Moreton Bay Regional Council
Acid Sulfate Soils
Pine Rivers Area

Volume 2

Appendix 4 SEA Summarised Analytical Data (A3)

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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
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 m^3; for disturbances greater than 1000 m^3, the action criteria is 0.03 %S, regardless of texture

Laboratory Results	Method Code	Reference	Units	Description
Suspension Peroxide Oxidation Combined Acidity and Sulfur (SPOCAS) Acid Base Accounting				
s-TAA		4	%S	S_{POS} + s-TAA WHERE pH_{KCl} >= 4.5 AND pH_{KCl} < 6.5 AND s-TPA > 0
s-S_{NAS}		4	%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				
s-TAA		4	%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		4	%S	S_{CR} + s-TAA WHERE pH_{KCl} >= 4.5 AND pH_{KCl} < 5.5
s-S_{NAS}		4	%S	S_{CR} + s-TAA + s-S_{NAS} WHERE pH_{KCl} < 4.5
Potential Acidity	(21=POCASm | 23=SPOCAS)			
S_{TOS} (Total Oxidisable Sulfur)	20C1e	5, 4	%S	(from TOS Method) = $S_T - S_{HCl}$
S_{CR} (Sulfur, chromium reducible)	22B	6, 4	%S	(from Chromium Reducible Sulfur method)
S_{POS} (Peroxide oxidisable sulfur)	21Ee | 23Ee	7 | 4	%S	= $S_P - S_{KCl}$
s-TSA (Titratable sulfidic acidity)	s-21L | s-23H	7 | 4	%S	= (TPA – TAA) / 623.7 (TSA calculated as equivalent % pyrite S)
s-TPA (Titratable peroxide acidity)	s-21G | s-23G	7 | 4	%S	= (TPA /623.7) (TPA calculated as equivalent % pyrite S)
Retained Acidity				
s-S_{NAS} (Net acid-soluble sulfur)	s-20J	4	%S	= ($S_{HCl} - S_{KCl}$) x 0.75 (S_{NAS} converted to equivalent % pyrite S)
Actual Acidity				
s-TAA (Titratable actual acidity)	s-23F	4	%S	= (TAA / 623.7) (TAA calculated as equivalent % pyrite S)
Total Oxidisable Sulfur (TOS)[5]				
S_T	20A1	5, 4	%S	Total Sulfur
S_{HCl}	20Be	5, 4	%S	Hydrochloric acid extracted sulfur
Method 21= POCASm, 23=SPOCAS				
Peroxide Oxidation Combined Acidity and Sulfate method (POCASm) | Suspension Peroxide Oxidation Combined Acidity and Sulfur method (SPOCAS)				
pH_{KCl}	21A | 23A	7 | 4	%S	pH of soil in potassium chloride (KCl) extract
pH_{OX}	21B | 23B	7 | 4	%S	pH of soil after peroxide digestion
S_{KCl}	21Ce | 23Ce	7 | 4	%S	KCl extracted sulfur
S_P	21De | 23De	7 | 4	%S	Peroxide sulfur
Ca_{KCl}	21Vh | 23Vh	7 | 4	%Ca	Ca extracted in 1 M KCl (after TAA titration)
Mg_{KCl}	21Sm | 23Sm	7 | 4	%Mg	Mg extracted in 1 M KCl (after TAA titration)
1:5 Water				
pH	4A1	8		pH of 1:5 soil:water suspension
EC	3A1	8	dS/m	Electrical Conductivity (EC) from a 1:5 soil:water extract
Cl	5A2	8	mg/kg	Soluble Chloride (Cl) from a 1:5 soil:water extract

Reference

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Field Morphology Summary																	Lab Sample				Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity					Retained Acidity	Actual Acidity	TOS		Method	POCASm(21) /SPOCAS(23)						1:5 WATER		
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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_{TOS} %S 20C1e	S_{CR} %S 22B	S_{POS} %S 21Ee|23Ee	s-TSA %S s-21L|s-23H	s-TPA %S s-21G|s-23G	s-S_{NAS} %S s-20J	s-TAA %S s-21J|s-23F	S_T %S 20A1	S_{HCl} %S 20Be		pH_{KCl} A	pH_{OX} B	S_{KCl} %S Ce	S_P %S De	Ca_{KCl} %Ca Vh	Mg_{KCl} %Mg Sm	pH 4A1	EC dS/m 3A1	Cl mg/kg 5A2
1000	1	P1	0.00	0.15	7.5YR32	IP				0.10	4.8	3.8	a		1	0.00	0.10								0.288	0.03						0.606	0.318									5.1	23	49200
