Appendix 10. South Australia: Setting

MAPUNIT	LABEL	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
Adelaide province																				
Nox	Nox	2364	Boucaut Volcanics--Arkaroola Subgroup	South Australian Element	Adelaide	Mafic	Extrusive	Basalt	Minor (to rhyolite)	Lava	<700	Associated rock types: rhyolite, dacite, andesite, trachyte, schist, conglomerate	Cu-qtz-mt shear zones in Boucaut Volcanics	Cu-barite-tourmaline-quartz stringers in tuff		Extensive continental flood basalts recording crustal extension and tensional rifting	Drexel et al. (1993)	43052	Forbes (1991)	42813
Na1	Na/ftrd71;1/ftr70	20586	Includes Wooltana Volcanics and Cadlareena Volcanics--Arkaroola Subgroup of the Callana Group, and Beda Volcanics (PIRSA--see 2000 State Map--has grouped all Wooltana Volcanics, Beda Volcanics, Gairdner Dyke Swarm at ~830 Ma)	South Australian Element	Adelaide, East Gawler	Mafic	Extrusive	Basalt, trachybasalt, sodic basalt, dolerite	Major	Lava, dyke	750	Associated rock types: rhyolite, andesite, dacite, quartzite, lapilli and crystal tuff, mudstone, quartzite, shale, calc-silicate metasediments				Extensive continental flood basalts (Beda Volcanics have MORB chemistry) recording crustal extension and tensional rifting	Drexel et al. (1993)	43052	Rogers & Freeman (1996a)	23054
Coompana province																				
?Mg	?Mg	7206	Giles Complex equivalent?--interpreted intrusives bodies beneath Phanerozoic sediments (gabbro and reversely magnetised bodies possibly mafic or ultramafic)	Central Australia	Coompana	Mafic, ?ultramafic	Intrusive, hypabyssal, ?extrusive	Gabbro, dolerite, basalt, possible ultramafic rocks	Major	Plug, dyke, lava		Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, arenaceous sediments, basalt				Primitive T-poor tholeiitic basalts, possible extrusive equivalents of hypabyssal mafic intrusives, mantle-plume related?	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
N5	N/ftr71;5/ftr70;	NA	Un-named basalt	Central Australia	Coompana	Mafic	Extrusive	Basalt, syenite-trachyte (?highly altered mafic volcanic rock) may be equivalent	Minor	Lava		Felsic granulite, orthogneiss, migmatite, gneissic granite, granite, felsic volcanics, arenaceous sediments				Primitive T-poor tholeiitic basalts, possible extrusive equivalents of hypabyssal mafic intrusives, mantle-plume related?	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Coompana, Officer provinces																				
?MN5	?M/ftr71;5/ftr7	NA	Un-named mafic dykes	Central Australia	Officer (or basement to basin), Coompana	Mafic	Hypabyssal	Mafic dykes trending north-northwest; up to 90 km long; may be as young as Neoproterozoic	Major	Dyke		Gneiss, granite, basalt, sandstone, arenaceous sediments							Drexel et al. (1993)	43052
?Mp	?Mp	39078	?Pitjantjatjara Supersuite--elliptical non-magnetic to weakly magnetic intrusive bodies, some with magnetic rims and N-trending folded linear magnetic bodies; interpreted as ?felsic bodies (pers. comm., W. Cowley, PIRSA, 2007)	Central Australia	Officer (or basement to basin), Coompana			No reference to mafic-ultramafic rocks	Major?										Cowley (2006)	62922
E-u	*-u	34766	Kulyong Volcanics (?correlatives of 504 ± 18 Ma Tide Hill Volcanics)	Central Australia	Officer (or basement to basin)	Mafic	Extrusive	Tholeiitic basalt	Major	Lava	3	Associated rock types: sandstone, greywacke, limestone				Tholeiitic basalt suite	Drexel & Priess (1995)	44133	Drexel & Priess (1995)	44133
N-w	N-w	19426	Wantapella Volcanics	Central Australia	Officer (or basement to basin)	Mafic	Extrusive	Tholeiitic basalt	Major	Lava	290	Associated rock types: sandstone, limestone, dolomite, conglomerate, quartzite				Tholeiitic basalt	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Curnamona province																				
