

**HELLYER PROJECT LOGGING
CODES**

LITHOLOGY SECTION

STRATIGRAPHY

Upper Rhyolitic Sequence	URS
Que River Shale	QRS
Hellyer (Upper) Basalt	PLS
Hangingwall Volcaniclastic Sequence	HVS
Hellyer Mineralised Sequence	HMS
Feldspar Phyric Andesite	FPS
Lower Basalt	LBS
Stringer Envelope Zone	SEZ
Stringer Zone	STZ

ROCK TYPE

Composition Prefix

Andesite	A
Basalt	B
Barite	Ba
Base Metal Sulphide	BMS
Chert	Ch
Dacite	D
Disseminated Base Metal Sulphide	DBS
Feldspar Phyric Andesite	FP
Glassy silica – colloform pyrite ore	GSP
Highly Altered (no primary textures)	HA
Massive Chalcopryite	MCPy
Massive Pyrite	Mpy
No Core	NC
Polymict	Y
Pumice	Pu
“Quellite”	Q
Rhyolite	R
Sandstone	Ss
Shale	Sh
Vein	Vn

Volcanic Texture Suffix

Ash volcaniclastic (0-2mm)	av
Breccia volcaniclastic (>64mm)	bv
Lapilli volcaniclastic (2-64mm)	lv
Fine (2-16mm)	flv
Medium (16-32mm)	mlv
Coarse (32-64mm)	clv
Lava	l
Pillow Lava	pl
Variolitic pillow lava	vp

COLOUR

Prefix

D=Dark
L=Light
B=Bright

Black	Bk
Brown	Br
Green	Gn
Grey	Gy
Orange	Or
Pink	Pk
Polychrome	Pc
Purple	Pu
Red	Rd
White	Wh
Yellow	Yw

VOLCANICLASTIC FRAGMENTS

Composition

As per rock type compositional prefix codes

Size

Size range in mm e.g. 10-50

Sorting

Well Sorted	W
Moderately Sorted	M
Poorly Sorted	P

Shape

Angular	A
Sub-angular	sA
Sub-roundes	sR
Rounded	R

CRYSTALS

Composition of any crystal component

VOLCANICLASTIC MATRIX

Composition

As per mineral code or:
Ash av

Crystal	X
Glassy	G
Lithic	L
Vitric	V

Volume

Matrix volume in %

LOWER CONTACT

Gradation

Sharp but not faulted	S
Faulted	F
Gradational up to 1m	G1
1-10m	G2
Over 10m	G3

Style

Conformable	C
Interfingering	F
Irregular	I

ALTERATION SECTION

TEXTURE

Disseminated	D
Fragments	F
Interpillow	IP
Local	L
Matrix	M
Nodular	N
Pervasive	P
Pillow Margins	PM
Rim	R
Stockwork	K
Structure controlled	S
Veins	V

INTENSITY

As per standard intensity coding 1-5

MINERALOGY

Albite	Ab
Biotite	Bt
Carbonate	CO
Chlorite	Cl
Clay	Cy
Epidote	Ep
Feldspar	Fd

Fuchsite	Fu
Hematite	Ht
Illite	Il
K-Feldspar	Kfd
Limonite	Li
Magnetite	Mt
Pyrite	Py
Pyrrhotite	Po
Quartz	Qz
Sericite	Se
Silica	Si
Talc	Ta
Tremolite	Tr
Tourmaline	Tm

VEINING SECTION

INTENSITY

As per standard intensity coding 1-5

WIDTH

Thickness range of veins in mm

MINERALOGY

As per mineralogy codes used for alteration and mineralisation

MINERALISATION SECTION

TEXTURE

Banded	Bn
Brecciated	Br
Colloform	Cm
Disseminated	Ds
Euhedral	Eu
Fragmental	Fr
Framboidal	Fb
Inter-pillow	IP
Joint plane coating	JP
Massive	Ma
Nodular	No
Pillow margin	Pm
Patches	Pa
Recrystallised	Rx
Reworked	Rw

