Moreton Bay Regional Council
Acid Sulfate Soils
Pine Rivers Area

Volume 2

Appendix 2 MAS Analytical Data (A3)

JS Walton[1], JA Manders[2], KE Goulding[1]

Department of Environment and Resource Management
Resource Assessment and Information, South-East Region[1]
Queensland Acid Sulfate Soils Investigation Team (QASSIT), Brisbane[2]

Prepared by:
Resource Assessment and Information, South-East Region
Department of Environment and Resource Management

Published by the Queensland Government, March 2011

ISBN: 9311662191731
June, 2011
Volume 2

Citation of this publication should take the form:
Walton, J.S, Manders J.A, Goulding K.E (2011). *Moreton Bay Regional Council Acid Sulfate Soils - Pine Rivers Area, Volume 2.* Department of Environment and Resource Management, Queensland, Australia.

Disclaimer
This document has been prepared with all due diligence and care, based on the best available information at the time of publication. The department holds no responsibility for any errors or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties. Information contained in this document is from a number of sources and, as such, does not necessarily represent government or departmental policy.

Analytical Data Method Codes

Field Morphology Summary	
Site ID	Borehole or site number
Hor No	Horizon number
Horizon Name[1]	Name of horizon
Upp Depth	Upper depth of horizon (m)
Low Depth	Lower depth of horizon (m)
Colour[2]	Colour of horizon
Mottle Colour[1]	Colour of dominant mottle
Soil Texture[1]	Soil texture
Jar.	Indicates presence of Jarosite (J) in profile
Gyp.	Indicates presence of Gypsum (Y) in profile
Shell	Indicates presence of Shell (SS) in profile
Field pH	
Depth (m)[3]	Depth at which pH_F and pH_{FOX} tests were conducted
pH_F (23Af)[4]	pH measured in the field on saturated soil sample using pH electrode
pH_{FOX} (23Bf)[4]	pH measured in the field – 30% peroxide reaction, pH electrode
Action Level pH_F	Indication of actual acidity from field test results A = $pH_F \leq 4$, a = $pH_F > 4$ to ≤ 5
Depth 1st Action Level (pH_F)	The depth category of the upper depth of the first horizon where pH_F is less than or equal to 4
	A0 $pH_F < 4$ is first exceeded 0–0.5 m below the surface
	A1 $pH_F < 4$ is first exceeded 0.5–1 m below the surface
	A2 1–2 m, A3 2–3 m, A4 3–4 m, A5 4–5 m
Lab Sample[3]	
No.	Sample number of sample taken for analysis
Upp Depth	Upper depth of sample taken for analysis (m)
Low Depth	Lower depth of sample taken for analysis (m)
Action Criteria[3]	
Depth 1st Action Level	The depth category of the upper depth of the first horizon where the texture-based ASS action criteria is exceeded. 'S' denotes potential acidity for the respective depth categories.
Action Level Select %S	Pc, Pl or Ps indicates samples that have exceeded 0.1, 0.06 or 0.03 %S (ie. exceeded the ASS action criteria), for clays, loams and sands respectively. Note: These figures apply to disturbances up to 1000 tonnes; for disturbances greater than 1000 tonnes, the action criteria is 0.03 %S, regardless of texture

Laboratory Results	Units	Description
Suspension Peroxide Oxidation Combined Acidity and Sulfur (SPOCAS) Acid Base Accounting[4]		
s-TAA	%S	S_{POS} + s-TAA WHERE pH_{KCl} >= 4.5 AND pH_{KCl} < 6.5 AND s-TPA > 0
s-S_{NAS}	%S	S_{POS} + s-TAA + s-S_{NAS} WHERE pH_{KCl} < 4.5 AND s-TPA > 0 (substitute with s-S_{RAS} where available)
Chromium Suite Acid Base Accounting[4]		
s-TAA	%S	S_{CR} + s-TAA WHERE pH_{KCl} >= 5.5 AND pH_{KCl} <6.5 (s-TAA is not required if the result for S_{CR} is below the action criteria for relevant soil texture)
s-TAA	%S	S_{CR} + s-TAA WHERE pH_{KCl} >= 4.5 AND pH_{KCl} < 5.5
s-S_{NAS}	%S	S_{CR} + s-TAA + s-S_{NAS} WHERE pH_{KCl} < 4.5

Laboratory Results	Method Code	Units	Description
Potential Acidity[4]			
S_{CR} (Sulfur, chromium reducible)	22B	%S	(from Chromium Reducible Sulfur method)
S_{POS} (Peroxide oxidisable sulfur)	23Ee	%S	= S_P – S_{KCl}
s-TSA (Titratable sulfidic acidity)	s-23H	%S	= (TPA – TAA) / 623.7 (TSA calculated as equivalent % pyrite S)
s-TPA (Titratable peroxide acidity)	s-23G	%S	= (TPA /623.7) (TPA calculated as equivalent % pyrite S)
a-S_{CR} (Sulfur, chromium reducible)	a-22B	mol H^+/t	(from Chromium Reducible Sulfur method) = S_{CR} x 623.7 (converted to equivalent mol H+/t)
a-S_{POS} (Peroxide oxidisable sulfur)	a-23Ee	mol H^+/t	= (S_P – S_{KCl}) x 623.7 (converted to equivalent mol H+/t)
TSA (Titratable sulfidic acidity)	23H	mol H^+/t	= TPA – TAA
TPA (Titratable peroxide acidity)	23G	mol H^+/t	= Titratable Peroxide Acidity (measured after peroxide digestion)
Retained Acidity[4]			
s-S_{NAS} (Net acid-soluble sulfur)	s-20J	%S	= (S_{HCl} – S_{KCl}) x 0.75 (S_{NAS} converted to equivalent % pyrite S)
a-S_{NAS} (Net acid-soluble sulfur)	a-20J	mol H^+/t	((S_{HCl} – S_{KCl}) x 467.8) (calculated in equivalent acidity units)
Actual Acidity[4]			
s-TAA (Titratable actual acidity)	s-23F	%S	= (TAA / 623.7) (TAA calculated as equivalent % pyrite S)
TAA (Titratable actual acidity)	23F	mol H^+/t	= Titratable actual acidity (measured before peroxide digestion)
S_{HCl}	20Be	%S	Hydrochloric acid extracted sulfur
Suspension Peroxide Oxidation Combined Acidity and Sulfur (SPOCAS)[4]			
pH_{KCl}	23A	%S	pH of soil in potassium chloride (KCl) extract
pH_{OX}	23B	%S	pH of soil after peroxide digestion
S_{KCl}	23Ce	%S	KCl extracted sulfur
S_P	23De	%S	Peroxide sulfur
Ca_{KCl}	23Vh	%Ca	Ca extracted in 1 M KCl (after TAA titration)
Ca_P	23Wh	%Ca	Ca in peroxide digest (after TPA digestion & titration)
Ca_A	23Xh	%Ca	Ca reacted with acid generated by peroxide digest (Ca_P – Ca_{KCl})
s-Ca_A	s-23Xh	%S	(Ca_A x 0.800) (Ca_A in equivalent % pyrite S it will neutralise)
a-Ca_A	a-23Xh	mol H^+/t	(Ca_A x 499.0) (Ca_A calculated as equivalent acid neutralising units)
Mg_{KCl}	23Sm	%Mg	Mg extracted in 1 M KCl (after TAA titration)
Mg_P	23Tm	%Mg	Mg in peroxide digest (after TPA digestion & titration)
Mg_A	23Um	%Mg	Reacted Magnesium (Mg_P – Mg_{KCl})
s-Mg_A	s-23Um	%S	(Mg_A x 1.319) (Mg_A in equivalent % pyrite S it will neutralise)
a-Mg_A	a-23Um	mol H^+/t	(Mg_A x 822.6), (Mg_A calculated as equivalent acid neutralising units)
s-Ca_A+s-Mg_A	s-23Xh+s-23Um	%S	Addition of Reacted Calcium and Magnesium (in equivalent % pyrite S it will neutralise)
a-Ca_A+a-Mg_A	a-23Xh+a-23Um	mol H+/t	Addition of Reacted Calcium and Magnesium (calculated as equivalent acid neutralising units)
Neutralising Capacity[4]			
ANC_{BT}	19A2	%$CaCO_3$	Back Titration after 0.1 M HCl treatment (expressed in equivalent %$CaCO_3$ units)
s-ANC_{BT}	s-19A2	%S	(ANC_{BT} / 3.121) (ANC_{BT} in equivalent % pyrite S it will neutralise)
a-ANC_{BT}	a-19A2	mol H^+/t	(ANC_{BT} x 199.8) (ANC_{BT} in equivalent acid neutralising units)
ANC_E	23Q	%$CaCO_3$	Excess ANC from SPOCAS (expressed in equivalent %$CaCO_3$)
s-ANC_E	s-23Q	%S	(ANC_E / 3.121) (ANC_E in equivalent % pyrite S it will neutralise)
a-ANC_E	a-23Q	mol H^+/t	(ANC_E x 199.8) (calculated in equivalent acid neutralising units)

Reference

1 McDonald RC, Isbell RF, Speight JG, Walker J and Hopkins MS (1990). *Australian Soil and Land Survey Field Handbook.* 2nd Edition, Inkata Press Melbourne Australia

2 Munsell (2000). *Munsell Soil Colour Charts* . Gretag Macbeth, Little Britain Road, New Windsor, NY.

3 Sample selection and handling is as per Ahern CR, Ahern MR and Powell B (1998). *Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils (ASS) in Queensland* . Department of Natural Resources, Indooroopilly, Queensland, Australia

4 Ahern CR, McElnea AE and Sullivan LA (2004) (Eds). *Acid Sulfate Soils Laboratory Methods Guidelines* . Department of Natural Resources, Mines and Energy, Indooroopilly, Queensland, Australia

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S $s\text{-}S_{NAS}$	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S $s\text{-}S_{NAS}$	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	$a\text{-}S_{CR}$ mol H^+/t a-22B	$a\text{-}S_{POS}$ mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
1	1	A1	0.00	0.10	10YR31		MC				0.10	4.7	2.5	a																		
	2	B21	0.10	0.70	2.5Y32	R	MHC				0.30	4.4	2.6	a																		
											0.60	4.5	2.6	a																		
	3	B22ia	0.70	1.20	10YR51	Y	HC	J			0.80	4.5	2.6	a																		
											1.00	4.6	2.4	a		4	0.80	1.00			0.147			0.138	< 0.02	0.010	0.000	0.069	1	6	0	43
	4	B3ia	1.20	1.60	10YR51	O	MC				1.25	4.6	2.6	a																		
											1.50	4.4	3.0	a		5	1.30	1.50							< 0.02				1			
	5	C1i	1.60	2.67	N40		MC				1.75	4.6	3.1	a																		
											2.00	4.6	2.6	a		6	1.80	2.00							< 0.02				6			
											2.25	4.4	2.1	a																		
											2.50	4.4	2.0	a		7	2.30	2.50	S2	Pc					0.336				210			
	6	2C2	2.67	3.40	5GY61		KS				2.75	4.6	1.7	a																		
											3.00	4.4	1.5	a																		
											3.25	4.3	1.4	a		9	3.20	3.40		Ps					1.764				1100			
	7	3C3	3.40	3.85	N40		LC				3.50	4.3	1.6	a																		
											3.75	5.4	1.7			10	3.60	3.80		Pc					2.782				1735			
	8	4C4u	3.85	5.30	5Y61		LS				4.00	5.8	2.0																			
											4.25	6.2	2.3			11	4.10	4.30		Ps					0.515				321			
											4.50	6.2	2.1																			
											4.75	6.1	1.8			12	4.60	4.80		Ps					0.682				425			
											5.00	6.0	1.9																			
											5.25	6.2	5.2			13	5.10	5.30		Ps					0.787				491			
	9	4C5u	5.30	5.97	5Y61		CLS				5.50	6.4	1.3			14	5.30	5.50		Pl					0.963				601			
											5.75	6.5	1.0																			
																15	5.80	5.97		Pl					0.386				241			
	10	D1	5.97	6.30	5GY61		LMC				6.00	6.7	7.4																			
											6.25	6.7	5.8																			
	11	D2	6.30	7.50	2.5Y76		SLMC				6.50	7.3	6.7																			
											6.75	6.9	6.5																			
											7.00	6.8	5.9																			
											7.25	7.1	6.9																			
											7.50	7.0	6.2																			
2	1	A1	0.00	0.15	2.5Y41	B	LC				0.10	5.3	2.4																			
	2	B21	0.15	0.55	10YR51	B	SLMC				0.30	5.1	2.6																			
	3	B22	0.55	0.85	10YR41	B	FSLC				0.60	4.7	2.3	a																		
											0.80	4.4	3.1	a																		
	4	B23i	0.85	1.75	2.5Y51	B	HC				1.00	4.2	2.9	a																		
											1.25	4.0	2.9	A	A1																	
											1.50	3.9	2.3	A		5	1.40	1.60							< 0.02				4			
											1.75	4.6	2.4	a																		
	5	2C1	1.75	2.40	2.5Y72		S				2.00	5.1	2.7			6	1.90	2.10						0.004	< 0.02				1			
											2.25	4.9	2.8	a																		
	6	2C2	2.40	4.25	2.5Y51		S				2.50	4.6	2.1	a		7	2.40	2.60							< 0.02				10			
											2.75	4.7	1.7	a																		
											3.00	5.2	1.9			8	2.90	3.10	S3	Ps					0.124				77			
											3.25	5.4	1.7																			
											3.50	5.7	1.7																			
											3.75	5.8	1.7																			
											4.00	6.0	1.6			10	3.90	4.10		Ps					0.166				104			
											4.25	6.5	1.4																			
	7	D	4.25	4.30	5GY81																											

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	0.80	1.00	0.008	5	0.13	80	0.031	3.5	4.5	0.02	0.03	0.005	0.006	0.001	0.001	0	0.050	0.049	0.000	0.000	0	0.000	0						
5	1.30	1.50			0.18	113		3.5		0.03		0.012					0.064												
6	1.80	2.00			0.19	118		3.6		0.03		0.014					0.061												
7	2.30	2.50			0.20	126		3.6		0.05		0.013					0.048												
9	3.20	3.40																											
10	3.60	3.80																											
11	4.10	4.30																											
12	4.60	4.80																											
13	5.10	5.30																											
14	5.30	5.50																											
15	5.80	5.97																											
5	1.40	1.60			0.07	44		3.8		0.01		0.006					0.033												
6	1.90	2.10			0.00	2		5.0		0.00		0.000					0.002												
7	2.40	2.60																											
8	2.90	3.10																											
10	3.90	4.10																											

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
3	1	A1	0.00	0.15	10YR33		CL				0.10	4.5	2.2	a																		
	2	B21	0.15	0.40	5Y42	O	MHC				0.30	4.3	2.5	a																		
	3	B22	0.40	0.60	5Y51		FSLC				0.60	4.4	2.9	a																		
	4	B23	0.60	0.95	5Y51		HC				0.80	4.6	3.1	a		4	0.70	0.90								< 0.02				2			
	5	B24	0.95	1.55	10Y51	O	MHC				1.25	4.7	3.2	a																		
											1.50	4.9	3.4	a																		
	6	B25	1.55	2.05	10Y51	O	SLC				1.75	4.8	3.4	a		6	1.60	1.80								< 0.02				1			
											2.00	4.9	3.5	a																		
	7	B26	2.05	2.30	10YR51	O	LMC				2.25	5.9	4.7			7	2.10	2.30								< 0.02				0			
	8	B27	2.30	2.60	5Y51	O	SLC				2.50	5.7	4.6																			
	9	B28	2.60	3.80	5Y41	O	SLC				2.75	6.4	6.2																			
											3.00	6.6	6.7																			
											3.25	6.4	6.5			10	3.10	3.30								< 0.02				2			
											3.50	6.5	6.3																			
											3.75	5.8	5.2																			
4	1	A1	0.00	0.35	10YR22		CL				0.10	4.5	3.3	a																		
											0.30	4.3	3.4	a																		
	2	B21	0.35	0.55	2.5Y51	O	LC																									
	3	B22ia	0.55	1.20	2.5Y41	Y	LC	J			0.60	4.1	2.3	a																		
											0.80	4.1	2.8	a																		
											1.00	4.1	2.9	a		4	0.80	1.00				0.185			0.178	< 0.02	0.012	0.000	0.038	3	7	0	24
	4	2B21i	1.20	1.60	2.5Y41	R	LC				1.25	4.0	2.8	A	A2																	
											1.50	4.3	2.7	a		5	1.30	1.50								< 0.02				2			
	5	2B22	1.60	1.90	5Y61	O	SLMC				1.75	4.7	3.7	a		6	1.60	1.80								< 0.02				0			
	6	2B23	1.90	4.00	N50		LMC				2.00	4.9	4.4	a																		
											2.25	5.3	4.8			7	2.10	2.30								< 0.02				0			
											2.50	5.5	4.8																			
											2.75	4.8	3.8	a		8	2.60	2.80								< 0.02				2			
											3.00	4.9	4.6	a																		
											3.25	5.1	4.6			9	3.10	3.30								< 0.02				4			
											3.50	5.4	4.9																			
											3.75	4.8	4.7	a																		
											4.00	4.8	5.0	a																		
5	1	A1	0.00	0.20	7.5YR42		CL				0.01	4.5	3.4	a																		
											0.10	5.4	4.2			1	0.00	0.10						0.126		0.043				27			
	2	B21	0.20	0.35	10YR41	O	LC				0.30	5.7	3.8			2	0.20	0.30								0.026				16			
	3	B22	0.35	0.60	10YR51	O	LC				0.50	4.9	4.1	a																		
											0.60	5.1	3.8			3	0.50	0.60								< 0.02				5			
	4	B23u	0.60	0.95	10YR51		LC				0.80	5.5	1.8			4	0.70	0.90	S1	Pc						0.561				350			
	5	B24u	0.95	1.50	N40		LC				1.00	5.8	1.6																			
											1.25	6.0	1.6			5	1.10	1.30		Pc						3.766				2349			
											1.50	6.0	1.8																			
6	1	A1	0.00	0.10	7.5YR42		CL				0.01	4.8	2.7	a																		
	2	B21	0.10	0.20	10YR51	O	LMC				0.11	5.1	3.9			2	0.10	0.20						0.214		0.062				39			
	3	B22i	0.20	0.60	10YR51	O	MC				0.30	4.3	3.4	a																		
											0.60	4.1	2.7	a		3	0.50	0.60								< 0.02				7			
	4	B23u	0.60	1.00	10YR41	O	LMC				0.80	4.6	2.9	a																		
											1.00	4.2	1.5	a		4	0.80	1.00								0.045				28			
	5	C1u	1.00	1.75	N40		FSLC				1.25	4.2	1.5	a																		
											1.50	4.2	1.5	a		5	1.30	1.50	S1	Pc						1.347				840			
											1.75	4.6	1.7	a																		
	6	C2u	1.75	2.30	N30		SCL				2.00	4.5	1.5	a		6	1.80	2.00		Pl						1.019				636			
											2.25	4.5	1.5	a																		
7	1	A1	0.00	0.04	10YR22		SCL																									
	2	A2	0.04	0.33	10YR32		SL				0.10	5.7	3.2																			
											0.30	5.8	4.6																			
	3	A3	0.33	0.76	10YR72	B	SCL				0.60	5.4	4.5																			
	4	B21	0.76	1.31	10YR71	O	SLMC				0.80	5.3	4.1																			
											1.00	5.3	4.3			4	0.80	1.00								< 0.02				1			
											1.25	5.3	4.1																			
	5	B22	1.31	2.65	2.5YR71	O	SMHC				1.50	5.3	3.7																			
											1.75	4.9	3.7	a																		
											2.00	4.8	3.6	a																		
											2.25	4.7	3.6	a																		
											2.50	4.7	3.6	a		7	2.30	2.50								< 0.02				1			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	0.70	0.90																										
6	1.60	1.80																										
7	2.10	2.30																										
10	3.10	3.30																										
4	0.80	1.00	0.095	59	0.08	49	0.187	3.8	4.5	0.06	0.07	0.042	0.042	0.000	0.000	0	0.100	0.092	0.000	0.000	0	0.000	0						
5	1.30	1.50			0.04	26		3.9		0.04		0.020					0.051												
6	1.60	1.80																										
7	2.10	2.30																										
8	2.60	2.80																										
9	3.10	3.30																										
1	0.00	0.10			0.08	52		4.8		0.15		0.231					0.267												
2	0.20	0.30																										
3	0.50	0.60																										
4	0.70	0.90																										
5	1.10	1.30																										
2	0.10	0.20			0.15	95		4.7		0.15		0.097					0.136												
3	0.50	0.60			0.06	36		3.9		0.10		0.057					0.128												
4	0.80	1.00			0.03	21		4.2		0.09		0.050					0.116												
5	1.30	1.50																										
6	1.80	2.00																										
4	0.80	1.00																										
7	2.30	2.50																										