M27	M/ftr71;2/ftr70	NA	Un-named basalt	South Australian Element	Curnamona	Mafic	Extrusive	Basalt (at least 7 horizons)	Minor	Lava	>394	Associated rock types: rhyolite, rhyodacite, agglomerate, felsic tuff, feldspathic sandstone, sandstone, mudstone, all part of Benagerie Ridge				Lacustrine to fluviatile environment for sediments-lavas?	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
M37	M/ftr71;3/ftr70	49582	Mafic intrusive equivalents of Bimbowrie Suite (Mesoproterozoic Granites <1600 Ma)	South Australian Element	Curnamona	Mafic	Intrusive	Mafic intrusive equivalents of Bimbowrie Suite (interpretation)	Major	Intrusion		Associated rock types: granite, migmatite							Webb & Crooks (2005)	61239
La	La	35889	Woman-in-White Amphibolite (Lady Louise Suite)	South Australian Element	Curnamona	Mafic	Hypabyssal, extrusive	Amphibolite, hornblende-quartz amphibolite to hornblende metagranite	Major	Sill, dyke (differentiated & folded)	300	Orthogneiss, psammopelitic schist, calc-feldspathic, felsic volcanics (Abminga Subsuite)				Iron-rich tholeiites in continental rift; bimodal mafic-felsic event extending from ~1692 Ma to 1682 Ma	Forbes (1991)	42813	Conor & Fanning (2001)	62877
Musgrave province																				
Mp8	Mp/ftr71;8/ftr70	7206	Giles Complex (mafic-ultramafic part; coeval with ~1070-1080 Ma Alcuna/Kulgera/Stuart Pass Dolerite dyke swarms, basalts in Tollu Group-Munmawarrawarra Basalt and Tjauwata Group-Mount Harris Basalt)	Central Australia	Musgrave	Mafic, ultramafic	Intrusive	Gabbro, norite, troctolite, anorthositic gabbro, peridotite, dunite, pyroxenite, mafic granulite	Major	Layered intrusion, massive intrusion	<8000	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt	1 Basal mafic-ultramafic Ni-Cu (Nebo-Babel)	2 Stratabound mafic-u/mafic Cr-PGE (Mt Davies)	4 Stratabound mafic-u/mafic Fe-Ti-V (Haran)	Melting of enriched source (?lithospheric mantle), lithospheric thinning with crustal extension, and/or mantle-plume activity	Gilkson et al. (1996)	44109	Gilkson et al. (1996)	44109
Mp9	Mp/ftr71;9/ftr70	7206	Giles Complex (ultramafic-mafic part; coeval with ~1070-1080 Ma Alcuna/Kulgera/Stuart Pass Dolerite dyke swarms, basalts in Tollu Group-Munmawarrawarra Basalt and Tjauwata Group-Mount Harris Basalt)	Central Australia	Musgrave	Ultramafic, mafic	Intrusive	Peridotite, dunite, pyroxenite, gabbro, norite, troctolite, anorthositic gabbro, mafic granulite	Major	Layered intrusion, massive intrusion	<8000	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt	1 Basal mafic-ultramafic Ni-Cu (Nebo-Babel)	2 Stratabound mafic-u/mafic Cr-PGE (Mt Davies)	4 Stratabound mafic-u/mafic Fe-Ti-V (Haran)	Melting of enriched source (?lithospheric mantle), lithospheric thinning with crustal extension, and/or mantle-plume activity	Gilkson et al. (1996)	44109	Gilkson et al. (1996)	44109
Mp10	Mp/ftr71;10/ftr7	7206	Giles Complex (anorthositic part; coeval with ~1070-1080 Ma Alcuna/Kulgera/Stuart Pass Dolerite dyke swarms, basalts in Tollu Group-Munmawarrawarra Basalt and Tjauwata Group-Mount Harris Basalt)	Central Australia	Musgrave	Mafic	Intrusive	Massive intrusion, layered intrusion	<1800	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt	1 Basal mafic-ultramafic Ni-Cu (Nebo-Babel)	2 Stratabound mafic-u/mafic Cr-PGE (Mt Davies)	4 Stratabound mafic-u/mafic Fe-Ti-V (Haran)	Melting of enriched source (?lithospheric mantle), lithospheric thinning with crustal extension, and/or mantle-plume activity	Gilkson et al. (1996)	44109	Gilkson et al. (1996)	44109
