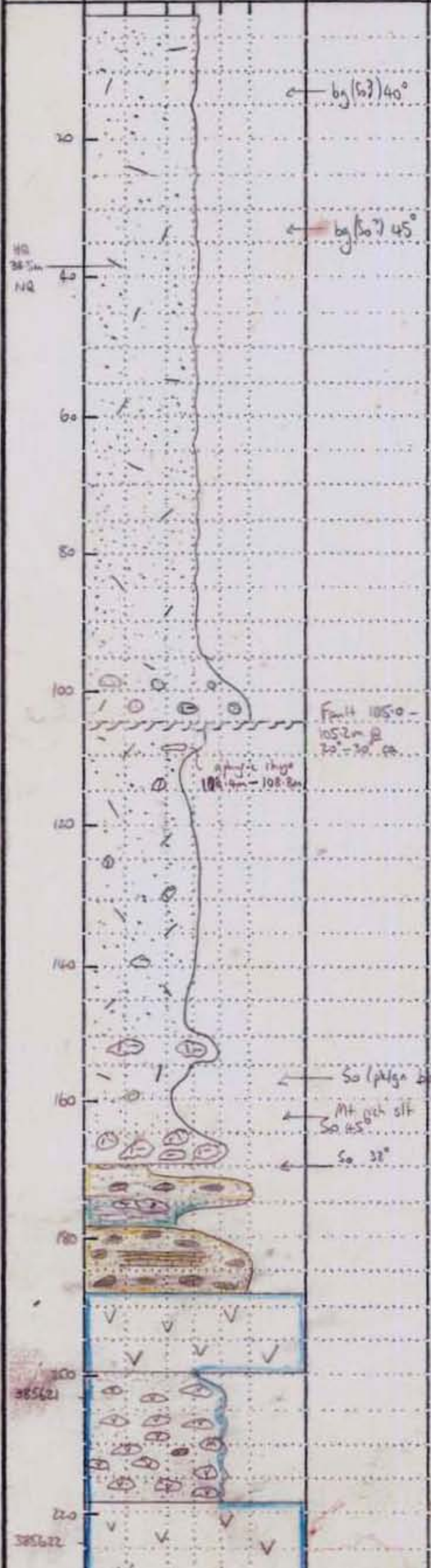
GRAPHIC CORE LOG

Scale 1: 1000	Hole No. SHD-1 — Depth 779.0 m
By Grant MacDonald	Project "South Henty" EL 5/96
Date Jan '97	Section
Page 1 of 4	Collar co-ords E N RL
	Az. °G °M Incl. °

Depth m	Mean Grainsize Mud 0.5 2 8 32 mm	Max. clast φ & Structure	Description



1.5m - 2.0m glacial rubble.
Blotchy to banded pk/gn (alb/chl) altered (non-hydrothermal) F > Q xtal sst c̄ det. Mt. Becomes bx below ~95m c̄ ~2% rdd clasts to 100mm of gy bn slt (or c̄ fg dsd py) + rare QFpR).

Similar to m unit but not part of same graded unit so fault must have seen some movement.

Dk gy gn (ocly blotchy pk) F > Q xtal sst > slt + bx (clasts pk/org QFpR aphyric rhyolite?). Det Mt including Mt rich tops to graded sst/slt ~ 163m. ~5% clasts above ~165m becoming > 50% below 165m.

Polymict bx/sst/slt c̄ silty top to soft sed slump bx inc clasts of slt, mv FpD, F xtals + lt (inc 0.5m raft near base) a pk/org QFpR. Somewhat marly mx.

Polymict bx / marly slt. Polymict bx c̄ clasts of lst, slt, F(Q)p in a marly slt mx. Large (large) raft of silty lst 181.9 - 183.8

Fp Basalt. Coherent but foliated @ ~35° ca. Similar in appearance to underlying coherent unit (blw) v/c. Correlate(?) of unit ~ -312-430m in NC1 PTO (A)

Polymict bx (FpBasalt >> lst) Dominantly derived from underlying/overlying basalts but c̄ a minor lst component plus possibly some gy cherty slt. Weakly pyritic in part.

