

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
1	LAYER STATUS					COLOUR (Munsell, 1994)					Field pH	LAYER NOTES					Field pH Test Method (1)				
	Lower		Horizon			Moist Munsell		Dry Munsell			(1 per layer)	1					Raupach test strip				
2	1		1			2.5		2.5			10					HCl (1)					
3	2		2			7.5		7.5			2					no effervescence					
4	3		3			4.5		4.5			4					audible/slight efferv.					
5	4		4			6.5		6.5			6					strong effervescence					
6	5		5			8.5		8.5			8					Boundary Distinctiveness					
7	6		6			10.5		10.5			10					(1 per layer) 1 2 3 4 5					
8	7		7			12.5		12.5			12					not evident					
9	8		8			14.5		14.5			14					sharp (<5 mm)					
10	9		9			16.5		16.5			16					abrupt (5-20 mm)					
11	10		10			18.5		18.5			18					clear (20-50 mm)					
12	11		11			20.5		20.5			20					gradual (50-100 mm)					
13	12		12			22.5		22.5			22					diffuse (>100 mm)					
14	13		13			24.5		24.5			24					STRUCTURE					
15	14		14			26.5		26.5			26					Grade of Pedality (1) 1 2 3 4 5					
16	15		15			28.5		28.5			28					single-grained					
17	16		16			30.5		30.5			30					massive					
18	17		17			32.5		32.5			32					weak pedality					
19	18		18			34.5		34.5			34					moderate pedality					
20	19		19			36.5		36.5			36					strong pedality					
21	20		20			38.5		38.5			38					Fabric (1) 1 2 3 4 5					
22	21		21			40.5		40.5			40					sandy					
23	22		22			42.5		42.5			42					earthy					
24	23		23			44.5		44.5			44					rough-faced peds					
25	24		24			46.5		46.5			46					smooth-faced peds					
26	25		25			48.5		48.5			48					Dominant (1) 1 2 3 4 5					
27	26		26			50.5		50.5			50					Ped Shape					
28	27		27			52.5		52.5			52					Sub-dominant (1) 1 2 3 4 5					
29	28		28			54.5		54.5			54					platy					
30	29		29			56.5		56.5			56					lenticular					
31	30		30			58.5		58.5			58					prismatic					
32	31		31			60.5		60.5			60					columnar					
33	32		32			62.5		62.5			62					angular blocky					
34	33		33			64.5		64.5			64					sub-ang. blocky					
35	34		34			66.5		66.5			66					polyhedral					
36	35		35			68.5		68.5			68					granular					
37	36		36			70.5		70.5			70					crumb					
38	37		37			72.5		72.5			72					round					
39	38		38			74.5		74.5			74					Dominant (1) 1 2 3 4 5					
40	39		39			76.5		76.5			76					Ped Size					
41	40		40			78.5		78.5			78					Sub-dominant (1) 1 2 3 4 5					
42	41		41			80.5		80.5			80					<2 mm					
43	42		42			82.5		82.5			82					2-5 mm					
44	43		43			84.5		84.5			84					5-10 mm					
45	44		44			86.5		86.5			86					10-20 mm					
46	45		45			88.5		88.5			88					20-50 mm					
47	46		46			90.5		90.5			90					50-100 mm					
48	47		47			92.5		92.5			92					100-200 mm					
49	48		48			94.5		94.5			94					200-500 mm					
50	49		49			96.5		96.5			96					> 500 mm					
51	50		50			98.5		98.5			98					SEGREGATIONS					
52	51		51			100.5		100.5			100					Type (1 per layer) 1 2 3 4 5					
53	52		52			102.5		102.5			102					dry					
54	53		53			104.5		104.5			104					mod. moist					
55	54		54			106.5		106.5			106					moist					
56	55		55			108.5		108.5			108					wet					
57	56		56			110.5		110.5			110					Soil Water Status (1 each per layer)					
58	57		57			112.5		112.5			112					1 2 3 4 5					
59	58		58			114.5		114.5			114					not evident					
60	59		59			116.5		116.5			116					calcareous					
61	60		60			118.5		118.5			118					gypseous					
62	61		61			120.5		120.5			120					manganiferous					
63	62		62			122.5		122.5			122					ferruginous					
64	63		63			124.5		124.5			124					ferromanganiferous					
65	64		64			126.5		126.5			126					organic					
66	65		65			128.5		128.5			128					not identified					
67	66		66			130.5		130.5			130					other					
68	67		67			132.5		132.5			132					Amount (1 per layer) 1 2 3 4 5					
69	68		68			134.5		134.5			134					none					
70	69		69			136.5		136.5			136					very few (<2%)					
71	70		70			138.5		138.5			138					few (2-10%)					
72	71		71			140.5		140.5			140					common (10-20%)					
73	72		72			142.5		142.5			142					many (20-50%)					
74	73		73			144.5		144.5			144					abundant (>50%)					
75	74		74			146.5		146.5			146					Strength (1 per layer) 1 2 3 4 5					
76	75		75			148.5		148.5			148					weak					
77	76		76			150.5		150.5			150					strong					
78	77		77			152.5		152.5			152					Form (1 per layer) 1 2 3 4 5					
79	78		78			154.5		154.5			154					soft segregations					
80	79		79			156.5		156.5			156					nodules					
81	80		80			158.5		158.5			158					fragments					
82	81		81			160.5		160.5			160					crystals					
83	82		82			162.5		162.5			162					veins					
84	83		83			164.5		164.5			164					concretions					
85	84		84			166.5		166.5			166					root linings					
86	85		85			168.5		168.5			168					tubules					
87	86		86			170.5		170.5			170					Size (1 per layer) 1 2 3 4 5					
88	87		87			172.5		172.5			172					fine (<2 mm)					
89	88		88			174.5		174.5			174					medium (2-6 mm)					
90	89		89			176.5		176.5			176					coarse (6-20 mm)					
91	90		90			178.5		178.5			178					v coarse (20-60 mm)					
92	91		91			180.5		180.5			180					ext coarse (>60 mm)					
93	92		92			182.5		182.5			182					Sand Fraction 1 2 3 4 5					
94	93		93			184.5		184.5			184					coarse					
95	94		94			186.5		186.5			186					fine					
96	95		95			188.5		188.5			188					Clay Fraction 1 2 3 4 5					
97	96		96			190.5		190.5			190					light					
98	97		97			192.5		192.5			192					medium					
99	98		98			194.5		194.5			194					medium heavy					
100	99		99			196.5		196.5			196					heavy					
101	100		100			198.5		198.5			198										
102	101		101			200.5		200.5			200										
103	102		102			202.5		202.5			202										
104	103		103			204.5		204.5			204										
105	104		104			206.5		206.5			206										
106	105		105			208.5		208.5			208										
107	106		106			210.5		210.5			210										
108	107		107			212.5		212.5			212										
109	108		108			214.5		214.5			214										
110	109		109			216.5		216.5			216										
111	110		110			218.5		218.5			218										
112	111		111			220.5		220.5			220										
113	112		112			222.5		222.5			222										
114	113		113			224.5		224.5			224										
115	114		114			226.5		226.5			226										
116	115		115			228.5		228.5			228										
117	116		116			230.5		230.5			230										
118	117		117			232.5		232.5			232										
119	118		118			234.5		234.5			234										
120	119		119			236.5		236.5			236										
121	120		120			238.5		238.5			238										
122	121		121			240.5		240.5			240										
123	122		122			242.5		242.5			242										
124	123		123			244.5		244.5			244										
125	124		124			246.5		246.5			246										
126	125		125			248.5		248.5			248										
127	126		126			250.5		250.5			250										
128	127		127			252.5		252.5			252										
129	128		128			254.5		254.5			254										
130	129		129			256.5		256.5			256										
131	130		130			258.5		258.5			258										
132	131		131			260.5		260.5			260										
133	132		132			262.5		262.5			262										
134	133		133			264.5		264.5			264										
135	134		134			266.5		266.5			266										
136	135		135			268.5		268.5			268										
137	136		136			270.5		270.5			270										
138	137		137			272.5		272.5			272										
139	138		138			274.5		274.5			274										
140	139		139			276.5		276.5			276										
141	140		140			278.5		278.5			278										
142	141		141			280.5		280.5			280										
143	142		142			282.5		282.5			282										
144	143		143			284.5		284.5			284										
145	144		144			286.5		286.5			286										
146	145		145			288.5		288.5			288										

