

Soil Laboratory Results



SOIL TEST REPORT

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Scone Research Centre

REPORT NO: SCO14/075R2

REPORT TO: Adam Koppers
SLR Consulting
10 Kings Road
New Lambton NSW 2305

REPORT ON: Seventy one soil samples

PRELIMINARY RESULTS

ISSUED: 21 May 2014

REPORT STATUS: Final

DATE REPORTED: 24 May 2014

METHODS: Information on test procedures can be obtained from Scone Research Centre

TESTING CARRIED OUT ON SAMPLE AS RECEIVED
THIS DOCUMENT MAY NOT BE REPRODUCED EXCEPT IN FULL

A handwritten signature in blue ink, appearing to read 'SR Young'.

SR Young
(Laboratory Manager)

SOIL CONSERVATION SERVICE
Scone Research Centre

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10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					P9B/2	C1A/5	C2A/4	C2B/4		
	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
1	Site 1 0-10 cm	21	36	37	6	0	8	0.03	6.6	5.3	10YR 4/2	10YR 2/2
2	Site 1 20-30 cm	49	23	25	3	<1	2(2)	0.17	7.9	6.8	10YR 4/2	10 YR 2/2
3	Site 1 50-60 cm	58	22	18	2	0	2(3)	0.64	8.6	7.6	2.5Y 5/3	2.5Y 4/3
4	Site 1 70-80 cm	52	22	24	2	0	2(3)	1.00	8.5	7.7	2.5Y 5/3	2.5Y 4/3
5	Site 1 100-110 cm	48	28	21	3	<1	2(3)	1.17	9.2	8.4	2.5Y 6/3	2.5Y 5/3
6	Site 2 0-10 cm	34	31	30	5	<1	8	0.08	6.2	5.2	10YR 5/3	10YR 4/3
7	Site 2 30-40 cm	66	19	12	3	<1	2(1)	0.31	7.3	6.2	2.5Y 5/3	2.5Y 4/4
8	Site 2 50-60 cm	68	16	12	4	<1	2(2)	0.65	7.8	7.0	2.5Y 5/4	2.5Y 5/4
9	Site 2 70-80 cm	70	18	9	3	<1	2(3)	1.06	7.3	6.6	2.5Y 5/4	2.5Y 5/4
10	Site 2 100-110 cm	66	19	11	4	<1	2(3)	1.12	6.1	5.6	10YR 6/6	10YR 5/8
11	Site 3 0-10 cm	21	33	36	10	<1	3(1)	0.03	6.9	5.9	10YR 5/3	10YR 4/2
12	Site 3 20-30 cm	50	21	24	5	<1	2(1)	0.18	6.1	5.1	10YR 6/3	10YR 5/3
13	Site 3 50-60 cm	60	21	16	3	<1	2(2)	0.59	6.0	5.2	2.5Y 6/3	2.5Y 5/3
14	Site3 80-90 cm	67	15	16	2	<1	2(2)	1.22	8.7	8.0	10YR 5/4	10YR 4/4



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Lab No	Method	P7B/2 Particle Size Analysis (%)					P9B/2	C1A/5	C2A/4	C2B/4		
	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
15	Site 7 0-10 cm	24	30	40	6	<1	3(1)	0.04	6.1	5.1	10YR 5/2	10YR 3/2
16	Site 7 30-40 cm	55	17	23	4	1	2(1)	0.14	7.6	6.3	10YR 5/2	10YR 4/2
17	Site 7 50-60 cm	56	17	24	3	<1	2(1)	0.28	8.3	7.3	2.5Y 5/3	2.5Y 4/3
18	Site 7 80-90 cm	63	15	16	5	1	2(2)	0.94	8.9	8.1	2.5Y 5/4	2.5Y 5/4
19	Site 8 0-10 cm	20	20	57	3	0	8	0.06	6.1	4.9	7.5YR 5/3	7.5YR 4/2
20	Site 8 30-40 cm	24	34	40	2	0	2(1)	0.15	7.2	5.9	7.5YR 5/6	7.5YR 4/6
21	Site 10 0-10 cm	37	29	26	6	2	8	0.08	6.8	5.9	10YR 4/3	10YR 3/2
22	Site 10 30-40 cm	58	23	15	4	0	5	0.05	7.2	6.1	10YR 4/3	10YR 3/3
23	Site 12 0-10 cm	28	25	35	11	1	3(3)	0.04	6.3	4.9	10YR 5/3	10YR 3/2
24	Site 12 40-50 cm	57	16	19	7	1	2(2)	0.23	7.7	6.6	10YR 5/3	10YR 4/3
25	Site 12 70-80 cm	64	15	14	6	1	2(1)	1.20	8.9	8.2	7.5YR 5/4	7.5YR 4/4
26	Site 12 100-110 cm	62	14	15	8	1	2(1)	1.19	9.0	8.2	7.5YR 5/6	5YR 4/6



