

RAVEX PTY LTD.

DICTIONARY OF GEOLOGICAL COMPUTER CODES - 30 OCTOBER 2006

Coded computer entry of geological data is in the form of a compulsory PRIMARY DESCRIPTOR, and, where necessary, a SECONDARY DESCRIPTOR(S) as explained below. Abbreviations for widely used geological terminology must be strictly adhered to as appended hereto. Where additional terminology is required which is NOT listed herein, use longhand descriptions until an updated DICTIONARY is issued by a Chief Geologist or Exploration Manager.

PRIMARY DESCRIPTOR

The system of abbreviations and codes is based around the concept of a compact *Primary Descriptor* with the form "accessory mineral", "accessory mineral", "Rock type", "qualifier", "colour". Each of these categories has a fixed format of lower and upper case letters and a set number of letters.

The *Primary Descriptor* is the minimum essential information for use in logging and data presentation. The *Primary Descriptor* must take the form (as an example):

clbiMscfoIBY8 which means: chlorite biotite schist foliated dark yellowish brown where the first two lower case pairs (clbi) each refer to a mineral (chlorite biotite), with the most abundant last, the following upper case letter and subsequent two lower case letters (**Msc**) form the rock name (schist), the next three lower case letters (fol) refer to a qualifier (foliated), and the three upper case letters at the end (BY8) refer to colour (dark yellowish brown).

The only part of this which is essential is the rock name (**Msc**). One or none of the minerals may be present (eg **MscfoIBY8** or **biMscfoIBY8**). Either or both colour and qualifier may be absent (eg **Msc** or **MscBY8**). Only *one qualifier* may be present in this Primary Descriptor. The colour may be designated by one, two, or a maximum of three upper case letters (eg **MscB5** for moderate brown schist). No estimates of abundance can be used in the primary descriptor. Mineral names, rock type names, qualifiers of all types, and colour terms can be used in Primary Descriptors.

SECONDARY DESCRIPTORS

Secondary descriptors are for detailed information and extra comments. There are a number of categories for Secondary Descriptors, to be used as column headers and headings for detailed comments.

Categories:	Code	Meaning
	Altn	alteration
	Comp	composition
	Mnvn	mineralisation and veining
	Rock	rock types
	Text	texture, includes grain size and structure
	Weth	weathering

The categories may be column headings in a log, or superheadings for a number of columns in a log, or may be used to prefix data in a comments column (eg **Altn blc5 cy sr Weth sap4 go50** meaning Alteration: intense bleaching with clay and sericite; and Weathering: strong saprolitic with 50% goethite). This allows logging to be done entirely as estimates in fixed column formats, or as strings of codes and estimates. In the example above, weathering could be logged in the comments column as **Weth sap4 go50**, or in column headed **Weth** with an entry **sap4 go50**, or as the estimates 4 and 50 in columns headed **sap** and **go** under the superheading **Weth**.

The format for secondary descriptors as strings of codes and estimates is not as compact as the primary descriptor. Spaces are used to separate category names and the terms contained within each category (eg **Altn blc cy sr**). Estimates of abundance and intensity follow terms such as rock type, mineral or qualifier, and follow directly the term referred to, without a space between (eg **Altn blc5 cy50 sr10**).

Mineral names, rock type names, qualifiers of all types, colour terms, and estimates of abundance and intensity can be used in the *Secondary Descriptors*.

Where ambiguities occur, brackets and plus signs should be used to make the meaning unambiguous.

