Dark grey graphitic limestone.
5w1	Grey siliceous wacke; foliated tuff, plagioclase-bearing andesite; minor argillite.

WESTERN FAULT

GRANDUC HANGING WALL: GASH BANDED TUFF SEQUENCE

4w2	Light green to greenish-grey phyllitic wacke, locally calcareous.
4l	Light greenish-yellow to grey massive carbonate, grades laterally into 4w2
4t	Light green tuffaceous sandstone.
4w1	Light green well bedded foliated fine grained wacke.

GRANDUC FAULT

SRma GRANDUC MINE SERIES (unit 3): Undifferentiated; dacite crystal tuff, chert, conglomerate, phyllite, wacke, limestone, exhalative iron formation, and massive sulphides.

SRma GRANDUC MINE SERIES (unit 3):

3v2	Dark green lapilli tuff, chert pebble conglomerate with a black calcareous matrix; minor dark green foliated volcanics.
3w1	Green chloritic phyllite, wacke; minor calcareous horizons.
3l	Grandux limestone; light grey to dark grey graphitic limestone, local marginal calcareous tuff.
3c	Black, grey, and white laminated chert and siliceous wacke.
3p2	Black argillite chip conglomerate, black pyritic argillite; includes magnetite-rich horizons, and cream and brown wacke.
3p1	Light grey bedded tuffaceous argillite.
3v1	Green to black volcanic, and volcaniclastic rocks, dark grey and green phyllite, green foliated wacke; minor cream laminated chert. Augite and/or feldspar-bearing flows at or near the base of the unit. Includes interbedded chert, magnetite iron formation, and massive sulphides.

SRfw GRANDUC FOOTWALL UNITS (units 1 to 2): Undifferentiated; argillite, tuff andesite flows and breccia.

SRfw GRANDUC FOOTWALL UNITS (units 1 to 2)

GRANDUC UPPER FOOTWALL SEQUENCE:

2p5	Dark grey to green argillite; minor volcanic rocks.
2ss	Light brown tuffaceous sandstone.
2p4	Rusty weathering, black pyritic argillite.
2v	Dark green, tuffaceous argillite; minor augite bearing andesite flows.
2p3	Dark grey, magnetite-bearing calcareous argillite; local pyrite and chalcopyrite(?) bearing horizons.
2p2	Dark grey bedded siliceous argillite.
2p1	Green siliceous phyllite; minor calcareous horizons, some lenses of epidote.

GRANDUC LOWER FOOTWALL SEQUENCE:

1tw	Dark grey-green augite-bearing andesite flows; minor tuff.
1w	Light grey siliceous wacke; minor breccia and tuff.
1t	Green to grey lithic tuff (+/- augite phenocrysts), andesite tuff.

HAZELTON GROUP

MOUNT GILWORTH FORMATION (Toarcian):

MG	Intermediate to felsic pyroclastic rocks including dust, ash, crystal, lithic and lapilli tuff. Locally pyritiferous (5 to 15%) and gossanous. Minor chalcedonic quartz veins.

BETTY CREEK FORMATION (Pliensbachian to Toarcian):

BC	Heterogeneous purple, grey and green, massive to bedded pyroclastic and sedimentary rocks, and minor pillow lava.

UNUK RIVER FORMATION (Norian to Pliensbachian):

UR	Undifferentiated; argillite, siltstone, andesite volcanic rocks, minor limestone and conglomerate.
URv2	Upper andesite tuffs: Dust, ash, crystal and lapilli tuff, and minor welded tuff and intercalated sediment (210 +/- 3 Ma, U-Pb zircon). Orthoclase + Plagioclase + hornblende porphyritic andesite flows (Premier Porphyry) near top of formation (194.8 +/- 2 Ma, U-Pb zircon).
URs2	Upper siltstone member: Carbonaceous thin-bedded argillite, siltstone, sandstone, with local basal conglomerate and limestone.
URv1	Lower andesite tuffs: Mainly ash tuffs with lesser dust and lapilli tuff, augite porphyry and two-feldspar porphyry flows, and minor sandstone and siltstone.
URs1	Lower siltstone member: Carbonaceous thin-bedded argillite and siltstone.

SYMBOLS

Geological contact:
- defined
- approximate
- assumed

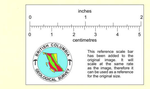
Fault:
- defined
- approximate
- assumed

Axial surface trace:
- anticline
- syncline

Bedding:
- inclined
- vertical
- measured tops
- overturned

Foliation:
- inclined
- vertical

Lineation:
- mineral lineation
- minor fold axis



Geology compiled from D.W. Klepacki and P.B. Read, (1981), and G.W.H. Norman, K.G. Sanders and D. Davidson (1959).

SCALE 1" = 400'

400 0 400 800 1200

FEET

GRANDUC MINES LTD. (N.P.L.)

Report by: P.J. McGuigan, P.Geo.

Date: May 15, 1992

NTS: 104 B/1,8

Mining Division Skeena

Ref. # 880

GRANDUC MINE, STEWART, B.C.

SURFACE GEOLOGY

Cambria Geological Ltd.

Map: 2

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