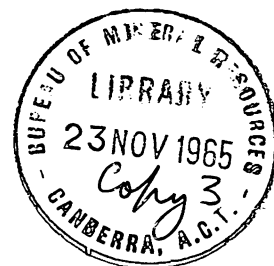


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COMMONWEALTH OF AUSTRALIA
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

BULLETIN No. 78



CHEMICAL ANALYSES OF AUSTRALIAN ROCKS, PART II: SEDIMENTARY ROCKS

COMPILED BY

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INTRODUCTION

CONTENT

This compilation includes analyses of igneous, metamorphic, and sedimentary rocks from all Australian States, Territories, and Protectorates, although the list of analysed rocks from Australian Antarctica is probably not complete.

Part 1—Bulletin 65—contains analyses of igneous and metamorphic rocks as well as analyses of natural slags, sinters and clinkers. *Part 2*—this Bulletin—contains analyses of non-carbonate and non-phosphate rocks, carbonate rocks being arbitrarily designated as rocks containing 25% or more of carbonate minerals. It is hoped that at some future date the carbonate and phosphate rocks may be published as Part 3. Evaporites are not included in the compilation.

I have attempted to make the compilation as complete as possible, and old, unreliable, and incomplete analyses are included, because I believe that, though the discriminating petrologist will use them only with the greatest of caution, he may find them useful in leading to early work in a particular area and in showing up chemical peculiarities of rocks in certain areas; furthermore, these analyses have some historical value and are thus made accessible to the 'scientific historian'.

PRESENTATION

As in Part 1 the tables are arranged according to rock type and subdivided on oxide ratios, these ratios being chosen to bring rocks of similar chemical composition together. In this Part silica, alumina, total iron, and lime have been used in calculating the ratios. As lime has not been estimated in many clays and shales, these analyses have been included with those containing less than 1% CaO. This is probably a source of error, but it is obvious that lime is not an important constituent of the analysed rock and to compile these analyses in a separate table would divorce them from the more complete ones of very similar composition. In Part 1 incomplete analyses, weathered rocks, etc., were presented in separate tables, but this arrangement is not practicable in Part 2, and separate tables of incomplete analyses are compiled only when oxides used as the main basis of subdivision have not been estimated.

Another difficulty has arisen with regard to the pyroclastic rocks, for those occurring in the volcanic fields of the Territory of Papua and New Guinea are so closely related to the lavas that they should not be separated from them, whereas elsewhere bedded tuffs among the older formations are commonly fossiliferous and appear to be true sediments. Some pyroclastic rocks are, therefore, listed in Part 1 and others in Part 2.

Most of the sedimentary analyses have been made by the State Surveys for economic purposes; hence there is some selection of the material analysed, and the number of analyses in a particular table is not a true estimate of the abundance of a particular sediment, but merely reflects its commercial value.

When the analyst's name is known it is given, otherwise it is merely stated that the analysis has been made by the particular State Survey.

As in Part 1, analyses are referred to by their original rock names, but as these have been used very loosely in the commercial world many shales probably are listed as clays and may even be found under the heading of slates in Part 1; it has been found that rocks described as clays, claystones, clayshales, shales, fireclays, and slates may all come from a single locality.

As many of the bauxites and laterites are derived from ancient soils resting on igneous rocks, they are not strictly sedimentary rocks and they have been included in Part 2 with some hesitation. Furthermore, such a rock analysis may have little value when divorced from the soil profile. Nevertheless, these apparently unrelated analyses have been listed to draw readers' attention to certain chemical features, to localities, and to references to the literature. Many hundreds of partial analyses of bauxite and laterite, all related to their soil profiles, are published in Owen (1954), and these have not been repeated in the present compilation.

OTHER REMARKS ON THE TABLES

References to the literature are given above each analysis; the numbers in bold type correspond to the numerical list of alphabetically arranged authors' names on page 228, and the second number refers to the page on which the analysis appears in the reference cited. Several references are given for some analyses, as quite commonly a second or third reference gives a description of the rock and relates it to others in the area, whereas the first may appear only as an analysis in a laboratory report.

Owing to lack of space, only very brief and somewhat general localities are given. The petrologist, using the analysis for comparison, probably needs nothing more precise, but those requiring further information may get it from the reference. In the case of analyses not previously published, or that are unlikely to appear in a later publication, a more detailed reference is given. Rock analyses by, or for, the Bureau of Mineral Resources are commonly from areas where place names are few, and specimens have been pin-pointed on air-photographs; for such analyses only very general localities are given here, because many of them will be re-published in bulletins, accompanied by regional maps, now in the course of preparation. If the rock has a formal name, this is given in italics beneath the lithological name.

In some cases it has been found that the summation of the published analysis is incorrect; this has been corrected, but as it is not known whether the actual total or one of the constituent oxides was misprinted, the new summation is shown in square brackets. When an author has added a corrigendum in a later publication, this publication is also quoted as a reference to the analysis.

There is a geographical index arranged according to States, Territories, and Protectorates, and after each place name the symbols SAa10, SMb90, etc., refer to the rocks from that particular locality that have been analysed and may be looked up in the appropriate table.

The following abbreviations have been used:

abs	=	absent
p	=	present
pnd	=	present not determined
tr	=	trace, less than 0.01%
nd	=	not determined

ACKNOWLEDGMENTS

I am particularly grateful to Dr N. H. Fisher for his suggestion that this compilation be published as a Bulletin of the Commonwealth Bureau of Mineral Resources, Geology and Geophysics and to the Director of the Bureau for sanctioning its publication; and for their assistance with the compilation of analyses made by, or for, the Bureau, I wish to thank Mr A. D. Haldane and Mr S. Baker.

Miss Ruth Penrose searched many copies of the New South Wales Department of Mines Annual Reports for chemical analyses and Miss Edith Smith went through the publications of the Australian Institute of Mining and Metallurgy: to both I am extremely grateful. Mrs G. Bartlett, of the Bureau library, also gave much valuable help.

I should like to acknowledge the kindness of Dr D. E. Thomas of the Geological Survey of Victoria, Dr E. O. Rayner of the Geological Survey of New South Wales, Dr L. W. Samuel and Mr G. H. Payne of the Western Australian Government Chemical Laboratories, and Mr J. H. Lord of the Geological Survey of Western Australia for making available unpublished analyses in the records of their departments. Drs C. T. McElroy and E. R. Segnit, and Messrs D. R. Pinkstone, H. Whitworth, and H. Yates also generously contributed unpublished analyses, and Dr F. C. Loughnan has given much information, and to all I offer my grateful thanks.

Finally, I should like to thank Mr K. A. Townley and Mr M. A. Randal, who have edited this Bulletin, for their assistance and kindly advice.

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TABLE SA — QUARTZ SANDS ($\text{CaCO}_3 < 25\%$)a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$

CaCO ₃ < 1%									
	1	2	3	4	5	6	7	8	9
Rock Name	Sand	Sand	Sand	Sand	Sand	Sand	Quartz Sand	Sand	Dune Sand
Locality	Newcastle, N.S.W.	Woy Woy, N.S.W.	Newcastle, N.S.W.	Maroubra Beach, N.S.W.	Botany Bay, N.S.W.	Long Bay, N.S.W.	Port Macquarie, N.S.W.	8 miles S.E. of Crookwell, N.S.W.	Bondi, N.S.W.
Reference	189	166, 77	189	115, 18	115, 18	115, 18	115, 17; 154, 182	166, 77	115, 17; 152, 182
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. H. Walton	R. H. Walton	R. H. Walton	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	*Plus undetermined	—	—	—	—	—	—	*Quoted as carbonate
SiO ₂	99.5	99.26	99.2	99.20	99.20	99.18	99.18	99.02	98.87
Al ₂ O ₃	0.1	0.35	0.1	} 0.34	} 0.32	} 0.36	0.22	0.40	} 0.25
Fe ₂ O ₃	0.02	0.07	0.2				0.09	} 0.22	
FeO	—	—	—	—	—	—	0.14		—
MgO	} <0.03	—	} <0.04	0.02	0.07	0.07	—	tr.	tr.
CaO		—		0.14	0.10	0.06	—	abs.	0.56*
Na ₂ O	—	—	—	—	—	—	—	—	—
K ₂ O	—	—	—	—	—	—	—	—	—
H ₂ O +	0.01	0.40*	0.1	} 0.20	} 0.30	} 0.26	0.36	0.30	—
H ₂ O —	—	—	—				—	—	—
CO ₂	—	—	—	—	—	—	—	—	0.43*
TiO ₂	0.04	—	0.03	—	—	—	—	—	—
P ₂ O ₅	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents									Cl = tr.
	99.70	100.08	99.67	99.90	99.99	99.93	99.99	99.94	100.11

TABLE SA — QUARTZ SANDS ($\text{CaCO}_3 < 25\%$)

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$									
$\text{CaCO}_3 < 1\%$									
	10	11	12	13	14	15	16	17	18
Rock Name	Sand	Sand	Sand	Sand	Sand	Sand	Siliceous Sand	Sand	Sand
Locality	3 mls. N. of Wamberal Lagoon, N.S.W.	Teatree Gully, S.A.	Woy Woy, N.S.W.	Woy Woy, N.S.W.	Hectorville, S.A.	La Perouse, N.S.W.	Near Murwillumbah, N.S.W.	Bondi Beach, N.S.W.	Cronulla, N.S.W.
Reference	189	55, 11	166, 77	166, 77	55, 11	115, 18	115, 17; 165, 125	115, 18	115, 17; 166, 77
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	R. H. Walton	N.S.W. Dep. Mines	R. H. Walton	N.S.W. Dep. Mines
Remarks	*Contains trace of ZrO_2	—	*Plus undetermined	*Plus undetermined	—	—	—	—	*Plus undetermined
SiO_2	98.80	98.78	98.66	98.54	98.08	98.00	97.84	97.74	97.62
Al_2O_3	0.93	0.80	0.46	0.61	1.12	1.26	0.64	1.00	1.32
Fe_2O_3	—	0.07	0.10	0.07	0.05	—	0.04		0.40
FeO	—	—	—	—	—	—	—	1.26	—
MgO	tr.	0.03	—	—	0.22	0.05	0.10		0.13
CaO	tr.	abs.	0.08	0.18	0.12	0.14	0.24	—	0.28
Na_2O	—	tr.	—	—	0.23	—	—	—	—
K_2O	—	tr.	—	—		—	—	—	—
$\text{H}_2\text{O} +$	0.18	0.02	0.50*	0.46*	0.26	0.44	—	—	0.52*
$\text{H}_2\text{O} -$	—	0.04	—	—			0.56	—	—
CO_2	—	abs.	—	—	—	—	—	—	—
TiO_2	0.59*	0.13	—	—	0.07	—	—	—	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	tr.	abs.	—	—	—	—	—	—	—
Other Constituents							undet. 0.58		
	100.50	99.87	99.80	99.86	100.15	99.89	100.00	100.00	100.27

TABLE SA — QUARTZ SANDS ($\text{CaCO}_3 < 25\%$)

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$									
$\text{CaCO}_3 < 1\%$								$\text{CaCO}_3 = 1/5\%$	
	19	20	21	22	23	24	25	26	27
Rock Name	Quartz Sand	Sand	Sand	Sand	Sand	Quartz Sand	Sand	Calcareous Sand	Sand
Locality	22 miles S. of Nowra, N.S.W.	Port Macquarie Harbour, N.S.W.	Woy Woy, N.S.W.	Plympton, S.A.	Busselton, W.A.	Mona Vale, Sydney, N.S.W.	Mornington Pen., Vic.	Waratah, N.S.W.	Cronulla Beach, N.S.W.
Reference	176, 99	115, 17; 164, 185	166, 77	55, 11	218, 99	175, 96	113, 74	115, 17; 164, 185	115, 17; 166, 77
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	C. C. Williams	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Loss on ignition	(Dredged)	*Plus undetermined	—	*Includes some organic	—	(Well)	*Quoted as carbonates	*Plus undetermined
SiO_2	97.27	97.20	96.44	96.18	95.46	91.40	91.06	96.19	95.48
Al_2O_3	0.69	0.96	1.20	1.66	2.76	2.55	—	0.86	1.04
Fe_2O_3	0.03	0.20	0.20	0.80	1.00	2.15	0.11	0.40	0.36
FeO			—	—	—		—	—	
MgO	—	0.13	—	0.18	tr.	—	—	0.13*	0.23
CaO	—	0.76	0.16	0.30	tr.	—	—	1.38	1.12
Na_2O	—	—	0.90*	0.19	—	—	—	—	—
K_2O	—	—			—	—	—	—	—
$\text{H}_2\text{O} +$	0.24*	—	1.10	0.40	0.78*	—	—	—	1.77*
$\text{H}_2\text{O} -$	—	0.17	—			—	—	—	
CO_2	—	0.59	—	—	—	—	—	1.23*	—
TiO_2	abs.	0.02	—	0.26	—	0.50	—	0.04	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	undet. = 1.77	NaCl = tr.	—	—	—	—	—	—	—
	100.00	100.03	100.00	99.97	100.00	96.60	—	100.23	100.00

TABLE SA — QUARTZ SANDS ($\text{CaCO}_3 < 25\%$)a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$

	$\text{CaCO}_3 = 1\% - 5\%$			$\text{CaCO}_3 > 5\% < 25\%$					
	28	29	30	31	32	33	34	35	36
Rock Name	Sand	Sand	Sand	Quartz Sand	Quartz Sand with forams	Quartz Sand	Quartz Sand	Quartz Sand	Glauconitic Sand
Locality	Cronulla Beach, N.S.W.	Salisbury, S.A.	Heron Island Bore, 730'-732' Qld.	Heron Island Bore, 292'-294' Qld.	Heron Island Bore, 530'-540' Qld.	Heron Island Bore, 594'-600' Qld.	Heron Island Bore, 594'-600' Qld.	Heron Island Bore, 567'-594' Qld.	Michaelmas Cay Bore, 582'-600' Qld.
Reference	115, 17; 166, 77	55, 11	214, 53	214, 28	214, 43	214, 46	214, 46	214, 45	214, 94
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	I. L. B. Henderson	I. L. B. Henderson	I. L. B. Henderson	I. L. B. Henderson	I. L. B. Henderson	I. L. B. Henderson	V. R. Cundith
Remarks	†Includes P_2O_5 and TiO_2 *Quoted as carbonates	(Coastal Dune)	*Quoted as carbonates °Loss on ignition includes organic	°Insol. *Loss on ignition includes organic	°Insol. *Loss on ignition includes organic	°Insol. *Loss on ignition includes organic	°Insol. *Loss on ignition includes organic	°Insol. *Loss on ignition includes organic	°Insol. *Includes P_2O_5
SiO_2	93.90	92.34	90.0	89.0°	83.7°	78.1°	78.0°	77.5°	76.7°
Al_2O_3	1.31	1.23	3.0	1.4	2.8	3.5	3.8	3.0	1.8*
Fe_2O_3	0.21	0.96							
FeO		—	—	—	—	—	—	—	—
MgO	0.40†	0.10	0.8*	0.4	0.5	1.3	0.2	1.0	1.3
CaO	1.85*	2.72	2.8	4.9	6.4	8.6	9.5	9.0	10.3
Na_2O	—	pnd.	—	—	—	—	—	—	—
K_2O	—	abs.	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	—	0.20	3.2°	4.2*	6.2*	8.3*	8.1*	8.8*	—
$\text{H}_2\text{O} -$	0.46	0.04	0.1	0.3	0.3	0.1	0.2	0.3	0.1
CO_2	1.87*	2.10	pnd.	pnd.	pnd.	pnd.	—	—	9.4
TiO_2	—	0.07	—	—	—	—	—	—	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	pnd.	—	—	—	—	—	—	—
Other Constituents		$\text{SO}_3 = 0.04$ $\text{Cl} = 0.02$ Organic = pnd.	Organic = 0.1	Organic = 0.3	Organic = 0.6	Organic = 0.2	Organic = 0.4	Organic = 0.6	Organic = 0.2
	100.00	99.82	99.9	99.84	99.9	99.9	99.8	99.6	99.8

TABLE SA — QUARTZ SANDS (CaCO₃<25%)b. Al₂O₃ + Total Fe₂O₃ = 5% - 10%c. Al₂O₃ +
Fe₂O₃ >
10%

CaCO ₃ > 5% < 25%							CaCO ₃ < 1%
	1	2	3	4	5	6	1
Rock Name	Sand (Tripoli)	Sand	Sand	Sand	Sand	Quartz Sand	Sand
Locality	S.A.	Mornington Peninsula, Vic.	Torrens River near Gumeracha S.A.	5 miles S.E. of Nundle, N.S.W.	Dalton, N.S.W.	Heron Island Bore, 567'-594' Qld.	Canterbury, N.S.W.
Reference	219, 50	113, 74	55, 11	171, 105	166, 77	214, 45	115, 18
Analyst	T. W. Dalwood	Vic. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	I. L. B. Henderson	R. H. Walton
Remarks		(Well)			(Underlying white clay)	°Insol. *Loss on ignition includes organic	
SiO ₂	91.64	90.30	90.18	90.00	85.72	73.1°	86.40
Al ₂ O ₃	6.69	6.15	5.14	6.18	7.10	5.2	8.37
Fe ₂ O ₃	0.25	0.11	1.04		0.92		1.83
FeO	abs.	—	—	—	—	—	
MgO	0.06	—	0.02	—	0.29	0.3	0.01
CaO	abs.	—	0.36	—	abs.	11.2	tr.
Na ₂ O	0.06	—	0.68	—	2.71	—	—
K ₂ O	0.06	—	0.52	—		—	tr.
H ₂ O +	1.42	3.44	0.41	2.46	3.26	9.7*	3.40
H ₂ O -	0.10	—	0.09			0.2	
CO ₂	—	—	abs.	—	—	—	—
TiO ₂	0.14	—	0.20	—	—	—	—
P ₂ O ₅	—	—	—	—	—	—	—
MnO	—	—	pnd.	—	—	—	—
Other Constituents	SO ₃ = 0.01		SO ₃ = 0.10 Cl = 0.02 Organic = pnd.			Organic = 0.5	
	100.43	100.00	98.76	98.64	100.00	99.7	100.01

TABLE SB — OTHER SANDS

	1	2
Rock Name	Zircon Sand	Beach Sand
Locality	Green-bushes, W.A.	Byron Bay, N.S.W.
Reference	217 , 45	189
Analyst	E. S. Simpson	N.S.W. Dep. Mines
Remarks	*Undetermined	
SiO ₂	23.84	1.06
Al ₂ O ₃	—	19.90
Fe ₂ O ₃	6.30	9.70
FeO	} 0.61*	13.76
MgO		7.30
CaO		0.36
Na ₂ O		—
K ₂ O		—
H ₂ O+		—
H ₂ O—		—
CO ₂		—
TiO ₂	17.12	23.65
P ₂ O ₅	0.83	0.85
MnO	—	0.76
Other Constituents	ZrO ₂ = 47.63 ThO ₂ = tr. SnO ₂ = 2.83 Ce ₂ O ₃ = 0.84	Cr ₂ O ₃ = 20.96 ThO ₂ = 0.20 Rare Earths = 1.85
	100.00	100.35

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$

CaO < 1%

	1	2	3	4	5	6	7	8	9
Rock Name	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone <i>Crotty Sandstone</i>	Sandstone	Sandstone	Sandstone	Sandstone
Locality	Donnybrook, W.A.	Donnybrook, W.A.	Stawell, Vic.	Donnybrook, W.A.	Andrew Divide, 1 mile S. of Crotty, Tas.	Donnybrook, W.A.	Donnybrook, W.A.	Donnybrook, W.A.	Donnybrook, W.A.
Reference	228, 99	228, 99	244, 63	229, 89	237	229, 89	229, 89	229, 89	229, 89
Analyst	Dougall	Dougall	Vic. Dep. Mines	Not stated	M. Chiba, H. Halsey, J. Cooper	Not stated	Not stated	Not stated	Not stated
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	98.28	96.88	96.19	96.19	95.67	95.25	95.07	94.88	94.86
Al_2O_3	0.09	0.24	1.90	1.90	1.87	2.53	2.85	3.35	2.91
Fe_2O_3	0.57	1.26	0.37	0.44	0.17	0.38	0.50	0.35	0.35
FeO	—	—	0.06	—	0.06	—	—	—	—
MgO	0.11	0.03	0.09	—	0.23	—	—	—	—
CaO	0.08	0.08	tr.	—	0.02	—	—	—	—
Na_2O	—	—	0.04	—	0.01	—	—	—	—
K_2O	0.01	0.03	0.39	—	0.61	—	—	—	—
$\text{H}_2\text{O} +$	0.64	0.84	0.48	—	0.60	—	—	—	—
$\text{H}_2\text{O} -$	0.14	0.26	0.11	—	0.16	—	—	—	—
CO_2	0.16	0.08	abs.	abs.	nd.	0.01	0.02	abs.	abs.
TiO_2	—	—	0.10	—	0.22	—	—	—	—
P_2O_5	0.03	0.01	—	—	0.05	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	$\text{FeS}_2 =$ 0.02 $\text{NaCl} =$ 0.03	$\text{FeS}_2 =$ 0.01 $\text{NaCl} =$ 0.06							
	100.16	99.78	99.73	98.53	99.67	98.17	98.44	98.58	98.12
Age	Mesozoic	Mesozoic	?Carboniferous	Mesozoic	Silurian	Mesozoic	Mesozoic	Mesozoic	Mesozoic

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$									
$\text{CaO} < 1\%$									
	10	11	12	13	14	15	16	17	18
Rock Name	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone
Locality	Donny-brook, W.A.	Donny-brook, W.A.	Donny-brook, W.A.	Helidon, Qld.	Donny-brook, W.A.	Donny-brook, W.A.	Yan Gan, Qld.	Goulburn, N.S.W.	Norseman, W.A.
Reference	229, 89	229, 89	229, 89	213, 150	229, 89	229, 89	213, 150	115, 16	228, 96
Analyst	Not stated	Not stated	Not stated	Qld. Govt. Anal.	Not stated	Not stated	Qld. Govt. Anal.	N.S.W. Dep. Mines	C. C. Williams
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	94.77	94.76	94.52	94.3	94.04	93.57	93.5	92.52	91.80
Al_2O_3	2.22	2.36	3.26	0.8	2.33	3.94	3.1	4.46	3.31
Fe_2O_3	1.90	0.98	0.59		1.79	0.43		0.46	1.06
FeO	—	—	—	—	—	—	—	—	abs.
MgO	—	—	—	—	—	—	tr.	0.23	0.23
CaO	—	—	—	0.3	—	—	0.4	tr.	0.14
Na_2O	—	—	—	—	—	—	—	0.14	0.31
K_2O	—	—	—	—	—	—	—	1.39	0.05
$\text{H}_2\text{O} +$	—	—	—	4.6	—	—	3.0	0.78	1.04
$\text{H}_2\text{O} -$	—	—	—		—	—			0.53
CO_2	0.03	0.01	0.02	—	0.01	0.01	—	—	abs.
TiO_2	—	—	—	—	—	—	—	0.20	1.17
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	0.27
Other Constituents									=0.07
	98.92	98.11	98.39	100.0	98.17	97.95	100.0	100.18	99.98
Age	Mesozoic	Mesozoic	Mesozoic	Triassic	Mesozoic	Mesozoic	Jurassic	?Silurian	

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$							b. $\text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3 = 5\% - 10\%$	
CaO < 1%					CaO = 1% - 5%		CaO < 1%	
	19	20	21	22	23	24	1	2
Rock Name	Kaolinized Sandstone	Sandstone	Sandstone	Sandstone	Calcareous Sandstone	Soft Calcareous Sandstone	Sandstone <i>Hawkesbury Sandstone</i>	Conglomerate
Locality	Hawkesbury Sandstone Botany, N.S.W.	13 mls. N. of Wallangra, Yetman Rd., N.S.W.	Helidon, Qld.	Helidon, Qld.	Heron Island Bore, 721'-722' Qld.	Heron Island Bore, 723'-730' Qld.	Peat's Ridge, 50 miles N. of Sydney, N.S.W.	Yandahoo Hills, W.A.
Reference	161, 197	161, 197	213, 150	213, 150	214, 52	214, 53	261, 274	259
Analyst	N.S.W. Dep. Mines	H. P. White	Qld. Govt. Anal.	Qld. Govt. Anal.	I. L. B. Henderson	I. L. B. Henderson	J. M. Pyle	Not stated
SiO_2	91.44	90.98	90.9	90.8	88.8°	87.6°	91.20	91.18
Al_2O_3	4.41	4.12	0.5	0.7	3.2	3.0	4.81	4.66
Fe_2O_3	0.50	0.80	3.3	3.7			0.22	1.82
FeO	0.18	0.72	—	—			0.08	0.28
MgO	0.18	tr.	tr.	tr.	1.2	1.3	0.03	tr.
CaO	0.34	tr.	abs.	abs.	3.0	3.4	0.16	0.11
Na_2O	0.04	0.21	—	—	—	—	0.05	0.20
K_2O	0.60	0.23	—	—	—	—	0.76	0.36
$\text{H}_2\text{O} +$	1.57	2.06	5.4	4.9	3.7*	4.2*	1.36	1.21
$\text{H}_2\text{O} -$	0.25	0.46			0.1	0.1	0.31	0.09
CO_2	—	0.03	—	—	pnd.	pnd.	0.23	—
TiO_2	0.52	0.30	—	—	—	—	0.84	0.30
P_2O_5	0.01	0.18	—	—	—	—	tr.	0.06
MnO	abs.	tr.	—	—	—	—	abs.	abs.
Other Constituents					Organic = 0.1	Organic = 0.1		Cl = tr. $\text{SO}_3 = 0.20$ $\text{ZrO}_2 = \text{tr.}$
	100.04	100.09	100.1	100.1	100.0	99.6	100.05	100.47
Age	Triassic		Triassic	Triassic	Recent	Recent	Triassic	

°Insol. *Loss on ignition includes organic.

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$									
CaO < 1%									
	3	4	5	6	7	8	9	10	11
Rock Name	Iron-stained Sandstone <i>Hawkesbury Sandstone</i>	Sandstone	Sandstone	Argillaceous Sandstone	Sandstone	Micaceous Sandstone <i>Hawkesbury Sandstone</i>	Sandstone	Sandstone	Kaolinite Sandstone
Locality	Botany, N.S.W.	Dunkeld, Vic.	Egerton, Vic.	Noarlunga, S.A.	13 mls. N. of Wallangra, Yetman Rd., N.S.W.	Cremorne, N.S.W.	Donnybrook, W.A.	Murphys Creek, Qld.	25 miles S. of Weipa, Qld.
Reference	161, 197	212, 194	212, 194	103, 29	161, 197	138, 56	229, 75	203, 150	35
Analyst	N.S.W. Dep. Mines	H. C. Richards	H. C. Richards	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. Bowley	Qld. Govt. Anal.	J. R. Beevers
Remarks	—	—	—	—	—	(Bore)	—	—	—
SiO_2	90.52	90.49	90.22	90.16	89.92	89.64	89.26	89.2	89.2
Al_2O_3	4.95	5.66	7.56	5.90	3.84	6.53	5.82	5.9	7.3
Fe_2O_3	0.35	0.59	tr.	1.00	1.95	1.94	0.50		0.5
FeO	0.18	abs.	abs.	—	0.76	—	0.08	—	—
MgO	0.17	tr.	tr.	0.18	0.17	0.03	0.24	tr.	—
CaO	abs.	0.27	tr.	0.22	tr.	tr.	0.21	0.9	—
Na_2O	0.19	0.88	0.38	0.32	0.25	0.07	0.33	—	—
K_2O	1.11	0.46	0.22	0.86	0.31	0.83	2.18	—	—
$\text{H}_2\text{O} +$	2.10	0.97	1.56	1.21	2.16	1.04	1.28	4.0	—
$\text{H}_2\text{O} -$	0.24	0.20	0.58	0.21	0.40	0.22	0.13		—
CO_2	—	abs.	abs.	abs.	0.02	—	0.01	—	—
TiO_2	0.30	—	—	0.26	0.30	—	0.30	—	0.7
P_2O_5	0.08	—	—	—	0.08	tr.	0.11	—	—
MnO	0.01	abs.	tr.	—	0.03	tr.	abs.	—	—
Other Constituents	Cl = tr. Organic = tr.			Cl = 0.01	Cl = tr.		$\text{SO}_3 = 0.03$ Organic = abs.		
	[100.20]	99.52	100.52	100.33	100.19	100.30	100.44	100.0	—
Age	Triassic	?Carboniferous	Ordovician			Triassic	Mesozoic	Triassic	Probably Tertiary

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

CaO < 1%									
	12	13	14	15	16	17	18	19	20
Rock Name	Kaolinite Sandstone	Sandstone <i>Hawkesbury Sandstone</i>	Sandstone	Sandstone	Argillaceous Sandstone	Sandstone	Sandstone	Sandstone <i>Hawkesbury Sandstone</i>	Glaucinite Sandstone
Locality	25 mls. S. of Weipa, Qld.	Pymont, Sydney, N.S.W.	4 mls. N. of Wallangra, Yetman Rd., N.S.W.	Goulburn, N.S.W.	Noarlunga, S.A.	Donnybrook, W.A.	Donnybrook, W.A.	Pymont, Sydney, N.S.W.	'Green-sand' Osborne Park, Perth, W.A.
Reference	35	148, 122	161, 197	115, 16	103, 29	229, 75	229, 89	140, 65	128, 8
Analyst	J. R. Beevers	H. P. White	W. A. Greig	N.S.W. Dep. Mines	W. S. Chapman	H. Bowley	—	N.S.W. Dep. Mines	D. G. Murray
Remarks	—	*Free $\text{SiO}_2 = 83.55\%$	—	—	—	—	—	—	(Bore)
SiO_2	88.9	88.85*	88.58	88.52	88.48	87.93	87.71	87.60	86.82
Al_2O_3	8.7	6.01	4.97	6.63	7.18	5.83	5.54	8.53	3.63
Fe_2O_3	0.8	0.10	1.60	0.76	0.82	0.32	2.68	0.03	2.98
FeO	—	1.37	0.81		—	0.10	—	0.10	0.78
MgO	—	0.25	0.22	0.28	0.06	0.76	—	0.29	0.54
CaO	—	0.08	0.36	0.16	0.04	0.21	—	0.60	tr.
Na_2O	—	0.01	0.06	0.04	0.20	0.56	—	0.45	0.45
K_2O	—	0.81	0.17	2.10	1.18	2.58	—	0.28	2.54
$\text{H}_2\text{O} +$	—	1.05	2.60	1.20	1.72	1.01	—	1.40	1.21
$\text{H}_2\text{O} -$	—	0.33	0.42		0.10	0.47	—	0.45	0.70
CO_2	—	0.84	0.04	—	abs.	0.02	0.90	—	0.05
TiO_2	0.7	0.66	0.28	0.25	0.10	0.14	—	—	0.27
P_2O_5	—	pnd.	0.15	—	—	0.17	—	tr.	tr.
MnO	—	0.04	tr.	—	—	abs.	—	abs.	tr.
Other Constituents		$\text{SO}_3 = \text{tr.}$	$\text{Cl} = \text{tr.}$		$\text{Cl} = 0.01$	$\text{SO}_3 = 0.02$ Organic = 0.04		$\text{SO}_3 = 0.11$ $\text{NaCl} = \text{tr.}$ Sol. $\text{SiO}_2 = 0.40$ $\text{Cl} = \text{tr.}$	$\text{ZrO}_2 = \text{tr.}$ $\text{B}_2\text{O}_3 = \text{tr.}$ $\text{FeS}_2 = 0.20$ $\text{Cl} = \text{tr.}$
	99.1	100.40	100.26	99.94	[99.89]	100.16	96.83	100.24	100.17
Age	Probably Tertiary	Triassic		?Silurian		Mesozoic	Mesozoic	Triassic	Cretaceous

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

CaO < 1%									
Rock Name	21	22	23	24	25	26	27	28	29
	Sandstone <i>Hawkesbury Sandstone</i>	Argillaceous Sandstone	Sandstone	Sandstone <i>Hawkesbury Sandstone</i>	Sandstone	Sandstone	Sandstone	Sandstone	Sandstone (Spicular)
Locality	Waverley, Sydney, N.S.W.	Noarlunga, S.A.	Greendale, Vic.	Botany, N.S.W.	50 mls. N. of Chin-chilla, Qld.	Donnybrook, W.A.	Dawson River, Qld.	Eurombah Creek, Qld.	Cape Riche, Albany, W.A.
Reference	148, 122	103, 29	212, 194	152, 182	161, 197	229, 89	161, 197	161, 197	111, 49 228, 99
Analyst	H. P. White	W. S. Chapman	H. C. Richards	N.S.W. Dep. Mines	W. A. Greig	Not stated	H. P. White	W. G. Stone	E. S. Simpson
Remarks	*Free $\text{SiO}_2 = 80.50\%$	—	—	—	—	—	—	—	*60.22% sol. in 5% NaOH °Plus loss
SiO_2	86.75*	86.48	86.37	86.19	85.60	85.45	84.98	84.76	83.62*
Al_2O_3	6.12	8.77	7.29	6.16	7.69	7.60	7.18	6.90	6.25
Fe_2O_3	0.30	1.04	1.67	0.50	0.40	2.12	1.42	1.60	1.95
FeO	1.92	—	abs.	1.71	0.36	—	0.18	0.45	—
MgO	0.36	abs.	0.43	0.36	0.41	—	0.43	0.34	0.57
CaO	0.20	0.08	tr.	0.40	0.50	—	0.26	0.10	0.13
Na_2O	0.15	0.15	0.84	0.15	0.12	—	1.04	1.06	} 1.24°
K_2O	1.14	1.13	0.34	1.09	0.90	—	1.97	1.87	
$\text{H}_2\text{O} +$	0.98	1.07	2.50	1.64	3.05	—	1.91	2.02	2.74
$\text{H}_2\text{O} -$	0.40	0.46	0.10	0.36	0.45	—	0.23	0.42	3.50
CO_2	1.29	abs.	abs.	1.07	0.03	1.09	0.03	0.03	abs.
TiO_2	0.69	0.33	—	0.68	0.48	—	0.45	0.45	—
P_2O_5	pnd.	—	—	tr.	0.02	—	0.19	0.06	—
MnO	0.06	—	tr.	tr.	0.05	—	tr.	0.04	—
Other Constituents	$\text{SO}_3 = \text{tr.}$	$\text{Cl} = 0.01$			$\text{Cl} = \text{tr.}$ $\text{BaO} = 0.01$		$\text{Cl} = \text{tr.}$ $\text{BaO} = \text{tr.}$ $\text{Li}_2\text{O} = \text{pnd.}$	$\text{Cl} = \text{tr.}$ $\text{BaO} = 0.10$	
	100.36	99.52	99.54	100.31	100.07	96.26	100.27	[100.20]	100.00
Age	Triassic			Triassic		Mesozoic	Mesozoic		Miocene

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$					c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 10\%$				
	CaO < 1%			CaO = 1% - 5%		CaO < 1%			
	30	31	32	33		1	2	3	4
Rock Name	Sandstone (Spicular)	Sandstone	Sandstone <i>Hawkes- bury Sandstone</i>	Sandstone		Kaolinized Sandstone	Conglo- merate	Sandstone <i>Hawkes- bury Sandstone</i>	Sandstone
Locality	Cape Riche, Albany, W.A.	Ulladulla, N.S.W.	North Bondi, N.S.W.	Darley, Vic.		25 miles S. of Weipa, Qld.	Shoal- haven District, N.S.W.	Waverley, Sydney N.S.W.	Spring Plains, Vic.
Reference	111 , 49; 228 , 99	170 , 143	167 , 103	212 , 194		35	138 , 60	148 , 122	225 , 94
Analyst	E. S. Simpson	W. A. Greig	N.S.W. Dep. Mines	H. C. Richards		J. R. Beevers	N.S.W. Dep. Mines	H. P. White	Vic. Dep. Mines
Remarks	* Plus loss	—	—	—		—	—	—	—
SiO_2	82.58	82.36	79.12	83.15		86.8	84.78	84.75	84.54
Al_2O_3	5.95	5.90	8.44	5.48		12.0	10.62	8.16	11.46
Fe_2O_3	2.34	1.80	0.70	1.57		0.7		0.41	3.09
FeO	—		3.42	abs.		—	—	1.56	—
MgO	0.39	0.16	0.59	0.64		—	—	0.36	0.59
CaO	abs.	0.12	0.14	2.90		—	—	0.18	tr.
Na_2O	2.43*	0.13	0.66	0.56		—	—	0.06	2.01
K_2O		0.31	2.22	0.24		—	0.31	1.50	tr.
$\text{H}_2\text{O} +$	2.82	6.64	1.74	2.51		—	—	1.41	0.93
$\text{H}_2\text{O} -$	3.49			0.46		—	—	0.49	—
CO_2	—	—	2.34	1.82		—	—	1.16	—
TiO_2	—	—	0.75	—		0.5	—	0.36	—
P_2O_5	—	—	tr.	—		—	—	pnd.	—
MnO	—	—	0.06	0.20		—	—	0.04	—
Other Con- stituents		Organic = 2.58					$\text{SO}_3 = 0.94$	$\text{SO}_3 = \text{tr.}$	
	100.00	100.00	100.18	99.53		100.0	96.65	100.44	102.62
Age	Tertiary	Permian	Triassic	?Permian		Probably Tertiary		Triassic	Silurian

TABLE SC — CALCAREOUS SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 10\% - 20\%$

CaO < 1%									
Rock Name	5	6	7	8	9	10	11	12	13
	Argillaceous Sandstone	Clayey Sandstone	Argillaceous Sandstone	Argillaceous Sandstone	Sandstone	Sandstone <i>Hawkesbury Sandstone</i>	Sandstone <i>Hawkesbury Sandstone</i>	Sandstone	Sandstone <i>Hawkesbury Sandstone</i>
Locality	Noarlunga, S.A.	Longwood, S.A.	Noarlunga, S.A.	Yacka, S.A.	Mt. Lofty, S.A.	Pyrmont, Sydney, N.S.W.	Tempe, Sydney, N.S.W.	Middle-back Range, S.A.	Cronulla, N.S.W.
Reference	102, 55	40, 71	103, 29	103, 40	37, 96	148, 122	151, 165	61, 229	163, 183
Analyst	S.A. Dep. Mines	W. S. Chapman	W. S. Chapman	W. S. Chapman	S.A. Dep. Mines	H. P. White	H. P. White	G. C. Carlos	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	*Free $\text{SiO}_2 = 72.70$	*Should this be 3.56?		*Including traces TiO_2 & P_2O_5
SiO_2	84.18	83.52	83.14	82.80	82.22	82.05*	81.98	81.72	81.48
Al_2O_3	11.08	11.41	9.88	11.62	13.96	9.20	9.90	9.15	10.94*
Fe_2O_3	0.64	0.20	1.46	0.19	0.58	0.50	0.30	2.11	—
FeO	—	—	—	—	—	1.92	2.07	0.59	—
MgO	0.12	0.22	0.28	0.12	0.34	0.39	0.11	0.10	—
CaO	abs.	0.06	abs.	0.22	abs.	0.22	0.15	0.34	—
Na_2O	0.33	0.25	0.23	0.59	—	0.16	0.18	2.87	—
K_2O	0.55	0.36	1.41	1.57	—	1.50	1.45	2.22	—
$\text{H}_2\text{O} +$	3.32	3.58	2.47	3.08	1.90	1.80	8.56*	0.39	—
$\text{H}_2\text{O} -$	0.08	0.23	0.41	0.22	1.29	0.68		0.02	—
CO_2	abs.	abs.	abs.	abs.	—	1.34	1.14	abs.	—
TiO_2	0.08	0.11	0.38	0.14	—	0.35	0.05	0.02	—
P_2O_5	—	—	—	—	—	pnd.	—	0.37	—
MnO	—	—	—	—	—	0.05	—	0.01	—
Other Constituents	Cl = 0.01	Cl = 0.01	Cl = 0.01	Cl = 0.11		$\text{SO}_3 = \text{tr.}$		Cl = tr. $\text{SO}_3 = 0.02$	
Less O = Cl				100.66 0.02	—	—	—	—	—
Age	100.39 Pre-cambrian	99.95	99.67	100.64	100.29	100.16 Triassic	[105.89] Triassic	99.93	— Triassic

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 10\% - 20\%$

CaO < 1%									
	14	15	16	17	18	19	20	21	22
Rock Name	Feldspathic Sandstone	Argillaceous Sandstone	Ferruginous Sandstone	Micaceous Sandstone	Sandstone <i>Narrabeen Sandstone</i>	Sandstone <i>Hawkesbury Sandstone</i>	Conglomerate	Sandstone <i>Hawkesbury Sandstone</i>	Sandstone
Locality	Towrang, N.S.W.	Noarlunga, S.A.	Thirroul, N.S.W.	Thirroul, N.S.W.	Gosford, N.S.W.	North Bondi, N.S.W.	Maitland, N.S.W.	Annandale, Sydney, N.S.W.	Bacchus Marsh, Vic.
Reference	29, 403 137, 61	103, 29	163, 183	163, 183	171, 104	167, 103	152, 182	148, 122	212, 194
Analyst	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. A. Greig	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. P. White	H. C. Richards
Remarks	—	—	*Includes P_2O_5	*Includes P_2O_5	—	—	—	*Free $\text{SiO}_2 = 66.35$	
SiO_2	80.88	80.80	80.80	80.10	79.66	79.28	79.20	78.75*	77.69
Al_2O_3	13.86	11.42	8.87	11.44*	9.43	7.96	9.86	10.93	10.00
Fe_2O_3	0.51	1.90	3.40*	1.20	0.10	1.40	0.40	0.10	2.70
FeO	—	—	—	—	3.00	2.88	0.42	2.48	tr.
MgO	tr.	abs.	—	—	0.56	0.41	0.50	0.52	0.96
CaO	0.15	0.08	—	—	0.64	0.32	0.10	0.16	0.74
Na_2O	tr.	0.16	—	—	0.23	0.62	1.84	0.21	1.02
K_2O	tr.	1.40	—	—	2.16	2.39	1.96	1.58	1.74
$\text{H}_2\text{O} +$	} 4.78	2.86	—	—	1.52	} 2.46	2.32	2.50	3.02
$\text{H}_2\text{O} -$		0.74	—	—	0.60		0.70	0.94	1.56
CO_2	—	abs.	—	—	1.94	1.97	0.03	1.61	0.32
TiO_2	tr.	0.38	0.45	0.64	0.45	0.52	0.15	0.51	—
P_2O_5	—	—	—	—	—	tr.	0.08	pnd.	—
MnO	abs.	—	—	—	—	0.02	0.06	0.08	tr.
Other Constituents		Cl = 0.02					$\text{FeS}_2 = 2.71$ $\text{Cr}_2\text{O}_3 = 0.01$ $\text{SO}_3 = 0.13$		
	100.18	99.76	93.52	93.38	100.29	100.23	100.47	100.37	99.75
Age			Permian	Permian	Triassic	Triassic	Permian	Triassic	Permian

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 10\% - 20\%$

CaO < 1%									CaO = 1% - 5%
	23	24	25	26	27	28	29	30	31
Rock Name	Spicular Sandstone	Clayey Sandstone	Sandstone	Sandstone	Decomposed Argillaceous Sandstone	Sandstone	Sandstone	Shaley Sandstone	Sandstone
Locality	Lower Palinup River, W.A.	Wollongong, N.S.W.	Picton, N.S.W.	Crowdy Head, N.S.W.	Hummock Hill near Port Augusta, S.A.	Red Rock Flat, Capertee Valley, N.S.W.	Boulder, Kalgoorlie, W.A.	9 mls. N.W. of White Cliffs, N.S.W.	Highfields, Qld.
Reference	257, 9	175, 96	169, 105	170, 143	88, 7; 101, 33; 103, 39	27, 133	226, 77; 236, 47	116, 75; 197, *	213, 150
Analyst	D. G. Murray	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. A. Greig	W. S. Chapman	J. C. H. Mingaye	E. S. Simpson	N.S.W. Dep. Mines	Qld. Govt. Anal.
SiO_2	74.36*	74.10	73.72	72.74	72.24	70.60	70.25	68.12	80.50
Al_2O_3	11.33	12.72	11.74	13.84	16.80	13.88	15.22	15.25	14.00
Fe_2O_3	2.29	—	4.60	0.90	1.84	3.10	1.00	0.76	
FeO	nd°	5.40	0.81	1.80	—	—	0.87	0.27	—
MgO	0.95	—	1.08	0.70	0.48	1.14	0.12	0.77	0.25
CaO	0.10	—	0.44	0.50	0.22	abs.	0.14	0.42	1.79
Na_2O	0.26	—	1.64	3.88	0.14	0.48	3.46	0.77	—
K_2O	1.04	—	1.14	3.31	3.20	2.68	1.28	0.73	—
$\text{H}_2\text{O} +$	5.84	—	4.28	1.30†	3.02	4.62	1.34	5.91	3.56
$\text{H}_2\text{O} -$	3.63	—	—	—	0.90	1.63	0.42	5.40	
CO_2	0.05	—	—	—	abs.	—	0.02	—	—
TiO_2	0.62	0.70	0.22	0.30	0.76	—	0.34	0.74	—
P_2O_5	0.06	—	0.08	—	—	—	—	—	—
MnO	tr.	—	0.02	—	—	tr.	tr.	—	—
Other Constituents	$\text{FeS}_2 = 0.23$ $\text{ZrO}_2 = \text{tr.}$	—	$\text{SO}_3 = \text{tr.}$	—	$\text{SO}_3 = 0.16$ $\text{Cl} = 0.34$	Sol. Salts = 2.12‡	S = 2.96 Fe = 2.47 Cu = 0.50	Cl = 1.29 $\text{V}_2\text{O}_5 = 0.03$ $\text{SO}_3 = 0.19$	—
Less O = Cl	—	—	—	—	100.10	—	—	100.66	—
	100.76	—	99.77	99.27	0.08	—	—	0.28	—
Age		Permian	Triassic		100.02	100.25	100.39	100.38	100.00
							?Pre-Cambrian	Cretaceous	Triassic

*41.77% Opal of spicules.

°Owing to organic.

†Loss on ignition.

‡Contains epsomite.

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 10\% - 20\%$			d. $\text{Al}_2\text{O}_3 + \text{FeO}_3 > 20\%$						
CaO < 1% — 5%			CaO < 1%						
	32		1	2	3	4	5	6	7
Rock Name	Sandstone Hawkesbury Sandstone		Kaolinite Sandstone	Sandstone	Shaley Sandstone	Sandstone (Fragment in Agglomerate)	Argillaceous Sandstone	Shaley Sandstone	Gritty Argillaceous Sandstone
Locality	Cataract River, N.S.W.		25 mls. S. of Weipa, Qld.	Picton, N.S.W.	Near White Cliffs, N.S.W.	Kangaroo Gully, near Bendigo, Vic.	Golconda District, Tas.	Near White Cliffs, N.S.W.	White Cliffs, N.S.W.
Reference	152, 182		35	169, 105	116, 75; 197, xi	232, 381	210, 12	116, 75	166, 75; 197
Analyst	W. A. Greig		J. R. Beevers	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. C. Richards	Not stated	N.S.W. Dep. Mines	N.S.W. Dep. Mines
SiO_2	74.28		69.5	68.64	66.14	64.87	64.10	63.55	62.83
Al_2O_3	11.59		22.0	16.31	21.45	13.82	19.13	21.89	20.00
Fe_2O_3	0.40		1.7*	3.90	0.78	3.95	7.87	0.57	0.27
FeO	2.79		—	0.81	—	3.50	—	0.21	0.28
MgO	0.81		—	0.92	0.45	1.23	1.81	0.57	0.48
CaO	1.14		—	0.68	0.41	tr.	—	0.32	0.35
Na_2O	0.36		—	1.08	0.46	1.78	1.05	0.71	0.43
K_2O	1.75		—	1.24	0.68	5.70	4.09	0.64	0.71
$\text{H}_2\text{O} +$	2.94		—	5.64	7.89	2.40†	2.30‡	7.30	8.23
$\text{H}_2\text{O} -$	0.80		—	—	1.90	—	—	3.98	4.81
CO_2	3.03		—	—	—	—	0.40	—	—
TiO_2	0.55		1.0	0.32	—	2.41	—	0.24	0.96
P_2O_5	—		—	0.22	—	—	—	—	0.01
MnO	tr.		—	0.04	—	—	—	—	—
Other Con- stituents	$\text{SO}_3 = 0.06$		—	$\text{SO}_3 = \text{tr.}$ Organic = tr.	$\text{Cl} = 0.17$ $\text{SO}_3 = 0.11$	—	—	$\text{Cl} = 0.64$ $\text{SO}_3 = 0.04$ $\text{V}_2\text{O}_5 = 0.03$	$\text{Cl} = 1.17$ $\text{SO}_3 = 0.22$
	—		—	—	100.44	—	—	100.69	100.75
Less O = Cl	—		—	—	0.03	—	—	0.14	0.25
	100.50		—	99.80	100.41	99.66	100.75	100.55	100.50
Age	Triassic		?Tertiary	Triassic	Cretaceous	Ordovician	Ordovician	Cretaceous	Cretaceous

*Specimen iron stained.

†Loss on ignition.

‡Loss on ignition.

TABLE SC — QUARTZ SANDSTONES (NON-CALCAREOUS
AND NON-FERRUGINOUS)

d. $\text{Al}_2\text{O}_3 + \text{FeO}_3 > 20\%$			
CaO = 1%			CaO = 1% — 5%
	8	9	10
Rock Name	Shaley Sandstone	Shaley Sandstone	Tuffaceous Sandstone
Locality	White Cliffs, N.S.W.	White Cliffs, N.S.W.	Rose Bay Bore, 1900' N.S.W.
Reference	116, 75; 197	116, 75; 197	250, 155
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S. G. Walton
Remarks	—	—	—
SiO_2	61.60	59.64	61.65
Al_2O_3	23.32	25.44	13.29
Fe_2O_3	0.80	0.59	2.94
FeO	0.18	0.27	6.44
MgO	0.70	0.47	3.44
CaO	0.48	0.74	1.64
Na_2O	0.24	0.38	2.44
K_2O	0.27	0.35	0.66
$\text{H}_2\text{O} +$	8.27	9.33	4.02
$\text{H}_2\text{O} -$	3.83	2.37	1.30
CO_2	—	—	0.90
TiO_2	0.72	0.57	0.97
P_2O_5	—	0.02	0.05
MnO	—	—	0.60
Other Con-stituents	$\text{V}_2\text{O}_3 = 0.01$	$\text{Cl} = 0.02$ $\text{SO}_3 = 0.06$	$\text{Cr}_2\text{O}_3 = 0.13$, $\text{NiO} = \text{tr.}$, $\text{CuO} = 0.01$, $\text{BaO} = 0.08$, $\text{ZnO} = 0.01$, $\text{Cl} = 0.01$, $\text{FeS}_2 = 0.07$, $\text{SO}_3 = 0.03$
	100.42	100.25	100.68
Age	Cretaceous	Cretaceous	Triassic (Narrabeen Group)

TABLE SD — CALCAREOUS SANDSTONES

CaO>5% & CaCO ₃ <25%			
	1	2	3
Rock Name	Sandstone	Sandstone	Sandstone
Locality	Kalgoorlie, W.A.	Near Athlone, South Gippsland, Vic.	Near Athlone South Gippsland, Vic.
Reference	226, 77; 236, 47	126, 452	126, 452
Analyst	C. G. Gibson	Vic. Dep. Mines	Vic. Dep. Mines
Remarks	—	*Loss on ignition	*Loss on ignition
SiO ₂	60.01	55.15	44.67
Al ₂ O ₃	17.82	15.23	13.57
Fe ₂ O ₃	0.54	4.49	4.87
FeO	1.65	0.98	2.76
MgO	1.69	2.79	3.82
CaO	5.86	5.43	9.97
Na ₂ O	2.79	1.16	1.18
K ₂ O	1.85	1.65	1.53
H ₂ O+	1.65	11.00*	15.16*
H ₂ O—	0.15	1.90	1.92
CO ₂	5.50	—	—
TiO ₂	0.05	0.59	0.52
P ₂ O ₅	—	tr.	tr.
MnO	0.09	0.22	0.62
Other Constituents	FeS ₂ =1.88	SO ₃ =abs.	SO ₃ =abs.
	101.53	100.59	100.59
Age	Pre-cambrian	Jurassic	Jurassic

TABLE SE — FERRUGINOUS SANDSTONES
(Total $\text{Fe}_2\text{O}_3 > 10\%$)

	1	2	3
Rock Name	Sideritic Chlorite Sandstone	Ferruginous Sandstone	Ferruginous Sandstone
Locality	At 177'9" in bore at Roper Bar, N.T.	Ridge Hill, Darling Scarp, W.A.	Arnhem Bay, N.T.
Reference	33, 22	199, 116	35
Analyst	P. J. J. Sinnott	R. T. Prider	J. R. Beevers
Remarks	—	°Combined $\text{SiO}_2 = 5.42$ *Loss on ignition	—
SiO_2	68.62	63.93°	45.16
Al_2O_3	1.74	3.17	6.22
Fe_2O_3	3.70	27.63	40.96
FeO	13.39	—	—
MgO	2.35	—	tr.
CaO	0.15	—	0.17
Na_2O	0.04	—	—
K_2O	0.14	—	—
$\text{H}_2\text{O} +$	1.70	4.40*	7.04
$\text{H}_2\text{O} -$	0.59	—	abs.
CO_2	6.75	—	—
TiO_2	0.05	0.99	0.60
P_2O_5	0.01	—	0.25
MnO	0.65	0.02	tr.
Other Constituents	$\text{Li}_2\text{O} = \text{abs.}$	—	$\text{S} = 0.08$
	99.88	100.14	100.48

TABLE SF — GREYWACKES

	1	2	3	4	5	6	7	8	9
Rock Name	Sub-Greywacke	Sub-Greywacke	Greywacke (Horizon in <i>Kondaku Tuff</i>)	Greywacke	Greywacke	Greywacke <i>Purari Greywacke</i>	Greywacke	Greywacke*	Greywacke* <i>Aure Greywacke</i>
Locality	Camberwell, Vic.	North of Doncaster, Vic.	Lower Wahgi River, New Guinea T.P. & N.G.	Bethania Junction Qld.	Mt. Nebo, 14 mls. N.W. of Brisbane, Qld.	Purari Valley, Papua, T.P. & N.G.	Horseshoe, W.A.	Tamworth, N.S.W.	Napere Creek Section Papua T.P. & N.G.
Reference	264, 141	264, 141	65, 103	20, 34; 52	20, 34	60, 169	259	11, 602; 46	59, 139
Analyst	G. C. Carlos	G. C. Carlos	Avery & Anderson	G. R. Patten	R. Gradwell	Avery & Anderson	D. G. Murray	J. C. H. Mingaye	Avery & Anderson
Remarks	—	—		—	—	—	—	*Formerly called tuff	*Formerly called sandstone
SiO ₂	81.60	74.64	72.83	68.54	66.06	65.18	62.28	56.06	53.30
Al ₂ O ₃	8.64	12.45	10.92	15.49	15.34	13.85	12.40	18.36	18.33
Fe ₂ O ₃	0.55	1.92	0.13	0.88	1.01	1.30	5.63	4.40	2.41
FeO	3.08	3.74	4.88	3.17	4.58	5.43	5.86	2.68	2.36
MgO	1.17	2.03	1.09	1.23	2.85	1.87	3.82	4.58	2.62
CaO	0.34	0.08	2.06	2.24	2.38	0.72	0.04	6.06	5.88
Na ₂ O	1.21	2.71	1.20	3.04	3.21	1.48	1.64	3.71	2.18
K ₂ O	1.06	0.09	1.36	3.50	4.00	1.60	2.01	0.66	1.72
H ₂ O+	1.30	0.06	2.03	0.75	0.36	3.94	4.34	2.50	3.14
H ₂ O—	0.14	1.28	0.65	0.15	0.16	2.10	0.66	0.28	5.74
CO ₂	abs.	0.04	1.00	—	nd.	tr.	0.10	0.24	1.00
TiO ₂	0.48	0.79	0.72	0.59	0.62	0.90	0.55	—	0.84
P ₂ O ₅	0.24	0.12	0.35	0.16	0.09	0.38	0.24	0.19	0.28
MnO	0.05	0.03	0.03	0.08	0.04	0.22	0.33	—	0.08
Other Constituents	Cl=0.02 SO ₃ =0.07	Cl=0.02 SO ₃ =0.01	Cl=0.03 SO ₃ =0.46	—	—	Cl=0.16 SO ₃ =0.90	B ₂ O ₃ =tr. FeS ₂ =0.16	—	Cl=0.03 SO ₃ =0.08
	[99.95]	100.01	99.74	99.82	100.70	[100.03]	100.06	99.72	99.99
Age	—	—	Lower Cretaceous	—	—	Cretaceous		Devonian	Miocene

TABLE SF — GREYWACKES

	10	11
Rock Name	Grey-wacke*	Gritty Greywacke <i>Aure Greywacke</i>
Locality	Tamworth, N.S.W.	Cupola Section Papua, T.P. & N.G.
Reference	11, 602; 46	59, 139
Analyst	H. P. White	Avery & Anderson
Remarks	Matrix of rock formerly called agglomerate	—
SiO ₂	52.88	52.34
Al ₂ O ₃	21.25	12.44
Fe ₂ O ₃	2.73	1.23
FeO	3.02	3.02
MgO	4.93	2.54
CaO	7.40	12.80
Na ₂ O	3.95	2.04
K ₂ O	1.15	1.56
H ₂ O+	2.53	0.96
H ₂ O—	0.25	1.31
CO ₂	0.20	8.78
TiO ₂	—	0.62
P ₂ O ₅	0.29	0.19
MnO	—	0.23
Other Con- stituents		Cl=0.03
	100.58	100.09
Age	Devonian	Miocene

TABLE SG — ARKOSES

	1	2	3	4	5	6	7	8	9
Rock Name	Arkose	Arkose	Arkose	Arkose	Arkose	Arkose	Arkose	Arkose	Arkose
Locality	Tarra Valley near Yarram, South Gippsland, Vic.	Barrabool Hills, near Geelong, Vic.	Apollo Bay, Otway Ranges, Vic.	San Remo, South Gippsland, Vic.	Apollo Bay, Otway Ranges, Vic.	Barrabool Hills, near Geelong, Vic.	Korumburra, South Gippsland, Vic.	Wonthaggi, South Gippsland, Vic.	Wonthaggi, South Gippsland, Vic.
Reference	63, 204;	63, 204; 212, 194	63, 204; 212, 194	63, 204	63, 204; 248, 4	63, 204	63, 204	63, 204	63, 204
Analyst	A. B. Edwards	H. C. Richards	H. C. Richards	A. B. Edwards	P. G. W. Bayly	P. G. W. Bayly	P. G. W. Bayly	F. F. Field	F. F. Field
Remarks	—	—	—	—	—	—	—	—	—
SiO ₂	65.50	64.13	64.00	63.60	62.18	61.92	61.04	57.90	57.57
Al ₂ O ₃	15.49	18.59	15.88	16.38	17.13	15.75	16.06	18.76	17.96
Fe ₂ O ₃	0.36	1.99	1.90	0.97	0.87	3.12	2.57	4.20	4.27
FeO	4.24	1.78	3.86	3.81	4.05	2.53	4.61		
MgO	1.92	1.24	1.81	1.92	2.60	2.47	2.55	1.31	1.51
CaO	3.50	1.34	2.02	2.15	2.19	2.13	1.92	3.40	1.38
Na ₂ O	2.60	4.36	3.42	4.19	2.15	2.76	2.00	2.88	2.64
K ₂ O	1.96	1.98	1.86	1.89	1.57	1.89	1.00	0.98	1.73
H ₂ O+	1.89	3.43	3.84	3.02	0.96	4.05	4.13	3.65	5.37
H ₂ O—	0.54	1.38	1.04	1.18	3.31	1.78	1.90	4.35	6.57
CO ₂	1.65	tr.	abs.	tr.	1.32	—	—	1.77	0.50
TiO ₂	0.60	—	—	0.69	—	0.81	0.87	0.81	0.72
P ₂ O ₅	0.20	—	—	0.12	—	—	0.35	—	—
MnO	0.06	tr.	tr.	0.09	—	—	0.25	—	—
Other Constituents	—	—	—	—	—	—	—	—	—
	100.51	100.22	99.63	100.01	98.33	99.21	99.25	100.21	100.22
Age	Jurassic	Jurassic	Jurassic	Jurassic	Jurassic	Jurassic	Jurassic	Jurassic	Jurassic

TABLE SG — ARKOSES

	10	11	12	13
Rock Name	Calcareous Arkose	Calcareous Arkose	Calcareous Arkose	Calcareous Concretion in Arkose
Locality	Near Lang Lang River, South Gippsland, Vic.	Korumburra, South Gippsland, Vic.	Longwarry, Vic.	Apollo Bay, Otway Ranges, Vic.
Reference	63, 205	63, 205	63, 205;	63, 205; 248, 4
Analyst	F. F. Field	P. G. W. Bayly	F. F. Field	P. G. W. Bayly
Remarks	*Loss on ignition	—	*Loss on ignition	
SiO ₂	55.15	52.90	44.67	41.58
Al ₂ O ₃	15.23	16.49	13.57	10.93
Fe ₂ O ₃	4.49	0.78	4.87	2.40
FeO	0.98	4.86	2.76	1.89
MgO	2.79	2.92	3.82	1.30
CaO	5.43	7.14	9.97	21.06
Na ₂ O	1.16	2.58	1.18	1.86
K ₂ O	1.65	1.73	1.53	1.83
H ₂ O+	11.00*	2.93	15.16*	0.71
H ₂ O—	1.90	1.72	1.92	1.39
CO ₂	—	4.65	—	14.93
TiO ₂	0.59	1.10	0.52	—
P ₂ O ₅	tr.	0.25	tr.	—
MnO	0.22	tr.	0.62	1.60
Other Constituents	SO ₃ = abs.	SO ₃ = abs.	—	—
	100.59	100.05	100.59	101.48
Age	Jurassic	Jurassic	Jurassic	Jurassic

TABLE SH — GLACIAL ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Matrix of Tillite	Varve Rock	Tillite	Matrix of Tillite	Grit*	Tillite	Tillite*	Tillite	Matrix of Tillite
Locality	Mt. Fitton, S.A.	Seaham, N.S.W.	Black Swamp, S.A.	Mt. Fitton, S.A.	Stuart Gorge, nr. Adelaide, S.A.	Poolamacca, Barrier Ra, N.S.W.	Black Swamp, S.A.	Stuart Gorge, nr. Adelaide, S.A.	Mt. Fitton 1 ml. w. of Terrapinna, S.A.
Reference	16, 460	192, 76	103, 39; 251, 47	16, 460	129, 245	17, 138	103, 39; 251, 47	129	16, 460
Analyst	D. R. Bowes	G. D. Osborne	W. S. Chapman	D. R. Bowes	W. S. Chapman	D. G. Bowes	W. S. Chapman	W. S. Chapman	D. R. Bowes
Remarks	*Loss on ignition	—	—	*Loss on ignition	*Inter-bedded with tillite	*Loss on ignition	*Altered	—	—
SiO ₂	79.31	78.41	72.18	71.94	70.85	70.0	62.98	62.77	59.51
Al ₂ O ₃	8.23	9.32	10.78	11.67	8.33	12.6	17.96	13.87	12.43
Fe ₂ O ₃	1.45	0.59	7.54	0.81	0.39	0.04	5.12	1.70	1.78
FeO	2.27	0.25		3.93	1.09	3.1		4.29	4.42
MgO	2.32	1.72	0.54	2.64	1.61	3.6	1.62	2.69	6.02
CaO	1.80	0.01	0.20	2.69	7.07	3.0	0.80	3.14	5.79
Na ₂ O	0.95	2.13	tr.	1.23	2.04	1.4	0.04	1.98	1.32
K ₂ O	2.00	4.56	2.46	2.64	1.75	3.4	3.58	3.22	3.72
H ₂ O+	0.20	1.74	4.92	0.52	0.70	1.0	5.77	2.71	0.71
H ₂ O—	0.08	0.85	0.27	0.04	0.03	—	0.79	0.20	0.04
CO ₂	0.47*	abs.	0.08	0.94*	6.48	1.6*	0.29	2.66	3.30
TiO ₂	0.51	<0.01	0.54	0.59	0.18	0.56	0.66	0.78	0.75
P ₂ O ₅	0.09	0.10	—	0.17	0.15	0.12	—	0.33	0.13
MnO	0.03	0.01	—	0.03	0.07	0.06	—	0.02	0.10
Other Constituents	BaO=abs. ZrO ₂ =0.04 S=0.09	—	Cl=0.02	BaO=0.09 ZrO ₂ =0.05 S=0.47	SrO=0.10	—	Cl=0.02	SrO=0.05	BaO=0.06 ZrO ₂ =0.04 S=0.12
	99.84	—	—	100.45	—	—	—	—	100.24
Less O= Cl, F, S	0.04	—	—	0.20	—	—	—	—	0.05
	99.80	99.70	99.53	100.25	100.84	100.5	99.63	100.41	100.19
Age	Pre-cambrian	Carboniferous	Pre-cambrian	Pre-cambrian	Pre-cambrian	Pre-cambrian	Pre-cambrian	Pre-cambrian	Pre-cambrian