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Lab No	Method	P7B/2 Particle Size Analysis (%)					P9B/2	C1A/5	C2A/4	C2B/4		
	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
27	Site 14 0-10 cm	20	24	48	8	<1	3(1)	0.05	6.3	5.4	10YR 5/3	10YR 3/2
28	Site 14 40-50 cm	53	22	23	2	0	2(1)	0.11	7.6	7.0	10YR 6/4	10YR 4/4
29	Site 14 70-80 cm	61	19	19	1	0	2(1)	0.27	8.4	7.4	2.5Y 6/4	10YR 5/6
30	Site 15 0-10 cm	12	14	30	44	<1	3(1)	0.04	5.9	4.8	10YR 5/3	10YR 3/3
31	Site 15 15-25 cm	13	11	32	44	<1	3(1)	0.01	5.9	4.5	10YR 7/2	10YR 4/3
32	Site 15 35-45 cm	34	11	24	31	<1	2(2)	0.06	6.2	4.6	10YR 7/3	10YR 5/6
33	Site 16 0-10 cm	16	19	47	18	<1	3(1)	0.03	6.1	5.1	10YR 5/3	10YR 3/2
34	Site 16 25-35 cm	18	15	42	23	2	2(1)	0.01	6.2	4.7	10YR 6/3	10YR 5/3
35	Site 16 45-55 cm	49	14	29	8	<1	2(2)	0.16	6.4	5.2	10YR 6/4	10YR 4/6
36	Site 16 70-80 cm	56	19	22	3	<1	2(2)	0.29	7.4	6.3	2.5Y 5/4	2.5Y 5/4



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	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
37	Site 17 0-10 cm	23	21	42	14	<1	8	0.04	6.0	4.9	10YR 4/3	10YR 3/2
38	Site 17 25-35 cm	47	16	27	10	0	2(1)	0.12	7.4	6.1	10YR 4/3	10YR 3/3
39	Site 17 45-55 cm	52	16	23	9	<1	2(2)	0.32	8.3	7.1	10YR 5/4	10YR 4/3
40	Site 17 70-80 cm	40	16	31	13	0	2(1)	0.79	9.0	8.2	7.5YR 5/6	7.5YR 5/6
41	Site 17 100-110cm	34	18	36	12	0	2(1)	0.82	9.0	8.2	7.5YR 6/6	7.5YR 5/6
42	Site 20 0-10 cm	25	32	35	8	0	3(1)	0.05	6.0	4.9	10YR 5/2	10YR 3/2
43	Site 20 30-40 cm	38	20	33	9	<1	2(2)	0.18	6.3	5.0	10YR 6/3	10YR 4/3
44	Site 20 60-70 cm	42	16	32	10	<1	2(3)	0.71	6.8	6.0	10YR 6/4	10YR 5/4
45	Site 20 90-100 cm	41	12	35	12	0	2(2)	0.77	7.5	6.5	10YR 5/8	10TR 4/6
46	Site 24 0-10 cm	20	14	32	31	3	8	0.04	5.9	4.6	10YR 5/2	10YR 4/2
47	Site 24 10-20 cm	14	12	36	36	2	7	0.08	5.7	4.6	10YR 6/2	10YR 4/2
48	Site 24 70-80 cm	38	9	25	28	<1	2(1)	0.60	5.6	4.9	10YR 6/3	10YR 5/3



