

Soils - Certificate of Analysis - E25-01-1567

Client:	Clarrich Farms Pty Ltd	Laboratory:	Environmental Analysis Laboratory
Contact:	Colin Tossel	Contact:	EAL Customer Service Team
Address:	Level 1, 487 - 489 Ruthven Street, , TOOWOOMBAH, QLD 4350, Australia	Address:	Military Road, East Lismore NSW 2480, Australia
Telephone:	0448 924 855	Telephone:	(02) 6620 3678
Email:	c.tabulam@riverbendgroup.com.au	Email:	eal@scu.edu.au

Customer reference:	P1 - P13 soil Samples	Request ID:	EAL /E25-01-1567
Number of samples:	46	Report ID:	E25-01-1567_EALT1_1
Date samples received:	20 October 2025	Issue date:	18 November 2025

Authorised by:	Kris Saville
Position:	Technical Team Leader



Accreditation No. 14960

Comments: EAL is a NATA accredited laboratory (14960), accredited for compliance with ISO/IEC 17025 - Testing.

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P1 (0.0 - 0.1) m	P1 (0.1 - 0.4) m	P1 (0.4 - 1.0) m	P1 (1.0 - 2.0) m	P2 (0.0 - 0.1) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0001	E25-01-1567-0002	E25-01-1567-0003	E25-01-1567-0004	E25-01-1567-0005
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	680	530	160	37	730
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.33	5.32	5.61	5.05	5.37
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.711	0.751	0.191	0.078	0.178
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	3.33	5.71	8.31	8.23	4.54
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	1500	2560	3730	3690	2040
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	668	1140	1660	1650	910
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	1.95	3.10	5.33	5.07	2.20
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	532	843	1450	1380	600
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	237	376	648	617	268
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	1.99	1.86	1.05	0.68	1.92
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	1740	1630	917	600	1680
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	777	728	409	268	751
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	< 0.065	0.11	0.36	0.15	< 0.065
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	< 33	58.4	188	78.3	33.2
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	< 15	26.1	83.8	34.9	< 15
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.20	0.04	0.46	2.2	0.06
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	40	7.5	93	450	13
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	18	3.3	42	200	5.7
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.042	0.13	0.11	0.36	0.18
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	< 1	2.8	2.4	8.0	4.0
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	< 1	1.3	1.1	3.6	1.8
Calcium - Base Saturation	%	** Calculation	<0.1	44	52	53	49	51
Magnesium - Base Saturation	%	** Calculation	<0.1	26	28	34	30	25
Potassium - Base Saturation	%	** Calculation	<0.1	26	17	6.7	4.1	21
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	0.7	1.0	2.3	0.9	0.7
Aluminium - Base Saturation	%	** Calculation	<0.1	2.6	0.3	3.0	13	0.7
Hydrogen - Base Saturation	%	** Calculation	<0.1	0.6	1.1	0.7	2.1	2.0
Calcium/Magnesium Ratio	---	** Calculation	<0.1	1.7	1.8	1.6	1.6	2.1
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	7.6	10.9	15.6	16.7	9.0
Carbon - Total	%	Inhouse S4a	<0.03	1.61	1.66	1.57	1.75	2.15
Nitrogen - Total	%	Inhouse S4a	<0.02	0.18	0.16	0.14	0.15	0.23
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	8.8	10.1	11.2	11.3	9.5
Estimated Organic Matter	%	Inhouse S4a	<0.04	2.82	2.91	2.75	3.05	3.76
Basic Texture	---	** Inhouse S65	---	Clay Loam	Clay Loam	Clay Loam	Clay Loam	Clay Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	1780	1840	1430	1240	2810
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	520	530	420	200	680
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	14	52	166	389	29
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	376	419	110	41.0	17.9
TOC	%	Inhouse S15b	<0.05	1.53	1.50	1.28	1.72	2.15
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	< 1	157	457	737	14.7
Nitrate	mg/kg N	** Inhouse S41	<0.10	44.8	50.1	29.7	17.5	53.1
Nitrite	mg/kg N	** Inhouse S41	<0.10	0.17	< 0.10	0.15	0.82	0.49
Ammonium	mg/kg N	** Inhouse S41	<0.10	100	77.0	2.51	2.00	3.15