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
8	1	A1	0.00	0.15	10YR33		MC				0.10	4.8	3.4	a																			
	2	B21i	0.15	0.40	10YR34	R	HC				0.30	3.7	2.9	A	A0																		
	3	B22i	0.40	1.15	2.5Y52	O	HC				0.60	3.5	2.6	A																			
											0.80	3.4	2.4	A																			
											1.00	3.5	2.4	A		4	0.80	1.00								< 0.02				0			
	4	B23ia	1.15	1.50	5Y42	Y	HC	J			1.25	3.4	2.4	A																			
											1.50	3.7	2.4	A		5	1.30	1.50								< 0.02	0.037	0.000	0.159	0	23	0	99
	5	B24i	1.50	1.80	N40	B	MC									6	1.50	1.70								< 0.02	0.019	0.000	0.114	1	12	0	71
											1.75	3.8	1.9	A																			
	6	B25i	1.80	2.40	2.5Y51	O	LC				2.00	3.8	2.5	A		7	1.80	2.00								< 0.02	0.012	0.000	0.003	2	7	0	2
											2.25	3.8	2.8	A		8	2.20	2.40								< 0.02				5			
	7	B26	2.40	2.75	2.5Y51	O	MHC				2.50	4.1	2.8	a																			
																9	2.50	2.70								< 0.02				3			
											2.75	4.5	3.1	a																			
	8	D1	2.75	3.25	2.5Y51	O	MHC				3.00	6.2	6.7			10	2.80	3.00								< 0.02				3			
											3.25	6.1	7.4																				
	9	D2	3.25	3.50	10Y51	O	MHC				3.50	6.3	7.0			11	3.30	3.50								< 0.02				4			
	10	D3	3.50	3.75	5GY51		FSMHC				3.75	6.3	6.3																				
	11	D4	3.75	3.95	N60		SLC																										
	12	D5	3.95	4.60	2.5Y61		FSMHC				4.00	6.4	5.7																				
											4.25	6.1	5.9																				
											4.50	5.9	6.1																				
	13	D6	4.60	4.85	10YR56	G	FSMC				4.75	6.0	6.0																				
9	1	P1	0.00	0.10	10R46		IP				0.10	5.7	3.4			1	0.00	0.10	S0	Pl						0.079				49			
	2	A1u	0.10	0.25	10YR21		CL									2	0.10	0.20		Pl						0.141				88			
	3	B2u	0.25	0.55	10Y51	O	LC				0.30	5.9	4.1																				
																3	0.30	0.50								0.021				13			
	4	B3u	0.55	1.05	10Y41		LC				0.60	4.7	3.1	a																			
											0.80	4.8	3.1	a																			
											1.00	5.3	3.5																				
	5	C1u	1.05	1.50	5GY41		LC				1.25	5.1	1.3			5	1.20	1.40		Pc						2.226				1388			
											1.50	5.4	1.3																				
	6	2Cu	1.50	1.60	10Y41		CKS									6	1.50	1.60		Ps						1.195				745			
	7	2Du	1.60	1.80	10Y2.5/1		SLC				1.75	5.9	4.0			7	1.60	1.80		Pc						0.415				259			
	8	2D2u	1.80	2.08	N60	O	SMHC				2.00	6.4	4.1			8	1.80	2.00								0.047				29			
	9	2D3	2.08	2.60	10Y51		MHC				2.25	6.3	5.3																				
											2.50	6.2	5.2			9	2.30	2.50								< 0.02				2			
	10	2D4	2.60	2.72	10Y51	O	HC																										
10	1	A1	0.00	0.20	10YR22		IP				0.10	5.0	2.9			1	0.00	0.10								< 0.02				10			
	2	B21i	0.20	0.40	2.5Y42	R	LMC				0.30	4.6	2.7	a		2	0.20	0.30								< 0.02				2			
	3	B22ia	0.40	0.70	5Y42	D	MC	J			0.60	4.2	3.1	a		3	0.50	0.60			0.223		0.222			< 0.02	0.011	0.000	0.101	6	7	0	63
	4	2B21ia	0.70	1.10	5Y62	Y	FSLC	J			0.80	4.5	3.2	a																			
											1.00	4.4	3.2	a		4	0.80	1.00			0.147		0.147			< 0.02	0.003	0.000	0.016	2	2	0	10
	5	2B22i	1.10	1.70	5Y42	O	CLFS				1.25	4.2	3.1	a																			
											1.50	4.4	3.2	a		5	1.30	1.50								< 0.02				4			
	6	2B3	1.70	1.90	2.5Y62	O	CLFS				1.75	4.2	3.3	a		6	1.70	1.90								< 0.02				5			
	7	3C1	1.90	2.20	10YR71		CS				2.00	4.3	3.1	a																			
																7	2.00	2.20								< 0.02				3			
	8	3C2	2.20	2.50	10YR61		LC				2.25	4.7	3.7	a																			
											2.50	5.0	3.6	a		8	2.30	2.50								< 0.02				4			
11	1	O	0.00	0.10	10YR22		LC																										
	2	A11	0.10	0.20	2.5Y32		LMC				0.11	5.8	2.1																				
	3	A12	0.20	0.35	2.5Y31		MHC				0.30	5.9	2.4																				
	4	B21	0.35	0.52	2.5Y61	O	FSLC				0.50	5.2	3.3																				
	5	B22	0.52	0.90	2.5Y71		FSLC				0.80	5.0	3.4	a		4	0.60	0.80				0.022				< 0.02				4			
	6	B23	0.90	1.35	N60		MC				1.00	5.1	3.5																				
																5	1.00	1.20								< 0.02				4			
											1.25	5.2	3.7																				
	7	2B24	1.35	1.60	10Y71	Y	FSLC				1.50	5.3	4.2			6	1.40	1.60								< 0.02				7			
	8	2B25	1.60	1.75	10Y71		FSLC				1.75	5.3	4.1																				
	9	3C	1.75	1.90	2.5Y71		S																										
	10	4C1	1.90	2.05	2.5Y71		SL				2.00	5.1	4.7																				
	11	4C2	2.05	2.25	10Y71		SL				2.25	5.2	4.1			10	2.05	2.25								< 0.02				4			
	12	4C3	2.25	2.30	2.5Y61		SL				2.30	5.6	4.6																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																	Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	0.80	1.00																												
5	1.30	1.50			0.17	108		3.4	3.8	0.09	0.13	0.029	0.030	0.001	0.001	0	0.084	0.085	0.001	0.001	1	0.002	1						
6	1.50	1.70			0.15	96		3.6	4.1	0.07	0.09	0.032	0.033	0.001	0.001	0	0.095	0.094	0.000	0.000	0	0.000	0						
7	1.80	2.00			0.05	31		4.0	4.6	0.03	0.05	0.008	0.008	0.000	0.000	0	0.021	0.021	0.000	0.000	0	0.000	0						
8	2.20	2.40			0.12	75		3.7		0.08		0.022					0.061												
9	2.50	2.70																												
10	2.80	3.00																												
11	3.30	3.50																												
1	0.00	0.10																												
2	0.10	0.20																												
3	0.30	0.50																												
5	1.20	1.40			0.15	92		3.6		0.27		0.089					0.170												
6	1.50	1.60																												
7	1.60	1.80																												
8	1.80	2.00																												
9	2.30	2.50																												
1	0.00	0.10																												
2	0.20	0.30			0.24	151		3.6		0.03		0.019					0.058												
3	0.50	0.60	0.050	31	0.16	101	0.084	3.6	4.4	0.02	0.03	0.013	0.014	0.001	0.001	0	0.055	0.054	0.000	0.000	0	0.000	0						
4	0.80	1.00	0.068	43	0.08	47	0.098	3.7	4.7	0.01	0.01	0.007	0.007	0.000	0.000	0	0.026	0.029	0.003	0.004	2	0.004	2						
5	1.30	1.50			0.08	51		3.6		0.01		0.010					0.033												
6	1.70	1.90			0.02	12		4.4		0.01		0.003					0.010												
7	2.00	2.20			0.02	12		4.3		0.01		0.004					0.013												
8	2.30	2.50			0.04	27		4.0		0.02		0.018					0.059												
4	0.60	0.80			0.02	10		4.5		0.00		0.002					0.008												
5	1.00	1.20			0.06	38		3.9		0.01		0.001					0.030												
6	1.40	1.60																												
10	2.05	2.25																												

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)					%S		%S			%S				mol H^+/t			
												23Af	23Bf									s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
12	1	A1	0.00	0.22	10YR42		CL				0.10	5.0	2.7	a																				
	2	B21i	0.22	0.50	10YR33		LMC				0.30	4.4	2.5	a																				
																2	0.30	0.40							< 0.02				2			
	3	B22ia	0.50	0.65	N40	Y	LMC	J			0.60	4.1	2.0	a		3	0.55	0.65				0.789		0.701	< 0.02	0.092	0.000	0.188	2	57	0	117
	4	2B23ia	0.65	0.95	5Y52	Y	SLC	J			0.80	4.2	2.5	a		4	0.70	0.90				0.164				0.021	0.000	0.022		13	0	14
	5	3B24ia	0.95	1.40	N60	Y	MC	J			1.00	4.4	3.0	a																			
											1.25	4.3	3.2	a		5	1.10	1.30							< 0.02	0.015	0.000	0.035	1	9	0	22
	6	3B25	1.40	2.70	N80	Y	MC				1.50	4.4	3.4	a		6	1.40	1.50								0.002	0.000	0.002		1	0	1
											1.75	4.4	3.2	a																		
											2.00	4.3	3.5	a																		
											2.25	4.3	3.5	a																		
											2.50	4.5	3.5	a																		
13	1	A1	0.00	0.15	10YR22		CL				0.10	3.9	3.2	A	A0	1	0.00	0.10							0.05				31			
	2	B1i	0.15	0.22	7.5YR32		LMC				0.20	3.7	2.4	A		2	0.15	0.20				0.273		0.239	< 0.02	0.041	0.037	0.245	4	26	23	153
	3	B21i	0.22	0.40	7.5R44		MHC				0.30	3.6	2.5	A																		
											0.40	3.5	2.5	A		3	0.30	0.40							< 0.02	0.066	0.000	0.188	2	41	0	117
	4	B22ia	0.40	0.70	10YR51	Y	MHC	J			0.60	3.6	2.6	A		4	0.50	0.60				0.349				0.042	0.000	0.194		26	0	121
	5	B23ia	0.70	1.75	10Y51	Y	MHC	J			0.80	3.7	2.6	A																		
											1.00	3.7	2.3	A																		
											1.25	3.6	2.2	A																		
											1.50	3.6	2.3	A		6	1.30	1.50				0.418				0.024	0.000	0.131		15	0	82
											1.75	4.4	1.9	a																		
	6	B24i	1.75	2.90	10Y51	G	MHC				2.00	4.5	2.8	a		7	1.80	2.00								0.022	0.000	0.082		14	0	51
											2.25	5.9	4.1																			
											2.50	5.9	5.0			8	2.30	2.50							0.037				23			
											2.75	6.1	6.1																			
	7	2B25	2.90	3.20	10GY61	B	SMC				3.00	6.3	6.4																			
																10	3.00	3.20							< 0.02				0			
	8	2B26	3.20	3.30	N70	B	SMC				3.25	6.0	6.1																			
14	1	A11	0.00	0.15	10YR31		SCL				0.10	5.4	2.1																			
	2	A12	0.15	0.30	10YR42		SCL				0.30	5.4	3.0																			
	3	A2	0.30	0.80	10YR63		CS				0.60	5.1	4.1																			
											0.80	5.1	4.0																			
	4	B1	0.80	1.10	10YR73	O	FSL				1.00	5.7	4.6																			
	5	B21	1.10	1.60	10YR74	O	FSL				1.25	5.8	4.8																			
											1.50	4.4	3.0	a																		
	6	B22	1.60	2.32	10YR61	O	FSCL				1.75	3.7	2.7	A	A2	7	1.70	1.90			0.030					0.004	0.000	0.018		2	0	11
											2.00	3.9	2.5	A																		
											2.25	3.7	2.7	A		8	2.10	2.30				0.037		0.035	< 0.02	0.002	0.000	0.018	0	1	0	11
	7	B23	2.32	2.60	5Y61	R	FSLC				2.50	3.7	2.6	A		9	2.40	2.60				0.049				0.004	0.000	0.018		2	0	11
	8	B24	2.60	3.18	N70	Y	FSLC				2.75	4.0	2.4	A																		
											3.00	4.1	2.6	a		10	2.80	3.00							< 0.02				1			
	9	2B25u	3.18	3.45	N50		LMC				3.25	4.8	2.4	a		11	3.20	3.40	S4	Pc					0.766				478			
	10	2B26u	3.45	3.60	N50	Y	FSLC				3.50	5.8	1.4			12	3.45	3.60		Pc					0.254				158			
	11	3B27	3.60	4.10	10YR76	L	MHC				3.75	5.9	3.0																			
											4.00	5.6	3.8			13	3.80	4.00							< 0.02				2			
15	1	A1	0.00	0.25	10YR21		CL				0.10	4.4	2.9	a																		
	2	B21i	0.25	0.55	10YR66	O	MC				0.30	3.9	2.8	A	A0																	
																3	0.30	0.40							< 0.02				1			
	3	2B22i	0.55	1.05	10YR61	O	FSCL				0.60	3.8	2.7	A																		
											0.80	3.6	2.7	A		4	0.70	0.90				0.172		0.169	< 0.02	0.004	0.000	0.022	1	2	0	14
											1.00	3.6	2.4	A																		
	4	3B23ia	1.05	1.65	10YR51	Y	MC	J			1.25	3.3	2.0	A																		
											1.50	3.4	2.3	A		5	1.30	1.50				0.533		0.515	< 0.02	0.023	0.080	0.228	3	14	50	142
	5	3B24i	1.65	1.95	10YR51	B	MC				1.75	3.4	2.1	A																		
	6	3B25i	1.95	2.25	10YR51		MHC				2.00	3.6	2.2	A																		
																6	2.00	2.20				0.269		0.177	0.048	0.140	0.319	0.443	30	87	199	276
											2.25	4.0	1.4	A																		
	7	3B26u	2.25	3.90	N50		MHC				2.50	4.2	1.4	a		7	2.30	2.50	S3	Pc		3.926		3.885	3.713	3.754	3.814	3.986	2316	2341	2379	2486
											2.75	5.0	1.5	a																		
											3.00	5.0	1.5	a		8	2.80	3.00		Pc					1.998				1246			
											3.25	5.9	1.2																			
											3.50	6.3	1.4			9	3.30	3.50		Pc					1.872				1168			
											3.75	6.4	1.2																			
	8	3B27u	3.90	4.10	N50		FSLMC				4.00	6.7	1.3			10	3.90	4.10		Pc					0.977				609			
	9	4B28u	4.10	5.25	N70		LFS				4.25	6.8	1.7			11	4.20	4.40		Ps					0.307				191			
											4.50	6.8	1.6																			
	10	5B29u	5.25	5.95	N40	B	MHC				5.50	7.7	4.6			12	5.40	5.60		Pc					0.385				240			
											5.75	8.0	7.3																			
	11	6B30	5.95	6.00	5G61	B	MHC				6.00	6.8	7.5																			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.30	0.40			0.20	125		3.8		0.05		0.018					0.030												
3	0.55	0.65	0.502	313	0.20	122	0.713	3.4	3.9	0.04	0.14	0.016	0.018	0.002	0.002	1	0.036	0.039	0.003	0.004	2	0.006	3						
4	0.70	0.90	0.082	51	0.06	38	0.128	3.8	4.3	0.02	0.04	0.005	0.005	0.000	0.000	0	0.010	0.012	0.002	0.003	2	0.003	2						
5	1.10	1.30			0.09	57		3.8	4.7	0.05	0.06	0.007	0.008	0.001	0.001	0	0.033	0.036	0.003	0.004	2	0.005	3						
6	1.40	1.50			0.06	38		3.8	5.1	0.03	0.04	0.011	0.011	0.000	0.000	0	0.050	0.055	0.005	0.007	4	0.007	4						
1	0.00	0.10			0.50	310		4.2		0.32		0.010					0.032												
2	0.15	0.20	0.023	15	0.21	130	0.114	3.8	3.8	0.08	0.12	0.013	0.016	0.003	0.002	1	0.037	0.043	0.006	0.008	5	0.010	6						
3	0.30	0.40			0.20	127		3.4	3.8	0.10	0.17	0.018	0.021	0.003	0.002	1	0.054	0.062	0.008	0.011	7	0.013	8						
4	0.50	0.60	0.113	70	0.19	121	0.244	3.5	3.8	0.09	0.14	0.029	0.033	0.004	0.003	2	0.077	0.089	0.012	0.016	10	0.019	12						
6	1.30	1.50	0.248	155	0.15	91	0.446	3.7	4.0	0.12	0.14	0.054	0.059	0.005	0.004	2	0.125	0.139	0.014	0.018	12	0.022	14						
7	1.80	2.00			0.12	76		3.7	4.3	0.11	0.14	0.057	0.059	0.002	0.002	1	0.128	0.141	0.013	0.017	11	0.019	12						
8	2.30	2.50																											
10	3.00	3.20																											
7	1.70	1.90	0.000	0	0.03	16	< 0.008	4.5	5.3	0.00	0.01	0.011	0.013	0.002	0.002	1	0.021	0.028	0.007	0.009	6	0.011	7						
8	2.10	2.30	0.000	0	0.04	22	< 0.008	4.2	5.4	0.01	0.01	0.012	0.011	0.000	0.000	0	0.022	0.024	0.002	0.003	2	0.002	1						
9	2.40	2.60	0.005	3	0.04	25	0.027	4.1	5.3	0.02	0.02	0.011	0.010	0.000	0.000	0	0.021	0.024	0.003	0.004	2	0.003	2						
10	2.80	3.00																											
11	3.20	3.40			0.12	76		4.1		0.11		0.060					0.133												
12	3.45	3.60																											
13	3.80	4.00																											
3	0.30	0.40			0.16	98		3.7		0.03		0.014					0.024												
4	0.70	0.90	0.128	80	0.04	25	0.188	4.1	4.9	0.02	0.02	0.011	0.010	0.000	0.000	0	0.019	0.021	0.002	0.003	2	0.002	1						
5	1.30	1.50	0.362	226	0.15	92	0.565	3.7	3.7	0.08	0.11	0.048	0.049	0.001	0.001	0	0.100	0.117	0.017	0.022	14	0.023	14						
6	2.00	2.20	0.006	4	0.12	77	0.115	4.0	2.9	0.11	0.25	0.071	0.075	0.004	0.003	2	0.174	0.198	0.024	0.032	20	0.035	22						
7	2.30	2.50	0.000	0	0.17	107	0.245	3.8	1.8	0.25	4.00	0.082	0.086	0.004	0.003	2	0.205	0.234	0.029	0.038	24	0.041	26						
8	2.80	3.00																											
9	3.30	3.50																											
10	3.90	4.10																											
11	4.20	4.40																											
12	5.40	5.60																						2.99	0.96	597			

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
16	1	AC	0.00	0.40	10YR44		S				0.10	5.2	3.8																			
											0.30	5.8	4.3																			
	2	C1	0.40	1.10	10YR54		S				0.60	6.3	4.3																			
											0.80	6.0	4.2																			
											1.00	6.5	5.4																			
	3	2C2	1.10	1.50	10YR43		FSCL				1.25	6.1	3.4																			
											1.50	6.2	6.4																			
	4	3C3	1.50	4.10	10YR56		CS				1.75	6.5	4.6																			
											2.00	6.5	7.5			4	1.50	2.00							< 0.02				5			
											2.25	6.7	7.6																			
											2.50	6.7	6.7																			
											2.75	6.8	7.3																			
											3.00	6.6	7.2			6	2.50	3.00							< 0.02				0			
											3.25	6.7	7.3																			
											3.50	6.6	7.4																			
											3.75	6.7	7.6																			
											4.00	6.7	7.7			8	3.50	4.00							< 0.02				2			
	5	4C4	4.10	4.40	10YR56		LS				4.25	7.0	5.8			9	4.10	4.40							< 0.02				0			
	6	5C5	4.40	7.00	10YR56		KS				4.50	6.9	2.8																			
											4.75	6.6	5.7																			
											5.00	6.5	6.1			10	4.50	5.00							< 0.02				6			
											5.25	6.4	5.8																			
											5.50	6.5	5.8																			
											5.75	6.5	6.7																			
											6.00	6.5	6.1																			
											6.25	6.7	5.8																			
											6.50	6.9	5.7			13	6.00	6.50							< 0.02				0			
											6.75	6.9	5.7																			
											7.00	6.9	1.7																			
	7	R	7.00	7.20	5G51		GR									15	7.00	7.20	S5	Ps					0.686				428			
17	1	A1	0.00	0.05	10YR32		CL																									
	2	B21	0.05	0.40	10YR43		ZCL				0.10	5.4	3.0																			
											0.30	5.8	2.9																			
	3	B22	0.40	0.70	10YR43	P	ZCL				0.60	6.1	3.6			2	0.40	0.70							< 0.02				6			
	4	B3	0.70	1.00	10YR52	B	LC				0.80	6.5	3.0																			
											1.00	6.8	4.0			3	0.70	1.00							< 0.02				6			
	5	C1	1.00	1.30	10YR54		S				1.25	6.9	5.0			4	1.00	1.30							< 0.02				6			
	6	C2	1.30	1.60	10YR64		S				1.50	6.6	4.7																			
	7	2C3	1.60	1.80	10YR52		CL				1.75	5.6	4.6			6	1.60	1.80							< 0.02				1			
	8	3C4	1.80	4.50	10YR63		CS				2.00	6.7	5.7			7	1.80	2.00							< 0.02				4			
											3.25	6.9	5.7																			
											3.50	6.8	6.1																			
											3.75	6.8	5.7																			
											4.00	6.7	5.8			9	3.00	4.00							< 0.02				1			
											4.25	6.8	5.7																			
											4.50	6.8	6.5																			
	9	4C5	4.50	7.30	10YR63		KS				4.75	7.0	6.1																			
											5.00	7.0	6.1																			
											5.25	6.9	6.0																			
											5.50	6.9	6.1			11	4.50	5.50							< 0.02				2			
											5.75	6.9	6.1																			
											6.00	7.1	5.9																			
											6.25	6.8	5.9																			
											6.50	7.0	6.0			12	5.50	6.50							< 0.02				1			
											6.75	7.0	5.8																			
											7.00	7.0	5.4																			
											7.25	7.1	7.5																			
	10	5D	7.30	7.50	5G51		LC				7.50	7.1	8.3			15	7.30	7.50							0.056				35			
18	1	A11	0.00	0.10	7.5YR32		SCL				0.10	6.4	3.6			1	0.00	0.10							< 0.02				5			
	2	A12	0.10	0.20	10YR44		CS																									
	3	A2	0.20	0.40	10YR54		CS				0.30	6.4	5.1			2	0.20	0.40							< 0.02				2			
	4	B21	0.40	0.60	10YR54	R	ZCL				0.60	5.2	4.6			3	0.40	0.60					0.009		< 0.02				4			
	5	B22	0.60	0.75	2.5Y41		LC									4	0.60	0.75						0.039	0.023				14			
	6	2B23u	0.75	1.30	2.5Y43		CS				0.80	6.4	7.2																			
											1.00	6.5	5.2			5	0.80	1.00	S1	Ps					0.084				52			
											1.25	7.0	5.8																			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	1.50	2.00																										
6	2.50	3.00																										
8	3.50	4.00																										
9	4.10	4.40																										
10	4.50	5.00																										
13	6.00	6.50																										
15	7.00	7.20																										
2	0.40	0.70																										
3	0.70	1.00																										
4	1.00	1.30																										
6	1.60	1.80																										
7	1.80	2.00																										
9	3.00	4.00																										
11	4.50	5.50																										
12	5.50	6.50																										
15	7.30	7.50																										
1	0.00	0.10																										
2	0.20	0.40																										
3	0.40	0.60			0.00	1		6.1		0.04		0.049					0.050											
4	0.60	0.75			0.02	10		5.3		0.07		0.052					0.053											
5	0.80	1.00																										