Fp Basalt. Coherent but foliated (wg) @ ~35° ca c̄ F xtals & chl ± calc filled vesicles (to 3mm) forming glomeroporphyritic clots to 1.5mm

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5 cm

Depth m	Mean Grainsize Mud 0.5 2 8 32 mm	Max. clast φ & Structure	Description

Depth marks: 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 500

Samples: 385624, 385625, 385626, 385627, 385628, 385629, 385630, 385631, 385632, 385633, 385634, 385635, 385636, 385637, 385638, 385654, 385640, 385641, 385642, 385639

Left margin values: 13.3, 47.1, 45.8, 15.5, 41.8, 20.0, 13.6, 13.7, 15.0, 15.2, 14.2, 18.1, 18.0, 14.5, 13.3, 37.9, 23.5, 14.5, 17.2, 20.4

Structure: f.r. 40°; f.c. 30°-35°

FpB Bx. Actually polymict c̄ rare pink/org FpD (interpreted as) clasts ~ 250 - 253.3 but 99.9% basalt clasts.

Green slt/sst Gn sst c̄ irreg rafts/beds of gn slt, So (S1?) ~ 30° ca

Howards Basalt Breccia Haematitic strongly foliated limestone + basalt clast breccia.

Green slt/sst as for 268.0 - to 271.1 -

FpB - probably extrusive, coherent + massive.

Polymict Volcaniclastic Breccia/sandstone c̄ angular to ~ spg dk gn clasts (dacitic basaltic?) + pk/org FpD (possibly an alt effect) in a F xtal mx c̄ silty zones.

Feldspar > Quartz Xtal Volcaniclastic - similar in appearance to xtal volcaniclastics above ~ 160m but without pk/org albite alt. Correlate of unit in NC4 165m to 183m

Marly sst c̄ 'nodules' of cb (calc) as growth in unconsolidated sst. Contact arbitrary - bt is just marly sst but more Lst ? pk/led. Vy are lt or marly sst. Fossils are often cb. hmt. Some ... c̄ F>Q xtal sst

Dacitic volcaniclastic. Weakly chl ± ser ± hmt hydrothermally altered (non F destructive, non Na depleting) volcaniclastic c̄ ~ 25% pink/orange F (1-2mm) xtals irregularly t/o. Either Fxtal v/clastic or dacitic pumiceous v/clastic. Apparent pumice clasts ~ 376m + irreg. gy slt clasts @ 318.2m + 318.6m. Alt gives a mottled appearance. Apparent chl clasts (eg 318.0 - 363.0) are interpd as pseudoclastic. Tc py, weakly silicified from 374.5 to 376.0m c̄ tc py. Foliated @ 35° ca t/o

Volcaniclastic bx (dacitic?) Similar to prev. unit but no lithogeate. Sandy/ashy graded top c̄ So 45° ca. Weakly chl-si altered (p...

Volcaniclastic (andesitic) sst/bx fg to mg "F xtal pumiceous" v/c (p...

Volcaniclastic (andesitic) sst/bx Texturally same in appearance as 388 - 394 but this is ser altd c̄ sd vn (p...

Dacitic volcaniclastic. Similar in appearance to 318.0 - 388.0 m. Only weakly hydrothermally chl ± ser altd c̄ no Na depletion. Weakly magnetic in the upper part.

Basalt intrusive Sharp upper + lower contacts. F porph c̄ calcite amygdales (0-10)

Volcaniclastic (dacitic/andesitic?) 50° ca foliated, weak to moderately hydrothermally ser altd volcaniclastic c̄ F generally visible. Either F xtal v/clastic or pumiceous v/clastic c̄ the latter more likely. Negligible sulphides until 459.0. Btw 459.0 to ~491.0 the rock is moderately ser + si ± py (to ~0.5% max but gly lower) altered c̄ alt pervasive. Shown here as one unit but not certain as the alt makes lithological recognition difficult (PTO)

Volcaniclastic breccia c̄ rdd pk/org FpD (~ 50%) (PTO)

390085

GRAPHIC CORE LOG	Hole No. SHD-1	Depth m
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5 cm