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P2 (0.1 - 0.4) m	P2 (0.4 - 0.1) m	P2 (1.0 - 2.0) m	P3 (0.0 - 0.1) m	P3 (0.1 - 0.4) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0006	E25-01-1567-0007	E25-01-1567-0008	E25-01-1567-0009	E25-01-1567-0010
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	570	180	180	890	750
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	6.00	6.54	6.46	6.48	5.88
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.149	0.047	0.044	0.865	0.359
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	6.17	7.56	7.50	5.15	4.33
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	2770	3390	3370	2310	1940
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	1240	1520	1500	1030	867
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	2.16	2.02	2.06	4.22	2.20
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	589	550	561	1150	599
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	263	245	250	513	268
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	1.68	0.35	0.30	4.24	2.74
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	1470	304	264	3720	2400
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	657	136	118	1660	1070
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.18	0.07	0.07	1.19	0.47
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	95.0	37.2	35.9	614	241
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	42.4	16.6	16.0	274	108
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.02	0.01	0.01	< 0.01	0.02
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	3.0	2.5	2.2	1.8	3.8
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	1.4	1.1	< 1	< 1	1.7
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.12	< 0.01	0.028	0.087	0.18
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	2.6	< 1	< 1	1.9	4.0
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	1.2	< 1	< 1	< 1	1.8
Calcium - Base Saturation	%	** Calculation	<0.1	60	76	75	35	44
Magnesium - Base Saturation	%	** Calculation	<0.1	21	20	21	28	22
Potassium - Base Saturation	%	** Calculation	<0.1	16	3.5	3.0	28	28
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	1.8	0.7	0.7	8.0	4.7
Aluminium - Base Saturation	%	** Calculation	<0.1	0.1	0.1	0.1	< 0.1	0.2
Hydrogen - Base Saturation	%	** Calculation	<0.1	1.1	< 0.1	0.3	0.6	1.8
Calcium/Magnesium Ratio	---	** Calculation	<0.1	2.9	3.7	3.6	1.2	2.0
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	10.3	10.0	10.0	14.9	9.9
Carbon - Total	%	Inhouse S4a	<0.03	2.23	1.11	1.09	2.40	2.26
Nitrogen - Total	%	Inhouse S4a	<0.02	0.20	0.06	0.06	0.26	0.19
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	11.1	18.1	17.2	9.2	12.0
Estimated Organic Matter	%	Inhouse S4a	<0.04	3.91	1.95	1.91	4.20	3.96
Basic Texture	---	** Inhouse S65	---	Clay Loam	Loam	Loam	Loam	Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Grey	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	2710	793	699	4500	3340
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	590	200	200	830	760
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	48	27	24	49	31
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	35.0	12.6	11.5	486	125
TOC	%	Inhouse S15b	<0.05	2.07	1.03	0.90	2.17	1.64
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	95.1	24.7	27.7	19.5	< 1
Nitrate	mg/kg N	** Inhouse S41	<0.10	33.4	< 0.10	< 0.10	184	109
Nitrite	mg/kg N	** Inhouse S41	<0.10	1.02	1.62	1.68	0.52	1.08
Ammonium	mg/kg N	** Inhouse S41	<0.10	7.20	< 0.10	< 0.10	18.7	12.8

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P3 (0.4 - 1.0) m	P3 (1.0 - 2.0) m	P4 (0.0 - 0.1) m	P4 (0.1 - 0.4) m	P4 (0.4 - 1.0) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0011	E25-01-1567-0012	E25-01-1567-0013	E25-01-1567-0014	E25-01-1567-0015
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	350	340	120	120	32
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.17	4.97	5.57	5.79	6.41
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.195	0.223	0.076	0.065	0.031
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	4.71	5.01	2.97	3.82	5.27
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	2110	2250	1330	1710	2370
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	943	1000	595	765	1060
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	1.31	1.38	1.14	1.42	1.90
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	357	377	310	387	516
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	159	168	138	173	230
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	1.29	1.38	1.11	0.91	0.47
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	1130	1210	975	798	408
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	504	538	435	356	182
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.21	0.21	< 0.065	0.10	0.09
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	106	107	< 33	49.0	46.7
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	47.5	47.7	< 15	21.9	20.8
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.02	0.15	0.12	0.08	< 0.01
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	4.1	29	25	15	2.0
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	1.8	13	11	6.8	< 1
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.078	0.16	0.13	0.086	0.028
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	1.7	3.6	2.8	1.9	< 1
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	< 1	1.6	1.3	< 1	< 1
Calcium - Base Saturation	%	** Calculation	<0.1	62	61	54	60	68
Magnesium - Base Saturation	%	** Calculation	<0.1	17	17	21	22	24
Potassium - Base Saturation	%	** Calculation	<0.1	17	17	20	14	6.0
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	2.7	2.5	0.9	1.5	1.2
Aluminium - Base Saturation	%	** Calculation	<0.1	0.3	1.8	2.2	1.2	0.1
Hydrogen - Base Saturation	%	** Calculation	<0.1	1.0	1.9	2.3	1.3	0.4
Calcium/Magnesium Ratio	---	** Calculation	<0.1	3.6	3.6	2.6	2.7	2.8
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	7.6	8.3	5.5	6.4	7.8
Carbon - Total	%	Inhouse S4a	<0.03	1.08	1.14	1.27	1.24	0.67
Nitrogen - Total	%	Inhouse S4a	<0.02	0.09	0.12	0.15	0.10	0.06
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	11.9	9.9	8.6	12.7	10.7
Estimated Organic Matter	%	Inhouse S4a	<0.04	1.89	2.00	2.22	2.16	1.17
Basic Texture	---	** Inhouse S65	---	Clay Loam	Clay Loam	Clay Loam	Loam	Loam
Basic Colour	---	** Inhouse S65	---	Black	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	1090	1070	733	621	395
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	410	400	230	200	54
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	30	32	35	45	29
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	36.0	33.7	15.8	31.7	9.2
TOC	%	Inhouse S15b	<0.05	0.98	1.09	1.07	0.98	0.56
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	58.3	55.3	103	137	74.1
Nitrate	mg/kg N	** Inhouse S41	<0.10	77.0	82.7	12.8	5.40	0.63
Nitrite	mg/kg N	** Inhouse S41	<0.10	0.86	1.08	0.54	0.46	1.32
Ammonium	mg/kg N	** Inhouse S41	<0.10	0.38	1.05	0.19	< 0.10	< 0.10