MINERAL NAMES

ac actinolite	fx feldspar (general)	ph phosphate (general)
ad adularia	fe ferric fe-oxides (goeth-, haemat-, limon-ite)	pi pitchblende
aa agate	fm ferromagnesian mineral, general	pl plagioclase
ab albite	fl fluorite	pt platinum
aw allanite	fu fuchsite	pr prehnite
af allophane		ps psilomelane
ai almandine	gh gahnite	py pyrite
al alunite	ga galena	pz pyrolusite
am amphibole (general)	gn garnet	pm pyromorphite
ax anatase	gi garnierite	pf pyrophyllite
an andalusite	gl glauconite	px pyroxene
ae andradite	go goethite	po pyrrotite
ag anglesite	gp graphite	
ah anhydrite	gs grossularite	qz quartz (check silica and vein quartz)
ak ankerite	gt grunerite	qc quartz-carbonate mixture
ay anthophyllite	gy gypsum	
at antigorite		rc rhodochrosite
ap apatite	hm heavy minerals, general	rd rhodonite
ar aragonite	hd hedenbergite	rb riebeckite
as arsenopyrite	he hematite	ru rutile
ao asbestos	hb hornblende	
au auridium, gold		sa sanidine
az azurite		sc scapolite
	im ilmenite	sh scheelite
ba barite	ja jarosite	so scorodite
bi biotite		sr sericite
bs bismuthinite	ka kaolin	se serpentine
bn bornite	kf K-feldspar	sd siderite
	ky kyanite	sl silliminitite
ca calcite		si silica, general (check: qz cs op)
cn carbon (as in carbonaceous)	lx leucoxene	sm smectite, montmorillonite
cb carbonate (general, see also "vein carbonate")	le lepidolite	ss smithsonite
ci carnotite	li limonite	sp sphalerite
ct cassiterite	lc limonite after carbonate	sf sphene
cg cerargyrite	lp limonite after pyrite	st staurolite
ce cerussite	ls limonite after sulphide	sb stibnite
cj chabazite	lz lizardite	sx sulphates, general
ck chalcedony		su sulphides, general
cc chalcocite	mg magnesite	
cp chalcopyrite	mh maghemite	tc talc
cs cherty silica	mt magnetite	tt tetrahedrite
cl chlorite	mk malachite	tn tennantite
cd chloritoid	mn manganese oxides (general)	tz topaz
cm chromite	mr marcasite	tm tourmaline
ch chrysocolla	mi mica (general)	tr tremolite
cq chrysophase	mc microline	tb torbanite
cy clay (general)	ml mineral (general)	
cz clinozoisite	mo molybdenite	ur uraninite
cx clinopyroxene (general)	mz monazite	ux uranium minerals, general
cf coffinite	mu muscovite	
cu copper, native		vc vein carbonate
co cordierite	ne neotocite	vq vein quartz
cv covellite	nf nepheline	vs vesuvianite
cr cuprite	nt nontronite	vl violarite
di diopside	ol olivine	wl willemite
do dolomite	op opaline silica	wo wollastonite
dr dravite	oc orthoclase	wf wolframite
	ox orthopyroxene	
en enargite		ze zeolite
ep epidote	pn pentlandite	zo zoisite
er erythrite	pp phlogopite	

ROCK TYPE: abbreviations always start with a capital. The capitals are chosen to show general categories:

B for **B**ase of oxidation categories.

G for general **igneous** (including unclassified varieties of igneous rock as well as intrusives) but not known extrusives. **G** was chosen rather than **I** because of the problems of confusion of **I** with **1** and **l**.

M for **m**etamorphic

O for overburden related rock types which includes regolith which is transported but **NOT** that which is derived in situ.

R for rock names outside other categories, and for in situ regolith to basement rocks.

S for **s**edimentary.

T for **tuff** (separated from other volcanics to allow a simple tuff terminology).

V for **v**olcanic/volcaniclastic, but note special tuff terminology above.