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	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
49	Site 25 0-10 cm	21	30	43	6	<1	3(2)	0.05	6.3	4.9	2.5Y 5/2	2.5Y 3/2
50	Site 25 20-30 cm	36	18	40	6	0	2(2)	0.41	7.9	6.8	2.5Y 6/3	2.5Y 5/4
51	Site 25 60-70 cm	25	26	39	10	0	2(2)	0.61	7.9	6.8	10YR 6/6	10YR 5/6
52	Site 27 0-10 cm	29	20	42	9	0	8	0.05	6.0	5.0	10YR 5/3	10YR 4/3
53	Site 27 10-20 cm	46	21	30	3	0	3(1)	0.03	6.9	5.7	10YR 5/6	10YR 4/4
54	Site 27 30-40 cm	46	21	30	3	<1	3(1)	0.04	8.0	6.9	10YR 5/4	10YR 4/3
55	Site 29 0-10 cm	11	14	30	45	<1	3(1)	0.02	5.5	4.5	10YR 6/2	10YR 4/2
56	Site 29 10-20 cm	9	15	29	45	2	3(1)	0.01	6.2	4.5	10YR 7/2	10YR 5/3
57	Site 29 30-40 cm	33	10	21	33	3	2(2)	0.08	6.4	4.8	10YR 7/3	10YR 6/4
58	Site 31 0-10 cm	23	25	43	8	1	3(1)	0.05	6.6	5.4	10YR 5/3	10YR 3/2
59	Site 31 20-30 cm	57	20	21	2	<1	8	0.03	7.5	6.1	7.5YR 5/6	7.5YR 4/6
60	Site 31 35-45 cm	56	19	23	2	0	2(1)	0.08	8.1	6.7	10YR 5/4	10YR 4/4
61	Site 31 60-70 cm	59	25	14	2	0	2(1)	0.37	8.6	7.3	2.5Y 6/4	2.5Y 5/4
62	Site 31 80-90 cm	63	19	16	2	0	4	0.47	9.1	8.1	2.5Y 6/4	2.5Y 6/4



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Lab No	Method	P7B/2 Particle Size Analysis (%)					P9B/2	C1A/5	C2A/4	C2B/4		
	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)	Colour (dry)	Colour (moist)
63	Site 33 0-10 cm	26	21	37	11	5	8	0.04	6.2	5.0	10YR 5/3	10YR 3/3
64	Site 33 30-40 cm	60	14	20	6	0	2(3)	0.58	7.2	6.3	10YR 6/6	10YR 5/6
65	Site 33 70-80 cm	61	15	18	6	0	2(3)	1.18	6.8	6.1	7.5YR 6/6	7.5YR 5/6
66	Site 33 100-110 cm	56	15	22	7	<1	2(3)	0.75	7.4	6.4	10YR 6/4	10YR 4/6
67	Site 34 0-10 cm	26	27	39	7	1	8	0.06	5.9	5.0	10YR 5/3	10YR 4/3
68	Site 34 20-30 cm	53	21	23	3	0	2(1)	0.04	7.2	5.9	7.5YR 5/6	5YR 5/6
69	Site 34 40-50 cm	53	21	23	3	<1	2(1)	0.14	8.3	7.0	7.5 YR 6/3	7.5YR 5/6
70	Site 32 0-10 cm	19	17	48	12	4	3(1)	0.04	5.9	4.9	10YR 6/3	10YR 3/3
71	Site 32 30-40 cm	42	14	27	17	0	2(2)	0.09	7.2	6.0	7.5YR 6/4	7.5YR 4/6



END OF TEST REPORT



Diagnostic and Analytical Services
Environmental Laboratory
1243 Bruxner Highway WOLLONGBAR NSW 2477
Phone 02 6626 1103 Email wollongbar.csu@dpi.nsw.gov.au

Owner SOIL CONSERVATION SERVICE
PO BOX 283
SCONE NSW 2337

Submitted 15.5.14

Received 19.5.14

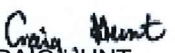
Samples received 71 x soil

SCO 14/075

Soil Analysis Report

Analytical Method	Method Number	Date Analysed
Extraction of Gillman and Sumpter Exchangeable Cations (including pre-wash as required)	In-house Method 014	21/05/14
Determination of Gillman and Sumpter Exchangeable Cations by ICP-AES	In-house Method 670	21/05/14

Results attached


CRAIG HUNT
TECHNICAL OFFICER
22 MAY, 2014 RG

FINAL REPORT S YOUNG - EMAIL EXCEL FILE

- These results are expressed on an air-dry weight basis unless otherwise stated.
- This report should not be reproduced except in full.
- Samples will be retained for one month from the date of the final report. Samples will then be discarded. Clients wishing to recover their samples must contact the laboratory within this period. The laboratory will return residual samples at client expense when requested.
- Test results and findings may be provided to authorised staff and used for statistical, surveillance, extension, certification and regulatory purposes in accordance with Departmental policies. The information assists disease and residue control programs and underpins market access for agricultural products. The source of the information will remain confidential unless otherwise required by Law or regulatory policies.