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P4 (1.0 - 2.0) m	P5 (0.0 - 0.1) m	P5 (0.1 - 0.4) m	P5 (0.4 - 1.0) m	P5 (1.0 - 2.0) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0016	E25-01-1567-0017	E25-01-1567-0018	E25-01-1567-0019	E25-01-1567-0020
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	86	1300	640	330	550
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.90	5.96	5.49	5.24	5.87
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.083	0.437	0.076	0.049	0.103
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	3.39	10.5	5.30	3.03	3.93
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	1520	4710	2380	1360	1760
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	679	2100	1060	607	787
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	0.97	2.41	1.06	1.88	2.81
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	264	655	288	510	766
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	118	292	128	228	342
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	0.47	1.83	1.66	0.79	1.08
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	413	1610	1450	695	943
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	184	717	649	310	421
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.11	0.10	< 0.065	< 0.065	< 0.065
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	54.8	51.7	< 33	< 33	< 33
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	24.5	23.1	< 15	< 15	< 15
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.01	0.01	0.04	0.39	0.02
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	2.4	2.8	8.8	79	3.2
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	1.1	1.2	4.0	35	1.4
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.078	0.36	0.15	0.20	0.15
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	1.7	8.1	3.4	4.6	3.3
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	< 1	3.6	1.5	2.0	1.5
Calcium - Base Saturation	%	** Calculation	<0.1	67	69	64	48	49
Magnesium - Base Saturation	%	** Calculation	<0.1	19	16	13	30	35
Potassium - Base Saturation	%	** Calculation	<0.1	9.4	12	20	13	13
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	2.1	0.7	0.6	0.9	0.8
Aluminium - Base Saturation	%	** Calculation	<0.1	0.2	< 0.1	0.5	6.2	0.2
Hydrogen - Base Saturation	%	** Calculation	<0.1	1.6	2.4	1.8	3.2	1.8
Calcium/Magnesium Ratio	---	** Calculation	<0.1	3.5	4.4	5.0	1.6	1.4
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	5.0	15.2	8.3	6.3	8.0
Carbon - Total	%	Inhouse S4a	<0.03	0.55	6.24	1.93	1.02	1.82
Nitrogen - Total	%	Inhouse S4a	<0.02	0.04	0.86	0.19	0.09	0.19
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	13.8	7.3	10.4	11.6	9.5
Estimated Organic Matter	%	Inhouse S4a	<0.04	0.97	10.9	3.38	1.79	3.18
Basic Texture	---	** Inhouse S65	---	Loam	Loam	Loam	Loam	Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	392	39300	2320	967	4560
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	91	1500	580	350	410
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	20	37	46	37	34
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	17.0	14.1	9.7	9.3	9.6
TOC	%	Inhouse S15b	<0.05	0.55	4.98	1.74	0.94	1.39
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	33.9	< 1	27.5	63.5	2.3
Nitrate	mg/kg N	** Inhouse S41	<0.10	28.2	225	2.03	< 0.10	27.4
Nitrite	mg/kg N	** Inhouse S41	<0.10	0.95	0.52	0.82	1.38	1.23
Ammonium	mg/kg N	** Inhouse S41	<0.10	< 0.10	7.01	0.33	< 0.10	0.46