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
19	1	A1	0.00	0.30	10YR22		L				0.10	6.5	4.0																			
											0.30	7.0	3.3			2	0.20	0.30								< 0.02				5			
	2	B21	0.30	0.90	2.5Y44	R	LMC				0.60	5.6	3.0																			
											0.80	5.0	2.9	a		4	0.70	0.90					0.037			< 0.02				1			
	3	B22	0.90	1.50	2.5Y33	R	MHC				1.00	5.5	2.9																			
											1.25	5.8	4.2																			
											1.50	5.6	4.3			5	1.30	1.50					0.024			< 0.02				1			
	4	B23	1.50	2.15	5Y42	O	MHC				1.75	5.4	4.1																			
											2.00	5.1	3.8			6	1.80	2.00								< 0.02				1			
	5	2B24ia	2.15	2.45	5Y42	O	LC	J			2.25	4.4	2.4	a																		
																7	2.25	2.45								< 0.02	0.022	0.000	0.030	0	14	0	19
	6	2C1	2.45	2.80	10Y31		LC				2.50	5.1	2.4																			
											2.75	4.9	1.7	a		8	2.60	2.80	S3	Pc						0.433				270			
	7	2C2u	2.80	3.50	5BG41		LC				3.00	5.9	2.0																			
											3.25	5.8	1.8																			
											3.50	6.1	1.3			9	3.30	3.50		Pc						1.843				1149			
	8	3C4u	3.50	3.90	N40		LS				3.75	6.3	1.3			10	3.70	3.90		Ps						0.735				458			
	9	3C5u	3.90	4.60	10Y51		LS				4.00	6.5	1.7																			
											4.25	6.6	3.7																			
											4.50	6.7	2.2			11	4.20	4.50		Ps						0.114				71			
	10	3C6u	4.60	5.65	10Y51		LS				4.75	6.8	4.7																			
											5.00	6.8	5.0																			
											5.25	6.8	5.3																			
											5.50	6.6	6.0			13	5.20	5.50								< 0.02				1			
	11	3C7u	5.65	6.35	2.5Y31		CLFS				5.75	6.4	4.0																			
											6.00	6.5	3.6			14	5.80	6.00								< 0.02				1			
											6.25	6.3	4.3																			
	12	4Cu	6.35	7.45	2.5Y51		KSLC				6.50	6.9	5.5																			
											6.75	7.1	5.9																			
											7.00	6.9	5.4			16	6.70	7.00								< 0.02				3			
											7.25	7.3	7.7																			
											7.45	7.6	7.0																			
20	1	A11	0.00	0.30	10YR34		CLFS				0.10	5.6	3.6																			
											0.30	5.8	2.9																			
	2	A12	0.30	1.00	10YR43		CLFS				0.60	6.2	3.5																			
											0.80	6.3	5.4																			
											1.00	6.8	5.6																			
	3	B21	1.00	1.90	10YR24	B	LC				1.25	6.3	5.0																			
											1.50	6.6	4.7																			
											1.75	6.0	3.5			6	1.70	1.90								< 0.02				1			
	4	B22	1.90	2.45	2.5YR24	O	LMC				2.00	6.0	3.8																			
											2.25	5.6	3.4																			
	5	B3	2.45	3.00	10Y51	O	SLC				2.50	5.4	3.3																			
											2.75	5.6	3.1			8	2.70	2.90								< 0.02				6			
											3.00	5.3	3.6																			
	6	2B2	3.00	3.65	10Y41	Y	CS				3.25	5.7	4.6			9	3.20	3.40					0.017			< 0.02				1			
											3.50	5.2	2.2																			
	7	2Cu	3.65	4.50	10Y41		CS				3.75	6.1	2.4																			
											4.00	6.4	1.9			10	3.70	4.00	S4	Ps						0.077				48			
											4.25	6.8	2.3																			
											4.50	6.4	1.9			11	4.20	4.50		Ps						0.082				51			
	8	3Cu	4.50	5.65	10Y51		LS				4.75	6.2	2.2																			
											5.00	6.4	2.3			12	4.80	5.00								0.029				18			
											5.25	6.3	2.3																			
											5.50	6.4	2.0			13	5.30	5.60								0.023				14			
	9	4Cu	5.65	6.22	10Y51		LS				5.75	6.7	2.1																			
											6.00	6.9	2.2			14	5.80	6.10		Ps						0.03				19			
	10	5D	6.22	6.40	5Y52	Y	KSLC																									

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A+s\text{-}Mg_A$	$a\text{-}Ca_A+a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.20	0.30																											
4	0.70	0.90			0.04	22		4.5		0.01		0.126					0.040												
5	1.30	1.50			0.02	14		4.9		0.01		0.221					0.056												
6	1.80	2.00			0.06	40		4.3		0.01		0.180					0.082												
7	2.25	2.45			0.08	53		3.9	4.8	0.02	0.04	0.107	0.110	0.003	0.002	1	0.059	0.070	0.011	0.015	9	0.017	11						
8	2.60	2.80			0.14	88		3.8		0.03		0.073					0.078												
9	3.30	3.50																											
10	3.70	3.90																											
11	4.20	4.50																											
13	5.20	5.50																											
14	5.80	6.00																											
16	6.70	7.00																						5.39	1.73	1077			
6	1.70	1.90																											
8	2.70	2.90			0.03	20		4.0		0.00		0.019					0.024												
9	3.20	3.40			0.02	10		4.5		0.00		0.021					0.015												
10	3.70	4.00																											
11	4.20	4.50																											
12	4.80	5.00																											
13	5.30	5.60																											
14	5.80	6.10																											

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Depth Upp	Depth Low	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Depth Upp	Depth Low	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
21	1	A11	0.00	0.10	2.5Y32		ZLC				0.10	5.2	2.6																				
	2	A3	0.10	0.40	2.5Y32	O	ZLC				0.30	5.3	3.0																				
	3	B21	0.40	0.70	2.5Y41	B	FSLC				0.60	6.2	3.5																				
	4	B22	0.70	1.10	2.5Y31	D	ZCL				0.80	6.4	4.3																				
											1.00	5.8	3.6			4	0.80	1.00								< 0.02				2			
	5	B23i	1.10	1.65	2.5Y32	R	ZCL				1.25	4.7	2.8	a																			
											1.50	4.6	2.0	a		5	1.30	1.50								< 0.02				7			
	6	C1u	1.65	2.20	N2.5/0		ZLC				1.75	5.9	1.7																				
											2.00	5.4	1.9			6	1.80	2.00	S2	Pc						0.724				452			
	7	C2u	2.20	2.50	N40		ZLC				2.25	5.3	1.7																				
											2.50	6.2	3.0			7	2.30	2.50		Pc						1.305				814			
	8	2C1u	2.50	3.00	N40		CS				2.75	6.3	2.6																				
											3.00	6.5	2.0			8	2.80	3.00		Ps						0.739				461			
	9	2C2u	3.00	3.50	N40		SLC				3.25	5.9	1.7																				
											3.50	6.1	1.8			9	3.30	3.50		Pc						0.907				566			
	10	3C1u	3.50	4.60	N40		LS				3.75	6.1	2.0																				
											4.00	6.3	2.4			10	3.80	4.00		Ps						1.549				966			
											4.25	6.4	1.9																				
											4.50	6.5	1.9			11	4.30	4.50		Ps						0.723				451			
	11	3C2u	4.60	5.30	N40		KS				4.75	6.3	1.7																				
											5.00	6.9	1.8			12	4.80	5.00		Ps						2.439				1521			
											5.25	7.1	1.8																				
	12	3C3u	5.30	5.60	N40		SLC				5.50	7.5	1.7																				
	13	3C4u	5.60	7.20	N50		LS				5.75	7.6	2.2																				
											6.00	7.9	2.1			14	5.80	6.00		Ps						0.163				102			
											6.25	7.1	1.9																				
											6.50	6.9	1.6																				
											6.75	7.0	1.9																				
											7.00	6.9	1.5			16	6.90	7.20		Ps						1.185				739			
	14	4C1u	7.20	7.50	N60		CKS				7.25	7.6	2.2																				
											7.50	7.6	2.7			17	7.30	7.50		Ps						0.232				145			
22	1	M	0.00	0.11	5YR44		LC				0.10	5.4	3.2																				
	2	A1	0.11	0.34	10YR21	B	LMC				0.30	6.8	5.2																				
	3	AB	0.34	0.75	10YR32	O	LMC				0.60	6.8	5.1																				
	4	B21	0.75	1.15	10YR52	O	LMC				0.80	6.9	5.3																				
											1.00	7.0	5.4																				
	5	B22	1.15	1.80	2.5Y52	O	MC				1.25	6.7	5.3																				
											1.50	5.3	4.1																				
											1.75	5.2	3.9																				
	6	2B21	1.80	2.10	2.5Y51		SLC				2.00	5.2	4.0																				
	7	2B22	2.10	2.30	2.5Y51	O	SCL				2.25	4.8	4.1	a		7	2.10	2.30								< 0.02				6			
	8	3B21ia	2.30	2.55	5Y51	Y	SLC	J			2.50	4.7	3.7	a		8	2.35	2.50			0.152		0.154			< 0.02	0.008	0.000	0.019	6	5	0	12
	9	3B22	2.55	3.40	10YR51	O	MC				2.75	4.9	4.1	a		9	2.70	2.90								< 0.02				6			
											3.00	5.0	4.0	a																			
											3.25	5.0	3.7	a		10	3.10	3.30								< 0.02				6			
	10	3C1u	3.40	3.65	N40		ZMC				3.50	5.5	4.3			11	3.40	3.50								0.085				53			
	11	4C1u	3.65	3.98	5GY51		S				3.75	6.0	1.8			12	3.70	3.90	S4	Ps						0.059				37			
	12	5C1	3.98	4.20	2.5Y62		S				4.00	6.6	5.5																				
																13	4.00	4.20					0.009		< 0.02				4			
23	1	A1	0.00	0.25	10YR41		LC				0.10	5.9	3.9																				
																2	0.10	0.20							< 0.02				4			
	2	B1	0.25	0.70	10YR41	G	LC				0.30	5.7	3.8																				
																3	0.30	0.40					0.017		< 0.02				2			
											0.60	5.8	6.3																				
	3	B21	0.70	1.05	5Y41	R	FSLMC				0.80	6.4	6.7																				
											1.00	6.4	5.0			5	0.80	1.00								< 0.02				6			
	4	B22	1.05	1.35	5Y52	R	FSLMC				1.25	6.4	5.0			6	1.10	1.30								< 0.02				0			
	5	C1u	1.35	2.40	5YR41		ZLC				1.50	6.5	1.6																				
											1.75	6.6	1.5																				
											2.00	6.6	1.8			7	1.80	2.00	S2	Pc						1.05				655			
											2.25	6.7	1.6			8	2.20	2.40		Pc						0.918				573			
	6	2C2u	2.40	2.70	5GY41		SL				2.50	6.9	1.1			9	2.45	2.65		Pl						1.521				949			
	7	3C3	2.70	3.00	5Y62		KS				2.75	7.1	4.2																				
											3.00	7.2	5.3			10	2.70	3.00								< 0.02				6			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	0.80	1.00																										
5	1.30	1.50			0.16	102		3.7		0.02		0.061					0.021											
6	1.80	2.00			0.32	199		3.7		0.14		0.049					0.032											
7	2.30	2.50																										
8	2.80	3.00																										
9	3.30	3.50																										
10	3.80	4.00																										
11	4.30	4.50																										
12	4.80	5.00																										
14	5.80	6.00																										
16	6.90	7.20																										
17	7.30	7.50																						< 0.5	0.07	46		
7	2.10	2.30			0.02	15		4.2		0.01		0.020					0.034											
8	2.35	2.50	0.092	57	0.05	33	0.133	4.0	5.1	0.01	0.02	0.031	0.032	0.001	0.001	0	0.054	0.063	0.009	0.012	7	0.013	8					
9	2.70	2.90			0.09	56		4.4		0.01		0.052					0.089											
10	3.10	3.30			0.10	62		4.0		0.01		0.065					0.116											
11	3.40	3.50			0.05	30		4.4		0.02		0.080					0.125											
12	3.70	3.90																										
13	4.00	4.20			0.00	2		5.8		0.00		0.012					0.007											
2	0.10	0.20																										
3	0.30	0.40			0.01	9		5.2		0.01		0.116					0.053											
5	0.80	1.00																										
6	1.10	1.30																										
7	1.80	2.00																										
8	2.20	2.40																										
9	2.45	2.65																										
10	2.70	3.00																						< 0.5	0.08	50		

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Depth Upp	Depth Low	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Depth Upp	Depth Low	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
24	1	A1	0.00	0.20	10YR42	D	LC				0.10	5.6	3.9			1	0.00	0.10								< 0.02				7			
	2	D1	0.20	0.40	2.5Y52		S				0.30	5.7	3.4																			
	3	D2ia	0.40	0.55	2.5Y41	Y	LMC	J			0.50	3.8	1.5	A	A0	3	0.40	0.50						0.356		< 0.02				1			
	4	2A1bi	0.55	0.75	5Y31	R	MHC				0.60	3.9	1.8	A																			
																4	0.60	0.70						0.187		< 0.02				0			
	5	2B21	0.75	1.30	5Y41	B	MC				0.80	4.6	3.3	a																			
											1.00	5.0	4.8	a		5	0.90	1.10					0.023			< 0.02				6			
											1.25	6.0	4.6																				
	6	2C1u	1.30	2.10	5GY41		ZMC				1.50	4.9	1.7	a		6	1.40	1.60	S2	Pc						1.967				1227			
											1.75	5.9	1.9																				
											2.00	6.4	1.3																				
	7	3C2u	2.10	3.00	5GY51		S				2.25	7.3	1.2																				
											2.50	7.3	1.4			8	2.30	2.70		Ps						0.868				541			
											2.75	7.4	1.4																				
											3.00	7.1	1.6																				
25	1	A11	0.00	0.30	2.5Y43	D	ZCL				0.10	5.5	3.7																				
											0.30	6.0	3.5																				
	2	A12	0.30	0.60	2.5Y42	B	CL				0.60	6.2	4.2																				
	3	B21	0.60	1.30	2.5Y52	D	CL				0.80	6.4	4.6																				
											1.00	6.1	4.7			4	0.80	1.00								< 0.02				2			
											1.25	6.6	4.9																				
	4	B22	1.30	1.70	5Y51	D	LMC				1.50	6.7	5.6																				
	5	2B21	1.70	1.98	5Y51	O	CS				1.75	6.7	5.2																				
	6	2B22	1.98	2.30	5Y61	O	CS				2.00	6.8	5.2																				
											2.25	7.0	6.7																				
	7	2B23	2.30	3.20	5Y71	D	FSCL				2.50	6.8	7.0																				
											2.75	6.6	5.5																				
											3.00	6.8	6.6			9	2.80	3.00								< 0.02				0			
	8	2B24	3.20	3.50	5Y51	O	LMC				3.25	7.5	7.5																				
											3.50	6.9	6.0																				
	9	3B21	3.50	4.55	5YR44	L	SCL				3.75	6.7	6.9																				
											4.00	6.6	5.7			11	3.80	4.00								< 0.02				0			
											4.25	6.4	5.2																				
											4.50	6.6	5.2																				
	10	3B22	4.55	4.90	7.5YR34	L	SCL				4.75	6.6	5.0																				
	11	3B23	4.90	5.40	10YR33	L	SCL				5.00	6.6	5.4																				
																14	5.10	5.30								< 0.02				1			
	12	4B21	5.40	7.20	10YR44		CKS				6.75	6.7	6.4																				
											7.00	6.6	6.3																				
	13	4B22	7.20	8.20	2.5Y43		CKS				7.25	7.0	5.9																				
											7.50	6.9	6.3			18	7.30	7.60								< 0.02				1			
											7.75	6.9	6.1																				
											8.00	7.3	6.2																				
	14	4B23	8.20	9.80	10YR44		CKS				8.25	7.2	6.2																				
											8.50	7.1	6.2																				
											8.75	7.0	6.7																				
											9.00	7.0	6.1																				
											9.25	7.0	6.1																				
											9.50	7.2	6.0			21	9.30	9.60								< 0.02				4			
											9.75	7.1	6.0																				
26	1	A1	0.00	0.05	2.5Y42	O	ZCL																										
	2	B21	0.05	0.12	2.5Y43	O	ZCL				0.10	6.3	4.1			2	0.05	0.12								< 0.02				11			
	3	C1u	0.12	0.75	2.5Y2.5/1		ZLC				0.30	6.8	1.9																				
																3	0.30	0.50	S0	Pc						0.712				444			
											0.60	6.4	1.3																				
	4	2C2u	0.75	1.60	N40	O	FSLC				0.80	6.6	1.6																				
											1.00	6.8	2.0			4	0.80	1.00		Pc						0.453				283			
											1.25	6.8	2.3																				
											1.50	6.7	1.9			5	1.30	1.50		Pc						0.216				135			
27	1	A1	0.00	0.05	10YR44		CL									1	0.00	0.05					0.022			< 0.02				5			
	2	B2	0.05	0.40	2.5Y44	O	CL				0.10	5.6	4.9																				
											0.30	4.4	3.0	a		2	0.20	0.40					0.034			< 0.02				2			
	3	2C1u	0.40	0.65	2.5Y2.5/1		CS				0.60	6.4	2.0			3	0.40	0.60	S0	Ps						0.068				42			
	4	3C2u	0.65	0.95	5Y41		ZLC				0.80	6.7	3.0																				
																4	0.80	0.95		Pc						0.343				214			
	5	3C3u	0.95	1.00	N30		CS				1.00	6.6	1.5																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10																										
3	0.40	0.50	0.197	123	0.16	98	0.297	3.6		0.03		0.031					0.048											
4	0.60	0.70	0.009	6	0.18	111	0.062	4.0		0.05		0.046					0.059											
5	0.90	1.10			0.01	8		5.2		0.02		0.070					0.094											
6	1.40	1.60			0.10	63		3.8		0.21		0.109					0.158											
8	2.30	2.70																										
4	0.80	1.00																										
9	2.80	3.00																										
11	3.80	4.00																										
14	5.10	5.30																										
18	7.30	7.60																										
21	9.30	9.60																										
2	0.05	0.12																										
3	0.30	0.50																										
4	0.80	1.00																										
5	1.30	1.50																										
1	0.00	0.05			0.01	9		5.2		0.02		0.073					0.088											
2	0.20	0.40	0.005	3	0.03	19	0.048	4.6		0.04		0.044					0.087											
3	0.40	0.60																										
4	0.80	0.95																										