TABLE SH —
GLACIAL ROCKS

	10
Rock Name	Laminated Slate*
Locality	Stuart Gorge, near Adelaide, S.A.
Reference	129, 245
Analyst	W. S. Chapman
Remarks	* Associated with tillite
SiO ₂	53.40
Al ₂ O ₃	15.70
Fe ₂ O ₃	—
FeO	3.22
MgO	2.62
CaO	5.65
Na ₂ O	1.95
K ₂ O	3.14
H ₂ O +	3.14
H ₂ O —	0.18
CO ₂	6.24
TiO ₂	0.93
P ₂ O ₅	0.27
MnO	0.05
Other Con- stituents	SrO = 0.09 FeS ₂ = 3.64
	100.22
Less O = Cl, F, S	0.04
	100.18
Age	Pre- cambrian

TABLE SI — SEDIMENTARY BRECCIAS

	1	2	3
Rock Name	Feldspathic Matrix of Fault Breccia	Micaceous Breccia	Feldspathic Breccia
Locality	Mt. Laura, near Whyalla, S.A.	Waratah District, Tas.	Waratah District, Tas.
Reference	211, 168	190, 26; 191, 37	190, 26; 191, 37
Analyst	W. S. Chapman	Tas. Dep. Mines	Tas. Dep. Mines
Remarks	—	*Loss on ignition	*Loss on ignition
SiO ₂	54.58	48.08	46.60
Al ₂ O ₃	29.93	18.91	19.23
Fe ₂ O ₃	1.08	21.61	19.16
FeO	—	0.49	0.26
MgO	abs.	5.07	4.49
CaO	0.04	2.35	2.95
Na ₂ O	0.62	0.67	3.29
K ₂ O	0.36	1.20	0.54
H ₂ O +	9.72	1.70*	4.06*
H ₂ O —	1.31	—	—
CO ₂	abs.	—	—
TiO ₂	2.53	—	—
P ₂ O ₅	—	—	—
MnO	—	—	0.22
Other Constituents	SO ₃ =0.18 Cl=0.28	FeS ₂ =0.33	—
	100.63	—	—
Less O = Cl, F, S	0.06	—	—
	100.57	100.41	100.80

TABLE SJ — PYROCLASTIC ROCKS

[illegible]

TABLE SJ — PYROCLASTIC ROCKS

a. CaO<1%									
	10	11	12	13	14	15	16	17	18
Rock Name	'Ignimbrite' <i>Brisbane Tuff</i>	Acid Tuff <i>Copes Creek Tuff</i>	Semi-Silicified Tuff	Acid Tuff <i>Copes Creek Tuff</i>	Arenaceous Tuff	Semi-Silicified Tuff	Laminated Tuff	Tuffaceous Rock	Tuff
Locality	Brisbane, Qld.	Nymboida, N.S.W.	Limestone Ck, near Little Oak Ck, Burrinjuck, N.S.W.	Nymboida, N.S.W.	Lower Limestone Ck, Burrinjuck, N.S.W.	On road 3 miles from Burrinjuck, N.S.W.	Upper Woolgarlo Ck, Por. 42, Par. of Woolgarlo, Burrinjuck, N.S.W.	Hume Highway Top Black Ra. near Burrinjuck, N.S.W.	Burrinjuck Ck, Burrinjuck, N.S.W.
Reference	19, 156	189	263	189	263	263	263	263	263
Analyst	G. R. Patten	J. H. Pyle	H. Yates	J. H. Pyle	H. Yates	H. Yates	H. Yates	H. Yates	H. Yates
Remarks	—	—	—	—	—	—	—	—	—
SiO ₂	75.52	75.51	74.83	74.72	72.22	71.06	70.00	69.24	68.07
Al ₂ O ₃	12.73	13.82	14.16	14.20	13.16	15.49	14.82	17.08	17.02
Fe ₂ O ₃	2.18	1.15	0.10	0.65	2.54	1.92	2.08	1.16	3.20
FeO	1.43	0.49	0.73	0.44	0.97	0.72	1.44	0.79	0.69
MgO	0.27	0.15	0.12	0.64	1.08	1.05	2.09	0.41	0.32
CaO	0.28	0.05	abs.	0.27	0.54	abs.	0.23	0.12	abs.
Na ₂ O	2.30	3.38	3.90	1.07	2.16	1.50	0.86	0.38	0.70
K ₂ O	3.47	2.83	4.74	3.95	3.10	4.42	3.02	5.42	4.58
H ₂ O+	1.20	1.87	0.97	2.84	2.61	2.76	4.14	3.46	3.95
H ₂ O—	0.48	0.75	0.09	1.32	0.67	0.82	0.94	1.22	0.58
CO ₂	—	abs.	—	abs.	—	—	—	—	—
TiO ₂	0.30	0.15	0.44	0.07	0.70	0.63	0.82	1.81	0.69
P ₂ O ₅	0.16	0.03	nd.	tr.	nd.	nd.	nd.	nd.	—
MnO	0.01	0.01	—	tr.	—	—	—	—	—
Other Constituents		Cr ₂ O ₃ =tr; SrO=tr. CuO=tr. BaO=tr. BeO=tr.	—	Cr ₂ O ₃ = 0.01 CuO=tr. BeO=tr. SrO=tr.	—	—	—	—	—
	[100.33]	100.19	100.08	100.18	99.75	100.37	100.44	101.09	99.80
Age	Triassic		Devonian		Devonian	Devonian	Devonian	Devonian	Devonian

TABLE SJ — PYROCLASTIC ROCKS

a. CaO<1%									
	19	20	21	22	23	24	25	26	27
Rock Name	Acid Tuff <i>Nimbin Rhyolite</i>	Tuff	Tuff or Argillaceous Sandstone	Tuff	Fine Tuff	Tuff	Feldspathic Tuff	Tuff	Fine Tuff
Locality	Urbenville, N.S.W.	Burrinjuck Ck, Burrinjuck, N.S.W.	Por. 144/168 Par. of Bowning Burrinjuck, N.S.W.	W. of Goodradigbee, Ra., N.S.W.	Wee Jasper, N.S.W.	Burrinjuck Ck, 3½ mls. from Burrinjuck, N.S.W.	Golconda District, Tas.	Golconda District, Tas.	3 mls. from Yeranan Siding, N.S.W.
Reference	189	263	263	263	263	263	210, 12	210, 12	176, 99
Analyst	J. H. Pyle	H. Yates	H. Yates	H. Yates	H. Yates	H. Yates	Tas. Dep. Mines	Tas. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	*Loss on ignition	*Loss on ignition	
SiO ₂	66.00	65.29	63.41	63.34	61.66	61.11	60.60	55.00	54.60
Al ₂ O ₃	15.51	20.69	17.68	19.19	22.58	20.96	21.84	19.53	16.50
Fe ₂ O ₃	4.36	0.77	5.43	3.96	2.49	4.39	6.86	11.87	} 5.70
FeO	0.11	0.62	0.29	0.58	0.77	1.53	—	—	
MgO	0.51	0.29	1.58	2.10	0.93	0.21	1.10	7.97	—
CaO	0.71	abs.	0.06	tr.	tr.	abs.	—	tr.	—
Na ₂ O	3.81	3.12	0.28	0.38	0.72	0.62	1.50	—	—
K ₂ O	4.45	3.98	4.36	5.30	5.06	6.82	2.03	—	—
H ₂ O+	2.08	3.91	4.25	3.84	4.45	3.63	6.50*	6.80*	—
H ₂ O—	2.10	0.44	2.09	0.94	0.78	0.38	—	—	—
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	0.46	1.01	1.08	0.56	0.78	0.55	0.30	0.20	0.30
P ₂ O ₅	0.05	—	nd.	0.09	nd.	tr.	—	—	—
MnO	0.04	—	—	—	—	—	—	—	—
Other Constituents	ZrO ₂ =0.03 BaO=0.04 NCO=0.03 S=tr.	—	—	—	—	—	—	—	—
Age	100.29	100.12	100.51	100.28	100.22	100.20	100.73	101.37	—
		Devonian	Devonian	Devonian	Devonian	Devonian	Ordovician	Ordovician	

TABLE SJ — PYROCLASTIC ROCKS

a. CaO<1%				b. CaO=1% – 5%				
	28	29	30		1	2	3	4
Rock Name	Tuff	Tuff <i>Jamberoo Tuff</i>	Volcanic Breccia		<i>Westley Park Tuff</i>	Tuff	Tuff	Volcanic Fragmental Rock
Locality	Golconda District, Tas.	Kiama, N.S.W.	Inverell, N.S.W.		Kiama, N.S.W.	Norfolk Island	Norfolk Island	Kangaroo Gully, near Bendigo, Vic.
Reference	210 , 12	163 , 182	149 , 143		163 , 182	135 , 146	135 , 146	232 , 381
Analyst	Tas. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines		N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	T. H. Plante*
Remarks	*Loss on ignition	—	—		—	*Insol.	—	*Alks. by E. O. Teale
SiO ₂	43·72	36·94	10·37		56·18	54·81*	47·45	41·42
Al ₂ O ₃	34·79	31·57	47·75		20·03	} 27·95	15·30	14·86
Fe ₂ O ₃	8·72	12·80	14·30		tr.		11·75	13·36
FeO	—	0·27	—		3·69		—	—
MgO	2·98	0·26	—		1·32	—	1·89	0·38
CaO	tr.	0·04	—		3·94	1·06	1·80	2·72
Na ₂ O	0·45	0·34	—		2·94	—	—	10·20
K ₂ O	1·68	tr.	—		2·46	—	—	3·30
H ₂ O +	7·42*	13·03	—		6·45	4·08	21·20	} 5·42
H ₂ O –	—	4·27	—		1·33	10·73	—	
CO ₂	—	—	—		—	—	—	2·40
TiO ₂	1·45	0·55	2·68		0·85	—	—	6·58
P ₂ O ₅	—	—	0·49		0·23	0·05	tr.	—
MnO	—	0·03	—		0·03	—	—	—
Other Con-stituents	—				SO ₃ = 0·41	Organic = 0·32 Undet. = 1·00	Undet. 0·62	
	101·21	100·10	—		99·86	100·00	100·00	100·64
Age	Ordovician	Permian	—		Permian			

TABLE SJ — PYROCLASTIC ROCKS

c. CaO = 5% — 10%							d. CaO > 10%	
	1	2	3	4	5	6	1	2
Rock Name	Tuff <i>Arrino Tuff</i>	Tuff <i>Kiama Tuff</i>	Zeolitic Tuff*	Green Banded Tuff*	Breccia <i>Dundas Breccia</i>	Volcanic Agglomerate	Tuff between pillows of lava	Fossil- iferous Tuff
Locality	Arrino, S.W. Division, W.A.	3½ mls. S. of Kiama, N.S.W.	Lower Wahgi River, New Guinea T. P. & N. G.	Dolodrook River, Vic.	Smithton, Tas.	Meeka- tharra, W.A.	King Island, Tas.	Gympie, Qld.
Reference	22, 23; 228, 104	163, 182	65, 103	268, 98	191, 37	81, 275	222, 122	47, 294
Analyst	J. H. Brooking	N.S.W. Dep. Mines	Avery & Anderson	E. O. Teale	Tas. Dep. Mines	H. Bowley	B. Scott	Not Stated
Remarks	—	—	*Horizon in <i>Chimbu</i> <i>Tuffs</i>	* <i>Garvey</i> <i>Gulley</i> <i>Series</i>	*Loss on ignition	—	—	Very old analysis
SiO ₂	67.56	54.84	50.16	5.09	49.28	45.56	51.14	43.150
Al ₂ O ₃	9.27	16.77	19.63	12.69	13.78	19.95	9.01	21.570
Fe ₂ O ₃	3.07	6.40	2.59	5.30	7.12	2.40	2.32	3.610
FeO	0.91	0.36	2.15	12.01	5.93	10.61	3.99	8.520
MgO	2.48	2.24	1.96	5.60	7.24	1.74	12.49	1.785
CaO	5.75	7.44	8.31	5.08	5.81	7.59	14.34	12.450
Na ₂ O	1.72	2.04	0.20	2.54	2.44	1.72	1.67	1.710
K ₂ O	2.39	0.75	1.56	1.32	1.10	2.16	0.39	1.310
H ₂ O+	1.56	7.18	9.22	2.72	4.90*	4.49	2.64	1.100
H ₂ O—	0.53	1.28	2.57	0.40	—	0.11	0.20	0.500
CO ₂	3.37	—	tr.	0.80	—	2.82	0.13	3.560
TiO ₂	0.75	0.84	0.90	2.12	2.20	0.69	0.49	—
P ₂ O ₅	0.71	0.21	0.38	—	0.25	—	nd.	—
MnO	0.25	0.02	0.06	—	tr.	nd.	0.16	—
Other Con- stituents	FeS ₂ = 0.09		Cl = 0.05 SO ₃ = 0.09		S = tr.			
	100.41	100.37	99.83	100.67	100.05	99.84	99.74	99.265
Age		Permian	Eocene		Cambrian		Cambrian	

TABLE SK — DIATOMITES

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Diatomite	Diatom- aceous Earth	Tripolite	Diatom- aceous Earth	Diatomite	Diatomite	Diatomite	Diatomite	Diatomite
Locality	Wyrallah, Richmond River, N.S.W.	Pine Creek, Qld.	Wyrallah, Richmond River, N.S.W.	Talbot, Vic.	Wyrallah, Richmond River, N.S.W.	Portland, Vic.	Happy Valley, near Linton, Vic.	Lillicur District, Vic.	Lake Maring- iniup, W.A.
Reference	26, 132; 115, 12; 141, 72	26, 132	141, 72	94, 44	26, 132; 115, 12	44, 32; 118, 253; 125, 13	44, 29	44, 20	253, 29
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	F.M. Krausé	N.S.W. Dep. Mines	P. G. W. Bayly	Vic. Dep. Mines	Vic. Dep. Mines	Not stated
Remarks	?Some secondary silicifi- cation	*Included organic matter	—	—	?Some secondary silicifi- cation	—	*Quoted as residue	*Free SiO_2 †Residue °Loss on ignition	*Before calcina- tion H_2O = 12.38
SiO_2	90.94*	89.10	88.14	87.98	86.01*	85.98	85.67	85.32*	85.25
Al_2O_3	2.38	} 0.59	1.42	1.15	} 2.83	} 3.05	} 2.31*	} 2.92†	} 4.75
Fe_2O_3	0.49		0.58	—					
FeO	0.33	—	—	—	—	—	—	—	—
MgO	tr.	—	—	0.38	tr.	tr.	—	—	1.50
CaO	—	tr.	—	1.06	tr.	abs.	—	—	2.76
Na_2O	—	—	—	—	—	—	—	—	2.90
K_2O	—	—	0.43	—	—	—	—	—	0.08
$\text{H}_2\text{O} +$	2.79	} 10.31*	3.64	} 9.38	5.96	3.35	4.58	4.87°	—
$\text{H}_2\text{O} -$	2.69		6.02		5.36	6.81	7.44	6.89	—
CO_2	—	tr.	—	—	tr.	—	—	—	—
TiO_2	—	—	—	—	—	—	—	—	—
P_2O_5	—	—	tr.	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con- stituents	NaCl = 0.32	—	Organic = tr.	—	—	—	—	—	$\text{SO}_3 = 0.54$ Cl = 2.87
Less O = Cl, F, S	—	—	—	—	—	—	—	—	100.65 0.65
	99.94	100.00	100.23	99.95	100.16	99.19	100.00	100.00	100.00

TABLE SK — DIATOMITES

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Diatomite	Diatomite	Diatomite	Diatomite	Diatomaceous Earth	Diatomite	Diatomite	Diatomaceous Earth	Siliceous Earth
Locality	Black Duck CK, 25 miles S. of Gatton, Qld.	Bugaldi, N.S.W.	Cooma, N.S.W.	Cape Arid, Eucla Div., W.A.	Cooma, N.S.W.	Morand-ing, Vic.	Bugaldi, N.S.W.	Cooma, N.S.W.	Tintinbar, N.S.W.
Reference	10, 310	43, 12; 115, 12	188, 165	228, 98; 254, 28	26, 132	44, 15	115, 12; 169, 105	26, 132	115, 14; 165, 125
Analyst	Qld Govt. Anal.	N.S.W. Dep. Mines	N.S.W. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	Vic. Dep. Mines	W. G. Stone	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	*Loss on ignition	*After calcination $\text{SiO}_2 = 96.74$ °Includes organic	—	*Free SiO_2 †Residue °Loss on ignition	—	*Quoted as Carbonates	—
SiO_2	84.3	84.14	84.14	83.84*	83.30	83.17*	82.22	81.64	81.60
Al_2O_3	1.8	1.30	2.61	0.98	3.84	4.93†	2.43	3.20	3.05
Fe_2O_3	0.7	0.90	0.19	0.54	0.36	—	1.00	0.40	1.29
FeO		0.18	0.09	—	—	—	0.27	—	
MgO	0.2	0.93	0.23	0.32	0.36	—	0.53	1.02*	0.42
CaO	0.3	0.30	0.50	0.31	0.30	—	0.28	0.84*	0.18
Na_2O	—	0.33	0.14	—	—	—	0.46	—	—
K_2O	—	0.09	0.12	—	—	—	0.38	—	—
$\text{H}_2\text{O} +$	9.0	7.05	3.94*	10.94°	5.84	4.58°	11.70	3.77	12.40
$\text{H}_2\text{O} -$	3.7	4.85	7.32	2.39	5.40	7.32		7.18	
CO_2	—	—	—	—	—	—	tr.	1.80*	—
TiO_2	—	tr.	0.20	—	—	—	0.15	—	0.20
P_2O_5	—	—	—	—	—	—	0.02	—	tr.
MnO	—	tr.	—	—	—	—	0.16	—	0.01
Other Constituents			Undet. = 0.52	NaCl = 0.68	NaCl = 0.25		$\text{SO}_3 = 0.21$ Cl = 0.27		Undet. = 0.85
							100.08	—	—
Less O = Cl, F, S	—	—	—	—	—	—	0.06	—	—
	100.00	100.07	100.00	100.00	99.65	100.00	100.02	99.85	100.00

TABLE SK — DIATOMITES

a. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 < 5\%$							b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$	
	19	20	21	22	23	24	1	2
Rock Name	Diatomite	Diatomite	Diatomite	Diatomite	Diatomite	Diatomite	Diatoma- ceous Earth	Diatoma- ceous Earth
Locality	Black Duck, 25 mls. S. of Gatton, Qld.	Bugaldi, N.S.W.	Lake Jandabup, Wanneroo, W.A.	Morandring, Vic.	Wanneroo, W.A.	Lake Maringiniup, Wanneroo, W.A.	Bacchus Marsh, Vic.	Lake Gnan-gara near Wanneroo, W.A.
Reference	10, 310; 43, 10	115, 12; 169, 105	228, 98; 252, 11; 253, 28	44, 15	43, 17; 228, 98; 252, 11; 253, 28	228, 98; 253, 11; 254, 28	125, 14	252, 12
Analyst	Qld. Govt. Anal.	H. P. White	C. C. Williams	Vic. Dep. Mines	E. S. Simpson	C. C. Williams	H. C. Jenkins	W.A. Dep. Mines
SiO_2	80.6	75.38	54.24†	53.58‡	49.08§	32.99**	94.16	92.96
Al_2O_3	2.7	2.44	3.14	4.68¶	3.51	1.84	0.21	6.65
Fe_2O_3	1.0	0.70	tr.		tr.	tr.	6.69	tr.
FeO	—	0.18	—	—	—	—	—	—
MgO	0.8	0.82	0.42	—	0.05	0.58	tr.	0.09
CaO	1.1	0.42	0.78	—	0.16	1.07	tr.	0.30
Na_2O	—	3.96*	0.15	—	0.22	0.15	—	—
K_2O	—	0.06	0.04	—	0.06	0.03	—	—
$\text{H}_2\text{O} +$	9.5	13.38	29.79°	2.28°†	35.79°	49.11°	°°	—
$\text{H}_2\text{O} -$	3.9		10.27	39.46	11.20	12.38	—	—
CO_2	—	1.72	—	—	—	—	—	—
TiO_2	—	tr.	—	—	—	—	—	—
P_2O_5	—	0.06	—	—	—	—	—	—
MnO	—	tr.	—	—	—	—	—	—
Other Constituents	—	Cl. = 1.42	$\text{SO}_3 = 0.65$ NaCl = 1.20	—	$\text{SO}_3 = \text{tr.}$ NaCl = 0.21	$\text{SO}_3 = 0.21$ NaCl = 1.83	—	—
Less O = Cl, F, S	—	100.54	—	—	—	—	—	—
	—	0.31	—	—	—	—	—	—
	99.60	100.23	100.68	100.00	100.28	100.19	101.06	100.00

*1.86% present as Na_2CO_3 †After calcination $\text{SiO}_2 = 89.45$

°Includes organic

‡Free SiO_2

¶Residue

°†Loss on ignition

§1.74% quartz. After calcination $\text{SiO}_2 =$

92.10

**After calcination $\text{SiO} = 85.25$

°°Calcinated

TABLE SK — DIATOMITES

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

	3	4	5	6	7	8	9	10	11
Rock Name	Diatomite	Diatomaceous Earth	Diatomite	Diatomaceous Earth	Siliceous Earth	Diatomaceous Earth	Diatomaceous Earth	Diatomaceous Earth	Diatomite
Locality	Wanneroo, W.A.	Bacchus Marsh, Vic.	Lake Jandabup W.A.	Glengower, Vic.	Pambula, N.S.W.	Glengower, Vic.	Glengower, Vic.	Newnham, Vic.	Woodbine, via Gatton, Qld.
Reference	228, 98; 252, 11; 253, 28	125, 14	253, 29	125, 8	165, 125	94, 43; 125, 8	94, 43; 125, 8	99, 283	10, 310
Analyst	E. S. Simpson	H. C. Jenkins	W. A. Gov. Chem. Lab.	Vic. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Not stated
Remarks	—	*After calcination SiO ₂ =92.9	†Before calcination H ₂ O+ = 29.97 H ₂ O— = 10.27	—	—	°Loss on ignition		‡Quoted as clayey matter & oxides	—
SiO ₂	92.10	90.85*	89.45	87.47	85.82	85.59	85.58	83.20	82.8
Al ₂ O ₃	6.59	5.91	5.18	2.35	7.97	8.33	7.52	5.36‡	5.1
Fe ₂ O ₃	tr.	—		5.06	0.65				tr.
FeO	—	—	—	—		—	—	—	—
MgO	0.09	0.60	0.69	0.24	—	1.18	1.21	—	0.6
CaO	0.30	tr.	1.29	tr.	—	0.79	0.80	tr.	abs.
Na ₂ O	0.41	—	1.32	—	—	—	—	—	—
K ₂ O	0.11	—	0.07	—	—	—	—	—	—
H ₂ O+	abs	—	†	4.56	—	3.68°	4.63	4.70	—
H ₂ O—	abs	1.18	†		—			6.74	—
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	—	—	—	—	0.32	—	—	—	—
P ₂ O ₅	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	NaCl=0.40	—	SO ₃ =1.07 Cl=1.20	—	—	—	—	Cl=tr.	—
			[100.27]						
Less O=Cl			0.16						
	100.00	98.54	[100.11]	99.68	94.76	99.57	99.74	100.00	88.50

TABLE SK — DIATOMITES

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

	12	13	14	15	16	17	18	19	20
Rock Name	Diatomite	Diatomaceous Earth	Diatomite	Diatomite	Diatomaceous Earth	Diatomaceous Earth	Diatomite	Diatomaceous Earth	Diatomaceous Earth
Locality	Wantial-able Ck, War-rumbungle, Mts., N.S.W.	Newnham, Vic.	Happy Valley, near Linton, Vic.	Glengower, Vic.	Glengower, Vic.	Cooma, N.S.W.	Cooma, N.S.W.	Barraba, N.S.W.	Ballarat, Vic.
Reference	26, 132; 115, 12	99, 283	44, 29	44, 23	94, 43; 125, 8	26, 132; 141, 62	188, 165	26, 132	94, 44; 125, 9
Analyst	N.S.W. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	T. S. Hart
Remarks		*Quoted as clayey matter & oxides	*Quoted as residue	—	*Loss on ignition	*Quoted as carbonates	*Loss on ignition	*Quoted as carbonates	—
SiO_2	82.62	81.76	81.75	81.63	81.31	80.94	80.59	80.56	79.89
Al_2O_3	5.20	6.44 *	5.46*	5.53	6.40	4.61	3.90	4.15	9.95
Fe_2O_3			—			1.23	0.94	1.77	tr.
FeO			—			—	0.18	—	—
MgO	tr.	—	—	—	1.19	0.21*	0.43	0.10*	tr.
CaO	0.53	tr.	—	—	4.73	0.49*	0.52	0.17*	tr.
Na_2O	—	—	—	—	—	—	0.16	—	—
K_2O	—	—	—	—	—	—	0.15	—	—
$\text{H}_2\text{O} +$	3.49	4.70	4.39	5.40	6.14*	2.99	5.39*	12.84	4.78
$\text{H}_2\text{O} -$	7.70	7.10	8.40	7.44		8.07	6.65		5.41
CO_2	0.42	—	—	—	—	0.61*	—	0.25*	—
TiO_2	—	—	—	—	—	—	0.60	—	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents		Cl = tr.				NaCl = 1.06	Undet. = 0.49		
	99.96	100.00	100.00	100.00	99.77	100.21	100.00	95.84	100.03

TABLE SK — DIATOMITES

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

	21	22	23	24	25	26	27	28	29
Rock Name	Grey Diatomite	Diatomite	Diatomite	Iron-stained Diatomite	Diato-maceous Earth	Diatomite	Diatomite	Diatomite	Diato-maceous Earth
Locality	Newnham, Vic.	Cooma, N.S.W.	Near Bugaldi, N.S.W.	Newnham, Vic.	Mickleham (Craigie-burn), Vic.	Orange-Cargo Rd., N.S.W.	Newnham, Vic.	Barraba, N.S.W.	Barraba, N.S.W.
Reference	45, 12	188, 165	173, 108	45, 12	125, 12	115, 12	45, 12	115, 12; 154, 182	176, 99
Analyst	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	Not Stated	N.S.W. Dep. Mines	Vic. Dep. Mines	H. B. Gurney	W. G. Stone
Remarks	*Free SiO ₂ †Residue °Loss on ignition	—	*Plus unde-termined †Loss on ignition	*Free SiO ₂ †Residue °Loss on ignition	*After cal-cination SiO ₂ = 89.33	—	—	—	*Plus undeter-mined
SiO ₂	79.67*	79.04	78.80	78.54*	78.27*	78.18	78.03	77.45	77.04
Al ₂ O ₃	} 7.73†	5.48	3.41	} 9.66†	6.89	6.17	} 8.79	6.98	7.15
Fe ₂ O ₃		0.37	} 2.05		1.08	} 1.95		1.10	} 1.55
FeO	—	0.18		—	—		0.09		
MgO	—	0.48	1.15	—	0.89	0.22	—	0.47	0.34
CaO	—	0.56	0.10	—	abs.	0.48	—	abs.	0.24
Na ₂ O	—	0.33	} 0.59*	—	0.19	0.29	—	1.03	} 0.68*
K ₂ O	—	0.39		—	0.36	0.25	—	0.63	
H ₂ O+	5.84°	5.96	13.90°	5.76°	5.03	5.29	6.54	5.60	} 12.80
H ₂ O—	6.76	6.24	—	6.04	6.90	7.09	6.64	6.10	
CO ₂	—	—	—	—	—	—	—	0.25	—
TiO ₂	—	0.20	—	—	tr.	0.20	—	0.20	0.20
P ₂ O ₅	—	—	—	—	—	tr.	—	0.06	—
MnO	—	—	—	—	—	tr.	—	0.05	—
Other Con-stituents		Undet. = 0.77	Cl = tr.	—	—	Organic Matter = tr.	—	SO ₃ = tr. NaCl = 0.06	—
	100.00	100.00	100.00	100.00	99.61	100.12	100.00	100.07	100.00

TABLE SK — DIATOMITES

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$

	30	31	32	33	34	35	36	37	38
Rock Name	Diatomite	Diatomite	Diatomite	Diatomite	Dark Grey Diatomite	Diatomite	Diatomite	Diatoma-ceous Earth	Diatomite
Locality	Barraba, N.S.W.	Cooma, N.S.W.	Lillicur District, Vic.	Cooma, N.S.W.	Newnham, Vic.	Wanti-alable Ck., Warrumbungle Mts., N.S.W.	Lake Gngangara, Wanneroo, W.A.	Gungal, N.S.W.	Morand-ing, Vic.
Reference	115, 12	115, 12	44, 20	188, 165	45, 12	26, 132; 115, 12	228, 98; 252, 12; 253, 28	176, 99	44, 15
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	E. S. Simpson	E. N. Reidy	Vic. Dep. Mines
Remarks	—	—	*Free SiO_2 †Residue °Loss on ignition	*Loss on ignition	*Free SiO_2 †Residue °Loss on ignition	—	*After calcination $\text{SiO}_2 = 86.91$	*Plus undet. °Loss on ignition	*Free SiO_2 †Residue °Loss on ignition
SiO_2	76.10	75.00	74.77*	73.66	73.45*	72.94	67.72*	66.08	58.74*
Al_2O_3	6.64	4.16	} 8.93†	8.09	} 12.77†	4.57	9.98	6.65	} 6.33†
Fe_2O_3	1.35	1.20		0.60		0.87	tr.	0.93	
FeO	0.09	0.36	—	0.23	—	—	—	—	—
MgO	0.54	0.42	—	0.78	—	0.41	tr.	2.72	—
CaO	1.04	0.80	—	0.60	—	5.33	0.22	4.78	—
Na_2O	0.60	0.25	—	0.17	—	—	—	} 0.48*	—
K_2O	0.34	0.71	—	0.29	—	—	—		—
$\text{H}_2\text{O} +$	8.62	7.40	6.87°	6.43*	7.26°	3.08	16.69*	17.86°	2.89°
$\text{H}_2\text{O} -$	4.68	6.30	9.43	7.69	6.52	7.88	5.63	—	32.04
CO_2	—	—	—	—	—	4.48	—	pnd.	—
TiO_2	0.25	0.36	—	0.50	—	—	—	0.50	—
P_2O_5	—	0.08	—	—	—	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Con-stituents		$\text{SO}_3 = 2.09$ Organic Matter = 1.10		Undet. = 0.96					
	100.25	100.23	100.00	100.00	100.00	[99.56]	100.24	100.00	100.00

TABLE SK — DIATOMITES

b. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 = 5\% - 10\%$			c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 > 10\%$						
Rock Name	39		1	2	3	4	5	6	7
	Diatomite		Diatoma-ceous Earth	Diatoma-ceous Earth	Impure Diatomite	Diatoma-ceous Earth	Diatomite	Diatoma-ceous Earth	Diatomite
Locality	Morand-ing, Vic.		Glengower, Vic.	Newnham, Vic.	S.E. Coona-barabran, N.S.W.	Mickleham (Craigie-burn), Vic.	Portland District, Vic.	S.E. of Coona-barabran, N.S.W.	Redesdale, Vic.
Reference	44, 15		94, 43; 125, 8	99, 283	176, 99	125, 12	118, 254; 125, 13	178, 98	44, 25
Analyst	Vic. Dep. Mines		Vic. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	L. G. Benjamin	N.S.W. Dep. Mines	Vic. Dep. Mines
Remarks	*Free SiO_2 †Residue °Loss on ignition		*Loss on ignition	*Quoted as clayey matter & oxides	—	*After calcina-tion $\text{SiO}_2 = 86.62$	—	*Plus undeter-mined °Loss on ignition	*Free SiO_2 †Residue °Loss on ignition
SiO_2	55.45*		81.57	78.44	75.40	75.40*	74.34	74.20	73.54
Al_2O_3	9.48†		abs.	10.76*	10.20	8.54	8.36	10.63	11.84
Fe_2O_3			11.30		—	1.89	2.66	1.60	
FeO	—		—	—	—	—	—	—	—
MgO	—		1.74	—	—	1.21	—	0.54	—
CaO	3.57°		tr.	tr.	—	abs.	—	0.20	—
Na_2O	31.50		—	—	—	nd.	0.09	0.52*	—
K_2O	—		—	—	—	nd.	0.02		—
$\text{H}_2\text{O} +$	—		4.92*	5.16	—	4.32	4.91	11.86°	4.66
$\text{H}_2\text{O} -$	—			5.64	—	8.22	9.12	—	9.96
CO_2	—		—	—	—	—	—	—	—
TiO_2	—		—	—	—	nd.	—	0.45	—
P_2O_5	—		—	—	—	—	—	—	—
MnO	—		—	—	—	—	—	—	—
Other Con-stituents				Cl = tr.					
	100.00		99.53	100.00	—	99.58	99.50	100.00	100.00

TABLE SK — DIATOMITES

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 > 10\%$

	8	9	10	11	12	13	14	15	16
Rock Name	Diatoma- ceous Earth	Diatomite	Diatoma- ceous Earth	Diatoma- ceous Earth	Diatomite	Diatoma- ceous Earth	Diatomite	Diatoma- ceous Earth	Diatomite
Locality	Barraba, N.S.W.	Orange— Cargo Rd., N.S.W.	Barraba, N.S.W.	Glen Innes, N.S.W.	Portland District, Vic.	Barraba, N.S.W.	N. of Barraba, N.S.W.	Portland, Vic.	Lillicur District, Vic.
Reference	181, 91	115, 12	26, 132	26, 132	118, 253; 125, 13	26, 132	43, 12; 115, 12; 169, 105	118, 253; 125, 13	44, 20
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	P. G. W. Bayly	N.S.W. Dep. Mines	W. A. Greig	P. G. W. Bayly	Vic. Dep. Mines
Remarks	*Loss on ignition	—	*Quoted as carbon- ates °Includes organic	*Quoted as carbon- ates	—	—	—	*After calcination $\text{SiO}_2 =$ 81·67	*Free SiO_2 †Residue °Loss on ignition
SiO_2	73·5	72·92	71·62	71·53	71·23	71·13	70·90	70·52*	68·62*
Al_2O_3	11·4	9·27	14·07	14·36	7·33	13·06	9·84	10·77	10·58†
Fe_2O_3	0·4	2·60		tr.	2·70	0·91	1·60	3·26	
FeO		—	—	—	—	—	0·36	—	—
MgO	tr.	0·44	0·80*	0·32*	abs.	0·87	0·61	abs.	—
CaO	tr.	0·52	0·86*	0·46*	tr.	0·31	1·30	0·75	—
Na_2O	—	0·54	—	—	abs.	—	0·20	0·41	—
K_2O	—	0·45	—	—	abs.	—	0·40	0·09	—
$\text{H}_2\text{O} +$	11·8*	6·73	4·03°	6·14	4·67	5·67	13·38	5·08	8·62°
$\text{H}_2\text{O} -$	—	6·45	7·30	6·50	13·98	7·33		8·82	12·18
CO_2	—	—	1·43*	0·72*	—	0·95	0·58	—	—
TiO_2	—	0·24	—	—	—	—	0·70	—	—
P_2O_5	—	0·03	—	—	—	—	0·02	—	—
MnO	—	—	—	—	—	—	tr.	—	—
Other Con- stituents		Organic = tr.			Cl = 0·51		$\text{SO}_3 = \text{abs.}$ Cl = tr.	Cl = 0·54	
Less O = Cl	—	—	—	—	100·42	—	—	100·24	
	—	—	—	—	0·12	—	—	0·13	
	97·5	100·19	100·11	100·03	100·30	100·23	99·89	100·21	100·00

TABLE SK — DIATOMITES

c. $\text{Al}_2\text{O}_3 + \text{Total Fe}_2\text{O}_3 > 10\%$

	17	18	19	20	21	22	23	24	25
Rock Name	Diatomite	Tripolite	Diatomite	Diatoma- ceous Earth	Diatomite	Diatoma- ceous Earth	Diatoma- ceous Earth	Diatomite	Diatomite
Locality	Tenterfield, N.S.W.	Wyrallah, Richmond R., N.S.W.	Cooma, N.S.W.	Barraba District, N.S.W.	Cooma, N.S.W.	Fairfield, Melbourne, Vic.	Bacchus Marsh, Vic.	Tarana, N.S.W.	Redesdale, Vic.
Reference	175, 96	141, 72	115, 12	181, 91	115, 12	44, 33; 125, 11	125, 14	174, 88	44, 25
Analyst	W. G. Stone	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	P. G. W. Bayly	H. C. Jenkins	W. A. Greig	Vic. Dep. Mines
Remarks	*Loss on ignition	—	—	*Loss on ignition	—	—	*After calcination $\text{SiO}_2 = 69.3$	*Plus undeter- mined	*Free SiO_2 †Residue °Loss on ignition
SiO_2	68.30	67.71	67.48	66.90	66.62	66.36	64.52*	63.84	61.81*
Al_2O_3	11.25	15.47	14.23	12.24	14.64	13.08	25.59	15.76	23.14†
Fe_2O_3	2.45	2.31	1.40	1.76	2.50	3.55	abs.	3.30	—
FeO		—	0.18		0.18	—	—	tr.	—
MgO	1.78	0.93	0.64	0.65	0.02	1.69	0.91	1.10	—
CaO	0.32	0.72	0.36	2.34	0.54	0.63	abs.	0.16	—
Na_2O	0.29	0.98	0.10	—	0.25	—	0.72	0.58*	—
K_2O	1.09	2.52	0.33	—	0.42	—	1.28		—
$\text{H}_2\text{O} +$	14.40*	4.42	10.86	14.80*	9.52	6.21	—	15.26	6.73°
$\text{H}_2\text{O} -$	—	5.41	4.06	—	5.28	8.81	5.22	—	8.32
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.40	—	0.36	0.50	0.24	—	—	—	—
P_2O_5	—	—	0.03	—	0.06	—	—	—	—
MnO	tr.	tr.	—	—	—	—	—	—	—
Other Con- stituents			Organic = tr.					Cl = tr.	
	100.28	100.47	100.03	—	100.27	100.33	98.24	100.00	100.00

TABLE SK — DIATOMITES

c. Al_2O_3 + Total Fe_2O_3 >10%	
	26
Rock Name	Gritty Clay with Sponge Spicules
Locality	Bugaldi, N.S.W.
Reference	189
Analyst	N.S.W. Dep. Mines
Remarks	*Loss on ignition
SiO_2	61.2
Al_2O_3	13.7
Fe_2O_3	2.7
FeO	—
MgO	1.2
CaO	2.0
Na_2O	—
K_2O	—
$\text{H}_2\text{O} +$	13.3*
$\text{H}_2\text{O} -$	4.8
CO_2	0.7
TiO_2	0.6
P_2O_5	—
MnO	—
Other Constituents	
	100.2

TABLE SL — OTHER SILICEOUS ROCKS

Rock Name	1 Radiolarite	2 Silica Rock	3 Radio-larian Chert	4 Silica Rock	5 Radio-larite	6 Sediment-ary Rock	7 Sinter Around Fumerole	8 Flint	9 —
Locality	Winning Station, Carnarvon Basin, W.A.	Tirrana, N.S.W.	Tamworth, N.S.W.	Tirrana, N.S.W.	Winning Station, Carnarvon Basin, W.A.	7 miles E. of Mt. Werong, N.S.W.	Island of Dobu, Papua, T.P. & N.G.	White Cliffs, Wilcannia, N.S.W.	Yarrah-appini Ra., S. Macks-ville, N.S.W.
Reference	35	165, 125	11, 613; 50, 32	165, 125	35	160, 217	127, 32	138, 60	160, 217
Analyst	S. Baker	N.S.W. Dep. Mines	J. C. H. Mingaye	N.S.W. Dep. Mines	S. Baker	H. P. White	Stokes and Hall	N.S.W. Dep. Mines	W. A. Greig
Remarks	*Loss on ignition †Dried at 105°C	—	—	—	*Loss on ignition °Dried at 105°	—	*Loss on ignition	—	—
SiO ₂	94.44	92.52	91.06	88.52	87.90	87.50	87.16	82.70	81.92
Al ₂ O ₃	1.79	4.46	3.79	6.63	7.01	7.41	2.20	1.48	10.91
Fe ₂ O ₃	0.94	0.46	2.01	0.76	10.45	0.60	2.66	0.72	0.81
FeO	—	—	—		—	0.09	—	—	0.27
MgO	—	0.23	0.46	0.28	—	0.10	tr.	2.97	0.08
CaO	abs.	tr.	0.45	0.16	tr.	abs.	tr.	1.40	0.16
Na ₂ O	0.06	0.14	0.28	0.04	0.14	0.31	0.21	0.11	0.19
K ₂ O	0.29	1.39	0.84	2.10	0.24	0.36		0.26	1.38
H ₂ O+	1.99*	0.78	0.97	1.20	3.72*	2.96	7.87	5.70	4.05
H ₂ O—	°	—	0.32	—	°	0.24	—	2.66	0.23
CO ₂	—	—	—	—	—	0.04	—	1.56	abs.
TiO ₂	—	0.20	—	0.25	—	0.22	—	tr.	0.28
P ₂ O ₅	—	—	tr.	—	—	0.05	—	tr.	0.05
MnO	—	—	tr.	—	—	tr.	—	tr.	tr.
Other Con-stituents	Cl=tr.	—	SO ₃ =0.35 Organic=tr.	—	—	SO ₃ =0.03 Cl=0.02	—	SO ₃ =tr.	Cl=tr. (Co ₂ Ni)O=tr. Organic=tr.
	99.51	100.18	100.53	99.94	99.46	99.93	100.10	99.56	100.33

TABLE SL — OTHER SILICEOUS ROCKS

	10	11	12	13	14	15	16	17
Rock Name	Sediment-ary Rock	Radiolarian Cherty Shale	Siliceous Rock	Porcell-anite	Radiolarite	Chert	Radiolarian Shale	Decom-posed Silic-eous Rock
Locality	Mt. Morgan Qld.	Tamworth, N.S.W.	Entrance Lake Macquarie, N.S.W.	½ ml. below Lake De Burgh, Burrinjuck, N.S.W.	Katherine-Darwin Region, N.T.	Coffs Harbour, N.S.W.	Tamworth Common, N.S.W.	25 mls S.E. of Grafton, N.S.W.
Reference	133, 448	11, 613; 50	175, 96	263	35	170, 143	11, 613; 50	175, 96
Analyst	Qld. Govt Anal.	J. C. H. Mingaye	N.S.W. Dep. Mines	H. Yates	S. Baker	W. A. Greig	J. C. H. Mingaye	N.S.W. Dep. Mines
Remarks	—	—	—	—	*Loss on ignition †Dried at 105°C	*Loss on ignition	—	—
SiO ₂	81.3	80.50	79.52	77.72	72.28	69.56	67.87	67.40
Al ₂ O ₃	18.5	9.57	9.50	13.02	19.04	15.40	15.25	18.35
Fe ₂ O ₃	1.1	2.67	—	0.10	0.66	0.50	5.08	—
FeO	—	—	—	0.61	—	1.71	—	—
MgO	—	0.76	—	—	—	0.66	1.46	—
CaO	—	0.60	—	0.29	abs.	1.72	1.71	—
Na ₂ O	—	1.18	—	2.83	0.21	4.73	1.37	—
K ₂ O	—	1.68	—	4.71	1.23	4.07	2.21	—
H ₂ O+	—	1.29	—	0.82	6.74*	1.36*	2.10	—
H ₂ O—	—	0.45	—	—	†	—	2.37	—
CO ₂	—	—	—	—	—	—	abs.	—
TiO ₂	—	—	—	0.24	—	0.20	—	—
P ₂ O ₅	—	0.11	—	nd.	—	—	0.12	—
MnO	—	tr.	—	—	—	—	tr.	—
Other Con-stituents	—	SO ₃ =tr. Organic=0.86	—	—	—	—	SO ₃ =tr.	—
	—	99.67	—	100.34	100.16	99.91	99.54	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	1	2	3	4	5	6	7	8	9
Rock Name	Clay	Clay	Clay	Silt	Sandy Clay	Clay	Clay	Clay	Clay
Locality	N. of North Para River S.A.	Near Echunga, S.A.	2 mls. from Burrage, N.S.W.	Hawkesbury River, N.S.W.	1½ mls. from Mt. Lofty, S.A.	Narrabeen, N.S.W.	Merimbula, N.S.W.	Near Echunga, S.A.	Dinmore, Ipswich, Qld.
Reference	76, 56	103, 28	29, 401	49, 199	103, 30; 235, 12	29, 402	162, 210	103, 28	202, 104
Analyst	T. W. Dalwood	W. S. Chapman	N.S.W. Dep. Mines	F. B. Guthrie	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	Qld. Govt. Anal.
Remarks	—	—	—	—	—	—	—	—	*Loss on ignition
SiO_2	91.13	90.88	90.52	89.96	89.84	89.45	89.20	88.94	87.7
Al_2O_3	3.85	4.60	4.71	4.77	6.62	10.40	5.60	6.66	9.0
Fe_2O_3	0.64	1.70	1.91		0.54	tr.	0.60	0.64	tr.
FeO	0.14	—	—		—	—	0.18	—	—
MgO	0.03	abs.	0.30		abs.	tr.	0.31	0.14	tr.
CaO	0.08	0.06	0.34	0.49	0.16	tr.	0.04	0.20	tr.
Na_2O	1.48	0.32	0.10	—	0.23	0.36	tr.	0.43	—
K_2O	0.56	0.98	0.63	0.12	0.64	0.32	1.22	1.60	—
$\text{H}_2\text{O}+$	1.00	1.07	1.57	—	2.07	—	1.97	1.28	2.4*
$\text{H}_2\text{O}-$	—	abs.	0.25	—	0.38	—	0.21	0.11	—
CO_2	—	abs.	—	—	abs.	—	—	abs.	—
TiO_2	1.35	0.20	—	—	0.42	tr.	0.50	0.34	—
P_2O_5	—	—	0.02	0.08	—	—	0.02	—	—
MnO	—	—	tr.	—	—	—	0.02	—	—
Other Constituents	$\text{SO}_3 = 0.02$ $\text{Cl} = 0.01$	$\text{Cl} = 0.01$	$\text{SO}_3 = \text{tr.}$ Organic = tr.	Volatile = 4.68 $\text{N} = 0.105$	—	—	$\text{NaCl} = \text{tr.}$ $\text{BaO} = 0.02$	$\text{Cl} = \text{abs.}$	—
	100.29	99.82	[100.35]	100.20	100.90	100.53	99.89	100.34	99.1

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	10	11	12	13	14	15	16	17	18
Rock Name	Clay	Fireclay	Clay	Fireclay	Clay	Clay	Clay	Fireclay	Clay
Locality	Greenwell Pt., near Nowra, N.S.W.	2 mls. from Eden, N.S.W.	Bittern, Mornington Pen., Vic.	Cobar, N.S.W.	Pambula, N.S.W.	Tirrana, N.S.W.	2 mls. from Macclesfield, S.A.	Mt. Hope, N.S.W.	Wallendbeen, N.S.W.
Reference	189	153, 177	113, 71; 114, 31	3, 55	180, 148	165, 122	103, 38; 235, 13	153, 177	159, 188
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	W. G. Stone	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	(From sandstone)	—	*Spectroscopic	—	—	—	—	—
SiO_2	87.5	87.36	86.77	86.02	86.0	85.12	85.06	85.06	84.80
Al_2O_3	9.1	6.38	6.79	9.03	7.7	8.00	6.11	8.43	9.06
Fe_2O_3	0.5	0.60	0.70	0.20	0.4	1.05	2.56	0.70	0.50
FeO	—	0.27	—	0.27	—		—	0.17	0.27
MgO	—	0.70	abs.	0.34	—	—	0.12	0.36	0.21
CaO	—	0.32	tr.	0.42	tr.	—	0.42	0.32	0.48
Na_2O	—	0.28	0.87	0.11	—	—	0.64	0.32	0.36
K_2O	—	0.83	0.03	1.61	—	—	1.15	0.75	1.06
$\text{H}_2\text{O} +$	—	2.05	2.65	1.58	nd.	—	1.39	2.86	2.60
$\text{H}_2\text{O} -$	—	0.73	1.25	0.12	—	—	0.45	0.28	0.40
CO_2	—	—	—	—	—	—	abs.	—	—
TiO_2	0.5	0.32	1.22	0.48	0.2	0.45	1.13	0.80	0.32
P_2O_5	—	tr.	—	0.03	—	—	—	0.01	0.08
MnO	—	tr.	—	tr.	—	—	—	0.04	tr.
Other Constituents	—	Cl = tr.	—	SrO = p* Li ₂ O = p*	—	—	Cl = 0.01 Organic = 1.44	—	—
	97.6	99.84	100.28	100.21	—	94.62	100.48	100.10	100.14

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Fireclay	Clay	Clay	Clay	Clay*	Clay	Fireclay*	Weathered Argillaceous Sandstone	Clay
Locality	Noarlunga, S.A.	Laura via Cooktown, Qld.	Bald Hills, Bathurst, N.S.W.	Boro, N.S.W.	2 mls. from Yacka, S.A.	Careel Bay, Broken Bay, N.S.W.	Noarlunga, S.A.	Noarlunga, S.A.	Careel Bay, Broken Bay, N.S.W.
Reference	103, 28	204, 124	154, 175	172, 135	88, 80; 235, 14	155, 194	102, 55; 103, 28	103, 29	155, 194
Analyst	W. S. Chapman	Qld. Govt. Anal.	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	W. A. Greig	W. S. Chapman	W. S. Chapman	W. A. Greig
Remarks	(Decomposed argillaceous sandstone)	*Loss on ignition	—	—	*Kaolinized shales and sandstones	—	*Decomposed argillaceous sandstone	—	—
SiO ₂	84.18	83.3	83.12	82.94	82.80	81.96	81.68	81.54	81.46
Al ₂ O ₃	11.08	12.1	9.86	9.20	11.62	9.72	11.78	12.72	10.79
Fe ₂ O ₃	0.64	0.5	0.40	—	0.19	0.50	0.82	0.22	0.55
FeO	—	—	0.18	—	—	0.18	—	—	0.12
MgO	0.12	0.2	0.64	—	0.12	0.44	0.06	abs.	0.22
CaO	abs.	abs.	0.16	—	0.22	0.50	abs.	abs.	0.30
Na ₂ O	0.33	—	0.22	—	0.59	0.49	0.37	0.22	0.10
K ₂ O	0.55	—	1.11	—	1.57	0.42	0.53	1.24	1.87
H ₂ O+	3.32	3.1*	2.76	3.45	3.08	3.40	3.85	3.37	2.54
H ₂ O—	0.08	0.2	0.78	—	0.22	1.42	1.53	0.09	1.44
CO ₂	abs	—	—	—	—	—	abs.	abs.	—
TiO ₂	0.08	—	0.64	—	0.14	1.04	0.18	0.30	0.84
P ₂ O ₅	—	—	0.04	—	—	0.08	—	—	0.05
MnO	—	—	—	—	—	abs	—	—	abs.
Other Constituents	Cl=0.01	—	—	Fe=0.06	Cl=0.11	SO ₃ =tr.	Cl=0.04	Cl=abs.	SO ₃ =tr.
	—	—	—	—	100.66	—	100.84	—	—
Less O= Cl, F, S	—	—	—	—	0.02	—	0.01	—	—
	100.39	99.4	99.91	95.65	100.64	100.15	100.83	99.70	100.28

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	28	29	30	31	32	33	34	35	36
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	100 mls n. of Bourke, N.S.W.	Pambula, N.S.W.	Near Pambula, N.S.W.	Wallendbeen, N.S.W.	Clergate, near Orange, N.S.W.	Pambula, N.S.W.	Co. of Cumberland (Sydney Area) N.S.W.	Gosford, N.S.W.	Merimbula, N.S.W.
Reference	178, 98	121, 245	153, 177	157, 205	165, 122	121, 245	29, 401; 136, 46	158, 195	121, 237; 162, 210
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Loss on ignition	*Corrected by F. C. Loughnan	—	*Spectroscopic	—	*Corrected by F. C. Loughnan	—	—	—
SiO_2	81.44	81.2	81.17	81.16	81.04	80.8	80.79	80.43	80.38
Al_2O_3	} 7.20	12.7	12.29	11.87	12.52	12.5	13.20	8.42	11.81
Fe_2O_3		1.3	0.53	0.50	0.40	1.1	0.86	2.90	0.45
FeO		—	0.04	0.18	—	—	—	0.36	—
MgO	abs.	0.2	tr.	0.47	—	0.2	tr.	0.34	0.53
CaO	abs.	0.3	0.24	0.64	—	0.3	0.15	0.15	tr.
Na_2O	—	—	0.58	0.16	—	—	} 0.11	0.32	0.10
K_2O	—	1.7*	2.74	1.03	—	2.1*		0.27	1.66
$\text{H}_2\text{O} +$	10.80*	2.1	1.79	3.68	—	1.7	3.44	3.50	3.41
$\text{H}_2\text{O} -$	—	0.1	0.23	0.32	—	0.1	1.45	1.95	0.67
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	—	0.3	0.30	0.32	0.12	0.3	—	0.75	0.65
P_2O_5	—	—	0.11	0.03	—	—	—	—	tr.
MnO	—	—	tr.	tr.	—	—	abs.	—	tr.
Other Constituents	Undet. = 0.56	—	BaO = tr., Cl = tr. SrO = tr.	SrO = tr.*	—	—	—	Organic + Undet. = 0.61	NaCl = 0.21
	100.00	[99.9]	100.02	100.36	94.08	[98.9]	100.00	100.00	99.87

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	37	38	39	40	41	42	43	44	45
Rock Name	Clay	Clay	Clay	Clay	Pipeclay	Clay	Clay	Clay	Decomposed Rock
Locality	6 mls. from Currency Ck. Station, S.A.	Bittern, Mornington Pen., Vic.	Mullion Ck, near Orange, N.S.W.	Near Marulan, N.S.W.	Caloola Ck., near Orange, N.S.W.	Mulligans Flat, Gungahlin, A.C.T.	Beltana, S.A.	Frenchs Forest, near Manly, N.S.W.	6 mls. N.E. of Bingara, N.S.W.
Reference	103, 39; 235, 17	113, 71 114, 31	176, 99	164, 184	138, 56	173, 108	88, 70; 235	166, 76	175, 96
Analyst	W. S. Chapman	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. A. Greig	S.A. Mines Dep.	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	(Bleached slate)	—	—	—	—	*Sand = 64.10%	—
SiO_2	80.16	80.05	79.82	79.62	79.28	79.22	79.04	78.88*	78.80
Al_2O_3	12.73	10.08	9.49	10.73	14.80	11.84	12.55	13.48	11.11
Fe_2O_3	1.06	1.62	0.40	0.50	0.54	0.80	0.66	0.50	1.65
FeO	—	—		0.41	—	0.18	—	0.18	
MgO	0.10	tr.	—	0.27	0.25	0.81	0.18	0.26	—
CaO	0.32	tr.	—	0.26	0.28	0.20	0.88	0.12	—
Na_2O	0.02	0.77	—	0.07	1.37	0.25	0.62	0.51	—
K_2O	0.63	0.11	—	0.52		2.11	1.86	1.47	—
$\text{H}_2\text{O} +$	4.00	4.00	—	4.40	3.13	3.25	3.34	4.26	—
$\text{H}_2\text{O} -$	1.02	2.56	—	0.72	0.35	0.51	0.65		—
CO_2	abs.	—	—	—	—	—	0.25	—	—
TiO_2	0.57	1.15	0.70	1.80	—	0.90	0.53	0.60	0.70
P_2O_5	—	—	—	0.10	—	tr.	—	—	—
MnO	—	—	—	tr.	—	—	—	—	—
Other Constituents	Cl = 0.02	—	—	$\text{SO}_3 = \text{tr.}$ NaCl = 0.95	—	CeCl = tr.	Cl = 0.15	—	—
Less O = Cl, F, S	—	—	—	—	—	—	100.71 0.02	—	—
	100.63	100.34	—	100.35	100.00	100.07	100.69	100.26	92.26

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	46	47	48	49	50	51	52	53	54
Rock Name	Clay	Clay	Clay	Fireclay	Clay	Clay	Decomposed Volcanic Rock	Clay	Clay
Locality	Howard, Qld.	Greigs Flat, near Pam-bula, N.S.W.	Mulligans Flat, Gun-gahlin, A.C.T.	Heathcote, N.S.W.	Clergate, N.S.W.	Little River, Burragorang Valley, N.S.W.	Bulahdelah, N.S.W.	4 mls. N. of Olary, S.A.	Port Augusta, S.A.
Reference	202, 140	184, 105	173, 108	139, 52	121, 240	189	175, 96	88, 77; 603, 43; 235	12, 163; 221, 40
Analyst	Qld. Dep. Mines	N.S.W. Dep. Mines	W. A. Stone	N.S.W. Dep. Mines	G. T. See & P. Bay-liss	N.S.W. Dep. Mines	W. A. Greig	W. S. Chapman	T. W. Dalwood
Remarks	*Loss on ignition	*Loss on ignition	—	—	—	—	—	—	—
SiO_2	78.8	78.7	78.46	78.31	78.2	77.8	77.60	77.40	77.14
Al_2O_3	11.0	10.2	11.79	15.29	13.0	11.0	15.20	14.24	14.21
Fe_2O_3	2.7	0.2	2.10	0.74	0.8	0.8	0.60	0.42	0.29
FeO	—	—	0.23	—	—		tr.	—	abs.
MgO	tr.	1.8	0.61	tr.	0.3	—	0.21	0.06	0.38
CaO	abs.	0.1	0.10	tr.	0.2	—	0.22	abs.	abs.
Na_2O	—	3.9	0.46	1.29	—	—	0.82	0.68	0.22
K_2O	—	3.9	1.99		3.4	—		0.03	0.68
$\text{H}_2\text{O} +$	6.6*	2.5*	3.09	3.33	4.0	—	5.44	5.67	4.46
$\text{H}_2\text{O} -$	—	—	0.65	1.04	0.3	—		0.46	1.72
CO_2	—	—	—	—	—	—	—	abs.	—
TiO_2	—	0.2	0.90	abs.	0.2	0.3	0.20	0.58	0.18
P_2O_5	—	—	tr.	abs.	—	—	—	—	—
MnO	abs.	—	—	tr.	—	—	—	—	—
Other Constituents							$\text{SO}_3 = \text{tr.}$	$\text{Cl} = 0.73$	$\text{SO}_3 = 0.17$ $\text{Cl} = 0.70$
	—	—	—	—	—	—	—	100.27	100.15
Less O = Cl, F, S	—	—	—	—	—	—	—	0.16	0.16
	99.1	101.50	100.38	100.00	100.4	89.9	100.29	100.11	99.99

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	55	56	57	58	59	60	61	62	63
Rock Name	Fireclay	Fireclay	Clay	Clay	Sandy Clay	Clay	Clay	Clay	Clay
Locality	3 mls. from Kapunda, S.A.	Illawarra district, N.S.W.	Cheltenham, Melbourne, Vic.	Near Peterborough, S.A.	5 mls. W of Woodstock, N.S.W.	Near Goulburn, N.S.W.	Near Puttapa Gap, S.A.	Oaklands, N.S.W.	Mt. Morgan, Qld.
Reference	103, 39; 235	142, 146	112, 470; 114, 59	88, 53	175, 96	164, 184	103, 43	185, 103	159, 191
Analyst	W. S. Chapman	N.S.W. Dep. Mines	F. F. Field	S.A. Dep. Mines	W. G. Stone	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	(Fluviatile)	—	—	—	—	—	—
SiO_2	76.98	76.80	76.65	76.48	76.44	76.40	76.30	76.1	76.10
Al_2O_3	14.88	13.97	13.34	13.41	9.13	15.14	13.07	11.8	14.13
Fe_2O_3	1.20	1.58	1.23	1.25	3.70	0.80	1.56	—	1.40
FeO	—	—	0.20	—		0.27	—	—	—
MgO	abs.	0.61	0.83	1.02	tr.	0.40	abs.	—	0.28
CaO	abs.	tr.	0.23	0.16	0.66	0.36	0.46	—	0.40
Na_2O	0.26	tr.	0.28	0.16	0.83	0.18	1.03	—	0.18
K_2O	1.24	1.54	0.61	2.70	2.36	2.29	2.83	—	0.98
$\text{H}_2\text{O} +$	3.75	4.25	4.36	3.59	—	3.54	3.51	—	4.07
$\text{H}_2\text{O} -$	0.16	1.42	1.07	0.19	—	0.20	0.60	—	1.07
CO_2	abs.	—	—	—	—	—	abs.	—	—
TiO_2	0.86	tr.	1.19	1.18	0.55	0.36	0.79	—	0.76
P_2O_5	—	tr.	tr.	—	—	0.04	—	—	0.07
MnO	—	tr.	—	—	—	tr.	—	—	abs.
Other Constituents	$\text{Cl} = 0.02$	$\text{SO}_3 = \text{tr.}$		$\text{Cl} = 0.16$			$\text{Cl} = 0.98$		$\text{Cr}_2\text{O}_3 = \text{tr.}$ Organic = 0.72
	—	—	—	100.30	—	—	101.13	—	—
Less O = Cl, F, S	—	—	—	0.03	—	—	0.22	—	—
	99.35	100.17	99.99	100.27	93.67	99.98	100.91		100.36

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	64	65	66	67	68	69	70	71	72
Rock Name	Graphitic Clay	Clay	Clay	Clay	Clay	Clay	Clayshale Meal	Clay	Clay
Locality	Noarlunga, S.A.	1 ml. N.W. of Hallam, Vic.	Near Echunga, S.A.	Kircaldy Beach Rd., near Adelaide, S.A.	Por. 16, Par. Marsh, Co. Wellington, N.S.W.	Sydney, N.S.W.	5 mls. W. of Woodstock, N.S.W.	Port Noarlunga S.A.	Culcairn, N.S.W.
Reference	103, 30; 235	114, 17	88, 43	235, 11	189	121, 250	175, 96	103, 32	121, 248
Analyst	W. S. Chapman	J. C. Watson	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. A. Greig	W. S. Chapman	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	75.96	75.82	75.46	75.34	75.0	75.0	74.82	74.56	74.4
Al_2O_3	14.20	14.88	14.57	11.13	11.7	13.2	9.06	14.48	10.1
Fe_2O_3	1.74	0.86	0.48	3.98	3.9	4.3	3.40	2.20	3.2
FeO	—	0.13	—	—	—	—		—	—
MgO	0.14	tr.	1.17	0.72	—	—	tr.	1.00	—
CaO	0.10	abs.	abs.	abs.	—	—	0.94	0.08	—
Na_2O	0.44	0.13	0.20	1.50	0.14	—	0.47	0.27	—
K_2O	1.02	0.17	4.75	1.92	2.58	0.6	1.34	4.33	2.2
$\text{H}_2\text{O} +$	3.87	5.46	2.11	2.70	3.5	4.3	—	2.10	3.2
$\text{H}_2\text{O} -$	1.33	1.10	0.12	1.40	0.5	1.5	—	0.04	1.6
CO_2	abs.	—	—	abs.	—	—	—	abs.	—
TiO_2	0.52	1.12	2.11	0.75	0.7	0.7	0.50	1.16	0.8
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	0.17	—	—	—	—	—	—	—	—
Other Constituents	Cl = 0.01 Organic = 1.27			Cl = 0.02				Cl = 0.21	
	—	—	—	—	—	—	—	100.43	—
Less O = Cl, F, S,	—	—	—	—	—	—	—	0.04	—
	100.77	99.67	100.97	99.46	98.02	99.6	90.53	100.39	95.5

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	73	74	75	76	77	78	79	80	81
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Wagga Wagga, N.S.W.	Oberon, N.S.W.	Wellington, N.S.W.	Grenfell, N.S.W.	3 mls. from Cadia, N.S.W.	Bathurst, N.S.W.	Mt. Panorama, Bathurst, N.S.W.	Griffith, N.S.W.	Young, N.S.W.
Reference	121, 246	178, 98	121, 249	121, 248	29, 132; 154, 175	121, 236	189	121, 248	121, 247
Analyst	G. T. See & P. Bayliss	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss	H. P. White	G. T. See & P. Bayliss	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss
Remarks	—	*Loss on ignition	—	—	—	—	—	—	—
SiO_2	74.4	74.36	74.3	74.1	73.52	73.1	73.0	72.6	72.0
Al_2O_3	9.7	14.04	11.0	9.5	9.75	14.6	13.9	13.0	10.1
Fe_2O_3	4.1	0.60	4.8	3.8	4.55	1.8	1.8	3.7	4.2
FeO	—	—	—	—	0.36	—	—	—	—
MgO	—	—	—	—	0.58	0.5	—	—	—
CaO	—	—	—	—	0.52	0.4	—	—	—
Na_2O	—	—	0.2	—	0.65	—	—	—	—
K_2O	1.5	—	1.7	1.6	0.79	1.2	—	1.9	1.4
$\text{H}_2\text{O} +$	4.4	5.60*	4.3	4.2	4.48	4.4	—	5.0	3.5
$\text{H}_2\text{O} -$	3.0	—	2.0	1.9	3.38	2.6	—	1.7	2.3
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.8	—	0.6	0.4	1.10	1.0	0.9	0.7	0.3
P_2O_5	—	—	—	—	p.n.d.	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents					Organic = 0.16				
	97.9	94.60	98.9	[96.5]	99.84	99.6		98.6	[93.8]