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P6 (0.0 - 0.1) m	P6 (0.1 - 0.4) m	P6 (0.4 - 1.0) m	P6 (1.0 - 2.0) m	P7 (0.0 - 0.1) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0021	E25-01-1567-0022	E25-01-1567-0023	E25-01-1567-0024	E25-01-1567-0025
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	110	100	17	6.2	66
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.08	5.44	5.88	6.32	5.84
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.086	0.032	0.020	0.020	0.068
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	2.81	3.17	5.34	7.79	3.00
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	1260	1420	2400	3500	1350
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	563	636	1070	1560	602
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	1.21	1.37	1.65	2.24	1.22
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	331	372	449	611	332
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	148	166	201	273	148
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	1.00	0.92	0.36	0.30	1.05
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	873	801	312	263	917
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	390	358	139	117	409
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	< 0.065	< 0.065	< 0.065	< 0.065	0.10
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	< 33	< 33	< 33	< 33	50.2
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	< 15	< 15	< 15	< 15	22.4
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.49	0.46	0.06	0.01	0.04
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	98	92	12	2.2	8.3
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	44	41	5.5	< 1	3.7
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.24	0.18	0.066	0.022	0.17
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	5.5	4.1	1.5	< 1	3.9
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	2.4	1.8	< 1	< 1	1.7
Calcium - Base Saturation	%	** Calculation	<0.1	48	52	71	75	54
Magnesium - Base Saturation	%	** Calculation	<0.1	21	22	22	22	22
Potassium - Base Saturation	%	** Calculation	<0.1	17	15	4.7	2.9	19
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	0.7	0.7	0.6	0.5	1.7
Aluminium - Base Saturation	%	** Calculation	<0.1	8.4	7.5	0.8	0.1	0.7
Hydrogen - Base Saturation	%	** Calculation	<0.1	4.2	3.0	0.9	0.2	3.1
Calcium/Magnesium Ratio	---	** Calculation	<0.1	2.3	2.3	3.2	3.5	2.5
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	5.8	6.1	7.5	10.4	5.6
Carbon - Total	%	Inhouse S4a	<0.03	1.68	1.72	1.19	1.40	1.48
Nitrogen - Total	%	Inhouse S4a	<0.02	0.15	0.15	0.12	0.09	0.12
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	11.1	11.2	9.7	16.0	12.7
Estimated Organic Matter	%	Inhouse S4a	<0.04	2.95	3.02	2.09	2.45	2.58
Basic Texture	---	** Inhouse S65	---	Clay Loam	Loam	Loam	Loam	Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	753	688	378	415	569
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	150	150	30	12	100
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	53	67	55	56	41
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	16.1	10.4	10.6	11.2	26.7
TOC	%	Inhouse S15b	<0.05	1.51	1.38	1.06	1.26	1.20
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	151	179	145	134	112
Nitrate	mg/kg N	** Inhouse S41	<0.10	25.8	< 0.10	< 0.10	< 0.10	2.72
Nitrite	mg/kg N	** Inhouse S41	<0.10	0.50	0.56	0.99	0.69	0.45
Ammonium	mg/kg N	** Inhouse S41	<0.10	< 0.10	< 0.10	0.17	< 0.10	< 0.10

