Appendix 10. Tasmania: Setting

SYMBOL	RCODE	STRATNO	FORMATION_GROUP	CRUSTAL_ELEMENT	PROVINCE	COMP_BULK	SETTING	ROCKTYPE	ABUNDANCE	MODE_OCCURRENCE	THICKNESS	COUNTRYROCK	MIN_STYLE 1	MIN_STYLE 2	MIN_STYLE 3	GEOTECTONICS	REFERENCE	GAREF	REFERENCE	GAREF
Tasman province																				
Ldb	1476	41479	Tholeiitic basalt: Crimson Creek Formation, Dundas Trough	Tasman	Tasman	Mafic	Extrusive, intrusive	Tholeiitic basalt, olivine and quartz normative basalts, aphyric-doleritic-granophyric basalts, basaltic lapilli tuff, volcanic breccia; sills have chilled margins, andesite	Major	Lavas and associated intrusive sills	Several thin horizons	Mudstone, siltstone, volcaniclastic turbiditic wacke, tuffaceous wacke, crystal tuff, hyaloclastite, greywacke, minor carbonate and calc-silicate rocks				Sub-alkaline to alkaline basalts with Within Plate Basalt geochemistry; tholeiitic basalts (correlate with mafic lavas in Karunnah Subgroup in Smithton Synclinorium)	Seymour & Calver (1995)	44135	Brown (1986)	41795
Ldv	1477	4898	Turbiditic volcaniclastic–mafic volcanic rocks: Crimson Creek Formation and correlates; Success Creek Group, all Dundas Trough	Tasman	Tasman	Mafic	Extrusive, intrusive	Interbedded, volcaniclastic turbiditic wacke, siltstone-mudstone and numerous tholeiitic basalt flows and associated intrusive sills	Major	Pillowed lava flows and associated intrusive sills	1000 (volcanic pile at Macquarie Harbour)	Mudstone, chert, volcaniclastic lithic wacke, basaltic-derived lithic wacke, siltstone				Sub-alkaline to alkaline basalts with Within Plate Basalt geochemistry; tholeiitic basalts; refractory low TiO_2 and strong LREE depleted second-stage melts in evolving rift settings	Crawford & Berry (1992)	8045	Crawford & Berry (1992)	8045
Ldd	1501	41541	Dolerite dykes: dolerite dykes, Port Sorell area; Cleveland-Waratah association and correlates, including Motton Spilite, all western Tasmania	Tasman	Tasman	Mafic	Hypabyssal, extrusive	Dolerite, pillowed and massive tholeiitic basalt (within Cleveland-Waratah association and correlates; including Motton Spilite)	Major	Dykes, lavas	<500 (volcanic pile)	Interbedded tuff, breccia, chert				Sub-alkaline basalts with Ocean Floor Basalt geochemistry (basalts in Cleveland-Waratah area and Motton Spilite); Island Arc-Ocean Arc characteristics; associated high-magnesian andesite and low-Ti tholeiite	Seymour & Calver (1995)	44135	Burrett & Martin (1989)	44105
Lsb	1470	41488	Tholeiitic basalt: Spinks Creek Volcanics–Togari Group, Smithton Synclinorium; Bernafai Volcanics and correlates, western Tasmania; Grassy Group–Skipworth Subgroup includes Grimes Intrusive Suite, City of Melbourne Volcs, Shower Droplet Volcs, Bold Head Volcs, all King Island	Tasman	Tasman	Mafic	Extrusive, intrusive	Skipworth Subgroup mafic rocks: tholeiitic basalt, picrite, hyaloclastite, picritic breccia, basaltic breccia, andesite-wehrlite-gabbro cumulates, dolerite; Spinks Creek Volcanics rocks: 7 geochemical suites with different TiO_2 contents and Nb/Zr ratios	Major	Lavas, sills, dykes	1000 (volcanic pile); 150 (sills)	Conglomerate, siltstone, shale, sandstone, dolomite, diamictite, limestone, volcaniclastic sandstone and conglomerate, peperite, felsic volcanics (Rocky Cape Group, Cottons Breccia)				King Island mafic rift sequence: continental break-up and development of volcanic passive margin; enriched Mid-Ocean Ridge Basalts; Spinks Creek Volcanics: low-K tholeiites erupted on thin continental crust in extensional intraplate setting	Meffre et al. (2004)	60650	Calver (2007)	63674