SITE LOCATION: RIDGE NEAR TRIG STATION

PROFILE MAP DETAILS										SURVEY DETAILS									
Profile No.	Map Sheet No.	Eastings		Northings		Described By	Profile Date	Photo Taken (1)	No. of Layers										
1	1	1	1	1	1	1	1	1	1										
2	2	2	2	2	2	2	2	2	2										
3	3	3	3	3	3	3	3	3	3										
4	4	4	4	4	4	4	4	4	4										
5	5	5	5	5	5	5	5	5	5										
6	6	6	6	6	6	6	6	6	6										
7	7	7	7	7	7	7	7	7	7										
8	8	8	8	8	8	8	8	8	8										
9	9	9	9	9	9	9	9	9	9										
Potential BSAL? (1)		Site type (1)		BIOPHYSICAL STRATEGIC AGRICULTURAL LAND SOIL DATA CARD						No. of Layers									
yes 1 no 2		checked 1 detailed 2 exclusion 3																	
SOIL TYPE		VEGETATION		LANDFORM ELEMENT (1)															
A.S.C.		Vegetation Community (1)																	
O		unknown 1		alcove 33 cone 34 footslope 21 ox-bow 57 sink hole/doline 62															
SO		rainforest 2		backplain 31 crater 51 foredune 12 pan/playa 55 stream channel 45															
A		wet sclerophyll forest 3		bank 25 cut face 28 gully 42 pediment 22 streambed 46															
B		dry sclerophyll forest 4		bar 8 cut-over surface 39 hillcrest 1 pit 60 summit surface 2															
F		woodland grass u/storey 5		beach 26 dam 16 hillslope 15 plain 30 swale 47															
GG		woodland shrub u/storey 6		beach ridge 27 drainage depression 41 lagoon 52 prior stream 3 swamp 58															
D		tall shrubland 7		bench 19 dune 11 lake 55 rock flat 34 talus 23															
A		low shrubland 8		berm 22 embankment 14 landslide 20 rock platform 35 tidal creek 48															
H		heath 9		blow-out 32 estuary 44 levee 8 scald 39 tidal flat 47															
SG		grassland/herbland 10		channel bench 33 fan 22 lunette 13 scarp 18 tor 4															
B		swamp complex 11		cirque 50 fill top 40 maar 53 scree 23 trench 49															
E		littoral complex 12		cliff 51 flood-out 42 mound 15 scroll 40 valley flat 38															
FAMILY		no vegetation 13																	
O		Growth Forms (4)																	
C		tree 14		not identified 1 limestone 23 coarse-basic 45															
A		tree mallee 2		unconsolidated 2 tuff 24 fine-acidic 46															
B		shrub 3		gravel 3 breccia 25 fine-intermediate 47															
G.S.G.		mallee shrub 4		sand 4 greywacke 26 fine-basic 48															
A		heath shrub 5		silt 5 arkose 27 serpentine 49															
B		chenopod shrub 6		clay 6 dolomite 28 gabbro 50															
C		hummock grass 7		organic material 7 calcrete 29 dolerite 51															
D		tussock grass 8		alluvium 8 aeolianite 30 diorite 52															
E		sod grass 9		colluvium 9 chert 31 syenite 53															
F		sedge 10		lacustrine 10 jasper 32 granodiorite 54															
G		rush 11		aeolian 11 metamorphic 33 adamellite 55															
H		forb 12		marine 12 gneiss 34 granite 56															
I		fern/cycad 13		calcareous sand 13 schist/phyllite 35 aplite 57															
J		moss 14		fill 14 slate 36 quartz porphyry 58															
K		lichen 15		mud 15 hornfels 37 basalt 59															
L		liverwort 16		till 16 quartzite 38 andesite 60															
M		vine 17		sedimentary 17 greenstone 39 trachyte 61															
N				shale 18 amphibolite 40 rhyolite 62															
O				siltstone/mudstone 19 marble 41 obsidian 63															
P				sandstone-quartz 20 igneous 42 scoria 64															
Q				sandstone-lithic 21 coarse-acidic 43 ash 65															
R				conglomerate 22 coarse-intermediate 44 agglomerate 66															
S				other 67															
T																			
U																			
V																			
W																			
X																			
Y																			
Z																			
AA																			
AB																			
AC																			
AD																			
AE																			
AF																			
AG																			
AH																			
AI																			
AJ																			
AK																			
AL																			
AM																			
AN																			
AO																			
AP																			
AQ																			
AR																			
AS																			
AT																			
AU																			
AV																			
AW																			
AX																			

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
1	LAYER STATUS					COLOUR (Munsell, 1994)					Field pH	LAYER NOTES					Field pH Test Method (1)				
	Lower		Horizon			Moist Munsell		Dry Munsell			(1 per layer)	1					Raupach test strip pH meter				
2	1		1			2.5		2.5			1						HCI (2)				
3	2		2			2.5		2.5			2						no effervescence				
4	3		3			2.5		2.5			3						audible/slight efferv.				
5	4		4			2.5		2.5			4						strong effervescence				
6	5		5			2.5		2.5			5						Boundary Distinctiveness				
7	6		6			2.5		2.5			6						(1 per layer) 1 2 3 4 5				
8	7		7			2.5		2.5			7						not evident				
9	8		8			2.5		2.5			8						sharp (<5 mm)				
10	9		9			2.5		2.5			9						abrupt (5-20 mm)				
11	10		10			2.5		2.5			10						clear (20-50 mm)				
12	11		11			2.5		2.5			11						gradual (50-100 mm)				
13	12		12			2.5		2.5			12						diffuse (>100 mm)				
14	13		13			2.5		2.5			13						STRUCTURE				
15	14		14			2.5		2.5			14						Grade of Pedality (1) 1 2 3 4 5				
16	15		15			2.5		2.5			15						single-grained				
17	16		16			2.5		2.5			16						massive				
18	17		17			2.5		2.5			17						weak pedality				
19	18		18			2.5		2.5			18						moderate pedality				
20	19		19			2.5		2.5			19						strong pedality				
21	20		20			2.5		2.5			20						Fabric (1) 1 2 3 4 5				
22	21		21			2.5		2.5			21						sandy				
23	22		22			2.5		2.5			22						earthy				
24	23		23			2.5		2.5			23						rough-faced peds				
25	24		24			2.5		2.5			24						smooth-faced peds				
26	25		25			2.5		2.5			25						Dominant (1) 1 2 3 4 5				
27	26		26			2.5		2.5			26						Ped Shape				
28	27		27			2.5		2.5			27						Sub-dominant (1) 1 2 3 4 5				
29	28		28			2.5		2.5			28						platy				
30	29		29			2.5		2.5			29						lenticular				
31	30		30			2.5		2.5			30						prismatic				
32	31		31			2.5		2.5			31						columnar				
33	32		32			2.5		2.5			32						angular blocky				
34	33		33			2.5		2.5			33						sub-ang. blocky				
35	34		34			2.5		2.5			34						polyhedral				
36	35		35			2.5		2.5			35						granular				
37	36		36			2.5		2.5			36						crumb				
38	37		37			2.5		2.5			37						round				
39	38		38			2.5		2.5			38						Dominant (1) 1 2 3 4 5				
40	39		39			2.5		2.5			39						Ped Size				
41	40		40			2.5		2.5			40						Sub-dominant (1) 1 2 3 4 5				
42	41		41			2.5		2.5			41						<2 mm				
43	42		42			2.5		2.5			42						2-5 mm				
44	43		43			2.5		2.5			43						5-10 mm				
45	44		44			2.5		2.5			44						10-20 mm				
46	45		45			2.5		2.5			45						20-50 mm				
47	46		46			2.5		2.5			46						50-100 mm				
48	47		47			2.5		2.5			47						100-200 mm				
49	48		48			2.5		2.5			48						200-500 mm				
50	49		49			2.5		2.5			49						> 500 mm				
51	50		50			2.5		2.5			50						SEGREGATIONS				
52	51		51			2.5		2.5			51						Soil Water Status (1 each per layer)				
53	52		52			2.5		2.5			52						Type (1 per layer) 1 2 3 4 5				
54	53		53			2.5		2.5			53						dry				
55	54		54			2.5		2.5			54						mod. moist				
56	55		55			2.5		2.5			55						moist				
57	56		56			2.5		2.5			56						wet				
58	57		57			2.5		2.5			57						TEXTURE				
59	58		58			2.5		2.5			58						(1 each per layer)				
60	59		59			2.5		2.5			59						Texture Grade 1 2 3 4 5				
61	60		60			2.5		2.5			60						sand				
62	61		61			2.5		2.5			61						loamy sand				
63	62		62			2.5		2.5			62						clayey sand				
64	63		63			2.5		2.5			63						sandy loam				
65	64		64			2.5		2.5			64						loam				
66	65		65			2.5		2.5			65						silty loam				
67	66		66			2.5		2.5			66						sandy clay loam				
68	67		67			2.5		2.5			67						clay loam				
69	68		68			2.5		2.5			68						clay loam sandy				
70	69		69			2.5		2.5			69						silty clay loam				
71	70		70			2.5		2.5			70						sandy clay				
72	71		71			2.5		2.5			71						silty clay				
73	72		72			2.5		2.5			72						clay				
74	73		73			2.5		2.5			73						fibric peat				
75	74		74			2.5		2.5			74						hemic peat				
76	75		75			2.5		2.5			75						sapric peat				
77	76		76			2.5		2.5			76						Sand Fraction 1 2 3 4 5				
78	77		77			2.5		2.5			77						coarse				
79	78		78			2.5		2.5			78						fine				
80	79		79			2.5		2.5			79						Clay Fraction 1 2 3 4 5				
81	80		80			2.5		2.5			80						light				
82	81		81			2.5		2.5			81						medium				
83	82		82			2.5		2.5			82						medium heavy				
84	83		83			2.5		2.5			83						heavy				
85	84		84			2.5		2.5			84						Size (1 per layer) 1 2 3 4 5				
86	85		85			2.5		2.5			85						fine (<2 mm)				
87	86		86			2.5		2.5			86						medium (2-6 mm)				
88	87		87			2.5		2.5			87						coarse (6-20 mm)				
89	88		88			2.5		2.5			88						v coarse (20-60 mm)				
90	89		89			2.5		2.5			89						ext coarse (>60 mm)				
91	90		90			2.5		2.5			90						Amount (1 per layer) 1 2 3 4 5				
92	91		91			2.5		2.5			91						none				
93	92		92			2.5		2.5			92						very few (<2%)				
94	93		93			2.5		2.5			93						few (2-10%)				
95	94		94			2.5		2.5			94						common (10-20%)				
96	95		95			2.5		2.5			95						many (20-50%)				
97	96		96			2.5		2.5			96						abundant (>50%)				
98	97		97			2.5		2.5			97						Strength (1 per layer) 1 2 3 4 5				
99	98		98			2.5		2.5			98						weak				
100	99		99			2.5		2.5			99						strong				
101	100		100			2.5		2.5			100						Form (1 per layer) 1 2 3 4 5				
102	101		101			2.5		2.5			101						soft segregations				
103	102		102			2.5		2.5			102						nodules				
104	103		103			2.5		2.5			103						fragments				
105	104		104			2.5		2.5			104						crystals				
106	105		105			2.5		2.5			105						veins				
107	106		106			2.5		2.5			106						concretions				
108	107		107			2.5		2.5			107						root linings				
109	108		108			2.5		2.5			108						tubules				
110	109		109			2.5		2.5			109						Size (1 per layer) 1 2 3 4 5				
111	110		110			2.5		2.5			110						fine (<2 mm)				
112	111		111			2.5		2.5			111						medium (2-6 mm)				
113	112		112			2.5		2.5			112						coarse (6-20 mm)				
114	113		113			2.5		2.5			113						v coarse (20-60 mm)				
115	114		114			2.5		2.5			114						ext coarse (>60 mm)				
116	115		115			2.5		2.5			115						Amount (1 per layer) 1 2 3 4 5				
117	116		116			2.5		2.5			116						very few (<2%)				
118	117		117			2.5		2.5			117						few (2-10%)				
119	118		118			2.5		2.5			118						common (10-20%)				
120	119		119			2.5		2.5			119						many (20-50%)				
121	120		120			2.5		2.5			120						abundant (50-90%)				
122	121		121			2.5		2.5			121						very abundant (>90%)				
123	122		122			2.5		2.5			122						Size (1 per layer) 1 2 3 4 5				
124	123		123			2.5		2.5			123						fine gravel (2-6 mm)				
125	124		124			2.5		2.5			124						gravel (6-20 mm)				
126	125		125			2.5		2.5			125						coarse gravel (20-60 mm)				
127	126		126			2.5		2.5			126						cobble (60-200 mm)				
128	127		127			2.5		2.5			127						stones (200-600 mm)				
129	128		128			2.5		2.5			128						boulders (>600 mm)				
130	129		129			2.5		2.5			129						Contrast 1 2 3 4 5				
131	130		130			2.5		2.5			130						faint				
132	131		131			2.5		2.5			131						distinct				
133	132		132			2.5		2.5			132						prominent				
134	133		133			2.5		2.5			133						Substrate				
135	134		134			2.5		2.5			134						Upper				
136	135		135			2.5		2.5			135						Lower				
137	136		136			2.5		2.5			136						Horizon				
138	137		137			2.5		2.5			137						Moist Munsell				
139	138		138			2.5		2.5			138						Dry Munsell				
140	139		139			2.5		2.5			139						Field pH				
141	140		140			2.5		2.5			140						LAYER NOTES				
142	141		141			2.5		2.5			141						Field pH Test Method (1)				
143	142		142			2.5		2.5			142						Raupach test strip				
144	143		143			2.5		2.5			143						pH meter				
145	144		144			2.5		2.5			144						HCI (2)				
146	145		145			2.5		2.5			145						no effervescence				
147	146		146			2.5		2.5			146						audible/slight efferv.				
148	147		147			2.5		2.5			147						strong effervescence				
1																					