MN3	MN/ftr71;3/ftr70	39599	Alcuna Dyke Swarm, various orientations in Musgrave Orogen (also called Kulgera Dyke Swarm, Ayers Range Swarm, Victory Downs Dyke Suite); coeval with Giles Complex; equated to ~1080 Ma Type A mafic dykes of Gilkson et al. (1996)	Central Australia	Musgrave	Mafic	Hypabyssal	Dolerite, olivine dolerite	Major	Dyke, plug	8 (>5 km long)	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt				Evolved olivine or quartz normative, low-Ti tholeiitic mafic rocks (similar to Stuart Pass Dolerite); modern island arc tholeiites	Zhao & McCulloch (1993)	61153	Zhao & McCulloch (1993)	61153
MN4	MN/ftr71;4/ftr70	NA	Un-named sills and plugs	South Australian Element	Curnamona	Mafic	Hypabyssal	Mafic rocks	Major	Sill, plug		Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt							Gilkson et al. (1996)	44109
MN5	MN/ftr71;5/ftr70	NA	Un-named mafic dykes	Central Australia	Musgrave	Mafic	Hypabyssal	Mafic dykes	Major	Dyke		Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt							Gilkson et al. (1996)	44109
Southwest Gawler, Central Gawler, East Gawler, North Gawler, Musgrave, Adelaide, Curnamona, Coompana provinces																				
N-g	N-g	6956	Gairdner Dyke Swarm (coeval with Amata Dolerite dykes in Musgrave Orogen and Callana Group Volcanics in Adelaide Geosyncline)	South Australian Element, Central Australia	North Gawler, Southwest Gawler, Central Gawler, East Gawler, Musgrave, Adelaide, Curnamona, Coompana	Mafic	Hypabyssal, extrusive, intrusive	Dolerite, basalt; gabbro	Major	Dyke, sill	50	Granite, orthogneiss, migmatite, gneissic granite, gabbro, felsic volcanics, basalt, sandstone				Plume related, rifting, graben	Wingate et al. (1998)	62664	Wingate et al. (1998)	62664
Ma11	Ma/ftr71;11/ftr7	7059	Lower Gawler Range Volcanics (GRV)--Roopena Volcanics, Konkaby Basalt; Nuckulla Basalt; comagmatic with Hiltaba Suite)	South Australian Element	Central Gawler, East Gawler	Mafic	Extrusive	Tholeiitic basalt, potassic basaltic andesite, tuff	Minor (of GRV)	Lava	1000	Associated rock types: rhyodacite, dacite, rhyolite, andesite, ignimbrite, granophyre, volcaniclastic sediments, sandstone, dolomitic siltstone, mudstone, carbonaceous shale	Basalt contains up to 1% Cu and Pb			Continental intraplate bimodal felsic-mafic volcanics	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Ma8	Ma/ftr71;8/ftr70	7059	Lower Gawler Range Volcanics (GRV)	South Australian Element	Central Gawler, East Gawler	Mafic	Extrusive	Tholeiitic basalt, potassic basaltic andesite, tuff	Minor (of GRV)	Lava	1000	Associated rock types: rhyodacite, dacite, rhyolite, andesite, ignimbrite, granophyre, volcaniclastic sediments, sandstone, dolomitic siltstone, mudstone, carbonaceous shale	Basalt contains up to 1% Cu and Pb			Continental intraplate bimodal felsic-mafic volcanics	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Ma	Ma	7059	Gawler Range Volcanics (GRV)	South Australian Element	Central Gawler, East Gawler	Mafic	Extrusive	Tholeiitic basalt, potassic basaltic andesite, tuff	Minor (of GRV)	Lava	1000	Associated rock types: rhyodacite, dacite, rhyolite, andesite, ignimbrite, granophyre, volcaniclastic sediments, sandstone, dolomitic siltstone, mudstone, carbonaceous shale	Basalt contains up to 1% Cu and Pb			Continental intraplate bimodal felsic-mafic volcanics	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Mh6	Mh/ftr71;6/ftr70	39162	Curramulka Gabbronorite, Hiltaba Suite (coeval with 1587 ± 4 Ma Hiltaba Suite leucogabbro-Jagodzinski (2005))	South Australian Element	North Gawler, Southwest Gawler, Central Gawler, East Gawler	Mafic, ultramafic	Intrusive	Gabbronorite, hornblende gabbronorite, norite, gabbro, monzodiorite, peridotite, pyroxenite	Major	Mafic (minor ultramafic) intrusive plug		Sandstone, conglomerate (Aagot Member, Wallaroo Group), gabbroic dykes and sills; intruded by Arthurton Granite and pegmatite dykes				Continental tholeiitic; continental extension; mantle plume	Zang et al. (2007)	NA	Zang et al. (2007)	NA