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	82	83	84	85	86	87	88	89	90
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay (soft shale)
Locality	16 mls. from Mt. Eba Station S.A.	Rosehill, Sydney, N.S.W.	Awaba, N.S.W.	Warrumbungle Mts. near Coonabarabran, N.S.W.	Dubbo, N.S.W.	Wellington, N.S.W.	Oolong, N.S.W.	Mudgee, N.S.W.	Cardup, W.A.
Reference	88 , 75	159 , 188	156 , 185	178 , 98	121 , 249	121 , 249	164 , 184	121 , 250	18 , 213
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines	G. T. See & P. Bayliss	D. G. Murray
Remarks	—	—	—	*Includes organic	—	—	—	—	—
SiO_2	71.74	71.26	70.64	70.04	69.0	67.9	62.00	76.0	73.42
Al_2O_3	11.02	13.27	13.93	6.60	12.1	12.7	10.60	8.5	12.51
Fe_2O_3	0.90	3.50	1.50	—	4.0	4.5	1.30	5.0	3.81
FeO	—	0.44	0.18	—	—	—		—	1.56
MgO	0.18	0.45	0.63	tr.	—	—	—	—	1.91
CaO	0.90	0.24	0.66	tr.	—	—	—	—	abs.
Na_2O	2.46	0.30	0.68	—	—	—	—	—	0.86
K_2O	0.34	0.91	0.83	—	2.2	2.7	—	1.6	3.02
$\text{H}_2\text{O} +$	7.04	5.02	6.09	18.30*	4.0	3.8	—	3.8	2.38
$\text{H}_2\text{O} -$	2.23	3.24	4.63	—	2.3	2.7	—	0.9	0.12
CO_2	—	—	—	—	—	—	—	—	0.02
TiO_2	0.76	0.84	0.35	—	0.8	0.5	0.76	0.8	0.25
P_2O_5	—	0.05	tr.	—	—	—	nd.	—	0.12
MnO	—	abs.	tr.	—	—	—	—	—	0.43
Other Constituents	Cl = 3.27	Sol. chlorides = 0.61	Organic = tr.						NaCl = tr. Graphite = 0.03
	100.84	—	—	—	—	—	—	—	—
Less O = Cl, F, S	0.80	—	—	—	—	—	—	—	—
	100.04	100.13	100.12	94.94	[94.4]	94.8		96.6	100.44

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	91	92	93	94	95	96	97	98	99
Rock Name	Clay	Clay (Bedded)	Clay (Bedded)	Clay	Clay (Bedded)	Clay	Clay	Clay	Clay
Locality	Por. 55. Par. of Orange, N.S.W.	Bellevue, W.A.	Bellevue, W.A.	Magill, S.A.	Bellevue, W.A.	PMLI, Par. Borenore, N.S.W.	Wagga Wagga, N.S.W.	Gundagai, N.S.W.	Taree, N.S.W.
Reference	189	228, 105	228, 106	71, 39	228, 104	189	121, 246	121, 249	259, 188
Analyst	N.S.W. Dep. Mines	A. J. Robertson	A. J. Robertson	Not stated	E. S. Simpson	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	—	*Loss on ignition	*Loss on ignition	*Dried before analysis	*Loss on ignition	—	—	—	—
SiO_2	72.2	72.19	71.31	69.94	69.94	69.1	68.9	67.5	67.26
Al_2O_3	10.4	12.09	14.13	13.89	13.73	13.7	12.8	12.1	13.41
Fe_2O_3	5.7	6.14	5.26	6.36	6.59	7.3	5.0	5.1	4.80
FeO	—	—	—	0.25	—	—	—	—	0.72
MgO	—	0.19	0.47	1.06	0.47	—	—	—	1.13
CaO	—	0.31	0.34	0.31	0.11	—	—	—	0.70
Na_2O	0.13	—	—	1.59	—	0.37	—	—	2.08
K_2O	0.53	—	—	2.28	—	1.68	2.6	2.0	2.61
$\text{H}_2\text{O} +$	5.6	6.75*	7.21*	3.59	7.84*	4.9	5.2	6.3	4.26
$\text{H}_2\text{O} -$	3.5	—	—	*	—	1.1	1.2	1.2	2.66
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.0	—	—	0.91	—	0.6	0.8	0.8	0.65
P_2O_5	—	—	—	—	—	—	—	—	0.02
MnO	—	—	—	—	—	—	—	—	tr.
Other Constituents				$\text{SO}_3 = 0.05$ $\text{Cl} = 0.07$					
Less O = Cl, F, S	—	—	—	100.30 0.02	—	—	—	—	—
	99.06	97.67	98.72	100.28	98.68	98.75	96.5	95.0	100.30

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 < 5\%$

	100	101	102	103	104	105	106	107	108
Rock Name	Clay	Clay	Marine Mud	Clay	Glauconitic Mud	Clay	Silt	Clay	Clay
Locality	Keepit Dam Site, Nami R., N.S.W.	Junee, N.S.W.	Narrabeen, Sydney, N.S.W.	Burruga, N.S.W.	Michaelmas Cay Bore 476'-480', Qld.	N. of North Para River, S.A.	Hunter River, N.S.W.	N. of North Para River, S.A.	N. of North Para River, S.A.
Reference	184, 105	121, 246	183, 96	29, 125	214, 91	103, 39	49, 198	76, 56	103, 39
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	H. B. Gurney	V. R. Cundith	W. S. Chapman	F. B. Guthrie	T. W. Dalwood	S.A. Dep. Mines
Remarks	—	—	—	—	*Insol. °Includes P_2O_5	—	—	—	—
SiO_2	67.2	62.2	59.7	89.60	89.0*	81.88	79.25	79.00	72.66
Al_2O_3	12.8	12.0	11.32	2.61	1.6°	9.78	10.02	9.82	11.00
Fe_2O_3	5.0	6.0	7.53	1.70		1.12		1.78	2.02
FeO	—	—	—	0.36		—		0.13	—
MgO	—	1.4	—	0.72	0.5	0.39	—	0.39	0.50
CaO	—	—	—	1.05	4.3	1.10	1.55	1.15	3.90
Na_2O	—	—	—	0.35	—	0.10	—	3.14	0.48
K_2O	—	2.1	—	0.47	—	0.92	0.09	1.09	1.32
$\text{H}_2\text{O} +$	—	6.2	—	1.70	—	1.69	—	2.25	3.11
$\text{H}_2\text{O} -$	—	5.0	—	0.57	0.2	0.62	—	—	0.94
CO_2	—	—	—	—	4.0	1.20	—	—	2.64
TiO_2	1.0	0.4	0.9	0.95	—	1.34	—	1.36	1.40
P_2O_5	—	—	—	0.05	—	—	0.18	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	—	—	Organic = 0.3	Cl = 0.08	Volatiles = 9.61 N = 0.084	$\text{SO}_3 = 0.02$ Cl = 0.18	Cl = 0.12
Less O = Cl, F, S	—	—	—	—	—	100.22 0.02	—	100.31 0.03	100.09 0.02
		95.3		100.13	99.9	100.20	100.78	100.28	100.07

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — SiO ₂ /Al ₂ O ₃ >5				b. SiO ₂ /Al ₂ O ₃ =5 — 4					
CaO<1% : Fe ₂ O ₃ <5%		CaO=1% — 5% Fe ₂ O ₃ =5% — 10%		CaO<1% : Fe ₂ O ₃ <5%					
	109	110		1	2	3	4	5	6
Rock Name	Clay	Clay		Clay	Clay	Siliceous Clay	Clay	Clay	Clay
Locality	Salisbury, S.A.	Currency Creek, S.A.		Bungen- dore, N.S.W.	Manly, near Sydney, N.S.W.	Dover, Tas.	Bungen- dore, N.S.W.	Balcombe, Ck, Morn- ington Pen., Vic.	2 mls. beyond Tea Tree Gully, S.A.
Reference	103, 33	103, 37		121, 243	156, 185	34, 7	164, 184	113, 71; 114, 31	103, 34; 235, 17
Analyst	W. S. Chapman	S.A. Dep. Mines		G. T. See & P. Bayliss	N.S.W. Dep. Mines	M. Neilson	N.S.W. Dep. Mines	Vic. Dep. Mines	W. S. Chapman
Remarks	(Alluvial)	—		—	*Spectro- scopic	*Loss on ignition	—	(On Ordo- vician basement)	—
SiO ₂	70.12	70.38		76.9	76.74	76.02	75.50	75.16	75.12
Al ₂ O ₃	12.35	13.14		15.6	15.39	18.69	15.22	16.09	15.94
Fe ₂ O ₃	4.70	5.16		0.5	0.60	0.24	} 0.90	0.68	0.58
FeO	—	—		—	0.27	—		—	—
MgO	1.38	0.34		—	0.21	0.33	—	tr.	0.08
CaO	1.58	2.02		—	abs.	—	—	0.50	0.16
Na ₂ O	1.42	1.30		—	0.09	0.62	—	—	0.38
K ₂ O	2.04	2.08		4.0	1.54	—	—	—	0.54
H ₂ O +	3.05	2.57		3.4	4.13	6.06*	nd.	4.00	4.59
H ₂ O —	1.29	1.65		abs.	0.75	—	—	3.30	2.03
CO ₂	1.14	0.77		—	—	—	—	—	abs.
TiO ₂	0.87	0.60		0.2	0.36	0.61	0.64	—	0.70
P ₂ O ₅	—	—		—	0.05	—	nd.	—	—
MnO	—	—		—	abs.	—	—	—	—
Other Con- stituents	Cl=0.07	Cl=0.05			Li ₂ O=p*				SO ₃ =abs. Cl=0.59
	100.01	100.06		—	—	—	—	—	100.71
Less O= Cl, F, S	0.02	0.01		—	—	—	—	—	0.13
	99.99	100.05		100.6	100.13	102.57	—	99.73	100.58

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

CaO < 1% : Fe_2O_3 < 5%									
	7	8	9	10	11	12	13	14	15
Rock Name	Kaolin	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Par. Towing N.S.W.	Waterloo, Sydney, N.S.W.	Pambula, N.S.W.	Port Stephens, N.S.W.	Wangerrip, Otway, Area, Vic.	Kings Plains, near Blayney, N.S.W.	Noarlunga, S.A.	1 mile from Tea Tree Gully, S.A.	Between Marulan & Towrang, N.S.W.
Reference	143, 188	156, 185	121, 245	29, 404; 139, 53	114, 46	141, 73	103, 29	103, 33; 235, 13	172, 135
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	J. C. Watson	N.S.W. Dep. Mines	W. S. Chapman	W. S. Chapman	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	75.08	75.04	74.6	74.57	74.41	74.40	74.38	74.28	74.20
Al_2O_3	15.17	16.82	16.9	16.47	17.79	16.88	16.02	16.91	17.84
Fe_2O_3	1.61	0.50	1.0	1.18	0.78	1.11	1.20	0.92	—
FeO	—	0.37	—	—	0.19	0.11	—	—	—
MgO	0.10	0.28	—	tr.	tr.	0.29	0.16	abs.	—
CaO	0.35	0.09	—	0.17	abs.	abs.	0.38	0.28	—
Na_2O	1.20	0.53	—	abs.	0.30	0.03	0.09	0.38	—
K_2O	1.32	1.59	5.0	1.03	0.62	2.79	1.81	0.94	—
$\text{H}_2\text{O}+$	4.10	2.91	2.1	4.36	5.44	3.56	4.31	5.20	—
$\text{H}_2\text{O}-$	0.60	1.02	0.1	1.84	0.79	0.50	0.38	0.47	—
CO_2	—	—	—	—	—	—	abs.	abs.	—
TiO_2	—	0.48	0.3	abs.	nd.	—	0.76	1.25	1.10
P_2O_5	0.03	0.14	—	abs.	tr.	tr.	—	—	—
MnO	tr.	abs.	—	tr.	—	tr.	—	—	—
Other Constituents	$\text{SO}_3 = 0.06$			$\text{SO}_3 = \text{tr.}$			$\text{Cl} = 0.01$	$\text{Cl} = 0.02$	
	—	—	—	—	—	—	—	—	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	99.62	99.77	100.0	99.62	100.32	99.67	99.50	100.65	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	16	17	18	19	20	21	22	23	24
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Near Peterborough, S.A.	4 mls. N.W. of Olary, S.A.	Near Peterborough, S.A.	Vale of Clwydd, N.S.W.	Tannymorel, Qld.	Marulan, N.S.W.	Willunga, S.A.	Bungendore, N.S.W.	Mudgee, N.S.W.
Reference	88, 53	103, 43	103, 35; 235, 18	158, 195	53, 101	121, 243	103, 32	164, 184	141, 73
Analyst	S.A. Dep. Mines	S.A. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	Qld Dep. Mines	R. Bury	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	*Loss on ignition	—	—	—	—
SiO_2	73.98	73.94	73.80	73.64	73.6	73.5	73.36	73.30	73.28
Al_2O_3	16.51	17.50	17.02	14.80	18.0	14.7	14.88	16.62	18.00
Fe_2O_3	0.60	0.54	1.24	2.70	1.1	2.2	2.54	1.30	0.54
FeO	—	—	—	0.49	—	—	—		—
MgO	0.07	0.12	0.36	0.28	tr.	0.6	1.08	—	0.33
CaO	0.04	0.32	abs.	0.13	0.2	0.3	abs.	—	0.37
Na_2O	0.51	0.80	0.21	0.37	—	0.1	0.34	—	3.73
K_2O	0.51		2.26	1.14	—	2.9	4.24	—	0.07
$\text{H}_2\text{O} +$	5.77	6.36	4.15	4.42	5.4*	4.2	1.88	—	3.71
$\text{H}_2\text{O} -$	0.67	1.68	0.47	1.65	1.8	0.8	0.36	—	0.34
CO_2	—	—	abs.	—	—	—	abs.	—	—
TiO_2	0.93	—	0.90	0.60	—	0.8	1.30	0.28	—
P_2O_5	—	—	—	0.04	—	—	—	nd.	—
MnO	—	—	—	tr.	—	—	—	—	—
Other Constituents	—	—	Cl=0.04	—	—	—	Cl=0.24	—	Organic = tr.
Less O = Cl, F, S	—	—	100.45	—	—	—	100.22	—	—
	—	—	0.01	—	—	—	0.03	—	—
	99.59	101.26	100.44	100.26	100.1	100.1	100.19	—	100.37

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	25	26	27	28	29	30	31	32	33
Rock Name	Clay	Clay	Clay	Stone Clay	Clay	Clay	Clay	Clay	Clay
Locality	Frenchs Forest, Manly, N.S.W.	Near Coomooroo Hill, Willowie, S.A.	Little-hampton, S.A.	Yuna, W.A.	Ulan, N.S.W.	Irondale Siding, N.S.W.	Near Oladdie, S.A.	Wondai, Qld.	Puttapa Gap, S.A.
Reference	166, 76	88, 79; 103, 37	88, 74; 103, 38	18, 213	121, 239	158, 195	103, 35	200, 134	88, 79; 103, 43
Analyst	N.S.W. Dep. Mines	W. S. Chapman	W. S. Chapman	H. P. Webb	R. Bury	N.S.W. Dep. Mines	W. S. Chapman	Qld. Govt. Anal.	W. S. Chapman
Remarks	*Includes 52.42% Sand	—	—	—	—	—	—	—	—
SiO_2	73.24*	73.14	73.10	72.86	72.8	72.74	72.68	72.6	72.58
Al_2O_3	17.16	15.50	18.06	16.87	17.7	15.42	17.96	16.0	17.59
Fe_2O_3	0.80	1.46	0.50	0.94	0.4	0.60	0.78	0.8	1.48
FeO	0.27	—	—	—	—	—	—	—	—
MgO	0.28	0.04	0.23	0.43	0.2	0.43	0.04	tr.	0.50
CaO	tr.	0.86	0.58	abs.	0.3	0.50	0.50	tr.	0.18
Na_2O	0.47	0.12	0.01	0.22	0.1	0.11	1.25	—	0.49
K_2O	1.44	2.72	0.22	1.16	1.5	2.39	0.48	—	2.80
$\text{H}_2\text{O}+$	5.98	3.87	5.83	5.62	5.9	3.85	5.20	4.4	2.95
$\text{H}_2\text{O}-$	—	0.94	0.14	0.98	0.5	1.21	0.50	0.8	0.19
CO_2	—	abs.	abs.	—	—	—	abs.	—	abs.
TiO_2	0.65	1.24	2.16	0.77	0.5	0.36	1.00	—	0.79
P_2O_5	—	—	—	nd.	—	0.09	—	—	—
MnO	—	—	—	abs.	—	—	—	—	—
Other Constituents		Cl=0.03	Cl=0.06	$\text{SO}_3=0.33$		Organic=2.54	Cl=0.12		Cl=0.17
	—	99.92	100.89	—	—	—	100.51	—	99.72
Less O=Cl, F, S	—	0.01	0.02	—	—	—	0.03	—	0.05
	100.29	99.91	100.87	100.18	99.9	100.24	100.48	94.6	99.67

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	34	35	36	37	38	39	40	41	42
Rock Name	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Noarlunga, S.A.	Heathcote, N.S.W.	Near Oladdie, S.A.	2½ mls. S. of Bungendore, N.S.W.	Rylstone, N.S.W.	Kings Plains-Blayney-Trunkkey Area, N.S.W.	Awaba, N.S.W.	Buckaroo, N.S.W.	60 mls. N.E. of Lyndhurst Siding, S.A.
Reference	103, 30	139, 52	103, 35	168, 99	158, 195	121, 241	156, 185	121, 240	88, 74
Analyst	W. S. Chapman	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	G. T. See & P. Bayliss	S.A. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	72.44	72.44	72.42	72.32	72.05	71.7	71.42	71.4	71.22
Al_2O_3	16.98	16.70	16.87	16.28	15.25	16.7	14.81	17.4	15.85
Fe_2O_3	1.20	0.28	0.74	1.20	1.80	2.3	0.60	0.6	1.81
FeO	—	1.00	—	0.45	0.36	—	0.08	—	—
MgO	0.20	0.36	0.36	1.01	0.37	—	1.11	1.1	1.30
CaO	abs.	0.45	abs.	0.20	0.23	—	0.72	0.2	0.04
Na_2O	2.92	1.45	1.25	0.20	0.48	—	0.77	tr.	0.10
K_2O	2.75		0.43	3.35	2.88	3.2	1.22	3.6	2.72
$\text{H}_2\text{O}+$	1.47	5.56	4.85	4.16	3.57	3.8	4.32	4.4	4.71
$\text{H}_2\text{O}-$	0.65	1.76	2.17	0.36	1.15	abs.	4.68	0.1	0.67
CO_2	abs.	—	0.85	—	—	—	—	—	—
TiO_2	0.60	—	—	0.70	0.88	0.6	0.32	1.1	1.30
P_2O_5	—	tr.	—	—	0.12	—	0.03	—	—
MnO	—	tr.	—	—	—	—	tr.	—	—
Other Constituents	$\text{Cl} = 0.01$		$\text{Cl} = 0.90$		Organic + undet. = 0.86				$\text{Cl} = 0.22$
	—	—	100.84	—	—	—	—	—	99.94
Less O = Cl, F, S	—	—	0.20	—	—	—	—	—	0.05
	99.22	100.00	100.64	100.23	100.00	98.3	100.08	99.9	99.89

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	43	44	45	46	47	48	49	50	51
Rock Name	Ball Clay	Fireclay	Siliceous Clay	Clay	Clay	Stoneware Clay	Clay	Clay	Clay
Locality	Yuna, W.A.	Dorrigo, near Bellingen, N.S.W.	Willowie, S.A.	Awaba, N.S.W.	Cape Hawke, nr. Forster, N.S.W.	Yuna, W.A.	Walcha Area, N.S.W.	Vale of Clwydd, N.S.W.	Sydney, N.S.W.
Reference	18, 213	142, 146	88, 79	156, 185	29, 403; 138, 57	18, 213	176, 99	158, 195	121, 250
Analyst	Gillies	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. P. Webb	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	71.22	71.13	70.84	70.70	70.57	70.52	70.10	69.86	69.8
Al_2O_3	17.69	17.15	15.60	14.72	16.27	17.27	17.45	16.93	14.2
Fe_2O_3	0.27	2.02	1.60	1.20	1.07	1.70	1.70	1.45	3.5
FeO	—	—	—	0.17	abs.	—		0.41	—
MgO	0.30	0.85	1.51	0.97	0.38	0.50	—	0.38	—
CaO	0.31	tr.	0.32	0.52	0.13	tr.	—	0.11	—
Na_2O	0.26	0.93	0.15	0.72	0.27	0.14	—	0.29	—
K_2O	0.63	0.35	2.92	0.97	2.20	1.30	—	2.96	1.3
$\text{H}_2\text{O}+$	6.91	4.83	4.39	4.94	5.95	6.24	nd.	4.33	4.2
$\text{H}_2\text{O}-$	0.51	2.96	1.18	4.96	2.88	1.28	—	1.55	4.0
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.46	—	1.43	0.24	abs.	0.82	0.65	0.70	—
P_2O_5	0.25	0.05	—	tr.	abs.	0.20	—	0.07	0.8
MnO	abs.	—	—	tr.	abs.	abs.	—	tr.	—
Other Constituents	NaCl = 1.14 Salts = 0.43	—	Cl = 0.02	—	$\text{SO}_3 = 0.41$	NaCl = 0.61 $\text{SO}_3 = 0.22$	—	Organic = 1.04	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	100.38	100.27	99.96	100.11	100.13	100.80	—	100.08	97.8

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	52	53	54	55	56	57	58	59	60
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Sandgate, Newcastle, N.S.W.	Tichborne, N.S.W.	Surveyors Pt., Yorke Pen., S.A.	Teralba, N.S.W.	Balcombe Ck., Bittern, Mornington Pen., Vic.	Wagga Wagga, N.S.W.	Gladstone, S.A.	Sale, Vic.	Willunga, S.A.
Reference	159, 188	121, 243	88, 57; 103, 35; 235, 13	163, 177	113, 71; 114, 31	121, 246	88, 71; 103, 41; 235, 12	114, 64	103, 32
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	Vic. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman	P. G. W. Bayly	W. S. Chapman
Remarks	—	—	—	—	—	—	—	(Alluvial on marine deposits)	—
SiO_2	69.54	69.3	68.66	68.60	68.30	68.3	67.88	67.39	66.80
Al_2O_3	15.01	14.9	14.52	14.97	17.06	14.5	16.90	16.75	16.33
Fe_2O_3	1.20	2.3	2.14	1.90	2.04	4.7	2.88	2.14	4.02
FeO	2.25	—	—	0.36	—	—	—	—	—
MgO	1.27	0.5	0.54	1.30	tr.	0.9	0.62	tr.	0.20
CaO	0.44	0.3	0.56	0.72	0.44	—	0.41	abs.	0.58
Na_2O	1.77	—	0.84	0.18	—	—	0.54	0.74	0.86
K_2O	2.26	3.7	5.03	0.37	—	1.8	2.67	1.17	4.14
$\text{H}_2\text{O}+$	4.28	5.7	2.73	6.73	6.20	6.4	4.82	4.65	4.52
$\text{H}_2\text{O}-$	1.48	1.6	2.80	4.75	5.68	2.0	0.88	5.70	1.48
CO_2	—	—	abs.	—	—	—	abs.	—	abs.
TiO_2	0.45	0.9	1.46	0.22	—	1.0	2.60	—	0.95
P_2O_5	0.10	—	—	0.05	—	—	—	—	—
MnO	0.05	—	—	0.03	—	—	—	—	—
Other Constituents			$\text{SO}_3 = 0.23$ $\text{Cl} = 1.00$				$\text{Cl} = 0.14$		$\text{Cl} = 0.86$
Less O = Cl, F, S	—	—	100.51	—	—	—	100.34	—	[100.74]
	—	—	0.22	—	—	—	0.04	—	0.19
	100.10	99.2	100.29	[100.18]	99.72	99.6	100.30	98.54	[100.55]

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

	CaO < 1% : Fe_2O_3 < 5%		Ca < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$						
	61	62	63	64	65	66	67	68	69
Rock Name	Clay	Clay	Clay	Clay (Bedded)	Clay	Clay	Clay (Bedded)	Clay	Clay
Locality	Denman, N.S.W.	Albury, N.S.W.	Near Oodla, Wirra, S.A.	Bellevue, W.A.	N. of North Para River, S.A.	ML 5, Par. Parkes, Co. Ashburton, N.S.W.	Bellevue, W.A.	Mouth Mitchell R, Bairnsdale, Vic.	Adelaide, S.A.
Reference	184, 105	121, 247	103, 37 235, 18	228, 104	76, 56	189	228, 105	114, 69	103, 26
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	S.A. Dep. Mines	H. Bowley	T. W. Dalwood	N.S.W. Dep. Mines	H. Bowley	P. G. W. Bayly	S.A. Dep. Mines
Remarks	—	—	—	*Loss on ignition	—	—	*Loss on ignition	(Estuarine mud)	—
SiO_2	66.0	64.4	71.46	69.80	68.93	68.7	68.24	68.20	67.90
Al_2O_3	14.8	14.3	14.79	14.45	14.57	13.9	14.95	13.86	13.80
Fe_2O_3	2.1	4.6	5.44	6.31	4.95	5.2	7.69	6.44	5.56
FeO	—	—	—	—	0.25	—	—	0.24	—
MgO	—	—	0.48	0.44	0.78	—	0.55	1.22	1.14
CaO	—	—	0.32	0.06	0.02	—	0.13	abs.	0.66
Na_2O	—	—	0.48	—	1.53	0.56	—	0.25	1.43
K_2O	—	2.6	0.34	—	1.70	2.88	—	1.88	2.17
$\text{H}_2\text{O}+$	—	4.7	6.00	7.84*	6.36	4.4	8.16*	4.70	4.35
$\text{H}_2\text{O}-$	—	2.9	0.52	—	—	1.7	—	4.13	1.74
CO_2	—	—	abs.	—	—	—	—	—	abs.
TiO_2	0.4	0.8	0.61	—	0.61	0.7	—	1.50	0.94
P_2O_5	—	—	—	—	—	—	—	abs.	—
MnO	—	—	0.08	—	—	—	—	—	—
Other Constituents	—	—	Cl = 0.06	—	$\text{SO}_3 = \text{tr.}$ Cl = 0.02	—	—	—	Cl = 0.05
Less O = Cl, F, S	—	—	100.58 0.62	—	—	—	—	—	99.74 0.01
	—	94.3	100.56	98.90	99.72	—	99.72	[102.42]	99.73

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

$\text{Ca} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	70	71	72	73	74	75	76	77	78
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Terra Cotta Clay	Clay	Clay
Locality	Near Salisbury, S.A.	Gunnedah, N.S.W.	2½ mls. W. of Salisbury, S.A.	Adelaide, S.A.	Bathurst, N.S.W.	Near Gladstone, S.A.	Wilga, W.A.	Bathurst, N.S.W.	Narrandera, N.S.W.
Reference	103, 32	121, 250	103, 28; 235, 17	103, 26	121, 249	103, 41; 235	18, 216	121, 249	121, 246
Analyst	W. S. Chapman	R. Bury	W. S. Chapman	S.A. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	D. G. Murray	R. Bury	G. T. See & R. Bayliss
Remarks	(Alluvial)	—	—	—	—	—	—	—	—
SiO_2	67.68	66.1	65.98	65.44	64.5	63.72	63.61	63.1	62.8
Al_2O_3	16.00	14.5	14.32	15.70	13.3	15.78	15.45	13.0	14.6
Fe_2O_3	5.66	5.1	5.44	5.92	5.6	7.60	2.90	6.0	5.6
FeO	—	—	—	—	—	—	3.10	—	—
MgO	1.00	—	0.80	0.84	—	1.16	2.66	—	—
CaO	0.96	—	0.14	0.26	—	0.18	abs.	—	—
Na_2O	1.16	0.7	0.49	0.42	1.3	0.74	0.43	1.3	—
K_2O	2.11	2.5	1.74	3.81	1.7	3.90	4.87	1.9	1.9
$\text{H}_2\text{O} +$	3.68	5.4	4.69	4.59	4.9	3.50	4.20	4.7	5.7
$\text{H}_2\text{O} -$	1.77	2.4	5.47	1.66	3.3	1.49	1.77	3.5	2.3
CO_2	abs.	—	abs.	abs.	—	abs.	0.04	—	—
TiO_2	0.88	0.7	0.80	0.96	0.8	1.28	0.76	0.8	0.8
P_2O_5	—	—	—	—	—	—	0.22	—	—
MnO	—	—	—	—	—	—	0.14	—	—
Other Constituents	Cl = 0.04		$\text{SO}_3 = 0.11$ Cl = 0.16	Cl = 0.08		Cl = 0.06	NaCl = tr. Humus = 0.28 FeS_2 = tr.		
	100.94	—	100.14	99.68	—	99.41	—	—	—
Less O = Cl, F, S	0.01	—	0.03	0.02	—	0.01	—	—	—
	100.93	97.4	100.11	99.66	95.4	99.40	100.43	94.3	[93.7]

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

$\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	79	80	81	82	83	84	85	86	87
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Wyalong, N.S.W.	Adelaide, S.A.	Adelaide, S.A.	Cowra, N.S.W.	Temora, N.S.W.	Albury, N.S.W.	Taree, N.S.W.	Yanco, N.S.W.	Albury, N.S.W.
Reference	121, 251	103, 27	103, 27	121	121, 248	121, 247	159, 188	121, 247	121, 247
Analyst	G. T. See & P. Bayliss	W. S. Chapman	S.A. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	62.7	62.60	61.98	61.8	61.7	61.3	61.28	61.1	61.1
Al_2O_3	13.0	15.64	14.35	15.5	13.0	15.1	14.92	14.3	14.6
Fe_2O_3	9.4	7.04	8.12	5.8	5.9	5.1	6.40	5.5	5.1
FeO	—	—	—	—	—	—	0.45	—	—
MgO	—	1.76	2.12	—	—	1.6	1.64	1.9	—
CaO	—	0.62	0.22	—	—	—	0.96	—	—
Na_2O	—	1.95	1.55	—	—	—	1.62	—	—
K_2O	0.5	3.56	3.04	4.5	1.4	1.6	2.97	2.2	3.7
$\text{H}_2\text{O}+$	2.4	3.44	4.58	5.7	5.6	5.6	4.69	6.5	5.7
$\text{H}_2\text{O}-$	7.8	1.83	2.17	2.3	4.1	2.4	4.33	3.1	4.3
CO_2	—	abs.	abs.	—	—	—	—	—	—
TiO_2	0.4	1.44	1.45	0.9	0.3	0.8	0.50	0.8	0.8
P_2O_5	—	—	—	—	—	—	0.08	—	—
MnO	—	—	—	—	—	—	0.16	—	—
Other Constituents		$\text{Cl} = 0.06$	$\text{Cl} = 0.03$						
	—	99.94	99.61	—	—	—	—	—	—
Less O = Cl, F, S	—	0.02	0.01	—	—	—	—	—	—
	96.2	99.92	99.60	96.5	92.0	93.5	100.00	95.4	[95.3]

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

	$\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 < 5\%$			$\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$			
	88	89	90	91	92	93	94
Rock Name	Impure Kaolin	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Larris Lake, N.S.W.	Carlos Gap, N.S.W.	Puggoon, N.S.W.	Adelaide Plains, S.A.	Adelaide, S.A.	Near Hindmarsh, Adelaide, S.A.	Dongara, W.A.
Reference	139, 52	158, 195	179, 104	80, 86	103, 26	73, 36	18, 214; 256, 17
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	T.W. Dalwood	H.P. Webb
Remarks	—	—	*Plus undetermined	(Alluvial)	—	—	—
SiO_2	71.16	63.82	62.06	65.80	65.30	64.14	62.74
Al_2O_3	17.47	14.17	25.37	14.43	15.50	15.11	13.32
Fe_2O_3	1.55	1.20	—	5.53	5.62	5.81	5.56
FeO	—	2.69	—	0.33	—	0.37	nd.
MgO	0.23	1.52	—	2.56	0.54	2.16	1.39
CaO	1.65	2.10	1.05	1.41	1.54	1.82	1.30
Na_2O	tr.	0.34	} 0.37*	1.51	1.12	1.01	0.66
K_2O	3.28	2.76		2.47	2.31	2.19	3.46
$\text{H}_2\text{O} +$	3.89	3.81	10.86	3.75	3.80	4.75	6.46
$\text{H}_2\text{O} -$	0.71	0.83	—	—	2.07	—	4.16
CO_2	—	—	—	0.97	1.23	1.33	0.38
TiO_2	—	0.76	0.29	0.99	0.80	1.03	0.70
P_2O_5	tr.	0.15	—	—	—	—	—
MnO	tr.	—	—	—	—	—	0.45
Other Constituents		Organic = 6.02		$\text{SO}_3 = 0.01$ $\text{Cl} = 0.02$	$\text{Cl} = 0.08$	$\text{SO}_3 = 0.04$ $\text{Cl} = 0.03$	$\text{NaCl} = \text{abs.}$
Less O = Cl, F, S	—	—	—	—	99.91	99.79	—
	99.94	100.17	100.00	99.78	99.89	99.78	100.58

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Fireclay	Clay	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay
Locality	Heathcote, N.S.W.	Bristol Hill, Maryborough, Vic.	Appila, S.A.	Little-hampton, S.A.	Campbell-field, Melbourne, Vic.	Noarlunga, S.A.	9 mls. S.W. of Avoca, N.S.W.	Mt. Werong, N.S.W.	Home Rule, N.S.W.
Reference	139, 52	98, 68; 114, 38	103, 37	103, 38; 235, 38	114, 60	103, 29	181, 96	178, 98	179, 104
Analyst	N.S.W. Dep. Mines	F. Ramsden	S.A. Dep. Mines	W. S. Chapman	L. Benjamin	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	(From quartz porphyry dyke)	—	—	(Lacus-trine)	—	*Loss on ignition	—	—
SiO_2	74.48	73.56	73.36	72.90	72.37	71.96	71.66	71.40	71.40
Al_2O_3	18.83	18.52	18.94	19.42	18.34	18.11	18.48	20.00	19.21
Fe_2O_3	0.39	1.56	0.80	0.98	1.70	0.92	0.40	—	0.29
FeO	—	—	—	—	0.07	—	—	—	—
MgO	0.72	tr.	0.04	abs.	tr.	0.24	0.20	—	—
CaO	tr.	abs.	abs.	0.06	abs.	0.41	0.24	—	—
Na_2O	abs.	0.36	0.08	0.52	0.13	0.17	—	—	—
K_2O	1.58	0.63	0.74	0.44	0.96	2.30	—	—	—
$\text{H}_2\text{O} +$	4.57	4.89	5.58	6.14	4.36	4.48	7.26*	—	—
$\text{H}_2\text{O} -$		0.24	0.22	0.06	1.67	0.31	—	—	—
CO_2	—	—	—	abs.	—	abs.	—	—	—
TiO_2	tr.	abs.	—	abs.	—	0.71	0.60	—	0.90
P_2O_5	tr.	abs.	—	—	—	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Constituents		Cl = tr.		Cl = 0.02	Cl = 0.11	Cl = 0.07			
	—	—	—	—	99.71	99.68	—	—	—
Less O = Cl, F, S	—	—	—	—	0.03	0.02	—	—	—
	100.57	99.76	99.76	100.54	99.68	99.66	98.84	—	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	10	11	12	13	14	15	16	17	18
RockName	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Kaolin	Fireclay
Locality	Mangrove Mt., N.S.W.	N.E. Oraparinna Stn., 66 mls. N.N.E. of Hawker, S.A.	15 mls. S.E. Cassilis, N.S.W.	Campbellfield, Melbourne, Vic.	Cooks River, Sydney, N.S.W.	5 mls. N.E. of Laura, S.A.	Waterloo, Sydney, N.S.W.	Tweed Heads, N.S.W.	Moorooduc, Mornington Pen., Vic.
Reference	189	88, 78	165, 122	230, 108	140, 62	103, 41	158, 195	144, 187	113, 70; 114, 19
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	(Partly residual & partly colluvial)
SiO_2	71.4	71.16	71.16	70.99	70.98	70.84	70.70	70.64	70.61
Al_2O_3	18.8	18.33	19.04	17.88	18.12	18.66	19.95	20.14	19.03
Fe_2O_3	1.0	0.52	0.55	1.38	0.25	1.64	0.35	0.80	1.29
FeO	—	—		abs.	—	—	0.45	—	0.19
MgO	—	0.27	—	0.94	0.18	0.52	0.46	0.10	tr.
CaO	—	0.14	—	0.20	—	abs.	0.21	0.24	abs.
Na_2O	—	0.61	—	0.52	1.71	0.16	0.28	1.13	0.07
K_2O	—	1.41	—	2.46		2.04	1.98	1.22	0.39
$\text{H}_2\text{O} +$	—	6.18	—	4.64	7.29	4.68	5.60	4.64	6.85
$\text{H}_2\text{O} -$	—	0.37	—	1.68	1.47	0.24		0.90	1.42
CO_2	—	—	—	—	—	abs.	—	—	—
TiO_2	0.6	0.69	0.47	—	—	1.18	—	—	0.51
P_2O_5	—	—	—	—	—	—	—	abs.	—
MnO	—	—	—	0.06	—	—	—	—	—
Other Constituents	—	Cl = 0.52	—	—	Organic = tr.	Cl = 0.01	—	$\text{SO}_3 = \text{abs.}$	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	—	100.20	—	100.75	100.00	99.97	99.98	99.81	100.36

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 < 5\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Diamond Head, Manning R., N.S.W.	20 mls. N. of Goulburn, N.S.W.	4 mls. N. of Marulan, N.S.W.	Booleroo, Centre, S.A.	Peak Hill, N.S.W.	Moorooduc, Mornington Pen., Vic.	5 mls. E. of Edeowie Siding, S.A.	Near Mudlamuckla, S.A.	Near Longwood, S.A.
Reference	139, 52	180, 148	165, 122	75, 51	142, 146	113, 70; 114, 19	88, 37	103, 42; 235, 16	103, 29; 235, 17
Analyst	N.S.W. Dep. Mines	W. G. Stone	N.S.W. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	J. C. Watson	S.A. Dep. Mines	W. S. Chapman	W. S. Chapman
Remarks	—	—	—	—	—	(Partly residual & partly colluvial)	—	—	—
SiO_2	70.23	70.2	69.96	69.95	69.82	69.70	69.62	69.56	69.52
Al_2O_3	19.27	19.1	20.12	19.14	20.66	19.63	20.09	18.82	20.83
Fe_2O_3	1.54	0.7	0.80	0.61	0.41	1.15	0.87	1.16	0.42
FeO	—	—	—	0.16	—	0.19	—	—	—
MgO	0.23	—	—	0.58	0.30	tr.	0.13	abs.	0.60
CaO	tr.	—	—	0.10	abs.	abs.	0.04	0.08	0.04
Na_2O	tr.	—	—	0.89	0.04	0.17	0.26	0.30	abs.
K_2O	4.50	—	—	0.22	1.75	0.36	0.28	0.37	2.46
$\text{H}_2\text{O} +$	4.27	—	—	7.34	6.00	7.37	7.55	5.90	5.26
$\text{H}_2\text{O} -$		—	—	—	1.19	1.03	0.93	2.20	0.38
CO_2	—	—	—	—	—	—	—	abs.	abs.
TiO_2	tr.	1.0	0.68	0.58	—	0.51	0.70	1.08	0.85
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Constituents				$\text{SO}_3 = 0.16$ $\text{Cl} = 0.50$			$\text{SO}_3 = 0.16$ $\text{Cl} = 0.15$	$\text{SO}_3 = \text{abs.}$ $\text{Cl} = 0.55$	
	—	—	—	100.23	—	—	—	100.02	—
Less O = Cl, F, S	—	—	—	0.11	—	—	—	0.12	—
	100.04	—	—	100.12	100.17	100.11	100.78	99.90	100.36

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	28	29	30	31	32	33	34	35	36
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	N. of North Para River, S.A.	3 mls. S.W. of Eden, N.S.W.	Near Balhannah, S.A.	Near Echunga, S.A.	Forestville, Sydney, N.S.W.	N. of North Para River, S.A.	Frenchs Forest, near Manly, N.S.W.	Port Stephens, N.S.W.	Near Armidale, N.S.W.
Reference	88, 77	157, 201	103, 30	88, 43	189	76, 56	166, 76	146, 205	158, 195
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	S.A. Dep. Mines	N.S.W. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	*Includes 43.38% Sand	—	—
SiO_2	69.46	69.44	69.44	69.38	69.3	69.21	69.16*	69.11	69.10
Al_2O_3	17.81	18.87	18.30	18.33	18.5	18.00	19.18	19.88	20.21
Fe_2O_3	1.23	0.90	1.46	1.68	0.7	1.12	0.85	2.24	0.15
FeO	0.18	0.36	—	—	—	0.17	0.32	abs.	0.18
MgO	0.72	0.75	1.01	0.58	—	0.83	0.36	0.25	0.04
CaO	abs.	0.34	0.50	0.18	—	0.04	0.10	0.30	0.36
Na_2O	0.32	0.33	3.38	0.20	—	1.22	0.45	0.32	0.36
K_2O	1.98	4.28	0.55	0.88	—	2.39	1.97	0.43	1.16
$\text{H}_2\text{O}+$	4.63	3.97	4.08	5.87	—	5.04	7.02	5.61	7.20
$\text{H}_2\text{O}-$	1.20	0.33	0.20	1.04	—	—		2.19	0.88
CO_2	—	—	abs.	—	—	—	—	—	—
TiO_2	1.90	0.64	0.74	1.65	0.9	1.82	0.80	—	0.70
P_2O_5	—	0.06	—	—	—	—	—	—	tr.
MnO	—	0.01	—	—	—	—	—	—	—
Other Con-stituents	$\text{SO}_3=0.30$ $\text{Cl}=0.18$	$\text{V}_2\text{O}_5=\text{tr.}$ $\text{Cr}_2\text{O}_3=\text{tr.}$	$\text{Cl}=0.01$	—	—	$\text{SO}_3=\text{tr.}$ $\text{Cl}=0.12$	—	—	—
	99.91	—	—	—	—	99.96	—	—	—
Less O= Cl, F, S	0.04	—	—	—	—	0.03	—	—	—
	99.87	[100.28]	99.67	99.79	—	99.93	100.21	100.33	100.34

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	37	38	39	40	41	42	43	44	45
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Buckaroo, N.S.W.	Appila, S.A.	Clandulla, N.S.W.	Merimbula, N.S.W.	Near Oodla Wirra, S.A.	Carlton, Sydney, N.S.W.	Kings Plain, Blayney-Trunkey Area, N.S.W.	$\frac{3}{4}$ mile E. of Dandenong Rlwy. Stn., Vic.	Ormiston, Qld.
Reference	121, 240	88, 68	177, 100	138, 58	88, 153; 103, 37; 235, 12	187, 94	121, 241	114, 17	53, 100
Analyst	R. Bury	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	G. T. See & P. Bayliss	J. C. Watson	Qld. Govt. Anal.
Remarks	—	Refractory	—	—	—	*Loss on ignition	—	(From granite)	—
SiO_2	69.1	68.86	68.84	68.73	68.72	68.6	68.6	68.59	68.45
Al_2O_3	19.6	22.70	21.24	19.00	22.09	18.2	20.6	19.42	21.70
Fe_2O_3	0.9	0.24	pnd.	1.85	0.42	3.3	1.9	1.73	1.53
FeO	—	—	—	—	—	—	—	0.19	—
MgO	0.7	0.19	—	0.27	abs.	—	—	tr.	1.08
CaO	0.3	0.34	—	0.20	0.14	—	—	abs.	—
Na_2O	0.2	0.03	—	0.74	0.27	—	—	0.11	1.03
K_2O	4.0	0.36	—		0.58	—	—	0.67	
$\text{H}_2\text{O} +$	4.2	5.82	nd.	7.17	7.12	6.8*	4.9	6.65	4.85
$\text{H}_2\text{O} -$	0.3	0.52	—	2.04	0.28	—	abs.	1.62	1.25
CO_2	—	—	—	—	abs.	—	—	—	—
TiO_2	0.6	0.60	0.80	tr.	0.85	1.0	0.3	1.02	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	Cl = 0.09	—	—	= 0.03	—	—	—	—
Less O = Cl, F, S	—	99.75	—	—	—	—	—	—	—
	99.9	99.73	—	100.00	100.50	—	96.3	100.00	99.89

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	46	47	48	49	50	51	52	53	54
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Marulan, N.S.W.	Gumer- acha, S.A.	Bulli, N.S.W.	Cygnat River, S.A.	Rock Flat, N.S.W.	Gulgong, N.S.W.	1½ mls. N.W. of Wah- roonga, Sydney, N.S.W.	Capertee, District, N.S.W.	Ringwood, Vic.
Reference	156, 185	103, 31	154, 175	103, 34	121, 240	154, 175	177, 100	179, 104	114, 36
Analyst	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	(From felspathic dyke)
SiO_2	68.35	68.30	68.22	68.2	68.2	68.16	68.16	68.09	68.03
Al_2O_3	22.12	21.79	21.47	21.9	19.3	20.55	19.88	22.18	22.84
Fe_2O_3	0.90	0.80	0.40	—	2.0	0.10	1.02	0.64	0.76
FeO	tr.	—	0.80	—	—	0.27	—	—	0.08
MgO	0.11	0.40	0.18	—	0.7	0.46	—	—	abs.
CaO	0.38	0.72	tr.	—	0.4	abs.	—	—	abs.
Na_2O	0.23	0.11	0.24	—	0.1	0.51	—	—	0.35
K_2O	0.29	1.20	0.48	—	4.9	2.47	—	—	0.84
$\text{H}_2\text{O} +$	8.03	6.34	7.82	9.7	3.7	5.96	—	—	6.37
$\text{H}_2\text{O} -$		0.22	0.90		0.4	1.08	—	—	0.29
CO_2	0.02	abs.	—	—	—	—	—	—	—
TiO_2	pnd.	0.03	0.57	—	0.8	0.65	0.90	0.70	—
P_2O_5	pnd.	—	0.06	—	—	tr.	—	—	—
MnO	—	—	0.01	—	—	tr.	—	—	—
Other Con- stituents		Cl=0.01	$\text{SO}_3=0.15$ Cl=tr.			$\text{V}_2\text{O}_5=0.01$			Cl=0.05
	—	—	—	—	—	—	—	—	99.61
Less O= Cl, F, S	—	—	—	—	—	—	—	—	0.01
	100.43	99.92	[101.30]	—	100.5	100.22	—	—	99.60

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	55	56	57	58	59	60	61	62	63
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Fireclay	Clay
Locality	Home Rule, N.S.W.	Booleroo, Centre, S.A.	Waterloo, N.S.W.	40 mls. N.E. of Lyndhurst, S.A.	Hamley Bridge, S.A.	Coraki Coal Mine, N.S.W.	Waratah, N.S.W.	Bulli, N.S.W.	Port Macquarie, N.S.W.
Reference	178, 98	88, 26; 103, 37	156, 185	124, 125	88, 68	138, 57	158, 195	153, 177	180, 148
Analyst	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	T. W. Dalwood	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. G. Stone
Remarks	—	—	—	(Weathered slate)	—	—	—	—	—
SiO_2	67.98	67.90	67.81	67.80	67.78	67.64	67.63	67.60	67.50
Al_2O_3	21.10	21.92	20.24	20.12	20.86	19.18	17.60	19.87	20.66
Fe_2O_3	—	0.58	0.60	0.72	0.62	1.11	0.85	1.21	1.44
FeO	—	—	0.45	0.21	—	0.28	0.54	0.27	—
MgO	—	0.14	0.56	0.44	0.44	0.79	0.24	0.27	—
CaO	—	0.24	0.33	0.02	0.26	0.52	0.21	0.15	—
Na_2O	—	0.20	0.29	1.30	0.43	0.57	0.69	0.70	—
K_2O	—	0.22	1.87	2.26	0.62	2.98	2.79	1.05	—
$\text{H}_2\text{O}+$	—	7.03	5.83	5.42	5.82	4.86	5.42	5.83	—
$\text{H}_2\text{O}-$	—	1.21	1.67	0.26	1.32	2.45	1.45	1.97	—
CO_2	—	abs.	—	abs.	—	—	—	—	—
TiO_2	—	0.66	0.56	1.00	2.20	abs.	0.65	0.80	0.90
P_2O_5	—	—	0.15	—	—	tr.	0.10	0.09	—
MnO	—	—	tr.	—	—	—	—	—	—
Other Constituents		$\text{Cl} = 0.20$		$\text{SO}_3 = 0.09$ $\text{Cl} = 1.22$	$\text{Cl} = 0.72$		Organic + undet. = 1.83		
Less O = Cl, F, S	—	100.30	—	100.86	101.07	—	—	—	—
	—	0.04	—	0.28	0.16	—	—	—	—
	—	100.26	100.36	100.58	100.91	100.38	100.00	99.81	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	64	65	66	67	68	69	70	71	72
Rock Name	Clay	Clay	China Clay	Clay	Clay	Clay	Fireclay	Clay	Fireclay
Locality	Simmonston, 20 mls. N.N.E. Quorn, S.A.	Near Salisbury, S.A.	Eyres Pen., S.A.	Campbellfield, Melbourne, Vic.	Budgee, 7 mls. N.E. of Mudgee, N.S.W.	Swan Bay, Richmond R., N.S.W.	2 mls. N.E. of Woodside, S.A.	Woonona, N.S.W.	4 mls. S. of O'Connell, N.S.W.
Reference	78, 77	103, 33	66, 26	36	188, 165	138, 60	72, 49	150, 152	153, 177
Analyst	S.A. Dep. Mines	W. S. Chapman	S.A. Dep. Mines	C. J. Carrel	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	*Loss on ignition	—	—	*Dried before analysis	—	—
SiO_2	67.50	67.50	67.41	67.40	67.4	67.28	67.20	67.15	67.10
Al_2O_3	19.77	20.98	22.45	20.45	20.6	20.07	21.62	21.20	18.08
Fe_2O_3	1.17	1.10	0.51	1.76	1.1	1.03	0.74	0.40	1.80
FeO	0.15	—	0.07	—	—	—	0.02	0.18	0.09
MgO	1.00	0.04	0.02	1.06	—	1.19	0.08	0.33	0.23
CaO	0.08	0.20	abs.	0.28	—	0.60	0.12	0.22	0.60
Na_2O	0.71	0.10	0.71	0.21	—	0.62	0.18	0.53	0.80
K_2O	2.10	1.12	0.57	1.99	—	3.08	0.16	1.35	2.76
$\text{H}_2\text{O}+$	6.19	6.10	7.57	5.20*	—	4.38	8.19	6.05	6.80
$\text{H}_2\text{O}-$	—	2.38	—	0.80	—	1.56	*	1.81	1.25
CO_2	—	abs.	—	—	—	—	—	—	—
TiO_2	0.87	1.36	0.48	0.85	0.7	tr.	1.64	1.07	0.85
P_2O_5	—	—	—	—	—	abs.	—	0.07	0.10
MnO	—	—	—	—	—	—	—	tr.	—
Other Constituents	$\text{SO}_3=0.05$ $\text{Cl}=0.59$	$\text{Cl}=0.06$	$\text{SO}_3=0.12$ $\text{Cl}=0.20$			Organic = tr.	$\text{SO}_3=0.01$ $\text{Cl}=0.03$	$\text{V}_2\text{O}_5=\text{tr.}$ $\text{Cl}=\text{tr.}$	$\text{Cl}=\text{tr.}$
	100.18	100.94	100.11	—	—	—	99.99	—	—
Less O = Cl, F, S	0.13	0.02	0.04	—	—	—	0.01	—	—
	100.05	100.92	100.07	100.00	—	99.81	99.98	100.36	100.46

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	73	74	75	76	77	78	79	80	81
Rock Name	Clay	Clay	Kaolin	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Tichborne, near Parkes, N.S.W.	Swan Bay, Richmond R., N.S.W.	Tichborne, near Parkes, N.S.W.	The Cedars, Forbes, N.S.W.	Woonona, N.S.W.	Ulan, N.S.W.	Lismore, N.S.W.	Mangrove, Mt., N.S.W.	Molong, N.S.W.
Reference	153, 177	138, 59	148, 130	164, 184	159, 188	5, 224	121, 252	185, 103	161, 194
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	*Plus undetermined	Ceramic	—	—	—
SiO_2	67.10	67.03	66.80	66.80	66.76	66.76	66.7	66.6	66.42
Al_2O_3	19.29	20.75	19.58	19.34	22.21	22.21	20.3	19.1	21.95
Fe_2O_3	1.82	0.91	1.85	2.50	0.50	0.35	0.4	0.9	1.10
FeO	0.27	abs.	0.36		0.36	0.04	—	—	—
MgO	0.69	0.54	0.85	—	0.42*	0.22	0.3	—	tr.
CaO	tr.	tr.	0.07	—		0.28	0.3	—	0.20
Na_2O	0.63	0.31	0.47	—	0.25	0.40	—	—	0.08
K_2O	3.12	2.89	3.26	—	0.92	1.20	1.5	—	0.04
$\text{H}_2\text{O}+$	4.71	2.13	4.82	—	8.58	7.11	7.3	—	8.77
$\text{H}_2\text{O}-$	1.24	2.33	0.65	—		1.07	1.1	—	0.34
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.15	—	1.25	0.70	—	—	1.0	0.9	0.85
P_2O_5	tr.	tr.	0.04	—	—	—	—	—	tr.
MnO	—	—	tr.	—	—	—	—	—	0.03
Other Constituents	Cl = 0.06	Organic = 3.04	$\text{Cr}_2\text{O}_3 = \text{tr.}$ $\text{V}_2\text{O}_5 = 0.04$ $\text{SO}_3 = 0.05$				Organic = 1.1		
	100.08	—	—	—	—	—	—	—	—
Less O = Cl, F, S	0.01	—	—	—	—	—	—	—	—
	100.07	99.93	100.09	—	100.00	99.64	[100.0]	—	99.78

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$

CaO < 1% : Fe_2O_3 < 5%									
	82	83	84	85	86	87	88	89	90
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Little-hampton, S.A.	Dubbo, N.S.W.	Barraba, N.S.W.	3 mls. South of Thackaringa, N.S.W.	Strathfield, Sydney, N.S.W.	Swan Bay, Richmond R., N.S.W.	Manly, Sydney, N.S.W.	Sylvania, Sydney, N.S.W.	6 mls. N.W. of Cobar, N.S.W.
Reference	103 , 38; 235 , 15	154 , 175	121	177 , 100	158 , 195	138 , 59	189	181 , 91	29 , 400; 144 , 188
Analyst	W. S. Chapman	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	*Loss on ignition	—
SiO_2	66.14	66.10	66.0	65.98	65.97	65.95	65.9	65.90	65.82
Al_2O_3	19.06	21.72	18.8	21.44	20.59	18.85	21.4	19.62	20.74
Fe_2O_3	4.68	0.70	4.1	0.46	tr.	3.33	0.8	1.44	1.45
FeO	—	0.18	—	—	1.08	—			—
MgO	0.18	0.37	—	—	0.55	0.97	—	tr.	0.97
CaO	0.28	0.30	—	—	0.11	tr.	—	tr.	0.10
Na_2O	0.35	0.41	—	—	0.88	0.83	0.1	—	0.07
K_2O	0.63	1.11	1.0	—	2.13	2.02	1.9	—	4.58
$\text{H}_2\text{O}+$	6.54	7.30	7.3	—	5.13	2.38	—	10.78*	4.54
$\text{H}_2\text{O}-$	1.82	0.95	2.3	—	1.60	2.60	—	—	1.75*
CO_2	abs.	—	—	—	—	—	—	—	—
TiO_2	0.88	0.60	1.2	abs.	0.70	—	0.8	1.10	—
P_2O_5	—	0.08	—	—	0.16	0.09	—	—	tr.
MnO	—	—	—	—	—	abs.	—	—	tr.
Other Constituents	Cl = 0.01				Organic = 1.47	Organic = 2.96 $\text{SO}_3 = \text{tr.}$			$\text{SO}_3 = 0.19$
	100.57	99.82	100.7	—	100.37	99.98	—	—	100.21

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\% : \text{Fe}_2\text{O}_3<5\%$

	91	92	93	94	95	96	97	98	99
Rock Name	Clay	Clay	Clay	Bell Clay	Clay	Clay	Clay	Clay	Clay
Locality	Marangaroo, N.S.W.	Coombell, N.S.W.	Kikiora, N.S.W.	Lal Lal, Vic.	Frenchs Forest, Sydney, N.S.W.	Dubbo District, N.S.W.	Sylvania, near Sydney, N.S.W.	Macleay R. District, N.S.W.	1½ mls. S.W. of Bundanoon,, N.S.W.
Reference	—	156, 185	181, 96	21	180, 148	186, 110	181, 91	138, 58	158, 195
Analyst	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. C. Callister	W. G. Stone	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Determined by G. T. See	—	—	(Sedimentary) *Loss on ignition	—	*Loss on ignition	—	—	—
SiO_2	65.5	65.44	65.4	65.38	65.3	65.3	65.2	65.17	65.16
Al_2O_3	20.4	19.90	21.1	21.55	21.3	21.8	20.0	21.89	21.48
Fe_2O_3	0.7	0.60	0.6	0.61	—	1.3	1.1	0.19	1.40
FeO	—	0.53	—	—	—	—		—	0.44
MgO	0.5	0.49	—	0.36	—	0.5	0.4	1.03	0.92
CaO	0.4	0.76	—	0.55	—	abs.	0.8	0.50	0.07
Na_2O	—	0.94	—	0.45	—	0.6	—	1.16	0.17
K_2O	3.7*	2.46	—	2.35	—		—	2.02	2.27
$\text{H}_2\text{O}+$	6.2*	8.20	—	6.82*	—	9.0*	nd.	6.07	5.48
$\text{H}_2\text{O}-$	2.8*		—	0.59	—	—	—	2.37	1.78
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.2	pnd.	1.3	1.16	—	1.0	0.9	abs.	0.72
P_2O_5	—	pnd.	—	—	—	0.1	—	tr.	0.04
MnO	—	tr.	—	—	—	—	—	abs.	—
Other Constituents	—	Organic = 0.44	—	$\text{V}_2\text{O}_5=\text{tr.}$	—	—	—	—	Organic = tr.
	100.4	99.76	—	99.82	—	99.6	—	100.40	99.93

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	100	101	102	103	104	105	106	107	108
Rock Name	Fireclay	Fireclay,	Fireclay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Waratah, N.S.W.	Little-hampton, S.A.	Richmond R., N.S.W.	Nepabunna, 10 mls. S.E. of North Flinders Ra., S.A.	Tichborne, borne, near Parkes, N.S.W.	Excelsior Colliery, N.S.W.	Tarago, N.S.W.	Frenchs Forest, near Sydney, N.S.W.	4 mls. E. of Elaine, Vic.
Reference	167, 100	36	140, 65	88, 77	121, 243	187, 94	189	180, 148	114, 55
Analyst	N.S.W. Dep. Mines	T. Gelb	N.S.W. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. G. Stone	Vic. Dep. Mines
Remarks	—	*Loss on ignition †Dried at 110°C	—	—	—	*Loss on ignition	—	—	(Fluviatile) *Plus undetermined
SiO_2	65.16	65.13	65.06	64.94	64.8	64.7	64.6	64.6	64.5
Al_2O_3	17.54	20.87	20.90	18.02	19.8	18.1	21.7	20.5	19.2
Fe_2O_3	1.00	2.45	1.24	2.52	2.1	1.0	0.9	—	1.2
FeO	0.81	—	—	—	—	—	—	—	—
MgO	1.59	0.21	0.76	1.74	—	—	—	—	1.0
CaO	0.84	0.23	0.66	0.08	—	—	—	—	0.5
Na_2O	1.62	0.22	0.17	0.88	—	—	—	—	4.8*
K_2O	2.24	0.49	3.21	4.24	3.4	—	—	—	
$\text{H}_2\text{O}+$	4.30	9.04*	6.30	4.42	6.7	11.8*	—	—	5.3
$\text{H}_2\text{O}-$	3.62	†	1.78	0.96	0.9	—	—	—	3.5
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.40	0.86	—	1.06	0.8	0.6	1.8	—	—
P_2O_5	—	—	tr.	—	—	—	—	—	—
MnO	—	—	tr.	—	—	—	—	—	—
Other Constituents			$\text{SO}_3 = \text{tr.}$ Organic = 0.10	Cl = 1.67					
	—	—	—	100.53	—	—	—	—	—
Less O = Cl, F, S	—	—	—	0.37	—	—	—	—	—
	103.12	99.50	100.18	100.16	98.5	—	—	—	100.0

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	109	110	111	112	113	114	115	116	117
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Fireclay	Clay	Clay
Locality	Tichborne, near Parkes, N.S.W.	Riverstone, N.S.W.	York Peninsula, S.A.	Dalton, N.S.W.	Dubbo, N.S.W.	Port Noarlunga, S.A.	White Cliffs, N.S.W.	Dubbo, N.S.W.	Marangaroo, N.S.W.
Reference	189	143, 196	103, 35	121, 234	121, 239	103, 32; 108, 52; 235	147, 184	121, 253	121, 239
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	R. Bury	G. T. See & P. Bayliss	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss
Remarks	—	—	—	*Determined by G. T. See	—	Non-refractory	—	—	—
SiO_2	64.5	64.20	64.00	64.0	64.0	63.70	63.55	63.5	63.4
Al_2O_3	20.8	20.18	17.97	21.2	19.7	19.68	21.89	17.6	21.9
Fe_2O_3	2.3	1.84	2.08	1.3	2.8	4.46	0.57	4.9	0.6
FeO		1.86	—	—	—	—	0.21	—	—
MgO	—	0.86	abs.	0.6	—	0.86	0.57	0.9	1.3
CaO	—	tr.	0.68	0.5	—	0.23	0.32	0.2	0.2
Na_2O	—	0.02	1.14	—	—	0.68	0.71	—	—
K_2O	—	1.79	4.98	—	1.4	3.91	0.64	1.8	3.4
$\text{H}_2\text{O}+$	—	7.50	3.70	6.6*	7.7	4.74	7.30	7.2	6.3
$\text{H}_2\text{O}-$	—	2.20	2.83	1.7*	2.0	0.85	3.98	2.0	3.0
CO_2	—	—	abs.	—	—	abs.	—	—	—
TiO_2	0.8	—	1.13	0.9	1.1	1.01	0.24	1.3	0.2
P_2O_5	—	—	—	—	—	—	tr.	—	—
MnO	—	tr.	—	—	—	—	tr.	—	—
Other Constituents	—	—	$\text{SO}_3 = 0.41$ $\text{Cl} = 0.98$	—	—	$\text{Cl} = 0.21$	$\text{CuO} = \text{tr.},$ $\text{SO}_3 = 0.04$ $\text{Cl} = 0.64$ $\text{V}_2\text{O}_5 = 0.03$	—	—
Less O = Cl, F, S	—	—	99.90	—	—	100.33	100.69	—	—
	—	—	0.22	—	—	0.05	0.14	—	—
	—	100.45	99.68	96.8	98.7	100.28	100.55	99.4	[100.3]