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
28	1	A1	0.00	0.03	7.5YR31		CL																									
	2	B21	0.03	0.65	10YR53	P	LMC				0.10	6.8	5.4																			
											0.30	6.4	6.1																			
											0.60	6.4	6.7			3	0.50	0.60							< 0.02				2			
	3	B22	0.65	1.00	10YR53	P	ZLMC				0.80	6.3	6.2																			
											1.00	6.5	6.7			4	0.80	1.00							< 0.02				0			
	4	B23	1.00	1.20	5Y52	B	FSLMC																									
	5	C1u	1.20	1.45	5GY51		FSLMC				1.25	6.5	5.4																			
																6	1.30	1.45	S2	Pc					0.504				314			
	6	2C1	1.45	2.15	10YR42		KS				1.50	6.2	7.5																			
											1.75	6.5	8.2			7	1.60	1.90							< 0.02				2			
											2.00	6.8	8.5																			
	7	2C21	2.15	3.70	10YR54		KS				2.25	6.4	4.8																			
											2.50	6.9	7.3																			
											2.75	6.5	6.1																			
											3.00	6.9	5.8			9	2.80	3.10							< 0.02				2			
											3.25	6.5	6.5																			
											3.50	6.8	6.5																			
	8	3C1u	3.70	4.00	5GY51		KSLC				3.75	6.5	5.9																			
											4.00	6.6	2.8			11	3.80	4.00		Pc					0.176				110			
	9	4C1u	4.00	4.35	5Y52		KS				4.25	6.7	3.7			12	4.10	4.30		Ps					0.037				23			
	10	5C1u	4.35	5.75	5Y52	B	LMC				4.50	6.8	6.1																			
											4.75	7.1	6.5																			
											5.00	6.4	5.9																			
											5.25	6.8	6.7																			
											5.50	6.9	3.6			14	5.30	5.60		Pc					0.768				479			
											5.75	6.8	0.9																			
29	1	A1	0.00	0.18	10YR31		LC				0.10	7.9	7.7																			
	2	B21	0.18	0.50	10YR32	P	LC				0.30	7.9	7.9																			
	3	B22	0.50	0.90	10YR43	O	LC				0.60	8.0	7.8			3	0.50	0.70							< 0.02				3			
											0.80	7.9	6.8																			
	4	B23	0.90	1.20	10YR44	O	FSLC				1.00	7.5	7.2																			
	5	B24	1.20	1.50	2.5YR52	O	FSLMC				1.25	7.7	7.5																			
											1.50	7.6	6.7			5	1.30	1.50							< 0.02				2			
	6	C1	1.50	1.70	5YR52		FSLMC				1.60	7.5	6.5																			
	7	2C1	1.70	2.00	5Y51		SLMC				1.75	7.7	7.1																			
											2.00	7.2	6.3			7	1.80	2.00							< 0.02				0			
	8	2C2	2.00	2.35	7.5YR44		KS				2.25	7.2	7.7																			
	9	2C3	2.35	2.60	2.5YR32		KS				2.50	7.9	8.7																			
	10	2C4	2.60	2.90	2.5Y42		KS				2.75	7.9	8.8			10	2.60	2.90							< 0.02				0			
	11	2C5	2.90	5.90	10YR46		KS				3.00	8.1	8.1																			
											3.25	8.0	6.7																			
											3.50	7.6	6.5																			
											3.75	7.7	6.8																			
											4.00	7.1	6.6			12	3.90	4.20							< 0.02				6			
											4.25	7.8	6.5																			
											4.50	7.8	7.2																			
											4.75	7.1	7.8																			
											5.00	7.2	7.8																			
											5.25	7.6	6.4																			
											5.50	7.6	6.5																			
											5.75	7.7	6.5																			
	12	3C1u	5.90	6.20	10Y41		LMC				6.00	7.6	1.8																			
																15	6.00	6.20	S6	Pc					2.085				1300			
	13	4C1u	6.20	6.75	5GY71		KS				6.25	7.2	1.8																			
											6.50	8.5	6.8			16	6.30	6.60		Ps					0.113				70			
											6.75	8.7	6.9																			
	14	5C1	6.75	7.45	10G71		KSMC				7.00	7.4	6.8																			
											7.25	7.2	6.2																			
																18	7.30	7.45							< 0.02				2			
30	1	A1	0.00	0.10	2.5Y32		CL				0.01	7.1	6.5																			
											0.10	7.0	7.2			1	0.00	0.10							< 0.02				6			
	2	B2	0.10	0.60	2.5YR43	O	LC				0.20	7.0	7.2																			
											0.30	7.0	7.2																			
											0.40	7.1	7.2																			
											0.50	6.8	5.7																			
											0.60	6.8	7.2			3	0.50	0.60							< 0.02				2			
	3	Cu	0.60	0.80	10Y31		ZLC				0.70	7.2	5.0																			
											0.80	7.2	3.5			4	0.60	0.80	S1	Pc					0.12				75			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
3	0.50	0.60																										
4	0.80	1.00																										
6	1.30	1.45																										
7	1.60	1.90																										
9	2.80	3.10																										
11	3.80	4.00																										
12	4.10	4.30																										
14	5.30	5.60																										
3	0.50	0.70																						0.74	0.24	148		
5	1.30	1.50																										
7	1.80	2.00																										
10	2.60	2.90																						< 0.5	0.05	32		
12	3.90	4.20																										
15	6.00	6.20																										
16	6.30	6.60																						< 0.5	0.05	34		
18	7.30	7.45																										
1	0.00	0.10																										
3	0.50	0.60																										
4	0.60	0.80																										

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
31	1	A1	0.00	0.25	10YR31	B	CL				0.10	5.5	3.0																				
											0.25	6.2	3.8																				
	2	B21	0.25	0.60	10YR53	B	LMC				0.50	4.7	3.9	a																			
																3	0.50	0.60								< 0.02				3			
	3	2B21	0.60	1.05	2.5Y62	B	SLMC				0.75	4.1	3.4	a		4	0.70	0.90								< 0.02				2			
											1.00	4.2	3.3	a																			
	4	2B22ia	1.05	1.60	5Y62	B	SLC	J			1.25	3.6	3.0	A	A2	5	1.10	1.30						0.038		< 0.02				2			
											1.50	3.8	3.1	A																			
	5	2C	1.60	2.00	2.5Y51		SLC				1.75	3.8	3.0	A		7	1.70	1.90								< 0.02				4			
	6	3C	2.00	2.20	10Y51		LC				2.05	4.0	1.5	A		8	2.00	2.20	S3	Pc		0.796					0.670	0.670	0.781		418	418	487
32	1	A1	0.00	0.05	10YR21	B	ZLC				0.01	6.1	5.2			1	0.00	0.05								< 0.02				11			
	2	B21	0.05	0.23	10YR51	B	ZLC				0.10	6.3	4.9																				
	3	B22	0.23	0.72	2.5Y51	B	ZLC				0.30	6.6	6.2																				
																3	0.30	0.40								< 0.02				11			
											0.60	6.3	6.3																				
	4	C1u	0.72	0.85	5Y51	B	ZLC				0.80	6.2	5.4			5	0.72	0.85								0.027				17			
	5	C2u	0.85	1.10	5Y41		ZLC				1.00	6.4	1.4			6	0.85	1.05	S1	Pc						0.682				425			
	6	C3u	1.10	1.40	5Y41		ZLC				1.40	6.6	1.3			7	1.20	1.40		Pc						3.343				2085			
33	1	A1	0.00	0.20	10YR41		FSCL				0.10	5.4	3.0																				
	2	B21	0.20	0.50	10YR42		FSLC				0.30	5.6	2.8																				
																2	0.30	0.40								< 0.02				1			
	3	B22	0.50	1.10	10YR43		ZLC				0.60	5.1	3.6																				
											0.80	4.8	3.7	a																			
											1.00	4.7	3.5	a		4	0.80	1.00								< 0.02				0			
	4	B23	1.10	1.40	10YR53	B	ZLC				1.25	5.0	4.0	a																			
	5	B24	1.40	1.80	10YR62	B	ZMC				1.50	5.5	5.9																				
											1.75	5.2	3.6			6	1.60	1.80								< 0.02				1			
	6	B25	1.80	2.10	10YR52	O	ZLMC				2.00	5.1	3.8			7	1.80	2.00								< 0.02				7			
	7	2C1	2.10	2.30	2.5Y51		SLC				2.25	5.6	3.7			8	2.10	2.30								< 0.02				5			
	8	3C2u	2.30	2.60	2.5Y51		SCL				2.50	6.4	1.6			9	2.30	2.50	S3	Pl						0.452				282			
	9	4C3u	2.60	2.70	2.5Y51		S				2.70	6.5	1.5			10	2.60	2.70		Ps						0.37				231			
34	1	A1	0.00	0.10	10YR31		CL				0.05	5.5	2.4																				
	2	B21	0.10	0.20	5Y51	B	LMC				0.11	5.5	2.4			2	0.10	0.20								< 0.02				12			
	3	B22	0.20	0.35	5Y41	B	LMC				0.30	6.3	2.4																				
	4	2A1	0.35	0.72	2.5Y31	B	ZLMC				0.60	6.6	2.8			4	0.50	0.70								0.049				31			
	5	2B1	0.72	1.00	5Y41	B	ZLC				0.80	6.7	2.9																				
											1.00	6.7	2.6																				
	6	2B2	1.00	1.28	2.5Y51		ZLC									6	1.00	1.20								0.058				36			
											1.25	6.9	2.6																				
	7	3Cu	1.28	1.65	10Y51	Y	SLC				1.50	6.6	2.7			7	1.40	1.60								0.032				20			
35	1	A11	0.00	0.10	7.5YR32		LC				0.01	5.1	3.6																				
											0.10	5.3	3.6																				
	2	A12	0.10	0.35	10YR42		LC				0.30	5.1	4.0																				
	3	B21	0.35	0.55	10YR61	R	MC																										
	4	B22	0.55	1.00	10YR62	R	MHC				0.60	5.0	3.6	a																			
											0.80	5.1	3.6			3	0.60	0.80								< 0.02				1			
											1.00	5.0	4.0	a																			
	5	B23	1.00	1.50	10YR62	Y	MHC									5	1.00	1.20								< 0.02				3			
											1.25	5.1	4.0																				
											1.50	5.2	4.3																				
	6	B24	1.50	2.00	10YR61	Y	HC				1.75	5.9	5.1			7	1.60	1.80								< 0.02				1			
											2.00	5.9	5.3																				
	7	B25	2.00	2.40	10YR62	R	SHC				2.25	6.1	5.4																				
	8	B26	2.40	2.70	2.5Y71	B	SHC				2.50	6.0	5.4																				
	9	2B	2.70	3.20	2.5Y71	B	SMC				2.75	6.1	5.0																				
											3.00	6.0	5.0			11	2.90	3.10								< 0.02				1			
	10	3B21	3.20	3.50	2.5Y61	R	HC				3.25	6.1	4.8																				
											3.50	5.9	5.5																				
	11	3B22	3.50	4.00	2.5Y71	B	SHC				3.75	5.2	5.0			13	3.70	3.90								< 0.02				1			
											4.00	5.4	5.1																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
3	0.50	0.60			0.05	30		4.3		0.01		0.029					0.030												
4	0.70	0.90			0.04	23		4.4		0.01		0.013					0.017												
5	1.10	1.30	0.004	2	0.03	19	0.017	4.4		0.01		0.015					0.023												
7	1.70	1.90			0.04	22		4.3		0.01		0.022					0.032												
8	2.00	2.20	0.016	10	0.11	69	0.097	3.9	2.4	0.08	0.75	0.045	0.050	0.005	0.004	2	0.075	0.079	0.004	0.005	3	0.009	6						
1	0.00	0.05																											
3	0.30	0.40																											
5	0.72	0.85																											
6	0.85	1.05																											
7	1.20	1.40																											
2	0.30	0.40																											
4	0.80	1.00			0.09	59		3.9		0.01		0.048					0.024												
6	1.60	1.80			0.05	29		4.4		0.01		0.083					0.079												
7	1.80	2.00			0.06	38		4.2		0.01		0.063					0.086												
8	2.10	2.30																											
9	2.30	2.50																											
10	2.60	2.70																											
2	0.10	0.20																											
4	0.50	0.70																											
6	1.00	1.20																											
7	1.40	1.60																											
3	0.60	0.80			0.04	22		4.2		0.03		0.010					0.073												
5	1.00	1.20																											
7	1.60	1.80																											
11	2.90	3.10																											
13	3.70	3.90																											

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Depth Upp	Depth Low	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Depth Upp	Depth Low	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
36	1	A11	0.00	0.12	10YR31		IP				0.10	5.2	4.4			1	0.00	0.10					0.134			0.052				32			
	2	A12	0.12	0.20	5Y2.5/1		IP				0.20	6.0	4.3			2	0.12	0.20	S0	Pl						0.087				54			
	3	B21	0.20	0.80	10YR41		ZMC				0.30	7.1	4.6																				
											0.60	6.9	3.9			3	0.50	0.60		Pc						0.13				81			
											0.80	7.1	1.3																				
	4	B22u	0.80	2.50	N40		FSLC				1.00	6.6	1.6			4	0.80	1.00		Pc						1.741				1086			
											1.25	6.3	1.5																				
											1.50	6.4	1.7																				
											1.75	6.7	1.7																				
											2.00	6.9	1.9			6	1.80	2.00		Pc						2.297				1433			
											2.25	7.2	2.0																				
											2.50	7.9	2.9																				
	5	C1u	2.50	3.00	N40		SLC				2.75	7.0	1.7			8	2.60	2.80		Pc						0.451				281			
											3.00	6.0	5.9																				
	6	2C2	3.00	3.60	5Y62	B	LKS				3.25	6.6	5.9																				
											3.50	6.5	5.7			9	3.30	3.50								< 0.02				1			
	7	2C3	3.60	4.25	N50		CKS				3.75	7.1	6.1																				
											4.00	7.3	6.1																				
											4.25	6.9	5.9																				
	8	3C4	4.25	4.50	2.5Y54	L	SCL				4.50	6.8	5.5			11	4.30	4.50								< 0.02				1			
37	1	A1	0.00	0.10	2.5Y43		CL				0.10	5.4	3.9																				
	2	B1	0.10	0.30	2.5Y43		CL				0.30	6.1	5.2																				
	3	B21	0.30	0.50	2.5Y54		LC																										
	4	B22	0.50	1.10	10YR54	D	MC				0.60	6.5	5.4																				
											0.80	6.7	5.8																				
											1.00	7.0	6.6																				
	5	B23	1.10	1.40	10YR58	P	LMC				1.25	7.4	8.5																				
	6	B24	1.40	2.00	10YR58	D	LC				1.50	7.4	8.1																				
											1.75	7.4	8.1			6	1.70	1.90								< 0.02				0			
											2.00	7.6	8.1																				
	7	B25	2.00	2.70	10YR58	D	LC				2.25	7.6	8.4																				
											2.50	7.6	6.6			7	2.30	2.50								< 0.02				1			
	8	2B21	2.70	3.25	10Y61	O	MC				2.75	7.9	6.5																				
											3.00	7.7	6.3			8	2.90	3.10								< 0.02				0			
											3.25	7.4	6.3																				
38	1	A11	0.00	0.15	10YR32	O	LC				0.10	5.3	3.4																				
	2	A12	0.15	0.30	10YR22	O	LMC				0.30	4.5	3.1	a																			
	3	B21	0.30	0.60	10YR41	O	MC				0.60	5.0	2.7	a																			
	4	B22	0.60	0.90	2.5Y31	O	MHC				0.80	5.1	2.8																				
	5	B23i	0.90	1.15	2.5Y41	O	LMC				1.00	5.3	2.6			5	0.90	1.10								< 0.02				2			
	6	B24i	1.15	1.30	10YR46	G	MC				1.25	4.6	3.0	a		6	1.15	1.30							0.158	< 0.02				1			
	7	B25	1.30	1.60	2.5Y41	O	MC				1.50	5.8	3.3			7	1.40	1.60								< 0.02				1			
	8	C	1.60	2.00	2.5Y51		KSLC				1.75	6.4	3.5																				
											2.00	6.7	2.8			8	1.80	2.00								< 0.02				6			
	9	2C	2.00	2.70	5Y41		KS				2.25	6.7	3.2			9	2.20	2.40								< 0.02				9			
											2.50	6.6	2.7																				
	10	3Cu	2.70	4.80	5GY41		KS				2.75	7.0	2.7																				
											3.00	6.2	4.0																				
											3.25	6.0	1.5																				
											3.50	6.1	1.6			10	2.70	3.60	S3	Ps						1.386				864			
											3.75	6.3	1.4																				
											4.00	5.8	2.0																				
											4.25	6.2	1.8																				
											4.50	5.8	2.0			11	4.20	4.70		Ps						0.722				450			
	11	4B2	4.80	5.80	5Y61	O	SHC				5.00	5.7	3.5			12	4.90	5.10								< 0.02				5			
											5.25	5.8	4.0																				
											5.50	6.2	2.3																				
											5.75	6.4	4.4																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A+s\text{-}Mg_A$	$a\text{-}Ca_A+a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10			0.08	51		4.6		0.20		0.161					0.314												
2	0.12	0.20																											
3	0.50	0.60																											
4	0.80	1.00																											
6	1.80	2.00																											
8	2.60	2.80																											
9	3.30	3.50																											
11	4.30	4.50																											
6	1.70	1.90																						0.73	0.23	146			
7	2.30	2.50																											
8	2.90	3.10																											
5	0.90	1.10			0.10	63		3.9		0.01		0.009					0.024												
6	1.15	1.30	0.005	3	0.15	94	0.021	3.7		0.01		0.015					0.034												
7	1.40	1.60																											
8	1.80	2.00																											
9	2.20	2.40																											
10	2.70	3.60																											
11	4.20	4.70																											
12	4.90	5.10			0.06	40		3.8		0.01		0.028					0.068												

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
39	1	A1	0.00	0.30	10YR42	B	LC				0.10	5.3	3.0																			
											0.30	6.1	4.0																			
	2	B21	0.30	0.95	10YR41	B	MC				0.60	6.2	3.9			3	0.50	0.60							< 0.02				3			
											0.80	5.4	2.7																			
	3	B22i	0.95	1.30	2.5Y51	O	MC				1.00	4.9	2.7	a																		
											1.25	4.6	2.7	a		5	1.10	1.30						0.106	< 0.02				1			
	4	B23i	1.30	1.70	5Y41	B	MC				1.50	4.6	3.0	a		6	1.40	1.60							< 0.02				5			
	5	C1i	1.70	1.85	5Y41	B	ZCL				1.75	4.4	2.4	a		7	1.70	1.85							0.025				16			
	6	C2i	1.85	2.20	N40		ZCL				2.00	5.1	1.6			8	1.90	2.10	S2	Pl					0.862				538			
	7	C3u	2.20	3.95	N40		ZCL				2.25	5.8	1.4																			
											2.50	6.2	1.7																			
											2.75	6.2	1.6																			
											3.00	6.3	1.9			10	2.80	3.00		Pl					1.266				790			
											3.25	6.2	2.0																			
											3.50	6.4	2.0																			
											3.75	6.4	1.6																			
																12	3.80	3.95		Pl					1.703				1062			
	8	2C1u	3.95	4.25	5Y53		KS				4.00	6.8	1.4																			
																13	4.00	4.20		Ps					0.324				202			
											4.25	6.7	5.2																			
	9	2C2	4.25	4.50	5Y64		KS				4.50	6.4	5.7			14	4.30	4.50							< 0.02				6			
40	1	M1	0.00	0.30	10YR42	O	LC				0.10	5.7	3.9																			
											0.30	6.3	4.7																			
	2	M2	0.30	0.65	10YR31	O	SLC				0.60	6.3	4.4																			
	3	B21b	0.65	1.25	7.5YR42	G	FSLC				0.80	6.1	4.4																			
											1.00	6.1	4.1																			
											1.25	5.6	4.7																			
	4	B22b	1.25	2.25	7.5YR43	G	FSLC				1.50	5.6	5.1																			
											1.75	6.0	5.0																			
											2.00	6.1	4.1																			
											2.25	5.9	4.6																			
	5	B23b	2.25	3.35	7.5YR43	O	SCL				2.50	5.8	4.5																			
											2.75	5.8	4.6																			
											3.00	6.2	4.4																			
											3.25	5.7	5.4																			
	6	B24b	3.35	3.70	7.5YR43	G	FSLC				3.50	5.7	4.8																			
	7	B25b	3.70	4.15	2.5Y52	O	SLC				3.75	5.8	5.6																			
											4.00	6.0	4.3			10	3.80	4.00							< 0.02				4			
	8	2C	4.15	4.35	N40	O	SLC				4.25	6.1	2.0			11	4.15	4.35							< 0.02				2			
	9	3C	4.35	6.00	2.5Y41		KS				4.50	6.1	1.3																			
											4.75	6.5	1.7																			
											5.50	6.5	3.0			12	4.50	6.00							0.022				14			
41	1	A1	0.00	0.30	10YR42	O	CL				0.10	6.5	4.7			1	0.00	0.10							0.029				18			
											0.30	6.4	6.2																			
	2	B21	0.30	0.70	2.5Y42	O	LC				0.60	6.3	7.0			3	0.50	0.60							< 0.02				2			
	3	B22	0.70	1.05	2.5Y52	O	LC				0.80	6.3	6.9																			
											1.00	6.2	5.1			4	0.80	1.00							< 0.02				3			
	4	C1u	1.05	1.40	10Y51		LC				1.25	6.3	1.7			5	1.20	1.40	S2	Pc					2.874				1793			
	5	2C2u	1.40	2.00	N40		FSCL				1.50	6.1	2.3																			
											1.75	6.1	2.0			6	1.70	1.90		Pl					0.884				551			
											2.00	6.2	1.4																			
	6	2C3u	2.00	2.40	N40		CLFS				2.25	6.5	1.5			7	2.10	2.30		Pl					1.47				917			
	7	3C4u	2.40	2.60	5Y41		LS				2.50	7.5	1.5			8	2.40	2.60		Ps					0.373				233			
	8	4C5	2.60	4.00	5Y41		KS				2.75	7.2	1.4			9	2.70	2.90		Ps					0.133				83			
											3.25	6.7	5.4																			
											3.75	7.1	5.1			10	3.40	3.80							< 0.02				12			
42	1	M1	0.00	0.95	10YR41	L	CL				0.10	4.5	3.0	a																		
											0.30	4.2	2.1	a		2	0.20	0.30					0.044		< 0.02				1			
											0.60	4.1	2.6	a																		
											0.80	5.5	2.1																			
	2	2A1	0.95	1.30	N20		ZMC				1.00	5.7	1.9			4	0.95	1.10							< 0.02				6			
											1.25	5.8	3.2																			
	3	2A2	1.30	1.55	5Y41		LMC				1.50	4.5	3.0	a		5	1.30	1.50							< 0.02				6			
	4	2B2	1.55	2.30	5Y51	O	MC				1.75	3.8	2.8	A	A2																	
											2.00	3.8	2.9	A		6	1.80	2.00					0.106		< 0.02				1			
											2.25	4.0	3.1	A																		
	5	3B2	2.30	3.00	2.5YR46	O	MHC				2.50	3.5	2.5	A																		
											2.75	3.8	2.8	A																		
											3.00	4.1	3.0	a		8	2.80	3.00					0.194		< 0.02				1			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS														Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
3	0.50	0.60																										
5	1.10	1.30	0.008	5	0.10	60	0.055	3.8		0.04		0.046					0.047											
6	1.40	1.60			0.09	54		3.9		0.02		0.034					0.035											
7	1.70	1.85			0.09	54		3.9		0.02		0.030					0.031											
8	1.90	2.10			0.10	60		3.7		0.06		0.032					0.035											
10	2.80	3.00																										
12	3.80	3.95																										
13	4.00	4.20																										
14	4.30	4.50																										
10	3.80	4.00																										
11	4.15	4.35																										
12	4.50	6.00																										
1	0.00	0.10																										
3	0.50	0.60																										
4	0.80	1.00																										
5	1.20	1.40																										
6	1.70	1.90																										
7	2.10	2.30																										
8	2.40	2.60																										
9	2.70	2.90																										
10	3.40	3.80																										
2	0.20	0.30			0.04	27		4.5		0.01		0.035					0.021											
4	0.95	1.10																										
5	1.30	1.50			0.05	31		4.2		0.01		0.005					0.028											
6	1.80	2.00	0.001	0	0.10	65	0.031	3.6		0.03		0.003					0.035											
8	2.80	3.00	0.005	3	0.19	117	0.042	3.3		0.04		0.015					0.067											