L44	L/ftr71;4/ftr70	24502	St Peter Suite; St Francis Suite	South Australian Element	Southwest Gawler	Mafic	Intrusive, hypabyssal	Dolerite, amphibolite, diorite	Minor (dominantly felsic)	Dyke and enclaves in granite, comingling		Associated rock types: granite, adamellite, granodiorite, leucogranite, leucoporphyry, rhyolite, lamprophyre				High-level A-type granitoids, crustal melt (St Francis Suite); I-type granitoids (St Peter Suite)	Drexel et al. (1993)	43052	Rankin & Flint (1991b)	42475
?L44	?L/ftr71;4/ftr7	24502	?St Peter Suite; ?St Francis Suite	South Australian Element	Southwest Gawler	Mafic	Intrusive, hypabyssal	Dolerite, amphibolite, diorite	Minor (dominantly felsic)	Dyke and enclaves in granite, comingling		Unknown, possibly granite, adamellite, granodiorite, leucogranite, leucoporphyry, rhyolite, lamprophyre				High-level A-type granitoids, crustal melt (St Francis Suite); I-type granitoids (St Peter Suite)	Drexel et al. (1993)	43052	Rankin & Flint (1991b)	42475
Lu	Lu	68775	Muckanippie Suite (intruded by ~1586 Ma Hiltaba Suite leucogranite)	South Australian Element	Central Gawler	Mafic	Intrusive, hypabyssal	Anorthosite, gabbro, diorite (undeformed)	Major	Plug, dyke		Associated rock types: felsic and mafic volcanics (Gawler Range Volcanics), granite, gneiss, metasediments (Mulgathing Complex)							Hoatson et al. (2005)	61149
L32	L/ftr71;32/ftr70	17845	Tarcoola Formation; ?underlain by 1715 ± 9 Ma rhyolite from Labyrinth Formation (Fanning et al., 2007)	South Australian Element	Central Gawler, East Gawler	Mafic	Extrusive, hypabyssal	Basalt	Minor	Lava, sills	Thin	Quartzite, siltstone, shale, claystone, dolomite, conglomerate and minor tuff; sandstone, conglomerate, chert, rhyolite, rhyodacite, granite	Lode Au-quartz veins (Tarcoola) ~ 2300 kg Au			Fluvial to marine clastic sediments with contemporaneous mafic volcanism in graben	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
LM14	LM/ftr71;14/ftr7	6187	Engenina Adamellite; Symons Granite (time equivalents of Tunkilla Suite)	South Australian Element	Central Gawler, Southwest Gawler	Mafic	Intrusive	Deformed gabbro, amphibolite, diorite	Minor (dominantly felsic)	Dyke and enclaves in granite		Associated rock types: granite, granodiorite, gneiss, banded-iron formation, metasedimentary rocks				I-type granitoids, post-kinematic orogenic intrusives	Rankin et al. (1996)	22613	Rankin et al. (1996)	22613
?LM14	?L/M/ftr71;14/ftr	6187	?Engenina Adamellite; ?Symons Granite (time equivalents of Tunkilla Suite)	South Australian Element	Central Gawler	Mafic	Intrusive	Deformed gabbro, amphibolite, diorite	Minor (dominantly felsic)	Dyke and enclaves in granite		Associated rock types: granite, granodiorite, gneiss, banded-iron formation, metasedimentary rocks				I-type granitoids, post-kinematic orogenic intrusives	Rankin et al. (1996)	22613	Rankin et al. (1996)	22613
Lx	Lx	23126	Wallaroo Group--Undifferentiated (includes Matta Formation: mafic volcanics and minor mafic intrusives associated with 1763 ± 14 Ma to 1737 ± 5 Ma felsic volcanics of the Wallaroo Group--Weetulta Formation)	South Australian Element	East Gawler	Mafic	Extrusive, hypabyssal	Basalt, basaltic breccia, agglomerate, lapilli tuff, amphibolite	Minor	Lava, intrusives		Associated rock types: rhyolite, rhyodacite, schist, phyllite, quartzite, sandstone, hornblende-oneiss				Tholeiitic volcanism similar in composition to the ~1798 Ma mafic dykes of the Tournefort Dyke Swarm (ME 9)	Zang (2002)	63370	Cowley et al. (2003)	24475