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	118	119	120	121	122	123	124	125	126
Rock Name	Clay	Clay	Clay	Clay	Fireclay	Clay	Clay	Clay	Clay
Locality	2½ mls. N.E. of Oodla, Wirra, S.A.	Concord, Sydney, N.S.W.	Corindi, N.S.W.	Tichborne, near Parkes, N.S.W.	Bulli, N.S.W.	West Maitland, N.S.W.	Coombell, N.S.W.	Little-hampton, S.A.	Near Coona-barabran, N.S.W.
Reference	88, 78	158, 195	121, 240	189	142, 146	158, 195	156, 185	235, 18	178, 98
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	63.30	62.92	62.8	62.5	62.22	62.18	62.14	62.04	61.70
Al_2O_3	18.72	19.47	17.6	20.8	20.96	20.78	19.18	18.03	18.54
Fe_2O_3	2.96	1.60	1.2	2.6	2.82	2.30	3.80	2.52	3.10
FeO	—	0.87	—	—	—	0.44	0.35	—	—
MgO	1.98	0.94	—	—	0.56	0.94	0.63	0.56	—
CaO	0.04	0.46	—	—	0.11	0.30	0.94	0.82	—
Na_2O	0.82	0.15	—	—	0.03	0.60	0.86	2.44	—
K_2O	4.67	2.91	3.7	—	3.01	1.58	1.97	0.04	—
$\text{H}_2\text{O} +$	4.61	5.68	5.0	—	2.46	6.23	5.67	7.00	—
$\text{H}_2\text{O} -$	1.58	2.60	6.2	—	1.49	4.11	3.77	3.08	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.82	0.84	0.8	1.0	—	0.68	pnd.	1.27	—
P_2O_5	—	0.09	—	—	—	0.04	pnd.	—	—
MnO	—	abs.	—	—	tr.	tr.	—	—	—
Other Constituents	Cl=0.80	Organic + undet. = 1.47	—	—	Organic = 6.69	NaCl = 0.12	Organic = 0.86	SO_3 = abs. Graphite = tr. Cl = 3.12	—
Less O = Cl, F, S	100.30	—	—	—	—	—	—	100.92	—
	0.17	—	—	—	—	—	—	0.70	—
	100.13	100.00	97.3	—	100.35	100.30	100.17	100.22	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	127	128	129	130	131	132	133	134	135
Rock Name	Fireclay	Clay	Clay (Bedded)	Fireclay	Clay	Clay	Clay	Clay	Clay
Locality	Bulli, N.S.W.	Little-hampton, S.A.	Bellevue, W.A.	Bulli, N.S.W.	Little-hampton, S.A.	Near Coona-barabran, N.S.W.	Wonthaggi, Vic.	Between Marulan & Towrang, N.S.W.	Ida Bay, Tas.
Reference	142, 146	235, 18	228, 104	142, 146	235, 181	178, 98	114, 46	172, 135	240, 38
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	P. G. W. Bayley	N.S.W. Dep. Mines	Tas. Dep. Mines
Remarks	—	—	*Loss on ignition	—	—	—	—	—	*Loss on ignition
SiO_2	61.30	61.26	61.21	60.10	59.96	59.30	58.57	56.40	55.6
Al_2O_3	19.55	20.24	19.55	19.76	19.20	17.70	18.64	17.84	14.8
Fe_2O_3	2.45	1.74	6.73	1.59	3.70	4.40	0.87	—	3.6
FeO	—	—	—	—	—	—	0.92	—	—
MgO	2.73	0.10	0.62	1.11	0.66	—	0.93	—	0.5
CaO	0.25	0.22	0.15	0.50	0.10	—	0.58	—	—
Na_2O	abs.	4.03	—	abs.	2.42	—	0.95	—	—
K_2O	2.69	0.36	—	2.14	0.59	—	2.74	—	—
$\text{H}_2\text{O} +$	4.06	6.03	10.44*	3.57	7.40	—	5.34	—	} 25.5*
$\text{H}_2\text{O} -$	1.15	2.58	—	1.70	2.48	—	11.29	—	
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	—	1.18	—	—	1.14	—	0.81	1.40	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	tr.	—	—	tr.	—	—	—	—	—
Other Constituents	Organic = 6.39	$\text{SO}_3 = 0.29$ $\text{Cl} = 2.75$	—	Organic = 10.03	$\text{SO}_3 = 0.58$ $\text{Cl} = 2.42$	—	—	—	—
	—	100.78	—	—	100.65	—	—	—	—
Less O = Cl, F, S	—	0.62	—	—	0.52	—	—	—	—
	100.57	100.16	98.70	100.50	100.13	—	101.64	—	100.00

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	136	137	138	139	140	141	142	143	144
Rock Name	Fireclay	Clay (Bedded)	Clay	Clay	Clay	Clay (Bedded)	Siliceous Clay	Clay	Clay
Locality	Waratah, N.S.W.	Bellevue, W.A.	Bal-hannah, S.A.	Barraba, N.S.W.	Oodla Wirra, S.A.	Bellevue, W.A.	Dover, Tas.	Salisbury, S.A.	Adelaide, S.A.
Reference	144, 188	228, 105	103, 30; 235, 30	29, 325; 153, 177	103, 37; 235, 12	228, 104	34, 7	103, 33	103, 27
Analyst	N.S.W. Dep. Mines	A. J. Robertson	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	E. S. Simpson	M. Neilson	W. S. Chapman	S.A. Dep. Mines
Remarks	—	*Loss on ignition	—	—	—	*Loss on ignition	*Loss on ignition	(Alluvial)	—
SiO_2	65.40	64.89	64.80	64.35	64.22	63.75	63.70	63.46	62.78
Al_2O_3	19.01	17.22	18.69	16.58	19.40	17.18	21.12	17.65	16.14
Fe_2O_3	5.36	7.36	5.28	7.40	5.26	7.40	5.02	6.56	7.14
FeO	abs.	—	—	0.27	—	—	—	—	—
MgO	0.07	0.42	abs.	0.21	0.88	0.49	0.33	2.22	1.62
CaO	0.05	tr.	abs.	0.50	0.40	0.13	—	0.84	0.58
Na_2O	0.29	—	0.62	0.83	0.57	—	0.71	1.49	2.45
K_2O	0.35	—	1.64	0.80	2.18	—	0.08	2.36	3.13
$\text{H}_2\text{O} +$	6.86	8.90*	5.60	7.33	5.80	10.02*	8.72*	1.97	3.02
$\text{H}_2\text{O} -$	2.88	—	1.64	0.67	0.59	—	—	2.63	1.29
CO_2	—	—	abs.	—	abs.	—	—	abs.	abs.
TiO_2	—	—	1.69	0.70	0.94	—	1.10	1.05	1.50
P_2O_5	abs.	—	—	0.07	—	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Constituents	$\text{SO}_3 = 0.13$	—	—	Cl = tr. $\text{CO}_3 = \text{tr.}$	Cl = 0.10	—	—	Cl = 0.11	Cl = 0.03
Less O = Cl, F, S	—	—	—	—	100.34 0.02	—	—	100.34 0.03	99.68 0.01
	100.40	98.79	99.96	99.71	100.32	98.97	100.78	100.31	99.67

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3=5\% - 10\%$

	145	146	147	148	149	150	151	152	153
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Carlton, Sydney, N.S.W.	Waratah, N.S.W.	Adelaide, S.A.	Salisbury, S.A.	Vale of Clwydd, N.S.W.	(Bedded) Bellevue, W.A.	Near Cherry Gardens, Mt. Lofty Ra., S.A.	Salisbury, S.A.	Waterloo, Sydney, N.S.W.
Reference	187, 94	164, 184	103, 26	103, 32	158, 195	228, 105	103, 30; 235, 17	103, 32	156, 185
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	A. J. Robertson	W. S. Chapman	W. S. Chapman	N.S.W. Dep. Mines
Remarks	*Loss on ignition	—	—	(Alluvial)	—	*Loss on ignition	(Transported)	—	—
SiO_2	62.7	62.62	62.38	62.34	62.16	62.08	61.56	61.54	61.54
Al_2O_3	17.0	19.92	15.79	15.92	16.22	18.60	17.81	16.07	18.60
Fe_2O_3	6.4	4.90	7.22	6.42	7.35	6.94	8.10	6.68	6.00
FeO	—	0.36	—	—	0.50	—	—	—	—
MgO	—	0.54	2.16	1.70	0.43	0.33	0.08	2.16	0.90
CaO	10.5*	0.31	abs.	0.60	0.14	tr.	0.28	0.50	0.80
Na_2O	—	0.40	2.47	1.06	0.29	—	0.06	1.19	0.28
K_2O	—		2.28	2.48	3.30	—	0.83	2.51	2.20
$\text{H}_2\text{O}+$	—	10.66	3.70	4.38	5.09	10.39*	6.70	5.26	3.93
$\text{H}_2\text{O}-$	—		1.96	3.81	2.10	—	3.70	2.58	1.17
CO_2	—	—	abs.	abs.	—	—	abs.	abs.	—
TiO_2	1.5	0.76	1.33	0.94	0.90	—	—	1.11	0.48
P_2O_5	—	—	—	—	0.06	—	1.21	—	0.10
MnO	—	—	—	—	—	—	—	—	0.26
Other Constituents	—	—	Cl=0.19	Cl=0.08	Organic + undet. = 1.46	—	Cl=0.02	Cl=0.04	Organic = 3.74
Less O = Cl, F, S	—	—	99.48	99.73	—	—	100.35	99.64	—
	—	—	0.04	0.02	—	—	0.01	0.02	—
	—	100.47	99.44	99.71	100.00	98.34	100.34	99.62	100.00

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$

	154	155	156	157	158	159	160	161	162
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Dubbo, N.S.W.	Port Noarlunga, S.A.	Carlton, Sydney, N.S.W.	Coombell, N.S.W.	Tenterfield, N.S.W.	Tamworth, N.S.W.	Tamworth, N.S.W.	Wagga Wagga, N.S.W.	Keepit Dam Site, Namoi R., N.S.W.
Reference	121, 253	103, 32; 108, 235	187, 94	121, 252	121, 251	121, 248	121, 248	121, 246	184, 105
Analyst	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	—	—	*Loss on ignition	—	—	—	—	—	—
SiO_2	61.3	60.52	60.0	59.4	59.1	58.2	57.8	57.7	54.6
Al_2O_3	18.7	18.66	19.5	17.8	16.1	15.2	16.8	18.5	17.7
Fe_2O_3	6.4	8.31	7.4	7.0	5.7	5.5	6.9	6.3	8.9
FeO	—	—		—	—	—	—	—	—
MgO	1.0	1.10	—	—	—	—	—	—	—
CaO	0.1	abs.	—	—	—	—	—	—	—
Na_2O	—	0.38	—	—	—	—	—	—	—
K_2O	1.3	4.99	—	2.9	2.2	2.1	2.2	1.8	—
$\text{H}_2\text{O}+$	6.4	3.93	11.3*	6.5	4.6	6.6	5.7	8.7	—
$\text{H}_2\text{O}-$	2.1	0.84	—	2.3	2.8	4.6	4.6	3.6	—
CO_2	—	abs.	—	—	—	—	—	—	—
TiO_2	1.3	0.90	1.9	0.8	0.8	1.5	0.8	0.8	0.9
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents		Cl=0.12							
Less O=	—	99.75	—	—	—	—	—	—	—
Cl, F, S	—	0.03	—	—	—	—	—	—	—
	98.6	99.72	—	96.7	[91.3]	93.7	94.8	97.4	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$

	$\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 = 5\%$ — 10%	$\text{CaO} = 1\% - 5\%$: $\text{Fe}_2\text{O}_3 = 5\% - 10\%$							
	163	164	165	166	167	168	169	170	171
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Barraba, N.S.W.	Near Puttapa Gap, S.A.	Swan Bay, Richmond R., N.S.W.	Coona-barabran, N.S.W.	Coward Cliff, 10 miles from Alberrie Siding, S.A.	Swan Bay, Richmond R., N.S.W.	22 miles N. of Roma, Qld.	Kilcunda, Vic.	Currency Creek, S.A.
Reference	121, 234	103, 43	138, 59	181, 91	215, 112	138, 59	35	114, 46	103, 37
Analyst	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	A. McClure	P. G. W. Bayly	S.A. Dep. Mines
Remarks	—	—	—	*Loss on ignition	—	—	—	(beneath coal seam)	—
SiO_2	48.7	66.94	65.11	63.4	63.28	63.02	55.26	57.83	65.58
Al_2O_3	15.6	17.63	21.55	18.9	16.14	20.96	17.85	18.49	16.55
Fe_2O_3	7.5	1.50	0.71	2.7	0.40	2.94	2.52	0.41	5.36
FeO	—	—	—		0.02	—	0.18	1.79	—
MgO	—	0.14	0.90	0.5	0.03	1.06	1.94	1.59	0.70
CaO	—	1.52	1.15	1.3	1.06	1.32	1.61	1.53	2.06
Na_2O	—	1.02	0.25	—	2.00	0.44	0.90	1.52	1.16
K_2O	1.1	4.06	3.09	—	0.32	2.90	0.40	2.42	2.50
$\text{H}_2\text{O} +$	5.4	3.82	5.66	3.1*	5.31	4.63	6.53	7.72	4.37
$\text{H}_2\text{O} -$	16.9	1.26	1.72	—	7.00	3.05	12.08	5.32	1.13
CO_2	—	abs.	—	—	—	—	nd.	—	0.64
TiO_2	0.3	1.05	—	0.5	0.65	—	0.52	0.63	0.77
P_2O_5	—	—	tr.	—	—	0.04	0.02	—	—
MnO	—	—	tr.	—	—	abs.	0.01	—	—
Other Constituents		Cl = 0.93			$\text{SO}_2 = 2.43$ Cl = 2.15	Organic = tr.			Cl = 0.02
Less O = Cl, F, S	—	99.87	—	—	—	—	—	—	100.84
	—	0.20	—	—	—	—	—	—	0.01
	95.5	99.67	100.14	90.4	100.79	100.36	99.82	99.25	100.83

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$

	172	173	174	175	176	177	178	179	180
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Little-hampton, S.A.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Little-hampton, S.A.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Near Morgan, S.A.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Adelaide, S.A.
Reference	235, 14	35	35	235, 14	35	103, 35; 235, 14	35	35	103, 26
Analyst	S.A. Dep. Mines	A. McClure	A. McClure	S.A. Dep. Mines	A. McClure	W. S. Chapman	A. McClure	A. McClure	S.A. Dep. Mines
Remarks	—	*Loss on ignition	*Loss on ignition	—	*Loss on ignition	(Bore)	*Loss on ignition	*Loss on ignition	Red Brick
SiO ₂	63.84	63.10	63.09	61.88	61.55	61.38	60.75	60.50	59.64
Al ₂ O ₃	18.52	16.04	16.46	19.10	16.38	16.61	15.71	17.00	16.71
Fe ₂ O ₃	5.04	5.58	5.74	7.64	6.44	6.04	7.11	5.72	7.72
FeO	—	—	—	—	—	—	—	—	—
MgO	0.46	1.41	1.47	0.90	1.72	0.67	1.43	1.35	1.68
CaO	2.52	3.09	3.75	3.72	3.49	1.62	3.33	2.72	2.34
Na ₂ O	2.09	—	—	0.54	—	0.74	—	—	2.26
K ₂ O	2.48	—	—	1.22	—	2.50	—	—	1.58
H ₂ O +	3.37	3.92*	3.32*	3.32	3.72*	5.46	4.34*	5.70*	4.25
H ₂ O —	0.65	1.30	1.04	1.10	1.32	2.42	2.91	2.36	2.05
CO ₂	abs.	—	—	abs.	—	1.72	—	—	1.20
TiO ₂	1.02	—	—	0.98	—	1.01	—	—	1.37
P ₂ O ₅	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Cl=0.01	—	—	Cl=0.01	—	Cl=abs.	—	—	Cl=0.04
Less O= Cl, F, S	—	—	—	—	—	—	—	—	100.84
	100.00	94.44	94.87	100.41	94.62	100.17	95.58	95.35	100.83

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ CaO = 1% — 5% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$

	181	182	183	184	185	186	187	188	189
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Narrabri, N.S.W.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Camden, N.S.W.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.
Reference	121, 256	35	35	189	35	35	35	35	35
Analyst	G. T. See & P. Bayliss	A. McClure	A. McClure	N.S.W. Dep. Mines	A. McClure	A. McClure	A. McClure	A. McClure	A. McClure
Remarks	—	*Loss on ignition	*Loss on ignition	—	*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition
SiO_2	59.2	58.68	58.15	58.0	56.20	55.55	53.64	53.50	52.95
Al_2O_3	17.4	17.18	16.74	18.9	17.34	17.29	17.74	17.80	18.98
Fe_2O_3	7.2	7.82	8.34	6.7	7.54	9.45	9.26	9.18	7.94
FeO	—	—	—		—	—	—	—	—
MgO	0.2	1.67	1.71	1.6	1.45	1.81	1.72	1.97	1.05
CaO	1.6	3.52	2.85	1.5	2.82	3.53	2.42	2.70	2.98
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	3.0	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	5.1	4.10*	5.96*	6.0	6.89*	5.94*	7.35*	7.06*	6.87*
$\text{H}_2\text{O} -$	2.5	2.25	3.94	2.2	5.55	3.82	6.34	6.95	6.51
CO_2	—	—	—	2.4	—	—	—	—	—
TiO_2	1.3	—	—	0.9	—	—	—	—	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents				Organic = 0.5					
	100.7	95.22	97.69	98.7	97.79	97.39	98.47	99.16	97.28

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$			d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$						
$\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$			$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$						
Rock Name	190 Clay	191 Clay		1 Clay	2 Clay (Kaolin)	3 Clay	4 Clay	5 Clay (Kaolin)	6 Sandy Clay
Locality	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.		Upper Eungella, Tweed River, Qld.	Marulan, N.S.W.	Broken Hill, N.S.W.	1½ mls. E. of Walch Road, N.S.W.	Pyalong, Vic.	Dover, Tas.
Reference	35	35		203, 121	148, 130	177, 100	175, 96	114, 21	34, 7
Analyst	A. McClure	A. McClure		Qld. Dept. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	M. Neilson
Remarks	*Loss on ignition	*Loss on ignition		*Loss on ignition	*43.87% = Sand			*Dried at 110°C. (from granite)	*Loss on ignition
SiO_2	50.70	50.60		70.4	68.74*	66.94	66.75	66.53	66.32
Al_2O_3	16.44	17.02		26.2	21.87	22.90	23.70	23.07	23.18
Fe_2O_3	7.05	6.65		—	0.49	—	1.75	1.24	1.89
FeO	—	—		tr.	abs.	—		0.16	—
MgO	1.24	1.30		tr.	0.23	—	—	0.14	0.82
CaO	3.03	2.80		abs.	0.16	—	—	0.11	—
Na_2O	—	—		—	0.16	—	—	0.22	0.11
K_2O	—	—		—	0.31	—	—	0.07	1.13
$\text{H}_2\text{O} +$	11.34*	12.32*		3.1*	6.75	—	—	8.14*	8.96*
$\text{H}_2\text{O} -$	7.06	5.82		0.2	0.75	—	—	—	—
CO_2	—	—		—	—	—	—	—	—
TiO_2	—	—		—	0.67	0.60	0.75	0.57	1.32
P_2O_5	—	—		—	0.11	—	—	tr.	—
MnO	—	—		—	tr.	—	—	—	—
Other Constituents					$\text{SO}_3 = \text{tr.}$ $\text{V}_2\text{O}_5 = \text{tr.}$ $\text{Cl} = 0.11$			$\text{Cl} = 0.11$ $\text{SO}_3 = \text{abs.}$	
	—	—		—	100.35	—	—	100.36	—
Less O = Cl, F, S	—	—	—	—	0.02	—	—	0.02	—
	96.86	96.51		99.9	100.33	—	—	100.33	103.73

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	7	8	9	10	11	12	13	14	15
RockName	Clay	Clay	Clay	Clay (Dried)	Clay	Clay (Pottery)	Clay	Fireclay	Clay
Locality	5 mls. E. of Edeowie Siding, S.A.	Dunedoo, N.S.W.	Marulan, N.S.W.	Maryborough, Vic.	Dutton, S.A.	Near Mt. Jupiter Mine, Echunga, S.A.	Tingalpa, Qld.	Yacka, S.A.	Swan Bay, Richmond R., N.S.W.
Reference	88, 37	189	121, 242	98, 68	88, 38	88, 43; 103, 28; 235, 13	53, 100	88, 80; 103, 40; 235, 14	29, 403; 138, 59
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	G.T. See & P. Bayliss	Vic. Dep. Mines	S.A. Dep. Mines	W. S. Chapman	Qld. Govt. Anal.	W. S. Chapman	N.S.W. Dep. Mines
SiO_2	66.30	66.2	66.0	65.95	65.52	65.50	65.44	65.20	65.17
Al_2O_3	22.25	22.3	24.0	22.17	22.34	22.92	25.02	22.47	21.89
Fe_2O_3	0.64	0.8	0.3	1.07	1.80	0.79	tr.	0.62	0.19
FeO	—	—	—	0.13	—	—	—	—	—
MgO	0.11	—	0.1	0.06	0.28	0.48	0.75	1.70	1.03
CaO	0.14	—	0.3	tr.	0.12	0.20	abs.	0.32	0.50
Na_2O	0.68	—	0.1	0.54	0.33	0.18	1.00	0.61	1.16
K_2O	0.04	—	0.5	2.82	3.68	2.79		0.42	2.02
$\text{H}_2\text{O} +$	7.77	—	7.8	5.32	4.19	6.40	7.72†	7.85	6.07
$\text{H}_2\text{O} -$	1.09	—	0.1	*	0.52	0.22	—	0.52	2.37
CO_2	—	—	—	—	—	abs.	—	abs.	—
TiO_2	1.45	0.8	0.9	0.37	0.92	1.22	—	0.75	abs.
P_2O_5	—	—	—	tr.	—	—	—	—	tr.
MnO	—	—	—	—	—	—	—	—	abs.
Other Constituents	Cl=0.11			Cl=0.18		Cl=0.02		Cl=0.33 $\text{SO}_3=0.10$	Organic — abs. $\text{SO}_3=\text{abs.}$
	100.58	—	—	98.61	—	—	—	100.89	—
Less O = Cl, F, S	0.02	—	—	0.04	—	—	—	0.08	—
	100.56	—	100.1	98.57	99.70	100.72	99.93	100.81	100.40

*Dried before analysis $\text{H}_2\text{O}=0.56$

†Loss on ignition

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	16	17	18	19	20	21	22	23	24
Rock Name	Clay	Clay	Plastic Clay	Clay	Clay	Clay	Clay	Clay (Pottery)	Clay
Locality	4½ mls. N. of Dubbo, N.S.W.	6 mls. N. of Dubbo, N.S.W.	Williams-town, S.A.	Near Mudgee, N.S.W.	Adelaide, S.A.	1½ mls. N.W. of Pomona, Qld.	Boro, N.S.W.	Near Mt. Jupiter Mine, Echunga, S.A.	4 mls. N.W. of Narra-been, N.S.W.
Reference	165, 122	174, 88	32, 110	165, 122	103, 27	53, 99	172, 135	88, 43; 103, 28; 235, 13	178, 98
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated	N.S.W. Dep. Mines	W. S. Chapman	Qld. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	*Loss on ignition	—	—	—
SiO_2	64.92	64.90	64.82	64.82	64.70	64.7	64.66	64.60	64.60
Al_2O_3	21.74	22.80	22.51	23.54	24.46	26.9	22.12	24.26	22.74
Fe_2O_3	1.30	1.85	1.75	0.70	0.82	0.6	0.91	0.69	1.10
FeO									
MgO	—	—	0.10	—	0.14	—	—	0.64	—
CaO	—	—	0.10	—	0.06	0.6	—	0.24	—
Na_2O	—	—	0.44	—	0.02	2.7	—	0.38	—
K_2O	—	—	abs.	—	0.70		—	3.15	—
$\text{H}_2\text{O} +$	—	—	8.25	—	7.71	4.5*	8.70	5.49	—
$\text{H}_2\text{O} -$	—	—	1.03	—	0.21	0.7	—	0.20	—
CO_2	—	—	—	—	abs.	—	—	abs.	—
TiO_2	1.00	0.85	1.08	0.44	1.34	—	—	1.14	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	Cl=0.20	—	Cl=0.02	—	—	Cl=abs.	—
Less O = Cl, F, S	—	—	100.28	—	—	—	—	—	—
	—	—	0.04	—	—	—	—	—	—
	—	—	100.24	—	100.18	100.7	—	100.79	—

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	25	26	27	28	29	30	31	32	33
Rock Name	Clay (Pottery)	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Near Mt. Jupiter Mine, Echunga, S.A.	Waterloo, Sydney, N.S.W.	Princes' Highway near Darkes Forest Turnoff, N.S.W.	1 ml. from Teatree Gully, S.A.	Glenorie, N.S.W.	Buckaroo, N.S.W.	2½ mls. N.E. of Oodla Wirra, S.A.	Paddy's River, N.S.W.	2 mls. N.E. of Morn-ington Vic.
Reference	88 , 43; 103 , 28; 235 , 18	156 , 185	182 , 96	103 , 33; 235 , 16	189	121 , 240	88 , 78	175 , 96	114 , 19
Analyst	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	R. Bury	S.A. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	64.28	64.26	64.2	64.18	64.1	64.0	63.96	63.80	63.76
Al_2O_3	24.44	22.09	21.7	23.69	22.4	23.4	22.70	21.85	25.49
Fe_2O_3	0.77	0.50	1.3	1.16	1.0	0.9	0.29	1.70	abs.
FeO	—	0.90	—	—	—	—	—	—	0.32
MgO	0.60	0.55	—	0.40	—	0.7	0.86	—	abs.
CaO	abs.	0.84	—	0.28	0.4	0.3	0.06	—	abs.
Na_2O	tr.	0.06	—	0.10	0.1	0.1	1.66	—	0.18
K_2O	3.41	1.90	—	1.33	2.1	4.2	0.22	—	0.10
$\text{H}_2\text{O}+$	5.55	6.34	—	7.45	7.3	5.3	8.45	—	8.04
$\text{H}_2\text{O}-$	0.49	1.94	—	0.30	1.1	0.2	0.91	—	2.27
CO_2	abs.	—	—	abs.	—	—	—	—	—
TiO_2	0.90	0.60	—	1.61	0.9	0.5	0.91	0.75	—
P_2O_5	—	0.11	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con-stituents	Cl = 0.09	SiO = tr.		Cl = 0.04	Organic = 0.4		Cl = 0.69		
	[100.53]	—	—	100.54	—	—	—	—	—
Less O = Cl, F, S	0.02	—	—	0.01	—	—	0.15	—	—
	[100.51]	100.09	—	100.53	99.8	99.6	100.71	—	100.16

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	34	35	36	37	38	39	40	41	42
Rock Name	Clay (Kaolin),	Clay	Clay	Refractory Clay (slate)	Clay	Clay	Clay	Clay	Clay
Locality	8 mls. S.E. of Parkes, N.S.W.	Wedderburn Junc., Vic.	Frenchs Forest, Sydney, N.S.W.	Lobethal, near James Town, S.A.	Booleroo, Centre, S.A.	Frenchs Forest, near Sydney, N.S.W.	7 mls. from Mt. Hope, N.S.W.	Mt. Piddington, near Mt. Victoria, N.S.W.	Nundah, Qld.
Reference	149, 142	114, 23; 260, 9	189	88, 74; 196, 108	75, 52	188, 165	144, 400	28, 238	53, 100
Analyst	H. P. White	P. G. W. Bayly	N.S.W. Dep. Mines	Not stated	T. W. Dalwood,	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. A. Greig	Qld. Dep. Mines
Remarks	*40.22% = Sand	(from granite)	—	—	—	—	(Drift material admitted with sand)	—	*Loss on ignition
SiO_2	63.60*	63.47	63.4	63.36	63.28	63.1	63.00	62.96	62.7
Al_2O_3	22.82	25.02	22.4	25.09	24.10	22.5	25.75	25.16	26.5
Fe_2O_3	1.40	1.75	1.2	0.82	0.70	1.1	1.24	1.30	1.3
FeO	0.18	nd.	—	—	0.05	—	—	0.27	—
MgO	0.11	0.24	—	0.06	0.94	—	tr.	0.51	tr.
CaO	0.26	abs.	—	0.12	0.02	—	0.40	0.18	tr.
Na_2O	0.51	0.05	—	0.08	1.23	—	0.14	0.40	0.3
K_2O	2.24	0.19	—	0.08	0.12	—	1.69	2.43	
$\text{H}_2\text{O}+$	6.26	8.78	—	8.75	8.80	—	7.33	6.26	7.5*
$\text{H}_2\text{O}-$	1.10	—	—	0.58	—	—	0.61	0.31	0.7
CO_2	—	—	—	abs.	—	—	—	—	—
TiO_2	1.72	0.76	0.8	1.61	0.67	0.9	—	0.20	1.3
P_2O_5	tr.	—	—	—	—	—	tr.	0.09	—
MnO	abs.	—	—	—	—	—	tr.	0.03	—
Other Constituents	Cl=0.11 V_2O_3 =0.02			Cl=0.01	Cl=0.55 SO_3 =0.17		SO_3 =0.10	Cl=tr. Cr_2O_3 =0.01 V_2O_3 =tr.	
	100.31	—	—	—	100.63	—	—	—	—
Less O=Cl, F, S	0.02	—	—	—	0.12	—	—	—	—
	100.29	100.26	—	100.56	100.51	—	100.26	100.11	100.3

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	43	44	45	46	47	48	49	50	51
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Wilgina, S.A.	Marulan, N.S.W.	Near Puttapa Gap, S.A.	Wedderburn, Vic.	Mittagong, N.S.W.	West Bay, S.A.	Lat. $31^\circ 14'S$ Long. $136^\circ 39'E$ S. of L. Eyre, S.A.	Port Stephens, N.S.W.	Marangaroo, N.S.W.
Reference	103, 42	121, 242	103, 43	114, 30	121, 245	103, 34	103, 42	165, 122	121, 239
Analyst	S.A. Dep. Mines	R. Bury	W. S. Chapman	J. C. Watson	G. T. See & P. Bayliss	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	(Residual on Ordovician basement)	—	—	—	—	—
SiO_2	62.68	62.4	62.38	62.38	62.1	62.00	61.9	61.90	61.8
Al_2O_3	24.68	25.7	22.58	23.62	22.8	27.10	25.9	23.42	22.8
Fe_2O_3	—	0.5	3.06	1.17	0.5	—	—	2.50	1.0
FeO	—	—	—	0.25	—	—	—	tr.	—
MgO	—	0.1	0.04	1.11	2.6	tr.	—	—	—
CaO	—	0.3	0.40	tr.	abs.	abs.	—	—	—
Na_2O	—	0.1	1.06	0.56	1.4	0.38	—	—	0.1
K_2O	—	0.1	1.15	4.87	5.4	0.07	—	—	3.8
$\text{H}_2\text{O} +$	} 11.64	9.7	7.60	4.98	5.7	} 11.43	} 11.0	—	5.9
$\text{H}_2\text{O} -$		0.2	0.26	—	—			—	3.8
CO_2	—	—	abs.	—	—	—	—	—	—
TiO_2	—	0.9	1.16	0.76	—	—	—	0.84	0.2
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	Cl = 0.98	—	—	—	—	—	—
Less O = Cl, F, S	—	—	100.67 0.22	—	—	—	—	—	—
	99.00	100.0	100.45	99.70	100.5	100.98	—	—	99.4

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	52	53	54	55	56	57	58	59	60
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay (Refractory)	Clay	Clay
Locality	10 miles from Cudal, N.S.W.	Burra, S.A.	Turramurra, Sydney, N.S.W.	Frenchs Forest, near Sydney, N.S.W.	5 mls. N. of Merimbula, N.S.W.	4 mls. N.W. of Dubbo, N.S.W.	Adelaide, S.A.	Gulgong, N.S.W.	Birdwood, S.A.
Reference	164, 184	218, 45	172, 135	183, 96	154, 175	159, 188	103, 27	184, 105	88, 24
Analyst	N.S.W. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines
Remarks	—	—	—	*Loss on ignition	—	—	—	*Loss on ignition	—
SiO_2	61.80	61.72	61.70	61.7	61.68	61.62	61.50	61.4	61.22
Al_2O_3	21.67	25.39	25.38	25.3	24.30	23.18	29.93	26.4	24.82
Fe_2O_3	3.00	2.06	—	0.7	1.20	1.30	0.24	0.1	0.72
FeO		—	—	—	0.09	0.26	—	—	—
MgO	—	0.64	—	—	0.33	0.68	tr.	tr.	0.10
CaO	—	0.06	—	—	0.30	0.14	tr.	tr.	0.36
Na_2O	—	0.28	—	—	0.34	0.30	—	0.7	0.20
K_2O	—	0.50	—	—	1.80	1.30	—	0.7	0.20
$\text{H}_2\text{O} +$	—	7.30	—	10.0*	7.35	6.94	6.52	10.3*	9.35
$\text{H}_2\text{O} -$	—	0.82	—	—	1.43	3.78		—	1.16
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.28	1.25	0.60	0.7	1.04	—	—	1.0	2.60
P_2O_5	nd.	—	—	—	0.07	—	—	—	—
MnO	—	—	—	—	0.01	0.02	—	—	—
Other Constituents	—	$\text{SO}_3 = 0.03$ $\text{Cl} = 0.16$	—	—	$\text{Cr}_2\text{O}_3 = 0.01$	Soluble Chloride = 0.90	—	—	—
Less O = Cl, F, S	—	100.21	—	—	—	—	—	—	—
	—	0.04	—	—	—	—	—	—	—
	—	100.17	—	—	99.95	100.42	—	100.6	100.73

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	61	62	63	64	65	66	67	68	69
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	West Maitland, N.S.W.	Willunga, S.A.	Puggoon, N.S.W.	Dinmore, Qld.	Dalton, N.S.W.	Mudgee, N.S.W.	Hallam, Vic.	Barraba, N.S.W.	Boro, N.S.W.
Reference	158, 195	88, 76; 103, 39; 235, 16	121, 232	53, 100	149, 142	183, 96	114, 14	189	172, 135
Analyst	N.S.W. Dep. Mines	W. S. Chapman	G. T. See & P. Bayliss	Qld Govt Anal.	J. C. H. Mingaye	N.S.W. Dep. Mines	J. C. Watson	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	(Residual on Grano-diorite)	—	—
SiO_2	61.16	60.90	60.9	60.85	60.74	60.7	60.67	60.5	60.44
Al_2O_3	21.21	25.06	27.4	26.75	24.60	23.3	24.41	24.5	21.20
Fe_2O_3	1.50	1.68	0.4	tr.	1.25	0.6	1.65	1.7	1.19
FeO	0.36	—	—	—	0.18	—	0.13	—	—
MgO	0.97	0.20	—	0.43	0.59	—	tr.	—	—
CaO	0.40	0.40	—	—	tr.	—	abs.	—	—
Na_2O	0.28	0.12	—	0.58	0.30	—	0.13	—	—
K_2O	2.34	1.53	—		2.22	—	0.16	—	—
$\text{H}_2\text{O}+$	7.51	7.62	9.1	8.70	7.33	—	8.93	—	10.16
$\text{H}_2\text{O}-$	3.49	0.52	1.8	2.40	1.60	—	1.60	—	—
CO_2	—	abs.	—	—	—	—	—	—	—
TiO_2	0.96	1.98	0.6	—	1.04	0.8	0.92	0.9	—
P_2O_5	0.03	—	—	—	tr.	—	—	—	—
MnO	tr.	—	—	—	tr.	—	—	—	—
Other Constituents		Cl=0.14			$\text{V}_2\text{O}_5=\text{tr.}$ Cl=0.11				
	—	100.15	—	—	99.96	—	—	—	—
Less O= Cl, F, S	—	0.04	—	—	0.02	—	—	—	—
	100.21	100.01	100.2	99.71	99.94	—	98.60	—	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	70	71	72	73	74	75	76	77	78
Rock Name	Fireclay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Packenhams, Vic.	8 miles E. of Port Augusta, S.A.	Leigh Creek, S.A.	20 miles W. of Goulburn, N.S.W.	Paracombe, near Haughton, S.A.	Branxton, N.S.W.	Newbridge, N.S.W.	Ben Bullen, N.S.W.	Lismore, N.S.W.
Reference	114, 18	88, 54	88, 144	180, 148	68, 80	138, 57	146, 205	189	121, 252
Analyst	J. C. Watson & F. F. Field	S.A. Dep. Mines	S.A. Dep. Mines	W. G. Stone	School of Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	*Includes C	—	—	—	—	—	—
SiO_2	60.28	60.26	60.22	60.2	60.17	60.10	60.03	60.0	60.0
Al_2O_3	23.75	20.83	24.40	28.1	23.61	24.88	27.62	22.9	20.7
Fe_2O_3	2.66	1.50	1.43	0.7	2.67	1.27	—	3.1	2.5
FeO	0.13	—	—	—	0.07	—	0.88	—	—
MgO	tr.	0.84	0.74	—	0.05	1.18	0.22	—	—
CaO	abs.	0.18	0.34	—	0.04	0.36	—	—	—
Na_2O	0.60	0.66	0.28	—	1.60	0.08	0.49	—	—
K_2O	0.16	3.44	2.80	—	4.98	2.49	0.25	—	2.4
$\text{H}_2\text{O}+$	9.40	6.16	7.73*	—	5.81	6.98	9.89	—	8.8
$\text{H}_2\text{O}-$	3.49	3.80	0.73	—	—	3.15	0.84	—	1.1
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.61	1.27	1.33	1.1	0.78	tr.	—	0.7	1.8
P_2O_5	—	—	—	—	—	tr.	—	—	—
MnO	—	—	—	—	—	—	tr.	—	—
Other Constituents		$\text{Cl} = 0.87$	$\text{Cl} = 0.07$ $\text{SO}_3 = 0.20$		$\text{Cl} = 0.02$ $\text{SO}_3 = 0.01$		$\text{CuO} = 0.09$ $\text{V}_2\text{O}_5 = 0.08$		
	—	99.81	100.27	—	—	—	—	—	—
Less O = Cl, F, S	—	0.20	0.02	—	—	—	—	—	—
	101.08	99.61	100.25	—	99.81	100.49	100.39	—	97.3

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	79	80	81	82	83	84	85	86	87
Rock Name	Fireclay	Clay	Clay	Fireclay	Fireclay	Clay	Clay	Clay	Clay
Locality	Bulli, N.S.W.	Marulan, N.S.W.	Bungonia, N.S.W.	Kangaroo Is., S.A.	Moorooduc, Vic.	Boorowa, N.S.W.	2½ mls. N.W. of Hesso, S.A.	Puggoon, N.S.W.	Bredbo, N.S.W.
Reference	142, 146	121, 242	121, 236	100, 41; 103, 34; 235, 17	113, 70; 114, 19	142, 146	88, 39; 103, 43	179, 104	189
Analyst	N.S.W. Dep. Mines	R. Bury	R. Bury	W. S. Chapman	J. C. Watson	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	*Determined by G. T. See	—	(Partly residual & partly colluvial)	—	—	*Plus undetermined °Loss on ignition	—
SiO_2	59.92	59.9	59.8	59.80	59.80	59.70	59.70	59.63	59.5
Al_2O_3	26.26	26.6	24.4	25.71	24.12	27.87	23.65	26.35	23.2
Fe_2O_3	2.03	0.9	1.4	2.62	3.09	0.68	0.91	1.80	} 2.4
FeO	—	—	—	—	0.19	0.50	—	—	
MgO	0.23	0.1	0.6	abs.	tr.	1.33	0.40	—	—
CaO	0.13	0.3	0.4	0.52	abs.	0.40	abs.	—	—
Na_2O	tr.	0.1	—	0.07	0.10	tr.	0.51	} 0.84*	—
K_2O	1.99	0.1	—	0.81	0.47	2.89	1.24		—
$\text{H}_2\text{O}+$	1.60	10.4	8.2*	8.10	9.19	6.15	6.93	11.28°	—
$\text{H}_2\text{O}-$	1.94	0.8	0.9*	1.55	2.26	1.10	5.53	—	—
CO_2	—	—	—	abs.	—	—	abs.	—	—
TiO_2	—	1.0	0.9	0.70	0.66	—	0.85	1.10	1.4
P_2O_5	—	—	—	—	—	tr.	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Constituents	Organic = 5.55	—	—	Cl = 0.08	—	—	Cl = 0.70 $\text{SO}_3 = 0.16$	—	—
Less O = Cl, F, S	—	—	—	99.96	—	—	100.58	—	—
	—	—	—	02	—	—	0.15	—	—
	99.65	100.2	96.6	99.94	99.88	100.62	100.43	101.00	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	88	89	90	91	92	93	94	95	96
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	White Micaceous Clay	Clay	Clay
Locality	Paracombe, near Houghton, S.A.	Manly, Sydney, N.S.W.	Paddys River, N.S.W.	18 miles E. of Paratoo, S.A.	Sydney, N.S.W.	Branxton, N.S.W.	7 mls. N.E. of Gumeracha, S.A.	Helensburgh, N.S.W.	4 miles N. of Clare, S.A.
Reference	68, 80	156, 185	189	103, 37	121, 250	138, 57	103, 41	179, 104	88, 29
Analyst	S.A. School Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	59.44	59.33	59.3	59.2	59.2	59.15	59.06	59.04	59.02
Al_2O_3	27.68	25.08	25.7	30.7	25.5	22.68	29.04	25.91	27.89
Fe_2O_3	0.90	0.90	1.3	—	4.9	1.74	1.21	1.00	1.20
FeO	0.13	0.36	—	—	—	—	—	—	—
MgO	0.05	tr.	—	—	—	1.08	0.20	—	0.31
CaO	0.08	0.35	—	—	—	0.76	abs.	—	0.52
Na_2O	0.34	0.41	—	—	—	0.05	0.07	—	0.09
K_2O	1.18	2.19	—	—	1.9	3.09	3.50	—	0.26
$\text{H}_2\text{O} +$	9.26	7.32	—	10.3	4.6	5.33	5.87	—	8.86
$\text{H}_2\text{O} -$	—	1.30	—		2.1	6.43	0.34	—	1.18
CO_2	—	0.06	—	—	—	—	abs.	—	—
TiO_2	0.95	1.10	1.0	—	0.7	—	0.68	0.90	0.85
P_2O_5	—	0.15	—	—	—	tr.	—	—	—
MnO	—	tr.	—	—	—	—	—	—	—
Other Constituents	$\text{SO}_3 = 0.03$ $\text{Cl} = 0.02$	$\text{SO}_3 = \text{tr.}$ Organic = 1.66 $\text{Cl} = \text{tr.}$ $\text{BaO} = 0.06$					$\text{Cl} = 0.01$		
	100.06	100.27	—	—	98.9	100.31	99.98	—	100.18

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	97	98	99	100	101	102	103	104	105
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Kuring-gai N.S.W.	Marulan, N.S.W.	Puggoon, N.S.W.	1 mile S. of Cardiff, N.S.W.	2 miles W. of Molong, N.S.W.	3 mls. S.E. of New- bridge, N.S.W.	20 miles N. of Goulburn, N.S.W.	Para- combe, near Haughton, S.A.	Dalton, N.S.W.
Reference	5, 224; 156, 185	121, 242	121, 232	175, 96	138, 58	189	180, 148	68, 80	142, 146
Analyst	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. G. Stone	S.A. Dep. Mines	N.S.W. Dep. Mines
Remarks	(Brick clay)	*Deter- mined by G. T. See	—	—	—	—	—	—	—
SiO_2	59.00	58.9	58.9	58.86	58.84	58.8	58.7	58.58	58.51
Al_2O_3	26.32	28.7	25.4	22.55	22.86	27.5	28.4	26.94	27.86
Fe_2O_3	1.00	0.6	2.2	—	1.66	1.2	0.7	0.87	1.30
FeO	0.27	—	—	—	abs.	—	—	0.07	—
MgO	tr.	0.1	0.5	—	0.61	—	—	0.05	0.61
CaO	0.47	0.3	0.2	—	tr.	—	—	0.04	0.24
Na_2O	0.27	—	tr.	—	1.81	—	—	1.11	0.29
K_2O	2.10	0.2*	0.2	—		—	—	3.40	2.29
$\text{H}_2\text{O}+$	8.35	8.9*	10.5	—	9.33	—	—	7.94	6.64
$\text{H}_2\text{O}-$	1.10	1.2*	0.7	—	4.06	—	—	—	1.94
CO_2	0.02	—	—	—	—	—	—	—	—
TiO_2	0.90	1.2	1.4	—	—	1.4	1.0	0.85	—
P_2O_5	0.10	—	—	—	abs.	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Con- stituents	Organic = 0.37 BaO = 0.06 SO_3 = tr.				Organic = 0.08			SO_3 = 0.01 Cl = 0.02	
	100.33	100.1	100.0	—	100.00	—	—	99.88	99.68

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	106	107	108	109	110	111	112	113	114
Rock Name	Clay	Clay	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay
Locality	Emu Creek, Warwick, Qld.	$\frac{3}{4}$ ml. E. of Dandenong, Vic.	Coorabin, near Oaklands, N.S.W.	Blackstone, Qld.	1 mile S. of Cardiff, N.S.W.	Gulgong, N.S.W.	Marulan, N.S.W.	Dalton, N.S.W.	N.E. of Tumut, N.S.W.
Reference	53, 100; 202, 140	114, 17	36	53, 100; 206, 128	175, 96	121, 233	172, 135	189	178, 98
Analyst	Qld. Dep. Mines	J. C. Watson	C. J. Carrel	Qld. Dep. Mines	N.S.W. Dep. Mines	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Loss on ignition	—	*Loss on ignition °Dried at 110° C	*Loss on ignition	—	*Determined by G. T. See	—	—	*Loss on ignition
SiO_2	58.4	58.32	58.29	58.2	58.16	57.9	57.70	57.7	57.68
Al_2O_3	30.1	21.00	29.60	28.2	27.40	28.3	29.80	25.7	19.52
Fe_2O_3	tr.	3.54	1.14	1.3	—	0.8	—	1.7	3.00
FeO	—	0.26	—	—	—	—	—		—
MgO	tr.	1.02	0.30	abs.	—	0.3	—	—	—
CaO	abs.	0.10	0.35	abs.	—	0.4	—	—	—
Na_2O	—	0.34	0.16	abs.	—	—	—	—	—
K_2O	—	1.87	1.39	abs.	—	—	—	—	—
$\text{H}_2\text{O} +$	11.6*	6.76	8.54*	9.5*	—	9.1*	—	—	10.75*
$\text{H}_2\text{O} -$	—	5.35	°	1.4	—	0.6*	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	—	1.06	1.06	1.2	—	1.0	—	0.8	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents									
	100.1	99.62	100.83	99.8	—	98.4	—	—	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	115	116	117	118	119	120	121	122	123
Rock Name	Clay	Clay	Clay*	Clay	Clay	Clay (Kaolin)*	Clay	Clay	Clay
Locality	Near Modbury, S.A.	11 mls. N.E. of Adelaide, S.A.	Mt. Michael, Blue Tier, Tas.	Magazine Hill, Woocalla, S.A.	Mangrove Mt., N.S.W.	Ransome Mine, Blue Tier, Tas.	Puggoon, near Gulgong, N.S.W.	Near Peterborough, S.A.	Coorabin, near Oaklands, N.S.W.
Reference	103, 33; 235, 12	103, 33; 235, 11	211, 20	103, 42; 235, 15	185, 103	211, 20	109, 133	103, 35	121, 237
Analyst	W. S. Chapman	W. S. Chapman	Tas. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	Tas. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	R. Bury
Remarks	—	—	*Altered Granite °Loss on ignition	—	—	*Altered Granite °Loss on ignition	—	—	—
SiO_2	57.32	57.22	57.18	56.98	56.9	56.83	56.75	56.70	56.6
Al_2O_3	27.74	28.17	24.24	28.60	31.9	27.85	28.75	29.86	28.3
Fe_2O_3	1.32	1.32	1.72	1.14	1.0	2.15	0.75	0.78	1.2
FeO	—	—	—	—	—	—	—	—	—
MgO	0.04	abs.	0.50	0.18	—	0.21	—	0.20	0.4
CaO	0.34	0.78	abs.	0.26	—	abs.	—	0.54	0.3
Na_2O	0.68	0.41	4.09	0.56	—	—	—	0.10	0.2
K_2O	1.20	1.68	0.28	2.12	—	—	—	abs.	1.9
$\text{H}_2\text{O}+$	8.61	8.09	3.30°	7.82	—	12.77°	—	10.16	9.3
$\text{H}_2\text{O}-$	1.18	0.98	—	1.28	—	—	—	1.19	1.0
CO_2	abs.	abs.	—	abs.	—	—	—	abs.	—
TiO_2	1.88	1.91	—	0.90	1.1	—	0.70	0.56	0.9
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Cl=0.04	0.06	SnO=8.38	Cl=0.16 Organic=0.53	—	SnO=0.57	—	Cl=0.16	—
Less O=	—	—	—	100.53	—	—	—	100.25	—
Cl, F, S	—	—	—	0.04	—	—	—	0.04	—
	100.35	100.62	99.69	100.49	—	100.38	—	100.21	100.1

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	124	125	126	127	128	129	130	131	132
Rock Name	Clay	Gritty Clay	Clay	Clay (Kaolin)	Refractory Ball Clay	Clay	Clay	Clay	Clay
Locality	Puggoon, near Gulgong, N.S.W.	4 miles N. of Clare, S.A.	Dunedoo, N.S.W.	East Coast of Eyres Peninsula, S.A.	Wilga, W.A.	Barraba, N.S.W.	Tamworth, District, N.S.W.	Well near Mudlamuckla, S.A.	Littlehampton, S.A.
Reference	121, 232	88, 29	189	103, 36	18, 216	121, 234	182, 96	103, 42; 235, 16	235, 17
Analyst	G. T. See & P. Bayliss	S.A. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	Gillies	G. T. See & P. Bayliss	N.S.W. Dep. Mines	W. S. Chapman	S.A. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	56.5	56.44	56.3	56.28	56.15	56.1	56.0	55.94	55.84
Al_2O_3	27.3	26.04	27.3	29.22	30.92	22.7	26.2	28.78	22.20
Fe_2O_3	1.1	0.88	1.3	1.60	0.33	3.0	2.1	1.24	4.96
FeO	—	—	—	—	—	—	—	—	—
MgO	0.7	0.16	—	0.44	tr.	—	—	abs.	0.42
CaO	0.1	0.22	—	0.38	abs.	—	—	0.22	0.10
Na_2O	tr.	0.70	—	0.30	0.35	—	—	0.70	1.12
K_2O	0.6	0.06	—	0.61	1.05	1.2	—	0.58	0.09
$\text{H}_2\text{O}+$	11.3	8.87	—	10.15	10.53	8.8	—	8.71	8.44
$\text{H}_2\text{O}-$	1.3	6.30	—	0.85	0.53	5.2	—	2.28	1.85
CO_2	—	—	—	0.66	abs.	—	—	abs.	—
TiO_2	1.2	0.78	0.8	—	0.62	1.0	1.4	1.16	1.90
P_2O_5	—	—	—	—	nd.	—	—	—	—
MnO	—	—	—	—	—	—	tr.	—	—
Other Constituents	—	—	—	Cl = 0.09	NaCl = 0.12 Other Salts = 0.06	—	—	Cl = 1.12 SO_3 = 0.15	Cl = 1.56 SO_3 = 0.17 C = 2.01
Less O = Cl, F, S	—	—	—	100.58	—	—	—	100.88	100.66
	—	—	—	0.02	—	—	—	0.25	0.31
	100.1	100.45	—	100.56	100.66	98.0	—	100.63	100.35

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	133	134	135	136	137	138	139	140	141
RockName	Gritty Clay	Clay	Clay	Clay	Clay	Clay	Kaolin	Clay	Clay
Locality	10 mls. N. of Kangaroo Pt., Pacific Highway, N.S.W.	Noarlunga, S.A.	Barraba, N.S.W.	Grafton, N.S.W.	Tea Tree Gully, S.A.	Wyalong, N.S.W.	Torrington, N.S.W.	Wyalong, N.S.W.	Eyres Pen., S.A.
Reference	185, 103	88, 48	212, 234	121, 252	234, 124	121, 251	157, 201	121, 251	88, 56; 103, 36; 235, 13
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	S.A. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman
Remarks	—	—	—	—	—	*Should this be 2.1?	*Spectroscopic	—	(mainly decomposed rock)
SiO_2	55.8	55.64	55.6	55.6	55.46	55.4	55.26	55.2	54.86
Al_2O_3	31.4	31.10	24.9	20.0	27.29	30.0	30.82	29.0	28.80
Fe_2O_3	0.4	0.58	1.8	3.8	2.02	1.0	0.90	1.0	1.19
FeO	—	—	—	—	0.07	—	tr.	—	—
MgO	—	abs.	—	—	0.32	—	0.26	—	0.08
CaO	—	0.20	—	—	0.16	—	0.32	—	0.66
Na_2O	—	0.25	—	—	0.76	—	0.32	—	0.48
K_2O	—	2.07	—	2.2	1.48	1.8	0.38	1.4	0.78
H_2O^+	—	9.00	10.7	7.9	9.36	9.5	10.05	8.9	9.78
H_2O^-	—	0.27	2.7	4.2	1.32	22.1*	1.80	4.4	1.63
CO_2	—	—	—	—	—	—	—	—	0.30
TiO_2	2.2	0.54	0.9	1.1	2.05	0.8	abs.	0.7	1.99
P_2O_5	—	—	—	—	—	—	0.06	—	—
MnO	—	—	—	—	—	—	tr.	—	—
Other Constituents		Cl=0.03			Cl=0.10 $\text{SO}_3=0.02$		SrO=pnd* $\text{Li}_2\text{O}=\text{pnd}^*$		Cl=0.01
Less O=	—	—	—	—	100.41	—	—	—	—
Cl, F, S	—	—	—	—	0.02	—	—	—	—
	—	99.68	[96.6]	94.8	100.39	[120.6]	100.17	100.6	100.56

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	142	143	144	145	146	147	148	149	150
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	De-composed Slate	Clay	Clay
Locality	Abercorn, Upper Burnett, Qld.	Kings Plains-Blayney-Trunkay Area, N.S.W.	Marulan, N.S.W.	Gulgong, N.S.W.	4mls. W. of Peterborough, S.A.	Oberon, N.S.W.	5 mls. from Hummock Hill, Mt. Laura, Eyres Pen., S.A.	Tea Tree Gully, S.A.	Near Modbury, S.A.
Reference	53 , 100; 206 , 128	121 , 241	121 , 243	121 , 233	88 , 53; 103 , 35; 235 , 18	183 , 96	88 , 75; 103 , 42; 235 , 15	88 , 59; 103 , 33	103 , 33; 235 , 12
Analyst	Qld Govt Anal.	G. T. See & P. Bayliss	R. Bury	G. T. See & P. Bayliss	S.A. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	W. S. Chapman	W. S. Chapman
SiO_2	54.8	54.8	54.8	54.7	54.68	54.6	54.58	54.50	54.48
Al_2O_3	32.3	29.5	27.9	27.4	29.23	30.3	29.93	29.96	28.75
Fe_2O_3	0.6	1.2	2.2	1.0	0.40	0.3	1.08	1.58	1.48
FeO	—	—	—	—	—	—	—	—	—
MgO	tr.	—	0.2	0.9	2.32	—	abs.	0.12	0.08
CaO	abs.	—	0.3	0.1	abs.	—	0.04	0.16	abs.
Na_2O	2.6	—	0.3	tr.	0.68	—	0.62	1.00	0.66
K_2O		—	1.2	0.1	tr.	—	0.36	0.36	1.84
$\text{H}_2\text{O}+$	9.1*	10.3	10.4	13.0	9.18	13.1*	9.72	9.28	8.71
$\text{H}_2\text{O}-$	0.6	4.4	1.5	1.7	2.05	—	1.31	1.18	2.12
CO_2	—	—	—	—	abs.	—	abs.	abs.	abs.
TiO_2	—	0.5	1.2	1.2	1.34	1.0	2.53	2.12	2.55
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	—	—	Cl=0.49 SO ₃ =0.19	—	Cl=0.28 SO ₃ =0.18	Cl=0.10	Cl=0.03
Less O=Cl, F, S	—	—	—	—	100.56	—	100.63	100.36	100.70
	100.0	100.7	100.0	100.1	100.45	99.3	100.57	100.34	100.69

*Loss on ignition

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	151	152	153	154	155	156	157	158	159
Rock Name	Clay	Clay	Clay	Miloschite	Clay	Clay	Clay	Clay	Clay
Locality	Gulgong, N.S.W.	Goulburn District, N.S.W.	Magazine Hill, Woocalla, S.A.	Campion, W.A.	Para-combe, near Houghton, S.A.	Gordon, Vic.	Oberon, N.S.W.	Kings Plains Blayney-Trunkey Area, N.S.W.	Eyres Peninsula, S.A.
Reference	121, 233	182, 96	88, 66; 103, 42; 235, 13	18, 213	68, 80	114, 34	179, 104	121, 241	88, 56; 103, 36
Analyst	G. T. See & P. Bayliss	N.S.W. Dep. Mines	W. S. Chapman	Hill	S.A. School Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	S.A. Dep. Mines
Remarks	—	—	—	—	—	(Dyke Rock)	—	—	—
SiO_2	54.2	54.2	54.16	54.04	53.96	53.67	53.54	53.3	53.26
Al_2O_3	32.0	29.8	29.74	30.27	32.14	31.80	29.82	28.5	32.31
Fe_2O_3	0.3	0.5	1.04	0.16	0.88	0.46	1.14	2.3	1.03
FeO	—	—	—	0.14	0.06	abs.	—	—	—
MgO	—	—	0.74	0.31	0.06	0.30	—	—	0.15
CaO	—	—	0.30	abs.	abs.	0.36	—	—	0.38
Na_2O	—	—	1.05	0.23	0.82	0.35	—	—	0.03
K_2O	—	—	1.69	0.14	0.72	tr.	—	—	0.12
$\text{H}_2\text{O} +$	9.6	—	7.76	11.89	10.80	1.83	—	12.0	10.90
$\text{H}_2\text{O} -$	1.7	—	1.71	2.16	—	11.44	—	1.8	1.77
CO_2	—	—	abs.	abs.	—	—	—	—	abs.
TiO_2	0.5	0.8	1.05	0.31	0.89	0.49	1.15	0.6	1.01
P_2O_5	—	—	—	abs.	—	0.04	—	—	—
MnO	—	—	—	tr.	—	—	—	—	—
Other Constituents			Cl=1.31 $\text{SO}_3=0.08$	NaCl=tr. $\text{Cr}_2\text{O}_3=0.80$ $\text{V}_2\text{O}_3=\text{abs.}$	Cl=0.05 $\text{SO}_3=0.04$	Cl=0.47			Cl=0.11
	—	—	100.63	—	100.40	101.21	—	—	101.07
Less O = Cl, F, S	—	—	0.29	—	0.01	0.10	—	—	0.02
	98.3	—	100.34	100.45	100.39	101.11	—	98.5	101.05

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$
 $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	160	161	162	163	164	165	166	167	168
Rock Name	Clay	Clay	Ball Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Paracombe, near Houghton, S.A.	Balhannah, S.A.	E. side of L. Hart, near Pimba, S.A.	4 miles W. of Bundanoon, N.S.W.	Armidale, N.S.W.	Near Willunga, S.A.	3 miles W. of Newbridge, N.S.W.	Grafton, N.S.W.	Tenterfield, N.S.W.
Reference	68, 80	103, 30	88, 79	165, 122	121, 251	88, 80; 103, 32; 235, 11	189	121, 252	176, 99
Analyst	S.A. School Mines	W. S. Chapman	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	*Loss on ignition
SiO_2	53.20	53.12	53.04	52.90	52.6	52.52	52.5	52.5	52.40
Al_2O_3	32.86	21.52	23.30	30.06	28.4	30.77	30.8	19.5	20.40
Fe_2O_3	1.03	1.96	1.44	1.50	3.5	1.94	0.8	4.7	—
FeO	0.09	—	—	0.18	—	—	—	—	—
MgO	0.01	0.90	0.90	—	—	0.24	—	—	pnd.
CaO	abs.	0.52	0.02	—	—	abs.	—	—	pnd.
Na_2O	0.40	0.44	1.10	—	—	0.32	—	—	—
K_2O	0.28	2.28	2.32	—	1.2	3.06	—	1.9	—
$\text{H}_2\text{O}+$	11.77	13.84	10.45	—	10.0	8.41	—	11.0	23.80*
$\text{H}_2\text{O}-$	—	4.92	0.21	—	2.7	0.89	—	3.9	—
CO_2	—	—	—	—	—	abs.	—	—	—
TiO_2	0.77	—	1.02	1.18	1.6	1.67	1.0	1.1	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	$\text{SO}_3 = 0.02$ $\text{Cl} = 0.02$	—	$\text{Cl} = 1.45$	—	—	$\text{Cl} = 0.23$	—	—	Undet. = 3.40
Less O = Cl, F, S	—	—	95.25	—	—	100.05	—	—	—
	—	—	0.30	—	—	0.05	—	—	—
	100.45	99.50	94.95	—	[100.0]	100.00	—	[94.6]	100.00

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	169	170	171	172	173	174	175	176	177
Rock Name	China Clay	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay	Clay (Kaolin)
Locality	Burabadji, W.A.	Inverell, District, N.S.W.	Glen Forrest, W.A.	10 mls. from Port Lincoln, S.A.	Ceduna, S.A.	Well near Mud-lamuckla, S.A.	Magazine Hill, Woocalla, S.A.	Near Modbury, Tea Tree Gully, S.A.	Mudgee, N.S.W.
Reference	18, 213	175, 96	18, 214	103, 36	88, 70; 103, 42	88, 70, 76; 103, 42; 235, 16	56, 18; 103, 42; 235, 16	88, 59; 103, 33; 235, 12	139, 53
Analyst	H. Bowley	N.S.W. Dep. Mines	Gillies	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	(Sedimentary)	—	—
SiO_2	52.39	52.30	52.19	52.16	52.10	52.04	52.04	52.02	52.00
Al_2O_3	32.26	32.70	34.18	29.16	29.48	28.23	30.87	28.04	31.20
Fe_2O_3	0.56	0.70	0.64	1.10	2.66	1.21	0.88	1.58	1.70
FeO	—		abs.	—	—	—	—	—	—
MgO	0.16	—	abs.	0.52	abs.	abs.	0.18	0.04	2.34
CaO	0.04	—	abs.	0.06	abs.	0.44	0.22	abs.	0.50
Na_2O	0.29	—	0.10	—	1.04	1.58	1.47	0.48	tr.
K_2O	0.54	—	0.51	—	0.42	0.67	2.04	1.90	5.33
$\text{H}_2\text{O} +$	11.69	—	11.38	13.30	10.76	9.27	9.82	8.50	6.26
$\text{H}_2\text{O} -$	1.42	—	0.50		2.08	3.61	1.60	1.46	0.96
CO_2	—	—	abs.	—	abs.	abs.	abs.	abs.	—
TiO_2	0.23	1.10	0.34	—	1.38	1.13	0.47	5.04	tr.
P_2O_5	—	—	—	—	—	—	—	—	tr.
MnO	abs.	—	abs.	—	—	—	—	—	tr.
Other Constituents	NaCl = 0.58	—	NaCl = 0.15 Other Salts = 0.02	NaCl = 3.77	Cl = 0.58	SO_3 = abs. Cl = 1.88	SO_3 = 0.26 Cl = 1.25	Cl = 0.06 Organic = 0.92	SO_3 = tr.
	—	—	—	—	100.50	100.06	101.10	100.04	—
Less O = Cl, F, S	—	—	—	—	0.13	0.43	0.28	0.01	—
	100.16	—	100.01	100.07	100.37	99.63	100.82	100.03	100.29

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	178	179	180	181	182	183	184	185	186
Rock Name	Clay	Clay	Fireclay	Semi-ball Clay	Ball Clay	Gritty Clay	Clay	Clay	Clay
Locality	Coward Cliff 15 mls. from Aberrie Ck. Siding, S.A.	Coorabin, near Oaklands, N.S.W.	Clackline, W.A.	Mt. Kokeby, W.A.	Cardup, W.A.	Surges Bay, Tas.	Kuring-gai, N.S.W.	1 mile N. of Gulgong, N.S.W.	Coorabin, near Oaklands, N.S.W.
Reference	215, 112	189	18, 214; 254, 25	18, 215	18, 213	34, 7	172, 135	164, 184	121, 237
Analyst	T. W. Dalwood	N.S.W. Dep. Mines	C. C. Williams	D. G. Murray	H. Bowley	R. D. Hill	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	*Loss on ignition	—	—	—
SiO_2	51.72	51.7	51.55	51.43	51.25	50.9	50.40	50.36	50.3
Al_2O_3	28.22	33.4	33.25	33.94	34.19	32.5	32.31	33.56	32.5
Fe_2O_3	2.64	0.9	0.43	0.93	0.64	1.7	0.95	1.80	1.5
FeO	0.02	—	abs.	nd.	—	—	—		—
MgO	0.04	—	0.40	abs.	abs.	—	—	—	0.5
CaO	0.08	—	0.09	abs.	abs.	—	—	—	0.4
Na_2O	0.66	—	0.31	0.37	0.16	2.0	—	—	0.2
K_2O	0.46	—	0.11	0.36	tr.	3.5	—	—	2.6
$\text{H}_2\text{O} +$	8.57	—	10.41	11.32	12.26	8.8*	—	—	10.4
$\text{H}_2\text{O} -$	2.28	—	0.90	0.78	1.23	—	—	—	1.0
CO_2	—	—	—	—	abs.	—	—	—	—
TiO_2	0.70	1.4	2.19	0.51	0.45	0.5	—	1.36	1.1
P_2O_5	—	—	—	—	—	—	—	nd.	—
MnO	—	—	abs.	abs.	—	—	—	—	—
Other Constituents	$\text{SO}_3 = 4.31$ $\text{Cl} = 0.15$		$\text{V}_2\text{O}_5 = \text{tr.}$	$\text{NaCl} = 0.17$ Other Salts = 0.06 $\text{SO}_3 = 0.24$	$\text{NaCl} = 0.15$ Other Salts = 0.03				
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	99.85	—	99.64	100.11	100.36	99.9	—	—	100.5