	2	B21i	0.15	0.40	10YR71	FSL				0.30	4.4	2.9	a		2	0.20	0.30								0.007							0.077	0.07									5.7	7.88	13130
	3	B22ia	0.40	1.00	10YR61	FSCL	J			0.60	3.8	2.5	A	A0	3	0.50	0.60							0.199	0.102	< 0.02				0.176	0.01	0.415	0.313	23	4.4		0.078		0.031	0.098	4.8	7.94	13390
										0.80	4.0	2.4	A																														
										1.00	4.8	1.7	a		4	0.80	1.00								0.134	< 0.02						0.382	0.248									5.7	8.29	14910
	4	C1u	1.00	2.40	7.5YR41	FSL				1.25	5.4	1.6																																
										1.50	5.9	1.7			5	1.30	1.50	S1	Pl						0.457							0.639	0.182											
										1.75	6.2	1.8																																
										2.00	6.9	1.9			6	1.80	2.00		Pl						0.395							0.521	0.126											
										2.25	6.9	2.0																																
	5	C2u	2.40	3.90		SL			SS	2.50	7.0	2.1			7	2.40	2.50		Pl						0.421							0.54	0.119											
										2.75	7.1	2.1																																
										3.00	7.1	2.2			8	2.80	3.00		Pl						0.447							0.58	0.133											
										3.25	7.1	1.8																																
										3.50	7.1	2.1			9	3.30	3.50		Pl						0.183							0.266	0.083											
										3.75	7.2	2.7			10	3.70	3.90		Pl						0.159							0.277	0.118											
1001	1	A1	0.00	0.15	10YR31	FSCL				0.10	4.8	2.3	a		1	0.00	0.10								0.143	0.021						0.192	0.049									4.8	1.37	1461
	2	B21i	0.15	0.70	2.5Y71	FSL				0.30	4.8	3.5	a		2	0.20	0.30								0.024							0.044	0.02									5.1	0.89	1010
										0.60	4.0	2.8	A	A0	3	0.50	0.60							0.058	0.098	< 0.02				0.027	0.03	0.187	0.089	23	4		0.053		0.034	0.028	4.3	1.49	1692
	3	B22ia	0.70	1.20	2.5Y51	FSL	J			0.80	4.2	2.6	a																														
										1.00	4.2	2.6	a		4	0.80	1.00							0.154	0.233	< 0.02				0.127	0.02	0.456	0.223	23	4		0.054		0.037	0.032	4.3	1.69	2006
	4	C1u	1.20	2.00	5Y41	FSL				1.25	5.6	3.9																																
										1.50	6.9	2.0			5	1.30	1.50	S2	Pl						0.718							0.894	0.176											
										1.75	6.8	1.8																																
										2.00	7.1	2.2			6	1.80	2.00		Pl						0.548							0.71	0.162											
	5	C2u	2.00	3.00	5Y41	FSL			SS	2.25	7.2	2.2																																
										2.50	7.2	2.0			7	2.30	2.50		Pl						0.472							0.593	0.121											
										2.75	7.4	2.2																																
										3.00	7.2	2.2			8	2.80	3.00		Pl						0.365							0.475	0.11											
1002	1	A1	0.00	0.10	7.5YR41	CL				0.10	4.4	3.1	a		1	0.00	0.10				0.180			0.119	0.368	0.046	0.107	0.003	0.024	0.053	0.02	0.634	0.266	21	4.4	5.1	0.196	0.3			4.6	17.8	36170
	2	B21i	0.10	0.20	7.5YR31	MHC																																						
	3	B22i	0.20	0.50	2.5Y51	LMC				0.30	4.0	3.0	A	A0	2	0.20	0.30				0.084				0.084		0.023	0.022	0.022	0.061	0.00	0.273	0.189	21	3.8	3.9	0.108	0.13			4.2	8.07	14310
	4	B23ia	0.50	0.60	2.5Y51	LC	J			0.60	3.5	2.2	A		3	0.50	0.60				0.137			0.114	0.120	< 0.02	0.029	0.010	0.027	0.091	0.02	0.333	0.213	21	3.5	3.4	0.092	0.12			3.7	6.48	10940
	5	2C1	0.60	1.70	2.5Y51	FSL				0.80	3.8	2.7	A																														
										1.00	4.4	3.4	a		4	0.80	1.00								0.040		0.015	0.000	0.000	0.005	0.00	0.103	0.063	21	4.4	4.6	0.057	0.07			5.1	6.3	10500
										1.25	4.2	3.3	a																												
										1.50	4.3	3.3	a		5	1.30	1.50								0.033							0.088	0.055											