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P7 (0.1 - 0.4) m	P7 (0.4 - 1.0) m	P7 (1.0 - 2.0) m	P8 (0.0 - 0.1) m	P8 (0.1 - 0.4) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0026	E25-01-1567-0027	E25-01-1567-0028	E25-01-1567-0029	E25-01-1567-0030
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	51	21	8.6	190	95
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	6.54	7.01	6.92	6.44	6.51
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.051	0.034	0.032	0.112	0.054
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	3.56	4.52	5.64	5.30	3.07
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	1600	2030	2530	2380	1380
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	714	906	1130	1060	615
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	1.40	1.54	1.86	1.70	0.94
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	380	418	505	463	256
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	170	187	226	207	114
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	0.71	0.41	0.45	1.04	0.61
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	619	363	392	911	535
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	276	162	175	407	239
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.11	0.07	< 0.065	0.21	0.16
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	54.4	36.2	< 33	106	83.5
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	24.3	16.2	< 15	47.3	37.3
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	< 0.01	< 0.01	< 0.01	0.01	0.02
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	1.9	1.7	1.6	2.8	3.9
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	< 1	< 1	< 1	1.2	1.8
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	< 0.01	< 0.01	< 0.01	0.13	< 0.01
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	< 1	< 1	< 1	3.0	< 1
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	< 1	< 1	< 1	1.3	< 1
Calcium - Base Saturation	%	** Calculation	<0.1	62	69	70	63	64
Magnesium - Base Saturation	%	** Calculation	<0.1	24	23	23	20	20
Potassium - Base Saturation	%	** Calculation	<0.1	12	6.3	5.6	12	13
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	1.8	1.1	0.8	2.5	3.4
Aluminium - Base Saturation	%	** Calculation	<0.1	0.2	0.1	0.1	0.2	0.4
Hydrogen - Base Saturation	%	** Calculation	<0.1	< 0.1	< 0.1	< 0.1	1.6	< 0.1
Calcium/Magnesium Ratio	---	** Calculation	<0.1	2.6	2.9	3.0	3.1	3.3
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	5.8	6.6	8.0	8.4	4.8
Carbon - Total	%	Inhouse S4a	<0.03	0.95	0.78	0.66	4.31	1.98
Nitrogen - Total	%	Inhouse S4a	<0.02	0.08	0.05	0.02	0.37	0.18
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	12.2	15.1	26.9	11.6	11.3
Estimated Organic Matter	%	Inhouse S4a	<0.04	1.67	1.36	1.15	7.54	3.47
Basic Texture	---	** Inhouse S65	---	Loam	Loam	Clay Loam	Clay Loam	Clay Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	468	351	278	1280	620
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	64	30	17	330	130
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	48	43	43	83	76
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	17.7	13.4	14.6	36.9	19.2
TOC	%	Inhouse S15b	<0.05	0.81	0.71	0.63	3.71	1.32
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	114	90.1	110	195	217
Nitrate	mg/kg N	** Inhouse S41	<0.10	0.67	0.52	0.80	< 0.10	< 0.10
Nitrite	mg/kg N	** Inhouse S41	<0.10	0.46	0.59	0.96	0.30	0.58
Ammonium	mg/kg N	** Inhouse S41	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P8 (0.4 - 1.0) m	P9 (0.0 - 0.1) m	P9 (0.1 - 0.4) m	P9 (0.4 - 1.0) m	P10 (0.0 - 0.1) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0031	E25-01-1567-0032	E25-01-1567-0033	E25-01-1567-0034	E25-01-1567-0035
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	30	140	140	8.8	9.1
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.91	5.66	6.17	6.25	6.02
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.057	0.483	0.238	0.076	0.065
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	2.60	4.86	3.81	1.68	1.35
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	1170	2180	1710	754	604
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	520	974	764	337	270
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	1.54	3.77	2.41	2.36	1.06
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	418	1030	656	644	288
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	187	458	293	287	128
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	0.50	1.66	1.11	0.80	0.74
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	442	1450	968	699	651
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	197	649	432	312	291
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.35	0.16	0.08	0.10	< 0.065
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	179	84.3	38.8	49.2	< 33
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	79.9	37.6	17.3	22.0	< 15
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.36	0.05	0.03	0.03	0.06
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	73	10	6.5	5.2	13
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	33	4.7	2.9	2.3	5.8
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.30	0.11	0.46	0.15	0.20
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	6.7	2.5	10	3.3	4.4
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	3.0	1.1	4.6	1.5	2.0
Calcium - Base Saturation	%	** Calculation	<0.1	46	46	48	33	39
Magnesium - Base Saturation	%	** Calculation	<0.1	27	36	31	46	31
Potassium - Base Saturation	%	** Calculation	<0.1	8.9	16	14	16	21
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	6.2	1.5	1.0	1.9	1.6
Aluminium - Base Saturation	%	** Calculation	<0.1	6.4	0.5	0.4	0.5	1.8
Hydrogen - Base Saturation	%	** Calculation	<0.1	5.3	1.0	5.8	2.9	5.7
Calcium/Magnesium Ratio	---	** Calculation	<0.1	1.7	1.3	1.6	0.7	1.3
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	5.6	10.6	7.9	5.1	3.5
Carbon - Total	%	Inhouse S4a	<0.03	0.78	4.48	4.05	1.48	2.06
Nitrogen - Total	%	Inhouse S4a	<0.02	0.09	0.40	0.33	0.10	0.18
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	8.4	11.2	12.3	14.8	11.6
Estimated Organic Matter	%	Inhouse S4a	<0.04	1.37	7.84	7.09	2.59	3.61
Basic Texture	---	** Inhouse S65	---	Clay Loam	Clay Loam	Clay Loam	Clay	Clay Loam
Basic Colour	---	** Inhouse S65	---	Brownish	Brownish	Brownish	Red	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	222	865	841	189	344
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	64	210	170	20	18
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	107	52	98	226	106
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	34.1	88.2	42.1	23.8	20.5
TOC	%	Inhouse S15b	<0.05	0.65	4.47	3.41	0.87	1.86
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	361	111	213	560	294
Nitrate	mg/kg N	** Inhouse S41	<0.10	< 0.10	221	77.7	12.5	< 0.10
Nitrite	mg/kg N	** Inhouse S41	<0.10	1.68	1.12	0.51	0.68	1.05
Ammonium	mg/kg N	** Inhouse S41	<0.10	< 0.10	19.6	4.91	0.13	< 0.10