Accredited for compliance with ISO/IEC 17025.
Accreditation No: 14173

Sample ID	Lab No.	Aluminium	Calcium	Potassium	Magnesium	Sodium	Cation Exchange Capacity	Calcium/Magnesium ratio	Aluminium Saturation	Exchangeable Calcium	Exchangeable Potassium	Exchangeable Magnesium	Exchangeable Sodium (ESP)
	Unit	cmol(+)/kg	cmol(+)/kg	cmol(+)/kg	cmol(+)/kg	cmol(+)/kg	cmol(+)/kg		%	%	%	%	%
1	LOR	0.1	0.03	0.01	0.007	0.03	14	1.7	<0.7	58	1.6	34	5.9
2*	4031	<0.1	8.4	0.24	4.9	0.86	30	0.96	<0.3	43	0.80	44	12
3*	4032	<0.1	13	0.24	13	3.7	22	0.63	<0.5	30	0.60	48	22
4*	4033	<0.1	6.5	0.13	10	4.7	13	0.64	<0.8	30	0.70	47	23
5*	4034	<0.1	3.9	0.092	6.1	3.0	21	0.73	<0.5	34	0.88	46	18
6	4035	<0.1	7.3	0.19	10	4.0	19	0.76	<0.5	39	4.7	50	5.7
7*	4036	<0.1	7.5	0.91	9.8	1.1	33	0.53	<0.3	31	1.2	58	9.4
8*	4037	<0.1	10	0.40	19	3.0	35	0.47	<0.3	27	0.47	58	14
9*	4038	<0.1	9.6	0.16	20	5.1	32	0.46	<0.3	26	0.64	57	16
10*	4039	<0.1	8.3	0.21	18	3.3	19	0.43	<0.5	25	0.62	57	17
11	4040	<0.1	4.8	0.12	11	3.3	16	2.5	<0.6	68	2.2	27	2.4
12	4041	<0.1	11	0.35	4.2	0.37	23	0.58	0.55	31	1.1	55	12
13*	4042	0.13	7.4	0.25	13	2.9	20	0.54	<0.5	30	0.81	56	13
14*	4043	<0.1	5.9	0.16	11	2.6	33	0.69	<0.3	35	0.87	51	13
15	4044	<0.1	12	0.28	17	4.2	15	2.0	0.90	61	5.2	30	3.1
16	4045	0.14	9.2	0.79	4.5	0.47	29	0.92	<0.3	43	1.7	46	9.3
17	4046	<0.1	12	0.50	14	2.7	33	0.85	<0.3	39	1.2	46	14
18*	4047	<0.1	13	0.39	15	4.8	32	0.85	<0.3	40	0.92	47	12
19	4048	<0.1	13	0.29	15	4.0	14	1.6	<0.7	56	4.9	35	3.0
20	4049	<0.1	8.2	0.71	5.1	0.44	22	0.70	<0.5	36	1.1	52	9.8
21	4050	<0.1	8.3	0.25	12	2.2	24	1.5	<0.4	56	5.3	36	2.9
22	4051	<0.1	13	1.3	8.6	0.69	28	1.2	<0.4	50	3.7	43	2.9
23	4052	<0.1	14	1.0	12	0.80	16	0.93	<0.6	43	5.4	46	4.8
24	4053	<0.1	6.9	0.87	7.4	0.77	31	0.48	<0.3	27	2.4	57	14
25*	4054	<0.1	8.4	0.75	18	4.3	35	0.56	<0.3	30	0.68	54	15
26*	4055	<0.1	11	0.24	19	5.3	33	0.63	<0.3	33	0.86	52	14
27	4056	<0.1	11	0.28	17	4.6	15	3.0	<0.7	69	7.1	23	0.83
28	4057	<0.1	11	1.1	3.5	0.13	23	1.1	<0.4	48	1.9	44	5.2
29	4058	<0.1	11	0.45	10	1.2	29	1.0	<0.3	45	1.0	43	11
30	4059	<0.1	13	0.30	12	3.0	5.6	2.3	<1.8	59	10	25	3.4
31	4060	<0.1	3.3	0.56	1.4	0.19	3.1	1.5	10	47	6.0	31	4.8
32	4061	0.32	1.4	0.18	0.96	0.15	12	0.27	4.2	16	1.1	61	17
33	4062	0.50	1.9	0.13	7.3	2.0	8.0	2.6	<1.2	66	5.8	26	1.8
34	4063	<0.1	5.3	0.47	2.1	0.15	5.1	1.3	3.5	51	2.8	38	5.1
35	4064	0.18	2.6	0.14	2.0	0.26	21	0.81	<0.5	38	1.1	47	13
36*	4065	<0.1	8.0	0.22	9.9	2.7	23	0.87	<0.4	40	0.70	46	12
37	4066	<0.1	9.3	0.16	11	2.9	13	1.9	<0.8	59	7.6	31	2.0
38	4067	<0.1	7.4	0.96	3.9	0.26	24	0.73	<0.4	38	1.8	52	7.7
39*	4068	<0.1	9.0	0.42	12	1.8	23	0.66	<0.4	36	0.92	54	8.2
	4069	<0.1	8.2	0.21	12	1.8							



Accredited for compliance with ISO/IEC 17025.