	6	3C2	1.70	2.00	7.5YR81	MHC				1.75	4.2	3.2	a																														
										2.00	4.0	2.3	A		6	1.80	2.00								0.014							0.062	0.048											
1003	1		0.00	3.00						0.10	4.5	2.8	a																														
										0.30	4.6	2.9	a																														
										0.60	4.2	2.9	a																														
										0.80	4.1	2.9	a																														
										1.00	3.9	2.9	A	A0																													
										1.25	3.9	3.0	A																														
										1.50	4.0	3.0	A																														
										1.75	4.2	3.2	a																														
										2.00	4.1	3.0	a																														
										2.25	4.1	3.4	a																														
										2.50	4.1	3.3	a																														
										2.75	4.3	3.3	a																														
										3.00	4.4	3.4	a																														
1004	1	A1	0.00	0.15	10YR21	CL				0.10	6.6	5.9			1	0.00	0.10								0.127	< 0.02						0.226	0.099									7	10.8	21430
	2	B2	0.15	0.40	2.5Y61	FSCL				0.30	5.1				2	0.20	0.30								0.031							0.072	0.041									7.1	5.39	9960
	3	2C1u	0.40	0.70	2.5Y51	FSL									3	0.50	0.60							0.014	0.055	< 0.02				0.000	0.00	0.109	0.054	23	6		0.055		0.035	0.089	7	6.53	12210
	4	3C2u	0.70	0.90	2.5Y41	LFS				0.80	6.8	1.2																																
															4	0.80	0.90	S1	Ps						0.248							0.389	0.141									4.2	8.15	14570
	5	4C3u	0.90	1.80	2.5Y41	FS									5	0.90	1.00		Ps						0.408							0.564	0.156									3.8	7.78	12990
															6	1.30	1.50		Ps						0.250							0.384	0.134											
															7	1.60	1.70		Ps						0.282							0.394	0.112											
										1.75	6.8	1.5																																
1005	1	A1	0.00	0.15	10YR21	ZCL				0.10	5.6	2.8			1	0.00	0.10								0.160	0.033						0.208	0.048									5.1	1.48	1869
	2	B21	0.15	0.40	10YR41	ZLC				0.30	4.3	3.3	a		2	0.20	0.30								0.088	< 0.02						0.149	0.061									4.7	0.97	996
	3	2B22	0.40	0.80	10YR61	FSCL				0.60	4.1	3.1	a		3	0.50	0.60								0.029							0.047	0.018									4.9	0.53	479
										0.80	4.0	3.1	A	A0																												
	4	2B23ia	0.80	2.00	2.5Y51	FSCL	J			1.00	3.9	2.8	A		4	0.80	1.00						0.046	0.061	< 0.02				0.015	0.02	0.109	0.048	23	4.1		0.028		0.03	0.02	4.8	1.06	1156
										1.25	4.0	2.7	A																												
										1.50	4.4	2.7	a		5	1.30	1.50							0.024							0.09	0.066											
										1.75	5.9	4.5																																
										2.00	6.3	4.0			6	1.80	2.00					0.011		0.062	< 0.02				0.004	0.01	0.12	0.058	23	4.6		0.053		0.06	0.038				
	5	2C1	2.00	2.50	5GY41	LFS			SS	2.25	6.6	2.0																																
										2.50	7.1	2.3			7	2.30	2.50	S2	Ps						0.236	0.221						0.474	0.238											
	6	3C2	2.50	3.30	5Y41	FSMC			SS	2.75	7.1	3.5																																
										3.00	7.5	1.9			8	2.80	3.00		Pc						0.158							0.242	0.084											
										3.25	7.4	6.0																																
	7	4D	3.30	3.50	5GY61	FSMC				3.50	8.2	8.4			9	3.30	3.50								0.021							0.076	0.055											

Field Morphology Summary																						Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity					Retained Acidity	Actual Acidity	TOS		Method	POCASm(21) /SPOCAS(23)						1:5 WATER		