SURVEY TITLE: RIXS CREEK BSAL

SITE LOCATION: DOWNSLOPE OF TRIG STATION

PROFILE MAP DETAILS				SURVEY DETAILS			
Profile No.	Map Sheet No.	Eastings	Northings	Described By	Profile Date	Photo Taken (1)	No. of Layers
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
Potential BSAL? (1)				Site type (1)			
yes ☐ no ☒				checked ☐ detailed ☒ exclusion ☐			
BIOPHYSICAL STRATEGIC AGRICULTURAL LAND SOIL DATA CARD							
SOIL TYPE	VEGETATION	LANDFORM ELEMENT (1)					
A.S.C.	Vegetation Community (1)	alcove ☐	cone ☐	footslope ☐	ox-bow ☐	sink hole/doline ☐	Please MARK LIKE THIS ONLY: ☐ ☒ ☐ ☐ - Use 2B pencil - No pen or biro - Fully erase mistakes - Make no stray marks - Numbers in () show max. entries allowed
O	unknown ☐	backplain ☐	crater ☐	foredune ☐	pan/playa ☐	stream channel ☐	
SO	rainforest ☐	bank ☐	cut face ☐	gully ☐	pediment ☐	streambed ☐	
A	wet sclerophyll forest ☐	bar ☐	cut-over surface ☐	hillcrest ☐	pit ☐	summit surface ☐	
B	dry sclerophyll forest ☐	beach ☐	dam ☐	hillslope ☐	plain ☐	swale ☐	
F	woodland grass u'storey ☐	beach ridge ☐	drainage depression ☐	lagoon ☐	prior stream ☐	swamp ☐	
GG	woodland shrub u'storey ☐	bench ☐	dune ☐	lake ☐	rock flat ☐	talus ☐	
N	tall shrubland ☐	berm ☐	embankment ☐	landslide ☐	rock platform ☐	tidal creek ☐	
Z	low shrubland ☐	blow-out ☐	estuary ☐	levee ☐	scald ☐	tidal flat ☐	
SG	heath ☐	channel bench ☐	fan ☐	lunette ☐	scarp ☐	tor ☐	
H	grassland/herbland ☐	cirque ☐	fill top ☐	maar ☐	scree ☐	trench ☐	
B	swamp complex ☐	cliff ☐	flood-out ☐	mound ☐	scroll ☐	valley flat ☐	
G	littoral complex ☐	LITHOLOGY					
L	no vegetation ☐	TOPOGRAPHY					
W	Growth Forms (4)	Substrate (3)				Slope Percent	Site Morphology (1)
C	tree ☐	not identified ☐	limestone ☐	coarse-basic ☐	☐ ☐ ☐ ☐	flat ☐	
A	tree mallee ☐	unconsolidated ☐	tuff ☐	fine-acidic ☐	☐ ☐ ☐ ☐	crest ☐	
B	shrub ☐	gravel ☐	breccia ☐	fine-intermediate ☐	☐ ☐ ☐ ☐	hillock ☐	
C	mallee shrub ☐	sand ☐	greywacke ☐	fine-basic ☐	☐ ☐ ☐ ☐	ridge ☐	
D	heath shrub ☐	silt ☐	arkose ☐	serpentine ☐	☐ ☐ ☐ ☐	upper slope ☐	
E	chenopod shrub ☐	clay ☐	dolomite ☐	gabbro ☐	☐ ☐ ☐ ☐	midslope ☐	
F	hummock grass ☐	organic material ☐	calcrete ☐	dolerite ☐	☐ ☐ ☐ ☐	simple slope ☐	
G	tussock grass ☐	alluvium ☐	aeolianite ☐	diorite ☐	☐ ☐ ☐ ☐	lower slope ☐	
H	sod grass ☐	colluvium ☐	chert ☐	syenite ☐	☐ ☐ ☐ ☐	open depression ☐	
I	sedge ☐	lacustrine ☐	jasper ☐	granodiorite ☐	☐ ☐ ☐ ☐	closed depression ☐	
J	rush ☐	aeolian ☐	metamorphic ☐	adamellite ☐	Slope Measurement Method (1)		
K	forb ☐	marine ☐	gneiss ☐	granite ☐	Slope Morphology (1)		
L	fern/cycad ☐	calcareous sand ☐	schist/phyllite ☐	aplite ☐	waxing ☐		
M	moss ☐	fill ☐	slate ☐	quartz porphyry ☐	waning ☐		
N	lichen ☐	mud ☐	hornfels ☐	basalt ☐	maximal ☐		
O	liverwort ☐	till ☐	quartzite ☐	andesite ☐	minimal ☐		
P	vine ☐	sedimentary ☐	greenstone ☐	trachyte ☐	Aspect (1)		
Q		shale ☐	amphibolite ☐	rhyolite ☐	none ☐		
R		siltstone/mudstone ☐	marble ☐	obsidian ☐	normal gilgai ☐		
S		sandstone-quartz ☐	igneous ☐	scoria ☐	crabhole gilgai ☐		
T		sandstone-lithic ☐	coarse-acidic ☐	ash ☐	linear gilgai ☐		
U		conglomerate ☐	coarse-intermediate ☐	agglomerate ☐	lattice gilgai ☐		
V				other ☐	melonhole gilgai ☐		
W					other ☐		
X							
Y							
Z							
AA							
AB							
AC							
AD							
AE							
AF							
AG							
AH							
AI							
AJ							
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AM							
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AO							
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CG							
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CJ							
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GU							
GV							
GW							
GX							
GY							
GZ							
HA							
HB							
HC							
HD							
HE							

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180		
1	LAYER STATUS					COLOUR (Munsell, 1994)					Field pH	LAYER NOTES					Field pH Test Method (1)					
2	Lower		Horizon			Moist Munsell		Dry Munsell			(1 per layer)	1						Raupach test strip pH meter				
3	1																	HCI (1)				
4																		no effervescence				
5																		audible/slight efferv.				
6																		strong effervescence				
7																		Boundary Distinctiveness				
8																		(1 per layer)				
9																		not evident				
10																		sharp (<5 mm)				
11																		abrupt (5-20 mm)				
12																		clear (20-50 mm)				
13																		gradual (50-100 mm)				
14																		diffuse (>100 mm)				
15																		STRUCTURE				
16																		Grade of Pedality (1)				
17																		1 2 3 4 5				
18																		single-grained				
19																		massive				
20																		weak pedality				
21																		moderate pedality				
22																		strong pedality				
23																		Fabric (1)				
24																		1 2 3 4 5				
25																		sandy				
26																		earthy				
27																		rough-faced peds				
28																		smooth-faced peds				
29																		Dominant (1)				
30																		1 2 3 4 5				
31																		Ped Shape				
32																		1 2 3 4 5				
33																		platy				
34																		lenticular				
35																		prismatic				
36																		columnar				
37																		angular blocky				
38																		sub-ang. blocky				
39																		polyhedral				
40																		granular				
41																		crumb				
42																		round				
43																		Dominant (1)				
44																		1 2 3 4 5				
45																		Ped Size				
46																		1 2 3 4 5				
47																		Sub-dominant (1)				
48																		1 2 3 4 5				
49																		<2 mm				
50																		2-5 mm				
51																		5-10 mm				
52																		10-20 mm				
53																		20-50 mm				
54																		50-100 mm				
55																		100-200 mm				
56																		200-500 mm				
57																		> 500 mm				
58																		SEGREGATIONS				
59																		Type (1 per layer)				
60																		1 2 3 4 5				
61																		not evident				
62																		calcareous				
63																		gypseous				
64																		manganiferous				
65																		ferruginous				
66																		ferromanganiferous				
67																		organic				
68																		not identified				
69																		other				
70																		Amount (1 per layer)				
71																		1 2 3 4 5				
72																		none				
73																		very few (<2%)				
74																		few (2-10%)				
75																		common (10-20%)				
76																		many (20-50%)				
77																		abundant (>50%)				
78																		Strength (1 per layer)				
79																		1 2 3 4 5				
80																		weak				
81																		strong				
82																		Form (1 per layer)				
83																		1 2 3 4 5				
84																		soft segregations				
85																		nodules				
86																		fragments				
87																		crystals				
88																		veins				
89																		concretions				
90																		root linings				
91																		tubules				
92																		Size (1 per layer)				
93																		1 2 3 4 5				
94																		fine (<2 mm)				
95																		medium (2-6 mm)				
96																		coarse (6-20 mm)				
97																		v coarse (20-60 mm)				
98																		ext coarse (>60 mm)				
99																		SUBSTRATE				
100																		Upper				
101																		1 2 3 4 5				
102																		Abundance				
103																		1 2 3 4 5				
104																		not evident				
105																		<2%				
106																		2-10%				
107																		10-20%				
108																		20-50%				
109																		Colour				
110																		1 2 3 4 5				
111																		dark				
112																		red				
113																		orange				
114																		yellow				
115																		brown				
116																		pale				
117																		grey				
118																		gley				
119																		Contrast				
120																		1 2 3 4 5				
121																		faint				
122																		distinct				
123																		prominent				
124																		Sample Taken				
125																		(3 per layer)				
126																		1 2 3 4 5				
127																		Type (1 per layer)				
128																		1 2 3 4 5				
129																		not evident				
130																		not identified				
131																		as substrate				
132																		as rock outcrop				
133																		as parent material				
134																		quartz				
135																		feldspar				
136																		silicate				
137																		ironstone				
138																		bauxite				
139																		shells				
140																		charcoal				
141																		pumice				
142																		opalised wood				
143																		other				
144																		Amount (1 per layer)				
145																		1 2 3 4 5				
146																		very few (<2%)				
147																		few (2-10%)				
148																		common (10-20%)				
149																		many (20-50%)				
150																		abundant (50-90%)				
151																		very abundant (>90%)				
152																		Size (1 per layer)				
153																		1 2 3 4 5				
154																		fine gravel (2-6 mm)				
155																		gravel (6-20 mm)				
156																		coarse gravel (20-60 mm)				
157																		cobbles (60-200 mm)				
158																		stones (200-600 mm)				
159																		boulders (>600 mm)				
160																		Soil Water Status				
161																		(1 each per layer)				
162																		1 2 3 4 5				
163																		dry				
164																		mod. moist				
165																		moist				
166																		wet				
167																		TEXTURE				
168																		(1 each per layer)				
169																		Texture Grade				
170																		1 2 3 4 5				
171																		sand				
172																		loamy sand				
173																		clayey sand				
174																		sandy loam				
175																		loam				
176																		silty loam				
177																		sandy clay loam				
178																		clay loam				
179																		clay loam sandy				
180																		silty clay loam				
181																		sandy clay				
182																						