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P10 (0.1 - 0.4) m	P10 (0.4 - 1.0) m	P11 (0.0 - 0.1) m	P11 (0.1 - 0.4) m	P11 (0.4 - 1.0) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0036	E25-01-1567-0037	E25-01-1567-0038	E25-01-1567-0039	E25-01-1567-0040
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	4.2	2.6	63	45	46
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.83	5.87	6.26	5.85	5.66
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.040	0.036	0.134	0.064	0.025
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	1.06	1.34	3.03	2.17	1.54
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	474	603	1360	973	692
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	212	269	606	434	309
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	0.97	1.72	3.40	2.01	2.27
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	265	467	927	547	618
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	118	208	414	244	276
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	0.76	0.58	1.42	0.60	0.38
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	666	511	1250	523	335
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	298	228	556	233	150
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.07	< 0.065	0.29	0.09	< 0.065
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	34.2	< 33	150	46.4	< 33
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	15.2	< 15	66.8	20.7	< 15
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.22	0.06	0.03	0.05	0.08
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	44	13	5.4	9.8	16
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	20	5.7	2.4	4.4	7.3
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.43	0.46	0.044	0.29	0.090
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	9.6	10	< 1	6.4	2.0
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	4.3	4.6	< 1	2.9	< 1
Calcium - Base Saturation	%	** Calculation	<0.1	30	32	37	42	35
Magnesium - Base Saturation	%	** Calculation	<0.1	28	41	41	39	51
Potassium - Base Saturation	%	** Calculation	<0.1	22	14	17	11	8.6
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	1.9	1.4	3.5	1.7	1.4
Aluminium - Base Saturation	%	** Calculation	<0.1	6.2	1.5	0.3	0.9	1.8
Hydrogen - Base Saturation	%	** Calculation	<0.1	12	11	0.5	5.5	2.0
Calcium/Magnesium Ratio	---	** Calculation	<0.1	1.1	0.8	0.9	1.1	0.7
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	3.5	4.2	8.2	5.2	4.4
Carbon - Total	%	Inhouse S4a	<0.03	1.29	0.84	2.96	1.93	0.89
Nitrogen - Total	%	Inhouse S4a	<0.02	0.10	0.07	0.20	0.15	0.09
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	12.6	12.7	14.9	12.9	9.9
Estimated Organic Matter	%	Inhouse S4a	<0.04	2.26	1.47	5.18	3.38	1.55
Basic Texture	---	** Inhouse S65	---	Clay Loam	Clay Loam	Clay Loam	Clay Loam	Clay
Basic Colour	---	** Inhouse S65	---	Brownish	Red	Brownish	Brownish	Red
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	189	137	668	287	156
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	9.5	6.8	160	21	8.1
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	126	266	130	223	396
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	14.4	14.8	52.9	29.6	11.7
TOC	%	Inhouse S15b	<0.05	1.09	0.84	2.74	1.55	0.81
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	383	606	328	547	731
Nitrate	mg/kg N	** Inhouse S41	<0.10	< 0.10	< 0.10	1.00	< 0.10	< 0.10
Nitrite	mg/kg N	** Inhouse S41	<0.10	2.57	2.62	7.91	3.86	0.24
Ammonium	mg/kg N	** Inhouse S41	<0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Certificate of Analysis

Request ID: EAL/E25-01-1567 Report ID: E25-01-1567_EALT1_1 Issue date: 18 November 2025