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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_{TOS} %S 20C1e	S_{CR} %S 22B	S_{POS} %S 21Ee|23Ee	s-TSA %S s-21L|s-23H	s-TPA %S s-21G|s-23G	$s\text{-}S_{NAS}$ %S s-20J	s-TAA %S s-21J|s-23F	S_T %S 20A1	S_{HCl} %S 20Be	Method	pH_{KCl} A	pH_{OX} B	S_{KCl} %S Ce	S_P %S De	Ca_{KCl} %Ca Vh	Mg_{KCl} %Mg Sm	pH 4A1	EC dS/m 3A1	Cl mg/kg 5A2
1006	1	A11	0.00	0.10	10YR31	FSL				0.10	4.9	3.5	a		1	0.00	0.10								0.054							0.073	0.019								5.1	0.28	197
	2	A12	0.10	0.30	10YR32	FSL				0.30	4.8	3.8	a		2	0.20	0.30								0.043							0.061	0.018								5.1	0.27	178
	3	B21	0.30	0.80	10YR62	FSCL				0.60	3.8	3.0	A	A0	3	0.50	0.60								0.048	< 0.02						0.083	0.035								4.8	0.68	685
										0.80	3.9	2.9	A																																
	4	B22	0.80	2.10	10YR51	FSCL				1.00	3.7	2.7	A		4	0.80	1.00								0.084	< 0.02						0.196	0.112								4.4	0.82	700
										1.25	3.9	3.1	A																																
										1.50	4.2	3.1	a		5	1.30	1.50								0.036							0.083	0.047												
										1.75	4.7	3.8	a																																
										2.00	4.8	4.0	a		6	1.80	2.00								0.019							0.051	0.032												
	5	2B2	2.10	2.70	10YR41	FSL				2.25	6.2	4.2																																	
										2.50	6.7	1.4			7	2.30	2.50	S3	Pl						0.137							0.818	0.681												
	6	3B2	2.70	3.60	N40	LMC				2.75	6.9	1.6																																	
										3.00	7.0	2.0			8	2.80	3.00		Pc						2.241							2.43	0.189												
										3.25	7.2	3.9																																	
										3.50	7.2	5.2			9	3.30	3.50		Pc						0.149							0.218	0.069												
	7	4D	3.60	4.50	5G51	FSLMC				3.75	7.7	7.9																																	
										4.00	7.8	8.6			10	3.80	4.00								0.077							0.135	0.058												
										4.25	8.4	8.5																																	
										4.50	8.1	8.6			11	4.30	4.50								0.036							0.102	0.066												
1007	1	A	0.00	0.15	N70	MC				0.10	4.8	2.9	a		1	0.00	0.10								0.054		0.044	0.000	0.000	0.020	0.04	0.113	0.059	21	3.9	4.7	0.032	0.08			4.7	0.79	800
	2	2A1	0.15	0.30	10YR31	ZCL				0.30	4.5	3.6	a		2	0.20	0.30			0.162					0.103		0.056	0.024	0.112	0.018	0.09	0.17	0.067	21	4.2	4.4	0.043	0.1			4.7	0.82	910
	3	2B21	0.30	0.50	2.5Y41	ZLC									3	0.40	0.50			0.123					0.047		0.000	0.006	0.117	0.012	0.11	0.11	0.063	21	4	4.2	0.047	0.05			4.5	0.88	960
	4	2B22	0.50	1.20	2.5Y52	MC				0.60	4.0	3.1	A	A0	4	0.50	0.60								0.034							0.089	0.055								4.3	0.8	866
										0.80	4.0	2.9	A																																
										1.00	3.8	2.9	A		5	0.80	1.00								0.033							0.078	0.045								4.1	0.72	704
	5	3D	1.20	1.80	N60	HC				1.25	3.6	2.9	A																																
										1.50	3.6	2.6	A		6	1.30	1.50								0.029							0.104	0.075												
										1.75	3.9	2.6	A		7	1.60	1.80								0.019							0.09	0.071												
1008	1	A1	0.00	0.18	10YR32	FSCL				0.10	5.1	3.1																																	
	2	B	0.18	0.30	10YR54	FSLC				0.30	4.6	3.4	a																																
	3	2D	0.30	0.62	10YR52	SCL				0.60	4.1	3.0	a																																
	4	2C1	0.62	1.00	10YR52	SL				0.80	4.2	2.6	a																																
										1.00	3.8	3.0	A	A1	4	0.80	1.00									< 0.02																				