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	187	188	189	190	191	192	193	194	195
Rock Name	Clay	Clay	Clay	Clay	Kaolinite	Clay	Clay	Clay	Clay
Locality	Coorabin, near Oaklands, N.S.W.	6 mls. from Minvalara, near Peterborough, S.A.	Bunda-noon, N.S.W.	Noarlunga, S.A.	5 miles N. of Gulgong, N.S.W.	Brookvale, near Manly, N.S.W.	Coorabin, near Oaklands, N.S.W.	Gulgong, N.S.W.	Frenchs Forest, near Sydney, N.S.W.
Reference	164, 184	88, 53; 103, 34; 235, 14	138, 56	88, 48	181, 91	163, 178	189	121, 233	121, 244
Analyst	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss
Remarks	—	—	—	—	*Loss on ignition	—	—	*Determined by G. T. See	(Residual of Igneous Origin)
SiO_2	50.18	50.18	50.17	50.10	50.1	50.02	50.0	50.0	49.9
Al_2O_3	33.03	31.76	34.26	35.71	34.4	31.78	33.1	32.6	29.0
Fe_2O_3	1.30	0.59	tr.	0.34	0.7	0.70	1.1	0.3	2.3
FeO		—	tr.	—		—	—	—	—
MgO	—	2.02	0.19	0.40	tr.	—	—	0.4	—
CaO	—	abs.	abs.	0.16	0.4	—	—	0.5	—
Na_2O	—	1.24	0.09	tr.	—	—	—	—	—
K_2O	—	0.12	6.17	1.33	—	—	—	—	2.3
$\text{H}_2\text{O} +$	—	11.46	6.46	11.34	13.3*	—	—	11.2*	9.5
$\text{H}_2\text{O} -$	—	0.91	2.80	0.40	—	—	—	1.8*	0.3
CO_2	—	abs.	—	—	—	—	—	—	—
TiO_2	0.96	1.40	abs.	0.25	0.9	2.24	1.1	0.9	5.9
P_2O_5	nd.	—	0.09	—	—	—	—	—	—
MnO	—	—	tr.	—	—	—	—	—	—
Other Constituents	—	$\text{SO}_3 = 0.15$ $\text{Cl} = 0.98$	—	$\text{Cl} = 0.01$	—	—	—	—	—
Less O = Cl, F, S	—	100.81 0.22	—	—	—	—	—	—	—
	—	100.59	100.23	100.04	99.80	—	—	[97.71	99.2

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	196	197	198	199	200	201	202	203	204
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Kaolin
Locality	12 miles from Goulburn, N.S.W.	Hivesville, Murgon District, Qld.	Kuring-gai, N.S.W.	E. of Home Rule, N.S.W.	10 miles from Maitland, N.S.W.	10 miles from Maitland, N.S.W.	Oaklands, N.S.W.	7 miles S. of Ipswich, Qld.	Coorabin, near Oaklands, N.S.W.
Reference	183 , 96	53 , 99; 202 , 141	172 , 135	164 , 184	158 , 195	158 , 195	189	53 , 100	189
Analyst	N.S.W. Dep. Mines	Qld Govt Anal.	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	E. A. Derrick	N.S.W. Dep. Mines
Remarks	*Loss on ignition	*Loss on ignition	—	—	—	—	—	*Loss on ignition	—
SiO_2	49.7	49.7	49.54	49.52	49.42	49.40	49.3	49.2	49.1
Al_2O_3	31.9	28.5	29.26	32.66	31.34	33.05	34.2	33.4	35.9
Fe_2O_3	0.7	2.2	<0.10	1.80	0.06	0.20	1.0	0.8	0.9
FeO	—	—	—		0.36	0.17		—	
MgO	—	0.5	—	—	0.46	0.47	—	0.8	—
CaO	—	abs.	—	—	0.19	0.14	—	2.0	—
Na_2O	—	5.0	—	—	0.46	0.31	—	0.5	—
K_2O	—		—	—	0.55	0.41	—		—
$\text{H}_2\text{O} +$	14.2*	13.5*	—	—	11.42	12.19	—	10.0*	—
$\text{H}_2\text{O} -$	—	0.6	—	—	1.68	2.51	—	3.5	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	2.8	—	—	0.76	1.55	1.24	1.6	—	1.4
P_2O_5	—	—	—	nd.	0.06	0.04	—	—	—
MnO	—	—	—	—	tr.	tr.	—	—	—
Other Constituents					$\text{SO}_3 = 0.12$ Organic = 0.74 $\text{FeS}_2 = 1.59$	$\text{NaCl} = 0.24$			
	99.3	100.0	—	—	100.00	100.37	—	100.2	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	205	206	207	208	209	210	211	212	213
RockName	Clay	Ball Clay	Clay	Kaolin	Kaolin	Clay	Clay	Clay	Clay
Locality	Oaklands Area, N.S.W.	Elgin, W.A.	Tyldesley Colliery, Cullen Bullen, N.S.W.	Ransome Mine, Blue Tier, Tas.	Kapinnie, 70 mls. N.W. of Port Lincoln, S.A.	Frenchs Forest, N.S.W.	2 miles N. of Birdwood, S.A.	Blumberg, near Birdwood, S.A.	Near Angaston, S.A.
Reference	185, 103	18, 214	178, 98	211, 20	54, 89; 88, 75	121, 244	216, 132	88, 22 103, 31; 235, 15	103, 39
Analyst	N.S.W. Dep. Mines	Gillies	N.S.W. Dep. Mines	Tas. Dep. Mines	Not stated	G. T. See & P. Bayliss	T. W. Dalwood	W. S. Chapman	S.A. Dep. Mines
Remarks	*Loss on ignition	—	*Loss on ignition	(Altered granite) *Loss on ignition	—	(Residual of igneous origin)	—	—	—
SiO_2	49.1	49.08	49.00	49.00	48.94	48.8	48.74	48.72	48.7
Al_2O_3	34.4	34.58	33.60	32.68	35.72	29.6	33.05	37.47	35.0
Fe_2O_3	0.5	0.43	1.00	0.64	1.10	1.3	0.80	0.80	—
FeO	—	abs.	—	0.30	—	—	abs.	—	—
MgO	<0.1	abs.	—	0.14	0.24	—	0.06	abs.	—
CaO	nd.	0.04	—	abs.	0.32	—	0.08	0.28	—
Na_2O	—	0.25	—	2.79	0.32	—	0.28	0.15	—
K_2O	—	0.75	—	3.59	0.86	4.0	0.08	0.32	—
$\text{H}_2\text{O} +$	11.0*	12.26	14.05*	11.90*	12.11	7.3	11.86	12.45	} 15.19
$\text{H}_2\text{O} -$	—	1.43	—	—	0.92	2.8	2.09	0.25	
CO_2	—	abs.	—	—	abs.	—	—	abs.	—
TiO_2	1.1	0.67	—	—	—	5.5	2.75	abs.	—
P_2O_5	—	nd.	—	—	—	—	—	—	—
MnO	—	abs.	—	—	—	—	—	—	—
Other Constituents		$\text{NaCl} = 0.36$ $\text{SO}_3 = \text{abs.}$ Other Salts = 0.11			Cl = 0.02		Cl = 0.05 $\text{SO}_3 = 0.05$	Cl = 0.04	
Less O = Cl, F, S	—	—	—	—	—	—	99.89	100.48	—
	—	—	—	—	—	—	0.01	0.01	—
	96.2	99.96	—	101.04	100.55	99.3	99.88	100.47	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	214	215	216	217	218	219	220	221	222
RockName	Ball Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Kalamunda, W.A.	Oaklands, N.S.W.	Puggoon, N.S.W.	Teatree Gully, S.A.	Noarlunga, S.A.	Woocalla, S.A.	11 mls. N.W. of Tumby Bay, Eyres Pen., S.A.	Belrose, Frenchs Forest, Sydney, N.S.W.	Kings Plains-Blayney-Trunkay Area, N.S.W.
Reference	18, 215	189	121, 232	103, 33; 235, 11	88, 48	88, 66	57, 107; 88, 56	188, 165	121, 241
Analyst	J. N. A. Grace	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman	S.A. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	(Decomposed Basalt)	—
SiO_2	48.69	48.6	48.6	48.58	48.52	48.50	48.42	48.3	48.3
Al_2O_3	29.19	34.8	30.8	34.15	35.98	27.03	35.53	35.6	35.1
Fe_2O_3	1.77	1.0	0.4	1.53	0.37	0.71	0.15	0.1	1.4
FeO	0.56		—	—	—	—	—	—	—
MgO	0.38	—	—	abs.	0.47	0.90	0.15	—	—
CaO	0.06	—	—	abs.	0.18	0.38	0.18	—	—
Na_2O	0.01	—	—	0.20	0.47	0.60	0.58	—	—
K_2O	0.16	—	—	1.66	0.28	1.98	1.72	—	—
H_2O^+	12.10	—	13.3	11.02	12.11	9.35	11.86	—	11.4
H_2O^-	2.07	—	2.7	1.10	1.26	9.23	0.25	—	1.0
CO_2	0.11	—	—	abs.	—	—	—	—	—
TiO_2	4.52	1.4	0.5	1.95	0.33	0.86	1.04	1.7	0.6
P_2O_5	0.02	—	—	—	—	—	—	—	—
MnO	0.04	—	—	—	—	—	—	—	—
Other Constituents	$\text{NaCl} = 0.03$ $\text{SO}_3 = 0.02$ $\text{Cr}_2\text{O}_3 = 0.02$ $\text{V}_2\text{O}_5 = 0.07$ Humus = 0.24	—	—	Cl = 0.06	Cl = 0.07	Cl = 0.91 $\text{SO}_3 = 0.38$	Cl = 0.31	—	—
Less O = Cl, F, S	—	—	—	100.25	100.04	100.83	100.19	—	—
	—	—	—	0.02	0.02	0.20	0.07	—	—
	[100.06]	—	[96.3]	100.23	100.02	100.63	100.12	—	97.8

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	223	224	225	226	227	228	229	230	231
Rock Name	Clay	Clay	Clay (Kaolin)	Clay	Clay	Clay (Kaolin)	Semiball Clay	Fireclay	Clay
Locality	Home Rule, near Warrobil, N.S.W.	Merrygoen, N.S.W.	Lal Lal, Vic.	Coffs Harbour, N.S.W.	10 miles N. of Gulgong, N.S.W.	Bulla, Vic.	Stinkwell, W.A.	Jacobs Well, W.A.	Lucky Hill, S.A.
Reference	109, 132	121, 237	21	161, 194	176, 99	36	18, 214	18, 215	103, 31
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	R. C. Callister	N.S.W. Dep. Mines	N.S.W. Dep. Mines	T. Gelb	C. R. Le Mesurier	H. Bowley	W. S. Chapman
Remarks	—	—	—	*Plus undetermined	—	—	—	—	—
SiO_2	48.30	48.3	48.26	48.26	48.20	48.17	48.07	48.06	48.0
Al_2O_3	34.27	26.8	34.08	25.22	34.39	35.94	35.96	36.83	38.2
Fe_2O_3	1.50	1.1	0.91	1.30	0.90	0.83	1.00	0.11	0.8
FeO	0.09	—	—	0.45		—	abs.	abs.	—
MgO	0.10	—	0.30	0.72	—	0.26	0.28	0.18	tr.
CaO	0.34	—	1.75	0.80	—	0.37	0.13	0.06	—
Na_2O	1.13	—	0.12	0.25*	—	0.15	0.06	0.17	0.4
K_2O	1.22	0.2	0.34		—	0.52	0.54	0.58	tr.
$\text{H}_2\text{O} +$	1.88	12.4	12.20	16.90	—	12.45	12.31	12.75	12.6
$\text{H}_2\text{O} -$	12.53	2.6	1.00		—	—	1.02	0.72	0.7
CO_2	—	—	—	—	—	—	abs.	abs.	—
TiO_2	—	3.0	1.52	6.10	0.95	1.27	1.26	0.98	—
P_2O_5	—	—	0.08	—	—	—	0.05	—	—
MnO	—	—	abs.	—	—	—	0.01	tr.	—
Other Constituents			$\text{V}_2\text{O}_5 = \text{tr.}$				$\text{NaCl} = 0.08$ $\text{SO}_3 = \text{abs.}$ Humus = abs.	$\text{NaCl} = 0.24$ Humus = abs.	
	101.36	94.4	100.56	100.00	—	99.96	100.77	100.68	100.7

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	232	233	234	235	236	237	238	239	240
Rock Name	Clay	Clay	Clay	Clay	China Clay	Clay	Clay	Clay	Clay
Locality	Merrygoen, N.S.W.	Pambula, N.S.W.	Near Kersbrook, S.A.	Birdwood, S.A.	Glen Forrest, W.A.	Near Modbury, S.A.	2 miles N. of Gulgong, N.S.W.	Colca Station, S.A.	Munna, N.S.W.
Reference	121, 237	163, 178	88, 34	41, 73	18, 214	103, 33; 235, 12	161, 194	103, 40	180, 148
Analyst	R. Bury	N.S.W. Dep. Mines	S.A. Dep. Mines	W. S. Chapman	E. S. Simpson	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	W. G. Stone
Remarks	—	—	—	—	Levigated	—	—	—	—
SiO_2	48.0	47.90	47.86	47.66	47.57	47.56	47.54	47.52	47.46
Al_2O_3	30.0	32.19	34.56	33.88	37.93	30.76	36.10	35.04	33.72
Fe_2O_3	0.8	1.50	1.08	0.80	0.31	1.32	0.70	—	1.70
FeO	—	—	—	—	abs.	—	0.18	—	—
MgO	—	—	0.73	0.12	abs.	abs.	0.26	—	—
CaO	—	—	0.36	0.04	abs.	0.54	0.60	—	—
Na_2O	—	—	0.32	0.06	0.11	0.38	0.21	—	—
K_2O	0.1	—	0.68	0.28	0.58	1.67	0.19	—	—
$\text{H}_2\text{O} +$	13.4	—	11.57	12.67	12.36	10.56	12.35	} 15.55	—
$\text{H}_2\text{O} -$	2.0	—	1.83	1.73	1.07	1.56	1.25		—
CO_2	—	—	—	abs.	abs.	abs.	—	—	—
TiO_2	0.8	2.10	1.18	3.32	0.22	3.54	0.52	—	2.00
P_2O_5	—	—	—	—	nd.	—	0.06	—	—
MnO	—	—	—	—	abs.	—	abs.	—	—
Other Constituents				Cl=0.18	NaCl=abs. SO_3 =abs.	Cl=0.04 Organic=2.37			
	—	—	—	—	—	100.30	—	—	—
Less O=Cl, F, S	—	—	—	—	—	0.01	—	—	—
	95.1	—	100.17	100.74	100.15	100.29	99.96	—	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	241	242	243	244	245	246	247	248	249
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Lal Lal, Vic.	Birdwood, S.A.	Near Simmons-ton, S.A.	Home Rule, N.S.W.	Home Rule, N.S.W.	Near Kersbrook, S.A.	Wedderburn, Vic.	S.E. Eyres Peninsula, S.A.	Near Gumeracha, S.A.
Reference	21	233, 120	103, 40	121, 233	121, 233	38, 84; 88, 34	260, 9	103, 36	103, 31
Analyst	R. C. Callister	S.A. Dep. Mines	W. S. Chapman	R. Bury	G. T. See & P. Bayliss	S.A. School Mines	P. G. W. Bayly	S.A. Dep. Mines	W. S. Chapman
Remarks	—	—	—	*Determined by G. T. See	—	—	—	—	—
SiO_2	47.36	47.34	47.32	47.3	47.2	47.14	47.13	47.12	47.12
Al_2O_3	36.30	35.19	35.74	35.2	35.3	37.21	36.01	41.52	35.70
Fe_2O_3	0.88	0.67	1.46	1.5	1.3	0.44	2.56	—	0.28
FeO	—	abs.	—	—	—	—	—	—	—
MgO	tr.	0.07	abs.	0.2	0.3	0.09	0.35	—	0.07
CaO	0.64	0.32	abs.	0.6	0.4	0.24	abs.	—	abs.
Na_2O	0.22	0.14	0.48	—	—	0.75	—	—	0.54
K_2O	0.29	0.10	0.08	—	0.3	0.12	—	—	0.34
$\text{H}_2\text{O} +$	12.60	12.96	12.13	12.9*	12.6	13.11	12.84	} 12.16	11.52
$\text{H}_2\text{O} -$	1.20	1.43	1.95	0.8*	1.8	—	—		1.60
CO_2	—	—	abs.	—	—	—	—	—	—
TiO_2	0.82	1.80	0.80	1.2	0.6	0.37	1.11	—	2.48
P_2O_5	0.03	—	—	—	—	—	—	—	—
MnO	abs.	—	—	0.01	—	—	—	—	—
Other Constituents	$\text{V}_2\text{O}_5 = \text{tr.}$	$\text{Cl} = 0.08$ $\text{SO}_3 = 0.04$	$\text{Cl} = 0.34$	—	—	$\text{Cl} = 0.10$	—	—	—
	—	100.14	100.30	—	—	—	—	—	—
Less O = Cl, F, S	—	0.02	0.07	—	—	—	—	—	—
	100.34	100.12	100.23	99.81	99.8	99.57	100.00	—	99.65

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	250	251	252	253	254	255	256	257	258
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Clay*	Clay	Clay
Locality	Kunioon, Qld.	Puggoon, N.S.W.	Jervis Bay, N.S.W.	Puggoon, N.S.W.	Eyres Peninsula, S.A.	Coorabin, near Oaklands, N.S.W.	Birdwood, S.A.	Birdwood, S.A.	Home Rule, near Warrobil, N.S.W.
Reference	53, 99	184, 105	189	181, 96	103, 36	121, 237	88, 22; 103, 31; 235, 17	103, 31	164, 184
Analyst	Qld Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	R. Bury	W. S. Chapman	S.A. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Loss on ignition	—	—	—	—	—	*Decomposed Slate	—	—
SiO_2	47.1	46.9	46.9	46.9	46.8	46.8	46.74	46.72	46.62
Al_2O_3	36.9	40.1	34.8	33.5	38.0	35.7	34.08	37.42	33.94
Fe_2O_3	1.3	1.1	0.8	1.1	tr.	1.2	1.12	0.96	} 1.25
FeO	—	—	—	—	—	—	—	—	
MgO	abs.	—	—	—	—	0.5	0.28	tr.	—
CaO	abs.	—	—	—	—	0.3	0.26	tr.	—
Na_2O	—	—	—	—	—	0.1	1.25	—	—
K_2O	—	—	—	—	—	2.4	0.12	—	—
$\text{H}_2\text{O} +$	13.2*	—	—	—	} 14.9	11.3	10.67	—	—
$\text{H}_2\text{O} -$	1.4	—	—	—		0.8	2.50	—	—
CO_2	—	—	—	—	—	—	abs.	—	—
TiO_2	—	0.6	2.2	1.2	—	1.1	1.34	—	0.75
P_2O_5	—	—	—	—	—	—	—	—	nd.
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	—	—	—	—	Cl = 1.91 $\text{SO}_3 = 0.35$	—	—
Less O = Cl, F, S	—	—	—	—	—	—	100.62 0.43	—	—
	99.9	—	—	—	—	100.2	100.19	—	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	259	260	261	262	263	264	265	266	267
Rock Name	Clay	Clay	China Clay	Clay	Clay	Clay	Miloschite	Clay	Clay (Kaolin)
Locality	Near Kersbrook, S.A.	Near Tumby Bay, S.A.	Kunjin, W.A.	Jervis Bay, N.S.W.	Lithgow, N.S.W.	Willoughby, Sydney, N.S.W.	Westonia, W.A.	Tyldesley Colliery, Cullen Bullen, N.S.W.	Elaine, Vic.
Reference	88, 34	103, 36	18, 215	189	139, 52	180, 148	18, 216	178, 98	114, 35
Analyst	S.A. Dep. Mines	W. S. Chapman	H. Bowley	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. G. Stone	E. S. Simpson	N.S.W. Dep. Mines	Vic. Dep. Mines
Remarks	—	—	—	—	—	*Plus undetermined	*0.57% Rutile removed	—	(from Dyke)
SiO_2	46.62	46.54	46.51	46.5	46.41	46.4	46.38	46.34	46.32
Al_2O_3	34.55	36.34	38.12	35.3	39.08	31.5	37.57	34.63	37.47
Fe_2O_3	0.58	0.50	0.40	0.9	0.40	1.2	0.06	0.25	1.13
FeO	—	—	abs.	—	abs.	—	abs.	—	0.06
MgO	0.53	0.69	abs.	—	tr.	0.1	0.36	—	0.18
CaO	0.06	0.83	0.09	—	tr.	—	abs.	—	abs.
Na_2O	tr.	0.39	0.12	—	abs.	1.7*	0.04	—	0.30
K ₂ O	0.01	5.75	0.32	—	0.68		0.07	—	0.25
$\text{H}_2\text{O} +$	12.88	7.04	13.68	—	11.27	13.5	13.75	—	13.08
$\text{H}_2\text{O} -$	2.40	0.84	0.50	—	1.88		0.98	—	1.57
CO_2	—	—	abs.	—	—	—	abs.	—	—
TiO_2	2.27	—	0.62	1.9	—	4.5	abs.*	—	0.47
P_2O_5	—	—	—	—	—	—	nd.	—	0.23
MnO	—	—	abs.	—	tr.	—	abs.	—	—
Other Constituents		NaCl = 1.77	NaCl = 0.16 SO_3 = 0.05 Humus = abs.		SO_3 = tr.		Cr_2O_3 = 1.22		Cl = 0.03
Less O = Cl, F, S	—	—	—	—	—	—	—	—	101.09
	99.90	100.69	100.57	—	99.72	98.89	100.43	—	101.08

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	268	269	270	271	272	273	274	275	276
Rock Name	China Clay	Kaolin	Clay	Clay	Clay	Clay	Miloschite	Clay	Clay
Locality	Mt. Egerton, Vic.	Zeehan, Tas.	3 miles W. of Merimbula, N.S.W.	Home Rule, N.S.W.	Ringwood, Vic.	Belrose, Frenchs Forest, Sydney, N.S.W.	Westonia, W.A.	Surges Bay, Tas.	Goodger, Qld.
Reference	114, 33	—	157, 202	176, 99	114, 37	188, 165	18, 216	34, 7	200, 134
Analyst	Vic. Dep. Mines	—	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	E. S. Simpson	M. Neilson	Qld Govt Anal.
Remarks	(From Aplite dyke)	*Loss on ignition	—	—	(From dyke)	(Decomposed basalt)	*0.32% Rutile removed	—	*Loss on ignition
SiO_2	46.20	46.20	46.15	46.14	46.14	46.1	45.98	45.82	45.8
Al_2O_3	39.18	37.40	37.87	36.30	32.18	30.2	38.53	39.38	37.6
Fe_2O_3	0.38	1.39	1.10	1.00	2.00	2.6	0.05	0.16	1.7
FeO	abs.	—	0.13		0.11	—	abs.	—	—
MgO	tr.	0.06	0.20	—	1.18	—	0.19	0.06	abs.
CaO	abs.	0.42	0.45	—	abs.	—	abs.	0.22	tr.
Na_2O	0.12	0.58	0.37	—	0.21	—	0.02	0.23	—
K_2O	tr.	0.37	0.40	—	0.14	—	0.05	0.49	—
$\text{H}_2\text{O} +$	13.00	13.89*	11.38	—	12.28	—	13.91	12.67	13.8*
$\text{H}_2\text{O} -$	—		1.80	—	3.72	—	0.89	—	0.8
CO_2	—	—	—	—	—	—	abs.	—	—
TiO_2	tr.	0.16	—	0.90	0.37	4.8	abs.*	0.55	—
P_2O_5	tr.	—	—	—	abs.	—	nd.	—	—
MnO	—	—	tr.	—	—	—	abs.	—	—
Other Constituents	Cl = tr. SO_3 = tr.	—	—	—	Cl = 3.30	—	Cr_2O_3 = 1.01	—	—
	—	—	—	—	101.63	—	—	—	—
Less O = Cl, F, S	—	—	—	—	0.73	—	—	—	—
	98.88	—	99.85	—	100.90	—	100.63	99.58	99.7

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	277	278	279	280	281	282	283	284	285
Rock Name	Clay	Clay	Clay	Clay	Clay	China Clay	Clay	Clay	Clay
Locality	Mt Colah, N.S.W.	Milton, N.S.W.	Flinders Mine, Eyres Pen., S.A.	Jervis Bay, N.S.W.	Near Simmons-ton, S.A.	Wagin, W.A.	Near Kersbrook, S.A.	2 miles N. of Birdwood, S.A.	Surges Bay, Tas.
Reference	179, 104	139, 52	103, 36	189	103, 40	18, 215	42, 70; 88, 34	216, 132	34, 7
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	Saw	S.A. Dep. Mines	T. W. Dalwood	R. D. Hill
Remarks	—	—	—	—	—	—	—	—	*Loss on ignition
SiO_2	45.80	45.79	45.77	45.7	45.64	45.57	45.56	45.56	45.4
Al_2O_3	35.58	34.54	39.55	36.1	36.88	38.28	38.18	36.46	37.7
Fe_2O_3	tr.	0.90	—	0.8	1.16	0.56	0.37	2.08	1.8
FeO	—	—	—	—	—	0.14	—	0.09	—
MgO	—	tr.	—	—	abs.	0.14	0.30	0.04	—
CaO	—	0.31	—	—	0.22	abs.	0.08	0.06	—
Na_2O	—	tr.	—	—	0.79	0.20	0.10	0.08	2.1
K_2O	—	0.65	—	—	0.10	0.91	0.03	0.12	0.4
$\text{H}_2\text{O} +$	—	11.35	13.55	—	11.82	13.11	13.72	13.01	11.9*
$\text{H}_2\text{O} -$	—	6.85	abs.	—	2.45	0.56	0.90	0.79	—
CO_2	—	—	—	—	abs.	0.02	abs.	—	—
TiO_2	4.70	—	—	2.4	0.36	0.30	1.05	1.50	0.7
P_2O_5	—	—	—	—	—	0.14	—	—	—
MnO	—	abs.	—	—	—	abs.	—	—	—
Other Constituents		Organic = tr.			Cl = 0.90	NaCl = 0.27 SO_3 = 0.01 Humus = 0.22	Cl = 0.06	SO_3 = 0.18 Cl = 0.02	
	—	—	—	—	100.32	—	100.35	—	—
Less O = Cl, F, S	—	—	—	—	0.20	—	0.01	—	—
	—	100.39	—	—	100.12	100.43	100.34	99.99	100.0

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	286	287	288	289	290	291	292	293	294
Rock Name	Clay	Kaolin	Clay	Clay (Kaolin)	Clay	Clay	Clay	Clay	Stoneware Clay
Locality	Corowa, N.S.W.	40 miles N.E. of Lyndhurst, S.A.	Jervis Bay, N.S.W.	30 miles S.E. of Dubbo, N.S.W.	Puggoon, N.S.W.	Tarong, Brooklands, Nanango, Qld.	Tumby Bay, Eyres Pen., S.A.	Maryborough, Vic.	Kalgoorlie, W.A.
Reference	189	124, 122	189	141, 70	121, 232	53, 101; 205, 128	103, 36	98, 69; 114, 36	18, 216
Analyst	N.S.W. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	Qld Govt Anal.	W. S. Chapman	Vic. Dep. Mines	H. Bowley
Remarks	—	(Lens in sandstone)	—	—	—	(Kaolinized Granite) *Loss on ignition	—	(From Dyke)	*not included in total
SiO_2	45.4	45.36	45.3	45.27	45.2	45.2	45.12	45.10	45.04
Al_2O_3	37.5	38.75	36.0	39.05	37.4	39.3	36.85	39.13	37.76
Fe_2O_3	1.1	0.51	0.6	1.08	0.5	1.3	1.91	0.68	0.44
FeO		0.07	—	abs.	—	—	—	0.09	abs.
MgO		0.18	—	0.22	—	abs.	0.56	0.14	0.15
CaO	—	0.01	—	abs.	—	tr.	0.08	abs.	abs.
Na_2O	—	0.64	—	abs.	—	—	1.34	0.70	3.77
K_2O	—	0.16	—	0.32	—	—		0.46	1.22
$\text{H}_2\text{O} +$	—	13.18	—	13.38	13.6	13.7*	10.78	14.27	7.93
$\text{H}_2\text{O} -$	—	1.09	—	1.09	2.8	0.2	2.42	—	0.92
CO_2	—	abs.	—	—	—	—	—	—	abs.
TiO_2	1.0	0.21	2.4	tr.	0.6	—	—	tr.	1.06
P_2O_5	—	—	—	tr.	—	—	—	—	nd.
MnO	—	—	—	abs.	—	—	—	—	abs.
Other Constituents		$\text{SO}_3 = 0.08$ $\text{Cl} = 0.31$					$\text{NaCl} = 0.92$	$\text{Cl} = 1.15$	$\text{NaCl} = 1.42$ Other Salts = 0.41 $\text{SO}_3 = 0.31$
	—	100.55	—	—	—	—	—	101.72	—
Less O = Cl, F, S	—	0.08	—	—	—	—	—	0.25	—
	—	100.47	—	100.41	100.1	99.7	99.98	101.47	100.12

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	295	296	297	298	299	300	301	302	303
Rock Name	Fireclay	'Clay Fraction'	Bedded Clay	Clay	Clay	Clay	Clay	Clay	Fireclay
Locality	Williamstown, S.A.	Bulla, Vic.	Goodger, Qld.	Oaklands, N.S.W.	3 miles from Tailem Bend, S.A.	Maroubra, N.S.W.	Angaston, S.A.	Jervis Bay, N.S.W.	Williamstown, S.A.
Reference	32, 107	87, 10	53, 99	189	103, 40	175, 96	103, 39	189	32, 108
Analyst	Not stated	A. J. Gaskin	Qld Govt Anal.	N.S.W. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	Not stated
Remarks	—	(Kaolinized Grano-diorite)	—	—	—	—	—	—	—
SiO_2	45.02	45.02	45.0	45.0	44.96	44.94	44.92	44.8	44.76
Al_2O_3	40.23	35.85	39.3	37.0	26.94	35.90	41.22	36.9	40.44
Fe_2O_3	} 0.54	0.99	1.0	0.6	1.68	—	—	1.2	} 0.63
FeO		0.24	—	—	—	—	—	—	
MgO	0.26	0.65	tr.	—	0.34	—	—	—	0.22
CaO	0.08	1.76	tr.	—	0.38	—	—	—	0.36
Na_2O	0.46	0.03	—	—	0.34	—	—	—	0.30
K_2O	1.00	0.25	—	—	2.72	—	—	—	0.50
$\text{H}_2\text{O} +$	9.86	8.90	12.9	—	8.28	—	} 13.93	—	11.80
$\text{H}_2\text{O} -$	0.85	5.90	0.8	—	11.05	—		—	1.28
CO_2	—	tr.	—	—	abs.	—	—	—	—
TiO_2	1.39	0.57	—	0.7	3.60	4.60	—	2.2	0.07
P_2O_5	—	tr.	—	—	—	—	—	—	—
MnO	—	tr.	—	—	—	—	—	—	—
Other Constituents	Cl = 0.02 $\text{SO}_3 = 0.01$	Cl = tr.	—	—	Cl = 0.31	—	—	—	Cl = 0.01
	—	—	—	—	100.60	—	—	—	—
Less O = Cl, F, S	—	—	—	—	0.07	—	—	—	—
	99.72	100.16	99.0	—	100.53	—	—	—	100.37

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	304	305	306	307	308	309	310	311	312
Rock Name	Clay	Clay	Clay	Clay	Clay	Clay	Fireclay	Clay	Clay
Locality	Birdwood, S.A.	Williamstown, S.A.	20 miles N.W. of Tumby Bay, S.A.	Near Cardiff, N.S.W.	St. Ives, Sydney, N.S.W.	Abercorn, Qld.	Williamstown, S.A.	Near Kersbrook, S.A.	Wingello, N.S.W.
Reference	195, 107; 262, 76	7, 32; 32, 107	103, 36; 235, 17	181, 91	178, 98	53, 100	32, 107	88, 34	93, 16; 106, 98
Analyst	W. S. Chapman	Not stated	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Qld. Gov. Anal.	Not Stated	S.A. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	*Loss on ignition	—	*Loss on ignition	—	—	(Associated with Bauxite)
SiO_2	44.74	44.74	44.68	44.68	44.64	44.6	44.54	44.54	44.52
Al_2O_3	39.42	40.77	38.90	35.26	40.74	40.9	40.36	38.60	36.01
Fe_2O_3	0.62	0.47	1.64	1.02	—	0.8	0.45	1.00	2.85
FeO	—	0.04	—		—	—		—	—
MgO	0.04	0.01	abs.	0.30	—	tr.	0.08	0.19	—
CaO	0.12	0.02	0.22	0.31	—	abs.	0.04	0.04	—
Na_2O	tr.	1.02	0.18	0.29	0.39	abs.	0.44	0.22	—
K_2O	tr.	1.62	0.66	0.64	0.69		1.42	tr.	—
$\text{H}_2\text{O} +$	14.18	11.11	12.48	16.30*	—	13.5*	10.74	14.36	13.37
$\text{H}_2\text{O} -$	0.56	0.38	1.46	—	—	0.4	0.54	0.94	—
CO_2	—	—	abs.	—	—	—	—	—	—
TiO_2	abs.	0.26	0.50	0.80	—	—	1.80	0.48	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Cl=0.02	$\text{SO}_3=0.05$ Cl=0.01	Cl=0.19	—	—	—	Cl=0.01 $\text{SO}_3=0.01$	—	Fe=1.99
	99.70	—	100.91	—	—	—	—	—	—
Less O= Cl, F, S	0.01	—	0.04	—	—	—	—	—	—
	99.69	100.50	100.87	99.60	—	100.2	100.43	100.37	98.74

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	313	314	315	316	317	318	319	320	321
Rock Name	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Mt. Eger- ton, Vic.	Williams- town, S.A.	Wingello, N.S.W.	Puggoon, N.S.W.	St. Ives, Sydney, N.S.W.	Ringwood, Vic.	Long Bay, Sydney, N.S.W.	Wedder- burn, Vic.	2½ miles W. of Gosford, N.S.W.
Reference	114, 33	32, 108	93, 16	184, 105	150, 152	114, 37	180, 148	260, 9	165, 122
Analyst	Vic. Dep. Mines	Not Stated	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	W. G. Stone	P. G. W. Bayly	N.S.W. Dep. Mines
Remarks	(from Aplite dyke)	—	(Associ- ated with Bauxite)	—	—	(From dyke)	—	—	—
SiO_2	44.43	44.42	44.40	44.3	44.27	44.24	44.24	44.20	44.16
Al_2O_3	40.37	40.28	32.36	40.1	37.39	38.14	31.40	34.33	34.22
Fe_2O_3	0.21	0.52	2.26	0.8	0.20	abs.	1.90	1.83	1.14
FeO	—		—	—	0.18	abs.	—	0.39	—
MgO	abs.	0.16	—	—	0.11	abs.	—	1.74	—
CaO	abs.	0.48	—	—	0.30	abs.	—	tr.	—
Na_2O	0.17	0.80	—	—	0.30	0.37	—	0.87	—
K_2O	0.10	0.30	—	—	1.33	tr.	—	7.63	—
$\text{H}_2\text{O} +$	13.99	12.69	16.00	—	11.33	12.59	12.80	7.81	—
$\text{H}_2\text{O} -$	0.82	0.86	—	—	0.75	4.87		—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	nd.	0.30	—	0.9	3.97	—	5.00	1.20	5.39
P_2O_5	tr.	—	—	—	0.17	—	—	—	—
MnO	—	—	—	—	abs.	—	—	—	—
Other Con- stituents	Cl = tr.	Cl = 0.01	Fe = 1.58	—	Cl = tr. $\text{V}_2\text{O}_5 =$ 0.01	Cl = 0.47	—	—	—
	—	—	—	—	—	100.68	—	—	—
Less O = Cl, F, S	—	—	—	—	—	0.10	—	—	—
	100.09	100.82	96.60	—	100.31	100.58	—	100.00	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	322	323	324	325	326	327	328	329	330
Rock Name	Auriferous Alluvium	Clay	Clay	Clay	Clay	Clay	China Clay	Clay	Pipeclay
Locality	Kanowna, W.A.	French's Forest, Sydney, N.S.W.	Coorabin, near Oaklands, N.S.W.	Williamstown, S.A.	Tilba Tilba, N.S.W.	Wah-roonga, Sydney, N.S.W.	Birdwood, S.A.	Royal Park, Melbourne, Vic.	Carlingford, Sydney, N.S.W.
Reference	18, 216	121, 244	189	32, 107; 88, 63; 103, 27; 235, 15	149, 142	180, 148	88, 24	123, 247	141, 73
Analyst	C. C. Williams	G. T. See & P. Bayliss	N.S.W. Dep. Mines	W. S. Chapman	W. A. Greig,	W. G. Stone	S.A. Dep. Mines	D. M. McCance,	N.S.W. Dep. Mines
Remarks	—	(Residual of Igneous Origin)	—	Refractory clay	—	—	—	(Vein in residual clay from basalt)	—
SiO_2	44.16	44.1	44.1	44.04	44.04	44.0	43.98	43.97	43.940
Al_2O_3	30.38	37.4	36.8	44.74	37.95	35.7	34.32	30.08	34.170
Fe_2O_3	4.44	0.6	0.8	0.29	1.00	—	0.50	2.39	0.800
FeO	—	—	—	nd.	0.09	—	—		—
MgO	0.70	—	—	abs.	tr.	—	0.70	0.38	0.341
CaO	0.53	—	—	0.32	0.60	—	0.06	0.26	tr.
Na_2O	1.05	—	—	0.39	0.16	—	tr.	1.37	0.004
K_2O	0.33	2.1	—	0.19	0.26	—	0.90	2.44	1.360
$\text{H}_2\text{O} +$	11.80	10.3	—	9.10	13.42	—	11.88	10.31	10.660
$\text{H}_2\text{O} -$	3.81	1.5	—	1.00	0.92	—	6.64	5.63	2.610
CO_2	—	—	—	abs.	—	—	—	0.04	—
TiO_2	3.74	4.1	1.0	0.52	1.82	4.8	0.90	4.21	5.810
P_2O_5	—	—	—	—	0.02	—	—	nd.	—
MnO	abs.	—	—	—	tr.	—	—	—	—
Other Constituents				Cl = 0.04	$\text{SO}_3 = 0.08$		Cl = 0.03		Organic = tr.
	—	—	—	100.63	—	—	99.91	—	—
Less O = Cl, F, S	—	—	—	0.01	—	—	0.01	—	—
	100.94	100.1	—	100.62	100.36	—	99.90	101.08	99.695

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	331	332	333	334	335	336	337	338	339
RockName	China clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Fireclay
Locality	Birdwood, S.A.	Ulladulla, N.S.W.	Royal Park, Melbourne, Vic.	Kuring-gai, N.S.W.	Williams- town, S.A.	Charlotte Waters, N.T.	Frenchs Forest, Sydney, N.S.W.	W. of Ox- ford Falls, Frenchs Forest, N.S.W.	Williams- town, S.A.
Reference	56 , 18; 195 , 107	141 , 73	123 , 247	172 , 135	32 , 107; 88 , 63	88 , 70	121 , 244	189	32 , 108
Analyst	T. W. Dalwood	N.S.W. Dep. Mines	D. M. McCance	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	Not stated
Remarks	—	—	(Residual)	—	—	*Includes alunite decom- position	(Residual of Igneous Origin)	—	
SiO_2	43.88	43.86	43.82	43.72	43.70	43.62	43.6	43.5	43.48
Al_2O_3	38.96	38.77	28.76	27.78	41.71	38.62	37.8	34.6	43.89
Fe_2O_3	0.62	0.74	2.66	1.02	0.62	0.72	0.3	1.8	} 0.63
FeO	—	—	0.20	—	—	—	—	—	
MgO	0.03	0.14	0.03	—	0.14	0.20	—	—	0.24
CaO	0.06	0.70	0.58	—	0.02	abs.	—	—	0.24
Na_2O	0.32	abs.	0.90	—	0.08	0.14	—	—	0.04
K_2O	0.04	0.84	1.66	—	0.02	abs.	2.8	—	0.16
$\text{H}_2\text{O} +$	13.88	12.86	9.23	—	12.92	15.84*	9.7	—	11.39
$\text{H}_2\text{O} -$	2.16	1.42	7.56	—	0.81	1.21	2.1	—	0.58
CO_2	abs.	—	0.04	—	—	—	—	—	—
TiO_2	abs.	0.89	4.75	—	0.05	abs.	3.0	0.6	0.04
P_2O_5	—	—	0.05	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con- stituents	Cl=0.43	$\text{SO}_3 = \text{tr.}$							Cl=0.01
	100.38	—	—	—	—	—	—	—	—
Less O = Cl, F, S	0.09	—	—	—	—	—	—	—	—
	100.29	100.22	100.24	—	100.07	100.35	99.3		100.70

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	340	341	342	343	344	345	346	347	348
Rock Name	Clay	Clay	Clay	Fireclay	Clay	Clay	Clay	Clay	Ball Clay
Locality	Ulladulla, N.S.W.	Killara, 60 mls. S.W. of Louth, N.S.W.	Brookvale, near Manly, N.S.W.	Williamstown, S.A.	Birdwood, S.A.	6 miles W. of Queanbeyan, N.S.W.	1½ mls. W. of Cleveland, Qld	Frenchs Forest, Sydney, N.S.W.	Bolgart, W.A.
Reference	149, 142	154, 183	163, 178	32, 107	262, 76	176, 99	53, 100; 201, 141	121, 244	18, 213
Analyst	W. A. Greig	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated	W. S. Chapman	N.S.W. Dep. Mines	Qld Govt Anal.	G. T. See & P. Bayliss	Gillies
Remarks	—	—	—	—	—	—	*Loss on ignition	(Igneous residual)	—
SiO_2	43.45	43.40	43.36	43.28	43.24	43.24	43.2	43.1	43.10
Al_2O_3	39.21	36.92	35.90	42.92	39.22	35.03	35.5	36.0	39.56
Fe_2O_3	0.40	abs.	1.10	0.59	0.46	0.43	4.8	0.7	0.69
FeO	0.18	tr.	—		—		—	—	—
MgO	0.02	tr.	—	0.16	0.10	—	0.8	—	abs.
CaO	0.23	abs.	—	0.24	0.32	—	—	—	abs.
Na_2O	0.25	—	—	0.12	tr.	—	0.7	—	0.17
K_2O	0.17	—	—	0.48	tr.	—		0.7	0.64
$\text{H}_2\text{O} +$	13.88	18.64	—	10.55	14.08	—	13.6*	12.3	14.49
$\text{H}_2\text{O} -$	1.17	—	—	0.77	2.25	—	1.4	1.0	1.03
CO_2	—	—	—	abs.	—	—	—	—	—
TiO_2	1.05	—	3.80	1.49	abs.	abs.	—	5.7	0.44
P_2O_5	0.06	—	—	—	—	—	—	—	abs.
MnO	abs.	—	—	—	—	—	—	—	abs.
Other Constituents	$\text{V}_2\text{O}_5 = 0.03$ $\text{NaCl} = 0.06$	$\text{SO}_3 = 0.84$		Cl = abs.	Cl = 0.03				$\text{NaCl} = 0.13$ Sol. Salts = 0.08
	—	—	—	—	99.70	—	—	—	—
Less O = Cl, F, S	—	—	—	—	0.01	—	—	—	—
	100.16	99.80		100.60	99.69		100.0	99.5	100.33

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	349	350	351	352	353	354	355	356	357
RockName	Fireclay	Clay	Clay	Clay	'Flint Clay'	Clay	Clay	Clay	Clay
Locality	Williamstown, S.A.	Jervis Bay, N.S.W.	Adelaide, S.A.	Jervis Bay, N.S.W.	Arckaringa Ck, N.W. Division, S.A.	Jervis Bay, N.S.W.	Epping, Sydney, N.S.W.	5 miles E. of Tailem Bend, Eyres Pen., S.A.	Eyres Pen., S.A.
Reference	32, 107	121, 236	1, 5; 32, 107; 88, 63; 103, 27; 235, 15	189	88, 68	189	146, 205	103, 40	88, 56
Analyst	Not stated	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	S.A. Dep. Mines
Remarks	—	—	(Refractory)	—	*Loss on ignition includes SO_3	—	—	—	—
SiO_2	43.08	43.0	42.86	42.8	42.72	42.7	42.70	42.60	42.60
Al_2O_3	42.33	37.0	47.96	37.1	36.89	36.0	42.49	39.75	35.07
Fe_2O_3	0.44	1.8	0.30	11.4	0.67	1.4	0.90	0.69	0.67
FeO		—	nd.	—	—		0.22	—	—
MgO	0.32	0.2	0.12	—	0.22	—	0.14	abs.	0.60
CaO	0.12	0.3	0.04	—	0.26	—	0.40	abs.	0.42
Na_2O	0.38	0.1	0.18	—	0.40	—	0.25	1.35	0.98
K_2O	2.20	0.1	0.41	—	0.20	—	0.77	0.46	3.86
$\text{H}_2\text{O} +$	10.57	14.4	8.00	—	16.15*	—	10.80	13.55	10.51
$\text{H}_2\text{O} -$	0.42	1.5	0.60	—	2.46	—	1.55	1.39	4.86
CO_2	abs.	—	abs.	—	—	—	—	—	—
TiO_2	0.13	1.4	0.04	2.6	abs.	2.8	—	—	0.32
P_2O_5	—	—	—	—	—	—	—	abs.	—
MnO	—	—	—	—	—	—	tr.	—	—
Other Constituents	Cl=0.03	—	Cl=0.01	—	Cl=0.33	—	—	—	Cl=0.54
	[100.02]	—	—	—	100.30	—	—	—	100.43
Less O = Cl, F, S	0.01	—	—	—	0.07	—	—	—	0.11
	[100.01]	99.8	100.52	—	100.23	—	100.22	99.79	100.32

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$									
	358	359	360	361	362	363	364	365	366
Rock Name	Fireclay	Clay	Clay	Clay	Clay	Fireclay	Clay	Clay	Fireclay
Locality	Epping, Sydney, N.S.W.	Calca Station, S.A.	Mt Egerton, Vic.	St Ives, Sydney, N.S.W.	Gosford, N.S.W.	Williams-town, S.A.	Jervis Bay, N.S.W.	Long Bay, Sydney, N.S.W.	Williams-town, S.A.
Reference	149, 142	103, 40	114, 33	179, 104	148, 130	32, 108	189	175, 96	32, 108
Analyst	H. P. White	W. S. Chapman	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated
Remarks	—	—	—	—	—	—	—	—	(From shaft)
SiO_2	42.52	42.50	42.40	42.28	42.26	42.24	42.2	42.10	41.84
Al_2O_3	32.63	40.93	35.96	35.96	34.26	44.51	35.7	37.20	43.83
Fe_2O_3	3.00	—	0.35	1.30	0.51	} 0.50	1.8	—	} 0.70
FeO	0.18	—	abs.	—	0.09		—	—	
MgO	tr.	tr.	abs.	—	0.06	0.27	—	—	0.18
CaO	tr.	0.18	tr.	—	0.32	0.16	—	—	0.14
Na_2O	0.48	—	0.11	—	0.65	0.54	—	—	0.44
K_2O	1.82	—	tr.	—	0.11	0.26	—	—	0.18
$\text{H}_2\text{O} +$	12.29	} 16.41	11.93	—	12.66	10.57	—	—	12.27
$\text{H}_2\text{O} -$	1.15		8.22	—	4.50	1.19	—	—	0.71
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	5.55	—	tr.	5.00	4.80	0.25	2.6	—	2.11
P_2O_5	0.19	—	tr.	—	0.08	—	—	—	—
MnO	tr.	—	—	—	abs.	—	—	—	—
Other Constituents	$\text{V}_2\text{O}_5 = 0.01$ $\text{Cl} = 0.02$	—	—	—	$\text{SO}_3 = 0.09$ $\text{V}_2\text{O}_5 = 0.05$	$\text{Cl} = 0.02$	—	—	$\text{Cl} = 0.01$
	—	—	—	—	—	100.51	—	—	—
Less O = Cl, F, S	—	—	—	—	—	0.01	—	—	—
	99.84	100.02	[98.97]	—	100.44	100.50	—	—	102.41

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	367	368	369	370	371	372	373	374	375
Rock Name	Clay	Clay	Clay	Clay	Fireclay	Clay	China Clay (Kaolin)	Clay	Clay
Locality	2½ miles E. of Ringwood, Vic.	Elaine, Vic.	Mt Eger-ton, Vic.	Flinders Mine, Eyres Pen., S.A.	Williams-town, S.A.	Long Bay, Sydney, N.S.W.	Imbitcha Bore near Oodna-datta, S.A.	Jervis Bay, N.S.W.	N.E. of Wangat, N.S.W.
Reference	114, 37	114, 35	114, 33	103, 36	32, 108	175, 96	56, 18; 194, 102	121, 236	175, 96
Analyst	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	S.A. Dep. Mines	Not stated	N.S.W. Dep. Mines	T. W. Dalwood	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	(From dyke)	(From dyke)	—	—	—	—	—	—	*Mainly Al_2O_3
SiO_2	41.82	41.81	41.70	41.68	41.56	41.50	41.20	41.1	39.28
Al_2O_3	39.33	37.52	34.66	36.68	46.51	31.48	36.12	35.9	} 36.40*
Fe_2O_3	1.00	0.51	0.57	—	} 0.50	} 4.55	0.72	3.0	
FeO	0.13	0.10	abs.	—			—	—	
MgO	abs.	0.28	abs.	tr.	0.12	—	0.14	0.2	
CaO	abs.	abs.	abs.	0.50	0.38	—	0.04	0.3	—
Na_2O	0.08	0.19	0.10	—	0.42	—	0.32	0.1	—
K_2O	tr.	abs.	0.18	—	0.14	—	0.60	0.1	—
$\text{H}_2\text{O} +$	12.89	13.27	12.22	} 19.23	9.89	—	16.12	14.8	—
$\text{H}_2\text{O} -$	4.92	0.70	10.52		0.72	—	4.71	1.8	—
CO_2	—	—	—	—	—	—	abs.	—	—
TiO_2	pnd.	5.80	tr.	—	0.11	4.70	abs.	2.4	—
P_2O_5	—	0.44	abs.	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con-stituents	Cl = abs.	Cl = 0.16	Cl = tr.	—	Cl = 0.01	—	Cl = 0.08	—	—
	—	100.78	—	—	—	—	100.05	—	—
Less O = Cl, F, S	—	0.04	—	—	—	—	0.02	—	—
	100.17	100.74	99.95	—	100.36	—	100.03	99.7	—

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$							CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$		
	376	377	378	379	380	381	382	383	384
Rock Name	Bedded Clay	Clay	Clay	Clay	Bedded Clay	Clay	Clay	Clay	Clay,
Locality	Alberrie Ck, 15 mls. S.E. of Coward Cliff, S.A.	Calca Station, S.A.	Birdwood, S.A.	Jervis Bay, N.S.W.	15 miles S.E. Alberrie Ck Siding, S.A.	11 miles E. of Inverell, N.S.W.	Petrie, Qld.	Waratah, N.S.W.	Orange, N.S.W.
Reference	88, 31; 215, 112	103, 40	41, 73	189	88, 31	184, 105	53, 101	164, 184	189
Analyst	T. W. Dalwood	S.A. Dep. Mines	W. S. Chapman	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	Qld Govt Anal.	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	*Loss on ignition	—	—	—
SiO_2	39.08	37.44	36.08	34.2	32.40	11.6	66.2	59.00	57.4
Al_2O_3	34.73	37.78	47.52	44.6	33.56	66.7	24.3	20.44	20.7
Fe_2O_3	0.31	—	0.21	0.9	0.72	0.4	9.7	5.40	8.1
FeO	—	—	—	—	—	—	—	0.45	—
MgO	0.02	—	0.29	—	1.14	—	0.2	0.43	—
CaO	abs.	—	0.08	—	0.96	—	0.4	0.34	—
Na_2O	1.86	—	0.02	—	1.72	—	0.4	0.32	0.70
K_2O	0.08	—	0.22	—	2.06	—			1.67
$\text{H}_2\text{O} +$	12.18	19.12	13.03	—	13.55	15.1*	—	12.52	7.3
$\text{H}_2\text{O} -$	8.05		1.14	—	3.61	—	—	—	2.1
CO_2	—	—	abs.	—	—	—	—	—	—
TiO_2	0.04	—	1.63	2.9	abs.	2.4	—	0.72	0.8
P_2O_5	—	—	—	—	—	—	—	nd.	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Cl = 2.49 $\text{SO}_3 = 1.50$	—	Cl = 0.01	—	$\text{SO}_3 = 10.16$ Cl = 0.33	—	—	—	—
	—	—	—	—	100.21	—	—	—	—
Less O = Cl, F, S	—	—	—	—	0.07	—	—	—	—
	100.34	—	100.23	—	100.14	—	101.2	99.62	98.1

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$

	385	386	387	388	389	390	391	392	393
Rock Name	Bedded Clay	Clay	Clay*	Bedded Clay	Clay	Clay	Clay	Clay	Clay
Locality	Bellevue, W.A.	Grafton, N.S.W.	Homebush, Sydney, N.S.W.	Bellevue, W.A.	Adelaide, S.A.	Bourke, N.S.W.	Girilambone, N.S.W.	4 miles from North Shields, Eyres Pen., S.A.	Sans Souci, Sydney, N.S.W.
Reference	228, 105	121, 252	189	228, 105	103, 26	141, 73	29, 400	103, 36; 235, 16	149, 142
Analyst	H. Bowley	G. T. See & P. Bayliss	N.S.W. Dep. Mines	A. J. Robertson	W. S. Chapman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman	W. A. Greig
Remarks	*Loss on ignition	—	(Admixed with shale)	*Loss on ignition	—	(Indurated)	—	—	—
SiO_2	56.86	54.7	54.7	53.03	52.80	52.52	50.50	48.60	44.20
Al_2O_3	22.63	19.7	20.9	24.69	14.34	25.79	22.15	24.03	29.85
Fe_2O_3	7.64	5.3	8.6	7.71	5.88	7.48	6.21	9.68	4.91
FeO	—	—	—	—	—	—	2.46	—	0.45
MgO	0.40	—	0.8	0.49	0.48	0.54	1.04	0.40	0.75
CaO	0.05	—	0.8	tr.	0.24	0.68	0.30	0.26	0.54
Na_2O	—	—	0.2	—	0.80	abs.	0.27	1.16	0.46
K_2O	—	1.9	2.4	—	1.43	0.58	2.32	1.49	2.77
$\text{H}_2\text{O} +$	11.53*	7.9	7.3	13.13*	4.73	8.29	15.02	9.02	8.93
$\text{H}_2\text{O} -$	—	4.2	1.9	—	19.11	4.01	—	4.61	1.77
CO_2	—	—	0.9	—	abs.	—	—	abs.	—
TiO_2	—	1.1	0.6	—	0.36	—	—	1.23	5.08
P_2O_5	—	—	—	—	—	tr.	0.17	—	0.07
MnO	—	—	—	—	—	tr.	abs.	—	abs.
Other Constituents	—	—	Organic = 0.6	—	Cl = 0.15	Organic = tr.	—	Cl = 0.09	$\text{SO}_3 = 0.10$ $\text{V}_2\text{O}_5 = 0.06$ $\text{Cr}_2\text{O}_3 = 0.01$
Less O = Cl, F, S	—	—	—	—	100.32	—	—	100.57	—
	—	—	—	—	0.03	—	—	0.02	—
	99.11	94.8	99.7	99.05	100.29	99.89	100.44	100.55	99.95

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$

	394	395	396	397	398	399	400	401
Rock Name	Clay	Clay	Clay	Clay	Clay	Bole (unc- tuous red clay)	Clay	Clay
Locality	S. Para Dam Site, S.A.	S. Para Dam Site, S.A.	S. Para Dam Site, S.A.	Brookvale, near Manly, N.S.W.	Wingello, N.S.W.	Molong, N.S.W.	Near Tailem Bend, Eyres Pen., S.A.	Blue Tier, Tas.
Reference	130, 34	130, 34	130, 34	163, 178	93, 16; 106, 98	25, 259	103, 40	211, 29
Analyst	S.A. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. P. White	S.A. Dep. Mines	Tas. Dep. Mines
Remarks	*Loss on ignition	*Loss on ignition	*Loss on ignition	—	(Associated with Bauxite)	*Includes some sand	—	(From basic dyke) *Loss on ignition
SiO_2	43.94	42.94	42.76	42.60	41.80	40.74*	38.64	38.60
Al_2O_3	26.05	25.06	25.04	31.25	29.10	26.75	39.38	29.17
Fe_2O_3	8.42	9.81	9.21	5.50	9.57	8.30	6.92	5.72
FeO	—	—	—	—	—	abs.	—	1.55
MgO	1.98	1.68	2.00	—	—	0.69	0.06	0.72
CaO	abs.	0.44	0.40	—	—	0.68	0.27	abs.
Na_2O	0.19	0.22	0.34	—	—	0.39	nd.	0.25
K_2O	8.29	6.22	2.78	—	—	1.85	nd.	
$\text{H}_2\text{O} +$	8.76*	10.22*	11.06*	—	16.50	18.42	13.01	23.40*
$\text{H}_2\text{O} -$	1.66	1.76	4.34	4.28	—		1.13	—
CO_2	—	—	—	—	—	—	—	—
TiO_2	0.75	0.83	0.57	—	—	0.45	—	0.80
P_2O_5	—	—	—	—	—	tr.	—	—
MnO	—	—	—	—	—	—	—	—
Other Con- stituents	—	—	—	—	—	CuO = 1.41 Cl = tr. SO ₃ = abs.	—	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—
	100.04	99.18	98.50	—	—	99.68	99.41	100.21

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO = 1% – 5% : $\text{Fe}_2\text{O}_3 < 5\%$

	402	403	404	405	406	407	408	409	410
Rock Name	Clay	Clay	Clay	Fireclay	Clay	Clay	Clay	Clay	Clay
Locality	Caltowie, S.A.	8 miles from Kinscote, S.A.	James-town, S.A.	Woonona, N.S.W.	Swan Bay, Richmond, R, N.S.W.	Wollongong, N.S.W.	Hawkesbury District, N.S.W.	22 miles N. of Roma, Qld.	Casino, District, N.S.W.
Reference	103, 41	103, 34; 235, 16	88, 71	139, 53	138, 59	139, 53	140, 63	35	139, 52
Analyst	W. S. Chapman	W. S. Chapman	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	A. McClure	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	62.86	61.56	59.22	58.80	56.50	53.80	52.96	51.09	49.72
Al_2O_3	22.09	22.94	23.10	23.33	25.39	21.77	25.45	21.94	27.62
Fe_2O_3	0.73	0.98	1.56	1.10	1.11	0.37	2.42	2.13	1.80
FeO	—	—	—	—	—	0.14	—	0.21	—
MgO	0.10	0.10	1.13	0.65	2.08	12.89	1.52	1.80	1.65
CaO	3.44	3.08	1.12	1.06	1.45	1.17	1.18	1.69	2.46
Na_2O	0.37	0.26	0.23	0.15	0.29	tr.	2.02	0.88	0.60
K_2O	0.06	0.77	1.56	2.09	2.71	0.40	2.23	0.59	1.30
$\text{H}_2\text{O} +$	8.42	7.06	7.74	7.39	7.12	8.13	3.82	8.19	7.41
$\text{H}_2\text{O} -$	0.94	0.86	1.06	2.05	3.76	1.87	8.22	10.50	7.74
CO_2	1.40	2.40	—	—	—	—	—	nd.	—
TiO_2	—	0.62	2.20	—	tr.	abs.	—	0.28	—
P_2O_5	—	—	—	0.07	tr.	abs.	tr.	0.04	tr.
MnO	—	—	—	tr.	abs.	tr.	tr.	0.02	tr.
Other Constituents	NaCl = 0.03	Cl = 0.05	—	$\text{SO}_3 = 0.11$ Organic = 3.71	—	—	—	—	—
Less O = Cl, F, S	—	100.68 0.01	—	—	—	—	—	—	—
	100.44	100.67	98.92	100.51	100.41	100.54	99.82	99.36	100.30

TABLE SM — CLAYS (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

	CaO = 1% – 5% Fe ₂ O ₃ < 5%		CaO = 1% – 5% : Fe ₂ O ₃ = 5% – 10%					
	411	412	413	414	415	416	417	418
RockName	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	Murrurundi, N.S.W.	Tumut District, N.S.W.	Griffith, N.S.W.	Mirrarrmitta, S.A.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Lat. 30°43'S Long. 138°25'E N. Leigh Ck, S.A.	Mandres Plantation Telvalue R. Area, New Britain, T. P. & N.G.	Mandres Plantation Telvalue R. Area, New Britain, T. P. & N.G.
Reference	140, 63	141, 73	36	103, 43	35	103, 43	35	35
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	C. J. Carrel	S.A. Dep. Mines	A. McClure	W. S. Chapman	A. McClure	A. McClure
SiO ₂	45.09	41.24	58.46	53.35	52.58	51.68	51.63	51.55
Al ₂ O ₃	15.76	35.10	20.95	21.35	17.56	22.25	17.98	18.96
Fe ₂ O ₃	0.48	0.68	7.62	5.87	9.94	5.96	9.22	6.56
FeO	—	abs.	—	—	—	—	—	—
MgO	13.61	1.33	1.79	1.00	1.65	0.68	1.32	1.19
CaO	1.65	1.80	1.13	1.00	2.13	4.56	2.12	2.88
Na ₂ O	tr.	abs.	0.72	nd.	—	0.25	—	—
K ₂ O	tr.	1.96	1.34	nd.	—	4.88	—	—
H ₂ O +	8.21	11.70	7.35*	7.74	7.32*	4.63	9.16*	9.51*
H ₂ O –	15.04	6.70	°	2.18	6.59	0.71	6.00	6.94
CO ₂	—	—	—	—	—	3.52	—	—
TiO ₂	—	—	0.81	—	—	0.69	—	—
P ₂ O ₅	—	abs.	—	—	—	—	—	—
MnO	tr.	tr.	—	—	—	—	—	—
Other Constituents		SO ₃ = abs.				Cl = 0.64		
	—	—	—	—	—	100.45	—	—
Less O = Cl, F, S	—	—	—	—	—	0.14	—	—
	[99.84]	100.51	100.17	[92.49]	97.77	100.31	97.43	97.59

(6'-15' below surface).

*Loss on ignition.

°Dried at 110°C.