OXIDATION

Box base of total oxidation (= first appearance of sulfide)

Bow base of partial oxidation (= last appearance of oxide)

IGNEOUS (non-extrusive)

Gad adamellite

Gal alaskite

Gan andesite

Gao anorthosite

Gap aplite

Gcb carbonatite

Gcp clinopyroxenite

Gdc dacite

Gdl dolerite

Gdn dunite

Gdr diorite

Gft felsite

Gfu felsic rock undifferentiated

Ggb gabbro

Ggd granodiorite

Ggp granophyre

Ggt granite (sensu stricto)

Ggu granitic undiff'd, granitoid

Ghb hornblendite

Ghz harzburgite

Giu intermediate rock undiff'd

Gkb kimberlite

Glg leucrogranite

Glm lamprophyre

Glt latite

Gmu mafic rock undifferentiated

Gmz monzonite

Gnr norite

Gop orthopyroxenite

Gpg pegmatite

Gph phonolite

Gpp porphyry

Gpr peridotite

Gpy pyroxenite

Gqd quartz diorite

Gqg quartz gabbro

Gql quartz latite

Gqm quartz monzonite

Grd rhyodacite

Gry rhyolite

Gsp serpentinite

Gsy syenite

Gta trachyandesite

Gtj trondhjemite

Gto tonalite

Gtr trachyte

Gum ultramafic general

Guu igneous rock undiff'd

METAMORPHIC

Mam amphibolite

Mcs calc-silicate

Mes endoskarn

Mfs felsic schist

Mgf granofels

Mgn gneiss

Mgr granulite

Mhf hornfels

Mmb marble

Mmi migmatite

Mms mafic schist

Mmu metamorphic undiffer'd

Moa orthoamphibolite

Mog orthogneiss

Mpa para-amphibolite

Mpg paragneiss

Mph phyllite

Msc schist

Msk skarn

Mst slate

Msu metasediment general

Mum ultramafic schist

Mvu metavolcanic general

Mxs exoskarn

OVERBURDEN AND NON-BASEMENT

REGOLITH

Oal alluvium

Obt bauxite

Obx regolith breccia

Occ calcrete

Ocl colluvium

Ocp caprock

Ocy clay

Odu duricrust general

Oel eluvium

Ofc ferricrete

Ogo gossan

Ogv gravel

Ogy gypcrete

Ohm humus

Ohp hardpan

Ois ironstone

Olg lag (gravel)

Oln lignite

Olo loam

Olt laterite

Omd mud

Omg magnesite, weathering relate

Oou overburden general

Ops podsol

Opt plinthite

Orb rubble

Osk scree

Osl silt, unconsolidated

Osn sand, unconsolidated

Osp saprolite

Osr saprock

Ost silcrete

Osa soil, A-horizon

Osb soil, B-horizon

Osc soil, C-horizon

Osu soil, undifferentiated

Otr travertine

UNCATEGORIZED AND IN SITU

BASEMENT

Rbx breccia

Rcb carbonate rock

undifferentiated

Rcc cataclasite

Rcp caprock

Rcy clay

Rfb fault breccia

Rfz fault rock or zone

undifferentiated

Rgo gossan in situ

Rgs greisen

Rgx gouge

Rku rock general/uncategorized

Rln rock – no logged

Rms massive any mineral

Rmy mylonite

Rnb not rock – backfilled stope

Rnc not rock – contamination

Rnh not rock – hole or stope

Rns not rock – no sample return

Rnw not rock – wood

Rph phyllonite

Rsp saprolite

Rsr saprock

Rsz sheared zone /rock undiff'd

Rtt tectonite

Ruu unidentified rock

Rvc carbonate vein

Rvu vein general

SEDIMENTS GENERAL

Sbx sedimentary breccia
 Sco coal
 Sdi diatomite
 Sdu sediment general,
 undifferentiated
 Sph phosphorite

SEDIMENTS CLASTIC

Sag argillite
 Sak arkose
 Sar arenite
 Sbo boundstone (carbonate)
 Sca calcarenite
 Scg conglomerate
 Scl clacilutite
 Scr calcirudite
 Scy claystone
 Sdm diamictite
 Sgr grit
 Sgs grainstone (carbonate)
 Sgw greywacke
 Smc micrite
 Smd mudstone
 Sml marl
 Spa packstone (carbonate)
 Spe pelite
 Sps psammrite
 Sqo orthoquartzite
 Sqt quartzite
 Srd rudite
 Srs rudstone (carbonate)
 Ssa subarkose
 Ssg subgreywacke
 Ssh shale
 Ssl siltstone