SURVEY TITLE: R.I.X.S. CREEK BSAL
SITE LOCATION: SOUTH EAST OF DAM

PROFILE MAP DETAILS				SURVEY DETAILS			
Profile No.	Map Sheet No.	Eastings	Northings	Described By	Profile Date	Photo Taken (1)	No. of Layers
1	1	1	1	1	1	profile 1	1
2	2	2	2	2	2	site 2	2
3	3	3	3	3	3	both profile & site 3	3
4	4	4	4	4	4	Nature of Exposure (2)	4
5	5	5	5	5	5	auger 5	5
6	6	6	6	6	6	pit 6	6
7	7	7	7	7	7	batter 7	7
8	8	8	8	8	8	gully 8	8
9	9	9	9	9	9	core sample 9	9
10	10	10	10	10	10	other 10	10

Potential BSAL? (1)	Site type (1)
yes 1 no 2	checked 3 detailed 4 exclusion 5

BIOPHYSICAL STRATEGIC AGRICULTURAL LAND SOIL DATA CARD

SOIL TYPE	VEGETATION	LANDFORM ELEMENT (1)			
A.S.C.	Vegetation Community (1)	alcove 33	cone 34	footslope 35	ox-bow 36
O	unknown 1	backplain 37	crater 38	foredune 39	pan/playa 40
SO	rainforest 2	bank 39	cut face 40	gully 41	pediment 42
A	wet sclerophyll forest 3	bar 41	cut-over surface 41	hillcrest 42	pit 43
B	dry sclerophyll forest 4	beach 42	dam 43	hillslope 44	plain 45
E	woodland grass u'storey 5	beach ridge 43	drainage depression 44	lagoon 45	prior stream 46
SG	woodland shrub u'storey 6	bench 44	dune 45	lake 46	rock flat 47
S	tall shrubland 7	berm 45	embankment 46	landslide 47	rock platform 48
SG	low shrubland 8	blow-out 46	estuary 47	levee 48	scald 49
A	heath 9	channel bench 47	fan 48	lunette 49	scarp 50
H	grassland/herbland 10	cirque 48	fill top 49	maar 50	scree 51
B	swamp complex 11	cliff 49	flood-out 50	mound 51	scroll 52
E	littoral complex 12				
W	no vegetation 13				
C					
G.S.G.					
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					
O					
P					
Q					
R					
S					
T					
U					
V					
W					
X					
Y					
Z					

LITHOLOGY				TOPOGRAPHY	
Substrate (3)		Slope Percent		Site Morphology (1)	
not identified 1	limestone 23	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	flat 1		
unconsolidated 2	tuff 24	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	crest 2		
gravel 3	breccia 25	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	hillock 3		
sand 4	greywacke 26	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	ridge 4		
silt 5	arkose 27	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	upper slope 5		
clay 6	dolomite 28	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	midslope 6		
organic material 7	calcrete 29	6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	simple slope 7		
alluvium 8	aeolianite 30	7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	lower slope 8		
colluvium 9	chert 31	8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	open depression 9		
lacustrine 10	jasper 32	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99	closed depression 10		
aeolian 11	metamorphic 33	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
marine 12	gneiss 34	11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
calcareous sand 13	schist/phyllite 35	12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
fill 14	slate 36	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
mud 15	hornfels 37	14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
till 16	quartzite 38	15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
sedimentary 17	greenstone 39	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
shale 18	amphibolite 40	17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
siltstone/mudstone 19	marble 41	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
sandstone-quartz 20	igneous 42	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
sandstone-lithic 21	coarse-acidic 43	20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			
conglomerate 22	coarse-intermediate 44	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99			

HYDROLOGY	
Profile Drainage (1)	Permeability (1)
very poorly drained 1	very slowly permeable 1
poorly drained 2	slowly permeable 2
imperfectly drained 3	moderately permeable 3
mod. well-drained 4	highly permeable 4
well-drained 5	
rapidly drained 6	

Depth (1) & Extent (1)	
≤ 500 mm depth 1	
> 500 mm depth 2	
≤ 50% area 1	
> 50% area 2	

Slope Measurement Method (1)	
inclinometer 1	
Abney level 2	
total station 3	
RTK GPS 4	
LIDAR 5	

Microrelief Type (1)	
none 1	
normal gilgai 2	
crabhole gilgai 3	
linear gilgai 4	
lattice gilgai 5	
melonhole gilgai 6	
other 7	

Aspect (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Morphology (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Measurement Method (1)	
inclinometer 1	
Abney level 2	
total station 3	
RTK GPS 4	
LIDAR 5	

Microrelief Type (1)	
none 1	
normal gilgai 2	
crabhole gilgai 3	
linear gilgai 4	
lattice gilgai 5	
melonhole gilgai 6	
other 7	

Aspect (1)	
flat 1	
crest 2	
hillock 3	
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upper slope 5	
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simple slope 7	
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open depression 9	
closed depression 10	

Slope Morphology (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Measurement Method (1)	
inclinometer 1	
Abney level 2	
total station 3	
RTK GPS 4	
LIDAR 5	

Microrelief Type (1)	
none 1	
normal gilgai 2	
crabhole gilgai 3	
linear gilgai 4	
lattice gilgai 5	
melonhole gilgai 6	
other 7	

Aspect (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Morphology (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Measurement Method (1)	
inclinometer 1	
Abney level 2	
total station 3	
RTK GPS 4	
LIDAR 5	

Microrelief Type (1)	
none 1	
normal gilgai 2	
crabhole gilgai 3	
linear gilgai 4	
lattice gilgai 5	
melonhole gilgai 6	
other 7	

Aspect (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Morphology (1)	
flat 1	
crest 2	
hillock 3	
ridge 4	
upper slope 5	
midslope 6	
simple slope 7	
lower slope 8	
open depression 9	
closed depression 10	

Slope Measurement Method (1)	
inclinometer 1	
Abney level 2	
total station 3	
RTK GPS 4	
LIDAR 5	

|--|--|

[illegible]