TABLE SN — FERRUGINOUS CLAYS (Total $\text{Fe}_2\text{O}_3 > 10\%$)a. $\text{Fe}_2\text{O}_3 = 10\% - 20\%$

CaO < 1%									
	1	2	3	4	5	6	7	8	9
Rock Name	Bedded Clay	Clay	Kaolinized Lode Stuff	Soapy Clay	Clay	Clay	Clay	Ferruginous Clay	Clay
Locality	Bellevue, W.A.	Stockwell, N. of North Para R., S.A.	Kalgoorlie, W.A.	Parkes, N.S.W.	Carlton, Sydney, N.S.W.	Mirramitta, S.A.	Carlton, Sydney, N.S.W.	Iron Knob, S.A.	New Hanover T.P. & N.G.
Reference	228, 104	176, 56	18, 216	139, 53	187, 94	103, 43	187, 94	101, 35; 131, 72	35
Analyst	H. Bowley	T. W. Dalwood	E. S. Simpson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	Not stated	S. Baker
Remarks	*Loss on ignition	—	—	—	*Loss on ignition	—	*Loss on ignition	—	*Dried at 105°C.
SiO_2	60.70	69.54	56.85	50.68	47.1	42.74	40.2	39.28	38.1
Al_2O_3	17.26	8.61	13.66	18.71	24.8	23.30	26.2	31.31	30.8
Fe_2O_3	11.15	10.61	11.79	12.51	12.9	17.70	15.7	11.34	13.1
FeO	—	0.27	5.38	abs.	0.4	—		—	—
MgO	0.29	1.50	2.69	2.28	—	0.42	—	0.44	—
CaO	abs.	0.49	0.47	0.52	—	0.78	—	0.32	—
Na_2O	—	4.69	0.97	1.34	—	nd.	—	0.05	—
K ₂ O	—	2.11	1.50		—	nd.	—	5.70	—
$\text{H}_2\text{O} +$	10.07*	2.15	4.00	4.62	13.8*	8.74	16.4*	7.59	—
$\text{H}_2\text{O} -$	—	—	0.58	7.65	—	1.92	—	1.28	*
CO_2	—	—	0.08	—	—	—	—	abs.	—
TiO_2	—	0.92	1.51	—	1.3	—	1.1	2.39	0.25
P_2O_5	—	—	0.35	tr.	—	—	—	—	—
MnO	—	—	abs.	tr.	—	—	—	—	—
Other Constituents		$\text{SO}_3 = 0.01$ $\text{Cl} = 0.02$	$\text{NaCl} = 0.10$ $\text{SO}_3 = 0.10$ $\text{Cr}_2\text{O}_3 = 0.06$	$\text{SO}_3 = 1.69$				$\text{Cl} = 0.15$	$\text{NiO} = 0.15$
	—	—	—	—	—	—	—	99.85	—
Less O = Cl, F, S	—	—	—	—	—	—	—	0.03	—
	99.47	100.57	100.09	100.00	100.3	95.60	99.6	99.82	

TABLE SN — FERRUGINOUS CLAYS (Total $\text{Fe}_2\text{O}_3 > 10\%$)a. $\text{Fe}_2\text{O}_3 = 10\% - 20\%$

Rock Name	CaO < 1%					CaO = 1% - 5%			
	10	11	12	13	14	15	16	17	18
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
Locality	New Hanover, T.P. & N.G.	5 mls. S.E. of Goulburn, N.S.W.	New Hanover, T.P. & N.G.	New Hanover, T.P. & N.G.	New Hanover, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.
Reference	35	164, 184	35	35	35	35	35	35	35
Analyst	S. Baker	N.S.W. Dep. Mines	S. Baker	S. Baker	S. Baker	A. McClure	A. McClure	A. McClure	A. McClure
Remarks	*Dried at 105°C.		*Dried at 105°C.	*Dried at 105°C.	*Dried at 105°C.	*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition
SiO_2	33.7	32.58	24.2	23.5	20.0	56.12	54.88	53.50	52.61
Al_2O_3	30.3	21.20	40.7	36.5	38.7	16.59	16.44	18.56	18.45
Fe_2O_3	17.3	1.30	14.4	19.8	18.5	10.83	11.36	10.31	10.83
FeO	—	12.60	—	—	—	—	—	—	—
MgO	—	tr.	—	—	—	1.94	1.97	1.63	1.88
CaO	—	tr.	—	—	—	2.43	2.79	1.73	2.11
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	—	22.14	—	—	—	6.07*	8.98*	7.12*	7.61*
$\text{H}_2\text{O} -$	*		*	*	*	3.61	1.92	5.87	4.57
CO_2	—		—	—	—	—	—	—	—
TiO_2	0.3	—	0.3	1.0	0.4	—	—	—	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	NiO = 0.08	$\text{FeCO}_3 = \text{p.}$	NiO = 0.14	NiO = 0.10	NiO = 0.09				
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
						97.59	98.34	98.72	98.06

TABLE SN — FERRUGINOUS CLAYS (Total $\text{Fe}_2\text{O}_3 > 10\%$)

a. $\text{Fe}_2\text{O}_3 = 10\% - 20\%$							b. $\text{Fe}_2\text{O}_3 > 20\%$	
CaO = 1% - 5%							CaO < 1%	
	19	20	21	22	23	24	1	2
Rock Name	Clay	Clay	Clay	Clay	Bole	Bole	Clay	Clay
Locality	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	Homebush, Sydney, N.S.W.	Mandres Plantation, Telvalue R. Area, New Britain, T.P. & N.G.	4 mls. from Boggabri, towards Baan Baa, N.S.W.	1 mile N. of Tambar Springs, N.S.W.	Marulan, N.S.W.	Surveyors' Pt., Yorke Pen., S.A.
Reference	35	35	189	35	156, 188	172, 136	156, 185	103, 35; 235, 13
Analyst	A. McClure	A. McClure	N.S.W. Dep. Mines	A. McClure	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chapman
Remarks	*Loss on ignition	*Loss on ignition	—	*Loss on ignition	*Plus undet. & Organic	*Mainly K_2O *Loss on ignition	—	—
SiO_2	52.58	52.53	51.9	50.00	42.53	41.34	42.38	39.76
Al_2O_3	19.31	16.38	18.7	18.25	20.87	21.40	24.57	9.05
Fe_2O_3	10.43	11.50	11.7	12.33	10.30	12.80	21.00	30.64
FeO	—	—	—	—	tr.	—	0.26	—
MgO	1.93	1.55	1.5	2.23	2.91	2.87	0.35	0.40
CaO	1.88	3.18	1.2	2.48	1.31	1.42	0.20	0.10
Na_2O	—	—	0.6	—	0.75	} 3.91*	0.18	1.49
K_2O	—	—	2.3	—	1.79		0.12	1.72
$\text{H}_2\text{O} +$	7.52*	6.30*	6.4	7.22*	19.54*	} 16.26°	} 11.28	7.94
$\text{H}_2\text{O} -$	6.22	5.40	3.8	5.56	—			5.60
CO_2	—	—	0.1	—	—	—	0.02	—
TiO_2	—	—	1.2	—	—	—	pnd.	0.61
P_2O_5	—	—	—	—	—	—	pnd.	—
MnO	—	—	—	—	—	—	—	—
Other Constituents	—	—	Organic = 0.1	—	—	—	—	$\text{SO}_3 = 2.38$ $\text{Cl} = 0.66$
Less O = Cl, F, S	—	—	—	—	—	—	—	100.35
	99.87	96.84	99.5	98.07	100.00	100.00	100.36	100.20

TABLE SN — FERRUGINOUS CLAYS (Total $\text{Fe}_2\text{O}_3 > 20\%$)

b. $\text{Fe}_2\text{O}_3 > 20\%$								
CaO < 1%								
Rock Name	3	4	5	6	7	8	9	10
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Ferruginous Clay	Ferruginous Clay
Locality	New Hanover, T.P. & N.G.	Sherlock, S.A.	Kor-Kuperrimul Creek, Bacchus Marsh, Vic.	Wingello, N.S.W.	New Hanover, T.P. & N.G.	New Hanover, T.P. & N.G.	6 miles E. of Melrose, N.S.W.	Balmain, Sydney, N.S.W.
Reference	35	103, 34	105, 140	93, 16; 106, 98	35	35	179, 104	140, 61
Analyst	S. Baker	W. S. Chapman	R. Jacobson	N.S.W. Dep. Mines	S. Baker	S. Baker	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*Dried at 105° C.	—	(Between basalt flows)	Associated with Bauxite	*Dried at 105° C.	*Dried at 105° C.	*Loss on ignition	—
SiO_2	31.3	28.98	26.01	23.93	21.3	20.0	9.74	6.16
Al_2O_3	32.3	28.83	28.27	24.95	34.6	37.4	5.54	23.65
Fe_2O_3	21.4	23.56	22.38	36.82	24.6	22.7	73.90	44.67
FeO	—	—	0.57	abs.	—	—	—	tr.
MgO	—	0.40	1.55	0.25	—	—	—	0.79
CaO	—	0.20	0.71	0.66	—	—	—	abs.
Na_2O	—	0.46	—	—	—	—	—	—
K_2O	—	0.04	—	—	—	—	—	—
$\text{H}_2\text{O} +$	—	10.21	12.06	10.39	—	—	10.64*	13.04
$\text{H}_2\text{O} -$	*	3.45	—	1.68	*	*	—	5.16
CO_2	—	abs.	tr.	—	—	—	—	—
TiO_2	—	3.47	3.03	1.01	1.0	0.9	nd.	—
P_2O_5	—	pnd.	abs.	0.10	—	—	nd.	tr.
MnO	—	—	tr.	—	—	—	—	4.33
Other Constituents	NiO = 0.13	Cl = 0.63		S = tr. Fe = 25.77	NiO = 0.14	NiO = 0.12		CoO = 0.85 NiO = 0.67 $\text{Cr}_2\text{O}_3 = 0.30$
	—	100.27	—	—	—	—	—	—
Less O = Cl, F, S	—	0.13	—	—	—	—	—	—
	—	100.14	—	—	—	—	—	99.62

TABLE SO — MISCELLANEOUS CLAYS

	1	2	3	4	5	6	7	8	9
Rock Name	Fuller's Earth	Bentonite	Impure Bentonite	Bentonite	Clay containing Gypsum	Fuller's Earth	Impure Bentonite	Impure Bentonite	Impure Bentonite
Locality	5 mls. N.W. of Boggabri, N.S.W.	Muswell-brook, N.S.W.	Marulan, N.S.W.	Wingen, N.S.W.	Simmons-ton, 20 mls. N.N.E. of Quorn, S.A.	4½ mls. S.E. of Baan Baa, N.S.W.	Boggabri, N.S.W.	Trida, N.S.W.	Trida, N.S.W.
Reference	156, 188	121, 271	121, 271	121, 271	78, 77	207, 17	121, 271	121, 271	121, 271
Analyst	W. A. Greig	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	S.A. Dep. Mines	J. C. H. Mingaye	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO ₂	65.48	64.5	64.1	63.3	60.96	58.02	58.0	57.6	57.1
Al ₂ O ₃	12.18	16.4	18.2	16.7	12.10	16.36	14.9	16.5	17.0
Fe ₂ O ₃	3.90	3.0	2.6	4.8	0.93	4.50	4.2	5.7	5.6
FeO	0.27	—	—	—	0.11	tr.	—	—	—
MgO	1.72	1.7	—	0.3	0.52	2.37	1.9	—	—
CaO	1.13	—	—	0.8	7.84	1.34	4.3	—	—
Na ₂ O	0.92	—	—	—	0.55	0.94	—	—	—
K ₂ O	0.36	0.5	2.6	2.3	1.59	0.24	0.6	2.4	2.4
H ₂ O +	5.58	6.9	6.1	3.1	4.08	16.14	7.0	6.7	6.3
H ₂ O —	8.44	5.5	2.9	5.5	—	—	4.7	6.2	6.7
CO ₂	0.06	1.8	abs.	1.0	—	—	4.4	0.4	0.3
TiO ₂	—	0.1	0.7	1.1	0.57	pnd.	0.3	0.7	0.7
P ₂ O ₅	—	—	—	—	—	pnd.	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents					SO ₃ = 10.37 Cl = 0.35				
	—	—	—	—	99.97	—	—	—	—
Less O = Cl, F, S	—	—	—	—	0.07	—	—	—	—
	100.04	100.4	97.2	98.9	99.90	99.91	100.3	96.2	96.1

TABLE SO — MISCELLANEOUS CLAYS

	10	11	12	13	14	15	16	17	18
Rock Name	Bentonite Clay	Bentonite	Bentonite	Bentonite Clay	Fuller's Earth	Fuller's Earth	Fuller's Earth	Fuller's Earth	Bentonite Clay
Locality	Cardabia, W.A.	Muswellbrook, N.S.W.	Wingen, N.S.W.	Swansea, N.S.W.	Dubbo, N.S.W.	Wingen, N.S.W.	Coonabarabran, N.S.W.	Boggabri, N.S.W.	March- agee, W.A.
Reference	90, 95	121, 271	121, 271	121, 271	121, 271	24, 30; 139, 53	176, 99	157, 205	90, 94
Analyst	D. Burns	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines	W. G. Stone	N.S.W. Dep. Mines	D. Burns
Remarks	—	—	—	—	—	—	°Plus undetermined *Loss on ignition	—	—
SiO ₂	53.51	53.0	51.6	51.2	50.9	50.61	50.10	46.96	46.80
Al ₂ O ₃	17.65	19.4	16.9	28.0	24.4	19.35	20.90	20.53	5.01
Fe ₂ O ₃	8.38	6.3	5.6	1.6	3.6	3.55	} 2.90	2.80	2.62
FeO	0.08	—	—	—	—	abs.		0.09	0.54
MgO	2.22	1.3	1.3	—	1.4	3.24	0.66	2.02	18.19
CaO	0.18	—	3.6	—	0.2	1.37	1.06	5.56	5.15
Na ₂ O	1.53	—	—	—	—	0.47	} 4.98°	2.07	1.34
K ₂ O	1.29	0.3	0.5	1.1	0.8	0.92		1.11	0.28
H ₂ O+	5.87	10.6	6.4	7.1	9.0	6.45	18.90*	6.48	6.33
H ₂ O—	7.06	8.5	8.6	7.3	7.6	13.73	—	7.94	9.03
CO ₂	0.26	abs.	5.4	—	abs.	—	—	4.14	3.97
TiO ₂	0.67	0.1	0.4	0.4	1.7	—	0.50	0.36	0.29
P ₂ O ₅	—	—	—	—	—	tr.	—	—	—
MnO	—	—	—	—	—	abs.	—	0.05	0.08
Other Constituents	C=0.48 SO ₃ =0.58 Cl=0.41					SO ₃ =abs.			C=0.50 SO ₃ =0.10 Cl=0.44
	100.17	—	—	—	—	—	—	—	100.67
Less O= Cl, F, S	0.09	—	—	—	—	—	—	—	0.09
	100.08	99.5	100.3	96.7	99.6	99.69	100.00	100.11	100.58

TABLE SO — MISCELLANEOUS CLAYS

	19	20	21	22	23
Rock Name	Fuller's Earth	Fuller's Earth	Fuller's Earth	Alunitic Clay	Alunitic Clay
Locality	Trentham, Vic.	Dubbo, N.S.W.	Boggabri, N.S.W.	18 mls. E. of Wirrealpa Head Station, S.A.	18 mls. E. of Wirrealpa Head Station, S.A.
Reference	83 , 43	121 , 271	165 , 125	88 , 80	88 , 80
Analyst	P. G. Bayly	G. T. See & P. Bayliss	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines
Remarks	—	—	—	—	—
SiO ₂	46·06	43·2	41·70	31·72	30·28
Al ₂ O ₃	28·21	27·0	13·51	32·93	37·34
Fe ₂ O ₃	3·04	8·1	4·30	0·87	0·34
FeO	0·30	—	0·17	—	—
MgO	tr.	1·2	2·09	0·42	0·14
CaO	0·71	0·3	12·78	0·06	0·06
Na ₂ O	2·64	—	0·80	2·20	1·94
K ₂ O	1·53	0·3	0·52	2·56	2·66
H ₂ O +	8·15	11·7	7·58	14·80	13·36
H ₂ O —	7·17	5·0	5·86	4·33	2·62
CO ₂	—	abs.	9·50	—	—
TiO ₂	—	2·9	0·65	0·16	0·22
P ₂ O ₅	0·21	—	0·24	—	—
MnO	—	—	0·12	—	—
Other Constituents	SO ₃ = 0·05 Cl = tr.		SO ₃ = 0·02	SO ₃ = 9·06 Cl = 2·21	SO ₃ = 11·34 Cl = 0·12
	—	—	—	—	—
Less O = Cl, F, S	—	—	—	0·48	0·03
	98·07	99·7	99·84	101·32	100·42

TABLE SP — INCOMPLETE AND OLD CLAY ANALYSES

	1	2	3	4	5
Rock Name	Clay	Clay	Clay	Clay	Fireclay
Locality	Ida Bay, Tas.	Ida Bay, Tas.	Ida Bay, Tas.	Ida Bay, Tas.	Lal Lal, Vic.
Reference	—	—	—	—	—
Analyst	A. J. Willcoxson	A. J. Willcoxson	A. J. Willcoxson	A. J. Willcoxson	C. Wood
Remarks	*Plus undet. °Plus Organic	*Plus undet. °Plus Organic	*Plus undet. °Plus Organic	*Plus undet.	—
SiO ₂	63.47	58.90	53.30	45.22	0.53
Al ₂ O ₃	} 23.71	} 22.00	} 34.52	} 29.29	93.93
Fe ₂ O ₃					—
FeO	—	—	—	—	—
MgO	1.08	1.00	2.28	1.93	—
CaO	0.92	0.85	1.44	1.22	—
Na ₂ O	} 1.38*	} 1.28*	} 0.19*	} 0.17*	—
K ₂ O					—
H ₂ O+	9.44°	8.76°	8.27°	7.02	5.80
H ₂ O—	abs.	7.21	abs.	15.15	—
CO ₂	—	—	—	—	—
TiO ₂	—	—	—	—	—
P ₂ O ₅	—	—	—	—	—
MnO	—	—	—	—	—
Other Constituents					
	—	—	—	—	—
Less O= Cl, F, S	—	—	—	—	—
	100.00	100.00	100.00	100.00	100.26

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 < 5\%$

	1	2	3	4	5	6	7	8	9
RockName	Shale <i>Wianamatta Shale</i>	Shale	Shale	Clay shale	Clay shale	Clay shale	Concretionary Ore-bed	Sandy shale	Claystone
Locality	Parramatta, Sydney, N.S.W.	Longwood, S.A.	Towrang, N.S.W.	Melbourne Area, Vic.	Towrang, N.S.W.	Cobborah, N.S.W.	Mt Oxide, Qld.	Mt Oxide, Qld.	6 mls W. of Mt Boppy Stn. N.S.W.
Reference	29, 402; 137, 61	104, 37	144, 188	114, 41	145, 188	161, 194	13, 31	13, 31	4, 19
Analyst	N.S.W. Dep. Mines	Not stated	N.S.W. Dep. Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Not stated	Not stated	W. G. Stone
Remarks	—	*Dried	(Bleached)	—	—	—	—	—	*Spectroscopic
SiO_2	85.35	83.86	79.54	78.87	78.82	78.72	76.7	76.5	76.33
Al_2O_3	8.81	10.76	12.53	12.46	13.27	13.83	12.1	13.5	13.35
Fe_2O_3	0.79	1.72	1.26	1.06	1.53	0.50	—	—	1.95
FeO	abs.	—	—	0.07	—	0.18	—	—	0.36
MgO	0.43	0.30	0.61	abs.	0.50	0.36	0.09	0.59	0.63
CaO	abs.	0.58	0.34	abs.	0.26	0.36	0.25	0.41	0.07
Na_2O	tr.	tr.	0.50	0.45	0.03	0.14	—	—	0.51
K_2O	1.48	1.70	1.82	0.41	2.93	0.31	—	—	2.74
$\text{H}_2\text{O} +$	2.35	1.32	2.97	3.99	2.49	5.02	—	—	3.12
$\text{H}_2\text{O} -$	1.05	abs.*	0.67	1.99	0.39	0.54	—	—	0.46
CO_2	—	—	—	—	—	—	—	—	0.02
TiO_2	tr.	0.26	—	—	—	0.20	—	—	0.60
P_2O_5	tr.	—	0.02	—	0.06	0.03	—	—	0.10
MnO	tr.	—	tr.	—	tr.	abs.	—	—	0.03
Other Constituents		Cl=0.01	$\text{SO}_3=0.04$	Cl=0.63			Cu=1.2 Fe=1.7 S=0.6 Mn=0.1	Cu=0.2 Fe=3.5 Mn=0.3	BaO=0.03 Cl=tr. SrO=pnd* $\text{Li}_2\text{O}=\text{pnd}^*$ CuO=tr.
	—	—	—	99.93	—	—	—	—	—
Less O= Cl, F, S	—	—	—	0.13	—	—	—	—	—
	100.26	[100.51]	100.30	99.80	100.28	100.19	—	—	100.30
Age	Triassic						Pre-cambrian	Pre-cambrian	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Clay shale	Shale	Siliceous Claystone	Shale	Shale	Shale	Shale	Shale	Shale
Locality	Cobborah, N.S.W.	Between Carlos Gap & Weengah, N.S.W.	3 mls. W. of Dunedoo, N.S.W.	25 chs S. of Carlos Gap, N.S.W.	Orange, N.S.W.	25 chs S. of Carlos Gap, N.S.W.	Between Carlos Gap & Weengah N.S.W.	25 chs S. of Carlos Gap, N.S.W.	Between Carlos Gap & Weengah, N.S.W.
Reference	161, 194	166, 76	189	166, 76	121, 263	166, 76	166, 76	166, 76	166, 76
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	76.30	76.00	75.2	75.10	75.0	74.66	74.44	73.54	73.48
Al_2O_3	14.40	14.02	15.0	13.56	11.7	14.46	14.12	13.72	14.64
Fe_2O_3	0.40	0.70	0.7	1.00	3.9	1.10	1.80	2.30	2.00
FeO	0.54	0.54	—	0.54	—	0.63	0.54	0.63	0.36
MgO	0.25	0.42	—	0.43	—	0.46	0.37	0.36	0.33
CaO	0.42	0.32	—	0.53	—	0.28	0.74	0.20	0.14
Na_2O	0.13	0.31	—	0.36	0.2	0.31	0.24	0.40	0.48
K_2O	0.47	2.57	—	2.95	2.6	2.83	2.69	2.74	2.73
H_2O^+	5.29	3.60	—	3.28	3.5	3.36	3.04	5.12	4.62
H_2O^-	0.73	—	—	—	0.5	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.32	0.70	0.4	0.72	0.7	0.72	0.71	0.64	0.60
P_2O_5	0.06	tr.	—	tr.	—	tr.	tr.	tr.	tr.
MnO	abs.	tr.	—	tr.	—	tr.	tr.	tr.	tr.
Other Constituents	Organic = 0.94	Organic = 1.10	—	Organic = 1.88	—	Organic = 1.52	Organic = 1.62	Organic = 0.56	Organic = 0.82
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	100.25	100.28	—	100.35	[98.1]	100.33	100.31	100.21	100.20
Age		Permian		Permian	Silurian	Permian	Permian	Permian	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 < 5\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Shale	Shale	Shale	Shale	Clay shale	Shale	Clay shale	Shale	Shale
Locality	Between Carlos Gap & Weengah, N.S.W.	Goulburn, N.S.W.	25 chs S of Carlos Gap, N.S.W.	N.E. of Capertee, N.S.W.	Clandulla, N.S.W.	N.E. of Capertee, N.S.W.	Near Rylstone, N.S.W.	N.E. of Capertee, N.S.W.	Neath, near Cessnock, N.S.W.
Reference	166, 76	121, 264	166, 76	171, 104	168, 99	166, 76	168, 99	166, 76	121, 261
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	73.36	73.3	72.94	72.82	72.50	72.50	72.20	72.00	72.0
Al_2O_3	14.39	14.4	13.64	14.23	11.51	12.83	12.58	13.58	12.7
Fe_2O_3	1.90	2.5	3.10	3.50	3.50	2.60	2.90	2.50	3.1
FeO	0.63	—	0.72	0.54	0.63	0.81	0.63	0.54	—
MgO	0.49	—	0.40	0.49	1.84	1.10	0.49	1.01	—
CaO	0.18	—	0.30	0.30	0.95	0.34	0.60	0.06	—
Na_2O	0.73	—	0.46	0.25	0.86	0.45	0.85	0.30	—
K_2O	2.53	4.4	2.51	2.68	3.53	3.24	3.31	3.48	1.8
$\text{H}_2\text{O}+$	5.12	3.9	4.08	4.64	4.20	1.82	5.80	2.08	3.2
$\text{H}_2\text{O}-$	—	0.7	—	—	—	—	—	—	2.5
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.45	0.5	0.64	0.55	0.65	0.60	0.70	0.60	0.6
P_2O_5	tr.	—	tr.	—	—	0.07	—	tr.	—
MnO	tr.	—	tr.	—	—	tr.	—	tr.	—
Other Constituents	Organic = 0.50	—	Organic = 1.40	—	—	Organic = 0.26 $\text{CaCO}_3 = 3.57$	—	Organic = 1.04 $\text{CaCO}_3 = 3.14$	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
Age	100.28 Permian	[99.7] Silurian	100.19 Permian	100.00 Permian	100.17 Permian	100.19 Permian	100.06 Permian	100.33 Permian	95.9 Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$

	CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$			CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$					
Rock Name	28 Shale	29 Shale	30 Shale	31 Shale	32 Shale	33 Shale	34 Shale	35 Clay shale	36 Shale <i>Narrabeen Shale</i>
Locality	Near Ween-gah, Carlos Gap, N.S.W.	Goulburn, N.S.W.	Maitland, N.S.W.	12 mls S.E. of Tamworth, N.S.W.	Brogans Creek, N.S.W.	Orange, N.S.W.	Orange, N.S.W.	Mt Buckaroo, N.E. of Mudgee, N.S.W.	Newport, N.S.W.
Reference	166, 76	121, 264	121, 259	160, 217	166, 76	121, 263	121, 263	157, 202	179, 102
Analyst	N.S.W. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	J. C. H. Mingaye	N.S.W. Dep. Mines	G. T. See & P. Bayliss	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	°Plus undet. *Loss on ignition
SiO_2	71.86	71.2	67.8	76.48	75.84	73.9	72.2	71.80	71.30
Al_2O_3	14.33	13.3	13.6	7.59	10.13	6.6	10.4	13.19	13.37
Fe_2O_3	3.20	4.0	1.5	8.00	4.30	7.5	5.7	4.75	} 5.00
FeO	0.54	—	—	0.27	0.63	—	—	0.50	
MgO	0.52	—	—	tr.	0.88	—	—	0.87	0.79
CaO	0.24	—	—	0.34	0.82	—	—	0.18	0.20
Na_2O	0.33	—	—	0.64	0.52	—	0.1	0.25	} 2.06°
K_2O	2.67	3.7	2.5	0.94	2.79	0.6	0.5	3.82	
$\text{H}_2\text{O} +$	5.56	3.8	4.6	4.24	3.32	4.6	5.6	3.13	6.60*
$\text{H}_2\text{O} -$	—	1.6	4.0	0.98	—	1.3	3.5	0.27	—
CO_2	—	—	—	abs.	—	—	—	—	—
TiO_2	0.35	0.7	0.5	0.55	0.37	1.1	1.0	0.50	0.65
P_2O_5	tr.	—	—	0.09	tr.	—	—	0.17	—
MnO	tr.	—	—	0.09	tr.	—	—	0.04	—
Other Constituents	Organic = 0.52			(Ni Co) O = 0.02 $\text{SO}_3 = \text{tr.}$	Organic = 0.54			Undet. = 0.53	$\text{SO}_3 = 0.03$
Age	100.12 Permian	98.3 Silurian	94.5 Permian	100.23 —	100.14 Permian	95.6 Silurian	99.0 Silurian	100.00 —	100.00 Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a — SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$

CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$						CaO = 1% — 5% : $\text{Fe}_2\text{O}_3 = 1\% - 5\%$		
	37	38	39	40	41	42	43	44
Rock Name	Shale <i>Wiana-matta Shale</i>	Clay shale	Shale	Shale	Shale	Mudstone	Shale <i>Wiana-matta Shale</i>	Shale
Locality	1½ mls W. of Auburn, Sydney, N.S.W.	Attunga, N.S.W.	Orange, N.S.W.	Crookwell, N.S.W.	Parkes, N.S.W.	Huskisson, Jervis Bay, N.S.W.	5 mls from Picton to- wards The Oaks, N.S.W.	Muswell- brook, N.S.W.
Reference	160, 216	171, 104	121, 263	121, 266	121, 265	51, 172	152, 182	172, 136
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss	G. T. See & P. Bayliss	B. V. Barton	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	°Loss on ignition	—	—	—	—	*Plus undet. °Quoted as CaCO_3	*Plus un- deter- mined
SiO_2	70.60	70.36	69.1	68.8	62.1	85.83	78.18	73.70
Al_2O_3	13.45	12.83	12.7	12.2	10.4	} 6.87	} 7.00	11.89
Fe_2O_3	5.75	} 5.95	7.3	5.4	9.6			} 1.40
FeO	0.31		—	—	—			
MgO	0.54	1.44	—	—	—	1.13	2.16*	1.05
CaO	0.50	0.98	—	—	—	1.16	3.06°	1.12
Na_2O	0.79	} 2.50	0.4	—	—	0.45	—	} 7.21*
K_2O	1.14		2.7	2.5	2.2	1.20	—	
$\text{H}_2\text{O} +$	} 6.60	} 5.34*	4.9	4.7	5.3	} 1.09	7.20	} 3.16
$\text{H}_2\text{O} -$			1.1	3.5	2.4		—	
CO_2	—	—	—	—	—	1.25	2.40°	—
TiO_2	nd.	0.60	0.6	1.4	0.6	—	—	0.47
P_2O_5	0.08	—	—	—	—	0.09	—	—
MnO	0.02	—	—	—	—	—	—	—
Other Con- stituents	Organic and undet. = 0.22					C = 2.70 Cl = tr.		
	100.00	100.00	[98.8]	98.5	[92.6]	—	100.00	100.00
Age	Triassic	Devonian	Silurian	—	—	Permian	Triassic	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

a. SILICEOUS — $\text{SiO}_2/\text{Al}_2\text{O}_3 > 5$ $\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$					b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5 - 4$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$				
	45	46	47	48		1	2	3	4
Rock Name	Siliceous Mudstone	Clay Shale	Clay Shale	'Slate'		Clay Shale	Sandy Shale	Clay Shale	Clay Shale
Locality	Kholo Creek, Qld.	Attunga, N.S.W.	Attunga, N.S.W.	Mudgee, N.S.W.		Melbourne Area, Vic.	Mt. White, N.S.W.	Melbourne Area, Vic.	Melbourne Area, Vic.
Reference	89, 12	171, 104	171, 104	165, 125		114, 41	188, 165	114, 41	114, 41
Analyst	W. H. Herdsman	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines		Vic. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines
Remarks	—	—	*Loss on ignition	—		—	—	—	—
SiO_2	71.78	71.16	67.94	64.58		74.52	74.3	73.90	73.12
Al_2O_3	12.97	12.00	11.06	12.05		16.19	15.6	18.31	15.61
Fe_2O_3	1.12	5.30	8.20	1.93		1.01	0.4	1.20	3.00
FeO	4.28			3.96		0.12	—	0.07	0.13
MgO	2.17	1.33	2.08	2.26		abs.	—	tr.	1.02
CaO	1.28	1.34	1.62	4.26		abs.	—	abs.	0.55
Na_2O	1.56	3.57	2.58	0.50		2.47	—	0.08	1.11
K_2O	1.80			3.56		1.14	—	1.89	1.36
$\text{H}_2\text{O} +$	1.90	4.80	5.92*	2.35		3.58	—	3.24	3.08
$\text{H}_2\text{O} -$	0.39			0.13		0.63	—	1.25	0.62
CO_2	abs.	—	—	3.58		—	—	—	—
TiO_2	0.58	0.50	0.60	0.56		—	0.7	—	—
P_2O_5	0.03	—	—	0.12		—	—	—	—
MnO	0.04	—	—	0.07		—	—	—	—
Other Constituents				$\text{FeS}_2 = 0.22$		$\text{Cl} = 0.46$		$\text{Cl} = 0.31$	$\text{Cl} = 0.41$
	—	—	—	—		100.12	—	100.25	100.01
Less O = Cl, F, S	—	—	—	—		0.10	—	0.07	0.10
	99.90	100.00	100.00	100.13		100.02	—	100.18	99.91
Age	—	Devonian	Devonian	—		—	—	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3=5-4$ CaO<1% : $\text{Fe}_2\text{O}_3<5\%$

	5	6	7	8	9	10	11	12	13
Rock Name	Shale	Clay Shale	Shale	Shale	Shale	Shale	Shale	Shale	Shale
Locality	Near Carrieton, S.A.	Melbourne Area, Vic.	Anstey Hill, Adelaide, S.A.	Between Carlos Gap & Weengah, N.S.W.	Near Weengah, Carlos Gap, N.S.W.	Mt Lofty Range, S.A.	Near Weengah, Carlos Gap, N.S.W.	25 chs S. of Carlos Gap, N.S.W.	Near Weengah, Carlos Gap, N.S.W.
Reference	103, 34	114, 41	74, 45	166, 76	166, 76	80, 86	166, 76	166, 76	166, 76
Analyst	S.A. Dep. Mines	Vic. Dep. Mines	T. W. Dalwood	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	*Analysed after drying	—	—	—
SiO_2	72.92	72.87	71.90	71.70	71.20	70.61	70.18	69.68	69.60
Al_2O_3	15.00	15.35	15.57	15.82	17.02	16.53	15.48	15.74	15.60
Fe_2O_3	1.36	2.05	1.26	1.90	1.50	1.49	2.60	2.30	1.70
FeO	—	0.20	0.18	0.45	0.63	0.20	0.72	0.72	0.99
MgO	—	0.93	1.04	0.44	0.43	1.48	0.56	0.42	0.49
CaO	0.56	abs.	0.04	0.70	0.34	0.12	0.32	0.28	0.42
Na_2O	2.96	2.03	1.36	0.41	0.32	0.33	0.28	0.34	0.25
K_2O	0.43	0.56	4.02	2.91	2.44	4.23	2.86	2.84	2.55
$\text{H}_2\text{O}+$	0.34	3.33	} 4.22	} 3.78	} 4.40	4.24	} 4.84	} 5.22	} 4.94
$\text{H}_2\text{O}-$	0.34	2.39				*			
CO_2	5.18	—	—	—	—	—	—	—	—
TiO_2	1.23	—	0.76	0.70	0.60	0.64	0.70	0.70	0.80
P_2O_5	—	—	—	tr.	tr.	—	tr.	tr.	tr.
MnO	—	—	—	tr.	tr.	—	tr.	tr.	tr.
Other Constituents		Cl=0.23	$\text{SO}_3=0.01$ Cl=0.06	Organic = 1.46	Organic = 1.30	$\text{SO}_3=0.02$ Cl=0.08	Organic = 1.66	Organic = 2.02	Organic = 2.52
	—	99.94	100.42	—	—	99.97	—	—	—
Less O = Cl, F, S	—	0.05	0.01	—	—	0.02	—	—	—
	100.32	99.89	100.41	100.27	100.18	99.95	100.20	100.26	99.86
Age	—	—	—	Permian	Permian	Pre-Cambrian	Permian	Permian	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

$$\text{CaO} < 1\% \quad : \quad \text{Fe}_2\text{O}_3 < 5\%$$

	14	15	16	17	18	19	20	21	22
Rock Name	Shale in <i>Hawkes-bury Formation</i>	Shale	Shale	Shale	Shale	Shale	Shale	Shale in <i>Hawkes-bury Formation</i>	Shale
Locality	Beacon Hill, Brookvale, N.S.W.	Near Weengah, Carlos Gap, N.S.W.	Near Weengah, Carlos Gap, N.S.W.	Brogans Creek, N.S.W.	Marangaroo, N.S.W.	Crafers, Mt. Lofty Ra., S.A.	Raleigh, N.S.W.	Near Manly, N.S.W.	Nowra, N.S.W.
Reference	121, 255	166, 76	166, 76	166, 76	171, 104	79, 49	121, 266	121, 255	121, 261
Analyst	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	(Weathered) *Dried	—	—	—
SiO ₂	69.1	68.56	68.44	68.30	67.84	67.66	67.2	66.4	64.6
Al ₂ O ₃	17.2	15.78	15.10	15.54	16.86	14.91	16.7	16.7	16.1
Fe ₂ O ₃	0.9	3.70	3.90	3.70	2.70	4.23	3.7	1.2	4.0
FeO	—	0.63	0.72	0.54	0.27	0.57	—	—	—
MgO	—	0.52	0.54	1.21	0.75	1.74	—	—	—
CaO	—	0.34	0.58	0.98	0.52	0.12	—	—	—
Na ₂ O	—	0.43	0.30	0.66	0.38	3.49	—	—	—
K ₂ O	2.2	3.04	2.69	4.51	3.06	2.59	2.4	1.8	2.9
H ₂ O +	6.9	} 5.16	3.92	} 4.08	} 7.58	3.81	4.7	5.9	5.6
H ₂ O —	3.3		—			—	1.5	5.1	2.1
CO ₂	—	—	—	—	—	1.23	—	—	—
TiO ₂	0.8	0.80	0.76	0.42	0.10	—	0.8	—	0.7
P ₂ O ₅	—	tr.	tr.	tr.	—	—	—	0.7	—
MnO	—	tr.	tr.	tr.	—	—	—	—	—
Other Constituents		Organic = 0.96	Organic = 2.78	Organic = 0.16	—	SO ₃ = 0.04 Cl = 0.02			
	—	—	—	—	—	—	—	—	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	100.4	99.92	99.73	100.10	100.06	100.41	97.0	97.8	96.0
Age	Triassic	—	—	—	—	—	—	Triassic	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3=5-4$									
$\text{CaO}<1\%$ $\text{Fe}_2\text{O}_3<5\%$		$\text{CaO}<1\% : \text{Fe}_2\text{O}_3=5\% - 10\%$							
	23	24	25	26	27	28	29	30	31
Rock Name	Shale	Clay slate	Shale	Shale	Shale	Shale	Clay Shale	Shale	Shale
Locality	Lithgow, N.S.W.	Mt. Buckeroo, near Mud-gee, N.S.W.	Mudgee, N.S.W.	N.E. of Capertee, N.S.W.	Parkes, N.S.W.	Glen Osmond, S.A.	Artarmon, Sydney, N.S.W.	Crafers, Mt. Loftly Ra., S.A.	Glen Osmond, S.A.
Reference	121, 261	157, 202	171, 104	171, 104	121, 265	67, 38	175, 96	79, 49	67, 38
Analyst	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	S.A. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines
Remarks	—	—	—	—	—	(Bore—123'-126')	—	(Weather-ed) *Dried	—
SiO_2	64.3	70.24	69.62	68.80	68.7	66.83	66.70	66.37	66.35
Al_2O_3	15.0	14.40	15.41	16.46	13.9	14.12	14.46	15.93	14.89
Fe_2O_3	4.1	4.95	5.60	4.80	5.2	2.34	6.80	5.11	5.81
FeO	—	0.81		0.34	—	4.83		0.36	1.07
MgO	—	1.09	1.13	0.49	—	4.61	—	1.04	2.65
CaO	—	0.25	0.64	0.46	—	0.16	—	0.26	0.10
Na_2O	—	0.54	3.57	0.13	0.6	1.22	—	3.03	1.52
K_2O	4.2	4.19		2.92	2.9	0.94	—	2.25	2.19
$\text{H}_2\text{O}+$	7.6	2.78	3.48	5.00	4.4	3.09	—	4.43	3.67
$\text{H}_2\text{O}-$	1.7	0.41			1.7	—	—	*	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.6	—	0.55	0.60	0.7	1.61	0.80	1.49	1.39
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con-stituents	—	Organic = 0.53	—	—	—	—	—	$\text{SO}_3=0.15$ $\text{Cl}=0.02$	$\text{SO}_3=0.01$ $\text{Cl}=0.10$
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
	97.5	100.19	100.00	100.00	98.0	99.75	—	100.44	99.75
Age	Permian	—	Permian	Permian	Ordovician	—	Triassic	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$

CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	32	33	34	35	36	37	38	39	40
RockName	Shale	Shale <i>Brin-gelly Shale</i>	Shale	Shale <i>Brin-gelly Shale</i>	Shale	Clay Shale	Shale	Shale	Shale
Locality	Glen Osmond, S.A.	Prospect, N.S.W.	Canberra, A.C.T.	Prospect, N.S.W.	Crafers, Mt. Lofty Ra., S.A.	Melbourne Area, Vic.	Glen Osmond, S.A.	Mudgee, N.S.W.	Slope Gully, S.A.
Reference	67, 38	189	121, 264	189	79, 49	114, 42	67, 38	121, 264	69, 28
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	S.A. Dep. Mines
Remarks	—	—	—	—	(weathered) *Dried	—	—	—	*Dried
SiO_2	66.16	65.99	65.7	65.65	65.38	65.04	64.50	64.3	64.26
Al_2O_3	16.39	16.46	13.6	15.74	14.92	16.07	14.40	16.1	14.39
Fe_2O_3	6.15	0.77	5.9	2.08	5.82	5.76	2.60	5.9	1.99
FeO	0.91	3.85	—	2.32	0.40	0.43	5.01	—	5.14
MgO	1.03	1.25	—	1.14	1.66	2.39	5.03	—	5.19
CaO	0.12	0.53	—	0.57	0.26	Abs.	0.46	—	abs.
Na_2O	1.24	0.64	—	0.36	3.49	0.55	1.32	—	1.98
K_2O	2.21	2.41	3.5	2.35	2.51	tr.	1.46	3.0	2.70
$\text{H}_2\text{O} +$	4.27	4.35	4.5	5.19	4.44	5.43	3.42	4.6	2.90
$\text{H}_2\text{O} -$	—	2.09	1.7	2.79	*	3.75	—	0.6	*
CO_2	—	0.21	—	0.24	—	—	0.22	—	—
TiO_2	1.58	1.14	0.4	1.06	1.32	—	1.49	1.4	1.25
P_2O_5	—	0.18	—	0.22	—	—	—	—	—
MnO	—	0.05	—	0.05	—	—	—	—	0.07
Other Constituents	$\text{SO}_3 = 0.06$ $\text{Cl} = 0.01$	$\text{ZrO}_2 = 0.01$, $\text{F} = \text{CuO} = 0.01$, 0.01 , $\text{BaO} = 0.04$, $\text{C} = 0.04$, $\text{S} = 0.01$		$\text{ZrO}_2 = \text{tr.}$ $\text{CuO} = 0.02$ $\text{BaO} = 0.05$ $\text{C} = 0.53$	$\text{SO}_3 = 0.20$ $\text{Cl} = 0.02$	$\text{Cl} = \text{Abs.}$			$\text{SO}_3 = 0.01$ $\text{Cl} = \text{abs.}$
	—	100.40	—	—	100.42	—	—	—	—
Less O = Cl, F, S	—	0.01	—	—	0.01	—	—	—	—
	100.13	100.39	95.3	100.36	100.41	99.42	99.91	95.9	99.88
Age	—	Triassic	Silurian	Triassic	—	—	—	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$

	41	42	43	44	45	46	47	48	49
Rock Name	Shale	Shale	'Slate'	Shale	Shale	Shale	Shale	Shale	Shale
Locality	Mt Lofty, S.A.	Glen Osmond, S.A.	Kempsey, N.S.W.	Glen Osmond, S.A.	Glen Osmond, S.A.	Wilga, W.A.	Glen Osmond, S.A.	Leigh Creek, S.A.	Magill, 5 mls E. of Adelaide, S.A.
Reference	70, 36	67, 38	165, 125	67, 38	103, 26	259	67, 38	77, 16	71, 39
Analyst	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	W. A. Govt. Chem. Lab.	S.A. Dep. Mines	S.A. School of Mines	Not stated
Remarks	*Dried	(Bore 33'-43')	—	(Bore 3'-13')	—	—	(Bore 23'-33')	—	—
SiO_2	64.03	63.97	63.80	63.76	63.70	63.61	63.41	63.19	63.11
Al_2O_3	15.43	14.37	14.17	15.11	15.10	15.45	14.56	15.60	14.07
Fe_2O_3	7.97	5.11	5.45	7.42	7.54	2.90	4.52	6.53	5.98
FeO	—	2.41		0.96	—	3.10	2.97	0.16	1.27
MgO	1.67	4.88	2.23	2.95	2.90	2.66	5.08	0.41	4.81
CaO	0.67	0.02	0.48	0.04	0.60	abs.	0.02	0.87	0.83
Na_2O	0.77	1.48	2.50	1.58	1.23	0.43	1.58	1.64	2.18
K_2O	1.98	2.98	2.40	2.59	3.22	4.87	2.79	2.77	2.50
$\text{H}_2\text{O} +$	5.37	3.60	3.02	4.24	5.10	4.20	3.76	5.09	3.60
$\text{H}_2\text{O} -$	*	—	0.42	—		1.77	—	—	—
CO_2	—	—	—	—	—	0.04	—	—	0.56
TiO_2	1.88	1.37	0.70	1.41	—	0.76	1.47	1.11	1.39
P_2O_5	—	—	0.07	—	—	0.22	—	—	—
MnO	—	—	0.08	—	—	0.14	—	—	—
Other Constituents	Cl=0.02	Cl=0.01	BaO=0.06 Cr_2O_3 =0.01 Fe S_2 =3.23 C=1.38	Cl=0.01		Fe S_2 =tr. Na Cl=tr. Organic=0.28	Cl=0.01	SO_3 =1.24 Cl=1.68	SO_3 =0.01 Cl=0.04
	—	—	—	—	—	—	—	100.29	100.35
Less O= Cl, F, S	—	—	—	—	—	—	—	0.37	0.01
	99.79	100.20	100.00	100.07	99.39	100.43	100.17	99.92	100.34
Age	—	—	—	—	—	(?)Permian	—	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 5-4$									
$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	50	51	52	53	54	55	56	57	58
Rock Name	Shale	Shale	Shale <i>Bringelly Shale</i>	Shale	Shale <i>Bringelly Shale</i>	Shale	Shale	Shale	Shale
Locality	Glen Osmond, S.A.	McDonald's Hole 8 miles N. of Caper-tee, N.S.W.	Camden, N.S.W.	Cowra, N.S.W.	Prospect, N.S.W.	Glen Osmond, S.A.	Glen Osmond, S.A.	Glen Osmond, S.A.	Glen Osmond, S.A.
Reference	67, 38	162, 223	121, 257	121, 265	189	67, 38	67, 38	67, 38	67, 38
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines
Remarks	(Bore-13'-23')	—	—	—	—	(Bore 83'-93')	(Bore 93'-103')	(Bore 43'-53')	(Bore 73'-83')
SiO_2	62.90	62.80	62.7	62.6	62.05	61.71	61.62	61.61	61.00
Al_2O_3	14.88	15.12	15.1	13.7	15.27	14.81	14.89	14.61	14.94
Fe_2O_3	6.54	2.90	6.0	6.5	1.86	3.33	3.30	5.76	3.08
FeO	1.70	3.62	—	—	6.06	4.44	4.42	2.44	4.44
MgO	4.49	3.47	—	—	1.36	5.95	6.02	5.44	6.02
CaO	0.02	0.66	—	—	0.65	0.02	—	0.22	0.48
Na_2O	1.43	1.51	—	—	0.62	1.86	1.60	1.98	1.52
K_2O	2.40	3.52	1.9	3.0	1.97	2.81	2.87	2.02	2.58
$\text{H}_2\text{O} +$	3.91	0.48	7.4	4.0	6.05	3.65	3.61	3.59	3.26
$\text{H}_2\text{O} -$	—	2.82	1.5	0.9	2.61	—	—	—	—
CO_2	—	—	—	—	0.32	0.22	0.27	—	1.02
TiO_2	1.32	1.20	0.8	0.3	1.02	1.46	1.46	1.43	1.39
P_2O_5	—	0.31	—	—	0.19	—	—	—	—
MnO	—	0.10	—	—	0.18	—	—	—	—
Other Constituents	Cl=0.01	Organic = 1.38			ZrO ₂ = 0.01 CuO = 0.01 F = 0.01 S = 0.01				
Less O = Cl, F, S	—	—	—	—	100.25 0.01	—	—	—	—
	99.78	99.89	[95.4]	91.0	100.24	100.26	100.06	[99.10]	99.73
Age	—	—	Triassic	Ordovician	Triassic	—	—	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

b. $\text{SiO}_2/\text{Al}_2\text{O}_3=5-4$

	CaO=1%—5% : Fe ₂ O ₃ <5%		CaO=1%—5% : Fe ₂ O ₃ =5%—10%						
	59	60	61	62	63	64	65	66	67
Rock Name	Shale	Shale	Clay Slate	Shale	Clay Shale	Shale	Shale	Clay Shale	Shale
Locality	Nr. Carrieton, S.A.	Singleton, N.S.W.	Rivertree, N.S.W.	Dongara, W.A.	Attunga, N.S.W.	Glen Osmond, S.A.	Glen Osmond, S.A.	Attunga, N.S.W.	Glen Osmond, S.A.
Reference	103 , 34	134 , 45	158 , 198	228 , 102	171 , 104	67 , 38	67 , 38	171 , 104	67 , 38
Analyst	W. S. Chapman	N.S.W. Dep. Mines	W. G. Stone	H. P. Webb	N.S.W. Dep. Mines	S.A. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines
Remarks	—	*Plus undetermined	*Plus SO ₂ =24.90% °Plus undet.	*Includes some organic	*Loss on ignition	(Bore 53'-63')	(Bore 103'-113')	*Loss on ignition	(Bore 63'-73')
SiO ₂	70.32	68.75	67.60	62.74	61.38	59.61	59.25	58.98	58.30
Al ₂ O ₃	17.41	14.20	15.84	13.32	13.28	13.72	14.34	14.41	13.96
Fe ₂ O ₃	2.47	3.95	1.50	5.56	9.30	3.06	2.87	8.50	3.27
FeO	—		4.23	—		4.44	4.78		4.62
MgO	—	1.44	1.71	1.39	2.94	6.66	6.28	2.02	6.72
CaO	1.65	2.06	1.50	1.30	1.44	1.62	1.06	2.94	1.88
Na ₂ O	0.68	3.01*	1.41	0.66	2.28	1.50	1.68	2.66	1.74
K ₂ O	1.04		4.39	3.46		2.46	2.60		2.46
H ₂ O+	0.56	4.14	1.14	6.46*	8.48*	3.88	3.63	9.74*	3.76
H ₂ O—	3.51	2.45	0.15	4.16	—	—	—		—
CO ₂	2.92	—	0.37°	0.38	—	1.42	1.73		1.85
TiO ₂	—	—	—	0.70	0.90	1.36	1.41	0.75	1.29
P ₂ O ₅	—	—	0.14	—	—	—	—	—	—
MnO	—	—	—	0.45	—	—	—	—	—
Other Constituents	—	—	—	—	—	—	—	—	—
Less O= Cl, F, S	—	—	—	—	—	—	—	—	—
	100.56	100.00	[99.98]	100.58	100.00	99.73	99.63	100.00	99.85
Age	—	—	—	—	—	—	—	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$

CaO<1% : Fe_2O_3 <5%									
RockName	1	2	3	4	5	6	7	8	9
	Shale	Shale	Shale	Shale	Shale	Argillite	Clay Shale	Clay Shale	Shale <i>Hawkesbury Formation</i>
Locality	Heathcote, N.S.W.	Co. of Cook, Blue Mts. Area, N.S.W.	Houghton, S.A.	Thornton, East Maitland, N.S.W.	Orange, District, N.S.W.	Spring- field Basin near Crad- ock (S.A.)	Mel- bourne Area, Vic.	Mel- bourne, Area, Vic.	Terry Hills, Frenchs Forest, N.S.W.
Reference	29, 404; 138, 52	152, 182	73, 36	162, 223	142, 148	107, 253	114, 42	114, 42	121, 255
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	T. W. Dalwood (Weathered)	N.S.W. Dep. Mines	N.S.W. Dep. Mines	P. C. Hem- ingway	Vic. Dep. Mines	Vic. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	*Loss on ignition	—	—	—
SiO_2	74.48	71.02	70.11	69.48	68.79	68.62	68.54	68.31	68.3
Al_2O_3	18.93	20.48	19.32	17.65	17.31	22.05	16.87	20.35	17.7
Fe_2O_3	0.39	0.90	0.67	0.85	4.77	2.03	3.31	1.16	3.3
FeO	—	—	0.17	0.22	—		0.26	0.02	—
MgO	0.72	0.21	0.80	0.36	1.18	0.10	2.07	1.47	—
CaO	—	0.10	0.16	0.05	abs.	0.52	abs.	abs.	—
Na_2O	abs	0.22	0.06	0.47	abs.	—	1.34	1.00	—
K_2O	1.58	0.62	2.66	2.25	4.26	—	0.61	0.67	2.2
$\text{H}_2\text{O}+$	—	5.89	5.26	4.60	3.34	2.21*	3.77	3.84	5.8
$\text{H}_2\text{O}-$	—	—	—	1.68	0.50	0.53	3.62	3.06	1.0
CO_2	—	—	—	—	—	—	—	—	1.2
TiO_2	—	—	0.80	0.65	—	1.94	—	—	0.8
P_2O_5	tr.	—	—	0.02	—	—	—	—	—
MnO	tr.	—	—	—	—	0.03	—	—	—
Other Con- stituents			$\text{SO}_3 = 0.02$ $\text{Cl} = 0.04$	$\text{BaO} = 0.06$ $\text{Cl} = 0.13$ Organic = 1.68	$\text{SO}_3 = 0.11$ Organic = tr.	$\text{SO}_3 = 0.04$ $\text{Cl} = 0.03$	$\text{Cl} = 0.31$	$\text{Cl} = 0.41$	
Less O = Cl, F, S	—	—	100.07	100.15	—	98.10	100.70	100.29	—
	[100.67]	100.39	100.06	100.13	100.26	98.09	100.64	100.20	100.3
Age	—	—	—	—	—	Triassic	—	—	Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Micaceous Shale*	Clay Shale*	Shale	'Clay Shale'	Shale	Shale	Shale <i>Ashfield Shale</i>	Sandy Shale	Shale*
Locality	Near Wollongong, N.S.W.	Williamstown, S.A.	Ben Bullen, N.S.W.	Botany, N.S.W.	Simmons-ton, 20 mls. N.N.E. Quorn, S.A.	Wagga Wagga, N.S.W.	Between Ryde & Gladesville, N.S.W.	Asquith, N.S.W.	Woonona, N.S.W.
Reference	138, 57	32, 110	164, 184	163, 177	78, 77	121, 265	121, 256	188, 165	92, 272
Analyst	N.S.W. Dep. Mines	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S.A. Dep. Mines	G. T. See & P. Bayliss	R. Bury	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	*With plant impressions	*'Blue Clay'	—	—	(Decomposed)	—	—	—	*Fire Clay below seam No. 6
SiO_2	68.28	68.10	67.88	67.74	67.67	67.5	67.0	66.9	66.76
Al_2O_3	21.29	19.10	17.14	19.26	18.43	18.0	20.4	20.4	22.21
Fe_2O_3	0.87	1.65	0.90	1.40	0.97	3.7	2.5	0.6	0.50
FeO	—		0.90	—	0.22	—	—	—	0.36
MgO	0.70	0.10	0.65	0.44	1.14	—	0.3	—	0.42
CaO	0.30	0.10	0.30	abs.	0.08	—	0.5	—	
Na_2O	0.31	0.44	0.54	0.15	1.24	—	0.2	—	0.25
K_2O	1.86	abs.	3.42	2.06	2.65	3.1	1.9	—	0.92
$\text{H}_2\text{O}+$	4.61	8.25	3.99	6.80	6.15	5.0	6.0	—	8.58
$\text{H}_2\text{O}-$	1.48	1.03	1.61	1.42	—	0.3	1.0	—	—
CO_2	—	—	—	—	—	—	abs.	—	—
TiO_2	tr.	1.08	0.65	0.75	0.73	0.8	0.9	0.7	—
P_2O_5	—	—	0.06	0.07	—	—	—	—	—
MnO	abs.	—	0.05	tr.	—	—	—	—	—
Other Con-stituents	Organic = tr.	Cl = 0.20	Organic = 2.26	Organic = 0.08 Cl = tr. BaO = tr. SO_3 = tr. V_2O_5 = tr.	SO_3 = 0.10 Cl = 1.44				
	—	100.20	—	—	100.82	—	—	—	—
Less O = Cl, F, S	—	0.04	—	—	0.32	—	—	—	—
	99.70	100.16	100.35	100.17	100.50	98.4	100.7	—	100.00
Age	Permian	—	Permian	Triassic	—	Ordovician	Triassic	Triassic	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	19	20	21	22	23	24	25	26	27
Rock Name	Shale	Shale	Shale*	Shale <i>Brin-gelly Shale</i>	Clay Shale	Shale	Clay Shale	Shale	Shale <i>Brin-gelly Shale</i>
Locality	Maitland, N.S.W.	Swansea, N.S.W.	Lithgow, N.S.W.	Merrylands, Sydney, N.S.W.	Carlton, Sydney, N.S.W.	Leigh Creek, S.A.	Melbourne Area, Vic.	Thornton, East Maitland, N.S.W.	Enfield, Sydney, N.S.W.
Reference	121, 259	121, 258	28, 239	121, 257	187, 94	77, 16	114, 41	121, 258	121, 257
Analyst	G. T. See & P. Bayliss	G. T. See & P. Bayliss	J. C. H. Mingaye	G. T. See & P. Bayliss	N.S.W. Dep. Mines	S.A. School of Mines	Vic. Dep. Mines	N.S.W. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	*Fireclay	—	*Loss on ignition	—	—	—	—
SiO_2	66.7	66.5	66.50	66.2	66.2	66.18	66.14	66.0	66.0
Al_2O_3	17.5	17.9	18.62	20.2	20.2	19.50	19.21	19.3	17.4
Fe_2O_3	2.0	1.9	2.00	4.0	0.8	1.39	3.14	1.0	3.7
FeO	—	—	—	—	0.4	0.08	0.35	—	—
MgO	—	—	0.76	—	—	0.47	4.32	—	—
CaO	—	—	abs.	—	—	0.16	abs.	—	—
Na_2O	—	—	0.21	—	—	1.29	0.62	—	—
K_2O	1.6	2.7	2.49	2.0	—	2.52	0.38	3.0	2.7
$\text{H}_2\text{O}+$	6.1	5.9	8.00	5.0	8.6*	5.81	3.55	6.1	5.9
$\text{H}_2\text{O}-$	3.8	1.6		1.7		—	1.88	1.3	2.1
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.4	0.8	—	0.7	0.9	1.06	—	0.6	0.7
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	Organic + undet. = 1.42	—	—	$\text{SO}_3 = 0.49$ $\text{Cl} = 1.41$	$\text{Cl} = \text{tr.}$	—	—
Less O = Cl, F, S	—	—	—	—	—	100.36 0.32	—	—	—
Age	98.1 Permian	97.3 Permian	100.00 Permian	99.8 Triassic	97.1 Triassic	100.04 —	99.59 —	[97.3] Permian	98.5 Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	28	29	30	31	32	33	34	35	36
Rock Name	Shale	'Clay Shale'	Shale*	Clay Shale	Shale <i>Ash-field Shale</i>	Shale <i>Ash-field Shale</i>	Shale <i>Ash-field Shale</i>	Shale	Shale
Locality	Simmons- ton, 20 mls. NNE of Quorn, S.A.	Botany, Sydney, N.S.W.	Ashford, N.S.W.	Carlton, Sydney, N.S.W.	Between Ryde & Gladesville, N.S.W.	Homebush, Sydney, N.S.W.	Between Ryde & Gladesville, N.S.W.	Anstey Hill, Adelaide, S.A.	Thornton, East Mait- land, N.S.W.
Reference	78 , 77	163 , 177	157 , 202	187 , 94	121 , 256	121 , 256	121 , 256	74 , 45	121 , 260
Analyst	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. Bury	R. Bury	R. Bury	T. W. Dalwood	G. T. See & P. Bayliss
Remarks	(Decom- posed)	—	*Fireclay	*Loss on ignition	—	—	—	—	—
SiO_2	65.93	65.72	65.70	65.7	65.7	65.7	65.6	65.60	65.6
Al_2O_3	20.87	19.26	19.40	19.1	19.5	19.2	21.2	19.03	19.0
Fe_2O_3	1.22	1.40	0.70	2.0	4.1	3.1	1.5	1.45	1.4
FeO	0.06	—	—	—	—	—	—	0.32	—
MgO	0.59	0.60	0.54	—	0.3	—	0.4	1.75	—
CaO	0.33	abs.	0.30	—	0.4	—	0.5	0.08	—
Na_2O	0.74	0.14	0.32	—	0.1	—	0.1	1.22	—
K_2O	1.35	2.69	1.86	—	1.1	2.1	2.2	5.90	1.7
$\text{H}_2\text{O}+$	6.62	6.66	5.28	8.5*	6.1	6.1	6.1	3.90	5.4
$\text{H}_2\text{O}-$	—	1.07	1.32	—	2.0	0.9	1.0	—	1.6
CO_2	—	—	—	—	0.1	—	abs.	—	—
TiO_2	1.40	1.10	0.64	1.0	0.9	0.7	0.8	0.96	0.6
P_2O_5	—	0.07	0.04	—	—	—	—	—	—
MnO	—	0.02	abs.	—	—	—	—	—	—
Other Con- stituents	$\text{SO}_3=0.11$ $\text{Cl}=0.65$	$\text{SO}_3=\text{tr.}$, $\text{Cl}=\text{tr.}$, $\text{V}_2\text{O}_5=\text{tr.}$ $\text{BaO}=\text{tr.}$ Organic= 1.09	Organic= 3.93	—	—	—	—	$\text{SO}_3=0.02$ $\text{Cl}=0.02$	—
	99.87	—	—	—	—	—	—	100.25	—
Less O= Cl, F, S	0.14	—	—	—	—	—	—	—	—
	99.73	99.82	100.03	—	100.3	97.8	99.4	—	95.3
Age	—	Triassic	—	Triassic	Triassic	Triassic	Triassic	—	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$

	37	38	39	40	41	42	43	44	45
Rock Name	Shale	Shale	Clay Shale	Shale <i>Hawkesbury Formation</i>	Shale	Shale <i>Hawkesbury Formation</i>	Shale Ash-field Shale	Clay Shale	Shale
Locality	Waratah, N.S.W.	Simmons-ton, 20 mls N.N.E. of Quorn, S.A.	Botany, Sydney, N.S.W.	Gosford Area, N.S.W.	Newlands, W.A.	W. of Gosford, N.S.W.	Eastwood, Sydney, N.S.W.	Melbourne, Area, Vic.	Woonona, N.S.W.
Reference	121, 258	78, 77	163, 177	121, 255	228, 106; 229, 108; 254, 29	121, 255	121, 256	114, 42	121, 260
Analyst	G. T. See & P. Bayliss	S.A. Dep. Mines (Decomposed)	N.S.W. Dep. Mines	G. T. See & P. Bayliss	E. S. Simpson	G. T. See & P. Bayliss	R. Bury	Vic. Dep. Mines	G. T. See & P. Bayliss
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	65.6	65.58	65.54	65.5	65.45	65.4	65.3	64.97	64.6
Al_2O_3	17.3	19.92	20.21	17.8	21.53	19.3	18.7	18.19	16.3
Fe_2O_3	3.4	2.65	1.20	0.9	0.94	0.9	3.6	2.88	3.8
FeO	—	0.16	—	—	0.12	—	—	0.20	—
MgO	—	0.96	0.58	—	0.71	—	0.6	1.67	—
CaO	—	0.12	abs.	—	abs.	—	0.5	abs.	—
Na_2O	—	0.57	0.21	—	0.31	—	0.2	0.12	—
K_2O	2.2	2.28	2.50	2.6	1.69	2.2	2.3	1.76	2.0
$\text{H}_2\text{O}+$	4.9	6.26	6.62	6.8	7.34	5.9	5.8	4.07	10.6
$\text{H}_2\text{O}-$	1.5	—	0.88	0.9	1.96	0.9	1.4	5.31	1.7
CO_2	—	—	—	—	—	—	0.1	—	—
TiO_2	0.7	0.69	0.95	0.5	—	0.4	0.8	—	0.7
P_2O_5	—	—	0.12	—	—	—	—	—	—
MnO	—	—	0.02	—	0.09	—	—	—	—
Other Constituents	—	$\text{SO}_3 = 0.09$ $\text{Cl} = 0.53$	$\text{SO}_3 = \text{tr.}$, $\text{Cl} = \text{tr.}$, $\text{BaO} = \text{tr.}$, $\text{V}_2\text{O}_5 = \text{tr.}$, Organic = 1.14	—	—	—	—	$\text{Cl} = 0.28$	—
Less O = Cl, F, S	—	99.81 0.12	—	—	—	—	—	—	—
Age	Permian	99.69	99.97	95.0	100.14	95.0	99.3	[99.45]	99.7
	Permian	—	Triassic	Triassic	—	Triassic	Triassic	—	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	46	47	48	49	50	51	52	53	54
Rock Name	Shale <i>Ash-field Shale</i>	Shale	Shale	Shale <i>Ash-field Shale</i>	Shale <i>Hawkesbury Formation</i>	Shale <i>Wianamatta Shale</i>	Shale <i>Hawkesbury Formation</i>	Shale	Clay Slate
Locality	St. Leonards Sydney, N.S.W.	Rose Bay, N.S.W.	Neath, nr. Cessnock, N.S.W.	Artarmon, Sydney, N.S.W.	Gosford Area N.S.W.	Hornsby, Sydney, N.S.W.	N.S.W.	Thornton, East Maitland, N.S.W.	Carlton, Sydney, N.S.W.
Reference	121, 256	153, 177	121, 261	121, 256	121, 255	188, 165	121, 255	121, 260	187, 94
Analyst	R. Bury	N.S.W. Dep. Mines	G. T. See & P. Bayliss	R. Bury	G. T. See & P. Bayliss	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	*Loss on ignition
SiO_2	64.4	64.36	64.1	63.9	63.9	63.9	63.8	63.8	63.8
Al_2O_3	19.8	20.86	17.8	19.9	18.8	21.3	20.5	16.2	17.8
Fe_2O_3	2.7	2.00	1.9	4.6	2.3	0.9	1.3	1.3	4.2
FeO	—	0.90	—	—	—	—	—	—	0.2
MgO	0.6	0.52	—	0.4	—	—	0.4	—	—
CaO	0.5	0.56	—	0.5	—	—	0.3	—	—
Na_2O	0.1	0.25	—	0.1	—	—	—	—	—
K_2O	2.2	2.54	2.1	1.8	2.6	—	—	2.9	—
$\text{H}_2\text{O}+$	6.2	5.74	6.7	6.2	8.2	—	6.6	5.1	6.9*
$\text{H}_2\text{O}-$	0.9	0.84	2.4	1.8	0.8	—	1.4	5.2	—
CO_2	0.9	—	—	0.1	1.1	—	—	—	—
TiO_2	0.8	0.80	0.9	0.8	0.6	0.6	0.9	0.6	1.0
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents		$\text{SO}_3=0.44$							
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
Age	99.1 Triassic	99.81 Triassic	95.9 Permian	100.1 Triassic	98.3 Triassic	— Triassic	95.2 Triassic	95.1 Permian	93.9 Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} < 1\%$: $\text{Fe}_2\text{O}_3 < 5\%$