Lxw	Lxw	39163	Wallaroo Group--Wandearah Formation (metasedimentary rocks associated with 1763 ± 14 Ma to 1737 ± 5 Ma felsic volcanics of the Wallaroo Group; rare mafic rocks)	South Australian Element	East Gawler	Mafic	Extrusive, hypabyssal	Basaltic rocks	Minor	Lava		Various volcanic rocks of Weetulta Formation (Mona Volcanics Member, Wardang Volcanics Member)							Cowley et al. (2003)	24475
Lxe	Lxe	39164	Wallaroo Group--Weetulta Formation (felsic volcanic rocks ranging in age from 1763 ± 14 Ma to 1737 ± 5 Ma; rare mafic rocks)	South Australian Element	East Gawler	Mafic	Extrusive, hypabyssal	Basaltic rocks	Minor	Lava		Various metasedimentary rocks of Wandearah Formation (Aagot Member, Wokurna Member)							Cowley et al. (2003)	24475
Lm	Lm	23777	McGregor Volcanics (overlain/intertongued with Moonabie Formation, and intruded by 1585 ± 5 Ma Charleston Granite; ?equivalent of ~1740 Ma felsic and mafic metavolcanics of the Wallaroo Group)	South Australian Element	East Gawler	Mafic	Extrusive	Basalt, basaltic andesite	Minor	Lava		Associated rock types: rhyodacite, rhyolite, dacite, andesite, volcaniclastic sandstone and grit, ash-flow tuff, sandstone, arkose, conglomerate, quartzite, siltstone				Mantle source for mafics; with-in plate volcanism, A-type	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Le	Le	14973	Tidnamurkuna Volcanics--Peake Metamorphics (equivalents of Myola Volcanics (Eyre Peninsula) and Mt Ista Volcanics (Qld)?)	South Australian Element	North Gawler, East Gawler	Mafic	Extrusive	Basalt	Minor	Lava	>600	Quartzitic and pelitic paragneiss, schist, phyllite, sandstone, epidosite, marble, rhyolite, granite, metavolcanic gneiss at Spring Hill				Anorogenic A-type with-in plate volcanism; lower crustal melt	Drexel et al. (1993)	43052	Rogers & Freeman (1996a)	23054
Leb2	Leb/ftr71;2/ftr7	14973	Peake Metamorphics (part of sequence)	South Australian Element	East Gawler	Mafic	Extrusive	Orthoamphibolite, metabasalt	Major	Lava	>600	Quartzitic and pelitic paragneiss, schist, phyllite, sandstone, epidosite, marble, rhyolite, granite, metavolcanic gneiss at Spring Hill				Anorogenic A-type with-in plate volcanism; lower crustal melt	Drexel et al. (1993)	43052	Rogers & Freeman (1996a)	23054
Ly1	Ly/ftr71;1/ftr70	23856	Myola Volcanics, Broadview Schist (equivalents of Tidnamurkuna Volcanics, Gawler Element, and Mt Ista Volcanics (Qld)?; intruded by Wertigo Granite)	South Australian Element	Central Gawler, East Gawler	Mafic	Extrusive, hypabyssal	Amphibolite (east of Iron Baron; dolerite and/or basalt precursors), gabbroic amphibolite	Minor	Sill, lava		Associated rock types: rhyolite, rhyodacite, schist, phyllite, quartzite, sandstone, hornblende-oneiss				Anorogenic A-type with-in plate volcanism; lower crustal melt	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Ld	Ld	5603	Gabbronorite, Donington Suite--Lincoln Complex	South Australian Element	Central Gawler, East Gawler	Felsic-mafic	Intrusive, hypabyssal	Gabbronorite, quartz gabbronorite, norite, charnockite, mafic dykes	Minor (<5% of DGS)	Intrusion, dyke		Associated rock types: granite, syenogranite, adamellite, granodiorite, tonalite, gneissic granite, augen gneiss, pegmatite, calc-silicate and marble xenoliths				Crystal fractionation of mantle-derived magma	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