SITE LOCATION: OPEN Paddock

4638

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1	LAYER STATUS		COLOUR (Munsell, 1994)				Field pH	LAYER NOTES				Field pH Test Method (1)								
	Lower	Horizon	Moist Munsell		Dry Munsell		(1 per layer)	1				Raupach test strip								
2												pH meter								
3												HCI (1)								
4												no effervescence								
5												audible/slight efferv.								
6												strong effervescence								
7												Boundary Distinctiveness								
8												(1 per layer) 1 2 3 4 5								
9												not evident								
10												sharp (<5 mm)								
11												abrupt (5-20 mm)								
12												clear (20-50 mm)								
13												gradual (50-100 mm)								
14												diffuse (>100 mm)								
15												STRUCTURE								
16												Grade of Pedality (1) 1 2 3 4 5								
17												single-grained								
18												massive								
19												weak pedality								
20												moderate pedality								
21												strong pedality								
22												Fabric (1) 1 2 3 4 5								
23												sandy								
24												earthy								
25												rough-faced peds								
26												smooth-faced peds								
27												Dominant (1) 1 2 3 4 5								
28												Ped Shape								
29												Sub-dominant (1) 1 2 3 4 5								
30												platy								
31												lenticular								
32												prismatic								
33												columnar								
34												angular blocky								
35												sub-ang. blocky								
36												polyhedral								
37												granular								
38												crumb								
39												round								
40												Dominant (1) 1 2 3 4 5								
41												Ped Size								
42												Sub-dominant (1) 1 2 3 4 5								
43												<2 mm								
44												2-5 mm								
45												5-10 mm								
46												10-20 mm								
47												20-50 mm								
48												50-100 mm								
49												100-200 mm								
50												200-500 mm								
51												> 500 mm								
52												SEGREGATIONS								
53												Soil Water Status (1 each per layer)								
54												Type (1 per layer) 1 2 3 4 5								
55												not evident								
56												calcareous								
57												gypseous								
58												manganiferous								
59												ferruginous								
60												ferromanganiferous								
61												organic								
62												not identified								
63												Amount (1 per layer) 1 2 3 4 5								
64												none								
65												very few (<2%)								
66												few (2-10%)								
67												common (10-20%)								
68												many (20-50%)								
69												abundant (>50%)								
70												Strength (1 per layer) 1 2 3 4 5								
71												weak								
72												strong								
73												Form (1 per layer) 1 2 3 4 5								
74												soft segregations								
75												nodules								
76												fragments								
77												crystals								
78												veins								
79												concretions								
80												root linings								
81												tubules								
82												Size (1 per layer) 1 2 3 4 5								
83												fine (<2 mm)								
84												medium (2-6 mm)								
85												coarse (6-20 mm)								
86												v coarse (20-60 mm)								
87												ext coarse (>60 mm)								
88												Substrate								
89												Upper								
90												Estimated Effective Rooting Depth (m)								
91												Sample Taken								
92												COARSE FRAGMENTS								
93												Type (1 per layer) Sur 1 2 3 4 5								
94												not evident								
95												not identified								
96												as substrate								
97												as rock outcrop								
98												as parent material								
99												quartz								
100												feldspar								
101												ironstone								
102												silcrete								
103												ironstone								
104												bauxite								
105												shells								
106												charcoal								
107												pumice								
108												opalised wood								
109												other								
110												Amount (1 per layer) Sur. 1 2 3 4 5								
111												very few (<2%)								
112												few (2-10%)								
113												common (10-20%)								
114												many (20-50%)								
115												abundant (50-90%)								
116												very abundant (>90%)								
117												Size (1 per layer) Sur. 1 2 3 4 5								
118												fine gravel (2-6 mm)								
119												gravel (6-20 mm)								
120												coarse gravel (20-60 mm)								
121												cobbles (60-200 mm)								
122												stones (200-600 mm)								
123												boulders (>600 mm)								
124												Contrast 1 2 3 4 5								
125												faint								
126												distinct								
127												prominent								

SURVEY TITLE: RIXS CREEK BSAL

SITE LOCATION: NORTH OF CREEK

PROFILE MAP DETAILS				SURVEY DETAILS			
Profile No.	Map Sheet No.	Eastings	Northings	Described By	Profile Date	Photo Taken (1)	No. of Layers
1	1	1	1	1	1	profile	1
1	1	1	1	1	1	site	1
2	2	2	2	2	2	both profile & site	1
3	3	3	3	3	3	Nature of Exposure (2)	2
4	4	4	4	4	4	auger	1
5	5	5	5	5	5	pit	4
6	6	6	6	6	6	batter	5
7	7	7	7	7	7	gully	4
8	8	8	8	8	8	core sample	5
9	9	9	9	9	9	other	6

Potential BSAL? (1)		Site type (1)		BIOPHYSICAL STRATEGIC AGRICULTURAL LAND SOIL DATA CARD	
yes	1	checked	1		
no	2	detailed	2		
		exclusion	3		

SOIL TYPE		VEGETATION		LANDFORM ELEMENT (1)	
A.S.C.	Vegetation Community (1)	alcove	43	cone	43
O	unknown	backplain	41	crater	51
O	rainforest	bank	25	cut face	28
A	wet sclerophyll forest	bar	6	cut-over surface	39
SO	dry sclerophyll forest	beach	26	dam	15
B	woodland grass u/storey	beach ridge	7	drainage depression	41
C	woodland shrub u/storey	bench	19	dune	11
GG	tall shrubland	berm	29	embankment	14
R	low shrubland	blow-out	59	estuary	44
A	heath	channel bench	33	fan	27
SG	grassland/herbland	cirque	50	fill top	40
G	swamp complex	cliff	5	flood-out	32
B	littoral complex			mound	15
E	no vegetation			ox-bow	57
N				pan/playa	55
O				pediment	22
W				pit	60
C				plain	30
				prior stream	9
				rock flat	35
				rock platform	48
				scald	38
				scarp	18
				scree	24
				scroll	10
				sink hole/doline	52
				stream channel	46
				streambed	45
				summit surface	2
				swale	47
				swamp	58
				talus	28
				tidal creek	49
				tidal flat	37
				tor	4
				trench	48
				valley flat	38

LITHOLOGY		TOPOGRAPHY	
Substrate (3)		Slope Percent	Site Morphology (1)
not identified	1	10	10
unconsolidated	2	11	11
gravel	3	12	12
sand	4	13	13
silt	5	14	14
clay	6	15	15
organic material	7	16	16
alluvium	8	17	17
colluvium	9	18	18
lacustrine	10	19	19
aeolian	11	20	20
marine	12	21	21
calcareous sand	13	22	22
fill	14	23	23
mud	15	24	24
till	16	25	25
sedimentary	17	26	26
shale	18	27	27
siltstone/mudstone	19	28	28
sandstone-quartz	20	29	29
sandstone-lithic	21	30	30
conglomerate	22	31	31
limestone	23	32	32
tuff	24	33	33
breccia	25	34	34
greywacke	26	35	35
arkose	27	36	36
dolomite	28	37	37
calcrete	29	38	38
aeolianite	30	39	39
chert	31	40	40
jasper	32	41	41
metamorphic	33	42	42
gneiss	34	43	43
schist/phyllite	35	44	44
slate	36	45	45
hornfels	37	46	46
quartzite	38	47	47
greenstone	39	48	48
amphibolite	40	49	49
marble	41	50	50
igneous	42	51	51
coarse-acidic	43	52	52
coarse-intermediate	44	53	53
coarse-basic	45	54	54
fine-acidic	46	55	55
fine-intermediate	47	56	56
fine-basic	48	57	57
serpentine	49	58	58
gabbro	50	59	59
dolerite	51	60	60
diorite	52	61	61
syenite	53	62	62
granodiorite	54	63	63
adamellite	55	64	64
granite	56	65	65
aplite	57	66	66
quartz porphyry	58	67	67
basalt	59	68	68
andesite	60	69	69
trachyte	61	70	70
rhyolite	62	71	71
obsidian	63	72	72
scoria	64	73	73
ash	65	74	74
agglomerate	66	75	75
other	67	76	76

LAND USE (1)		HYDROLOGY	
national/state parks	1	Profile Drainage (1)	Permeability (1)
timber/scrub/unused	2	very poorly drained	very slowly permeable
logged native forest	3	poorly drained	slowly permeable
hardwood plantation	4	imperfectly drained	moderately permeable
softwood plantation	5	mod. well-drained	highly permeable
volun./native pasture	6	well-drained	
improved pasture	7	rapidly drained	
cropping	8		
orchard/vineyard	9		
vegetables/flowers	10		
urban	11		
industrial	12		
quarry/mining	13		
other	14		

SITE CONDITION		Surface Condition	
Site Disturbance(s) (2)	Ground Cover %	Current (2)	Expected Wet (2) Dry (2)
natural disturbance	1	cracked	2 2 2
no effective disturbance	2	self-mulched	3 3 3
limited clearing	3	loose	4 4 4
extensive clearing	4	soft	5 5 5
cleared, no cultivation	5	firm	6 6 6
occasional cultivation	6	hardset	7 7 7
rainfed cultivation	7	surface crust	8 8 8
irrigated cultivation	8	trampled	9 9 9
highly disturbed	9	poached	10 10 10
		recently cultivated	11 11 11
		water repellent	12 12 12
		gravelly	13 13 13
		other	14 14 14

SITE FIELD NOTES	
Photo file name/s:	



NSW SOIL AND LAND INFORMATION SYSTEM

Please MARK LIKE THIS ONLY:
☐ ☒ ☐ ☐
 • Use 2B pencil
 • No pen or biro
 • Fully erase mistakes
 • Make no stray marks
 • Numbers in () show max. entries allowed

Please do not mark this space.