Ti/Zr	Sample	Depth m
27.0	385643	500
20.1	385644	
		520
13.8	385645	
		540
14.8	385646	
22.2	385647	560
23.1	385648	
		580
13.3	385649	
		600
13.9	385650	
13.4	385651	620
13.5	385652	
		640
14.2	385653	
		660
15.5	385502	
20.5	385505	
		680
24.8	385522	
24.4	385532	
21.1	385538	700
26.8	385546	
20.5	385553	
26.1	385557	720
22.9	385560	
14.0	385566	
		740
		750

Depth m | Mean Grainsize: Mud 0.5 2 8 32 mm | Max. clast φ & Structure | Description

Basaltic (?) intrusive. Similar in appearance to 440.3-445.3 but Ti/Zr say Andesite (PTO)
Volcaniclastic bx as for the basal part of 445.3-498. (PTO)
Volcaniclastic bx Graded unit c finer sandy top + base bx as for immediately overlying bed (P
Volcaniclastic dacitic pumice(?) bx. Non-descript rock consisting of marly (cb altd?) F tla (~15% of rock) c distrib= suggestive of pumice. The two narrow units of v/clastic bx c rdd FpD a ARA type QFpD(R) are interped as erosional units. Pumiceous rock contains v occl sil clasts of m. FpD (?) (PTO)
Volcaniclastic andesitic pumiceous(?) bx. Rock has a cmy colour c sm Fs + ARA type Q xtals (PTO)
Basaltic dyke as for) Sharp upper + lower contacts, Leopard spot text (Fs) + cb fill vesicles

Volcaniclastics dacitic (pumiceous) F p pumice c dacitic composition
Siltstone cream volcaniclastic c cg clasts of pyrite
Volcaniclastic (pumiceous, dacitic) F xtal tish c q vn c gy sf
Siltstone cream v'clastic c sulphide vns
Volcaniclastic pumiceous (dacitic) bx. F xtals clearly recognisable to 599.5. Below this the rock has a stripy appearance in parts due to alt= defining foliation @ 30° ca but interped as part of the same unit. Above 628m the rock is monomict consisting of pumice (altered). Below this the core contains occasional rafts of cream/grey ashy slt. Rock is wh/gy sericite altd + tlo c fe-smn dsd py + tc dsd sphalerite downhole.

Strongly sericite-silica-Mn (CO3?)-sulphide altered finer volcaniclastic. Yellow green in colour. Primary textures hard to see. Zone ~654m of intermixed gy ashy material. Foliated tlo. Sulphides py, gn, sph (from or/br to rh) occur tlo as dsd blebs + in pre-deformational vns often associated c cb (two types of cb, wt calcite + yw br). Sericite-silica alt= is pervasive. Mn (CO3?) alt= is suggested by yw/br CO3 + elevated Mn. Volcaniclastic is distinguished by andesitic Ti/Zr + ARA type Q xtals (sparse but distinct). Anomalous Ba ~676-677m. Two generations of veins c deformed q-cb-sd (average ~ parallel to foliation cross-cut by fibrous q-cb-sd vn (averaging ~ to). Interpd as V.H.M.S. footwall style alt= (PTO)
Strongly altered volcaniclastic. Distinguished by lack of ARA Q xtals + more felsic Ti/Zr. Visually alt= is similar to sericite-silica altd mx, cb altd(?) F + blebby + vnt sulphides inc or/br sphalerite. Zone of intermixed gy ashy material ~714-739.

GRAPHIC CORE LOG

Scale 1:1000	Hole No. SHD-1
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	Az. °G

Depth m | RL | 5 cm

T:/Zr	Depth m
	750
7.3	385585
6.2	385592
6.9	385602
24.0	385513
	770
12.3	385613
	779 EOH.

Mean Grainsize: Mud 0.5 2 8 32 mm | Max. clast ϕ & Structure

Description

Appears to be same unit perhaps to EOH as there are no obvious breaks. Basal part contains rounded clasts up to 100 — of cm gn and dk gy ē F. These are difficult to interpret. They appear to both be the same ē the dk gy overprinting the cm gn clasts. The dk gy could be v.f.g pg. The initial clasts are Fp - probably dacites - this is supported by T:/Zr 12.3 for 385613. The clasts make up ~30% of this basal part ē the matrix pumiceous as for the overlying rock