Ssn sandstone
 Stb turbidite
 Sti tillite
 Swk wacke

SEDIMENTS CHEMICAL

Sct chert
 Sdo dolomite
 Sex exhalite
 Sic iron formation carbonate facies
 Sif iron formation general
 Sil iron formation silicate facies
 Sio iron formation oxide facies
 Sis iron formation sulphide facies
 Sjs jaspilite, jasper
 Slm limestone
 Smg magnesite rock (sedimentary)

TUFF

Tan andesitic tuff
 Tdc dacitic tuff
 Tll lithic tuff
 Tlv lithic vitric tuff
 Tlx lithic crystal tuff
 Try rhyolithic tuff
 Tta trachyandesitic tuff
 Ttc trachytic tuff
 Ttf felsic tuff
 Tti intermediate tuff
 Ttm mafic tuff
 Ttu tuff general
 Tum ultramafic tuff
 Tvl vitric lithic tuff
 Tvv vitric tuff
 Tvx vitric crystal tuff
 Txl crystal lithic tuff

Txv crystal vitric tuff
 Txx crystal tuff

VOLCANICS AND VOLCANICLASTICS OTHER THAN TUFF

Vag agglomerate, volcanic
 Van andesite volcanic
 Vbs basalt
 Vbx volcanic breccia
 Vdc dacitic volcanic
 Vft felsic volcanic
 Vhc hyaloclastite
 Vhm high magnesium basalt
 Vig ignimbrite
 Vkm komatilite
 Vkt keratophyre
 Vlh lahar
 Vob obsidian
 Vpc pyroclastic
 Vpp peperite
 Vrd rhyodacitic volcanic
 Vry rhyolitic volcanic
 Vsp spilitic (volcanic)
 Vsu volcanic sediment undiff
 Vta trachyandesitic volcanic
 Vtb trachybasaltic volcanic
 Vtc trachytic volcanic
 Vth tholeiitic volcanic
 Vum ultramafic volcanic
 Vvc volcaniclastic
 Vvf felsic volcanic
 Vvi intermediate volcanic
 Vvm mafic volcanic
 Vvu volcanic undifferentiated

Estimates of Abundance and Intensity

Quantitative estimates of abundance as percentages must directly follow the mineral or rock that they refer to, and consist of a two digit number ranging from 01 to 99. Qualitative estimates of intensity must consist of a number from 0 to 5, referring to a scale from absent to intense as listed below, and must directly follow the term referred to. Qualitative estimates should generally be for characteristics such as weathering for which a percentage is meaningless.

0	absent	1	trace, rare	2	weak, minor
3	moderate,	4	strong, abundant	5	intense, very abundant

COLOUR: Colour codes have been organised to give the same descriptions as those used in the Rock-Colour Chart prepared by the Geological Society of America. The colour chart should be used for any detailed logging, but the codes can also be used for rough descriptions (eg OcyB meaning brown clay). The strongest hue is listed first, the weaker hue (if present) is listed second, and the strenght/shade listed last, eg BY5 equals moderate yellowish-brown).

Hues:

A	grey
B	brown
E	orange
G	green
K	pink
L	olive
N	black (noir)
P	purple
R	red
U	blue
W	white
Y	yellow

Strength/Shade:

1	very pale
2	pale
3	light
4	medium light
5	moderate
6	dusky
7	very dusky
8	dark
9	very dark