Lm	1498	40981	Tholeiitic dolerite dykes: Rocky Cape Dyke swarm, Rocky Cape Region; Tayatea Dolerite, western Tasmania	Tasman	Tasman	Mafic	Hypabyssal	Tholeiitic dolerite, amphibolite; 4 geochemical groups – 1. foliated tholeiites (pre-tectonic); 2. unfoliated massive tholeiites-feeders to basalts in Smithton Synclinorium; 3. unfoliated massive calc-alkaline leucocratic; 4. olivine-2 pyroxene feldspar cumulates with distinctive REE pattern	Major	Dyke swarm (steeply dipping, emplaced in northeast-trending faults), sills	<250	Siltstone, pyritic shale (Cowrie Siltstone), hornfels				Early manifestation of an extended period of crustal attenuation that led to aborted rift development in Smithton Synclinorium and eventuated in ocean opening east of Rocky Cape Region	Seymour & Calver (1995)	44135	Burrett & Martin (1989)	44105
Lob	1473	4477	Alkali basalt and dolerite: within Burnie and Oonah Formations; includes Cooee Dolerite, western Tasmania	Tasman	Tasman	Mafic	Extrusive, hypabyssal	Alkali basalt, pillowed basalt, dolerite	Major	Lavas, sills, transgressive sheets, dykes, boudins	300 (sill); 4 (lavas)	Mudstone, quartz sandstone, greywacke, siltstone, pelite, peperite, turbidite, sulphide-bearing slate, schist, carbonate rocks (Burnie and Oonah Formations)				Alkaline and sodic dolerite intrusions (Cooee Dolerite) and related lavas emplaced into uncompacted turbidite pile (Burnie Formation) prior to the Penguin Orogeny; Cooee Dolerite represents oldest dated dolerite in Tasmania	Crook (1979)	36046	Crook (1979)	36046
Lr	1483	NA	Undifferentiated Rocky Cape Group rocks, Rocky Cape Region	Tasman	Tasman	Mafic	?Extrusive, hypabyssal	?Dolerite, basalt (mafic rocks not found in literature, thus very minor component of stratigraphy, if present)	Minor	?Sills, dykes, lavas		Quartz sandstone, siltstone, shale, pyritic shale, dolomite, greywacke, haematitic breccia							Burrett & Martin (1989)	44105
Laa	1480	41158	Amphibolite: Bowry Formation (Arthur Metamorphic Complex), western Tasmania; Pegarah Amphibolite, central Tasmania	Tasman	Tasman	Mafic	Intrusive, ?extrusive	Amphibolite, hornblende amphibolite, metagabbro, mafic schist, pyrite-magnetite, dolerite; minor ultramafic igneous rocks	Major	Sills, concordant and subconcordant lenses, pendants and screens in granite; Bowry Formation is allochthonous	?Thin	Interbedded high-grade quartzofeldspathic schist, quartzite, pelitic schist, phyllite, turbidite, marble (all part of Surprise Bay Formation); minor granite				Tholeiitic amphibolite bodies emplaced prior to regional deformation and intruded by 760 ± 12 Ma and ?777 ± 7 Ma (U-Pb zircon) granites; Bowry Formation amphibolites have E-MORB-type tholeiitic patterns typical of rift settings in volcanic passive margins	Holm et al. (2003)	24604	Calver (2007)	63674
Lta	1421	40961	Amphibolite: in Proterozoic metamorphosed dominantly siliceous shelf sequences, and Mount McCall Amphibolite, Tyennan Region	Tasman	Tasman	Mafic	Extrusive	Amphibolite, garnet amphibolite, clinopyroxene orthoamphibolite	Minor	Lavas, massive boudins, schistose tabular bodies concordant with main foliation		Quartzite, schist, garnet schist, phyllite, metasiltstone, ironstone, dolomite, garnet-kyanite gneiss, migmatitic gneiss, eclogite				Chemistry of phyllitic amphibolite east of Tyeliveetrees Range indicates protolith was a tholeiitic basalt interbanded with quartzite, ironstone, phyllite	Burrett & Martin (1989)	44105	Seymour & Calver (1995)	44135