Sheared	Sh
Shrinkage shadows	Ss
Veins	Vn
Vein selvage	VS
Boxwork veining	Bx

MINERALOGY

Mineralogy prefix, percentage suffix (Tr for trace)

Arsenopyrite	As
Barite	Ba
Chalcopyrite	Cp
Galena	Ga
Pyrite	Py
Pyrrhotite	Po
Sphalerite	Sp
Gangue	Ga

FAULTS SECTION

BASE

Downhole depth to bottom of fault

DOWNHOLE WIDTH

Downhole thickness of fault in cm

CORE AXIS ANGLE

Angle to core axis

STYLE

Brecciated	Br
Cavernous	Cv
Puggy	Pu
Rehealed	Rh
Slickensided	Sl
Carbonate	CO
Chlorite	Cl
Quartz	Si
Rubble	Ru
Sericite	Se
Shear	Sh

FABRIC SECTION

TYPE

Bedding	Bd
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Clast alignment	CA
Cleavage	Cl
Flow Banding	FB
Shearing	Sh
Sulphide banding	SB
Vesicle alignment	VA

FACING

Facing uphole	U
Facing downhole	D

WEATHERING

Type prefix, standard intensity coding suffix

Leached	L
Oxidised	O

INTENSITY CODING


1	Trace
2	Weak
3	Moderate
4	Strong
5	Intense


GRAPHIC LOG

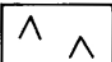
As per attached symbols from "Volcanic Textures" by McPhie, Doyle and Allen.

SYMBOLS FOR COHERENT TEXTURES

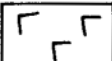
- single line symbols for low to moderate phenocryst abundance
- double line symbols for abundant phenocrysts
- smaller symbols for fine grained phenocrysts
- larger symbols for coarse grained phenocrysts
- additional "+" symbol for coarse, phenocryst-rich granitoid texture


 basalt, poorly to moderately porphyritic basalt

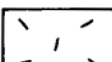
 phenocryst-rich basalt

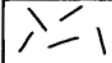
 andesite, poorly to moderately porphyritic andesite


 phenocryst-rich andesite

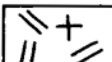
 dacite, poorly to moderately porphyritic dacite


 phenocryst-rich dacite


 fine, poorly to moderately porphyritic rhyolite

 coarse, poorly to moderately porphyritic rhyolite

 coarse, phenocryst-rich rhyolite

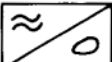
 coarse rhyolitic porphyry

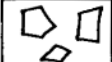
 flow foliation

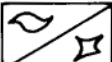
 spherulites, lithophysae, alteration spots, nodular devitrification texture

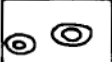
SYMBOLS FOR VOLCANICLASTIC TEXTURES


- closer spaced symbols for dominant grain size and grain type


 pumice or relict pumice


 angular, juvenile lava clasts

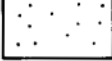
 fiamme/vitriclast or relict vitriclast

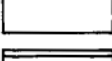
 accretionary lapilli

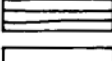
 angular, polymict lithic clasts

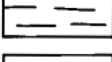
 rounded, polymict lithic clasts


 mudstone intraclast

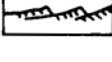
 sand-size particles, granular texture

 mud-size particles

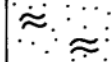
 distinct planar stratification


 diffuse planar stratification

 cross bedding


 micro-cross lamination


e.g.

 pumice clasts in sand matrix

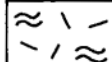
 angular polymict lithic clasts and mudstone intraclasts in sand matrix

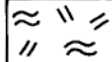
SYMBOLS FOR JUVENILE-CLAST-RICH DEPOSITS

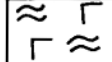
 jigsaw-fit texture of fine, moderately porphyritic rhyolite

 jigsaw-fit texture of coarse, moderately porphyritic rhyolite

 jigsaw-fit texture of coarse phenocryst-rich andesite

 pumice-clast-rich deposit, coarse, moderately porphyritic rhyolitic composition

 pumice-clast-rich deposit, coarse, phenocryst-rich rhyolitic composition

 pumice-clast-rich deposit, coarse, moderately porphyritic dacitic composition