	5	3C2	1.00	1.60	10YR61	SL				1.25	3.9	3.0	A																																
										1.50	4.2	3.2	a		5	1.30	1.50									< 0.02																				
	6	4C3	1.60	3.00	5Y51	SL				1.75	5.2	3.0																																	
										2.00	6.0	4.2			6	1.80	2.00									< 0.02																				
										2.25	6.4	3.9																																	
										2.50	6.3	1.8			7	2.30	2.50									< 0.02																				
										2.75	6.7	2.5																																	
										3.00	6.9	2.4																																	
	7	5C4u	3.00	3.50	5Y51	SCL			SS	3.25	7.1	2.6																																	
										3.50	7.6	1.8																																	
1009	1	A1	0.00	0.35	10YR31	CL				0.10	4.5	2.6	a																																
										0.30	4.5	3.2	a																																
	2	B21	0.35	0.70	10YR71	LMC				0.60	4.1	3.0	a		3	0.50	0.60									< 0.02																				
	3	B22	0.70	0.90	10YR61	MC				0.80	4.0	2.8	A	A1																																
															4	0.80	0.90									< 0.02																				
	4	2B23ia	0.90	1.60	10YR51	LMC	J			1.00	3.8	2.6	A		5	0.90	1.00					0.260				< 0.02					0.053	0.20	0.102	23	3.7		0.031			0.012	0.035			
										1.25	3.8	2.5	A																																
										1.50	3.5	2.1	A		6	1.30	1.50					0.236				< 0.02					0.095	0.14	0.158	23	3.7		0.031			0.006	0.024			
	5	3D	1.60	3.00	N70	HC				1.75	3.9	2.9	A																																
										2.00	4.0	2.9	A		7	1.80	2.00									0.023																				
										2.25	4.2	2.9	a																																
										2.50	4.3	3.4	a																																
										2.75	4.3	3.0	a																																
										3.00	4.4	2.9	a																																
1010	1	A1	0.00	0.20	10YR21	CL				0.10	3.6	2.9	A	A0	1	0.00	0.10					0.408				< 0.02					0.116	0.29	0.292	23	3.8		0.138			0.02	0.029			
	2	B21	0.20	0.50	10YR61	LMC				0.30	3.6	2.6	A		2	0.20	0.30					0.228				< 0.02					0.039	0.19	0.154	23	3.6		0.102			0.019	0.034			
	3	2B22ia	0.50	0.80	2.5Y51	LMC	J			0.60	3.5	2.7	A		3	0.50	0.60					0.334				< 0.02					0.183	0.15	0.3	23	3.7		0.056			0.021	0.036			
										0.80	3.4	2.6	A																																
	4	2B23ia	0.80	2.10	10YR51	LMC	J			1.00	3.3	2.5	A		4	0.80	1.00					0.343				< 0.02					0.180	0.16	0.308	23	3.6		0.068			0.026	0.043			
										1.25	3.3	2.4	A																																
										1.50	3.4	2.2	A		5	1.30	1.50					0.603				< 0.02					0.467	0.14	0.694	23	3.6		0.072			0.026	0.043			
										1.75	3.6	2.2	A																																
										2.00	3.5	2.2	A		6	1.80	2.00					0.836				< 0.02					0.659	0.18	0.955	23	3.7		0.077			0.033	0.052			
	5	2B24ia	2.10	2.60	N50	MHC	J			2.25	3.8	2.3	A																																
										2.50	4.0	2.4	A		7	2.30	2.50									< 0.02																				
	6	3D	2.60	3.00	N60	HC				2.75	3.9	2.3	A																																
										3.00	4.1	2.6	a																																

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity					Retained Acidity	Actual Acidity	TOS		Method	POCASm(21) /SPOCAS(23)						1:5 WATER		
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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_{TOS} %S 20C1e	S_{CR} %S 22B	S_{POS} %S 21Ee|23Ee	s-TSA %S s-21L|s-23H	s-TPA %S s-21G|s-23G	s-S_{NAS} %S s-20J	s-TAA %S s-21J|s-23F	S_T %S 20A1	S_{HCl} %S 20Be		pH_{KCl} A	pH_{OX} B	S_{KCl} %S Ce	S_P %S De	Ca_{KCl} %Ca Vh	Mg_{KCl} %Mg Sm	pH 4A1	EC dS/m 3A1	Cl mg/kg 5A2