N-k	N-k	9569	Kilroo Formation	South Australian Element	Southwest Gawler, Central Gawler	Mafic	Extrusive	Basalt (two zones, lower zone contains 10 separate flows)	Minor	Lava	0.5 to 24	Associated rock types: clastic sediments, mudstone, siltstone, sandstone, andesitic crystal tuff, thin halite-anhydrite layers/veins				Rift graben within wrench-fault system; terrestrial fluvial and playa-lake sediments	Drexel et al. (1993)	43052	Drexel et al. (1993)	43052
Tasman province																				
Ek3	*k/ftr71;3/ftr70	28634	Kanmantoo Group (part)--Moratana Supergroup	Tasman	Tasman	Mafic	Extrusive, intrusive	Calc-alkaline dolerite and basalt, amphibolite	Major	Dyke, lave, sheet	3	Associated rock types: sandstone, phyllite, schist, gneiss, siltstone, calc-silicate, marble, sulphidic metasediments (intercalated with Kanmantoo Group metasediments)				Primitive MORB-type mafic rocks intruded or extruded at maximum crustal extension; with marine sediments	Drexel & Priess (1995)	44133	Drexel & Priess (1995)	44133
EOd26	*Od/ftr71;26/ftr	24727	Black Hill Norite	Tasman	Tasman	Mafic, ultramafic	Intrusive	Gabbro, olivine gabbro, gabbronorite, norite, anorthosite, granophyre, peridotite, troctolite, monzonite	Major	Funnel-shaped plugs, layered intrusion		Syntectonic granite, rhyolite, ?metasediments (Kanmantoo Group?)				Continental tholeiite (Turner, 1996) or transitional N-type MORB (Burtt & Purvis, 2002)	Burtt & Purvis (2002)	62888	Turner (1996)	62889
Eo8	*o/ftr71;8/ftr70	26184	Truro Volcanics--Normanville Group that belongs to Moratana Supergroup (Truro Volcanics are interbedded with dated Heatherdale Shale, both form the upper part of the Normanville Group	Tasman	Tasman	Mafic	Extrusive, hypabyssal	Andesite, trachybasalt, hawaiite basalt, volcanic breccia, gabbro, dolerite, minor ?ultramafic rocks	Major	Lava, sill, dyke	>300	Associated rock types: conglomerate, volcaniclastic sediments, shale, phyllite, sandstone, limestone (intercalated with Normanville and/or Kanmantoo Group metasediments				MORB to within-plate alkalic suite marking onset of rifting; basalts in submarine setting	Morand et al. (2003)	50154	Morand et al. (2003)	50154
O-ip	O-ip	33824	Pondinnie Basalt--Innamincka Formation	Tasman	Tasman	Mafic	Extrusive	Trachytic basalt, olivine basalt	Minor	Lava		Associated rock types: pyritic shale, siltstone, breccia, sandstone				Not Applicable--Phanerozoic			Drexel & Priess (1995)	44133
E-j	*-j	30532	Jena Basalt--Kalladeina Formation (compositionally similar to basalts from Truro Volcanics)	Tasman	Tasman	Mafic	Extrusive	Basalt, alkaline basalt, trachytic basalt, hyaloclastite	Major	Lava		Associated rock types: limestone, dolomite, shale, siltstone, sandstone, agglomerate				Alkaline intraplate mafic volcanics associated with rifting; Not Applicable--Phanerozoic	Gravestock et al. (1995)	23155	Drexel & Priess (1995)	44133
O2	O/ftr71;2/ftr70;	NA	Un-named basalt	Tasman	Tasman	Mafic	Extrusive, hypabyssal	Basalt, dolerite	?Minor	Dyke, lave, sheet		Associated rock types: sandstone, phyllite, schist, gneiss, siltstone, calc-silicate, marble, sulphidic metasediments (intercalated with Kanmantoo Group metasediments)				Primitive MORB-type mafic rocks intruded or extruded at maximum crustal extension; with marine sediments	Drexel & Priess (1995)	44133	Drexel & Priess (1995)	44133
EOd23	*Od/ftr71;23/ftr	NA	Un-named mafic intrusive	Tasman	Tasman	Mafic	Intrusive	Mafic intrusive rocks	?Minor	Dyke, lave, sheet		Associated rock types: sandstone, phyllite, schist, gneiss, siltstone, calc-silicate, marble, sulphidic metasediments (intercalated with Kanmantoo Group metasediments)				Primitive MORB-type mafic rocks intruded or extruded at maximum crustal extension; with marine sediments	Drexel & Priess (1995)	44133	Drexel & Priess (1995)	44133