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
43	1	A11	0.00	0.30	5Y2.5/1		ZCL				0.10	5.2	2.2																			
											0.30	5.6	2.9			2	0.20	0.30								< 0.02				4		
	2	A12	0.30	0.55	5Y41		SLC				0.40	5.4	2.7																			
																3	0.40	0.50								< 0.02				1		
	3	2B2	0.55	1.00	10YR62	O	S				0.60	4.9	1.9	a																		
											0.80	4.6	2.4	a		4	0.70	0.90					0.020			< 0.02				6		
											1.00	4.2	2.4	a																		
	4	3B21	1.00	1.32	2.5Y71	B	CS				1.25	4.7	2.8	a																		
	5	3B22	1.32	1.85	2.5Y71	B	SLC				1.50	4.4	2.4	a																		
											1.75	4.5	2.9	a																		
	6	3B24	1.85	2.90	2.5Y61	Y	MHC									7	1.90	2.10								< 0.02				0		
											2.25	4.2	2.5	a		8	2.20	2.40								< 0.02				6		
											2.50	4.3	3.0	a																		
											2.75	4.1	2.6	a																		
44	1	A1	0.00	0.25	7.5YR32		FSCL				0.10	5.7	3.8																			
	2	2B21ia	0.25	0.60	2.5Y54	Y	FSCL	J			0.30	4.5	3.3	a																		
																2	0.30	0.50						0.502		< 0.02				1		
											0.60	4.1	3.1	a																		
	3	2B22ia	0.60	1.20	2.5Y53	Y	CLFS	J			0.80	4.0	3.1	A	A1																	
											1.00	3.8	3.1	A		3	0.80	1.00						0.529		< 0.02				6		
	4	2B23ia	1.20	1.55	5Y62	Y	LS				1.25	4.3	3.3	a																		
											1.50	4.3	3.1	a		4	1.30	1.50						0.174		< 0.02				0		
	5	3B21	1.55	2.00	5Y81	Y	FSMHC	J			1.75	4.8	3.8	a																		
											2.00	4.9	3.6	a		5	1.80	2.00								< 0.02				1		
	6	3B22	2.00	3.00	5Y81	O	SMC				2.25	4.6	3.8	a																		
											2.50	4.9	4.1	a		6	2.30	2.50								< 0.02				3		
											2.75	5.0	4.8	a																		
											3.00	5.1	4.2			7	2.80	3.00					0.021			< 0.02				3		
45	1	A1	0.00	0.25	N20		ZLC				0.10	5.5	3.1			1	0.00	0.10	S0	Pc						0.191				119		
	2	B2	0.25	0.65	5Y51	O	ZLC				0.30	5.3	3.0																			
																2	0.30	0.50					0.029			< 0.02				5		
											0.60	5.1	2.8																			
	3	C	0.65	1.50	5Y41		CS				0.80	4.7	3.5	a																		
											1.00	4.8	3.1	a		3	0.80	1.00					0.010			< 0.02				2		
											1.25	4.3	2.7	a																		
											1.50	4.4	3.2	a		4	1.30	1.50					0.023			< 0.02				6		
	4	2D	1.50	3.70	5YR82	G	ZLC				1.75	4.3	2.2	a																		
											2.00	4.0	2.2	A	A2	5	1.80	2.00								< 0.02				6		
											2.25	4.3	2.2	a																		
											2.50	4.1	2.3	a																		
											2.75	4.4	2.2	a																		
											3.00	4.6	2.2	a		7	2.80	3.00						0.061		< 0.02				2		
											3.25	4.1	2.6	a																		
											3.50	4.2	2.5	a																		
	5	2D2	3.70	3.95	5Y51	O	SLC				3.75	4.4	2.7	a																		
																9	3.75	3.95						0.075		< 0.02				2		
	6	2D3	3.95	4.15	10YR21		SCL				4.00	4.4	1.7	a																		
																10	4.00	4.10								< 0.02				2		
	7	2D4	4.15	5.20	5Y61	O	FSLC				4.25	4.3	1.7	a																		
											4.50	4.4	2.5	a																		
											4.75	4.3	2.6	a																		
											5.00	4.6	2.5	a		12	4.80	5.00								< 0.02				6		
											5.20	4.6	2.6	a																		
46	1	A1	0.00	0.45	10YR21		CL				0.10	3.9	1.9	A	A0																	
											0.30	4.2	2.8	a		2	0.20	0.30	S0	Pl						0.084				52		
	2	B21i	0.45	0.70	5Y51	O	LC				0.60	4.2	2.0	a		3	0.50	0.60						0.286		< 0.02				4		
	3	B22ia	0.70	1.10	5Y51	B	FSLC	J			0.80	3.9	2.3	A																		
											1.00	3.5	2.1	A		4	0.80	1.00						0.629		< 0.02				0		
	4	B23ia	1.10	1.50	5Y51	Y	FSCL	J			1.25	3.9	2.2	A																		
																5	1.30	1.50						0.638		< 0.02				2		
	5	B	1.50	2.50																												
	6	2B2	2.50	3.00	10YR54	L	FSLC				2.51	3.8	1.5	A																		
											2.75	4.8	2.4	a																		
											3.00	5.1	2.6	A		6	2.80	3.00								< 0.02				6		

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS														Neutralising Capacity					
No	Upp Depth	Low	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.20	0.30			0.10	60		4.1		0.00		0.021					0.060												
3	0.40	0.50			0.05	33		4.0		0.00		0.009					0.039												
4	0.70	0.90			0.01	6		4.7		0.00		0.001					0.004												
7	1.90	2.10			0.06	40		3.8		0.01		0.002					0.016												
8	2.20	2.40			0.10	61		3.7		0.03		0.004					0.024												
2	0.30	0.50	0.461	287	0.04	25	0.647	4.1		0.03		0.047					0.016												
3	0.80	1.00	0.468	292	0.05	32	0.654	3.8		0.03		0.035					0.019												
4	1.30	1.50	0.158	98	0.02	10	0.22	4.3		0.01		0.008					0.008												
5	1.80	2.00			0.06	40		3.9		0.02		0.041					0.069												
6	2.30	2.50			0.03	17		4.4		0.02		0.033					0.071												
7	2.80	3.00			0.02	10		4.5		0.02		0.032					0.072												
1	0.00	0.10																											
2	0.30	0.50			0.02	13		4.6		0.05		0.038					0.084												
3	0.80	1.00			0.01	4		5.1		0.04		0.024					0.063												
4	1.30	1.50			0.01	8		4.7		0.06		0.025					0.068												
5	1.80	2.00			0.04	25		4.3		0.04		0.033					0.084												
7	2.80	3.00	0.008	5	0.05	31	0.043	3.7		0.03		0.033					0.068												
9	3.75	3.95	0.007	4	0.07	41	0.046	3.8		0.04		0.047					0.092												
10	4.00	4.10			0.14	88		4.0		0.04		0.045					0.085												
12	4.80	5.00			0.03	19		4.2		0.04		0.039					0.067												
2	0.20	0.30			0.43	271		4.4		0.28		0.026					0.022												
3	0.50	0.60	0.080	50	0.20	125	0.216	3.6		0.11		0.024					0.029												
4	0.80	1.00	0.534	333	0.09	59	0.767	3.6		0.06		0.020					0.029												
5	1.30	1.50	0.566	353	0.07	43	0.804	3.7		0.05		0.016					0.025												
6	2.80	3.00			0.07	41		3.8		0.07		0.020					0.033												

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
47	1	A1	0.00	0.12	2.5Y2.5/1		CLFS				0.10	5.0	2.2	a		1	0.00	0.10						0.052		< 0.02				1			
	2	B21	0.12	0.35	2.5Y41	B	CLFS				0.30	4.4	3.1	a		2	0.20	0.30								< 0.02				6			
	3	B22ia	0.35	0.85	2.5Y61	O	SL	J			0.60	4.4	3.4	a		3	0.50	0.70						0.014		< 0.02				2			
											0.80	6.0	4.6																				
	4	B23	0.85	1.25	5Y62	O	CS				1.00	6.3	5.2																				
																4	1.00	1.20								< 0.02				2			
											1.25	6.7	5.8																				
	5	B24	1.25	1.90	10Y51	P	SCL			SS	1.50	6.5	5.9			5	1.30	1.50								< 0.02				1			
											1.75	7.4	6.4			6	1.70	1.90								< 0.02				1			
	6	C1u	1.90	3.52	10Y41	R	LS			SS	2.00	7.6	5.1																				
											2.25	7.6	1.9																				
											2.50	7.7	2.5																				
											2.75	7.9	2.1			8	2.60	2.80	S2	Ps						0.274				171			
											3.50	7.5	1.5																				
	7	2D1u	3.52	3.75	10Y51	Y	MC				3.75	7.6	5.8			9	3.52	3.75		Pc						0.42				262			
	8	2D2u	3.75	3.95	10Y51	R	MC									10	3.75	3.95		Pc						0.592				369			
	9	2D3u	3.95	4.35	10GY51	R	MHC				4.00	8.1	7.2																				
											4.25	8.4	8.4			11	4.10	4.30								0.028				17			
48	1	A1	0.00	0.18	10YR22	O	CLFS				0.10	4.5	3.0	a																			
	2	B21	0.18	0.35	2.5Y52	O	CLFS				0.30	4.5	3.2	a																			
	3	B22	0.35	0.55	2.5Y51	O	CLFS				0.50	4.3	2.9	a		3	0.40	0.50								< 0.02				1			
	4	B23ia	0.55	1.30	2.5Y51	Y	SCL	J			0.80	4.3	2.7	a		4	0.70	0.90							0.125	< 0.02				1			
											1.00	4.3	2.7	a																			
																5	1.00	1.20							0.115	< 0.02				6			
											1.25	4.3	3.0	a																			
	5	B24	1.30	1.70	2.5Y51	B	SCL				1.50	5.0	3.4	a		6	1.40	1.60						0.015		< 0.02				6			
	6	C1u	1.70	2.30	10Y31		SCL				1.75	6.6	1.8																				
											2.00	7.2	2.3			7	1.90	2.10	S2	Pl						0.403				251			
											2.25	7.6	2.2																				
	7	2C2u	2.30	3.60	10Y31		CLS			SS	2.50	7.7	2.2			8	2.30	2.50		Pl						0.305				190			
											2.75	8.1	2.5																				
											3.00	8.0	2.4																				
											3.25	7.9	2.2																				
											3.50	7.9	2.2			10	3.30	3.50		Pl						0.732				457			
	8	3C3u	3.60	5.75	N30		ZLC			SS	3.75	8.2	2.2																				
											4.00	8.4	2.1																				
											4.25	8.2	2.4																				
											4.50	8.4	2.3			12	4.30	4.50		Pc						0.994				620			
											4.75	8.2	2.0																				
											5.00	8.4	2.1																				
											5.25	8.4	2.1																				
											5.50	8.2	2.1			14	5.30	5.50		Pc						0.841				525			
											5.75	8.1	2.3																				
	9	4C4	5.75	5.90	N30		CLS				5.90	7.7	2.3																				
49	1	A1	0.00	0.35	10YR21		CLFS				0.10	6.2	4.4																				
											0.30	7.3	5.5																				
	2	B21	0.35	1.10	5Y63	O	CLFS				0.60	7.3	5.8																				
											0.80	7.4	6.1																				
											1.00	7.4	6.2																				
	3	B22	1.10	1.75	5Y62	O	LFS				1.25	7.5	6.3																				
											1.50	7.7	6.0																				
											1.75	7.6	6.3																				
	4	2B	1.75	2.20	10YR46	R	CLS				2.00	7.1	5.7			7	1.90	2.10								< 0.02				7			
	5	3Cu	2.20	2.60	10Y51	O	CLS				2.25	6.9	1.9																				
											2.50	6.9	2.3			8	2.30	2.50	S3	Pl						0.618				385			
	6	4D	2.60	3.00	10Y71	O	SLMC				2.75	6.7	5.6			9	2.70	2.90								< 0.02				2			
											3.00	6.6	6.4																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10			0.05	31		4.5		0.03		0.121					0.056												
2	0.20	0.30			0.04	28		4.2		0.03		0.050					0.034												
3	0.50	0.70	0.119	74	0.01	7	0.183	4.6		0.02		0.040					0.028												
4	1.00	1.20																											
5	1.30	1.50																											
6	1.70	1.90																						4.69	1.50	937			
8	2.60	2.80																						4.14	1.33	827			
9	3.52	3.75																						0.95	0.30	190			
10	3.75	3.95																											
11	4.10	4.30																						0.91	0.29	182			
3	0.40	0.50			0.03	19		4.2		0.03		0.031					0.032												
4	0.70	0.90	0.102	64	0.02	13	0.167	4.3		0.03		0.032					0.034												
5	1.00	1.20	0.089	56	0.02	10	0.16	4.3		0.04		0.035					0.040												
6	1.40	1.60			0.01	4		5.0		0.04		0.042					0.049												
7	1.90	2.10																											
8	2.30	2.50																						5.31	1.70	1061			
10	3.30	3.50																						4.51	1.45	901			
12	4.30	4.50																						1.95	0.62	390			
14	5.30	5.50																						1.65	0.53	330			
7	1.90	2.10																											
8	2.30	2.50																											
9	2.70	2.90																											

Field Morphology Summary														Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
50	1	A1	0.00	0.20	10YR21	R	IP				0.10	6.2	2.7																			
																1	0.10	0.20	S0	Pl						0.079				49		
	2	B21	0.20	0.65	10YR41	R	SCL				0.30	6.6	4.5																			
																2	0.30	0.40								< 0.02				4		
											0.60	6.6	3.6																			
	3	C1	0.65	1.20	N40		SCL				0.80	6.6	3.6																			
											1.00	6.3	3.2			4	0.80	1.00								< 0.02				6		
	4	C2u	1.20	2.00	10Y31		SCL			SS	1.25	6.1	1.3																			
											1.50	6.4	1.6			5	1.30	1.50		Pl						1.052				656		
											1.75	6.7	2.1																			
											2.00	7.0	2.2																			
	5	C3u	2.00	2.40	10Y31		CLFS			SS	2.25	7.2	2.5			7	2.10	2.30		Pl						0.318				198		
	6	2C4u	2.40	3.20	5GY31		ZLC				2.50	7.2	2.7																			
																8	2.50	2.70		Pc						0.341				213		
											2.75	7.0	3.0																			
											3.00	7.6	4.0																			
	7	2C5u	3.20	3.45	5GY31		FSLC				3.25	6.9	1.3			10	3.20	3.40		Pc						3.217				2006		
	8	2C6u	3.45	3.70	5GY31		SLC				3.50	6.8	1.2																			
	9	3C7u	3.70	3.90	10YR51		SL				3.75	6.6	1.3			12	3.70	3.90		Pl						1.296				808		
	10	D	3.90	4.50	2.5Y44	R	LMC				4.00	6.7	3.6																			
											4.25	6.7	5.7			13	4.10	4.30								< 0.02				7		
											4.50	6.6	6.4																			
51	1	A	0.00	0.30	7.5YR2.5/1	G	CLFS				0.10	5.1	2.1																			
											0.30	4.8	3.1	a		2	0.20	0.30								< 0.02				7		
	2	B21	0.30	0.60	2.5Y52	R	SCL									3	0.40	0.50						0.013		< 0.02				1		
											0.60	4.8	3.3	a																		
	3	B22ia	0.60	1.00	5Y51	Y	SC	J			0.80	5.3	4.1			4	0.70	0.90					0.013			< 0.02				6		
											1.00	5.7	4.6																			
	4	B23ia	1.00	1.20	5Y51	O	SCL	J								5	1.00	1.20					0.002			< 0.02				0		
	5	B24	1.20	1.90	5Y51	G	SCL				1.25	6.4	6.0																			
											1.50	6.5	6.1																			
											1.75	6.5	5.6			7	1.70	1.90								< 0.02				5		
	6	B25	1.90	2.20	5Y41	G	SCL				2.00	6.5	5.6																			
																8	2.00	2.20								< 0.02				3		
	7	D1	2.20	2.45	10YR48	R	KSLMC				2.25	6.5	5.3			9	2.20	2.40								< 0.02				1		
	8	D2	2.45	2.90	N80	O	SLMC				2.50	6.3	5.4																			
											2.75	6.2	6.2																			
											2.90	6.2	6.4																			
52	1	A1	0.00	0.20	10YR42		LFS				0.10	5.0	3.3	a																		
	2	B1	0.20	0.40	10YR56	O	CFS				0.30	5.8	4.0																			
	3	B21i	0.40	0.70	2.5Y64	O	CFS				0.60	5.3	4.3																			
	4	B22i	0.70	1.00	2.5Y63	O	CFS				0.80	4.5	3.3	a																		
											1.00	4.0	3.0	A	A1																	
	5	B23i	1.00	1.70	2.5Y62	B	CFS				1.25	3.6	2.7	A		5	1.10	1.30						0.061		< 0.02				4		
											1.50	3.5	2.7	A																		
	6	B24ia	1.70	1.90	2.5Y62	Y	SCL	J			1.75	3.6	2.4	A		7	1.70	1.90						0.104		< 0.02				6		
	7	B25ia	1.90	3.00	2.5Y62	Y	SCL	J			2.00	3.2	2.1	A																		
											2.25	3.2	1.9	A																		
											2.50	3.4	2.1	A																		
																9	2.50	2.70						0.103		< 0.02				6		
											2.75	3.6	1.8	A																		
											3.00	5.0	2.1	a																		
	8	2B1ia	3.00	3.30	5Y41	B	FSLC	J			3.25	5.7	2.8			10	3.10	3.30						0.071		< 0.02				2		
	9	2B2u	3.30	3.60	5Y41	G	SLC				3.50	5.5	1.4			11	3.40	3.60	S4	Pc						1.059				660		
	10	3Du	3.60	4.10	N60	B	SMC				3.75	5.5	2.8																			
											4.00	5.5	2.2			12	3.80	4.00								0.081				51		
	11	4D	4.10	4.50	5Y61	R	SMHC				4.25	5.5	2.5			13	4.20	4.40					0.024			< 0.02				2		
											4.50	5.6	3.0																			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS														Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.10	0.20																										
2	0.30	0.40																										
4	0.80	1.00																										
5	1.30	1.50																										
7	2.10	2.30																						2.48	0.79	496		
8	2.50	2.70																										
10	3.20	3.40																										
12	3.70	3.90																										
13	4.10	4.30																										
2	0.20	0.30																										
3	0.40	0.50			0.01	7		4.8		0.02		0.047					0.043											
4	0.70	0.90	0.007	4	0.00	2	0.024	5.7		0.02		0.047					0.039											
5	1.00	1.20	0.068	43	0.00	1	0.115	6.2		0.02		0.072					0.038											
7	1.70	1.90																										
8	2.00	2.20																										
9	2.20	2.40																										
5	1.10	1.30	0.003	2	0.05	32	0.013	4.0		0.01		0.023					0.007											
7	1.70	1.90	0.044	28	0.05	31	0.074	3.9		0.02		0.009					0.005											
9	2.50	2.70	0.032	20	0.06	38	0.063	3.7		0.02		0.011					0.008											
10	3.10	3.30	0.019	12	0.05	31	0.147	3.9		0.12		0.203					0.035											
11	3.40	3.60			0.07	46		3.7		0.40		0.484					0.045											
12	3.80	4.00			0.05	34		4.0		0.06		0.082					0.060											
13	4.20	4.40			0.02	13		4.6		0.05		0.045					0.048											