1011	1	A	0.00	0.40	10YR32	CL				0.10	6.0	3.9																															
										0.30	5.9	5.2																															
	2	B	0.40	0.70	10YR53	SLC				0.60	5.8	5.1																															
	3	2C1	0.70	1.40	2.5Y62	KS				0.80	5.8	5.1																															
										1.00	5.7	5.0																															
										1.25	5.8	5.1																															
	4	3C2	1.40	1.60	10YR52	CS				1.50	5.9	5.0			5	1.40	1.50								< 0.02																	
	5	4C3	1.60	2.10	2.5Y52	SCL				1.75	5.0	4.3	a																													
										2.00	4.9	3.8	a																															
	6	4C4	2.10	3.00	5B61	SCL				2.25	5.8	2.9																															
										2.50	6.0	2.9																															
										2.75	6.3	3.0																															
															8	2.80	3.00							< 0.02																			
1012	1	A1	0.00	0.15	10YR32	LC				0.10	5.5	3.2			1	0.00	0.10							0.044																			
	2	B21	0.15	0.40	10YR56	MHC				0.30	5.4	3.5			2	0.20	0.30							0.040																			
	3	B22	0.40	1.70	10YR61	HC				0.60	5.2	3.2			3	0.50	0.60							0.024																			
										0.80	4.8	3.1	a																															
										1.00	4.8	3.2	a		4	0.80	1.00							0.018																			
										1.25	4.8	3.1	a																															
										1.50	4.9	3.2	a		5	1.30	1.50							0.017																			
	4	B23	1.70	2.40	10YR61	MHC				1.75	5.3	3.5																															
										2.00	5.3	3.5			6	1.80	2.00							0.017																			
										2.25	5.9	4.2																															
	5	2B24	2.40	4.00	N70	MC				2.50	7.2	6.4			7	2.40	2.50							0.013																			
										2.75	7.5	6.3																															
										3.00	7.4	6.9			8	2.80	3.00							0.014																			
										3.25	7.7	6.8																															
										3.50	7.6	6.6			9	3.30	3.50							0.017																			
										3.75	7.3	7.0																															
										4.00	7.6	6.6			10	3.80	4.00							0.015																			
	6	3D1	4.00	4.60	N70	ZLC				4.25	7.8	7.3																															
										4.50	7.6	6.7			11	4.30	4.50							0.014																			
	7	4D2	4.60	5.00	5GY71	FSLC				4.75	6.9	6.3																															
										5.00	7.1	7.0			12	4.80	5.00							0.013																			
1013	1	A11	0.00	0.10	10YR41	LC				0.10	6.5	4.0			1	0.00	0.10							0.066		0.046	0.000	0.000	0.008	0.00	0.12	0.054	21	4.8	5.6	0.044	0.09			5.4	2.83	4420
	2	2A12	0.10	0.45	10YR31	CL				0.30	5.5	4.0			2	0.20	0.30	S0	Pl			0.110		0.175	0.11	0.102	0.000	0.000	0.020	0.00	0.264	0.089	21	4.7	5.5	0.063	0.17			5.5	4.09	6000
	3	2B21	0.45	1.10	2.5Y61	ZMC				0.60	5.1	3.4			3	0.50	0.60							0.028																			
										0.80	5.2	3.6																															
										1.00	5.8	3.7			4	0.80	1.00							0.047																			
	4	3B22	1.10	1.70	5Y51	ZMC				1.25	6.3	3.0																															
										1.50	6.1	2.2			5	1.30	1.50							0.085																			
	5	3B23ia	1.70	2.60	5Y51	ZMC	J			1.75	6.3	2.3																															
										2.00	6.1	1.6			6	1.80	2.00							0.111	0.025																			
										2.25	6.0	1.8																															