Accreditation No: 14173

Sample ID	Lab No. Unit	Aluminium cmol(+)/kg	Calcium cmol(+)/kg	Potassium cmol(+)/kg	Magnesium cmol(+)/kg	Sodium cmol(+)/kg	Cation Exchange Capacity cmol(+)/kg	Calcium/ Magnesium ratio	Aluminium Saturation %	Exchange- able Calcium %	Exchange- able Potassium %	Exchange- able Magnesium %	Exchangeable Sodium (ESP) %
	LOR	0.1	0.03	0.01	0.007	0.03							
40*	4070	<0.1	8.9	0.15	9.9	1.4	20	0.90	<0.5	44	0.72	48	6.8
41*	4071	<0.1	6.9	0.16	8.9	1.7	18	0.77	<0.6	39	0.92	50	9.6
42	4072	<0.1	6.9	0.54	5.2	0.58	13	1.3	<0.8	52	4.1	39	4.4
43	4073	<0.1	4.2	0.20	9.8	2.8	17	0.42	<0.6	24	1.2	57	16
51*	4074	<0.1	1.2	0.051	3.3	1.6	6.2	0.37	<1.6	20	0.82	53	25
51*	4075	<0.1	1.4	0.074	3.9	1.8	7.3	0.36	<1.4	19	1.0	54	25
46	4076	0.17	2.8	0.34	3.7	0.48	7.4	0.75	2.3	37	4.6	49	6.4
47	4077	0.18	1.9	0.19	2.2	0.63	5.1	0.88	3.6	38	3.7	42	12
51*	4078	<0.1	0.57	0.052	3.5	0.89	5.1	0.16	<2	11	1.0	69	18
49	4079	<0.1	4.3	0.35	5.8	0.91	11	0.75	<0.9	38	3.1	50	7.9
50*	4080	<0.1	1.9	0.071	7.7	2.1	12	0.24	<0.8	16	0.60	65	18
51*	4081	<0.1	0.60	0.072	5.1	1.5	7.3	0.12	<1.4	8.3	0.99	70	20
52	4082	<0.1	8.5	1.2	5.8	0.34	16	1.4	<0.6	53	7.8	36	2.1
53	4083	<0.1	11	1.2	8.9	0.32	21	1.2	<0.5	50	5.7	42	1.5
54	4084	<0.1	13	0.60	10	0.68	24	1.2	<0.4	52	2.4	42	2.8
55	4085	0.44	2.2	0.38	0.95	0.11	4.1	2.3	11	54	9.3	23	2.8
56	4086	0.25	1.0	0.11	0.97	0.25	2.6	1.1	9.6	40	4.3	37	9.4
57	4087	0.11	1.0	0.11	9.4	2.2	13	0.11	0.87	8.1	0.84	73	17
58	4088	<0.1	13	1.0	4.6	0.17	19	2.8	<0.5	69	5.6	24	0.92
59	4089	<0.1	11	0.62	11	0.85	24	0.98	<0.4	46	2.6	47	3.5
60	4090	<0.1	11	0.38	11	1.7	24	0.98	<0.4	45	1.6	46	7.0
61*	4091	<0.1	11	0.23	14	2.8	28	0.80	<0.4	39	0.82	49	10
62*	4092	<0.1	14	0.15	14	1.9	30	0.94	<0.3	45	0.51	48	6.3
63	4093	<0.1	3.9	0.60	7.1	0.49	12	0.55	<0.8	32	4.9	58	4.0
64*	4094	<0.1	2.6	0.13	16	2.4	21	0.16	<0.5	12	0.59	76	11
65*	4095	<0.1	1.4	0.10	13	2.7	17	0.11	<0.6	8.0	0.59	75	16
66*	4096	<0.1	1.6	0.080	11	2.4	15	0.14	<0.7	11	0.52	73	16
67	4097	<0.1	7.2	0.95	5.7	0.18	14	1.3	<0.7	51	6.8	40	1.3
68	4098	<0.1	7.4	0.69	12	0.84	21	0.63	<0.5	36	3.4	57	4.0
69	4099	<0.1	6.9	0.46	13	1.8	22	0.54	<0.5	31	2.1	58	8.2
70	4100	<0.1	6.7	0.68	2.7	0.12	10	2.5	<1	65	6.6	26	1.2
71	4101	<0.1	7.9	0.22	7.0	1.3	16	1.1	<0.6	48	1.3	43	8.0

*Prewash undertaken for EC >0.3



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