QUALIFIERS

COMPOSITION

acd acid
 alk alkaline general
 amb amphibolitic
 and andesitic
 apl aplitic
 arg argillaceous
 ark arkosic
 arn arenaceous
 ash ash bearing
 bas basic
 bic bioclastic
 bst basaltic
 cgt conglomeratic
 cly clayey
 cty cherty
 dct dacitic
 drt dioritic
 dlr doleritic
 dlm dolomitic
 dun dunitic
 fel felsic
 fer ferruginous
 fsp feldspathic
 fst felsitic
 gab gabbroic
 gns gneissic
 gph graphitic
 grd granodioritic
 grn granitic
 grp granophyric
 hmg high magnesium (basalt)
 int intermediate
 kom komatiitic
 lab labile
 leu leucocratic
 lmy limey as in limestone
 lth lithic
 maf mafic
 mag magnetic
 mel melanocratic
 mgw magnetic weakly / lomag
 mic micaceous
 mmc monomictic
 mnz monzonitic
 mud muddy
 olg oligomictic
 ool oolitic, oolites, ooliths
 peg pegmatitic
 pel pelitic
 plm polymictic
 pot potassic
 psm psammitic
 rhy rhyolitic
 ryd rhyodactitic
 shy shaley
 sly silty
 sty slatey
 sny sandy
 spl spilitic
 srp serpentinitic
 syt syenitic
 thl tholeiitic

ton tonalitic
 ubc ultrabasic
 umf ultramafic
 vcl volcanolithic
 vit vitric

TEXTURE

acc acicular
 adc accumulate textured
 agg agglomeratic
 alt alternating
 amd amygdaloidal / amygdules
 amp amorphous
 ang angular
 anh anhedral
 aph aphanitic
 apy aphyric
 bdb bedded, banded beds
 bdc bedded, convoluted
 bdg bedded, graded
 bdi interbedded
 bdk bedded, thick
 bdl bedded, laminar
 bdm bedded, medium
 bdn bedded, thin
 bdr bedded, irregular
 bds bedded, massive
 bdt bedded, turbiditic
 bdu bedded/bedding general
 bdv bedded, varved
 bdw bedded, wavy
 bdx bedded, cross
 blb blebs
 bld boulders bouldery
 bot botryoidal or as botryoids
 brn branchings, anastomosing
 cch conchoidal
 cln clean (washed)
 cls clastic or as clasts
 cmt cemented, cement
 cnv convoluted (but not bedding – see “bdc”)
 con concretionary, concretions
 cry cryptocrystalline
 csp clast supported
 ctg coatings
 dis disseminated /disseminations
 dnd dendritic
 dty dirty
 ear earthy
 eqg equigranular
 euh euhedral
 fgm fragmental, or fragments
 fib fibrous
 fis fissile
 fib flow banded
 flg flaggy
 flt flattened
 fri friable, loose
 glp glomero-porphyrific
 gls glassy
 grb granoblastic
 het heterogeneous

hfl hornfelsic
 hom homogenous
 hrd hard, hardened
 imb imbricated
 ing intergranular
 inq inequigranular
 irr irregular (but not bedding see “bdr”)
 ist interstitial
 knt knotted
 lap lapilli textured, lapilli
 len lenticular or as lenticles
 mas massive *but not bedding, see “bds”
 mct mesocumulate textured
 mig migmatitic
 mlk milky
 mtx matrix (in or of)
 mxs matric supported
 nod nodular or as nodules
 ocl ocellar, ocelli
 oct orthocumulate textured
 peb pebbly band or layer
 pil pillowed
 plt peletoidal
 por porphyritic, phenocrysts
 ppb porphyroblastic, or as porphyroblasts
 prd predominant or main
 prs porous
 ptc perthitic
 rad radiating
 rdd rounded
 rel relict
 rex recrystallised
 rip rippled, ripples
 sba subangular
 sbh subhedral
 sbo subordinate
 sbr subrounded
 sch schistose
 sfx spinifex textured
 skt skeletal
 sph spherulitic, spherules
 stg sorting good
 stm sorting moderate
 stp sorting poor
 stl stylonitic
 sug sugary
 thk thick, large
 thn thin, small
 trc trachytic
 trn transitional
 ufx uniform textured
 var variolitic
 ves vesicular or in vesicles
 vgd variegated
 vrm vermiform
 vug vuggy
 wld welded
 xen xenolith or xenolithic
 xtl crystalline