NO1	N/O/ftr71;1/ftr70	NA	Un-named mafic rocks	Tasman	Tasman	Mafic	Extrusive, intrusive	Volcanics and mafic intrusives (Neoproterozoic--Ordovician)	?Minor	Dyke, lave, sheet		Associated rock types: sandstone, phyllite, schist, gneiss, siltstone, calc-silicate, marble, sulphidic metasediments (intercalated with Kanmantoo Group metasediments)				Primitive MORB-type mafic rocks intruded or extruded at maximum crustal extension; with marine sediments	Drexel & Priess (1995)	44133	Drexel & Priess (1995)	44133
To be shown (point data, not polygons): other important Proterozoic mafic-ultramafic magmatic ages/events																				
Central Gawler, East Gawler, Musgrave provinces																				
NA	NA	42483	Amata Dolerite, northwest-trending in Musgrave Orogen; equated to ~825 Ma Type B mafic dykes of Gilkson et al. (1996); coeval with Gairdner Dyke Swarm in Musgrave Orogen, Gawler Element	Central Australia	Musgrave	Mafic	Hypabyssal	Quartz dolerite	Major	Dyke	3 to 30	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt, mafic intrusives				Slightly quartz-normative tholeiites; chemically similar to Gairdner dolerite dykes	Gilkson et al. (1996)	44109	Gilkson et al. (1996)	44109
NA	NA	NA	Un-named olivine dolerite dykes, mainly northeast and minor northwest-trending in Musgrave Orogen (Hinckley Range, Mann Range; equated to ~1000 Ma Type C mafic dykes of Gilkson et al. (1996); note: no geochronology data for 1000 Ma dykes found at GA)	Central Australia	Musgrave	Mafic	Hypabyssal	Olivine dolerite	Major	Dyke	1 to 2	Felsic granulite, orthogneiss, migmatite, gneissic granite, felsic volcanics, basalt, mafic intrusives				Primitive, high-mg dolerites derived from enriched heterogeneous mantle source relative to Kulgera and Stuart Pass Dolerite dykes	Gilkson et al. (1996)	44109	Gilkson et al. (1996)	44109
NA	NA	NA	Leucogabbro, Hiltaba Suite, Peculiar Knob North iron ore prospect (DDH PK1, 326.7-328.8 m; MGA location: 538128 E, 6730169 N; Lat 29.557500, Long 135.3993430); mafic magmatic intrusive age	South Australian Element	East Gawler	Mafic	Intrusive	Leucogabbro, leucogabbronorite, gabbro, norite, pegmatoidal leucogabbro	Major	Intrusion									Jagodzinski (2005)	62883
NA	NA	NA	Metagabbro (Engenina DDH 86EN 27, 178.9-182.0 m; GDA94 location: Lat 29.538598, Long 135.403845)	South Australian Element	East Gawler	Mafic	Intrusive	Metagabbro	Major	Intrusion									Hoin (2005; unpub, OZCHRON)	NA
NA	NA	NA	Amphibolite (Engenina DDH 86EN 20, 128.4-130.5 m; GDA94 location: Lat 29.586493, Long 135.382868)	South Australian Element	East Gawler	Mafic	Intrusive	?Hypabyssal	Major	Intrusion or dyke									Hoin (2005; unpub, OZCHRON)	NA
NA	NA	NA	Microgabbro dyke, Hiltaba Suite, Snake Gully prospect northeast of Olympic Dam mine site (DDH SGD 4, 402.9-443.0 m; AMG location: 689940 E, 6634800 N; Lat 30.4038330, Long 136.9771667)	South Australian Element	East Gawler	Mafic	Hypabyssal	Microgabbro dyke cuts ~1850 Ma megacrystic granite of Donington Suite	Major	Dyke		Granite (~1850 Ma Donington Suite)							Jagodzinski (2005)	62883
NA	NA	NA	Colona metagabbro (Colona Homestead DDH 43, 52-54 m; GDA94 location: 771569 E, 6527778 N, Zone 52; Lat 31.3527847, Long 131.8546826; ?coeval with 1723 Ma Derpetti Dolerite, Northern Territory)	South Australian Element	Central Gawler	Mafic, ultramafic	Intrusive	Gabbro, metagabbro, pyroxenite	Major	Intrusion		Gneiss, diorite, tonalite, granodiorite, pegmatite				Subduction or collision-related setting for a relatively mafic calc-alkaline igneous suite	Daly et al. (1994; unpub)	NA	Fanning et al. (2007)	NA
NA	NA	NA	Bill's Lookout gabbro (DDH BLD 1, 694.6 m, ~35 km east of Olympic Dam Cu-U-Au mine; AMG location: 712800 E, 6636900 N; Lat 30.3811670, Long 137.2146670)	South Australian Element	East Gawler	Mafic	Intrusive	Anorthositic gabbro	Major	Intrusion									Johnson (1993)	NA