4627

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1	LAYER STATUS		COLOUR (Munsell, 1994)				Field pH	LAYER NOTES				Field pH Test Method (1)								
	Lower	Horizon	Moist Munsell		Dry Munsell		(1 per layer)					Raupach test strip								
2							1					pH meter								
3												HCl (1)								
4												no effervescence								
5												audible/slight efferv.								
6												strong effervescence								
7												Boundary Distinctiveness								
8												(1 per layer) 1 2 3 4 5								
9												not evident								
10												sharp (<5 mm)								
11												abrupt (5-20 mm)								
12												clear (20-50 mm)								
13												gradual (50-100 mm)								
14												diffuse (>100 mm)								
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16												Grade of Pedality (1) 1 2 3 4 5								
17												single-grained								
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46												10-20 mm								
47												20-50 mm								
48												50-100 mm								
49												100-200 mm								
50												200-500 mm								
51												> 500 mm								
52												SEGREGATIONS								
53												Soil Water Status (1 each per layer)								
54												1 2 3 4 5								
55												dry								
56												mod. moist								
57												moist								
58												wet								
59												TEXTURE								
60												(1 each per layer)								
61												Texture Grade 1 2 3 4 5								
62												sand								
63												loamy sand								
64												clayey sand								
65												sandy loam								
66												loam								
67												silty loam								
68												sandy clay loam								
69												clay loam								
70												clay loam sandy								
71												silty clay loam								
72												sandy clay								
73												silty clay								
74												clay								
75												fibric peat								
76												hemic peat								
77												sapric peat								
78												Sand Fraction 1 2 3 4 5								
79												coarse								
80												fine								
81												Clay Fraction 1 2 3 4 5								
82												light								
83												light medium								
84												medium								
85												medium heavy								
86												heavy								
87												Size (1 per layer) 1 2 3 4 5								
88												fine (<2 mm)								
89												medium (2-6 mm)								
90												coarse (6-20 mm)								
91												v coarse (20-60 mm)								
92												ext coarse (>60 mm)								
93												COARSE FRAGMENTS								
94												Type (1 per layer) Sur 1 2 3 4 5								
95												not evident								
96												quartz								
97												feldspar								
98												silcrete								
99												ironstone								
100												bauxite								
101												shells								
102												charcoal								
103												pumice								
104												opalised wood								
105												other								
106												Amount (1 per layer) Sur 1 2 3 4 5								
107												very few (<2%)								
108												few (2-10%)								
109												common (10-20%)								
110												many (20-50%)								
111												abundant (50-90%)								
112												very abundant (>90%)								
113												Size (1 per layer) Sur 1 2 3 4 5								
114												fine gravel (2-6 mm)								
115												gravel (6-20 mm)								
116												coarse gravel (20-60 mm)								
117												cobbles (60-200 mm)								
118												stones (200-600 mm)								
119												boulders (>600 mm)								
120												MOTTLES								
121												Abundance 1 2 3 4 5								
122												not evident								
123												<2%								
124												2-10%								
125												10-20%								
126												20-50%								
127												Colour 1 2 3 4 5								
128												dark								
129												red								
130												orange								
131												yellow								
132												brown								
133												pale								
134												grey								
135												gley								
136												Contrast 1 2 3 4 5								
137												faint								
138												distinct								
139												prominent								
140												Estimated Effective Rooting Depth (m)								
141												Upper								
142												Sample Taken								
143												(3 per layer) 1 2 3 4 5								
144												disturbed								
145												undisturbed								
146												bulked								
147												bulk density								
148												Base of Observation (1)								
149												layer continues								
150												soil continues								
151												equipment refusal								
152												bedrock reached								
153												COARSE FRAGMENTS								
154												Type (1 per layer) Sur 1 2 3 4 5								
155												not evident								
156												quartz								
157												feldspar								
158												silcrete								
159												ironstone								
160												bauxite								
161												shells								
162												charcoal								
163												pumice								
164												opalised wood								
165												other								
166												Amount (1 per layer) Sur 1 2 3 4 5								
167												very few (<2%)								
168												few (2-10%)								
169												common (10-20%)								
170												many (20-50%)								
171												abundant (50-90%)								
172												very abundant (>90%)								
173												Size (1 per layer) Sur 1 2 3 4 5								
174												fine gravel (2-6 mm)								
175												gravel (6-20 mm)								
176												coarse gravel (20-60 mm)								
177												cobbles (60-200 mm)								
178												stones (200-600 mm)								
179												boulders (>600 mm)								
180												SEGREGATIONS								
181												Type (1 per layer) 1 2 3 4 5								
182												not evident								
183												calcareous								
184												gypseous								
185												manganiferous								
186												ferruginous								
187												ferromanganiferous								
188												organic								
189												not identified								
190												other								
191												Amount (1 per layer) 1 2 3 4 5								
192												none								
193												very few (<2%)								
194												few (2-10%)								
195												common (10-20%)								
196												many (20-50%)								
197												abundant (>50%)								
198												Strength (1 per layer) 1 2 3 4 5								
199												weak								
200												strong								
201												Form (1 per layer) 1 2 3 4 5								
202												soft segregations								
203												nodules								
204												fragments								
205												crystals								
206												veins								
207												concretions								
208												root linings								
209												tubules								
210																				

SURVEY TITLE: RIXS CREEK BSAL

SITE LOCATION: NORTH OF CREEK

PROFILE MAP DETAILS				SURVEY DETAILS			
Profile No.	Map Sheet No.	Easting	Northing	Described By	Profile Date	Photo Taken (1)	No. of Layers
1	1	1	1	1	1	profile	1
2	2	2	2	2	2	site	1
3	3	3	3	3	3	both profile & site	1
4	4	4	4	4	4	Nature of Exposure (2)	2
5	5	5	5	5	5	auger	1
6	6	6	6	6	6	pit	4
7	7	7	7	7	7	batter	5
8	8	8	8	8	8	gully	4
9	9	9	9	9	9	core sample	5
10	10	10	10	10	10	other	1

Potential BSAL? (1)		Site type (1)		BIOPHYSICAL STRATEGIC AGRICULTURAL LAND SOIL DATA CARD	
yes	1	checked	1		
no	2	detailed	2		
		exclusion	3		

SOIL TYPE	VEGETATION	LANDFORM ELEMENT (1)			
A.S.C.	Vegetation Community (1)	alcove	cone	footslope	ox-bow
O	unknown	backplain	crater	foredune	pan/playa
SO	rainforest	bank	cut face	gully	pediment
B	wet sclerophyll forest	bar	cut-over surface	hilcrest	pit
GG	dry sclerophyll forest	beach	dam	hillslope	plain
SG	woodland grass u/storey	beach ridge	drainage depression	lagoon	prior stream
FAMILY	woodland shrub u/storey	bench	dune	lake	rock flat
C	tall shrubland	berm	embankment	landslide	rock platform
	low shrubland	blow-out	estuary	levee	scald
	heath	channel bench	fan	lunette	scarp
	grassland/herbland	cirque	fill top	maar	scree
	swamp complex	cliff	flood-out	mound	scroll
	littoral complex				
	no vegetation				

LITHOLOGY		TOPOGRAPHY	
Growth Forms (4)	Substrate (3)	Slope Percent	Site Morphology (1)
tree	not identified	0	flat
tree mallee	unconsolidated	1	crest
shrub	gravel	2	hillock
mallee shrub	sand	3	ridge
heath shrub	silt	4	upper slope
chenopod shrub	clay	5	midslope
hummock grass	organic material	6	simple slope
tussock grass	alluvium	7	lower slope
sod grass	colluvium	8	open depression
sedge	lacustrine	9	closed depression
rush	aeolian		
fern	marine		
fern/cycad	calcareous sand		
moss	fill		
lichen	mud		
liverwort	till		
vine	sedimentary		
	shale		
	siltstone/mudstone		
	sandstone-quartz		
	sandstone-lithic		
	conglomerate		
	igneous		
	coarse-acidic		
	coarse-intermediate		

LAND USE (1)		HYDROLOGY	
national/state parks	Identification Method (1)	Profile Drainage (1)	Permeability (1)
timber/scrub/unused	personal assessment	very poorly drained	very slowly permeable
logged native forest	geology map	poorly drained	slowly permeable
hardwood plantation	both assessment & map	imperfectly drained	moderately permeable
softwood plantation	Rock Outcrop % (1)	mod. well-drained	highly permeable
volun./native pasture	nil	well-drained	
improved pasture	>20-30%	rapidly drained	
cropping	<2%		
orchard/vineyard	>30-50%		
vegetables/flowers	2-10%		
urban	>50%		
industrial	>10-20%		
quarry/mining			
other			

SITE CONDITION		Surface Condition		Photo file name/s:
Site Disturbance(s) (2)	Ground Cover %	Current (2)	Expected Wet (2) Dry (2)	
natural disturbance		cracked		
no effective disturbance		self-mulched		
limited clearing		loose		
extensive clearing		soft		
cleared, no cultivation		firm		
occasional cultivation		hardset		
rainfed cultivation		surface crust		
irrigated cultivation		trampled		
highly disturbed		poached		
		recently cultivated		
		water repellent		
		gravelly		
		other		



NSW SOIL AND LAND INFORMATION SYSTEM

Please MARK LIKE THIS ONLY:
☐ ☒ ☐ ☐
 • Use 2B pencil
 • No pen or biro
 • Fully erase mistakes
 • Make no stray marks
 • Numbers in () show max. entries allowed

Please do not mark this space.