Field Morphology Summary															Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
53	1	A11	0.00	0.05	10YR31		LC				0.05	5.8	3.1																			
	2	A12	0.05	0.35	10YR31	R	SLC				0.10	5.9	3.0																			
											0.30	6.5	4.3																			
	3	B21	0.35	0.60	10YR41	O	MC				0.60	6.0	4.4																			
	4	B22	0.60	1.00	10YR52	O	SCL				0.80	5.8	4.5			4	0.70	0.90								< 0.02				4			
											1.00	5.8	4.4																			
	5	B23	1.00	1.40	10YR52	O	KSCL				1.25	5.6	4.3			5	1.10	1.30								< 0.02				2			
	6	B24	1.40	2.60	5Y51	O	SLC				1.50	5.6	4.1			6	1.40	1.60								< 0.02				1			
											1.75	6.0	5.0																			
											2.00	5.8	5.2																			
											2.25	5.8	5.0																			
											2.50	5.8	5.5			8	2.30	2.50								< 0.02				1			
	7	2B21	2.60	3.50	5Y42	B	LS			SS	2.75	6.3	4.4																			
											3.00	6.5	5.0			9	2.80	3.00								< 0.02				1			
											3.25	7.1	6.4			10	3.20	3.40									0.009				6		
											3.50	7.4	6.5																			
	8	2B22	3.50	3.75	5Y41		SL			SS	3.75	6.7	3.0			11	3.55	3.75	S4	Pl					0.131				82			
	9	2B23	3.75	4.00	10Y41	B	SLC				4.00	8.2	8.1			12	3.80	4.00									0.006				4		
	10	3B21	4.00	4.50	10GY51	O	SLMC				4.25	7.5	7.8			13	4.20	4.40									0.088				55		
											4.50	7.2	8.0																			
54	1	A1	0.00	0.30	7.5YR2.5/1	R	LC				0.10	4.9	3.5	a																		
											0.30	5.2	4.1			2	0.20	0.30					0.021		< 0.02				2			
	2	B21	0.30	0.60	10YR52	B	KSMC				0.60	4.6	3.6	a																		
	3	B22	0.60	0.90	2.5Y61	B	KSMC				0.80	4.1	3.2	a		4	0.60	0.80					0.017		< 0.02				2			
	4	2B21	0.90	1.20	2.5Y62	B	KSMC				1.00	4.5	3.3	a																		
	5	2B22	1.20	2.30	5Y62	B	CKS				1.25	5.1	3.2																			
											1.50	5.6	3.7			6	1.30	1.50					0.017		< 0.02				7			
											1.75	5.9	4.4																			
											2.00	6.0	3.2																			
											2.25	4.9	3.5	a		8	2.10	2.30						0.016	< 0.02				8			
	6	2B23	2.30	3.00	2.5Y61	B	CKS				2.50	5.2	5.5																			
											2.75	6.8	2.0																			
											3.00	5.9	2.4			10	2.80	3.00	S3	Ps					0.167				104			
	7	3C1	3.00	4.20	5Y52		SLC			SS	3.25	7.0	7.4																			
											3.50	7.1	7.7			11	3.20	3.50									0.038				24		
											3.75	7.2	7.0																			
											4.00	7.1	6.7			12	3.80	4.10									0.087				54		
	8	4C	4.20	6.00	N40		ZLMC			SS	4.25	7.5	6.3																			
											4.50	7.7	3.0																			
											4.75	7.1	3.5																			
											5.00	7.2	2.2			14	4.80	5.00		Pc					1.881				1173			
											5.25	7.2	7.4																			
											5.50	7.8	7.7																			
											5.75	8.1	4.2																			
											6.00	7.5	7.4			16	5.80	6.00		Pc						1.179	0.523		735		326	
55	1	A1	0.00	0.30	10YR31		CL				0.10	6.0	3.1																			
	2	B21	0.30	0.80	10YR54	R	MC									3	0.40	0.50							< 0.02				6			
											0.60	4.4	3.2	a																		
											0.80	4.3	3.2	a																		
	3	B22	0.80	1.50	2.5Y62	O	CS				1.00	4.3	3.0	a		5	0.90	1.10							< 0.02				6			
											1.25	3.8	3.1	A	A1																	
											1.50	3.9	2.7	A		6	1.30	1.50						0.064	< 0.02				6			
	4	2B21	1.50	2.35	5Y51	Y	SL	J			1.75	4.0	2.7	A																		
											2.00	4.7	3.0	a		7	1.80	2.00						0.127	< 0.02				6			
											2.25	5.3	2.8																			
	5	2B22	2.35	3.00	10Y41	B	SL				2.50	6.0	3.6																			
											2.75	6.1	2.8			9	2.70	2.90							0.049				31			
											3.00	6.3	2.0																			
	6	3C1	3.00	3.80	10Y41		SCL			SS	3.25	6.4	2.3																			
											3.50	6.5	3.9																			
											3.75	6.8	3.1			11	3.60	3.80	S3	Pl					0.297				185			
	7	4C1	3.80	4.50	N40		SLMC				4.00	6.8	4.4																			
											4.25	6.9	2.6																			
											4.50	6.3	3.5			13	4.30	4.50		Pc					0.961				599			
56	1	A1	0.00	0.25	10YR31		LC				0.10	6.6																				
	2	B1	0.25	0.55	7.5YR44	P	LC				0.30	4.6		a																		
	3	B2	0.55	1.20	7.5YR72	Y	MHC				0.60	4.1		a																		
											0.80	3.9		A	A1	3	0.60	0.80						0.117	< 0.02				1			
											1.00	4.0		A																		
											1.20	4.2		a																		

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
4	0.70	0.90																										
5	1.10	1.30																										
6	1.40	1.60																										
8	2.30	2.50																										
9	2.80	3.00																										
10	3.20	3.40						9.2	6.9	0.01	0.01	0.196	0.288	0.092	0.074	46	0.014	0.026	0.012	0.016	10	0.089	56				0.573	0.18	114
11	3.55	3.75																										
12	3.80	4.00						7.4	6.6	0.01	0.01	0.096	0.090	0.000	0.000	0	0.046	0.047	0.001	0.001	1	0.000	0				0.286	0.09	57
13	4.20	4.40						6.9	7.2	0.01	0.10	0.158	0.240	0.082	0.066	41	0.113	0.108	0.000	0.000	0	0.059	37				0.429	0.14	86
2	0.20	0.30			0.02	11		5.2		0.01		0.053					0.043												
4	0.60	0.80	0.001	0	0.01	9	0.014	4.9		0.01		0.028					0.041												
6	1.30	1.50			0.00	3		5.4		0.02		0.023					0.037												
8	2.10	2.30			0.00	2		5.7		0.02		0.020					0.031												
10	2.80	3.00																										
11	3.20	3.50						9.0	6.7	0.07	0.11	0.201	0.246	0.045	0.036	22	0.083	0.111	0.028	0.037	23	0.073	45				0.432	0.14	86
12	3.80	4.10						9.2	6.8	0.06	0.15	0.230	0.375	0.145	0.116	72	0.069	0.090	0.021	0.028	17	0.144	90				0.72	0.23	144
14	4.80	5.00																										
16	5.80	6.00						8.3	2.7	0.15	1.33	0.220	0.513	0.293	0.234	146	0.183	0.311	0.128	0.169	105	0.403	251						
3	0.40	0.50			0.06	38		4.4		0.01		0.081					0.028												
5	0.90	1.10			0.03	21		4.4		0.01		0.030					0.015												
6	1.30	1.50	0.019	12	0.04	22	0.041	4.3		0.02		0.032					0.021												
7	1.80	2.00	0.090	56	0.03	17	0.14	4.4		0.02		0.039					0.033												
9	2.70	2.90																										
11	3.60	3.80																										
13	4.30	4.50																										
3	0.60	0.80	0.013	8	0.10	64	0.087	4.1		0.07		0.019					0.032												

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S s-S_{NAS}	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	a-S_{CR} mol H^+/t a-22B	a-S_{POS} mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
57	1	M1	0.00	0.15	2.5Y61	G	LC				0.10	6.4	5.0																				
	2	2A1	0.15	0.30	2.5Y61		CLS				0.20	6.4	3.5			2	0.20	0.30								< 0.02				3			
	3	2B21	0.30	0.75	2.5Y54	G	CLS				0.40	6.3	2.6																				
											0.60	6.1	3.2			3	0.50	0.60								< 0.02				2			
	4	2B22	0.75	1.08	2.5Y53	G	SLC				0.80	5.9	2.6																				
											1.00	5.7	3.2			4	0.80	1.00								< 0.02				2			
	5	2B23	1.08	1.35	10YR56	G	SLC				1.25	4.7	3.5	a																			
	6	2B24	1.35	1.50	5YR46	B	SMC				1.50	4.2	3.2	a		6	1.35	1.50								< 0.02				0			
	7	2B25	1.50	1.90	2.5Y61	R	SMHC				1.75	4.4	3.2	a																			
58	1	A11	0.00	0.20	5Y31		SLC				0.10	5.1	2.3			1	0.00	0.20								< 0.02				4			
	2	A12	0.20	0.45	2.5Y31		FSLC				0.30	5.2	2.7			2	0.20	0.40						0.074		< 0.02				2			
	3	B21	0.45	0.85	2.5Y52	O	SLC				0.60	5.3	3.7																				
											0.80	5.2	3.6			3	0.60	0.80						0.033		< 0.02				2			
	4	B22	0.85	1.20	5Y51	R	MHC				1.00	5.0	3.0	a		4	0.90	1.10								< 0.02				5			
	5	B23	1.20	1.65	N50	R	MC				1.25	4.9	3.3	a																			
											1.50	4.5	4.1	a		5	1.30	1.50								< 0.02				0			
	6	B24	1.65	2.60	5Y71	Y	SMC				1.75	4.8	3.8	a																			
											2.00	4.8	4.0	a		6	1.80	2.00								< 0.02				6			
											2.25	4.7	3.6	a																			
											2.50	4.9	4.5	a																			
	7	B25	2.60	2.80	10YR56	G	FSLC				2.75	4.7	3.8	a																			
59	1	A1p	0.00	0.30	2.5Y2.5/1		SL				0.10	5.7	2.5																				
											0.30	5.6	3.3																				
	2	A2	0.30	0.70	2.5Y42		CS				0.60	5.4	5.0																				
	3	B21	0.70	1.10	2.5Y64	P	CS				0.80	5.4	5.3																				
											1.00	5.1	4.7			4	0.80	1.00						0.013		< 0.02				1			
	4	B22	1.10	1.50	10YR64	L	SL				1.25	4.7	3.2	a																			
											1.50	4.3	3.5	a		5	1.30	1.50								< 0.02				0			
	5	C1	1.50	2.10	5Y51	B	CLS				1.75	4.5	3.3	a																			
											2.00	4.9	3.5	a		6	1.80	2.00								< 0.02				6			
	6	C2	2.10	3.00	5Y41	B	CLS				2.25	5.5	3.2																				
											2.50	5.4	3.4			7	2.30	2.50								< 0.02				0			
											2.75	5.7	2.9																				
											3.00	5.6	3.0			8	2.80	3.00								< 0.02				2			
	7	2B	3.00	4.00	5Y71	R	SMC				3.25	4.7	3.2	a																			
											3.50	4.9	3.5	a		9	3.30	3.50								< 0.02				1			
											3.75	4.8	3.1	a																			
											4.00	4.7	3.3	a																			
	8	D	4.00	4.60	5Y71	G	SMHC				4.25	4.9	3.2	a																			
											4.50	5.0	3.1	a																			
60	1	A1	0.00	0.30	10YR21		FSCL				0.10	5.1	2.1																				
											0.30	4.6	2.5	a		2	0.20	0.30					0.064		< 0.02				4			
	2	B21	0.30	0.65	2.5Y51	O	FSL				0.60	4.2	2.8	a		3	0.50	0.60						0.047	< 0.02				3			
	3	B22	0.65	0.95	2.5Y52	Y	FSL	J			0.80	4.2	2.7	a		4	0.70	0.90						0.142	< 0.02				0			
	4	B23	0.95	1.50	2.5Y52	O	FSL				1.00	4.0	2.7	A	A1																		
											1.25	4.3	2.8	a		5	1.20	1.40					0.011		< 0.02				0			
											1.50	5.7	4.2																				
	5	B3	1.50	2.30	5Y41	B	LS									6	2.00	2.20								< 0.02				4			
											2.25	6.6	2.4																				
	6	C1u	2.30	2.95	10Y31		LS		SS		2.50	7.2	3.0																				
																7	2.50	2.70	S3	Ps						0.171				107		
											2.75	7.2	3.4																				
	7	C2u	2.95	3.80	10Y31		CLFS		SS		3.00	7.3	3.2																				
											3.25	7.5	3.0																				
											3.50	7.6	3.7																				
																9	3.50	3.70		Pl						0.645				402		
											3.75	7.4	3.9																				
	8	C3u	3.80	5.40	10Y31		FSLC		SS		4.00	7.6	3.0																				
											4.25	7.5	2.5																				
											4.50	7.7	2.2																				
											4.75	7.3	2.1			11	4.60	4.80		Pc						0.603	0.014			376		9
											5.00	7.0	2.6																				
											5.25	7.4	1.8																				
	9	C4u	5.40	6.00	10Y31		ZLMC		SS		5.50	7.4	2.4																				
											5.75	7.7	1.8			13	5.60	5.80		Pc						1.061				662		
											6.00	7.7	1.9																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.20	0.30																										
3	0.50	0.60																										
4	0.80	1.00																										
6	1.35	1.50			0.07	43		4.2		0.05		0.001					0.023												
1	0.00	0.20			0.08	51		4.3		0.04		0.047					0.076												
2	0.20	0.40			0.07	44		4.5		0.06		0.020					0.063												
3	0.60	0.80			0.03	18		4.7		0.03		0.005					0.022												
4	0.90	1.10			0.05	32		4.4		0.06		0.010					0.044												
5	1.30	1.50			0.06	39		4.1		0.06		0.023					0.103												
6	1.80	2.00			0.05	30		4.1		0.03		0.038					0.147												
4	0.80	1.00			0.01	7		4.7		0.00		0.007					0.005												
5	1.30	1.50			0.03	20		4.2		0.01		0.013					0.030												
6	1.80	2.00			0.03	18		4.2		0.01		0.017					0.030												
7	2.30	2.50																										
8	2.80	3.00																										
9	3.30	3.50																										
2	0.20	0.30			0.06	36		4.5		0.01		0.077					0.041												
3	0.50	0.60	0.014	9	0.03	17	0.037	4.3		0.02		0.029					0.025												
4	0.70	0.90	0.121	75	0.02	13	0.183	4.3		0.02		0.025					0.025												
5	1.20	1.40	0.003	2	0.01	7	0.041	4.6		0.04		0.036					0.041												
6	2.00	2.20																										
7	2.50	2.70						9.0	6.8	0.07	0.25	0.228	0.436	0.208	0.166	104	0.051	0.065	0.014	0.018	12	0.185	115				0.506	0.16	101
9	3.50	3.70						8.5	7.1	0.18	0.82	0.308	0.913	0.605	0.484	302	0.157	0.186	0.029	0.038	24	0.522	326				0.584	0.19	117
11	4.60	4.80						8.5	5.1	0.17	0.78	0.232	0.694	0.462	0.370	231	0.139	0.167	0.028	0.037	23	0.407	254						
13	5.60	5.80																						1.51	0.48	302			

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth (m)	pH_F 23Af	pH_{FOX} 23Bf	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth (m)	Low Depth (m)	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5 %S s-TAA	pH KCl <4.5 %S $s\text{-}S_{NAS}$	<=5.5 pH KCl <6.5 %S s-TAA	<=4.5 pH KCl <5.5 %S s-TAA	pH KCl <4.5 %S $s\text{-}S_{NAS}$	S_{CR} %S 22B	S_{POS} %S 23Ee	s-TSA %S s-23H	s-TPA %S s-23G	$a\text{-}S_{CR}$ mol H^+/t a-22B	$a\text{-}S_{POS}$ mol H^+/t a-23Ee	TSA mol H^+/t 23H	TPA mol H^+/t 23G
61	1	A1	0.00	0.15	10YR21		CL				0.10	4.2	2.5	a		1	0.00	0.10						0.149		0.035				22			
	2	B21	0.15	0.50	10YR51	O	FSLC				0.30	4.3	2.9	a																		
																2	0.30	0.40							0.061	< 0.02				2			
	3	B22	0.50	0.80	10YR51	O	FSLC				0.60	5.3	4.0																			
																3	0.60	0.70								< 0.02				2			
											0.80	5.6	2.1																			
	4	C1	0.80	1.35	2.5Y41		FSLC				1.00	5.6	4.5																			
																4	1.00	1.20								< 0.02				9			
											1.25	5.4	3.3																			
	5	C2	1.35	2.75	10Y31		CLFS				1.50	6.0	1.5																			
											1.75	5.9	1.5																			
											2.00	6.1	1.6			5	1.80	2.00	S2	Pl						1.125				702			
											2.25	6.4	1.8																			
											2.50	6.4	2.1																			
											2.75	6.5	2.1																			
	6	C3	2.75	3.00	10Y2.5/1		SCL				3.00	6.7	2.0			7	2.80	3.00		Pl						0.645				402			
	7	D1	3.00	3.30	5GY51	B	FSMC			SS						8	3.00	3.20		Pc						0.160				100			
											3.25	7.5	6.3																			
	8	D2	3.30	3.95	5GY51	B	MC				3.50	7.5	8.1																			
																9	3.50	3.70								< 0.02				3			
											3.75	7.7	8.4																			
	9	D3	3.95	4.45	5GY51	B	MHC				4.00	8.4	8.4																			
											4.25	7.8	8.3																			
											4.45	7.5	7.8																			
62	1	A1	0.00	0.20	2.5Y2.5/1		CL				0.10	4.5	3.4	a		1	0.00	0.10						0.120		< 0.02				7			
	2	B21	0.20	0.70	2.5Y51	O	LS				0.30	4.7	3.5	a																		
																2	0.30	0.40						0.003		< 0.02				0			
											0.60	5.3	4.3																			
																3	0.60	0.70								< 0.02				2			
	3	C1	0.70	1.30	5Y51		LS				0.80	5.8	4.4																			
											1.00	5.4	4.8			4	0.90	1.00								< 0.02				4			
											1.25	5.8	3.7																			
	4	C2	1.30	1.95	5Y41		SL			SS	1.50	5.8	2.1			5	1.30	1.50	S2	Pl						0.277				173			
											1.75	5.9	1.8																			
																6	1.75	1.95		Pl						0.396				247			
	5	C3	1.95	2.50	5Y41		FSLC				2.00	6.0	2.0																			
											2.25	5.7	2.2			7	2.10	2.30		Pc						0.437				273			
											2.50	5.4	3.0																			
	6	C4	2.50	2.80	5Y41		CLFS				2.75	5.8	2.1			8	2.60	2.80		Pl						0.247				154			
	7	D	2.80	3.00	10YR46		SLC				3.00	5.8	4.9			9	2.80	3.00								< 0.02				4			
63	1	A1	0.00	0.22	10YR21		FSLC				0.10	4.5	2.8	a																		
	2	B2	0.22	1.30	10YR62	P	LS				0.30	4.7	4.0	a																		
											0.60	4.1	3.3	a		2	0.50	0.60						0.012		< 0.02				1			
											0.80	4.8	3.5	a																		
											1.00	4.2	3.4	a		3	0.80	1.00						0.013		< 0.02				2			
											1.25	4.7	3.9	a																		
	3	C1	1.30	3.25	N40		CS			SS	1.50	6.5	4.8																			
																4	1.50	1.70	S2	Ps						0.151				94			
											1.75	6.6	1.7																			
											2.00	6.9	2.1																			
											2.25	7.0	2.0																			
											2.50	7.0	2.0																			
																6	2.50	2.70		Ps						0.193				120			
											2.75	7.3	2.2																			
											3.00	7.2	2.2																			
											3.25	7.4	2.1																			
	4	C2	3.25	4.00	10Y31		FSLC			SS	3.50	7.6	3.8																			
											3.75	7.4	3.1			8	3.60	3.80		Pc						0.500	0.237			312	148		
											4.00	7.3	2.0																			
	5	C3	4.00	4.50	10Y31		ZLMC				4.25	7.4	2.1			9	4.20	4.40		Pc						0.556	0.202			347	126		
											4.50	7.4	2.5																			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10	0.029	18	0.11	71	0.275	5.0		0.24		0.116					0.338												
2	0.30	0.40	0.021	13	0.04	23	0.117	4.3		0.09		0.042					0.109												
3	0.60	0.70																											
4	1.00	1.20																											
5	1.80	2.00																											
7	2.80	3.00																											
8	3.00	3.20						8.6	7.1	0.06	0.22	0.281	0.446	0.165	0.132	82	0.108	0.129	0.021	0.028	17	0.160	100				0.722	0.23	144
9	3.50	3.70																						< 0.5	0.05	32			
1	0.00	0.10			0.11	68		4.9		0.18		0.109					0.231												
2	0.30	0.40			0.00	2		5.4		0.04		0.024					0.052												
3	0.60	0.70						6.6		0.04		0.030					0.064												
4	0.90	1.00																											
5	1.30	1.50																											
6	1.75	1.95																											
7	2.10	2.30																											
8	2.60	2.80																											
9	2.80	3.00																											
2	0.50	0.60	0.002	1	0.01	7	0.024	4.7		0.02		0.044					0.019												
3	0.80	1.00	0.020	12	0.01	6	0.053	4.7		0.03		0.045					0.020												
4	1.50	1.70																											
6	2.50	2.70						8.9	4.5	0.05	0.25	0.133	0.184	0.051	0.041	25	0.027	0.041	0.014	0.018	12	0.059	37						
8	3.60	3.80						7.9	2.8	0.12	0.62	0.130	0.174	0.044	0.035	22	0.104	0.155	0.051	0.067	42	0.102	64						
9	4.20	4.40						8.2	3.2	0.15	0.70	0.188	0.269	0.081	0.065	40	0.128	0.201	0.073	0.096	60	0.161	100						