NA	NA	NA	Un-named mafic sills, north Gawler Element; associated with un-named coeval 1799 ± 2 Ma felsic volcanics (Hopper, 2001) (location: 585750 E, 6904700 N; Lat. 27.8756244, Long 135.8732411)	South Australian Element	East Gawler	Mafic	Intrusive, hypabyssal	Mafic rock	Major	Sill		Granite (~1850 Ma Donington Suite)							Hooper (2001; unpub)	NA
NA	NA	5603	Quartz gabbronorite, Donington Suite--Lincoln Complex, Cape Donington, Eyre Peninsula (location: 590794.56 E, 6157005.1 N; Lat 34.725, Long 135.991667)	South Australian Element	Central Gawler, East Gawler	Felsic-mafic	Intrusive	Quartz gabbronorite, quartz-gabbronorite gneiss	Minor	Intrusion		Granite (~1850 Ma Donington Suite)				Mafic cumulates associated with I-type grantes derived from mafic mantle-derived magma at 845°C and >8 kb	Mortimer et al. (1988)	41973	Drexel & Priess (1995)	44133
NA	NA	5603	Quartz gabbronorite, Donington Suite--Lincoln Complex, Cape Donington, Eyre Peninsula (location: 590794.56 E, 6157005.1 N; Lat 34.725, Long 135.991667)	South Australian Element	Central Gawler, East Gawler	Felsic-mafic	Intrusive	Quartz gabbronorite, quartz-gabbronorite gneiss	Minor	Intrusion		Granite (~1850 Ma Donington Suite)				Mafic cumulates associated with I-type grantes derived from mafic mantle-derived magma at 845°C and >8 kb	Mortimer et al. (1988)	41973	Drexel & Priess (1995)	44133
NA	NA	5603	Quartz gabbronorite, Donington Suite--Lincoln Complex, Cape Donington, Eyre Peninsula (location: 590794.56 E, 6157005 N; Lat 34.7234901, Long 135.9930492)	South Australian Element	Central Gawler, East Gawler	Felsic-mafic	Intrusive	Quartz gabbronorite, quartz-gabbronorite gneiss	Minor	Intrusion		Granite (~1850 Ma Donington Suite)				Mafic cumulates associated with I-type grantes derived from mafic mantle-derived magma at 845°C and >8 kb	Mortimer et al. (1988)	41973	Drexel & Priess (1995)	44133
NA	NA	68745	Tournefort Dyke Swarm, McLaren Point, Eyre Peninsula (location: 592755 E, 6149270 N; Lat 34.79301446, Long 136.0153176)	South Australian Element	Central Gawler	Mafic	Intrusive	Amphibolite, dolerite	Major	Dyke	3	Granite (~1850 Ma Donington Suite)				Fractionated, mantle-derived magma; LREE enriched and high K, Rb, Ba indicate crustal contamination; typical continental Proterozoic mafic dykes	Drexel et al. (1993)	43052	Schwarz (1998a)	22489
NA	NA	29821	Blackfellow Hill Pyroxenite (DDH Blackfellow Hill 1, 145.55-145.86 m; GDA94 location: 359420 E, 6643867 N, Zone 53; Lat 30.328863, Long 133.537650)	South Australian Element	Central Gawler	Mafic, ultramafic	Intrusive	Phlogopite pyroxenite, pyroxenite, gabbro, norite, gabbronorite, phlogopite schist	Major	Layered intrusion	58	Gneiss, garnet gneiss, banded-iron formation, carbonate, chalcedony; mafic rocks are intruded by tonalite and granodiorite				Derived from silicious high-magnesium basaltic parent magma	Drexel et al. (1993)	43052	Fanning et al. (2007)	NA
Not to be shown (point data); uncertain metamorphic/inherited/relative Proterozoic ages																				
Central Gawler, East Gawler, Southwest Gawler provinces																				
NA	NA	NA	Nundroo mafic granulite (DDH Nundroo 2, 128.0-128.9 m; GDA94 location: 238453 E, 647761 N; Lat 31.805835, Long 132.237289)	South Australian Element	Central Gawler	Mafic	Intrusive	Mafic granulite (high-grade hb-pl-cpx mafic gneiss and pl-cpx-opx-gt-mt mafic gneiss)	Major	Intrusion		Metasedimentary quartzofeldspathic gneiss				Whole-rock chemistry consistent with mafic rocks derived from tholeiitic gabbro or basalt	Drexel et al. (1993)	43052	Fanning et al. (2007)	NA
NA	NA	24842	Metanorite,