Client Sample ID:				P12 (0.0 - 0.1) m	P12 (0.1 - 0.4) m	P12 (0.4 - 1.0) m	P13 (0.0 - 0.1) m	P13 (0.1 - 0.4) m
Sample Date:				16 October 2025	16 October 2025	16 October 2025	16 October 2025	16 October 2025
EAL Sample ID:				E25-01-1567-0041	E25-01-1567-0042	E25-01-1567-0043	E25-01-1567-0044	E25-01-1567-0045
Parameter	Unit	Method Reference	LOR	---	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1	200	78	66	86	43
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---	5.92	5.96	5.63	5.65	5.58
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005	0.391	0.107	0.023	0.043	0.019
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05	5.09	3.79	0.65	1.29	0.28
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22	2280	1700	294	578	127
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10	1020	760	131	258	56.6
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01	3.16	1.68	1.14	0.90	0.24
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2	860	458	312	245	65.7
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1	384	204	139	109	29.3
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12	1.62	0.64	0.14	< 0.12	< 0.12
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112	1420	557	119	< 112	< 112
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50	632	249	53.0	< 50	< 50
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065	0.40	0.25	0.13	0.12	0.10
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33	204	128	66.2	59.6	51.0
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15	91.0	57.0	29.6	26.6	22.8
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01	0.03	0.03	0.29	0.16	0.38
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1	5.3	5.3	59	31	77
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1	2.4	2.4	26	14	34
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01	0.100	0.15	0.33	0.28	0.35
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1	2.2	3.3	7.4	6.2	7.7
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1	< 1	1.5	3.3	2.8	3.5
Calcium - Base Saturation	%	** Calculation	<0.1	49	58	24	46	20
Magnesium - Base Saturation	%	** Calculation	<0.1	30	26	43	32	17
Potassium - Base Saturation	%	** Calculation	<0.1	16	9.7	5.0	3.2	2.4
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1	3.8	3.8	4.8	4.1	7.2
Aluminium - Base Saturation	%	** Calculation	<0.1	0.3	0.4	11	5.5	28
Hydrogen - Base Saturation	%	** Calculation	<0.1	1.0	2.3	12	9.8	25
Calcium/Magnesium Ratio	---	** Calculation	<0.1	1.6	2.3	0.6	1.4	1.2
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---	10.4	6.5	2.7	2.8	1.4
Carbon - Total	%	Inhouse S4a	<0.03	5.52	2.90	0.66	2.37	0.86
Nitrogen - Total	%	Inhouse S4a	<0.02	0.42	0.21	0.08	0.21	0.11
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1	13.2	13.6	7.9	11.1	8.1
Estimated Organic Matter	%	Inhouse S4a	<0.04	9.66	5.08	1.15	4.15	1.50
Basic Texture	---	** Inhouse S65	---	Clay Loam	Clay Loam	Clay Loam	Loam	Loam
Basic Colour	---	** Inhouse S65	---	Grey	Brownish	Brownish	Brownish	Brownish
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50	1070	779	115	475	146
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1	280	240	14	190	27
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1	90	126	157	92	74
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1	406	50.5	17.7	17.2	12.1
TOC	%	Inhouse S15b	<0.05	4.55	2.72	0.56	2.37	0.86
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1	233	321	480	301	248
Nitrate	mg/kg N	** Inhouse S41	<0.10	28.4	18.0	0.61	< 0.10	< 0.10
Nitrite	mg/kg N	** Inhouse S41	<0.10	10.4	0.38	0.79	1.06	0.39
Ammonium	mg/kg N	** Inhouse S41	<0.10	6.11	< 0.10	< 0.10	< 0.10	< 0.10

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Client Sample ID: P13 (0.4 - 1.0) m			
Sample Date: 16 October 2025			
EAL Sample ID: E25-01-1567-0046			
Parameter	Unit	Method Reference	LOR
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	<1
pH (H2O)	units	Rayment & Lyons 2011 - 4A1	---
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	<0.005
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.05
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<22
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<10
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.01
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<2
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<1
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.12
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<112
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<50
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	<0.065
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	<33
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	<15
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	<0.01
Aluminium - Exchangeable	kg/ha	** Inhouse S37	<1
Aluminium - Exchangeable	mg/kg	** Inhouse S37	<1
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	<0.01
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	<1
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	<1
Calcium - Base Saturation	%	** Calculation	<0.1
Magnesium - Base Saturation	%	** Calculation	<0.1
Potassium - Base Saturation	%	** Calculation	<0.1
Sodium - Base Saturation (ESP)	%	** Calculation	<0.1
Aluminium - Base Saturation	%	** Calculation	<0.1
Hydrogen - Base Saturation	%	** Calculation	<0.1
Calcium/Magnesium Ratio	---	** Calculation	<0.1
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	---
Carbon - Total	%	Inhouse S4a	<0.03
Nitrogen - Total	%	Inhouse S4a	<0.02
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	<1
Estimated Organic Matter	%	Inhouse S4a	<0.04
Basic Texture	---	** Inhouse S65	---
Basic Colour	---	** Inhouse S65	---
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	<50
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	<1
Phosphorus Buffer Index	---	** Rayment & Lyons 2011 - 9I2b	<1
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	<0.1
TOC	%	Inhouse S15b	<0.05
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	<1
Nitrate	mg/kg N	** Inhouse S41	<0.10
Nitrite	mg/kg N	** Inhouse S41	<0.10
Ammonium	mg/kg N	** Inhouse S41	<0.10