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
64	1	M	0.00	0.25	2.5Y62	B	MC				0.05	4.3	3.2	a																			
											0.10	4.2	3.1	a		1	0.00	0.10							0.233	< 0.02				11		
	2	2A1b	0.25	0.55	7.5YR2.5/1		LC				0.30	4.2	3.1	a																		
																2	0.30	0.40						0.633		0.094			59		
	3	2B21b	0.55	0.85	2.5Y61	R	MC				0.60	5.3	3.3																			
											0.80	4.1	2.7	a		3	0.60	0.80							0.296	< 0.02				2		
	4	3B21b	0.85	1.60	2.5Y66	Y	MHC	J			1.00	4.0	2.6	A	A1	4	0.90	1.10							0.314	< 0.02				1		
											1.25	4.2	2.8	a																		
											1.50	4.1	2.9	a		5	1.30	1.50							0.294	< 0.02				2		
	5	3B22b	1.60	2.10	2.5Y51	R	HC	J			1.75	4.5	2.8	a																		
											2.00	4.5	3.0	a		6	1.80	2.00							0.231	< 0.02				2		
	6	3B23b	2.10	2.40	2.5Y51	R	HC	J			2.25	4.0	3.0	A		7	2.20	2.40							0.229	< 0.02				2		
	7	3B24b	2.40	2.50	2.5Y51	R	HC	J			2.50	4.2	3.2	a		8	2.40	2.50							0.216	< 0.02				1		
65	1	A1	0.00	0.20	10YR31		SCL				0.05	5.9																				
											0.10	6.1																				
	2	A2	0.20	0.45	2.5Y63		KSCL				0.30	6.2																				
	3	B21	0.45	0.65	10YR66	R	LC				0.60	5.6																				
	4	B22	0.65	1.20	10R46	B	LMC				0.80	5.1																				
											1.00	4.6		a		4	0.80	1.00								< 0.02				1		
	5	B23	1.20	1.45	5Y71	R	LMC				1.25	4.8		a																		
66	1	A1	0.00	0.45	7.5YR31		LC				0.10	5.3	3.7																			
											0.30	4.9	4.0	a																		
	2	B21	0.45	0.65	2.5Y62	Y	MC				0.60	4.4	3.4	a		3	0.50	0.60							0.088	< 0.02				2		
	3	B22	0.65	0.85	2.5Y61	Y	LMC				0.80	4.2	3.5	a		4	0.70	0.80							0.076	< 0.02				2		
	4	B23	0.85	1.05	2.5Y62	R	FSL				1.00	4.3	3.2	a		5	0.85	1.05							0.070	< 0.02				1		
	5	B24	1.05	1.60	N70	R	MHC				1.25	4.2	3.2	a																		
											1.50	4.6	3.3	a		6	1.30	1.50							0.119	< 0.02				6		
	6	B25	1.60	2.00	N70	R	MHC				1.75	4.4	3.5	a																		
											2.00	4.6	3.5	a		7	1.80	2.00								< 0.02				0		
67	1	A1	0.00	0.20	2.5Y2.5/1		CL				0.05	4.6	3.7	a																		
											0.10	4.5	3.0	a		1	0.00	0.10								< 0.02				5		
	2	B21i	0.20	0.45	2.5Y51	Y	CS				0.30	4.0	2.7	A	A0																	
																2	0.30	0.40							0.053	< 0.02				2		
	3	B22i	0.45	0.80	2.5Y52	Y	SC				0.60	3.9	3.5	A																		
																3	0.60	0.70						0.018		< 0.02			1		
											0.80	3.8	3.0	A																		
	4	B23i	0.80	1.15	2.5Y51	Y	CS				1.00	3.4	2.6	A		4	0.90	1.10							0.065	< 0.02				1		
	5	B24ia	1.15	1.75	5Y41	Y	CS	J			1.25	3.8	2.7	A																		
											1.50	4.0	2.2	A		5	1.40	1.60						0.014		< 0.02			0		
											1.75	5.7	2.1																			
	6	B25u	1.75	2.00	5BG31	Y	CS				2.00	6.4	1.8			6	1.80	2.00	S2	Ps						0.396				247		
	7	C1u	2.00	2.20	5BG31	Y	SLC				2.20	7.1	1.8			7	2.00	2.20		Pc						0.384				240		
	8	C2u	2.20	2.50	5BG31	Y	SLC			SS	2.50	7.6	5.6			8	2.30	2.50		Pc						0.487				304		
	9	Du	2.50	2.70	10B71	Y	SLMC				2.60	8.1	2.7			9	2.50	2.70								0.037				23		
68	1	A1	0.00	0.20	7.5YR2.5/1		CL				0.05	6.3	3.5																			
											0.10	4.9	3.4	a																		
																1	0.10	0.20						0.143		< 0.02			10		
	2	B21	0.20	0.40	2.5Y61	D	CS				0.30	4.3	2.5	a		2	0.25	0.35						0.028		< 0.02			2		
	3	B22ia	0.40	0.60	2.5Y61		CS				0.50	4.1	2.7	a		3	0.45	0.55						0.021		< 0.02			2		
	4	B23ia	0.60	0.90	2.5Y61	O	CS	J			0.80	3.8	2.8	A	A1	4	0.70	0.80						0.018		< 0.02			1		
	5	B24ia	0.90	1.20	2.5Y51	Y	CS	J			1.00	3.6	2.1	A		5	0.95	1.15							0.087	< 0.02				2		
	6	B25i	1.20	1.70	10Y51		CS				1.25	3.6	2.2	A																		
											1.50	4.0	2.5	A		6	1.30	1.50						0.012		< 0.02			1		
	7	C1u	1.70	2.10	10Y41		SLC				1.75	5.8	1.6																			
											2.00	6.3	1.8			7	1.80	2.00	S2	Pc						0.506				316		
	8	C2u	2.10	2.70	10Y41		SLC			SS	2.25	7.0	1.6																			
											2.50	7.0	1.9			8	2.30	2.50		Pc						0.405				253		
69	1	A1	0.00	0.35	7.5YR32		SL				0.05	6.1																				
											0.10	5.4																				
											0.30	5.7																				
	2	A2e	0.35	0.50	2.5Y62		CS				0.40	5.8																				
	3	B21	0.50	0.70	2.5Y51	O	SLMC				0.60	5.1																				
	4	B22	0.70	1.00	2.5Y61	R	FSLMC				1.00	4.4		a																		
	5	B23	1.00	1.50	2.5Y81	R	FSMHC				1.25	4.5		a		5	1.20	1.40								< 0.02				6		
											1.50	4.5		a																		

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																		Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10	0.026	16	0.19	118	0.098	4.0		0.06		0.024					0.024													
2	0.30	0.40	0.071	44	0.54	336	0.424	4.6		0.33		0.023					0.018													
3	0.60	0.80	0.026	16	0.27	167	0.131	3.5		0.10		0.022					0.033													
4	0.90	1.10	0.128	80	0.18	115	0.212	3.5		0.04		0.015					0.029													
5	1.30	1.50	0.056	35	0.23	146	0.111	3.4		0.04		0.014					0.039													
6	1.80	2.00	0.014	8	0.21	133	0.062	3.5		0.04		0.015					0.060													
7	2.20	2.40	0.016	10	0.21	131	0.071	3.5		0.05		0.015					0.064													
8	2.40	2.50	0.017	10	0.20	124	0.078	3.5		0.06		0.016					0.068													
4	0.80	1.00			0.08	47		4.0		0.02		0.011					0.036													
3	0.50	0.60	0.006	4	0.08	49	0.044	4.1		0.04		0.028					0.038													
4	0.70	0.80	0.011	7	0.06	38	0.048	3.9		0.03		0.021					0.036													
5	0.85	1.05	0.016	10	0.05	33	0.064	3.9		0.04		0.013					0.027													
6	1.30	1.50	0.005	3	0.10	65	0.06	3.7		0.05		0.029					0.104													
7	1.80	2.00			0.08	52		3.9		0.04		0.038					0.139													
1	0.00	0.10			0.17	109		4.2		0.07		0.119					0.078													
2	0.30	0.40	0.007	4	0.04	27	0.061	4.2		0.05		0.033					0.040													
3	0.60	0.70	0.002	1	0.02	10	0.034	4.5		0.03		0.031					0.037													
4	0.90	1.10	0.031	19	0.03	21	0.104	4.0		0.06		0.037					0.042													
5	1.40	1.60	0.062	38	0.01	9	0.13	4.5		0.05		0.044					0.048													
6	1.80	2.00																												
7	2.00	2.20																												
8	2.30	2.50						8.4	7.0	0.15	0.63	0.356	0.788	0.432	0.346	216	0.066	0.073	0.007	0.009	6	0.355	221				0.305	0.10	61
9	2.50	2.70						8.7	6.8	0.04	0.07	0.179	0.223	0.044	0.035	22	0.061	0.068	0.007	0.009	6	0.044	28				0.396	0.13	79
1	0.10	0.20			0.13	79		4.6		0.12		0.089					0.112													
2	0.25	0.35	0.001	0	0.02	15	0.052	4.7		0.05		0.041					0.065													
3	0.45	0.55	0.003	2	0.02	11	0.054	4.7		0.05		0.041					0.069													
4	0.70	0.80	0.143	89	0.02	10	0.246	4.5		0.06		0.038					0.065													
5	0.95	1.15	0.067	42	0.02	11	0.149	4.3		0.06		0.040					0.068													
6	1.30	1.50	0.022	14	0.01	7	0.086	4.6		0.06		0.045					0.076													
7	1.80	2.00																												
8	2.30	2.50						8.6	6.7	0.12	0.53	0.317	0.709	0.392	0.314	196	0.083	0.090	0.007	0.009	6	0.323	201				0.396	0.13	79
5	1.20	1.40			0.13	78		3.5		0.01		0.004					0.105													

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)					%S		%S			%S				mol H^+/t			
												23Af	23Bf									s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
70	1	A1	0.00	0.25	10YR21		LC				0.10	4.1	1.0	a		1	0.00	0.10							0.325	< 0.02				11			
	2	B21	0.25	0.40	2.5Y52	B	LMC				0.30	4.2	2.9	a																			
	3	B22	0.40	0.65	2.5Y53	B	LMC				0.60	4.4	2.9	a		3	0.50	0.60							0.110	< 0.02				1			
	4	B23	0.65	0.90	2.5Y53	R	SLC				0.80	4.3	2.8	a		4	0.70	0.90							0.101	< 0.02				0			
	5	2B1	0.90	1.40	2.5Y51	B	SCL				1.00	4.2	2.2	a																			
											1.25	4.2	2.0	a		5	1.10	1.30							0.089	< 0.02				6			
	6	2B2	1.40	1.70	10YR51	B	SCL				1.50	4.2	2.6	a																			
																6	1.50	1.70							0.072	< 0.02				0			
	7	C	1.70	2.15	10Y51	Y	MC				1.75	4.7	3.0	a																			
											2.00	4.7	2.7	a		7	1.80	2.00								< 0.02				6			
71	1	A1	0.00	0.30	10YR22		SCL				0.10	5.4	1.9																				
											0.30	5.7	3.0																				
	2	B21	0.30	0.60	10YR53	O	SCL				0.60	4.5	3.0	a																			
	3	B22	0.60	1.05	2.5Y62	O	SCL				0.80	3.8	2.6	A	A1	4	0.70	0.90							0.117	< 0.02				6			
											1.00	4.4	2.8	a																			
	4	B23ia	1.05	1.40	10YR61	Y	SCL	J			1.25	3.6	2.4	A		5	1.10	1.30							0.157	< 0.02				0			
	5	B24i	1.40	1.70	7.5YR41	B	SCL				1.50	3.5	2.1	A																			
																6	1.50	1.70							0.062	< 0.02				1			
	6	B25	1.70	2.10	10YR51	R	SCL				1.75	3.6	2.1	A																			
											2.00	4.5	1.5	a		7	1.80	2.00							0.035	< 0.02				1			
	7	C1	2.10	2.40	5GY31		SCL				2.25	4.9	1.5	a		8	2.20	2.40	S3	Pl			0.305			0.289				180			
	8	C2u	2.40	3.15	5GY31		SCL				2.50	5.3	1.4																				
																9	2.50	2.70		Pl						0.307				191			
											2.75	6.4	1.7																				
																10	2.90	3.10		Pl						0.381				238			
72	1	A1	0.00	0.15	10YR22		SLC				0.10	4.6	1.7	a		1	0.00	0.10								< 0.02				6			
	2	A3	0.15	0.55	10YR32	B	SLC				0.30	4.0	1.8	A	A0																		
	3	B21	0.55	1.00	10YR52	B	KSCL				0.60	3.7	2.9	A																			
											0.80	3.7	2.6	A		3	0.70	0.90							0.062	< 0.02				6			
											1.00	4.1	2.8	a																			
	4	B22	1.00	1.30	10YR62	B	KSCL				1.25	3.8	3.0	A		4	1.10	1.30					0.047			< 0.02				6			
	5	2B21	1.30	1.45	10YR71	B	CKS				1.35	4.1	2.8	a		5	1.30	1.45					0.031			< 0.02				6			
	6	2B22	1.45	1.55	10YR73	O	CKS				1.50	3.7	2.6	A		6	1.45	1.55					0.024			< 0.02				0			
	7	C1	1.55	1.70	5YR56	R	KSLMC									7	1.55	1.70							0.079	< 0.02				1			
	8	C2	1.70	2.00	2.5YR48	G	KSMHC				1.75	4.0	2.6	A																			
											1.95	4.0	2.4	A																			
73	1	O2	0.00	0.10	10YR22		LC				0.10	6.3	1.7			1	0.00	0.10								0.045				28			
	2	A1	0.10	0.40	10YR21		KSCL				0.30	6.4	2.4			2	0.20	0.30								0.02				12			
	3	C1	0.40	0.60	10YR61		CKS				0.60	6.4	1.8			3	0.50	0.60								0.028				17			
	4	C2	0.60	1.00	10YR51		CKS				0.80	6.3	1.7																				
											1.00	6.3	1.5			4	0.80	1.00	S1	Ps						0.039				24			
	5	C3	1.00	1.10	10YR51		CLKS									5	1.00	1.10								0.046				29			
	6	2C4u	1.10	1.55	2.5Y51		ZLC				1.25	6.3	1.9			6	1.20	1.40								0.062				39			
											1.50	6.3	0.9																				
	7	2C5u	1.55	4.20	10Y31		KSLMC				1.75	6.0	0.8																				
											2.00	4.7	1.5	a		7	1.80	2.00		Pc						2.11				1316			
											2.25	6.4	1.5																				
											2.50	5.8	0.8																				
											2.75	6.1	0.8																				
											3.00	6.1	0.8			9	2.80	3.00		Pc						2.505				1562			
											3.25	6.4	0.8																				
											3.50	6.6	0.8																				
											3.75	6.5	0.8																				
											4.00	6.6	0.8			11	3.80	4.00		Pc						3.362				2097			
											4.20	6.6	0.7																				
74	1	A11	0.00	0.10	10YR31		CL				0.10	5.1	3.2			1	0.00	0.10								0.029				18			
	2	A12	0.10	0.18	2.5Y2.5/1		CLFS									2	0.10	0.18								< 0.02				6			
	3	A3	0.18	0.30	2.5Y31		CLFS				0.30	5.1	3.2			3	0.20	0.30					0.057			< 0.02				1			
	4	B21	0.30	0.43	10YR51	P	SLC									4	0.30	0.40								< 0.02				1			
	5	B22	0.43	0.70	10YR51		SMC				0.60	4.6	2.9	a		5	0.50	0.60								< 0.02				4			
	6	B23	0.70	0.90	10YR51		SMHC				0.80	4.5	2.5	a		6	0.70	0.90								< 0.02				4			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
1	0.00	0.10	0.008	5	0.30	187	0.032	3.9		0.02		0.016					0.046												
3	0.50	0.60	0.003	2	0.11	66	0.016	4.0		0.01		0.019					0.027												
4	0.70	0.90	0.005	3	0.10	60	0.018	4.0		0.01		0.017					0.025												
5	1.10	1.30	0.015	9	0.06	40	0.046	4.0		0.03		0.007					0.010												
6	1.50	1.70	0.008	5	0.06	40	0.036	4.0		0.03		0.008					0.025												
7	1.80	2.00			0.08	52		3.9		0.02		0.026					0.122												
4	0.70	0.90	0.089	56	0.02	11	0.133	4.3		0.01		0.033					0.019												
5	1.10	1.30	0.137	85	0.02	13	0.202	4.4		0.02		0.033					0.025												
6	1.50	1.70	0.038	23	0.02	14	0.089	4.3		0.04		0.031					0.039												
7	1.80	2.00	0.006	4	0.03	17	0.063	4.2		0.06		0.033					0.046												
8	2.20	2.40			0.02	10		4.6		0.08		0.042					0.062												
9	2.50	2.70																											
10	2.90	3.10																											
1	0.00	0.10			0.17	109		4.2		0.02		0.085					0.077												
3	0.70	0.90	0.007	4	0.04	28	0.024	4.4		0.02		0.004					0.018												
4	1.10	1.30	0.001	0	0.04	23	0.011	4.5		0.01		0.004					0.018												
5	1.30	1.45	0.002	1	0.02	13	0.011	4.7		0.01		0.003					0.016												
6	1.45	1.55	0.003	2	0.02	15	0.021	4.5		0.02		0.003					0.012												
7	1.55	1.70	0.004	2	0.07	46	0.055	4.1		0.05		0.004					0.021												
1	0.00	0.10																											
2	0.20	0.30																											
3	0.50	0.60																											
4	0.80	1.00																											
5	1.00	1.10																											
6	1.20	1.40																											
7	1.80	2.00																											
9	2.80	3.00																											
11	3.80	4.00																											
1	0.00	0.10			0.18	113		4.2		0.01		0.017					0.044												
2	0.10	0.18			0.11	70		4.2		0.00		0.004					0.020												
3	0.20	0.30			0.05	34		4.5		0.00		0.002					0.013												
4	0.30	0.40			0.06	35		4.2		0.00		0.002					0.022												
5	0.50	0.60			0.09	57		3.9		0.00		0.003					0.027												
6	0.70	0.90			0.08	50		3.8		0.01		0.004					0.025												

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
75	1	A1	0.00	0.20	2.5Y2.5/1	P	LC				0.05	5.8	2.5																				
											0.10	5.8	2.2																				
											0.20	5.5	2.4																				
	2	B21	0.20	0.40	5Y41	R	MC				0.30	5.0	3.1	a																			
																2	0.30	0.40							< 0.02				2			
	3	B22	0.40	0.80	5Y41	O	MHC				0.60	4.8	2.8	a		3	0.50	0.70							< 0.02				2			
											0.80	4.5	2.9	a																			
	4	B23	0.80	1.20	5Y41	O	MHC				1.00	4.7	3.1	a		4	0.90	1.10							< 0.02				3			
	5	B24	1.20	1.45	2.5Y41	O	MC				1.25	4.6	3.3	a		5	1.20	1.40							< 0.02				3			
	6	B25	1.45	1.65	2.5Y41	O	LMC				1.50	4.4	3.2	a																			
	7	C1	1.65	1.85	2.5Y41	O	LMC				1.75	4.4	3.3	a		7	1.65	1.85							< 0.02				1			
	8	C2	1.85	2.00	2.5Y51	O	LMC				1.95	4.3	3.3	a																			
	9	C3	2.00	2.10	2.5Y41	O	SLC				2.10	4.4	3.5	a		9	2.00	2.10							< 0.02				4			
76	1	A11	0.00	0.09	5Y32		CLS				0.05	5.8	1.8			1	0.00	0.09	S0	Pl					0.127				79			
	2	A12	0.09	0.20	N2.5/0		CLS				0.10	4.8	1.7	a																			
																2	0.10	0.20		Pl					0.061				38			
	3	A3	0.20	0.30	N2.5/0		SLC				0.25	5.0	1.8	a		3	0.20	0.30							< 0.02				9			
	4	B21	0.30	0.50	N50	O	LMC				0.35	4.2	2.3	a																			
																4	0.40	0.50						0.301	< 0.02				2			
	5	B22	0.50	0.70	N50	G	LMC				0.60	3.9	2.2	A	A0	5	0.50	0.70						0.309	< 0.02				0			
	6	B23	0.70	1.00	N50	O	LMC				0.80	3.9	2.1	A																			
											1.00	4.0	1.0	A		6	0.80	1.00						0.315	< 0.02				2			
77	1	A1	0.00	0.18	10YR22		SCL				0.05	4.5	2.6	a																			
											0.10	4.1	3.4	a		1	0.00	0.10							0.029				18			
	2	B21	0.18	0.35	10YR51	R	LMC				0.30	4.0	2.8	A	A0	2	0.20	0.30						0.180	< 0.02				6			
	3	B22ia	0.35	0.55	2.5Y51	Y	LMC	J			0.50	3.7	2.7	A		3	0.40	0.50						0.296	< 0.02				1			
	4	C1ia	0.55	0.70	2.5Y41	Y	LMC	J			0.60	3.6	2.5	A																			
																4	0.60	0.70						0.227	< 0.02				2			
	5	C2ia	0.70	1.30	2.5Y41	O	LMC	J			0.80	3.5	2.1	A		5	0.70	0.90						0.222	< 0.02				1			
											1.00	3.8	2.2	A																			
											1.25	3.7	2.1	A																			
	6	C3ia	1.30	1.50	2.5Y51	O	LC	J			1.40	4.0	2.2	A		7	1.30	1.50						0.351	< 0.02				4			
	7	C4ia	1.50	1.70	2.5Y51	O	LMC	J			1.55	4.0	2.2	A																			
	8	C5ia	1.70	2.10	2.5Y51	O	LMC	J			1.75	3.8	2.7	A																			
											2.00	4.1	2.6	a		9	1.80	2.10						0.212	< 0.02				7			
	9	C6ia	2.10	2.30	2.5Y31	R	LMC	J			2.25	4.8	2.0	a		10	2.10	2.30						0.187	0.054				34			
78	1	A1	0.00	0.14	10YR21		ZCL				0.10	4.2	1.8	a		1	0.00	0.10						0.277	< 0.02				12			
	2	B21i	0.14	0.32	2.5Y52	D	LC				0.25	3.8	3.8	A	A0	2	0.20	0.30						0.090	< 0.02				2			
	3	B22ia	0.32	0.60	2.5Y52	Y	LC	J			0.50	3.5	2.4	A																			
																3	0.50	0.60						0.079	< 0.02				1			
	4	B23ia	0.60	1.50	2.5YR42	Y	ZLC	J			0.80	3.9	2.4	A																			
											1.00	3.7	2.6	A		4	0.80	1.00						0.210	< 0.02				1			
											1.25	3.6	2.5	A																			
											1.50	3.6	2.7	A		5	1.30	1.50						0.155	< 0.02				1			
	5	B24i	1.50	1.98	2.5Y42	O	ZLC				1.75	4.1	3.0	a																			
																6	1.80	1.98	S2	Pc			0.117		0.114				71			
	6	C1u	1.98	2.45	5Y41	B	ZLC			SS	2.00	7.1	2.9																				
											2.25	7.2	3.8			7	2.10	2.30		Pc					0.432				269			
	7	2C2u	2.45	2.60	5Y41		ZLC			SS	2.50	7.1	6.0			8	2.45	2.60							0.098				61			
	8	3C3u	2.60	2.90	10GY41		LMC				2.75	8.5	8.7																				
											2.90	7.3	8.7			9	2.70	2.90							0.004				2			
79	1	A1	0.00	0.10	2.5Y31		ZCL				0.10	4.2	3.6	a																			
	2	A3	0.10	0.28	2.5Y31	O	ZCL									2	0.10	0.20						0.121	< 0.02				1			
											0.25	4.0	3.6	A	A0																			
	3	B21i	0.28	0.68	2.5Y51	O	KSLC									3	0.30	0.40						0.071	< 0.02				0			
											0.50	3.9	3.3	A																			
	4	B22ia	0.68	0.90	2.5Y51	Y	KSLC	J			0.80	3.9	3.6	A		5	0.70	0.90						0.086	< 0.02				6			
	5	B23ia	0.90	1.50	2.5Y61	Y	SLC	J			1.00	4.1	3.9	a																			
											1.25	5.5	4.9			6	1.20	1.40					0.012		< 0.02				6			
											1.45	6.5	5.9																				
	6	B24i	1.50	1.95	2.5Y51	O	SCL				1.75	6.4	6.1			7	1.60	1.80							0.003				2			
	7	C1	1.95	2.25	5BG31	B	CLS			SS	2.00	7.0	2.0																				
											2.20	7.2	5.0			8	2.00	2.20	S2	Pl					0.235				147			
	8	D	2.25	2.60	10YR81	R	KSLC				2.50	7.2	6.9																				