4628

cm	mm	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1	LAYER STATUS		COLOUR (Munsell, 1994)				Field pH	LAYER NOTES				Field pH Test Method (1)								
	Lower	Horizon	Moist Munsell		Dry Munsell		(1 per layer)	1				Raupach (1) test strip (3) pH meter (2)								
2	(1)(1)(1)(1)	(2)(2)(2)(2)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					HCI (1)									
3	(2)(2)(2)(2)	(3)(3)(3)(3)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					no effervescence (1)(1)(1)(1)(1) audible/slight efferv. (2)(2)(2)(2)(2) strong effervescence (3)(3)(3)(3)(3)									
4	(3)(3)(3)(3)	(4)(4)(4)(4)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Boundary Distinctiveness									
5	(4)(4)(4)(4)	(5)(5)(5)(5)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					(1 per layer) 1 2 3 4 5									
6	(5)(5)(5)(5)	(6)(6)(6)(6)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					not evident (1)(1)(1)(1)(1) sharp (<5 mm) (2)(2)(2)(2)(2) abrupt (5-20 mm) (3)(3)(3)(3)(3) clear (20-50 mm) (4)(4)(4)(4)(4) gradual (50-100 mm) (5)(5)(5)(5)(5) diffuse (>100 mm) (6)(6)(6)(6)(6)									
7	(6)(6)(6)(6)	(7)(7)(7)(7)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					STRUCTURE									
8	(7)(7)(7)(7)	(8)(8)(8)(8)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Grade of Pedality (1) 1 2 3 4 5									
9	(8)(8)(8)(8)	(9)(9)(9)(9)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					single-grained (1)(1)(1)(1)(1) massive (2)(2)(2)(2)(2) weak pedality (3)(3)(3)(3)(3) moderate pedality (4)(4)(4)(4)(4) strong pedality (5)(5)(5)(5)(5)									
10	(9)(9)(9)(9)	(10)(10)(10)(10)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Fabric (1) 1 2 3 4 5									
11	(10)(10)(10)(10)	(11)(11)(11)(11)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					sandy (1)(1)(1)(1)(1) earthy (2)(2)(2)(2)(2) rough-faced peds (3)(3)(3)(3)(3) smooth-faced peds (4)(4)(4)(4)(4)									
12	(11)(11)(11)(11)	(12)(12)(12)(12)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Dominant (1) 1 2 3 4 5									
13	(12)(12)(12)(12)	(13)(13)(13)(13)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Ped Shape									
14	(13)(13)(13)(13)	(14)(14)(14)(14)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Sub-dominant (1) 1 2 3 4 5									
15	(14)(14)(14)(14)	(15)(15)(15)(15)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					platy (1)(1)(1)(1)(1) lenticular (2)(2)(2)(2)(2) prismatic (3)(3)(3)(3)(3) columnar (4)(4)(4)(4)(4) angular blocky (5)(5)(5)(5)(5) sub-ang. blocky (6)(6)(6)(6)(6) polyhedral (7)(7)(7)(7)(7) granular (8)(8)(8)(8)(8) crumb (9)(9)(9)(9)(9) round (10)(10)(10)(10)(10)									
16	(15)(15)(15)(15)	(16)(16)(16)(16)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Dominant (1) 1 2 3 4 5									
17	(16)(16)(16)(16)	(17)(17)(17)(17)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Ped Size									
18	(17)(17)(17)(17)	(18)(18)(18)(18)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Sub-dominant (1) 1 2 3 4 5									
19	(18)(18)(18)(18)	(19)(19)(19)(19)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					<2 mm (1)(1)(1)(1)(1) 2-5 mm (2)(2)(2)(2)(2) 5-10 mm (3)(3)(3)(3)(3) 10-20 mm (4)(4)(4)(4)(4) 20-50 mm (5)(5)(5)(5)(5) 50-100 mm (6)(6)(6)(6)(6) 100-200 mm (7)(7)(7)(7)(7) 200-500 mm (8)(8)(8)(8)(8) > 500 mm (9)(9)(9)(9)(9)									
20	(19)(19)(19)(19)	(20)(20)(20)(20)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					SEGREGATIONS									
21	(20)(20)(20)(20)	(21)(21)(21)(21)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Type (1 per layer) 1 2 3 4 5									
22	(21)(21)(21)(21)	(22)(22)(22)(22)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					not evident (1)(1)(1)(1)(1) calcareous (2)(2)(2)(2)(2) gypseous (3)(3)(3)(3)(3) manganiferous (4)(4)(4)(4)(4) ferruginous (5)(5)(5)(5)(5) ferromanganiferous (6)(6)(6)(6)(6) organic (7)(7)(7)(7)(7) not identified (8)(8)(8)(8)(8) other (9)(9)(9)(9)(9)									
23	(22)(22)(22)(22)	(23)(23)(23)(23)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Amount (1 per layer) 1 2 3 4 5									
24	(23)(23)(23)(23)	(24)(24)(24)(24)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					none (1)(1)(1)(1)(1) very few (<2%) (2)(2)(2)(2)(2) few (2-10%) (3)(3)(3)(3)(3) common (10-20%) (4)(4)(4)(4)(4) many (20-50%) (5)(5)(5)(5)(5) abundant (>50%) (6)(6)(6)(6)(6)									
25	(24)(24)(24)(24)	(25)(25)(25)(25)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Strength (1 per layer) 1 2 3 4 5									
26	(25)(25)(25)(25)	(26)(26)(26)(26)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					weak (1)(1)(1)(1)(1) strong (2)(2)(2)(2)(2)									
27	(26)(26)(26)(26)	(27)(27)(27)(27)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Form (1 per layer) 1 2 3 4 5									
28	(27)(27)(27)(27)	(28)(28)(28)(28)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					soft segregations (1)(1)(1)(1)(1) nodules (2)(2)(2)(2)(2) fragments (3)(3)(3)(3)(3) crystals (4)(4)(4)(4)(4) veins (5)(5)(5)(5)(5) concretions (6)(6)(6)(6)(6) root linings (7)(7)(7)(7)(7) tubules (8)(8)(8)(8)(8)									
29	(28)(28)(28)(28)	(29)(29)(29)(29)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Size (1 per layer) 1 2 3 4 5									
	(29)(29)(29)(29)	(30)(30)(30)(30)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					fine (<2 mm) (1)(1)(1)(1)(1) fine (2-6 mm) (2)(2)(2)(2)(2) medium (2-6 mm) (3)(3)(3)(3)(3) coarse (6-20 mm) (4)(4)(4)(4)(4) v coarse (20-60 mm) (5)(5)(5)(5)(5) ext coarse (>60 mm) (6)(6)(6)(6)(6)									
	(30)(30)(30)(30)	(31)(31)(31)(31)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Soil Water Status (1 each per layer)									
	(31)(31)(31)(31)	(32)(32)(32)(32)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					1 2 3 4 5									
	(32)(32)(32)(32)	(33)(33)(33)(33)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					dry (1)(1)(1)(1)(1) mod. moist (2)(2)(2)(2)(2) moist (3)(3)(3)(3)(3) wet (4)(4)(4)(4)(4)									
	(33)(33)(33)(33)	(34)(34)(34)(34)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					TEXTURE (1 each per layer)									
	(34)(34)(34)(34)	(35)(35)(35)(35)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Texture Grade 1 2 3 4 5									
	(35)(35)(35)(35)	(36)(36)(36)(36)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					sand (1)(1)(1)(1)(1) loamy sand (2)(2)(2)(2)(2) clayey sand (3)(3)(3)(3)(3) sandy loam (4)(4)(4)(4)(4) loam (5)(5)(5)(5)(5) silty loam (6)(6)(6)(6)(6) sandy clay loam (7)(7)(7)(7)(7) clay loam (8)(8)(8)(8)(8) clay loam sandy (9)(9)(9)(9)(9) silty clay loam (10)(10)(10)(10)(10)									
	(36)(36)(36)(36)	(37)(37)(37)(37)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					sandy clay (1)(1)(1)(1)(1) silty clay (2)(2)(2)(2)(2) clay (3)(3)(3)(3)(3)									
	(37)(37)(37)(37)	(38)(38)(38)(38)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					fibric peat (1)(1)(1)(1)(1) hemic peat (2)(2)(2)(2)(2) sapric peat (3)(3)(3)(3)(3)									
	(38)(38)(38)(38)	(39)(39)(39)(39)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Sand Fraction 1 2 3 4 5									
	(39)(39)(39)(39)	(40)(40)(40)(40)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					coarse (1)(1)(1)(1)(1) fine (2)(2)(2)(2)(2)									
	(40)(40)(40)(40)	(41)(41)(41)(41)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					Clay Fraction 1 2 3 4 5									
	(41)(41)(41)(41)	(42)(42)(42)(42)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)					light (1)(1)(1)(1)(1) light medium (2)(2)(2)(2)(2) medium (3)(3)(3)(3)(3) medium heavy (4)(4)(4)(4)(4) heavy (5)(5)(5)(5)(5)									
	(42)(42)(42)(42)	(43)(43)(43)(43)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(43)(43)(43)(43)	(44)(44)(44)(44)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(44)(44)(44)(44)	(45)(45)(45)(45)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(45)(45)(45)(45)	(46)(46)(46)(46)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(46)(46)(46)(46)	(47)(47)(47)(47)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(47)(47)(47)(47)	(48)(48)(48)(48)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(48)(48)(48)(48)	(49)(49)(49)(49)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(49)(49)(49)(49)	(50)(50)(50)(50)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(50)(50)(50)(50)	(51)(51)(51)(51)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(51)(51)(51)(51)	(52)(52)(52)(52)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(52)(52)(52)(52)	(53)(53)(53)(53)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(53)(53)(53)(53)	(54)(54)(54)(54)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(54)(54)(54)(54)	(55)(55)(55)(55)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(55)(55)(55)(55)	(56)(56)(56)(56)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(56)(56)(56)(56)	(57)(57)(57)(57)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(57)(57)(57)(57)	(58)(58)(58)(58)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(58)(58)(58)(58)	(59)(59)(59)(59)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(59)(59)(59)(59)	(60)(60)(60)(60)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(60)(60)(60)(60)	(61)(61)(61)(61)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(61)(61)(61)(61)	(62)(62)(62)(62)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(62)(62)(62)(62)	(63)(63)(63)(63)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(63)(63)(63)(63)	(64)(64)(64)(64)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(64)(64)(64)(64)	(65)(65)(65)(65)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(65)(65)(65)(65)	(66)(66)(66)(66)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(66)(66)(66)(66)	(67)(67)(67)(67)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(67)(67)(67)(67)	(68)(68)(68)(68)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(68)(68)(68)(68)	(69)(69)(69)(69)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(69)(69)(69)(69)	(70)(70)(70)(70)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(70)(70)(70)(70)	(71)(71)(71)(71)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(71)(71)(71)(71)	(72)(72)(72)(72)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(72)(72)(72)(72)	(73)(73)(73)(73)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(73)(73)(73)(73)	(74)(74)(74)(74)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(74)(74)(74)(74)	(75)(75)(75)(75)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(75)(75)(75)(75)	(76)(76)(76)(76)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(76)(76)(76)(76)	(77)(77)(77)(77)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(77)(77)(77)(77)	(78)(78)(78)(78)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(78)(78)(78)(78)	(79)(79)(79)(79)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(79)(79)(79)(79)	(80)(80)(80)(80)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(80)(80)(80)(80)	(81)(81)(81)(81)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(81)(81)(81)(81)	(82)(82)(82)(82)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(82)(82)(82)(82)	(83)(83)(83)(83)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(83)(83)(83)(83)	(84)(84)(84)(84)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(84)(84)(84)(84)	(85)(85)(85)(85)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(85)(85)(85)(85)	(86)(86)(86)(86)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(86)(86)(86)(86)	(87)(87)(87)(87)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(87)(87)(87)(87)	(88)(88)(88)(88)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(88)(88)(88)(88)	(89)(89)(89)(89)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(89)(89)(89)(89)	(90)(90)(90)(90)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(90)(90)(90)(90)	(91)(91)(91)(91)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(91)(91)(91)(91)	(92)(92)(92)(92)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(92)(92)(92)(92)	(93)(93)(93)(93)	(2.5)(5.5)(17)(1)	(2.5)(5.5)(17)(1)	(10)(10)	(1)(1)														
	(93)(93)(93)(93)</																			

SITE LOCATION: OPEN Paddock

[illegible]

[illegible]

Supporting Photographs



Site 1: Landscape



Site 1: Soil Profile



Site 2: Landscape



Site 2: Soil Profile



Site 3 (GPS4): Landscape



Site 3 (GPS4): Soil Profile



Site 6: Landscape



Site 6: Soil Profile



Site 7: Landscape



Site 7: Soil Profile



Site 8: Landscape



Site 8: Soil Profile



Site 10: Landscape



Site 10: Soil Profile



Site 12: Landscape



Site 12: Soil Profile



Site 13: Landscape



Site 13: Soil Observation



Site 14: Landscape



Site 14: Soil Profile



Site 15: Landscape



Site 15: Soil Profile



Site 16: Landscape



Site 16: Soil Profile



Site 17: Landscape



Site 17: Soil Profile



Site 18: Landscape



Site 18: Soil Profile (Check Site)