	55	56	57	58	59	60	61	62	63
Rock Name	Shale <i>Hawkesbury Formation</i>	Shale <i>Bringelly Shale</i>	Shale	Shale*	Shale	Altered Carbonaceous Shale	Clay Slate	Shale*	Shale
Locality	Kuring-gai, N.S.W.	Merrylands, Sydney, N.S.W.	Goulburn, N.S.W.	East of Cessnock, N.S.W.	Capertee Valley, N.S.W.	Meekatharra, W.A.	Thornton, East Maitland, N.S.W.	East of Cessnock, N.S.W.	Thornton, East Maitland, N.S.W.
Reference	121, 255	121, 257	121, 266	48, 294	164, 185	255, 25	162, 223	48, 295	121, 259
Analyst	R. Bury	G. T. See & P. Bayliss	G. T. See & P. Bayliss	W. A. Greig	N.S.W. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	H. P. White	G. T. See & P. Bayliss
SiO_2	63.6	63.5	63.4	62.94	62.88	62.62	62.54	62.42	62.4
Al_2O_3	21.5	21.1	16.5	19.49	18.02	18.78	17.38	17.11	20.3
Fe_2O_3	1.1	4.5	4.6	1.25	1.35	1.00	1.70	0.88	1.3
FeO	—	—	—	0.18		2.62		0.18	—
MgO	0.4	—	—	0.85	0.34	3.09	0.61	0.96	—
CaO	0.4	—	—	0.38	0.32	0.82	0.24	0.31	—
Na_2O	—	—	—	0.37	0.49	3.36	0.27	0.34	—
K_2O	—	2.0	3.8	2.29	2.53	3.30	2.84	1.89	2.5
$\text{H}_2\text{O}+$	6.7	6.1	4.6	5.42	—	2.07	3.88	5.71	9.8
$\text{H}_2\text{O}-$	1.0	1.7	1.4	4.00	—	0.13	2.22	2.97	1.3
CO_2	—	—	—	0.02	—	abs.	—	0.01	—
TiO_2	0.9	0.7	0.8	0.97	0.65	0.16	0.68	1.40	0.6
P_2O_5	—	—	—	0.03	0.08	0.29	0.06	0.07	—
MnO	—	—	—	tr.	—	0.16	—	tr.	—
Other Constituents	—	—	—	$\text{Cr}_2\text{O}_3 = 0.01$ $\text{ZrO}_2 = \text{abs.}$ $\text{Cl} = 0.01$ $\text{FeS}_2 = 1.12$ Organic = 1.15	$\text{C} = 5.73$ Volatiles = 7.96	$\text{FeS}_2 = 1.22$ $\text{C} = 1.60$	$\text{NaCl} = 0.40$ $\text{BaO} = 0.03$ Organic = 7.40	$\text{ZrO}_2 = \text{abs.}$ $\text{FeS}_2 = 0.78$ $\text{Cl} = 0.01$ $\text{Cr}_2\text{O}_3 = 0.01$ Organic = 4.83	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
Age	95.6 Triassic	99.6 Triassic	95.1 Ordovician	100.48 Permian	100.35 —	100.22 —	100.25 Permian	[99.88] Permian	98.2 Permian

*Fireclay

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3<5\%$

	64	65	66	67	68	69	70	71	72
Rock Name	Concret- ionary Ore Bed	Shale	Shale	Clay Shale	Shale	Shale	Shale	Shale	Shale
Locality	Mt. Oxide, Old.	Maitland, N.S.W.	Maccles- field, S.A.	Maitland, N.S.W.	Bulli, N.S.W.	Maccles- field, S.A.	Maitland, N.S.W.	Maccles- field, S.A.	Leigh Creek, S.A.
Reference	13, 31	121, 259	103, 38	183, 96	121, 261	103, 38	121, 259	103, 38	77, 16
Analyst	Not stated	G. T. See & P. Bayliss	W. S. Chapman	N.S.W. Dep. Mines	G. T. See & P. Bayliss	W. S. Chapman	G. T. See & P. Bayliss	W. S. Chapman	S.A. School of Mines
Remarks	—	—	—	*Loss on ignition	—	—	—	—	—
SiO_2	62.3	62.2	62.04	61.7	61.5	61.26	61.1	59.96	59.82
Al_2O_3	17.0	15.7	18.03	19.1	16.5	20.24	16.4	19.20	18.05
Fe_2O_3	—	2.9	2.52	2.0	4.4	1.74	2.2	3.70	2.07
FeO	—	—	—	—	—	—	—	—	—
MgO	0.70	—	0.56	1.0	—	0.10	—	0.66	0.79
CaO	0.55	—	0.82	0.3	—	0.22	—	0.10	0.16
Na_2O	—	—	2.44	—	—	4.03	—	2.42	1.62
K_2O	—	2.8	0.04	—	3.1	0.36	2.3	0.59	1.70
$\text{H}_2\text{O}+$	—	8.9	7.00	12.1*	6.4	6.03	9.0	7.40	6.85
$\text{H}_2\text{O}-$	—	2.0	3.08	—	1.3	2.58	5.0	2.48	—
CO_2	—	—	abs.	—	—	abs.	—	abs.	—
TiO_2	—	0.7	1.27	0.9	0.7	1.18	0.6	1.14	1.23
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Con- stituents	Fe=5.7 Mn=1.0		$\text{SO}_3=\text{abs.}$ Cl=3.12 Graphite = tr.			$\text{SO}_3=0.29$ Cl=2.75		$\text{SO}_3=0.58$ Cl=2.42	$\text{SO}_3=0.15$ Cl=1.29 C=6.75
	—	—	100.92	—	—	100.78	—	100.65	100.48
Less O= Cl, F, S	—	—	0.70	—	—	0.62	—	0.52	0.30
	—	95.2	100.22	97.1	93.9	100.16	96.6	100.13	100.18
Age	Pre- cambrian	Permian	—	Permian	Permian	—	Permian	—	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$

$$\text{CaO} < 1\% \quad : \quad \text{Fe}_2\text{O}_3 < 5\%$$
[illegible]

c. $\text{SiO}_2/\text{Al}_2\text{O}_3=4-3$ $\text{CaO}<1\%$: $\text{Fe}_2\text{O}_3=5\%-10\%$

	82	83	84	85	86	87	88	89	90
Rock Name	Shale	Shale	Clay Slate	Clay Slate	Shale	Shale	Arena- ceous Shale <i>Narrabeen Shale</i>	Shale	Shale <i>Hawkes- bury Form- ation</i>
Locality	Slape Gully, S.A.	Glen Osmond, S.A.	Cobar, N.S.W.	Near The Peak, Cobar, N.S.W.	Carlton, Sydney, N.S.W.	Newlands, W.A.	Mona Vale, Sydney, N.S.W.	Thornton, East Maitland, N.S.W.	Kuring-gai N.S.W.
Reference	69, 28	67, 38	3, 51 157, 198	3, 52; 157, 198	187, 94	228, 106; 229, 108; 254, 28	179, 102	121, 259	121, 255
Analyst	Not stated	S.A. Dep. Mines	W. A. Greig	W. G. Stone	N.S.W. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	G. T. See & P. Bayliss	R. Bury
Remarks	*Dried	—	—	—	*Loss on ignition	—	*Plus un- determined °Loss on ignition	—	—
SiO_2	62.96	62.40	62.13	62.12	62.0	61.39	61.24	61.2	61.0
Al_2O_3	16.15	16.32	19.06	18.90	18.4	18.12	18.17	16.0	20.0
Fe_2O_3	7.50	7.52	5.00	1.75	8.6	8.74	} 6.67	6.1	5.1
FeO	0.73	1.19	1.53	4.41	—	0.12		—	—
MgO	2.38	2.62	1.70	2.72	—	1.00	1.14	—	0.9
CaO	0.02	abs.	0.74	0.78	—	tr.	0.44	—	0.4
Na_2O	1.58	1.56	0.15	0.29	—	0.40	} 2.05*	—	—
K_2O	2.39	2.81	4.43	4.86	—	1.98		2.07	—
$\text{H}_2\text{O}+$	4.99	4.08	3.09	3.10	7.6*	6.38	9.66°	10.8	5.3
$\text{H}_2\text{O}-$	*	—	1.02	0.33	—	2.16	—	1.1	1.0
CO_2	—	—	—	—	—	—	—	—	2.2
TiO_2	1.40	1.62	0.72	0.75	1.0	—	0.60	0.7	0.9
P_2O_5	—	—	0.15	0.14	—	—	—	—	—
MnO	tr.	—	0.02	0.05	—	0.11	—	—	—
Other Con- stituents	$\text{SO}_3=0.01$ $\text{Cl}=0.01$	$\text{SO}_3=0.07$ $\text{Cl}=0.03$	$\text{NaCl}=$ 0.31	$\text{BaO}=$ 0.04			$\text{SO}_3=0.03$		
	100.12	[100.22]	100.05	100.24	97.6	100.40	100.00	98.6	96.8
Age					Triassic		Triassic	Permian	Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$

CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$									
	91	92	93	94	95	96	97	98	99
Rock Name	Shale	Shale <i>Ashfield Shale</i>	Shale <i>Ashfield Shale</i>	Shale, <i>Brin- gelly Shale</i>	<i>Ashfield Shale</i>	Shale	Shale <i>Ashfield Shale</i>	Clay Shale	'Shale'
Locality	Tumut, N.S.W.	Granville, N.S.W.	Artarmon, N.S.W.	Prospect, N.S.W.	Near Berrima N.S.W.	Muswell- brook, N.S.W.	Homebush, Sydney, N.S.W.	The Mount, Rockley Rd., S. of Bathurst, N.S.W.	Tathra, N.S.W.
Reference	121, 265	30, 101	121, 256	189	121, 256	169, 105	121, 256	162, 223	121, 266
Analyst	G. T. See & P. Bayliss	N.S.W. Dep. Mines	R. Bury	N.S.W. Dep. Mines	G. T. See and P. Bayliss	N.S.W. Dep. Mines	G. T. See and P. Bayliss	N.S.W. Dep. Mines	G. T. See and P. Bayliss
Remarks	—	*Plus undet. ° Loss on ignition	—	—	*Includes CO_2	—	*Includes some CO_2		
SiO_2	60.9	60.86	60.3	60.28	60.0	59.46	55.8	55.27	55.1
Al_2O_3	18.4	17.90	18.6	17.78	16.7	17.30	17.9	18.26	17.6
Fe_2O_3	7.5	6.70	6.3	4.45	8.3	5.77	6.4	6.40	10.5
FeO	—		—	2.60	—		—	3.78	—
MgO	—	tr.	0.9	1.17	—	1.80	—	3.70	—
CaO	—	0.62	0.8	0.56	—	0.74	—	0.83	—
Na_2O	—	2.64*	0.1	0.34	—	4.58	—	3.52	—
K_2O	4.3		2.1	2.36	1.9		2.2	2.69	4.5
$\text{H}_2\text{O} +$	5.1	10.94°	6.4	5.61	10.5*	9.70	13.5*	0.21	5.4
$\text{H}_2\text{O} -$	0.7		1.0	3.39	0.7	—	0.8	4.11	1.8
CO_2	—		3.4	0.26	—	—	—	—	—
TiO_2	0.9	—	0.8	1.12	0.8	0.75	0.7	0.85	0.7
P_2O_5	—	—	—	0.22	—	—	—	0.44	—
MnO	—	—	—	0.09	—	—	—	0.02	—
Other Con- stituents		$\text{SO}_3 = 0.34$		$\text{ZrO}_2 = 0.01$ $\text{CuO} = 0.01$		—		$\text{BaO} = 0.12$	
	97.8	100.00	100.7	100.25	98.9	100.00	97.3	100.20	94.8
Age	Ordovician	Triassic	Triassic	Triassic	Triassic	Permian	Triassic		

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$

CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$							CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$		
	100	101	102	103	104	105	106	107	108
Rock Name	Shale <i>Hawkesbury Formation</i>	Shale	Shale	Shale	Carbonate Sediment	Shale	'Slate'	Clayslate	Shale
Locality	Beacon Hill, Brookvale, N.S.W.	Outtrim Colliery, South Gippsland Vic.	Kilcunda, South Gippsland, Vic.	Kilcunda, South Gippsland, Vic.	Bool Lagoon, S.A.	Muswellbrook, N.S.W.	Walcha, N.S.W.	Bungwahl, N.S.W.	Macclesfield, S.A.
Reference	170, 142	63, 209; 241, 28	63, 209; 243	63, 209; 243	2	171, 104	154, 182	157, 202	103, 38
Analyst	N.S.W. Dep. Mines	F. E. A. Stone	P. G. W. Bayly	P. G. W. Bayly	S.A. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. S. Chap- man
Remarks	—	—	—	—	—	—	—	—	—
SiO_2	53.38	61.36	60.70	57.83	54.34	52.14	65.34	63.20	61.88
Al_2O_3	15.93	18.18	18.32	18.49	13.92	16.74	16.55	16.46	19.10
Fe_2O_3	12.60	4.26	1.18	0.41	4.44	1.20	1.50	5.50	7.64
FeO	—	—	3.18	1.79		1.26	3.87	—	—
MgO	1.30	1.26	2.02	1.59	3.75	1.64	2.44	2.06	0.90
CaO	0.62	1.68	2.00	1.53	3.11	2.00	1.08	2.02	3.72
Na_2O	0.40	1.94	1.25	1.52	—	0.91	2.58	2.32	0.54
K_2O	2.08	3.32	2.64	2.42	—	2.15	3.45	2.18	1.22
$\text{H}_2\text{O} +$	5.20	4.23	4.13	7.72	12.06	11.18	1.91	2.91	3.32
$\text{H}_2\text{O} -$	—	3.10	3.35	5.32		—	0.31	1.03	1.10
CO_2	—	—	—	—	6.43	0.20	—	—	abs.
TiO_2	0.60	—	0.90	0.63	0.56	0.65	0.45	—	0.98
P_2O_5	—	—	tr.	abs.	—	—	—	—	—
MnO	0.23	—	tr.	tr.	—	—	—	—	—
Other Con- stituents	Organic + Undet = 7.66		$\text{SO}_3 = \text{abs.}$	$\text{SO}_3 = \text{tr.}$	$\text{SO}_3 = 0.19$ $\text{NaCl} = 0.48$ Organic = 0.59	Organic = 9.93	Organic = 0.72	Organic = 2.16	Cl = 0.01
	100.00	99.33	99.67	99.25	99.87	100.00	100.20	99.84	100.41
Age	Triassic	Jurassic	Jurassic	Jurassic	Quaternary				

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

c. $\text{SiO}_2/\text{Al}_2\text{O}_3 = 4-3$ $\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 < 5\%$			d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ $\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$						
	109	110		1	2	3	4	5	6
Rock Name	Shale <i>Ashfield Shale</i>	Shale <i>Ashfield Shale</i>		Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale	Clayslate	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>
Locality	Eastwood, N.S.W.	Thornleigh N.S.W.		Somesby, near Gosford, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Thirroul, N.S.W.	5 mls N.W. of Dunedoo N.S.W.	Heathcote, N.S.W.	East of Berowra, N.S.W.
Reference	121, 256	121, 256		121, 255	121, 255	121, 260	157, 202	121, 255	121, 255
Analyst	R. Bury	R. Bury		G. T. See and P. Bayliss	R. Bury	G. T. See and P. Bayliss	N.S.W. Dep. Mines	R. Bury	G. T. See and P. Bayliss
Remarks	—	—		—	—	—	—	—	—
SiO_2	58.5	54.8		66.8	65.9	65.7	65.22	64.8	63.6
Al_2O_3	18.3	18.0		22.9	22.5	25.0	24.46	21.9	23.4
Fe_2O_3	6.4	8.0		0.6	0.5	0.5	0.30	1.6	0.9
FeO	—	—		—	—	—	0.18	—	—
MgO	1.4	1.4		—	—	—	0.24	0.5	—
CaO	1.3	1.4		—	—	—	0.09	0.3	—
Na_2O	0.2	0.1		—	—	—	0.32	—	—
K_2O	2.5	2.2		2.0	2.8	0.9	0.92	2.9	3.1
$\text{H}_2\text{O}+$	5.8	6.1		7.0	6.8	13.5	7.41	5.9	5.2
$\text{H}_2\text{O}-$	0.9	0.8		0.8	1.1	2.0	0.99	1.8	1.2
CO_2	4.4	5.8		—	—	—	—	—	—
TiO_2	0.8	0.7		0.8	0.5	1.4	—	0.9	0.7
P_2O_5	—	—		—	—	—	—	—	—
MnO	—	—		—	—	—	tr.	—	—
Other Constituents									
	100.5	[99.3]		100.9	[100.1]	[109.0]	100.13	100.6	98.1
Age	Triassic	Triassic		Triassic	Triassic	Permian		Triassic	Triassic

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	7	8	9	10	11	12	13	14	15
Rock Name	Grey Band in 'Zebra Rock'	Shale	Shale* <i>Narrabeen Shale</i>	Shale	Shale <i>Ashfield Shale</i>	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale
Locality	Argyle Downs, East Kimberley, W.A.	Marangaroo, N.S.W.	Lithgow, N.S.W.	Mt. Buckaroo, near Mudgee, N.S.W.	St. Leonards, Sydney, N.S.W.	Chatswood, Sydney, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Thirroul, N.S.W.	Mujar, E. of Collie, W.A.
Reference	95, 59	122, 374	28, 239	157, 202	121, 256	121, 255	121, 255	121, 255	228, 106
Analyst	H. P. Rowledge	Not stated	J. C. H. Mingaye	N.S.W. Dep. Mines	R. Bury	G. T. See & P. Bayliss	R. Bury	G. T. See & P. Bayliss	D. G. Murray
Remarks	—	—	*Chocolate Shale	—	—	—	—	—	—
SiO_2	63.41	63.0	62.92	62.92	62.7	62.5	62.3	62.1	61.92
Al_2O_3	25.11	22.0	23.30	21.81	23.8	25.0	23.5	21.7	26.09
Fe_2O_3	1.12	0.9	0.27	2.05	1.9	0.7	1.3	0.6	0.75
FeO	0.02	—	3.80	0.50	—	—	—	—	—
MgO	0.11	1.0	0.66	1.33	0.5	—	0.6	—	0.27
CaO	abs.	0.3	0.58	0.48	0.5	—	0.4	—	abs.
Na_2O	0.12	0.1	0.28	0.31	0.1	—	—	—	0.26
K_2O	0.82	3.7	1.52	6.14	2.3	2.6	—	2.1	0.74
$\text{H}_2\text{O}+$	8.82	6.0	7.00	3.41	6.6	8.2	7.9	7.5	8.64
$\text{H}_2\text{O}-$	0.35	3.0		0.32	1.1	1.0	1.1	0.5	1.48
CO_2	abs.	—	—	—	0.2	—	—	—	—
TiO_2	0.44	0.2	—	0.90	0.8	0.4	0.9	0.6	0.54
P_2O_5	abs.	—	—	0.12	—	—	—	—	—
MnO	abs.	—	—	—	—	—	—	—	—
Other Constituents	$\text{ZrO}_2 = \text{tr.}$ $\text{B}_2\text{O}_3 = \text{tr.}$ $\text{FeS}_2 = \text{abs}$ $\text{C} = \text{abs}$								$\text{V}_2\text{O}_3 = \text{tr.}$
	100.32	100.2	[100.33]	100.29	100.5	100.4	98.0	95.1	100.69
Age		Permian	Triassic		Triassic	Triassic	Triassic	Triassic	?Carboniferous

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

$\text{CaO} < 1\% : \text{Fe}_2\text{O}_3 < 5\%$									
	16	17	18	19	20	21	22	23	24
Rock Name	Shale <i>Bringelly Shale</i>	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale	Shale	Shale	Shale <i>Hawkesbury Formation</i>	Shale
Locality	Merrylands, Sydney, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Thornton, East Maitland, N.S.W.	Thornton, East Maitland, N.S.W.	Woonona, N.S.W.	Frenchs Forest N.S.W.	Woonona, N.S.W.
Reference	121, 257	121, 255	121, 255	121, 255	121, 258	121, 258	121, 260	121, 255	92, 272; 157, 202
Analyst	G. T. See & P. Bayliss	G. T. See & P. Bayliss	R. Bury	R. Bury	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	G. T. See & P. Bayliss	N.S.W. Dep. Mines
Remarks	—	—	—	—	—	—	—	—	(Fireclay below Seam 5).
SiO_2	61.6	61.5	61.0	60.6	60.0	58.9	58.4	58.3	57.92
Al_2O_3	23.3	25.5	23.6	23.9	21.0	20.9	22.9	23.5	22.21
Fe_2O_3	3.2	1.0	1.4	1.2	0.5	1.1	1.1	1.2	3.90
FeO	—	—	—	—	—	—	—	—	p.n.d.
MgO	—	—	0.6	0.5	—	—	—	—	0.59
CaO	—	—	0.3	0.4	—	—	—	—	0.23
Na_2O	—	—	—	—	—	—	—	—	0.46
K_2O	2.1	2.8	—	—	1.0	2.1	1.1	2.3	2.37
$\text{H}_2\text{O} +$	6.9	7.7	7.8	8.2	12.1	9.6	11.2	7.6	6.42
$\text{H}_2\text{O} -$	2.1	0.9	1.2	0.7	2.5	2.6	1.1	5.4	2.13
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0.8	0.5	0.9	1.0	0.6	1.0	1.0	0.8	0.90
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	—	—	—	—	—	—	—	Organic = 2.87
	100.0	99.9	96.8	96.5	97.7	96.2	96.8	99.1	100.00
Age	Triassic	Triassic	Triassic	Triassic	Permian	Permian	Permian	Triassic	Permian

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	25	26	27	28	29	30	31	32	33
Rock Name	Shale <i>Hawkesbury Formation</i>	Shale <i>Hawkesbury Formation</i>	Shale	Shale <i>Hawkesbury Formation</i>	Shale	Clayshale	Shale	Claystone	Shale*
Locality	Brookvale, near Manly, N.S.W.	Terry Hills, Frenchs Forest, N.S.W.	Korumburra, S. Gippsland, Vic.	Beacon Hill, Brookvale, Sydney, N.S.W.	Wilga, W.A.	Muswellbrook, N.S.W.	Macclesfield, S.A.	Kulpara, S.A.	Collie, W.A.
Reference	121, 255	121, 255	63	121, 255	259	169, 105	103, 38	117, 113	18, 214
Analyst	G. T. See & P. Bayliss	G. T. See & P. Bayliss	P. G. W. Bayly	G. T. See & P. Bayliss	S. Gillies	N.S.W. Dep. Mines	W. S. Chapman	S.A. Dep. Mines	S. Gillies
Remarks	—	—	—	—	—	—	—	—	*Fireclay
SiO_2	57.9	57.7	57.40	57.3	56.15	56.02	55.84	54.64	54.31
Al_2O_3	28.2	22.3	20.44	21.5	30.92	19.52	22.20	25.71	28.32
Fe_2O_3	0.7	4.6	1.14	2.9	0.33	3.40	4.96	1.53	1.23
FeO	—	—	2.44	—	—		—	0.13	—
MgO	—	—	1.50	—	tr.	1.41	0.42	1.16	0.33
CaO	—	—	0.98	—	abs.	0.82	0.10	0.18	abs.
Na_2O	—	—	1.41	—	0.35	4.53	1.12	0.28	0.11
K_2O	2.1	2.6	3.66	1.9	1.05		0.09	2.58	0.39
$\text{H}_2\text{O}+$	5.3	6.5	5.99	7.9	10.53	13.40	8.44	8.37	9.61
$\text{H}_2\text{O}-$	4.7	0.9	3.63	6.6	0.53	—	1.85	2.70	2.90
CO_2	—	2.0	—	—	—	—	abs.	—	0.26
TiO_2	0.9	0.5	0.90	0.7	0.62	0.90	1.90	2.40	0.56
P_2O_5	—	—	tr.	—	—	—	—	—	—
MnO	—	—	abs.	—	—	—	—	—	0.58
Other Constituents	—	—	$\text{SO}_3 = \text{abs.}$	—	NaCl = 0.12 Other Sol. Salts = 0.06	—	$\text{SO}_3 = 0.17$ Cl = 1.56 Graphite = 2.01	$\text{SO}_3 = 0.02$ Cl = 0.02	Organic = 1.10 NaCl = 0.69 Other Sol. Salts = 0.16
	99.8	97.1	99.49	98.8	100.66	100.00	100.31*	99.72	100.55
Age	Triassic	Triassic	Jurassic	Triassic		Permian			

*100.66 less O = Cl, F, S = 0.35

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO = 1% : $\text{Fe}_2\text{O}_3 < 5\%$

	34	35	36	37	38	39	40	41	42
Rock Name	Shale	Shale	Shale	Shale, (Fireclay)	Claystone	Indurated Shale	Shale (or clay) <i>Narra- been shale</i>	Claystone	Clayshale
Locality	Cronulla, Sydney, N.S.W.	Ida Bay, Tas.	Thirroul N.S.W.	Collie, W.A.	Croxton, near North- cote, Vic.	Moora, W.A.	Careel Bay, Pittwater, N.S.W.	Home Rule, N.S.W.	5 mls. N.W. of Dune- doo, N.S.W.
Reference	163, 183	240, 38	121, 260	228, 106	249	14, 60; 18, 215	162, 223	169, 105	157, 202
Analyst	N.S.W. Dep. Mines	F. D. Power	G. T. See & P. Bayliss	E. S. Simpson	Vic. Dep. Mines	H. Bowley	N.S.W. Dep. Mines	W. A. Greig	N.S.W. Dep. Mines
Remarks	—	*Loss on ignition	—	—	—	*Loss on ignition	—	*Loss on ignition	—
SiO_2	54.28	53.8	53.1	51.95	51.40	50.34	49.48	47.40	46.82
Al_2O_3	26.50	28.1	27.2	29.58	22.56	31.97	33.92	36.12	38.12
Fe_2O_3	—	1.1	3.6	3.40	4.67	2.68	0.11	0.50	0.45
FeO	—		—	—		—		—	0.09
MgO	—	tr.	—	1.01	2.13	0.86	abs.	0.20	0.14
CaO	—	0.7	—	tr.	tr.	0.16	0.12	0.44	0.11
Na_2O	—	—	—	1.09	4.67	0.22	0.10	—	0.40
K_2O	—	—	1.3	0.63		2.66	0.44	—	0.35
$\text{H}_2\text{O} +$	—	16.4*	10.6	11.23	6.50	9.73*	12.33	14.14*	12.60
$\text{H}_2\text{O} -$	—	—	1.3	0.54	7.90	1.16	1.49	—	1.07
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	—	—	0.9	—	0.17	—	2.20	0.50	—
P_2O_5	—	—	—	—	—	—	0.07	—	—
MnO	—	—	—	—	—	—	—	—	tr.
Other Con- stituents	—	—	—	—	—	—	—	—	—
Less O = Cl, F, S	—	—	—	—	—	—	—	—	—
		100.1	98.0	99.43	100.00	99.78	100.26	99.30	100.15
Age			Permian	?Carbon- iferous			Triassic		

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

CaO < 1% : $\text{Fe}_2\text{O}_3 < 5\%$							CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$		
	43	44	45	46	47	48	49	50	51
Rock Name	Claystone	Kaolinized Shale	Clay Shale	Shale	Pellet Claystone	Claystone	Banded Shale	Clay Shale	Red Band in 'Zebra Rock'
Locality	Home Rule, N.S.W.	Arnhem Bay Area, N.T.	Williams-Town, S.A.	Kanowna, W.A.	Bulli, N.S.W.	Muswellbrook N.S.W.	Muswellbrook N.S.W.	Lithgow, N.S.W.	Argyle Downs, East Kimberley, W.A.
Reference	169, 105	35	32, 110	228, 102	8, 126	189	189	106, 108	95, 59
Analyst	W. A. Grieg	J. R. Beevers	S.A. Dep. Mines	C. C. Willians	G. C. Carlos	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	H. P. Rowledge
Remarks	*Loss on ignition	—	—	—	—	—	—	(Clay Band) *Loss on ignition	—
SiO_2	46.64	46.00	45.04	44.16	42.77	42.31	65.70	63.43	59.80
Al_2O_3	37.37	36.25	36.26	30.38	38.19	30.46	23.43	25.55	23.45
Fe_2O_3	0.50	1.34	1.90	4.44	1.16	2.28	5.80	6.02	5.73
FeO	—	—		—	tr.	0.14	0.27	—	0.18
MgO	0.30	tr.	0.32	0.70	0.30	0.12	0.13	0.70	0.17
CaO	0.34	0.12	0.16	0.53	0.64	0.02	0.20	—	0.20
Na_2O	—	—	0.44	1.05	nd.	0.04	0.16	—	0.08
K_2O	—	—	0.04	0.33	nd.	abs.	0.05	—	0.82
$\text{H}_2\text{O} +$	14.30*	13.56	13.72	11.80	13.67	11.48	2.09	5.30*	8.45
$\text{H}_2\text{O} -$	—	0.69	1.64	3.81	0.93	10.97	0.61	—	0.37
CO_2	—	—	—	—	abs.	abs.	0.12	—	abs.
TiO_2	0.25	3.20	0.78	3.74	2.19	1.68	1.43	—	0.57
P_2O_5	—	0.03	—	—	0.61	0.48	0.07	—	0.17
MnO	—	abs.	—	abs.	tr.	abs.	0.03	—	abs.
Other Constituents	—	S = 0.10	Cl = 0.01	—	—	—	C = 0.16	—	$\text{Be}_2\text{O}_3 = \text{tr.}$ $\text{ZrO}_2 = \text{tr.}$
Less O = Cl, F, S	—	101.29	—	—	—	—	—	—	—
	—	0.03	—	—	—	—	—	—	—
	99.7	101.26	100.31	100.94	100.46	99.98	100.25	101.00	99.99
Age	—	—	—	Quaternary	Permian	—	—	Permian	—

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$ CaO < 1% : $\text{Fe}_2\text{O}_3 = 5\% - 10\%$

	52	53	54	55	56	57	58	59	60
RockName	Claystone	Shale	Shale	'Phyllite'	Shale	Shale	Shale	Shale <i>Hawkesbury Formation</i>	Shale <i>Ashfield Shale</i>
Locality	Muswellbrook N.S.W.	Cootamundra, N.S.W.	Berrima, N.S.W.	Canbelego, N.S.W.	Orange, N.S.W.	Belmont, W.A.	Belmont, W.A.	Terry Hills Frenchs Forest, N.S.W.	Granville, N.S.W.
Reference	169, 105	121, 264	169, 106	4, 23	121, 263	228, 106	18, 215; 228, 106	121, 255	121, 256
Analyst	H. P. White	G. T. See & P. Bayliss	W. A. Greig	J. C. H. Mingaye	R. Bury	E. S. Simpson	A. J. Robertson	R. Bury	G. T. See & P. Bayliss
SiO_2	59.46	58.7	58.40	57.68	57.4	56.82	56.80	56.8	54.2
Al_2O_3	17.30	20.0	21.10	19.73	20.7	19.67	19.88	21.3	22.2
Fe_2O_3	5.77	7.0	5.50	1.60	8.1	7.51	7.16	6.4	5.6
FeO	—	—		7.20	—	—	—	—	—
MgO	1.70	—	0.72	3.33	—	0.50	0.41	1.0	—
CaO	0.74	—	0.20	0.16	—	0.63	0.74	0.4	—
Na_2O	4.58	—	0.08	0.14	0.7	—	2.25	—	—
K_2O		4.5	2.06	4.56	1.7	—	1.92	—	2.2
$\text{H}_2\text{O}+$	9.70	3.7	11.00	4.24	7.3	10.18*	6.63*	7.0	10.6*
$\text{H}_2\text{O}-$		1.3		0.14	2.1	—	4.34	1.0	0.1
CO_2	—	—	—	0.01	—	—	—	2.5	—
TiO_2	0.75	0.3	0.80	0.75	0.8	—	—	0.9	0.7
P_2O_5	—	—	—	0.14	—	—	—	—	—
MnO	—	—	—	0.05	—	—	—	—	—
Other Constituents	—	—	Organic = 0.04 $\text{SO}_3 = \text{tr.}$ $\text{Fe S}_2 = \text{tr.}$	BaO = 0.05 $\text{Cr}_2\text{O}_3 = \text{tr.}$ $\text{SrO} = \text{tr.}$ $\text{V}_2\text{O}_5 = \text{tr.}$ $\text{Li}_2\text{O} = \text{tr.}$ $(\text{NiCo})\text{O} = \text{tr.}$			$\text{V}_2\text{O}_5 = \text{tr}$ $\text{NaCl} = 0.46$		
	100.00	95.5	100.26	99.78	98.8	95.31	100.59	97.3	95.6
Age		Silurian			Silurian	Mesozoic or Tertiary	Mesozoic or Tertiary	Triassic	Triassic

*Loss on ignition.

Includes CO_2

TABLE SQ — LUTITES (NON-CALCAREOUS AND NON-FERRUGINOUS)

d. ALUMINOUS $\text{SiO}_2/\text{Al}_2\text{O}_3 < 3$

	$\text{Ca} < 1\% : \text{Fe}_2\text{O}_3 = 5\% - 10\%$		$\text{CaO} = 1\% - 5\% : \text{Fe}_2\text{O}_3 < 5\%$			$\text{CaO} = 1\% - 5\%$ $\text{Fe}_2\text{O}_3 = 5\% - 10\%$	
	61	62	63	64	65	66	67
Rock Name	Shale	Shale <i>Ashfield Shale</i>	Shale	Shale	Shale	Shale <i>Narrabeen Shale</i>	Shale
Locality	Lithgow, N.S.W.	Auburn, Sydney, N.S.W.	Brisbane City, Qld.	Ida Bay, Tas.	Ida Bay, Tas.	Dents Ck, Sutherland, N.S.W.	Homebush, N.S.W.
Reference	28, 238	121, 256	20, 34	240, 38	240, 38	92, 68	189
Analyst	J. C. H. Mingaye	G. T. See & P. Bayliss	G. R. Patten	F. D. Power	F. D. Power	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	*Includes CO_2	—	*Loss on ignition	*Loss on ignition	(Chocolate Shale)	—
SiO_2	52.70	51.6	61.62	48.6	47.7	56.28	55.2
Al_2O_3	21.48	21.5	21.20	23.2	25.6	24.21	19.6
Fe_2O_3	0.90	8.0	1.51	1.2	2.1	7.34	7.7
FeO	7.92	—	1.93	—	—		—
MgO	1.05	—	1.77	1.1	1.0	2.36	1.3
CaO	0.68	—	1.59	1.4	1.2	1.10	1.6
Na_2O	0.21	—	3.39	—	—	—	0.2
K_2O	2.04	2.4	3.07	—	—	—	2.2
$\text{H}_2\text{O} +$	12.86	11.1*	3.29	22.8*	21.4*	5.32	6.2
$\text{H}_2\text{O} -$		0.9	0.03	—	—	3.38	1.1
CO_2	—	—	n.d.	—	—	—	3.3
TiO_2	—	0.7	0.82	—	—	—	0.6
P_2O_5	—	—	0.17	—	—	—	—
MnO	—	—	0.07	—	—	—	—
Other Con- stituents	—	—	—	—	—	Cu = 0.08	Organic = 0.8
	99.84	96.2	100.46	98.3	99.0	100.07	
Age	Permian	Triassic				Triassic	

TABLE SR — FERRUGINOUS LUTITES (Total $\text{Fe}_2\text{O}_3 > 10\%$)

	1	2	3	4	5	6	7	8	9
Rock Name	Glauconite Shale	Black Greenalite Shale	Chocolate Shale	Chocolate Shale	Ferruginous Shale	Ferruginous Shale	Magnetite-Greenalite Rock	'Clay Band'	Ferruginous Shale
Locality	Gingin, W.A.	Roper Bar, Bore 143'—, N.T.	Long Reef, near Sydney, N.S.W.	Helensburgh, N.S.W.	Rylstone, N.S.W.	Rylstone, N.S.W.	Roper Bar, Bore 231' 9"—232' N.T.	Mt. Keira, N.S.W.	Rylstone, N.S.W.
Reference	259	33, 22	121, 254; 250, 155	121, 254; 163, 182	134, 47	134, 47	33, 17	92, 80; 106, 113	134, 47
Analyst	E. S. Simpson	P. J. Sinnott	S. G. Walton	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	P. J. Sinnott	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	—	—	—	(Rubble)	(Rubble)	—	—	(Rubble)
SiO_2	59.79	40.97	38.98	36.42	32.10	31.12	30.26	27.36	21.35
Al_2O_3	8.15	12.03	28.00	31.48	15.91	14.42	2.26	10.14	14.65
Fe_2O_3	10.47	6.09	14.39	15.50	41.94	42.10	16.47	34.40	51.45
FeO	0.33	26.08	0.98	0.45			37.00	8.85	
MgO	2.32	4.18	0.36	0.36	0.62	1.28	2.09	2.33	1.17
CaO	2.96	0.10	0.15	0.60	0.45	0.55	tr.	1.00	tr.
Na_2O	0.17	0.10	0.08	0.24	2.81	3.04	0.16	—	1.64
K_2O	2.84	0.50	0.18	0.09			0.14	—	
$\text{H}_2\text{O} +$	4.73	7.90	10.38	10.19	6.17*	7.49*	8.73	8.22	9.74*
$\text{H}_2\text{O} -$	5.17	1.43	3.60	1.77	—	—	2.15	2.66	
CO_2	0.25	tr.	0.22	—	—	—	tr.	1.70	—
TiO_2	0.09	0.65	2.05	2.24	—	—	0.03	0.05	—
P_2O_5	1.72	0.03	0.06	0.12	—	—	0.01	0.59	—
MnO	—	0.01	0.04	0.02	tr.	tr.	0.78	tr.	—
Other Constituents	Organic = 0.42 F = 0.77	$\text{Li}_2\text{O} = \text{abs.}$ $\text{SO}_3 = \text{tr.}$	$\text{Cr}_2\text{O}_3 = 0.06$ $\text{NiO} = 0.01$ $\text{ZrO}_2 = 0.01$ $\text{CuO} = 0.11$ $\text{SO}_3 = 0.01$ $\text{FeS}_2 = 0.09$ $\text{Cl} = 0.15$	$\text{Cl} = 0.12$ $\text{SO}_3 = 0.18$			$\text{Li}_2\text{O} = \text{tr.}$ $\text{SO}_3 = \text{tr.}$	$\text{V}_2\text{O}_5 = 0.01$ $\text{SO}_3 = 0.14$ Organic = 2.42	
	100.18	—	99.91	99.78	—	—	—	—	—
Less O = Cl, F, S	0.32	—	0.04	0.02	—	—	—	—	—
	99.86	100.07	99.87	99.76	100.00	100.00	100.08	[99.87]	100.00
Age	Cretaceous	—	Triassic (Narrabeen Group)	Triassic (Narrabeen Group)	—	—	—	Permian	—

*Loss on ignition.

TABLE SR — FERRUGINOUS LUTITES (Total $\text{Fe}_2\text{O}_3 > 10\%$)

	10
Rock Name	'Clay Band'
Locality	Piper's Flat, N.S.W.
Reference	28, 234
Analyst	A. Liversidge
Remarks	—
SiO_2	4.60
Al_2O_3	—
Fe_2O_3	80.00
FeO	—
MgO	—
CaO	—
Na_2O	—
K_2O	—
$\text{H}_2\text{O} +$	3.54
$\text{H}_2\text{O} -$	1.28
CO_2	—
TiO_2	—
P_2O_5	0.49
MnO	—
Other Con- stituents	S = 0.11 Undet 9.98
	100.00
Age	Permian

TABLE SS — CALCAREOUS LUTITES ($\text{CaCO}_3 < 25\%$)

a. $\text{CaO} = 5\% - 10\%$						b. $\text{CaO} > 10\%$			
Rock Name	1 Calcareous Mudstone	2 Shale	3 Shale	4 <i>Aure Mudstone</i>	5 Calcareous Clay Shale		1 Clay Shale	2 Clay Shale	3 Slate
Locality	Glendon, N.S.W.	Portland, N.S.W.	Leigh Ck, S.A.	Napere Ck, Papua, T.P. & N.G.	Minchin-bury, near Penrith, N.S.W.		Near Lionsville, N.S.W.	Near Lionsville, N.S.W.	Glassford, Qld.
Reference	51, 171; 208, 152	30, 76	77, 16	59, 139	153, 177		168, 99	168, 99	9, 455
Analyst	J. C. H. Mingaye	N.S.W. Dep. Mines	S.A. School Mines	Avery and Anderson	N.S.W. Dep. Mines		N.S.W. Dep. Mines	N.S.W. Dep. Mines	Qld. Govt. Anal.
Remarks	—	*Loss on ignition	—	—	—		—	*Includes C	
SiO_2	59.66	56.30	53.07	52.36	51.00		70.72	69.60	63.4
Al_2O_3	12.21	18.00	14.62	15.83	15.03		0.48	0.32	12.4
Fe_2O_3	1.30	4.65	6.00	1.96	4.10		—	—	1.2
FeO	1.80		1.86	3.74	4.50		0.36	0.72	8.5
MgO	1.41	0.58	2.33	3.00	4.68		0.61	0.60	1.5
CaO	6.55	6.05	5.56	5.91	6.60		14.52	14.28	10.8
Na_2O	1.69	—	1.47	2.18	2.34		11.16	10.29	2.2
K_2O	2.26	—	2.84	1.50	1.89		0.24	0.22	
$\text{H}_2\text{O} +$	2.98	10.63*	5.29	3.62	5.48		1.66	4.10*	tr.
$\text{H}_2\text{O} -$	1.35		—	5.08	—		—	—	tr.
CO_2	6.08	—	—	3.34	3.76		—	—	—
TiO_2	0.68	—	1.04	0.91	1.44		—	—	—
P_2O_5	0.09	—	—	0.24	—		—	—	—
MnO	0.14	—	—	0.08	0.14		tr.	tr.	abs.
Other Constituents	$\text{SO}_3 = 2.02$ $\text{Cl} = 0.03$ $\text{V}_2\text{O}_5 = 0.01$ $\text{BaO} = \text{tr.}$ $\text{Cr}_2\text{O}_3 = \text{tr.}$ $\text{ZrO}_2 = \text{tr.}$	$\text{SO}_3 = 0.80$	$\text{SO}_3 = 6.19$ $\text{Cl} = 0.26$	$\text{SO}_3 = 0.04$ $\text{Cl} = 0.03$					
Less O = Cl, F, S	100.26	—	100.53	99.82	—	—	—	—	—
	0.01	—	0.06	0.01	—	—	—	—	—
Age	100.25	97.01	100.47	99.81	100.36		99.75	100.13	100.0
	Permian								

TABLE SS — CALCAREOUS LUTITES ($\text{CaCO}_3 < 25\%$)

b. $\text{CaO} > 10\%$	
	4
Rock Name	Calcareous Shale
Locality	Red Hill, Canberra, A.C.T.
Reference	198
Analyst	N.S.W. Dep. Mines
Remarks	—
SiO_2	60.02
Al_2O_3	15.54
Fe_2O_3	1.20
FeO	5.40
MgO	1.84
CaO	10.48
Na_2O	0.38
K_2O	4.30
$\text{H}_2\text{O} +$	} 0.68
$\text{H}_2\text{O} -$	
CO_2	0.30
TiO_2	—
P_2O_5	tr.
MnO	—
Other Con- stituents	
	100.14

TABLE ST — INCOMPLETE ANALYSES OF
CALCAREOUS and DOLOMITIC LUTITES

	1	2	3	4
Rock Name	Calcareous Shale	Dolomitic Shale	Dolomitic Shale <i>Mt. Isa Shale</i>	Dolomitic Shale
Locality	Between Picton and The Oaks, N.S.W.	Near Mt. Oxide, Qld.	12 mls. S.S.E. Mt. Isa, Qld.	Judenan Ck, 70 mls. N.W. of Mt. Isa, Qld.
Reference	152, 182	31, 106	35	31, 106
Analyst	N.S.W. Dep. Mines	S. Baker	S. Baker	S. Baker
Remarks	*Plus under-determined °Quoted as Carbonate	*Insol.	*Insol.	*Insol.
SiO ₂	78.18	54.8*	51.0*	43.6*
Al ₂ O ₃	} 7.0	—	—	—
Fe ₂ O ₃		—	—	—
FeO	—	—	—	—
MgO	2.16*	9.3	8.1	11.1
CaO	3.06°	11.6	15.0	17.2
Na ₂ O	—	—	—	—
K ₂ O	—	—	—	—
H ₂ O+	} 7.20	—	—	—
H ₂ O—		—	—	—
CO ₂	2.40°	—	—	—
TiO ₂	—	—	—	—
P ₂ O ₅	—	—	—	—
MnO	—	—	—	—
Other Constituents				
	100.00			
Age	Triassic	Pre-cambrian	Pre-cambrian	Pre-cambrian

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

a. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 > 20$					b. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 20-5$				
	1	2	3	4		1	2	3	4
Rock Name	Pisolitic Bauxite	Bauxite	Bauxite	Bauxite		Pisolitic Bauxite	Bauxite	Pisolitic Bauxite	Bauxite
Locality	6 mls N. of Wingello, N.S.W.	Wingello, N.S.W.	Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.		St. Leonards, Tas.	Near Boolarra, Gippsland, Vic.	St. Leonards, Tas.	Boolarra, Gippsland, Vic.
Reference	93, 16; 106, 98	93, 16; 106, 98	84, 291	84, 291		62	84, 290	62	84, 291
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines		W. St. C. Manson	J. C. Watson	W. St. C. Manson	Vic. Dep. Mines
Remarks	—	†Not included in Total	*Insoluble SiO_2	—		—	*Insoluble SiO_2	—	—
SiO_2	1.90	1.80	1.60*	1.32		9.9	9.28*	8.2	6.54
Al_2O_3	61.46	58.31	66.32	62.34		50.6	47.82	54.5	55.76
Fe_2O_3	1.99	2.85	2.98	2.67		9.8	9.09	5.6	4.07
FeO	—	—	—	—		—	—	—	—
MgO	—	—	—	—		—	—	—	—
CaO	—	—	—	—		—	—	—	—
Na_2O	—	—	—	—		—	—	—	—
K_2O	—	—	—	—		—	—	—	—
$\text{H}_2\text{O} +$	30.77	32.68	27.54	31.30		27.3	23.78	27.9	} 29.04
$\text{H}_2\text{O} -$	—	—	—	—		—	3.32	—	
CO_2	—	—	—	—		—	—	—	—
TiO_2	—	2.40	2.14	2.14		2.4	—	2.9	4.75
P_2O_5	0.034	2.88	—	—		—	7.25	—	—
MnO	—	—	—	—		—	—	—	—
Other Constituents	Fe = 1.39	Fe = 1.99†							
	97.544	100.02	100.58	[99.77]		100.0	100.54	99.1	100.16

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

b. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 20-5$						c. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 5-4$			
	5	6	7	8	9		1	2	3
Rock Name	Ferruginous Bauxite	Bauxite	Bauxite	Bauxite	Bauxite		Earthy Bauxite	Earthy Bauxite	Bauxite
Locality	Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.	Near Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.		St. Leonards, Tas.	St. Leonards, Tas.	Riccarton, Tas.
Reference	209	84, 291	84, 290	84, 291	84, 291		62	62	62
Analyst	Vic. Dep. Mines	Vic. Dep. Mines	J. C. Watson	Vic. Dep. Mines	Vic. Dep. Mines		W. St. C. Manson	W. St. C. Manson	W. St. C. Manson
Remarks	*Loss on ignition	—	*Insol. SiO_2	*Insol. SiO_2	*Insol. SiO_2		*Insol.	*Insol.	(Shaft) *Insol.
SiO_2	5.0	2.55	2.14*	1.90*	1.21*		7.7*	1.6*	1.0*
Al_2O_3	53.0	59.22	58.22	58.66	60.19		52.0	55.0	53.8
Fe_2O_3	6.5	5.76	5.11	9.49	6.41		12.5	11.7	12.8
FeO	—	—	—	—	—		—	—	—
MgO	—	—	—	—	—		—	—	—
CaO	—	—	—	—	—		—	—	—
Na_2O	—	—	—	—	—		—	—	—
K_2O	—	—	—	—	—		—	—	—
$\text{H}_2\text{O} +$	31.0*	29.46	29.62	28.38	28.78		26.7	29.3	30.5
$\text{H}_2\text{O} -$	—	—	0.70	0.96			—	—	—
CO_2	—	—	—	—	—		—	—	—
TiO_2	4.5	2.86	4.23	0.83	3.31		2.0	1.9	2.3
P_2O_5	—	—	—	—	—		—	—	—
MnO	—	—	—	—	—		—	—	—
Other Constituents									
	100.0	[99.85]	100.02	100.22	99.90		100.9	99.5	100.4

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

d. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 4-3$						e. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 3-2$			
	1	2	3	4	5		1	2	3
Rock Name	Bauxite	Pisolitic Bauxite	Bauxite	Bauxite	Bauxite		Bauxite	Ferruginous Bauxite	Earthy Bauxite
Locality	Near Boolarra, Gippsland, Vic.	Riccarton, Tas.	Near Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.	Boolarra, Gippsland, Vic.		Swansea, Ironbark, Tas.	Mornington Peninsula, Vic.	St. Leonards, Tas.
Reference	84, 290	62	84, 290	84, 291	84, 291		62	113, 70	62
Analyst	J. C. Watson	W. St. C. Manson	J. C. Watson	Vic. Dep. Mines	Vic. Dep. Mines		W. St. C. Manson	Vic. Dep. Mines	W. St. C. Manson
Remarks	*Insol.	*Insol. °Loss on ignition	*Insol.	*Insol.	*Insol.		*Insol. °Loss on ignition	*Insol. °Loss on ignition	—
SiO_2	4.20*	1.75*	1.74*	1.65*	1.53*		9.3*	9.1*	8.7
Al_2O_3	49.00	51.3	48.53	54.15	49.54		41.4	44.8	44.0
Fe_2O_3	14.31	15.9	14.20	17.41	15.57		19.9	16.5	20.7
FeO	—	—	—	—	—		—	—	—
MgO	—	—	—	—	—		—	—	—
CaO	—	—	—	—	—		—	—	—
Na_2O	—	—	—	—	—		—	—	—
K_2O	—	—	—	—	—		—	—	—
$\text{H}_2\text{O}+$	28.12	27.7°	26.72	} 24.42	29.14		24.6°	25.4°	24.8°
$\text{H}_2\text{O}-$	1.40	—	1.90		0.82		—	—	—
CO_2	—	—	—	—	—		—	—	—
TiO_2	3.57	1.6	6.55	2.78	3.29		4.2	4.6	1.7
P_2O_5	—	—	—	—	—		—	—	—
MnO	—	—	—	—	—		—	—	—
Other Constituents									
	100.60	98.25	99.64	100.41	99.89		99.4	100.4	99.9

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

e. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 3-2$									
	4	5	6	7	8	9	10	11	12
Rock Name	Earthy Bauxite	Pisolitic Bauxite	Gibbsite Laterite	Earthy Bauxite	Bauxite	Earthy Bauxite	Bauxite	Bauxite	Bauxite
Locality	Ouse, Tas.	St. Leonards, Tas.	Wongan Hills, S. W. Division, W.A.	Ouse, Tas.	Near Boolarra, Gippsland, Vic.	Ouse, Tas.	Emmaville, N.S.W.	Near Boolarra, Gippsland, Vic.	Near Boolarra, Gippsland, Vic.
Reference	62	62	228, 122; 231, 105; 239, 10	62	84, 290	62	106, 104; 145, 205	84, 290	84, 290
Analyst	W. St. C. Manson	W. St. C. Manson	E. S. Simpson	W. St. C. Manson	J. C. Watson	W. St. C. Manson	N.S.W. Dep. Mines	J. C. Watson	J. C. Watson
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition	—	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	*Insol.	*Insol.
SiO_2	8.4*	6.4*	5.96	5.8*	4.86*	3.3*	3.00	2.64*	1.52*
Al_2O_3	49.2	46.1	44.66	47.2	42.00	47.8	46.95	45.20	45.72
Fe_2O_3	20.8	19.2	19.08	17.9	19.20	19.1	19.15	22.04	18.18
FeO	—	—	—	—	—	—	—	—	—
MgO	—	—	tr.	—	—	—	—	—	—
CaO	—	—	tr.	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	20.2°	25.4°	26.44	27.1°	24.56°	27.8°	27.50°	26.42	27.48
$\text{H}_2\text{O} -$	—	—	0.58	—	2.58	—	—	0.80	1.16
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	2.0	2.1	3.10	2.3	6.80	1.9	—	3.40	4.42
P_2O_5	—	—	tr.	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents			$\text{SO}_3 = 0.18$						
	100.6	99.2	100.00	100.3	100.00	[99.9]	96.60	100.50	98.48

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

e. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 3-2$			f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$						
	13		1	2	3	4	5	6	7
Rock Name	Bauxite		Pisolitic Bauxite	Aluminous Ironstone	Pisolitic Bauxite	Dolerite Bauxite	Bauxite (bulk sample)	Bauxite	Aluminous Ironstone
Locality	Near Boolarra, Gippsland, Vic.		Ouse, Tas.	Byron, Inverell, N.S.W.	Wingello, N.S.W.	St. Leonards Tas.	Burgess Ck. Callignee South, Vic.	Rosevale, Wedbury, Tas.	Old Byron Homestead, Inverell, N.S.W.
Reference	84, 290		62	154, 174	93, 16; 106, 98	62	85, 293	62	154, 174
Analyst	J. C. Watson		W. St. C. Manson	H. B. Gurney	N.S.W. Dep. Mines	W. St. C. Manson	Vic. Dep. Mines	R. A. Dunt	H. B. Gurney
Remarks	*Insol.		*Insol. °Loss on ignition	—	*Insol. °Loss on ignition †Not included in total	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	—
SiO_2	1.10		9.5*	9.45	9.12*	9.1*	9.10*	9.0*	8.45
Al_2O_3	46.28		34.1	32.71	37.31	37.8	37.40	41.5	35.63
Fe_2O_3	16.19		34.0	22.13	29.42	27.4	22.21	22.3	22.63
FeO	—		—	0.69	—	—	—	—	1.15
MgO	—		—	0.75	—	—	—	—	0.21
CaO	—		—	0.95	—	—	—	—	0.40
Na_2O	—		—	0.52	—	—	—	—	0.47
K_2O	—		—	tr.	—	—	—	—	tr.
$\text{H}_2\text{O}+$	27.72		20.4°	22.07	20.65°	23.0°	20.80°	24.1°	23.09
$\text{H}_2\text{O}-$	0.90		—	3.15	—	—	5.70	—	3.00
CO_2	—		—	—	—	—	—	—	—
TiO_2	4.93		2.3	6.20	—	2.0	3.65	2.8	3.80
P_2O_5	—		—	0.81	0.001	—	—	—	0.62
MnO	—		—	0.47	—	—	—	—	0.19
Other Con-stituents				$\text{Cr}_2\text{O}_3 = 0.22$ $\text{CuO} = 0.02$	$\text{Fe} = 20.59^\dagger$		Undet = 1.14		$\text{Cr}_2\text{O}_3 = 0.09$ $\text{V}_2\text{O}_5 = \text{abs.}$ $\text{CuO} = 0.28$
	97.12		100.3	100.14	96.50	99.3	100.00	99.7	100.01

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
Rock Name	8	9	10	11	12	13	14	15	16
	Earthy Bauxite with Pisolites	Aluminous Laterite	Earthy Bauxite	Dolerite Bauxite	Bauxite	Doleritic Bauxite	Ferruginous Bauxite	Dolerite Bauxite	Bauxite (Pebble Ore)
Locality	St. Leonards, Tas.	6 miles W. of Inverell, N.S.W.	St. Leonards, Tas.	St. Leonards, Tas.	Swansea, Ironbark, Tas.	St. Leonards, Tas.	Astrolabe Ra, Papua, T.P. & N.G.	Ouse, Tas.	Wingello, N.S.W.
Reference	62	183, 96	62	62	62	62	35	62	93, 16; 106, 98
Analyst	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	A. McClure	W. St. C. Manson	N.S.W. Dep. Mines
Remarks	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition	*Insol. Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Loss on ignition Includes 2.26% H_2O —	—	†Not included in total
SiO_2	8.4*	8.4	8.3*	8.2*	8.0*	7.96*	7.90	7.6	7.20
Al_2O_3	38.6	32.5	42.5	39.2	34.8	38.58	41.72	35.9	44.98
Fe_2O_3	24.0	30.9	22.1	25.5	33.4	26.84	24.74	32.5	28.14
FeO	—	—	—	—	—	—	—	—	2.37
MgO	—	—	—	—	—	0.14	—	—	—
CaO	—	—	—	—	—	tr.	—	—	—
Na_2O	—	—	—	—	—	0.09	—	—	—
K_2O	—	—	—	—	—	0.08	—	—	—
$\text{H}_2\text{O}+$	23.4°	22.6°	24.5°	24.2°	21.0°	23.62°	23.17*	22.2	16.10
$\text{H}_2\text{O}-$	—	—	—	—	—	1.32	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	4.7	4.7	2.4	2.0	2.6	1.35	1.88	2.1	—
P_2O_5	—	—	—	—	—	0.09	—	—	0.04
MnO	—	—	—	—	—	0.09	—	—	—
Other Con-stituents									$\text{Fe} = 21.55\ddagger$
	99.1	99.1	99.8	99.1	99.8	100.16	99.41	100.3	98.83

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	17	18	19	20	21	22	23	24	25
Rock Name	Earthy Bauxite	Dolerite Bauxite	Earthy Bauxite	Earthy Bauxite	Pisolitic Bauxite	Bauxite	Earthy Bauxite	Dolerite Bauxite	Bauxite
Locality	St. Leonards, Tas.	Ouse, Tas.	Ouse, Tas.	St. Leonards, Tas.	Ouse, Tas.	Wingello, N.S.W.	St. Leonards Tas.	Ouse, Tas.	Emmaville, N.S.W.
Reference	62	62	62	62	62	93, 18	62	62	106, 104; 145, 205
Analyst	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	—	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition
SiO_2	7.2*	6.5*	6.1*	5.7*	5.5*	5.32	5.3*	5.2*	5.10
Al_2O_3	39.7	35.4	41.9	42.8	40.3	36.66	41.4	35.5	41.43
Fe_2O_3	29.2	33.9	25.4	25.7	30.1	34.06	24.6	35.4	26.87
FeO	—	—	—	—	—	—	—	—	—
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O}+$	21.4°	21.5°	25.1°	23.0°	20.8°	21.20	25.4°	22.1°	23.95°
$\text{H}_2\text{O}-$	—	—	—	—	—	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.9	2.3	2.0	2.1	2.4	—	2.3	2.0	—
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents									
	99.4	99.6	100.5	99.3	99.1	97.24	99.0	100.2	97.35

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	26	27	28	29	30	31	32	33	34
Rock Name	Earthy Bauxite	Earthy Bauxite	Bauxite	Earthy Bauxite	Earthy Bauxite	Dolerite Bauxite	Earthy Bauxite	Bauxite	Earthy Bauxite
Locality	Ouse, Tas.	St. Leonards, Tas.	Wingello, N.S.W.	St. Leonards, Tas.	Ouse, Tas.	Ouse, Tas.	St. Leonards, Tas.	Wingello, N.S.W.	Ouse, Tas.
Reference	62	62	181, 90	62	62	62	62	181, 90	62
Analyst	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition
SiO_2	5.0*	4.9*	4.86	4.8*	4.8*	4.7*	4.6*	4.58	4.5*
Al_2O_3	44.8	42.2	35.80	36.3	41.7	35.4	45.5	34.41	43.7
Fe_2O_3	23.1	24.8	31.55	32.9	25.7	33.8	22.9	33.20	26.5
FeO	—	—	1.08	—	—	—	—	1.44	—
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	24.3°	25.7°	22.28°	22.5°	24.9°	24.3°	24.3°	19.60°	23.5°
$\text{H}_2\text{O} -$	—	—	—	—	—	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	2.7	2.0	4.25	2.6	2.5	1.9	2.1	6.10	2.1
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents									
	99.9	99.6	99.82	99.1	99.6	100.1	99.4	99.33	100.3

TABLE SU — BAUXITES AND LATERITES (SiO₂<10/%)

f. AL ₂ O ₃ /Total Fe ₂ O ₃ = 2—1									
	35	36	37	38	39	40	41	42	43
Rock Name	Earthy Bauxite	Bauxite	Bauxite (pebble ore)	Bauxite	Bauxite	Bauxite	Pisolitic Bauxite	Earthy Bauxite	Bauxite
Locality	Ouse, Tas.	Wingello, N.S.W.	Wingello, N.S.W.	N. of Inverell, N.S.W.	Rosevale, Westbury, Tas.	Wingello, N.S.W.	Ouse, Tas.	Ouse, Tas.	Rosevale, Westbury, Tas.
Reference	62	181, 90	93, 16; 106, 98	106, 104; 145, 205	62	181, 90	62	62	62
Analyst	W. St. C. Manson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	R. A. Dunt	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	R. A. Dunt
Remarks	*Insol. °Loss on ignition	°Loss on ignition	†Not included in total	—	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	—
SiO ₂	4.5*	4.42	4.34	4.30	4.3*	4.26	4.1*	4.1*	4.1
Al ₂ O ₃	41.8	59.99	39.80	39.95	38.9	41.75	40.7	42.0	38.3
Fe ₂ O ₃	28.1	27.95	26.15	29.65	28.8	27.00	30.0	28.4	29.1
FeO	—	3.85	1.04	—	—	3.06	—	—	—
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na ₂ O	—	—	—	—	—	—	—	—	—
K ₂ O	—	—	—	—	—	—	—	—	—
H ₂ O+	22.7°	17.70°	17.00	22.92	24.5°	18.09°	22.3°	21.9*	24.5
H ₂ O—	—	—	1.40	—	—	—	—	—	—
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	1.9	—	4.19	—	2.6	5.50	1.9	2.5	3.6
P ₂ O ₅	—	5.50	0.03	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents			Fe = 19.12†						
	99.0	99.41	93.95	96.82	99.1	99.66	99.0	98.9	99.6

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	44	45	46	47	48	49	50	51	52
Rock Name	Bauxite	Nodular Bauxite	Pisolitic Bauxite	Dolerite Bauxite	Bauxite	Bauxite	Pisolitic Bauxite	Ferruginous Pisolitic Bauxite	Bauxite
Locality	Warialda Rd., 9 mls. from Inverell, N.S.W.	St. Leonards, Tas.	St. Leonards, Tas.	Ouse, Tas.	Wingello, N.S.W.	Riccarton, Tas.	Ouse, Tas.	St. Leonards, Tas.	N. of Inverell, N.S.W.
Reference	106, 104; 145, 205	62	62	62	181, 90	62	62	62	106, 104; 145, 205
Analyst	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	—	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines
Remarks	—	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition
SiO_2	4.10	4.0*	3.9*	3.9*	3.84	3.8*	3.7*	3.7*	3.40
Al_2O_3	41.68	41.9	43.8	36.3	38.44	41.0	40.5	39.4	35.62
Fe_2O_3	24.18	26.1	24.1	34.9	31.40	21.7	30.3	30.9	35.98
FeO	—	—	—	—	2.43	—	—	—	—
MgO	0.14	—	—	—	—	—	—	—	—
CaO	0.80	—	—	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	23.68	25.7°	24.6°	22.5°	18.61°	25.4°	23.2°	23.1°	23.63°
$\text{H}_2\text{O} -$	2.66	—	—	—	—	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	2.05	2.3	2.6	2.1	5.30	8.7	2.3	2.1	—
P_2O_5	0.23	—	—	—	—	—	—	—	—
MnO	tr.	—	—	—	—	—	—	—	—
Other Constituents	$\text{SO}_3 = \text{abs.}$ V_2O_5 tr.								
	99.52	100.0	99.0	99.7	100.02	[100.6]	100.0	99.2	98.63

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	53	54	55	56	57	58	59	60	61
Rock Name	Bauxite	Bauxite	Bauxite	Amorphous Bauxite	Earthy Bauxite	Bauxite	Bauxite	Pisolitic Bauxite	Bauxite
Locality	N. of Inverell, N.S.W.	Near Boolarra, Gippsland, Vic.	Riccarton, Tas.	Wingello, N.S.W.	Ouse, Tas.	Wingello, N.S.W.	Warialda Rd. 5 mls. from Inverell, N.S.W.	Wingello, N.S.W.	Emmaville, N.S.W.
Reference	106, 104; 145, 205	84, 290	62	93, 16; 106, 98	62	93, 18	106, 104; 145, 205	93, 16; 106, 98	160, 104; 145, 205
Analyst	N.S.W. Dep. Mines	J. C. Watson	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	^o Loss on ignition	—	*Insol. ^o Loss on ignition (Soft-under-capping)	†Not included in total	*Insol. ^o Loss on ignition	—	—	†Not included in total	—
SiO_2	3.00	2.76	2.4*	2.40	2.2*	1.76	1.70	1.3	0.16
Al_2O_3	38.79	41.30	39.3	41.16	45.1	36.16	38.97	39.47	42.20
Fe_2O_3	27.41	25.51	31.2	28.30	25.2	33.80	28.65	31.55	28.91
FeO	—	—	—	—	—	—	—	—	tr.
MgO	—	—	—	—	—	—	0.18	—	0.37
CaO	—	—	—	—	—	—	0.50	—	0.28
Na_2O	—	—	—	—	—	—	—	—	} 0.17
K ₂ O	—	—	—	—	—	—	—	—	
$\text{H}_2\text{O}+$	25.69°	25.00	21.7°	—	24.9°	21.18	22.39	23.68	21.50
$\text{H}_2\text{O}-$	—	0.78	—	—	—	—	2.40	—	1.95
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	—	4.76	4.4	3.08	2.3	—	4.35	—	4.75
P_2O_5	—	—	—	—	—	—	0.37	—	0.26
MnO	—	—	—	—	—	—	tr.	—	tr.
Other Constituents				Fe = 19.81†			$\text{V}_2\text{O}_5 = 0.06$ $\text{SO}_3 = \text{abs.}$	Fe = 22.08†	$\text{SO}_3 = \text{abs.}$
	94.89	100.11	99.0	94.75	99.7	92.90	99.57	96.00	100.55