REGOLITH

ars arenose (weathering profile term)
 blc bleached
 bxw boxworked (as in limonite-after-sulphide)
 cap cap or capping
 ccr calcreted
 fcr ferricreted
 frs fresh
 gly gley
 gos gossanous
 hpn hardpanized, hardpanned
 ind indurated
 lat lateritic
 lch leached
 lir lithorelics
 lom loamy
 lsg liesegang
 mot mottled or as mottles
 oxd oxidized
 pal pallid
 ped pedogenic
 pis pisolitic, pisolites, pisoliths
 plm plasmic
 res residual
 sap saprolitic
 sfl surficial
 sit silcreted
 spg supergene
 wth weathered, highly
 wtm weathered, moderately
 wts weathered, slightly
 wtu weathered, unspecific

ALTERATION

aaa advanced argillic
 aag argillic alteration
 aau alteration unspecific
 abi biotite alteration
 acb carbonate alteration
 acl chlorite alteration
 acy clay alteration
 afe ferruginous
 asi silica alteration
 asr sericite alteration
 atm tourmaline alteration
 abl bleached, bleaching
 agz greisenized
 ahd hydrothermal
 ahp hypogene
 ams metasomatic
 apc phyllic
 apv pervasive
 apt potassic
 app propylitic
 asp spilitic
 asr serpentinitised

STRUCTURE

aug augen textured, as augen
 blk blocky
 bou boudinaged
 bxx brecciated
 cbx crackle brecciated
 clv cleaved, cleavage

QUALIFIERS (CONTINUED)

crn crenulated
 cta cataclastic
 ctt contorted
 fau faulted, fault
 fld folded, folds
 fol foliated, foliation
 frc fracture, in fractures
 iso isoclinal
 jnt jointed, jointing
 lin lineated or forming lineation
 mas massive
 myl mylonitic
 phy phyllitic
 ptg ptygmatic
 rod rodDED, columnar
 sch schistose, schistosity
 scl schlieren textured, schlieren
 shr sheared
 sls slickensided
 tec tectonic
 unf unfoliated

VEINING

vcb carbonate veined
 vlc vein on lithologic contact
 vlt veinlet
 vmr massive vein, reef
 vqc quartz carbonate veined
 vqs vein quartz + sulphide
 vqz quartz veined
 vsk stockworked or as stockworks
 vst stringers
 vsv vein subvertical

GRAIN SIZE ("MM" CLASSES**ONLY FOR SEDIMENTS)**

gzv very fine grained (<0.1mm)
 gzf fine grained (0.1-0.25mm)
 gzm medium grained (0.25-0.5mm)
 gzc course grained (0.5-1.0mm)
 gzy very course grained (1.0-2.0mm)
 gzg granule, gritty (2.0-4.0mm)
 gzp pebbly (4-16mm)
 gzo cobbly (16-256mm)
 gzb bouldery (>256mm)

GENETIC

aeo aeolian
 agg agglomeratic
 all allochthonous
 alv alluvial
 aqu aqueous
 aug authigenic
 aut autochthonous
 clp collapse (as in collapse breccia)
 col colluvial
 dep depositional
 dig diagenetic

dyk occurring as a dyke
 elv eluvial
 epc epiclastic
 epg epigenetic
 ept epithermal
 ext extrusive
 flt float
 flv fluvial
 flw occurring as a flow
 glc glacial
 igb ignimbritic
 inf intraformational
 ins in situ
 itv intrusive
 mmg greenschist facies
 mma amphibolite facies
 mmn granulite facies
 mml low grade metamorphism
 mmm medium grade metamorphism
 mmh high grade metamorphism
 mmu metamorphic unspecific, metamorphosed general
 ocp outcrop
 pmy primary
 pyc pyroclastic
 rew reworked
 sec secondary
 sed sedimentary
 sill sill, occurring as a sill
 stm stromatolitic
 syg syngenetic
 trn transported
 tuf tuffaceous
 tur turbiditic
 vlc volcanoclastic
 vol volcanic