Site 20: Landscape



Site 20: Soil Profile



Site 21: Landscape



Site 21: Soil Profile (Check Site)



Site 23: Landscape



Site 23: Soil Profile

Soil Laboratory Results



SOIL TEST REPORT

Page 1 of 7

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)

Page 2 of 7

SCO14/075R2
Adam Koppers
SLR Consulting
10 Kings Road
New Lambton N

Sam J. Lang

SOIL CONSERVATION SERVICE

Scone Research Centre

Page 3 of 7

Report No: SCO14/075R2
 Client Reference: Adam Koppers
 SLR Consulting
 10 Kings Road
 New Lambton NSW 2305

Lab No	Method Sample Id	P7B/2 Particle Size Analysis (%)					P9B/2 EAT	C1A/5 EC (dS/m)	C2A/4 pH	C2B/4 pH (CaCl ₂)	Colour (dry)	Colour (moist)
		clay	silt	f sand	c sand	gravel						
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

SOIL CONSERVATION SERVICE

Scone Research Centre

Report No: SCO14/075R2
 Client Reference: Adam Koppers
 SLR Consulting
 10 Kings Road
 New Lambton NSW 2305

Lab No	Method Sample Id	P7B/2 Particle Size Analysis (%)					P9B/2 EAT	C1A/5 EC (dS/m)	C2A/4 pH	C2B/4 pH (CaCl ₂)	Colour (dry)	Colour (moist)
		clay	silt	f sand	c sand	gravel						
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



SOIL CONSERVATION SERVICE

Scone Research Centre

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Report No: SCO14/075R2
 Client Reference: Adam Koppers
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 New Lambton NSW 2305

Lab No	Method Sample Id	P7B/2 Particle Size Analysis (%)					P9B/2 EAT	C1A/5 EC (dS/m)	C2A/4 pH	C2B/4 pH (CaCl ₂)	Colour (dry)	Colour (moist)
		clay	silt	f sand	c sand	gravel						
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



SOIL CONSERVATION SERVICE

Scone Research Centre

Report No: SCO14/075R2
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 10 Kings Road
 New Lambton NSW 2305

Lab No	Method Sample Id	P7B/2 Particle Size Analysis (%)					P9B/2 EAT	C1A/5 EC (dS/m)	C2A/4 pH	C2B/4 pH (CaCl ₂)	Colour (dry)	Colour (moist)
		clay	silt	f sand	c sand	gravel						
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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Report No: SCO14/075R2
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 SLR Consulting
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 New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					P9B/2	C1A/5	C2A/4	C2B/4	Colour (dry)	Colour (moist)
	Sample Id	clay	silt	f sand	c sand	gravel	EAT	EC (dS/m)	pH	pH (CaCl ₂)		
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

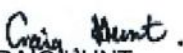
Samples received 71 x soil

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	14	0.96	<0.3	43	0.80	44	12
3*	4032	<0.1	13	0.24	13	3.7	30	0.63	<0.5	30	0.60	48	22
4*	4033	<0.1	6.5	0.13	10	4.7	22	0.64	<0.8	30	0.70	47	23
5*	4034	<0.1	3.9	0.092	6.1	3.0	13	0.73	<0.5	34	0.88	46	18
6	4035	<0.1	7.3	0.19	10	4.0	21	0.76	<0.5	39	4.7	50	5.7
7*	4036	<0.1	7.5	0.91	9.8	1.1	19	0.53	<0.3	31	1.2	58	9.4
8*	4037	<0.1	10	0.40	19	3.0	33	0.47	<0.3	27	0.47	58	14
9*	4038	<0.1	9.6	0.16	20	5.1	35	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	0.37	16	2.5	<0.6	68	2.2	27	2.4
12	4041	<0.1	11	0.35	4.2	2.9	23	0.58	<0.3	31	1.1	55	12
13*	4042	0.13	7.4	0.25	13	2.6	20	0.54	<0.5	30	0.81	56	13
14*	4043	<0.1	5.9	0.16	11	4.2	33	0.69	<0.3	35	0.87	51	13
15	4044	<0.1	12	0.28	17	0.47	15	2.0	<0.9	61	5.2	30	3.1
16	4045	0.14	9.2	0.79	4.5	2.7	29	0.92	<0.3	43	1.7	46	9.3
17	4046	<0.1	12	0.50	14	4.8	33	0.85	<0.3	39	1.2	46	14
18*	4047	<0.1	13	0.39	15	4.0	32	0.85	<0.3	40	0.92	47	12
19	4048	<0.1	13	0.29	15	0.44	14	1.6	<0.7	56	4.9	35	3.0
20	4049	<0.1	8.2	0.71	5.1	2.2	22	0.70	<0.5	36	1.1	52	9.8
21	4050	<0.1	8.3	0.25	12	0.69	24	1.5	<0.4	56	5.3	36	2.9
22	4051	<0.1	13	1.3	8.6	0.80	28	1.2	<0.4	50	3.7	43	2.9
23	4052	<0.1	14	1.0	12	0.77	16	0.93	<0.6	43	5.4	46	4.8
24	4053	<0.1	6.9	0.87	7.4	4.3	31	0.48	<0.3	27	2.4	57	14
25*	4054	<0.1	8.4	0.75	18	5.3	35	0.56	<0.3	30	0.68	54	15
26*	4055	<0.1	11	0.24	19	4.6	33	0.63	<0.3	33	0.86	52	14
27	4056	<0.1	11	0.28	17	0.13	15	3.0	<0.7	69	7.1	23	0.83
28	4057	<0.1	11	1.1	3.5	1.2	23	1.1	<0.4	48	1.9	44	5.2
29	4058	<0.1	11	0.45	10	3.0	29	1.0	<0.3	45	1.0	43	11
30	4059	<0.1	13	0.30	12	0.19	5.6	2.3	<1.8	59	10	25	3.4
31	4060	<0.1	3.3	0.56	1.4	0.15	3.1	1.5	10	47	6.0	31	4.8
32	4061	0.32	1.4	0.18	0.96	2.0	12	0.27	4.2	16	1.1	61	17
33	4062	0.50	1.9	0.13	7.3	0.15	8.0	2.6	<1.2	66	5.8	26	1.8
34	4063	<0.1	5.3	0.47	2.1	0.26	5.1	1.3	3.5	51	2.8	38	5.1
35	4064	0.18	2.6	0.14	2.0	2.7	21	0.81	<0.5	38	1.1	47	13
36*	4065	<0.1	8.0	0.22	9.9	2.9	23	0.87	<0.4	40	0.70	46	12
37	4066	<0.1	9.3	0.16	11	0.26	13	1.9	<0.8	59	7.6	31	2.0
38	4067	<0.1	7.4	0.96	3.9	1.8	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	23	0.66	<0.4	36	0.92	54	8.2



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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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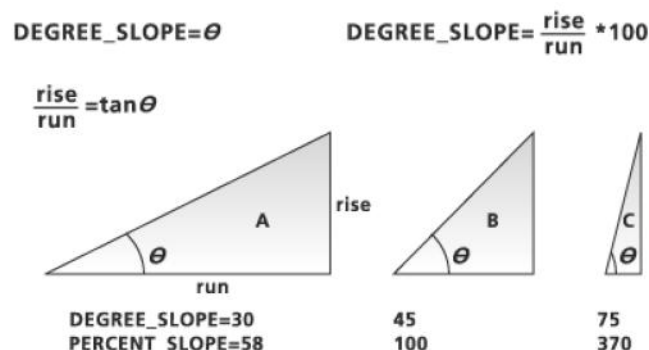
Slope Analysis Methodology

Slope Analysis Methodology

1. Acquire appropriate elevation information. In this case, LIDAR data provided by Centennial.
2. Load Contours into ArcMap 10.1
3. Using 3D Analyst Extension - Create a TIN Surface based on the contours
(http://resources.arcgis.com/en/help/main/10.1/index.html#/Create_TIN/00q90000001v000000/)
4. Using 3D Analyst Extension – Run the Surface Slope Tool
(<http://resources.arcgis.com/en/help/main/10.1/index.html#/00q900000076000000/>) using a custom Break File (attached).
5. Using a Spatial Join, correlate the Surface Slope at the Soil Survey coordinates.

The Surface Slope Tool:

Surface Slope creates an output polygon feature class containing polygons that classify an input TIN or terrain dataset by slope. The slope is the angle of inclination between the surface and a horizontal plane, which may be analysed in degrees or percent. Slope in degrees is given by calculating the arctangent of the ratio of the change in height (dZ) to the change in horizontal distance (dS), or slope = $\text{Arctan}(dZ/dS)$. Percent slope is equal to the change in height divided by the change in horizontal distance multiplied by 100, or $(dZ/dX) * 100$.



The {**slope_field**} is the name of attribute field used to record the polygon aspect codes. Its default value is SlopeCode.

Each triangle is classified into a slope class. Contiguous triangles belonging to the same class are merged during the formation of output polygons. The {units} parameter can be set to use PERCENT or DEGREES. The default is PERCENT. The default percent slope class breaks are 1.00, 2.15, 4.64, 10.00, 21.50, 46.40, 100.00, 1000.00. Optionally, DEGREES may be used to classify slope. The default degree slope class breaks are 0.57, 1.43, 2.66, 5.71, 12.13, 24.89, 45.0, 90.0.

The **{class_breaks_table}** is used to define custom slope classes. The table can be either a TXT or DBF file for a Windows environment, and a DBF file in a UNIX environment. Each record in the table needs to contain two values that are used to represent the slope range of the class and its corresponding class code.

Table example:

break, code

10.0, 11

25.0, 22

40.0, 33

70.0, 44

Note the comma delineation and use of decimals in the first field. Field names are needed but are ignored. The first field represents the breaks and values need to be decimal, the second field represents codes and values need to be integer. The units of the slope range are defined by the {units}. When this argument is not specified, the default classification is used.