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

g. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 < 1 > 0.5$									
Rock Name	1 Pisolitic Bauxite	2 Bauxite	3 Turgite-bauxite Laterite	4 Bauxite	5 Ferruginous Nodular Bauxite	6 Bauxite	7 Pisolitic Bauxite	8 Bauxite	9 Dolerite Bauxite
Locality	Ouse, Tas.	Swansea, Ironbark, Tas.	Gooseberry Hill, S.W. Division W.A.	Wingello, N.S.W.	St. Leonards, Tas.	Wingello, N.S.W.	St. Leonards Tas.	Wingello, N.S.W.	Ouse, Tas.
Reference	62	62	228, 122; 239, 10; 256, 11	181, 90	62	181, 90	62	93, 18	62
Analyst	W. St. C. Manson	W. St. C. Manson	E. S. Simpson	N.S.W. Dep. Mines	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Combined $\text{SiO}_2 = 1.97\%$ OMnO_2	—	*Insol. °Loss on ignition	—	*Insol. °Loss on ignition	—	*Insol. °Loss on ignition
SiO_2	7.5*	7.3*	6.41*	6.14	5.6*	5.14	4.9*	4.80	4.7*
Al_2O_3	31.3	31.2	36.74	30.36	32.8	34.02	29.7	34.26	34.7
Fe_2O_3	38.1	36.7	39.80	38.20	39.2	34.63	40.0	36.40	37.3
FeO	—	—	—	0.72	—	1.53	—	—	—
MgO	—	—	0.15	—	—	—	—	—	—
CaO	—	—	0.10	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	20.8°	20.1°	13.73	19.32	21.1°	19.16	19.8°	21.42	20.3°
$\text{H}_2\text{O} -$	—	—	1.20	—	—	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	2.4	3.7	1.98	4.90	1.6	5.25	3.3	—	2.5
P_2O_5	—	—	tr.	—	—	—	—	—	—
MnO	—	—	0.06°	—	—	—	—	—	—
Other Constituents			$\text{Cr}_2\text{O}_3 = 0.03$ $\text{V}_2\text{O}_5 = 0.23$						
	100.1	99.0	100.43	99.64	100.3	99.73	197.71	96.88	99.5

TABLE SU — BAUXITES AND LATERITES (SiO₂<10%)

g. AL ₂ O ₃ /Total Fe ₂ O ₃ <1>0.5									
	10	11	12	13	14	15	16	17	18
Rock Name	Bauxite	Bauxite	Pisolitic Bauxite	Bauxite	Bauxite	Ferruginous Pisolitic Bauxite	Bauxite	Bauxite	Bauxite
Locality	Wingello, N.S.W.	Wingello, N.S.W.	Ouse, Tas.	Emmaville, N.S.W.	Wingello, N.S.W.	Wingello, N.S.W.	Wingello, N.S.W.	Wingello, N.S.W.	Wingello, N.S.W.
Reference	181, 90	181, 90	62	106, 104; 145, 205	181, 90	93, 16; 106, 98	181, 90	181, 90	181, 90
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. St. C. Manson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines
Remarks	—	°Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	°Loss on ignition	†Not included in total	°Loss on ignition	*Loss on ignition	—
SiO ₂	4.32	3.86	3.8*	3.80	3.42	3.14	3.10	2.94	2.42
Al ₂ O ₃	33.35	32.09	33.3	35.00	33.05	34.14	32.5	33.55	35.02
Fe ₂ O ₃	35.55	38.60	37.7	39.30	39.20	36.53	38.95	38.45	36.80
FeO	1.53	0.81	—	—	2.52	—	1.17	2.07	4.86
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na ₂ O	—	—	—	—	—	—	—	—	—
K ₂ O	—	—	—	—	—	—	—	—	—
H ₂ O+	18.80	19.40°	23.2°	19.25*	16.70°	22.40	19.70°	16.56*	15.08
H ₂ O—	—	—	—	—	—	—	—	—	—
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	5.80	4.70	2.0	—	5.00	0.038	4.80	—	4.90
P ₂ O ₅	—	—	—	—	—	—	—	5.50	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents						S=0.056 Fe=25.57†			
	99.35	99.46	100.0	97.35	99.89	96.31	100.22	99.07	99.08

TABLE SU — BAUXITES AND LATERITES ($\text{SiO}_2 < 10\%$)

g. Al_2O_3 /Total Fe_2O_3 <1>0.5			h. Al_2O_3 /Total $\text{Fe}_2\text{O}_3 < 0.5$						
	19	20		1	2	3	4	5	6
Rock Name	Pisolitic Bauxite	Pisolitic Bauxite		Pisolitic Bauxite	Pisolitic Bauxite	Chromiferous Laterite	Pisolitic Bauxite	Laterite	Laterite
Locality	Riccarton, Tas.	Riccarton, Tas.		Ouse, Tas.	Ouse, Tas.	Comet Vale, W.A.	Ouse, Tas.	Nullagine, W.A.	N. E. Kalgoorlie, W.A.
Reference	62	62		62	62	110, 11 & 69	62	259	82, 15; 226, 78
Analyst	W. St. C. Manson	W. St. C. Manson		W. St. C. Manson	W. St. C. Manson	D. G. Murray	W. St. C. Manson	J. N. A. Grace	J. H. Brooking
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition		°Loss on ignition	°Loss on ignition	—	°Loss on ignition	—	—
SiO_2	1.9*	1.75*		8.2	5.0	4.98	4.7	4.06	4.07
Al_2O_3	28.4	34.6		19.4	19.2	5.81	25.0	0.29	16.72
Fe_2O_3	43.0	39.9		56.5	56.7	70.40	50.2	84.93	67.74
FeO	—	—		—	—	tr.	—	—	—
MgO	—	—		—	—	0.17	—	abs.	—
CaO	—	—		—	—	abs.	—	abs.	—
Na_2O	—	—		—	—	—	—	—	—
K_2O	—	—		—	—	—	—	—	—
$\text{H}_2\text{O} +$	16.9°	19.0°		9.6°	17.3°	12.95	17.8°	9.79	10.84
$\text{H}_2\text{O} -$	—	—		—	—	0.76	—	0.77	0.63
CO_2	—	—		—	—	—	—	abs.	—
TiO_2	—	—		5.3	1.7	0.23	2.2	0.01	—
P_2O_5	4.5	4.2		—	—	0.04	—	0.17	—
MnO	—	—		—	—	—	—	—	—
Other Constituents						$\text{MnO}_2 =$ $\text{O} \cdot \text{O}_2 =$ $\text{SO}_3 = 0.48$ $\text{Cr}_2\text{O}_3 =$ 4.60 $\text{V}_2\text{O}_3 =$ abs.		$\text{MnO}_2 =$ 0.10 $\text{SO}_3 = 0.14$ $\text{Cr}_2\text{O}_3 =$ abs. $\text{V}_2\text{O}_3 = 0.25$ $\text{Na Cl} = 0.18$	
	94.7	99.45		99.0	99.9	100.44	99.9	100.69	100.00

TABLE SU — BAUXITES AND LATERITES (SiO₂<10%)

h. AL ₂ O ₃ /Total Fe ₂ O ₃ <0.5									
	7	8	9	10	11	12	13	14	15
Rock Name	Limonite Laterite	Chromiferous Laterite	Limonite Laterite	Turgite Laterite	Turgite Laterite	Turgite Laterite	Turgite Nodule	Turgite Laterite	Laterite
Locality	Ora Banda, W.A.	Comet Vale, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Coolgardie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	N. E. Kalgoorlie, W.A.
Reference	228, 118	110, 69; 228, 118; 231, 101	228, 120; 266, 120	228, 120; 266, 102	228, 120	226, 120	266, 120	228, 120; 266, 120	82, 15; 228, 78
Analyst	D. G. Murray	W.A. Dept. Mines	E. S. Simpson	E. S. Simpson	E. S. Simpson	E. S. Simpson	E. S. Simpson	E. S. Simpson	J. H. Brooking
Remarks	(From Norite) *Combined SiO ₂ =3.16	*by difference	—	—	Combined SiO ₂ =1.77	—	(In Laterite)	—	—
SiO ₂	3.49*	3.14	2.73	2.67	2.53*	2.52	2.33	1.77	1.53
Al ₂ O ₃	16.44	—	12.76	9.92	4.32	5.97	6.48	12.29	(7.52)
Fe ₂ O ₃	60.61	79.01	62.67	78.38	80.02	79.41	84.44	75.41	82.33
FeO	—	—	—	—	—	—	—	—	—
MgO	0.28	—	0.99	0.35	tr.	1.56	tr.	abs.	—
CaO	abs.	—	abs.	abs.	abs.	abs.	—	abs.	—
Na ₂ O	—	—	—	—	—	—	—	—	—
K ₂ O	—	—	—	—	—	—	—	—	—
H ₂ O +	16.60	12.348*	14.46	} 6.00	} 7.06	} 6.89	4.83	7.05	8.10
H ₂ O —	—	—	—				—	—	0.52
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	1.34	—	6.00	2.01	6.06	3.10	1.82	2.55	—
P ₂ O ₅	0.07	0.078	tr.	tr.	—	tr.	—	tr.	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	MnO ₂ =0.29 Cr ₂ O ₃ =0.96 V ₂ O ₃ =0.10	S = 0.124 Cr ₂ O ₃ =5.30	MnO ₂ =0.35 Cr ₂ O ₃ =0.08 V ₂ O ₃ =0.15	MnO ₂ =0.07 Cr ₂ O ₃ =0.01 V ₂ O ₃ =0.40	MnO ₂ =0.13 Cr ₂ O ₃ =0.08 V ₂ O ₃ =0.55	MnO ₂ =0.07 Cr ₂ O ₃ =0.60 V ₂ O ₃ =0.65	MnO ₂ =0.10 Cr ₂ O ₃ =tr. V ₂ O ₃ =0.49	MnO ₂ =0.41 Cr ₂ O ₃ =0.05 V ₂ O ₃ =0.45	—
	100.18	100.000	100.19	99.81	100.75	100.77	100.49	99.98	100.00

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

a. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 > 20$						b. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 20-5$			
	1	2	3	4	5		1	2	3
Rock Name	Bauxite	Bauxite	Bauxite	Bauxite	Bauxite		Laterite	Laterite	Laterite
Locality	South Gippsland Vic.	South Gippsland, Vic.	South Gippsland, Vic.	South Gippsland, Vic.	South Gippsland, Vic.		Rocky Gully, W.A.	Green-bushes, W.A.	Green-bushes, W.A.
Reference	84, 291	84, 291	84, 291	84, 291	84, 291		258, 32	258, 32	258, 32
Analyst	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines	Vic. Dep. Mines		W.A. Govt. Chem. Lab.	W.A. Govt. Chem. Lab.	W.A. Govt. Chem. Lab.
Remarks	—	—	—	—	—		*Free SiO_2 = 42.6%	*Free SiO_2 = 48.9%	*Free SiO_2 = 32.5%
SiO_2	25.34	18.48	14.84	13.20	11.18		60.0*	58.0*	52.6*
Al_2O_3	50.10	54.30	55.40	56.79	59.95		26.4	25.3	23.3
Fe_2O_3	1.13	1.74	2.69	2.07	1.13		1.8	3.9	1.5
FeO	—	—	—	—	—		—	—	—
MgO	—	—	—	—	—		0.10	0.07	0.09
CaO	—	—	—	—	—		0.05	abs.	abs.
Na_2O	—	—	—	—	—		—	—	—
K_2O	—	—	—	—	—		—	—	—
$\text{H}_2\text{O} +$	—	—	—	—	—		8.86	12.06	10.59
$\text{H}_2\text{O} -$	—	—	—	—	—		1.23	0.63	0.92
CO_2	—	—	—	—	—		—	—	—
TiO_2	—	—	—	—	—		1.21	0.62	0.20
P_2O_5	—	—	—	—	—		0.04	0.20	0.16
MnO	—	—	—	—	—		0.02	tr.	0.01
Other Constituents									
							99.71	100.78	89.37

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

b. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 20\text{—}5$							
	4	5	6	7	8	9	10
Rock Name	Laterite	Laterite	Laterite	Gibbsite Laterite	Bauxite	Earthy Bauxite	Bauxite
Locality	Rocky Gully, W.A.	Green- bushes, W.A.	Rocky Gully, W.A.	Glen Forrest, W.A.	Near Bool- arra, South Gippsland, Vic.	Ouse, Tas.	Gippsland, Vic.
Reference	258 , 32	258 , 32	258 , 32	228 , 122	84 , 290	62	84 , 291
Analyst	N. K. Jones	N. K. Jones	N. K. Jones	H. Bowley	J. C. Watson	W. St. C. Manson	Vic. Dep. Mines
Remarks	*Free SiO_2 = 18.2%	*Free SiO_2 = 28.7%	*Free SiO_2 = 34.5	*Free SiO_2 = 5.0%	*Quoted as insol.	*Quoted as Insol. °Loss on ignition	*Acid sol.
SiO_2	48.5*	45.4*	43.6*	16.05*	14.96*	13.7*	12.36*
Al_2O_3	31.1	35.3	33.6	50.68	45.36	49.4	57.23
Fe_2O_3	4.2	3.8	4.7	7.14	8.52	9.4	3.49
FeO	—	—	—	—	—	—	—
MgO	0.17	0.14	abs.	—	—	—	—
CaO	0.13	abs.	abs.	—	—	—	—
Na_2O	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	11.84	12.63	14.50	25.95	21.80	25.4°	—
$\text{H}_2\text{O} -$	1.89	0.93	1.56	—	5.36	—	—
CO_2	—	—	—	—	—	—	—
TiO_2	1.98	0.34	1.31	0.62	4.76	2.0	—
P_2O_5	0.06	0.09	0.11	—	—	—	—
MnO	0.08	0.03	0.015	—	—	—	—
Other Con- stituents							
	99.95	98.66	99.39	100.44	100.76	99.9	

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

c. Al_2O_3 /Total Fe_2O_3 = 5—4			d. Al_2O_3 /Total Fe_2O_3 = 4—3				
	1	2		1	2	3	4
Rock Name	Gibbsite Laterite	Pisolitic Bauxite		Laterite	Laterite	Laterite	Gibbsite- Halloysite Laterite
Locality	Glen Forrest, W.A.	Riccarton, Tas.		Tober- mory, N.T.	Wongan Hills, W.A	Wongan Hills, W.A.	Glen Forrest, W.A.
Reference	228 , 122; 231 , 105	62		35	258 , 32	258 , 32	228 , 122
Analyst	E. S. Simpson	W. St. C. Manson		A. McClure	N. K. Jones	N. K. Jones	E. S. Simpson
Remarks	*Mostly Quartz	*Insol. °Loss on ignition		*Loss on ignition	*Free SiO_2 = 19.0%	*Free SiO_2 = 22.1%	*Free SiO_2 = 23.83%
SiO_2	17.17*	11.6*		68.10	46.2*	46.0*	36.23*
Al_2O_3	46.70	41.6		16.81	30.9	29.2	36.48
Fe_2O_3	10.02	8.7		4.55	8.3	9.5	10.70
FeO	—	—		—	—	—	—
MgO	tr.	—		—	abs.	abs.	—
CaO	tr.	—		—	abs.	abs.	—
Na_2O	—	—		—	—	—	—
K_2O	—	—		—	—	—	—
$\text{H}_2\text{O}+$	24.79	24.1°		7.55*	12.05	11.46	[16.22]
$\text{H}_2\text{O}-$	0.58	—		2.02	1.34	1.66	0.37
CO_2	—	—		—	—	—	—
TiO_2	0.59	8.3		0.78	0.68	0.78	—
P_2O_5	tr.	—		—	tr.	tr.	—
MnO	—	—		—	0.005	0.01	—
Other Con- stituents							
	[99.85]	94.3		100.31	99.47	98.61	100.00

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

e. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 3-2$									
	1	2	3	4	5	6	7	8	9
Rock Name	Laterite	Laterite	Laterite	Laterite	Ferruginous Bauxite	Pisolitic Bauxite	Laterite	Doleritic Bauxite	Pisolitic Laterite
Locality	Springvale, Qld.	Wongan Hills, W.A.	Springvale, Qld.	Wongan Hills, W.A.	Astrolabe Ra, Papua, T.P. & N.G.	Wingello, N.S.W.	Green-bushes, W.A.	St. Leonards, Tas.	Paddys Ck. Area, Qld.
Reference	35	258, 32	35	258, 32	35	93, 16; 106, 98	258, 32	62	35
Analyst	A. McClure	N. K. Jones	A. McClure	N. K. Jones	A. McClure	N.S.W. Dep. Mines	N. K. Jones	W. St. C. Manson	J. R. Beevers
Remarks	*Dried before analysis	*Free $\text{SiO}_2 = 24.9$	*Dried before analysis	*Free $\text{SiO}_2 = 18.3$	*Dried before analysis	†Not included in total	*Free $\text{SiO}_2 = 24.7\%$	—	(over Serpentine)
SiO_2	56.13	52.5*	47.89	44.5*	38.03	29.80	28.2*	22.60	20.92
Al_2O_3	24.28	25.1	22.17	29.3	30.73	35.28	38.7	34.42	13.59
Fe_2O_3	9.52	10.2	8.43	11.9	14.87	12.90	17.6	15.20	48.92
FeO	—	—	—	—	—	—	—	0.51	—
MgO	—	abs.	—	abs.	—	—	0.14	0.93	—
CaO	—	abs.	—	abs.	—	—	abs.	tr.	—
Na_2O	—	—	—	—	—	—	—	0.14	—
K_2O	—	—	—	—	—	—	—	0.05	—
$\text{H}_2\text{O}+$	10.11	9.56	9.21	11.59	13.63	17.81	8.13	20.19	12.57
$\text{H}_2\text{O}-$	1.97*	1.22	0.82*	1.43	10.40*	—	3.88	4.32	—
CO_2	—	—	—	—	—	—	—	0.21	—
TiO_2	—	0.66	—	0.63	1.94	2.65	1.31	0.90	0.19
P_2O_5	—	tr.	—	tr.	—	0.08	0.04	0.07	—
MnO	—	0.003	—	0.01	—	—	0.015	0.08	1.87
Other Constituents						Fe = 9.03†			$\text{Cr}_2\text{O}_3 = 1.27$ Ni = 0.50 Co = 0.33 $\text{V}_2\text{O}_5 = \text{tr.}$
	102.01	99.24	88.52	99.36	99.20	98.52	98.01	[99.62]	100.16

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

e. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 3-2$				f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$					
	10	11	12		1	2	3	4	5
Rock Name	Bauxite	Pisolitic Bauxite	Earthy Bauxite		Laterite	Laterite	Pisolitic Laterite	Ferruginous Bauxite	Bauxite
Locality	Emma-ville, N.S.W.	Wingello, N.S.W.	Ouse, Tas.		Wongan Hills, W.A.	Ridge Hill, Darling Ra., W.A.	Wingello, N.S.W.	Astrolabe Ra, Papua, T.P. & N.G.	Wingello, N.S.W.
Reference	106, 104; 145, 205	93, 16; 106, 98	62		258, 32	199, 116	93, 16; 106, 98	35	181, 90
Analyst	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. St. C. Manson		N. K. Jones	R. T. Prider	N.S.W. Dep. Mines	A. Mc-Clure	N.S.W. Dep. Mines
Remarks	—	†Not included in total	*Insol. °Loss on ignition		*Free $\text{SiO}_2 = 20.6$	*Free $\text{SiO}_2 = 36.69\%$ (over ferruginous sand stone)	*Much sand †Not included in total	*Loss on ignition °Dried before analysis	*Loss on ignition
SiO_2	16.40	12.22	12.1*		45.7*	44.87*	35.42*	34.72	32.98
Al_2O_3	47.84	45.82	43.8		26.6	24.63	23.63	27.85	29.46
Fe_2O_3	13.59	18.70	17.7		14.4	14.82	21.82	21.19	18.60
FeO	tr.	—	—		—	—	—	—	0.54
MgO	0.23	—	—		abs.	—	—	—	—
CaO	0.74	—	—		abs.	—	—	—	—
Na_2O	} 0.20	—	—		—	—	—	—	—
K_2O		—	—		—	—	—	—	—
$\text{H}_2\text{O} +$	17.40	20.26	23.8°		10.59	} 14.61*	16.13	14.14*	15.21*
$\text{H}_2\text{O} -$	1.83	—	—		1.10		—	6.74°	—
CO_2	—	—	—		—	—	—	—	—
TiO_2	1.77	—	2.7		0.64	1.25	—	1.84	2.80
P_2O_5	0.14	—	—		tr.	—	—	—	—
MnO	tr.	—	—		0.01	0.01	—	—	—
Other Constituents	$\text{V}_2\text{O}_3 = \text{tr.}$ $\text{SO}_3 = \text{abs.}$	Fe = 13.09†					Fe = 15.27†		
	100.14	97.00	[100.1]		99.04	100.19	97.00	106.48	99.59

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	6	7	8	9	10	11	12	13	14
Rock Name	Ferruginous Bauxite	Pisolitic Laterite	Doleritic Bauxite	Doleritic Bauxite	Bauxite	Doleritic Bauxite	Pisolitic Bauxite	Doleritic Bauxite	Doleritic Bauxite
Locality	Astrolabe Ra, Papua, T.P. & N.G.	23 miles S.E. of Goulburn, N.S.W.	St. Leonards, Tas.	St. Leonards, Tas.	Emmaville, N.S.W.	St. Leonards, Tas.	Wingello, N.S.W.	St. Leonards, Tas.	Ouse, Tas.
Reference	35	181, 90	62	62	106, 104; 145, 205	62	93, 16; 106, 98	62	62
Analyst	A. McClure	N.S.W. Dep. Mines	R. Dunt	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson
Remarks	*Loss on ignition °Dried before analysis	*Not included in total	—	*Loss on ignition	*Loss on ignition	*Insol. °Loss on ignition	†Not included in total	*Insol. °Loss on ignition	*Insol. °Loss on ignition
SiO_2	31.47	26.5	24.6	22.0	20.20	19.5*	17.80	17.7*	16.8*
Al_2O_3	28.43	27.2	33.0	36.3	33.21	35.7	38.82	35.5	32.1
Fe_2O_3	24.20	26.7	19.4	21.7	26.99	24.0	27.00	24.0	31.7
FeO	—	—	—	—	—	—	—	—	—
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	—
K_2O	—	—	—	—	—	—	—	—	—
$\text{H}_2\text{O} +$	14.48*	—	} 18.1	19.8*	18.00*	18.6°	19.20	20.4°	18.0°
$\text{H}_2\text{O} -$	7.76°	—		—	—	—	—	—	—
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.42	3.5	1.7	2.0	—	1.8	—	1.6	1.9
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	—	Fe = 18.7†	—	—	—	—	Fe = 19.02†	—	—
	107.76	83.9	96.8	[101.8]	98.40	99.6	102.82	99.2	[100.5]

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	15	16	17	18	19	20	21	22	23
Rock Name	Pisolitic Bauxite	Laterite	Doleritic Bauxite	Bauxite	Pisolitic Laterite	Bauxite	Bauxite	Doleritic Bauxite	Bauxite
Locality	Wingello, N.S.W.	Parkerville, Darling Ra., W.A.	St. Leonards, Tas.	Inverell, N.S.W.	23 mls. S.E. of Goulburn, N.S.W.	Wingello, N.S.W.	Wingello, N.S.W.	St. Leonards, Tas.	Burgess Ck. Callinglee South, Vic.
Reference	93, 16; 106, 98	238, 107 239, 10	62	106, 104; 145, 205	181, 90	181, 90	93, 18	62	85, 293
Analyst	N.S.W. Dep. Mines	S. E. Terrill & D. Burns	W. St. C. Manson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. St. C. Manson	Vic. Dep. Mines
Remarks	*12.46% Sand †Not included in total	*Free $\text{SiO}_2 = 5.66\%$	*Insol. °Loss on ignition	—	†Not included in total	*Loss on ignition	—	*Insol. °Loss on ignition	*Loss on ignition
SiO_2	16.24*	15.83*	15.1*	15.01	14.5	14.14	13.56	12.5*	12.27
Al_2O_3	34.07	31.68	37.4	31.43	38.8	36.61	34.62	36.6	32.73
Fe_2O_3	29.55	24.95	24.6	27.06	26.0	21.80	25.80	26.7	24.84
FeO	1.53	2.52	—	—	—	0.72	—	—	—
MgO	0.18	0.62	—	0.40	—	—	—	—	—
CaO	0.36	0.01	—	abs.	—	—	—	—	—
Na_2O	0.28	0.14	—	—	—	—	—	—	—
K_2O		abs.	—	—	—	—	—	—	—
$\text{H}_2\text{O}+$	10.85	19.55	20.8°	17.96	—	21.98*	20.94	21.3°	18.20*
$\text{H}_2\text{O}-$	1.90	2.69	—	2.42	—	—	—	—	6.76
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	4.45	2.07	2.0	4.98	3.2	4.40	—	1.9	3.70
P_2O_5	0.07	0.09	—	0.34	—	—	—	—	—
MnO	tr.	nd.	—	tr.	—	—	—	—	—
Other Constituents	Fe = 20.81† $\text{V}_2\text{O}_5 = \text{tr.}$ S = tr.			$\text{SO}_3 = \text{tr.}$ CuO = tr. $\text{V}_2\text{O}_5 = \text{tr.}$	Fe = 18.2†				Undet. = 1.50
	99.48	100.15	99.9	99.60	82.5	99.65	94.92	99.0	100.00

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$									
	24	25	26	27	28	29	30	31	32
Rock Name	Doleritic Bauxite	Doleritic Bauxite	Bauxite	Doleritic Bauxite	Doleritic Bauxite	Earthy Bauxite	Bauxite	Bauxite	Pisolitic Bauxite
Locality	St. Leonards, Tas.	Ouse, Tas.	Wingello, N.S.W.	St. Leonards, Tas.	St. Leonards, Tas.	St. Leonards, Tas.	Rosevale, Westbury, Tas.	Rosevale, Westbury, Tas.	Wingello, N.S.W.
Reference	62	62	181, 90	62	62	62	62	62	93, 16; 106, 98
Analyst	W. St. C. Manson	W. St. C. Manson	N.S.W. Dep. Mines	W. St. C. Manson	W. St. C. Manson	W. St. C. Manson	R. A. Dunt	R. A. Dunt	N.S.W. Dep. Mines
Remarks	*Insol. °Loss on ignition	*Insol. °Loss on ignition	°Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*Insol. °Loss on ignition	*1.30% Sand †Not included in total
SiO_2	11.7*	11.5*	11.40	11.4*	11.1*	10.9*	10.8*	10.7*	10.46*
Al_2O_3	36.6	36.2	32.26	36.9	39.0	40.1	38.7	38.4	36.33
Fe_2O_3	26.9	32.3	29.80	26.4	26.8	22.7	25.0	25.7	30.05
FeO	—	—	1.08	—	—	—	—	—	—
MgO	—	—	—	—	—	—	—	—	0.06
CaO	—	—	—	—	—	—	—	—	—
Na_2O	—	—	—	—	—	—	—	—	} 0.11
K_2O	—	—	—	—	—	—	—	—	
$\text{H}_2\text{O}+$	22.3°	17.2°	20.02°	24.0°	22.2°	23.1°	23.1°	22.9°	19.26
$\text{H}_2\text{O}-$	—	—	—	—	—	—	—	—	1.79
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	1.5	2.3	4.50	1.4	1.8	1.8	1.7	1.7	1.58
P_2O_5	—	—	—	—	—	—	—	—	0.025
MnO	—	—	—	—	—	—	—	—	—
Other Constituents									S=0.062 Fe=21.03†
	99.0	99.5	99.06	100.1	[100.9]	98.6	99.3	99.4	99.72

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

f. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 2-1$					g. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 = 1-0.5$			
	33	34	35	36		1	2	3
Rock Name	Doleritic Bauxite	Pisolitic Bauxite	Bauxite	Pisolitic Bauxite		Laterite	Laterite (Mottled)	Bauxite
Locality	St. Leonards, Tas.	Wingello, N.S.W.	Wingello, N.S.W.	St. Leonards, Tas.		Rocky Gully, W.A.	Baker's Hill, Darling Ra. W.A.	Swansea, Ironbark, Tas.
Reference	62	93, 16; 106, 98	181, 90	62		258, 32	226, 61; 228, 122; 231, 105	62
Analyst	W. St. C. Manson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	W. St. C. Manson		W.A. Govt. Chem. Lab.	E. S. Simpson	W. St. C. Manson
Remarks	*Insol. °Loss on ignition	†Not included in total	*Loss on ignition	*Insol. °Loss on ignition		*Free $\text{SiO}_2 = 50.9$	—	*Insol. °Loss on ignition
SiO_2	10.4*	10.30	10.18	10.1*		58.7*	13.74	12.1*
Al_2O_3	39.1	39.82	40.45	38.0		8.2	31.14	29.9
Fe_2O_3	24.8	20.34	23.80	25.5		10.7	35.54	33.7
FeO	—	—	3.33	—		—	—	—
MgO	—	—	—	—		abs.	tr.	—
CaO	—	—	—	—		abs.	0.16	—
Na_2O	—	—	—	—		—	—	—
K_2O	—	—	—	—		—	—	—
$\text{H}_2\text{O} +$	22.7°	22.30	17.50*	23.0°		6.70	14.71	20.3°
$\text{H}_2\text{O} -$	—	—	—	—		2.41	0.69	—
CO_2	—	—	—	—		—	—	—
TiO_2	2.2	5.50	4.50	2.4		1.84	4.33	3.8
P_2O_5	—	0.24	—	—		0.02	tr.	—
MnO	—	—	—	—		0.04	—	—
Other Constituents		Fe = 14.23†						
	99.2	98.50	99.76	99.0		88.61	100.31	99.8

TABLE SV — BAUXITES AND LATERITES ($\text{SiO}_2 > 10\%$)

h. $\text{Al}_2\text{O}_3/\text{Total Fe}_2\text{O}_3 < 0.5$							
	1	2	3	4	5	6	7
Rock Name	Limonite Laterite	Laterite	Laterite	Ferruginous Bauxite	Laterite (loose pebbly)	Laterite (mottled cellular)	Laterite
Locality	Ora Banda, W.A.	Wingello, N.S.W.	Giralia, W.A.	Astrolabe Range, Papua, T.P. & N.G.	Clackline, W.A.	Clackline, W.A.	Ridge Hill, Darling Ra. W.A.
Reference	228, 118	—	35	35	96, 13	96, 13	199, 116; 239, 10
Analyst	D. G. Murray	J. C. H. Mingaye	S. Baker	A. McClure	Not Stated	Not Stated	R. T. Prider
Remarks	*Combined $\text{SiO}_2 =$ 8.09%	(Overlying basalt)	*Loss on ignition	*Loss on ignition °Dried before Analysis	—	—	*Combined $\text{SiO}_2 =$ 4.94 % °Loss on ignition
SiO_2	36.83*	33.04	28.12	22.03	15.42	10.84	10.30*
Al_2O_3	8.48	7.76	6.48	20.07	17.70	16.38	22.53
Fe_2O_3	45.67	43.16	9.86	42.07	54.28	56.36	48.56
FeO	—	abs.	20.18	—	—	—	—
MgO	tr.	0.32	3.80	—	—	—	—
CaO	abs.	0.58	2.50	—	—	—	—
Na_2O	—	tr.	0.62	—	—	—	—
K_2O	—	0.15	1.00	—	—	—	—
$\text{H}_2\text{O} +$	} 9.32	10.27	22.68*	14.11*	10.80	13.85	} 15.82°
$\text{H}_2\text{O} -$		3.03	—	(2.70)°	1.52	1.81	
CO_2	abs.	—	pnd.	—	—	—	—
TiO_2	0.06	tr.	0.48	1.13	0.67	0.54	3.24
P_2O_5	0.05	0.54	0.90	—	—	—	—
MnO	abs.	1.04	0.35	—	—	—	0.05
Other Con- stituents	$\text{Cr}_2\text{O}_3 =$ tr. $\text{V}_2\text{O}_5 =$ 0.06	Organic = 0.32					
	100.47	100.21	99.22	99.41	100.39	99.78	100.50

TABLE SW — INCOMPLETE ANALYSES OF BAUXITES AND LATERITES

	1	2	3	4	5	6	7	8	9
Rock Name	Pisolitic Bauxite	Laterite (Turgite)	Pisolitic Bauxite	Bauxite	Lateritic Clay	Lateritic Clay	Lateritic Clay	Lateritic Clay	Lateritic Clay
Locality	Wingello, N.S.W.	Boogardie, W.A.	Wingello, N.S.W.	Wingello, N.S.W.	Okawu Ck., Kokoda, Papua, T.P. & N.G.	Okawu Ck., Kokoda, Papua, T.P. & N.G.	Okawu Ck., Kokoda, Papua, T.P. & N.G.	Okawu Ck., Kokoda, Papua, T.P. & N.G.	Okawu Ck., Kokoda, Papua, T.P. & N.G.
Reference	93, 16; 106, 98	288, 188	93, 16; 106, 98	93, 16; 106, 98	35	35	35	35	35
Analyst	N.S.W. Dep. Mines	E. S. Simpson	N.S.W. Dep. Mines	N.S.W. Dep. Mines	S. Baker	S. Baker	S. Baker	S. Baker	S. Baker
Remarks	—	—	—	—	—	—	—	—	—
SiO ₂	31.86	11.46	5.80	5.55	—	—	—	—	—
Al ₂ O ₃	29.22	—	—	41.44	25.26	25.0	24.13	23.62	19.43
Fe ₂ O ₃	—	73.81	33.28	—	7.59	12.1	10.0	9.8	11.3
FeO	—	—	—	—	—	—	—	—	—
MgO	—	—	—	—	—	—	—	—	—
CaO	—	—	—	—	—	—	—	—	—
Na ₂ O	—	—	—	—	—	—	—	—	—
K ₂ O	—	—	—	—	—	—	—	—	—
H ₂ O +	—	2.67	18.25	23.45	12.5	13.9	13.1	12.9	2.5
H ₂ O —	—	0.19	—	—	—	—	—	—	—
CO ₂	—	—	—	—	—	—	—	—	—
TiO ₂	—	—	—	—	0.17	0.3	0.29	0.22	0.27
P ₂ O ₃	—	0.05	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Fe = 22.19	SO ₃ = 0.21	Fe = 23.10	Fe = 16.51					

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 SMc95, SMc107, SMd36, SMd39,
 SMd55, SMd195, SMd210, SMd221,
 SMd273, SMd323, SMd337, SMd338,
 SMd347, SQc9, SQd2, SQd13, SQd17,
 SQd18, SQd19, SQd23, SQd26, SQd59
 Girilambone—SMd391
 Glendon—SSa1

Glen Innes—SKc11
 Glenorie—SMd29
 Goodradigbee—SJA22
 Gosford—SCc18, SMA35, SMd321, SMd362,
 SQc40, SQc42, SQc50, SQd1
 Goulburn—SCa17, SCb15, SMA60, SMc20,
 SMd73, SMd103, SMd152, SMd196,
 SNa11, SQa20, SQa29, SQc57, SVf7,
 SVf19
 Grafton—SL17, SMd136, SMd 167,
 SMd386
 Granville—SQc92, SQd60
 Grenfell—SMA76
 Griffith—SMA80, SMd413
 Gulgong—SMc51, SMd59, SMd111,
 SMd121, SMd124, SMd145, SMd151,
 SMd185, SMd191, SMd194, SMd227,
 SMd238
 Gundagai—SMA98
 Gungal—SKb37
 Gunnedah—SMb71
 Hawkesbury River—SMA4, SMd408
 Heathcote—SMA49, SMb35, SMc1, SQc1,
 SQd5
 Helensburgh—SMd95, SR4
 Homebush—SMd387, SNa21, SQc33,
 SQc97, SQd67
 Home Rule—SMc9, SMc55, SMd199,
 SMd223, SMd244, SMd245, SMd258,
 SMd271, SQd41, SQd43
 Hornsby—SQc51
 Hunter River—SMA106
 Huskisson—SQa42
 Illawarra District—SMA56
 Inverell—SJA30, SMd170, SMd381, SUf2,
 SUf7, SUf9, SUf38, SUf44, SUf52,
 SUf53, SUf59, SVf18
 Irondale Siding—SMb30
 Jervis Bay—SMd252, SMd262, SMd280,
 SMd288, SMd302, SMd350, SMd352,
 SMd354, SMd364, SMd374, SMd379,
 SQa42
 Junee—SMA101
 Kandos—SQc79
 Kangaroo Point—SMd133
 Keepit Dam—SMA100, SMc162
 Kempsey—SQb43
 Kiama—SJA29, SJB1, SJC2
 Kikiora—SMc93
 Killara—SMd341
 Kings Plains—SMb12, SMb39, SMc43,
 SMd143, SMd158, SMd222
 Kuring-gai—SMd97, SMd184, SMd198,
 SMd334, SQc55, SQc90

Lake Macquarie—SL12
 La Perouse—SAa15
 Larris Lake—SMB88
 Lionsville—SSb1, SSb2
 Lismore—SMc79, SMD78
 Lithgow—SMd263, SQb23, SQc21, SQc76,
 SQd9, SQd50, SQd61
 Long Bay—SAa6, SMD319, SMD365,
 SMD372
 Long Reef—SR3
 Louth—SMD341
 Macksville—SL9
 Macleay River—SMc98
 Maitland—SCc20, SMc123, SMD61,
 SMD200, SMD201, SQa30, SQc4,
 SQc19, SQc26, SQc36, SQc53, SQc61,
 SQc63, SQc65, SQc67, SQc70, SQc89,
 SQd20, SQd21
 Mangrove Mt.—SMc10, SMc80, SMD119
 Manly—SMA44, SMB2, SMB25, SMc34,
 SMc88, SMD89, SMD192, SMD342,
 SMD397, SQb14, SQb21, SQc100,
 SQd26, SQd28
 Manning River—SMc19
 Marangaroo—SMc91, SMc117, SMD51,
 SQb18, SQd8
 Maroubra—SAa4, SMD300
 Marulan—SMA40, SMB21, SMB15, SMc21,
 SMc46, SMc134, SMD2, SMD9,
 SMD44, SMD80, SMD98, SMD112,
 SMD144, SNb1, SO3
 Melrose—SNb9
 Merimbula—SMA7, SMA36, SMc40, SMD56,
 SMD270
 Merrygoen—SMD224, SMD232
 Merrylands—SQc22, SQc56, SQd16
 Milton—SMD278
 Minchinbury—SSa5
 Mittagong—SMD47
 Molong—SMc81, SMD101, SMD399
 Mona Vale—SAa24, SQc88
 Moorebank—SQc80
 Mount Boppy—SQa9
 Mount Buckaroo—SQa35, SQb24, SQd10
 Mount Colah—SMD277
 Mount Hope—SMA17, SMD40
 Mount Kiera—SR8
 Mount Piddington—SMD41
 Mount Victoria—SMD41
 Mount Werong—SL6, SMc8
 Mount White—SQb2
 Mudgee—SMA91, SMB24, SMc68, SMD19,
 SMD66, SMD177, SQa35, SQa48,
 SQb24, SQb25, SQb39, SQd10
 Mullion Creek—SMA39
 Munna—SMD240
 Murrurundi—SMD411
 Murwillumbah—SAa16
 Muswellbrook—SO2, SO11, SQa44, SQc75,
 SQc96, SQc105, SQd30, SQd48, SQd49,
 SQd52
 Namoi River—SMA100, SMc162
 Narrabeen—SMA6, SMA102, SMD24
 Narrabri—SMc181
 Narrandera—SMB78
 Neath—SQa27, SQc48
 Newbridge—SMD76, SMD102, SMD166
 Newcastle—SAa1, SAa3, SMB52
 Newport—SQa36
 Norfolk Island—SJB2, SJB3
 Nowra—SAa19, SMA10, SQb22
 Nundle—SAB4
 Nymboida—SJA9, SJA11, SJA13
 Oaklands—SMA62, SMD108, SMD123,
 SMD179, SMD186, SMD187, SMD193,
 SMD202, SMD204, SMD205, SMD215,
 SMD255, SMD298, SMD324
 Oberon—SMA74, SMD147, SMD157
 O'Connel—SMc72
 Oolong—SMA88
 Orange—SKb26, SKc9, SMA32, SMA39,
 SMA41, SMA91, SMD384, SQa14,
 SQa33, SQa34, SQa39, SQc5, SQd56
 Oxford Falls—SMD338
 Paddys River—SMD32, SMD90
 Pambula—SKb7, SMA14, SMA29, SMA30,
 SMA33, SMA47, SMB9, SMD233
 Parkes—SMB66, SMc73, SMc75, SMc104,
 SMc109, SMc121, SMD34, SNa4,
 SQa41, SQb27
 Parramatta—SQa1
 Peats Ridge—SCb1
 Peak Hill—SMc23
 Penrith—SSa5
 Picton—SCc25, SCd2, SQa43, ST1
 Pipers Flat—SR10
 Pittwater—SQd40
 Poolamacca—SH6
 Portland—SSa2
 Port Macquarie—SAa7, SAa20, SMc63
 Port Stephens—SMB10, SMc35, SMD50
 Prospect—SQb33, SQb35, SQb54, SQc94
 Puggoon—SMB90, SMD63, SMD86, SMD99,
 SMD121, SMD124, SMD216, SMD251,
 SMD253, SMD290, SMD316
 Pyrmont—SCb13, SCb19, SCc10
 Queanbeyan—SMD345

Raleigh—SQb20
 Red Rock Flat—SCc28
 Richmond River—SKa1, SKa3, SKa5,
 SKc18, SMc69, SMc74, SMc87, SMc102,
 SMc165, SMc168, SMD15, SMD406
 Riverstone—SMc110
 Rivertree—SQb61
 Rock Flat—SMc50
 Rose Bay—SCd10, SQc47
 Rose Hill—SMA83
 Ryde—SQc16, SQc32, SQc34
 Rylstone—SMb38, SQA25, SR5, SR6, SR9
 Sandgate—SMb52
 Sans Souci—SMD393
 Sawtell—SQc74
 Seaham—SH2
 Shoalhaven District—SCc2
 Singleton—SQb60
 Somesby—SQd1
 St. Ives—SMD308, SMD317, SMD361
 St. Leonards—SQc46, SQd11
 Strathfield—SMc86
 Sutherland, SQd66
 Sydney—SMA34, SMA69, SMb51, SMD92
 Sylvania—SMc89, SMc97
 Swan Bay—SMc69, SMc74, SMc87,
 SMc165, SMc168, SMD15, SMD406
 Swansea—SO13, SQc20
 Tambar Springs—SNA24
 Tamworth—SF8, SF10, SL3, SL11, SL16,
 SMc159, SMc160, SMD130, SQA31
 Tarago—SMc106
 Tarana—SKc24, SMA15
 Taree—SMA99, SMb85
 Tathra—SQc99
 Temora—SMb83
 Tempe—SCc11
 Tenterfield—SKc17, SMc158, SMD168
 Teralba—SMb55
 Terry Hills—SQc9, SQd2, SQd13, SQd17,
 SQd18, SQd19, SQd26, SQd59
 Thackaringa—SMc85
 The Cedars—SMc76
 The Oaks—SQA43, ST1
 Thirroul—SCc16, SCc17, SMc105, SQd3,
 SQd14, SQd36
 Thornleigh—SQc110
 Thornton—SQc4, SQc26, SQc36, SQc53,
 SQc61, SQc63, SQc89, SQd20, SQd21
 Tichborne—SMb53, SMc73, SMc75,
 SMc104, SMc109, SMc121
 Tilba Tilba—SMD326
 Tintinbar—SKa18
 Tirrana—SL2, SI4
 Torrington—SMD139
 Towrang—SCc14, SMb15, SMc134, SQA3,
 SQA5
 Trida—SO8, SO9
 Trunkay—SMb38, SMc43, SMD143,
 SMD158, SMD222
 Tumut—SMD114, SMD412, SQc91
 Turrumurra—SMD54
 Tweed Heads—SMc17
 Ulan—SMb29, SMc78
 Ulladulla—SCb31, SMD332, SMD340
 Urbenville—SJA19
 Vale of Clwydd—SMb19, SMb49, SMc149
 Wagga Wagga—SMA73, SMA97, SMb57,
 SMc161, SQc15
 Wahroonga—SMc52, SMD327
 Walcha—SMb49, SQc106
 Walcha Road—SMD4
 Wallangra—SCa20, SCb7, SCb14
 Wallendbeen—SMA18, SMA31
 Wallsend—SQc77
 Wamberal Lagoon—SAA10
 Wangat—SMD375
 Waratah—SAA26, SMc61, SMc100, SMc136,
 SMc146, SMD383, SQc37, SQc78
 Warrobil—SMD223, SMD258
 Warrumbungle Mountains—SKb12, SKb35,
 SMA85
 Waterloo—SMb8, SMc16, SMc57, SMc153,
 SMD26
 Waverley—SCb21, SCc3
 Wee Jasper—SJA23
 Weengah—SQA11, SQA16, SQA18, SQA19,
 SQA28, SQb8, SQb9, SQb11, SQb13,
 SQb15, SQb16
 Wellington—SMA68, SMA75, SMA87
 White Cliffs—SCc30, SCd3, SCd6, SCd7,
 SCd8, SCd9, SMc115
 Wilcannia—SL8
 Willoughby—SMD264
 Wingello—SMD312, SMD315, SMD398,
 SNb6, SUA1, SUA2, SUf3, SUf16,
 SUf22, SUf28, SUf33, SUf36, SUf37,
 SUf40, SUf48, SUf56, SUf58, SUf60,
 SUG4, SUG6, SUG8, SUG10, SUG11,
 SUG14, SUG15, SUG16, SUG17, SUG18,
 SVE6, SVE11, SVf3, SVf5, SVf12,
 SVf15, SVf20, SVf21, SVf26, SVf32,
 SVf34, SVf35, SVh2, SW1, SW3, SW4
 Wingen—SO4, SO12, SO15
 Wollongong—SCc24, SMD407, SQc10
 Woodstock—SMA59, SMA70
 Woonona—SMc71, SMc77 SMD405, SQc18,
 SQc45, SQd22, SQd24

Woy Woy—SAa2, SAa12, SAa13, SAa21
 Wyalong—SMb79, SMd138, SMd140
 Wyrallah—SKa1, SKa3, SKa5, SKc18
 Yanco—SMb86
 Yarrahappini Range—SL9
 Yetman—SCa20, SCb7, SCb14
 Yeranan Siding—SJa27
 Young—SMa81

Northern Territory

Arnhem Bay—SE3, SQd44
 Charlotte Waters—SMd336
 Darwin—SL14
 Katherine—SL14
 Roper River—SE1, SR2, SR7
 Tobermory—SVd1

Papua and New Guinea

New Britain
 Telvalue River—SMc173, SMc174, SMc176,
 SMc178, SMc179, SMc182, SMc183,
 SMc185, SMc186, SMc187, SMc188,
 SMc189, SMc190, SMc191, SMd415,
 SMd417, SMd418, SNa15, SNa16,
 SNa17, SNa18, SNa19, SNa20, SNa22
 New Guinea
 Wahgi River—SJc3, SF3
 New Hanover—SNa9, SNa10, SNa12,
 SNa13, SNa14, SNb3, SNb7, SNb8
 Papua
 Astrolabe Range—SUf14, SVe5, SVf4,
 SVf6, SVh4
 Cuprola—SF11
 Dobu Island—SL7
 Kokoda—SW5, SW6, SW7, SW8, SW9
 Napere Creek—SF9, SSa4
 Purari Valley—SF6

Queensland

Abercorn—SMd142, SMd309
 Bethania Junction—SF4
 Black Duck—SKa10, SKa19
 Blackstone—SMd109
 Brisbane—SJa10, SQd63
 Brooklands—SMd291
 Chinchilla—SCb25
 Cleveland—SMd346
 Cooktown—SMa20
 Dawson River—SCb27
 Dinmore—SMa9, SMd64
 Emu Creek—SMd106

Eurombah Creek—SCb28
 Gatton—SKa10, SKa19, SKb11
 Glassford—SSb3
 Goodger—SMd276, SMd297
 Gympie—SJd2
 Helidon—SCa13, SCa21, SCa22
 Heron Island—SAa30, SAa31, SAa32,
 SAa33, SAa34, SAa35, SAB6, SCa23,
 SCa24
 Highfields—SCc31
 Hivesville—SMd197
 Howard—SMa46
 Ipswich—SMd203
 Kholo Creek—SQa45
 Kunioon—SMd250
 Laura—SMa20
 Michaelmas Cay—SAa36, SMa104
 Mount Isa—ST3, ST4
 Mount Morgan—SL10, SMa63
 Mount Nebo—SF5
 Mount Oxide—SQa7, SQa8, SQc64, ST2
 Murgon District—SMd197
 Murpheys Creek—SCb10
 Nanango—SMd291
 Nundah—SMd42
 Ormiston—SMc45
 Paddys Creek—SVe9
 Petrie—SMd382
 Pine Creek—SKa2
 Pomona—SMd21
 Roma—SMc169, SMd409
 Springvale—SVe1, SVe3
 Tannymorel—SMb20
 Tarong—SMd291
 Tingalpa—SMd13
 Tweed River—SMd1
 Upper Burnett—SMd142
 Upper Eungella—SMD1
 Warwick—SMd106
 Weipa—SCb11, SCb12, SCc1, SCd1
 Wondai—SMb32
 Woodbine—SKb11
 Yan Gan—SCa16

South Australia

Adelaide—SMb69, SMb73, SMb80, SMb81,
 SMb91, SMb92, SMb93, SMc144,
 SMc147, SMc180, SMd20, SMd58,
 SMd116, SMd351, SMd389, SQb7,
 SQb49, SQc35
 Alberie Siding—SMc167, SMd178,
 SMd376, SMd380
 Angaston—SMd213, SMd301

Anstey Hill—SQb7, SQc35
 Appila—SMc3, SMc38
 Arckaringa Creek—SMd353
 Balhannah—SMc30, SMc138, SMd161
 Beltana—SMA43
 Birdwood—SMd60, SMd211, SMd212,
 SMd235, SMd242, SMd256, SMd257,
 SMd284, SMd304, SMd328, SMd331,
 SMd344, SMd378
 Black Swamp—SH3, SH7
 Blumberg—SMd212
 Bool Lagoon—SQc104
 Booleroo Centre—SMc22, SMc56, SMd38
 Burra—SMd53
 Calca Station—SMd239, SMd359, SMd377
 Caltowie—SMd402
 Carrieton—SQb5, SQb59
 Ceduna—SMd173
 Cherry Gardens—SMc151
 Clare—SMd96, SMd125
 Coomooroo Hill—SMb26
 Coward Cliff—SMc167, SMd178, SMd376
 Cradock—SQc6
 Crafers—SQb19, SQb30, SQb36
 Currency Creek—SMA37, SMA110, SMc171
 Cygnet River—SMc49
 Dutton—SMd11
 Echunga—SMA2, SMA8, SMA66, SMc31,
 SMd12, SMd23, SMd25
 Edeowie—SMc25, SMd7
 Eyres Peninsula—SMc66, SMd127, SMd141,
 SMd148, SMd159, SMd220, SMd248,
 SMd254, SMd279, SMd292, SMd356,
 SMd357, SMd370, SMd392, SMd400
 Flinders Range—SMc103
 Gladstone—SMb58, SMb75
 Glen Osmond—SQb28, SQb31, SQb32,
 SQb38, SQb42, SQb44, SQb45, SQb47,
 SQb50, SQb55, SQb56, SQb57, SQb58,
 SQb64, SQb65, SQb67, SQc83
 Gumeracha—SAb3, SMc47, SMd94,
 SMd249
 Hamley Bridge—SMc59
 Hawker—SMc11
 Hectorville—SAa14
 Hesso—SMd82
 Hindmarsh—SMb93
 Houghton—SMd74, SMd88, SMd104,
 SMd155, SMd160, SQc3
 Hummock Hill—SCc27, SMd148
 Iron Knob—SNa8
 Jamestown—SMd37, SMd404
 Kangaroo Island—SMd82
 Kapinnie—SMd209
 Kapunda—SMA55
 Kersbrook—SMd234, SMd246, SMd259,
 SMd283, SMd311
 Kingscote—SMd403
 Kircaldy Bay—SMA67
 Kulpara—SQd32
 Lake Eyre—SMd49
 Lake Hart—SMd162
 Laura—SMc15
 Leigh Creek—SMd72, SMd416, SQb48,
 SQc24, SQc72, SSa3
 Littlehampton—SMb27, SMc4, SMc82,
 SMc101, SMc125, SMc128, SMc131,
 SMc172, SMc175, SMd132
 Lobethal—SMd37
 Longwood—SCc6, SMc27, SQa2
 Lucky Hill—SMd231
 Lyndhurst—SMb42, SMc58, SMd287
 Macclesfield—SMA16, SQc66, SQc69,
 SQc71, SQc108, SQd31
 Magazine Hill—SMd118, SMd153, SMd175
 Magill—SMA94, SQb49
 Middleback Range—SCc12
 Minvalara—SMd188
 Mirramitta—SMd414, SNa6
 Modbury—SMd115, SMd150, SMd176,
 SMd237
 Morgan—SMc177
 Mount Eba Station—SMA82
 Mount Fitton—SH1, SH4, SH9
 Mount Laura—SI1, SMd148
 Mount Lofty—SCc9, SMA5, SQb41
 Mount Lofty Range—SMc151, SQb10,
 SQb19, SQb30, SQb36
 Mudlamuckla—SMc26, SMd131, SMd174
 Nepabunna—SMc103
 Noarlunga—SCb6, SCb16, SCb22, SCc5,
 SCc7, SCc15, SMA19, SMA25, SMA26,
 SMA64, SMb13, SMb34, SMc6,
 SMd134, SMd190, SMd218
 North Para River—SMA1, SMA105,
 SMA107, SMA108, SMb65, SMc28,
 SMc33, SNa1
 North Shields—SMd392
 Oladdie—SMb31, SMb36
 Olary—SMA53, SMb17
 Oodla Wirra—SMb63, SMc41, SMc118,
 SMc140, SMd31
 Oodnadatta—SMd373
 Oraparinna—SMc11
 Paracombe—SMd74, SMd88, SMd104,
 SMd155, SMd160
 Paratoo—SMd91

Peterborough—SMa58, SMb16, SMb18,
 SMd122, SMd146, SMd188
 Pimba—SMd162
 Plympton—SAa22
 Port Augusta—SCc27, SMA54, SMd71
 Port Lincoln—SMd172, SMd209
 Port Noarlunga—SMA71, SMc114, SMc155
 Puttapa Gap—SMA61, SMb33, SMc164,
 SMd45
 Quorn—SMc64, SO5, SQc14, SQc28, SQc38
 Salisbury—SAa29, SMA109, SMb70, SMb72,
 SMc65, SMc143, SMc148, SMc152
 Sherlock—SNb4
 Simmonston—SMc64, SMd243, SMd281,
 SO5, SQc14, SQc28, SQc38
 Slake Gully—SQb40, SQc82
 South Para River—SMd394, SMd395,
 SMd396
 Springfield—SQc6
 Stockwell—SNa1
 Surveyors Point—SMb54, SNb2
 Stuart Gorge—SH5, SH8, SH10
 Tailem Bend—SMd299, SMd356, SMd400
 Tea Tree Gully—SAa11, SMb6, SMb14,
 SMd28, SMd137, SMd149, SMd176,
 SMd217
 Torrens River—SAb3
 Tumby Bay—SMd127, SMd220, SMd260,
 SMd292, SMd306
 West Bay—SMd48
 Whyalla—SI1
 Wilgina—SMd43
 Williamstown—SMd18, SMd295, SMd303,
 SMd305, SMd310, SMd314, SMd325,
 SMd335, SMd339, SMd343, SMd349,
 SMd363, SMd366, SMd371, SQc11,
 SQd45
 Willowie—SMb26, SMb45
 Willunga—SMb22, SMb60, SMd62, SMd165
 Wirrealpa Head Station—SO22, SO23
 Woocalla—SMd118, SMd153, SMd175,
 SMd219
 Woodside—SMc70
 Yacka—SCc8, SMA23, SMd14
 Yongala—SMd122
 Yorke Peninsula—SMb54, SMc111, SNb2

Tasmania

Andrew Divide—SCa5
 Blue Tier—SMd117, SMd120, SMd208,
 SMd401
 Crotty—SCa5
 Dover—SMb3, SMc142, SMd6
 Golconda—SCd5, SJa25, SJa26, SJa28

Ida Bay—SMc135, SP1, SP2, SP3, SP4,
 SQd35, SQd64, SQd65
 Ironbark—SUE1, SUf12, SUg2, SVg3
 King Island—SId1
 Mount Michael—SMd117
 Ouse—SUE4, SUE7, SUE9, SUf1, SUf15,
 SUf18, SUf19, SUf21, SUf24, SUf26,
 SUf30, SUf31, SUf34, SUf35, SUf41,
 SUf42, SUf47, SUf50, SUf57, SUg1,
 SUG9, SUG12, SUh1, SUh2, SUh4,
 SVb9, SVE12, SVf14, SVf25
 Riccarton—SUC3, SUD2, SUf49, SUf55,
 SUG19, SUG20, Svc2
 Rosevale—SUf6, SUf39, SUf43, SVf30,
 SVf31
 Smithton—SJc5
 St. Leonards—SUB1, SUB3, SUC1, SUC2,
 SUE3, SUE5, SUf4, SUf8, SUf10,
 SUf11, SUf13, SUf17, SUf20, SUf23,
 SUf27, SUf29, SUf32, SUf45, SUf46,
 SUf51, SUG5, SUG7, SVE8, SVf8,
 SVf9, SVf11, SVf13, SVf17, SVf22,
 SVf24, SVf27, SVf28, SVf29, SVf33,
 SVf36
 Surges Bay—SMd183, SMd275, SMd285
 Swansea—SUE1, SUf12, SUG2, SVG3
 Waratah—SI2, SI3
 Westbury—SUf6, SUf39, SUf43, SVf30,
 SVf31
 Zeehan—SMd269

Victoria

Apollo Bay—SG3, SG5, SG13
 Athlone—SD2, SD3
 Bacchus Marsh—SCc22, SKb1, SKb4,
 SKc23, SNb5
 Bairnsdale—SMb68
 Ballarat—SKb20
 Barrabool Hills—SG2, SG6
 Bendigo—SCd4, SSB4
 Bittern—SMA12, SMA38, SMb56
 Boolarra—SUA3, SUA4, SUB2, SUB4,
 SUB5, SUB6, SUB7, SUB8, SUB9, SUD1,
 SUD3, SUD4, SUD5, SUE8, SUE11,
 SUE12, SUE13, SUf54, SVb8
 Bristol Hill—SMc2
 Bulla—SMd228, SMd296
 Burgess Creek—SUf5, SVf23
 Callignee South—SUf5, SVf23
 Camberwell—SF1
 Campbellfield—SMc5, SMc13, SMc67
 Cheltenham—SMA57
 Craigieburn—SKb25, SKc4

Croxton—SQd38
 Dandenong—SMc44, SMd107
 Darley—SCb33
 Dolodrook River—SJc4
 Doncaster—SF2
 Dunkeld—SCb4
 Egerton—SCb5
 Elaine—SMc108, SMd267, SMd368
 Fairfield—SKc22
 Glengower—SKb6, SKb8, SKb9, SKb15,
 SKb16, SKc1
 Gippsland—SD2, SD3, SG1, SG4, SG7,
 SG8, SG9, SG10, SG11, SQc73,
 SQc101, SQc102, SQc103, SQd27,
 SVa1, SVa2, SVa3, SVa4, SVa5,
 SVb8, SVb10
 Gordon—SMd156
 Greendale—SCb23
 Hallam—SMA65, SMd67
 Happy Valley—SKa7, SKb14
 Kangaroo Gully—SCd4, SJb4
 Kilcunda—SMc170, SQc102, SQc103
 Korumburra—SG7, SG11, SQc73, SQd27
 Lal Lal—SMc94, SMd225, SMd241, SP5
 Lang Lang River—SG10
 Lillicur—SKa8, SKb32, SKc16
 Linton—SKa7, SKb14
 Longwarry—SG12
 Maryborough—SMc2, SMd10, SMd293
 Melbourne—SKc22, SMc5, SMc13, SMc67,
 SMd329, SMd333, SQa4, SQb1, SQb3,
 SQb4, SQb6, SQb37, SQc7, SQc8,
 SQc25, SQc44
 Mickleham—SKb25, SKc4
 Mitchell River—SMb68
 Moorooduc—SMc18, SMc24, SMd83
 Moranding—SKa15, SKa22, SKb38, SKb39
 Mornington—SMd33
 Mornington Peninsula—SAa25, SAb2,
 SMA12, SMA38, SMb5, SMb56, SMc18,
 SMc24, SUE2
 Mount Egerton—SMd268, SMd313,
 SMd360, SMd369
 Newnham—SKb10, SKb13, SKb21, SKb24,
 SKb27, SKb34, SKc2
 Northcote—SQd38
 Otway Ranges—SG3, SG5, SG13, SMb11
 Outtrim Colliery—SQc101
 Pakenham—SMd70
 Portland—SKa6, SKc5, SKc12, SKc15
 Pyalong—SMd5
 Redesdale—SKc7, SKc25
 Ringwood—SMc54, SMd272, SMd318,
 SMd367

Royal Park—SMd329, SMd333
 Sale—SMb59
 San Remo—SG4
 Spring Plains—SCc4
 Stawell—SCa3
 Talbot—SKa4
 Tarra Valley—SG1
 Trentham—SO19
 Wangerrip—SMb11
 Wedderburn—SMd35, SMd46, SMd247,
 SMd320
 Wonthaggi—SG8, SG9, SMc133
 Yarram—SG1

Western Australia

Albany—SCb29, SCb30
 Argyle Downs—SQd7, SQd51
 Arrino—SJc1
 Bakers Hill—SVg2
 Bellevue—SMA92, SMA93, SMA95, SMb64,
 SMb67, SMc129, SMc137, SMc141,
 SMc150, SMd385, SMd388, SNa2
 Belmont—SQd57, SQd58
 Bolgart—SMd348
 Boogardie—SW2
 Boulder—SCc29
 Burabadji—SMd169
 Busselton—SAa23
 Champion—SMd154
 Cape Arid—SKa13
 Cape Riche—SCb29, SCb30
 Cardabia—SO10
 Cardup—SMA90, SMd182
 Carnarvon Basin—SL1, SL5
 Clackline—SMd180, SVh5, SVh6
 Collie—SQd15, SQd33, SQd37
 Comet Vale—SUH3, SUH8
 Coolgardie—SUh11
 Darling Range—SE2, SVf2, SVf16, SVg2,
 SVh7
 Dongara—SMb94, SQb62
 Donnybrook—SCa1, SCa2, SCa4, SCa6,
 SCa7, SCa8, SCa9, SCa10, SCa11,
 SCa12, SCa14, SCa15, SCb9, SCb17,
 SCb18, SCb26
 Elgin—SMd206
 Glen Forrest—SMd171, SMd236, SVb7,
 SVc1, SVd4
 Gingin—SR1
 Giralia—SVh3
 Gooseberry Hill—SUG3
 Greenbushes—SB1, SVb2, SVb3, SVb5,
 SVE7

Horseshoe—SF7	Nullagine—SUh5
Jacobs Wells—SMd230	Ora Banda—SUh7, SVh1
Kalamunda—SMd214	Osborne Park—SCb20
Kalgoorlie—SCc29, SD1, SMd294, SNa3,	Palinup River—SCc23
SUh6, SUh9, SUh10, SUh12, SUh13,	Parkerville—SVf16
SUh14, SUh15	Perth—Scb20
Kanowna—SMd322, SQd46	Ridge Hill—SE2, SVf2, SVh7
Kimberley—SQd7, SQd51	Rocky Gully—SVb1, SVb4, SVb6, SVg1
Kunjin—SMd261	Stinkwell—SMd229
Lake Gnangara—SKb2, SKb36	Wagin—SMd282
Lake Jandabup—SKa21, SKb5	Wanneroo—SKa21, SKa23, SKa24, SKb2,
Lake Maringiniup—SKa9, SKa24	SKb3, SKb5, SKb36
Machagee—SO18	Westonia—SMd265, SMd274
Meekatharra—SJc6, SQc60	Wilga—SMb76, SMd128, SQb46, SQd29
Moora—SQd39	Winning Station—SL1, SL5
Mount Kokeby—SMd181	Wongan Hills—SUE6, SVd2, SVd3, SVE2,
Mujar—SQd15	SVE4, SVf1
Newlands—SQc41, SQc87	Yandanhoo Hills—SCb2
Norseman—SCa18	Yuna—SMb28, SMb43, SMb48

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