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.30	0.40			0.09	58		4.0		0.04		0.019					0.071												
3	0.50	0.70			0.05	32		4.3		0.03		0.014					0.075												
4	0.90	1.10			0.05	30		4.3		0.06		0.024					0.135												
5	1.20	1.40			0.05	32		4.3		0.09		0.033					0.173												
7	1.65	1.85			0.04	27		4.4		0.10		0.040					0.179												
9	2.00	2.10			0.05	30		4.3		0.09		0.044					0.178												
1	0.00	0.09																											
2	0.10	0.20			0.35	220		4.3		0.03		0.016					0.015												
3	0.20	0.30			0.35	216		4.1		0.06		0.022					0.022												
4	0.40	0.50	0.013	8	0.29	178	0.079	3.6		0.06		0.012					0.032												
5	0.50	0.70	0.013	8	0.30	185	0.076	3.4		0.06		0.013					0.032												
6	0.80	1.00	0.016	10	0.30	184	0.071	3.4		0.05		0.014					0.034												
1	0.00	0.10			0.43	267		4.0		0.10		0.027					0.034												
2	0.20	0.30	0.022	14	0.15	93	0.084	3.8		0.06		0.022					0.069												
3	0.40	0.50	0.145	90	0.15	94	0.251	3.7		0.06		0.024					0.083												
4	0.60	0.70	0.066	41	0.16	98	0.128	3.7		0.04		0.024					0.088												
5	0.70	0.90	0.074	46	0.15	91	0.141	3.8		0.04		0.025					0.089												
7	1.30	1.50	0.191	119	0.15	96	0.302	3.9		0.05		0.035					0.100												
9	1.80	2.10	0.081	51	0.12	75	0.156	3.9		0.05		0.038					0.104												
10	2.10	2.30	0.021	13	0.11	70	0.092	3.9		0.06		0.044					0.116												
1	0.00	0.10	0.029	18	0.23	143	0.119	4.2		0.08		0.144					0.075												
2	0.20	0.30	0.017	11	0.07	43	0.088	4.1		0.07		0.047					0.043												
3	0.50	0.60	0.051	32	0.03	17	0.108	4.1		0.04		0.041					0.040												
4	0.80	1.00	0.188	117	0.02	13	0.292	4.3		0.04		0.039					0.039												
5	1.30	1.50	0.135	84	0.02	11	0.236	4.4		0.06		0.051					0.050												
6	1.80	1.98	0.003	2	0.00	2	0.222	6.0		0.22		0.273					0.072												
7	2.10	2.30																											
8	2.45	2.60						8.8	6.8	0.09	0.19	0.317	0.642	0.325	0.260	162	0.096	0.121	0.025	0.033	21	0.293	183				1.238	0.40	247
9	2.70	2.90						8.7	7.5	0.09	0.09	0.241	0.299	0.058	0.046	29	0.166	0.221	0.055	0.073	45	0.119	74				0.841	0.27	168
2	0.10	0.20	0.007	4	0.11	70	0.054	4.2		0.05		0.085					0.051												
3	0.30	0.40	0.005	3	0.07	41	0.048	4.1		0.04		0.066					0.041												
5	0.70	0.90	0.054	34	0.02	14	0.115	4.4		0.04		0.053					0.038												
6	1.20	1.40	0.007	4	0.00	1	0.051	6.1		0.04		0.064					0.039												
7	1.60	1.80						6.5	5.8	0.43	0.43	0.573	0.492	0.000	0.000	0	0.039	0.048	0.009	0.012	7	0.000	0				< 0.1	0.02	10
8	2.00	2.20						8.5	6.4	0.19	0.43	0.403	0.521	0.118	0.094	59	0.037	0.050	0.013	0.017	11	0.112	70				< 0.1	0.00	0

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Upp Depth	Low Depth	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Upp Depth	Low Depth	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)						(m)				%S		%S			%S				mol H^+/t		
												23Af	23Bf								s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
80	1	A1	0.00	0.22	10YR21		ZCL				0.10	5.1	4.2																				
																2	0.10	0.20					0.096		0.043				27		
	2	B21	0.22	0.50	2.5Y51	O	FSLC				0.30	4.6	3.8	a																		
																3	0.30	0.40					0.012		< 0.02				1		
	3	B22i	0.50	0.72	2.5Y51	O	ZLC				0.60	3.8	3.2	A	A0																	
																4	0.60	0.70						0.072	< 0.02				1		
	4	B23ia	0.72	1.38	2.5Y41	O	SLC	J			0.80	3.9	3.0	A																		
											1.00	4.1	3.4	a		5	0.80	1.00					0.015		< 0.02				1		
											1.25	5.3	4.5			6	1.10	1.30					0.005		< 0.02				0		
	5	C1	1.38	1.74	2.5Y41	O	SLC				1.50	5.8	2.4																			
											1.70	6.3	2.0			7	1.50	1.70	S2	Pc						0.173			108		
	6	2C2	1.74	2.40	5BG31	O	SLC			SS	2.00	3.7	1.8	A		8	1.80	2.00		Pc						0.469			293		
											2.25	6.8	2.8			9	2.20	2.40		Pc						0.38			237		
	7	3C3	2.40	2.60	10Y2.5/1		SLC			SS	2.50	6.9	1.8			10	2.40	2.60		Pc						0.383			239		
81	1	A1	0.00	0.14	10YR21		CL				0.10	5.6	3.1																			
	2	A3	0.14	0.28	2.5Y41	O	LC									2	0.14	0.24					0.034		< 0.02				3		
											0.25	5.3	4.7																			
	3	B21	0.28	0.67	2.5Y51	O	CLS				0.30	5.2	4.4																			
																3	0.30	0.40					0.020		< 0.02				2		
											0.60	5.9	4.8			4	0.50	0.60					0.007		< 0.02				1		
	4	B22	0.67	1.30	2.5Y61	O	SCL				0.80	6.3	5.8																			
											1.00	6.6	6.4			5	0.80	1.00							< 0.02				1		
											1.25	6.9	6.7			6	1.10	1.30							< 0.02				6		
	5	2B21	1.30	1.68	2.5Y51	O	SCL			SS	1.50	7.4	6.7			7	1.40	1.60								0.003				2		
	6	2B22	1.68	1.75	2.5Y42	O	FSLC				1.70	7.5	9.2																			
	7	D	1.75	3.00	10YR81	R	FSLMC				2.00	7.5	6.2			8	1.80	2.00							< 0.02				0		
											2.25	7.0	6.5																			
											2.50	7.1	6.9																			
											2.75	6.6	6.6																			
											3.00	6.7	7.3																			
82	1	A1	0.00	0.18	10YR21		CL				0.10	5.5	2.6			1	0.00	0.10							< 0.02				5		
	2	B1	0.18	0.42	10YR31	O	FSLC				0.30	4.8	3.9	a																		
	3	B21	0.42	0.59	10YR43	O	SLC				0.50	4.9	4.0	a		3	0.42	0.52							< 0.02				1		
	4	B22	0.59	1.04	10YR51	O	KSLC				0.60	4.8	4.3	a																		
											0.80	4.9	4.3	a																		
											1.00	5.0	4.0	a		4	0.80	1.00					0.038		< 0.02				1		
	5	B23m	1.04	1.14	10YR51		KS																									
	6	B24	1.14	1.90	10YR61	O	SLMC				1.25	4.5	3.6	a																		
											1.50	4.5	3.5	a		5	1.30	1.50					0.023		< 0.02				3		
											1.75	5.4	4.1																			
	7	R	1.90	2.40	10YR61						2.00	5.3	4.0																			
											2.25	5.9	5.0																			
83	1	A1	0.00	0.20	10YR21		ZLC				0.10	4.0	3.4	A	A0	1	0.00	0.10					0.277		< 0.02				2		
	2	B21	0.20	0.61	10YR41	O	ZLC				0.30	4.0	2.5	A		2	0.20	0.30					0.188		< 0.02				2		
											0.60	3.7	3.0	A		3	0.50	0.60					0.140		< 0.02				3		
	3	B22i	0.61	0.82	10YR42	O	ZLC				0.80	3.9	3.0	A		4	0.70	0.80					0.121		< 0.02				4		
	4	B23i	0.82	1.30	10Y31	O	ZLC				1.00	3.8	3.4	A		5	0.90	1.10					0.078		0.025				16		
											1.25	3.8	1.3	A																		
	5	C1	1.30	3.40	5BG31		ZLC				1.50	4.4	1.5	a		6	1.30	1.50	S2	Pc					2.908			1814		
											1.75	5.0	1.3	a																		
											2.00	5.3	2.3			7	1.80	2.00		Pc					3.297			2056		
											2.25	5.3	3.2																			
											2.50	5.5	3.0																			
											2.75	5.6	1.3																			
											3.00	5.9	1.3			9	2.80	3.00		Pc					2.027			1264		
											3.25	6.1	1.9			10	3.20	3.40		Pc					1.347			840		
	6	2D1	3.40	3.60	2.5Y41	O	ZLMC				3.50	6.4	6.1																			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS															Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.10	0.20			0.05	33		5.2		0.14		0.166					0.202												
3	0.30	0.40			0.01	6		5.0		0.06		0.042					0.077												
4	0.60	0.70	0.050	31	0.02	13	0.138	4.3		0.07		0.042					0.073												
5	0.80	1.00	0.029	18	0.01	9	0.106	4.5		0.07		0.045					0.072												
6	1.10	1.30	0.008	5	0.00	3	0.076	5.3		0.07		0.055					0.073												
7	1.50	1.70																											
8	1.80	2.00																											
9	2.20	2.40																											
10	2.40	2.60																											
2	0.14	0.24			0.03	18		4.8		0.01		0.175					0.060												
3	0.30	0.40	0.004	2	0.02	10	0.018	4.8		0.01		0.092					0.039												
4	0.50	0.60			0.00	3		5.4		0.01		0.084					0.038												
5	0.80	1.00																											
6	1.10	1.30																											
7	1.40	1.60						9.1	7.3	0.02	0.02	0.404	1.844	1.440	1.152	719	0.027	0.032	0.005	0.007	4	1.159	723				4.935	1.58	986
8	1.80	2.00																											
1	0.00	0.10																											
3	0.42	0.52																											
4	0.80	1.00			0.04	23		4.5		0.01		0.010					0.030												
5	1.30	1.50			0.02	11		4.7		0.01		0.004					0.025												
1	0.00	0.10	0.010	6	0.26	164	0.066	4.1		0.05		0.033					0.070												
2	0.20	0.30	0.019	12	0.17	104	0.085	3.8		0.06		0.039					0.095												
3	0.50	0.60	0.036	22	0.10	62	0.123	3.8		0.08		0.041					0.105												
4	0.70	0.80	0.051	32	0.06	39	0.127	4.0		0.06		0.045					0.124												
5	0.90	1.10	0.000	0	0.05	33	0.061	4.3		0.06		0.054					0.134												
6	1.30	1.50			0.15	93		3.7		0.22		0.068					0.174												
7	1.80	2.00			0.17	105		3.7		0.30		0.101					0.234												
9	2.80	3.00																											
10	3.20	3.40																											

Field Morphology Summary																	Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity							
Site ID	Hor No	Horizon Name	Depth Upp	Depth Low	Colour	Mottle Colour	Soil Texture	Jar.	Gyp.	Shell	Field pH Depth	pH_F	pH_{FOX}	Action Level (pH_F)	Depth 1st Action Level (pH_F)	No	Depth Upp	Depth Low	Depth 1st Action Level	Action Level Select %S	<=4.5 pH KCl <6.5	pH KCl <4.5	<=5.5 pH KCl <6.5	<=4.5 pH KCl <5.5	pH KCl <4.5	S_{CR}	S_{POS}	s-TSA	s-TPA	a-S_{CR}	a-S_{POS}	TSA	TPA
			(m)								(m)	23Af	23Bf				(m)					%S		%S			%S				mol H^+/t			
																						s-TAA	s-S_{NAS}	s-TAA	s-TAA	s-S_{NAS}	22B	23Ee	s-23H	s-23G	a-22B	a-23Ee	23H	23G
84	1	A1	0.00	0.10	10YR42		SL				0.10	6.7	3.0																					
	2	A21	0.10	0.20	10YR43	O	CLS				0.15	6.7	2.5			2	0.10	0.20							< 0.02				7			
	3	A22	0.20	0.30	2.5Y41	O	CLS				0.30	6.5	3.2																				
	4	2A	0.30	0.70	10YR31		LC				0.60	6.5	3.9			4	0.50	0.60							0.051				32			
	5	2B21	0.70	0.90	10YR42	O	LMC				0.80	6.3	3.6			5	0.70	0.80							< 0.02				10			
	6	2B22	0.90	1.15	10YR42	O	LMC				1.00	6.6	3.2			6	0.95	1.05							0.025				16			
	7	3C1	1.15	1.50	2.5YR41		ZMC				1.25	6.5	2.7			7	1.20	1.40							0.072				45			
											1.50	6.4	2.0																				
	8	3C2	1.50	3.50	2.5YR31		ZMC				1.75	5.9	1.4																				
											2.00	5.5	1.5			8	1.80	2.00	S2	Pc					3.042				1897			
											2.25	6.4	1.5																				
											2.50	6.5	2.3																				
											2.75	6.8	1.6																				
											3.00	6.7	2.0			10	2.80	3.00		Pc					3.194				1992			
											3.25	7.1	2.7																				
											3.50	7.2	2.2																				
85	1	O2	0.00	0.15	10YR42		CL				0.10	5.3	1.4			1	0.00	0.10						0.081			0.031				19			
	2	A11	0.15	0.55	10YR32		CL				0.30	5.9	3.0			2	0.15	0.25							< 0.02				4			
																3	0.40	0.50							< 0.02				11			
	3	A12	0.55	0.75	2.5Y2.5/1		CL				0.60	6.3	3.3			4	0.60	0.70							< 0.02				9			
	4	B21u	0.75	1.15	2.5Y41	B	LC				0.80	6.4	3.9																				
											1.00	6.3	2.9			5	0.80	1.00							< 0.02				9			
	5	B22u	1.15	1.30	10Y51	R	LC				1.25	6.1	2.8			6	1.15	1.30							< 0.02				5			
	6	B23u	1.30	1.50	10Y51	R	SLC				1.50	5.6	2.6			7	1.30	1.50							< 0.02				11			
	7	C1u	1.50	1.80	5Y41		MC				1.75	5.9	2.7			8	1.60	1.80							< 0.02				5			
	8	C2u	1.80	2.00	5Y41		LMC				2.00	5.7	2.6			9	1.80	2.00							< 0.02				5			
	9	Du	2.00	2.15	2.5Y61	R	MC				2.15	5.4	3.0			10	2.00	2.15							< 0.02				2			
86	1	Mia	0.00	0.50	10YR42	Y	ZLMC	J			0.10	3.5	2.0	A	A0	1	0.00	0.10						0.642	< 0.02				8			
											0.30	3.1	1.4	A																		
																2	0.30	0.40						0.300	0.025				16			
	2	2A11	0.50	0.70	10YR21		CL				0.60	4.7	2.9	a																		
																3	0.60	0.70	S0	Pl			0.657		0.25				156			
	3	2A12	0.70	0.90	10YR21		CL				0.80	4.4	3.4	a																		
																4	0.80	0.90						0.322	0.033				21			
	4	2B21	0.90	1.10	2.5Y41	O	LC				1.00	4.1	2.6	a		5	0.90	1.10						0.204	< 0.02				4			
	5	3C1ia	1.10	2.45	2.5Y41	Y	ZLMC	J			1.25	3.9	2.5	A																		
											1.50	3.5	2.4	A		6	1.30	1.50						0.261	< 0.02				7			
											1.75	3.6	2.4	A																		
											2.00	3.7	2.3	A																		
											2.25	4.0	2.2	A		8	2.20	2.40			0.482				0.046	0.109	0.309		29	68	193
	6	3C2ia	2.45	2.80	5GY41	Y	ZLMC	J			2.50	3.9	2.2	A																		
											2.75	4.0	1.9	A		9	2.60	2.80		Pc				0.871	0.409				255			
	7	3C3ia	2.80	3.00	2.5Y41	Y	ZMC	J			3.00	4.1	2.2	a		10	2.80	3.00						0.284	0.05				31			

Lab Sample			Retained Acidity		Existing Acidity			SPOCAS																Neutralising Capacity					
No	Upp Depth	Low Depth	$s\text{-}S_{NAS}$	$a\text{-}S_{NAS}$	s-TAA	TAA	S_{HCl}	pH_{KCl}	pH_{OX}	S_{KCl}	S_P	Ca_{KCl}	Ca_P	Ca_A	$s\text{-}Ca_A$	$a\text{-}Ca_A$	Mg_{KCl}	Mg_P	Mg_A	$s\text{-}Mg_A$	$a\text{-}Mg_A$	$s\text{-}Ca_A\text{+}s\text{-}Mg_A$	$a\text{-}Ca_A\text{+}a\text{-}Mg_A$	ANC_{BT}	$s\text{-}ANC_{BT}$	$a\text{-}ANC_{BT}$	ANC_E	$s\text{-}ANC_E$	$a\text{-}ANC_E$
	(m)		%S	mol H^+/t	%S	mol H^+/t	%S			%S		%Ca			%S	mol H^+/t	%Mg			%S	mol H^+/t	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t	$\%CaCO_3$	%S	mol H^+/t
			s-20J	a-20J	s-23F	23F	20Be	23A	23B	23Ce	23De	23Vh	23Wh	23Xh	s-23Xh	a-23Xh	23Sm	23Tm	23Um	s-23Um	a-23Um	s-23Xh+s-23Um	a-23Xh+a-23Um	19A2	s-19A2	a-19A2	23Q	s-23Q	a-23Q
2	0.10	0.20																											
4	0.50	0.60																											
5	0.70	0.80																											
6	0.95	1.05																											
7	1.20	1.40																											
8	1.80	2.00																											
10	2.80	3.00																											
1	0.00	0.10			0.05	31		4.9		0.01		0.213					0.071												
2	0.15	0.25																											
3	0.40	0.50																											
4	0.60	0.70																											
5	0.80	1.00																											
6	1.15	1.30																											
7	1.30	1.50																											
8	1.60	1.80																											
9	1.80	2.00																											
10	2.00	2.15																											
1	0.00	0.10	0.365	227	0.26	165	0.575	3.6		0.09		0.024					0.030												
2	0.30	0.40	0.052	32	0.22	139	0.154	3.6		0.09		0.025					0.030												
3	0.60	0.70			0.41	254		4.6		0.34		0.042					0.029												
4	0.80	0.90	0.029	18	0.26	162	0.196	4.3		0.16		0.029					0.030												
5	0.90	1.10	0.029	18	0.17	105	0.124	3.5		0.09		0.023					0.028												
6	1.30	1.50	0.066	41	0.18	115	0.154	3.5		0.07		0.028					0.035												
8	2.20	2.40	0.236	147	0.20	125	0.446	3.6	3.2	0.13	0.18	0.042	0.045	0.003	0.002	1	0.059	0.056	0.000	0.000	0	0.000	0						
9	2.60	2.80	0.196	122	0.27	166	0.483	3.7		0.22		0.061					0.081												
10	2.80	3.00	0.077	48	0.16	98	0.26	3.8		0.16		0.040					0.050												