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Guideline:			Heavy Soil Guidelines (Clay)	Medium Soil Guidelines (Clay Loam)	Light Soil Guidelines (Loam)	Sandy Soil Guidelines (Loamy Sand)
Parameter	Unit	Method Reference	---	---	---	---
Phosphorus - Bray 1	mg/kg	** Rayment & Lyons 2011 - 9E2	45	30	24	20
pH (H ₂ O)	units	Rayment & Lyons 2011 - 4A1	6.5	6.5	6.3	6.3
Electrical Conductivity	dS/m	Rayment & Lyons 2011 - 3A1	0.200	0.150	0.120	0.100
Calcium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	15.6	10.8	5.0	1.9
Calcium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	7000	4816	2240	840
Calcium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	3125	2150	1000	375
Magnesium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	2.4	1.7	1.2	0.60
Magnesium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	650	448	325	168
Magnesium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	290	200	145	75
Potassium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	0.60	0.50	0.40	0.30
Potassium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	526	426	336	224
Potassium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	235	190	150	100
Sodium - Exchangeable	cmol+/kg	Rayment & Lyons 2011 - 15D3	0.3	0.26	0.22	0.11
Sodium - Exchangeable	kg/ha	Rayment & Lyons 2011 - 15D3	155	134	113	57
Sodium - Exchangeable	mg/kg	Rayment & Lyons 2011 - 15D3	69	60	51	25
Aluminium - Exchangeable	cmol+/kg	** Inhouse S37	0.6	0.5	0.4	0.2
Aluminium - Exchangeable	kg/ha	** Inhouse S37	121	101	73	30
Aluminium - Exchangeable	mg/kg	** Inhouse S37	54	45	32	14
Hydrogen - Exchangeable	cmol+/kg	** Rayment & Lyons 2011 - 15G1	0.6	0.5	0.4	0.2
Hydrogen - Exchangeable	kg/ha	** Rayment & Lyons 2011 - 15G1	13	11	8	3
Hydrogen - Exchangeable	mg/kg	** Rayment & Lyons 2011 - 15G1	6	5	4	2
Calcium - Base Saturation	%	** Calculation	77.6	75.7	65.6	57.4
Magnesium - Base Saturation	%	** Calculation	11.9	11.9	15.7	18.1
Potassium - Base Saturation	%	** Calculation	3.0	3.5	5.2	9.1
Sodium - Base Saturation (ESP)	%	** Calculation	1.5	1.8	2.9	3.3
Aluminium - Base Saturation	%	** Calculation	3.0	3.5	5.2	6.0
Hydrogen - Base Saturation	%	** Calculation	3.0	3.5	5.2	6.0
Calcium/Magnesium Ratio		** Calculation	6.5	6.4	4.2	3.2
Effective Cation Exchange Capacity	cmol+/kg	** Calculation	20.1	14.3	7.8	3.3
Carbon - Total	%	Inhouse S4a	>3.1	> 2.6	> 2.0	> 1.4
Nitrogen - Total	%	Inhouse S4a	>0.30	> 0.25	> 0.20	> 0.15
Carbon : Nitrogen Ratio	Ratio	Inhouse S4a	10-12	10-12	10-12	10-12
Estimated Organic Matter	%	Inhouse S4a	>5.5	> 4.5	> 3.5	> 2.5
Basic Texture		** Inhouse S65	---	---	---	---
Basic Colour		** Inhouse S65	---	---	---	---
Phosphorus	mg/kg	1:3 Nitric:HCl - APHA 3125 ICPMS	400–1500	400–1500	400–1500	400–1500
Phosphorus - Colwell	mg/kg	** Rayment & Lyons 2011 - 9B2	80	50	45	35
Phosphorus Buffer Index		** Rayment & Lyons 2011 - 9I2b	<15 (extremely Low); 15–70 (Very Low); 71–140 (Low); 141–280 (Moderate); 280–840 (High); > 840 (Very	<15 (extremely Low); 15–70 (Very Low); 71–140 (Low); 141–280 (Moderate); 280–840 (High); > 840 (Very	<15 (extremely Low); 15–70 (Very Low); 71–140 (Low); 141–280 (Moderate); 280–840 (High); > 840 (Very	<15 (extremely Low); 15–70 (Very Low); 71–140 (Low); 141–280 (Moderate); 280–840 (High); > 840 (Very
Chloride	mg/kg	** Rayment & Lyons 2011 - 5A3a	---	---	---	---
TOC	%	Inhouse S15b	---	---	---	---
Phosphorus Sorption	mg P/kg	** Inhouse S18b (Based on Abbott 1985)	---	---	---	---
Nitrate	mg/kg N	** Inhouse S41	---	---	---	---
Nitrite	mg/kg N	** Inhouse S41	---	---	---	---
Ammonium	mg/kg N	** Inhouse S41	---	---	---	---

Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Conversions to kg/ha = mg/kg x 2.24.
- Soluble salts are included in exchangeable cation results. No pre-wash is carried out unless specifically requested.

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Notes:

- The chloride estimate result (Electrical Conductivity x 640) is considered an estimate, and is generally an over-estimate.
- < 'LOR' means less than limit of reporting. 'ND' means not detected. 'NA' means not applicable. 'NR' means not requested.
- ** denotes NATA accreditation does not cover the performance of this service.
- .. denotes not requested, no data/information or no guidelines available.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (available on request or at scu.edu.au/eal).
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.
- Results only relate to the item tested.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Guidelines for phosphorus have been reduced for Australian soils.
- Methods from Rayment and Lyons, 2011. Soil Chemical Methods - Australasia. CSIRO Publishing, Collingwood.
- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Conversions for 1 cmol+/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- ppm = mg/kg dried sample