										2.50	5.8	1.6			7	2.30	2.50		Pc					0.612																			
	6	3C1u	2.60	3.50	5GY41	ZMC				2.75	6.0	1.6																															
										3.00	6.1	1.6			8	2.80	3.00		Pc					1.048																			
										3.25	6.1	1.6																															
										3.50	6.3	1.6			9	3.30	3.50		Pc					1.254																			
1014	1	A1	0.00	0.10	10YR42	ZL				0.10	5.3	4.0																															
	2	A2j	0.10	0.40	10YR62	ZCL				0.30	5.8	4.6																															
	3	B21	0.40	0.70	2.5Y66	ZMC				0.60	5.5	4.2																															
	4	2B22	0.70	1.20	10YR61	MHC				0.80	5.7	4.3																															
										1.00	6.1	6.0																															
	5	3B23	1.20	1.50	2.5Y71	LMC				1.25	6.5	7.5																															
										1.50	7.0	8.0																															
	6	3B24	1.50	2.00	5Y71	LMC				1.75	7.2	8.0																															
										2.00	7.3	8.3			1	1.80	2.00							0.030																			
1015	1	A1	0.00	0.10	10YR32	CL				0.10	5.6	3.2			1	0.00	0.10							0.093		0.042	0.000	0.000	0.013	0.02	0.119	0.026	21	4.2	5.1	0.009	0.05			5.1	0.24	82
	2	B2	0.10	0.30	10YR52	LC				0.30	5.3	3.5			2	0.20	0.30							0.028																			
	3	2B21	0.30	0.50	10YR61	FSCL									3	0.40	0.50							0.023																			
	4	2B22	0.50	1.10	10YR61	FSL				0.60	4.5	3.7	a		4	0.50	0.60							0.021																			
										0.80	4.7	3.4	a		5	0.80	1.00							0.021																			
	5	2B23	1.10	1.50	10YR61	FSCL				1.25	6.3	5.2																															
										1.50	6.5	5.6			6	1.30	1.50							0.019																			
	6	3B2	1.50	2.00	5B51	FSCL			SS	1.75	6.8	1.9																															
										2.00	7.6	1.9			7	1.80	2.00	S2	Pl					0.439																			
	7	3C1u	2.00	2.75	5B51	FSCL			SS	2.25	7.8	2.0																															
										2.50	7.9	2.0			8	2.30	2.50		Pl					0.302																			
										2.75	7.4	1.7																															
	8	3C2u	2.75	3.00	5B51	FSCL																																					
1016	1	A1	0.00	0.15	10YR31	ZCL				0.10	5.5	3.9																															
	2	B21	0.15	0.45	10YR62	FSCL				0.30	4.2	2.9	a		2	0.20	0.30									0.008	0.000	0.000		0.00			21	4.3	5	0.03	0.04							
	3	B22	0.45	0.80	10YR61	FSCL				0.60	3.9	2.8	A	A0	3	0.50	0.60									0.007	0.000	0.000		0.00			21	4.3	4.7	0.037	0.04							
										0.80	4.0	2.6	A																															
	4	B23ia	0.80	1.25	10YR51	FSCL	J			1.00	5.7	4.5																															
										1.25	5.7	4.5																															
	5	B24	1.25	1.50	10YR51	FSCL				1.50	6.2	3.6			5	1.30	1.50	S2	Pl					0.067																			
	6	C1	1.50	1.80	N40	FSCL			SS	1.75	6.6	4.0			6	1.60	1.80		Pl					0.363																			
	7	2C2	1.80	2.30	N80	ZLC				2.00	6.6	2.6			7	1.80	2.00							0.036																			
										2.25	6.2	6.6																															

Field Morphology Summary																				Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity					Retained Acidity	Actual Acidity	TOS		Method	POCASm(21) /SPOCAS(23)						1:5 WATER		
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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_{TOS} %S 20C1e	S_{CR} 22B	S_{POS} 21Ee|23Ee	s-TSA 21L|s-23H	s-TPA s-21G|s-23G	s-S_{NAS} %S s-20J	s-TAA %S s-21J|s-23F	S_T %S 20A1	S_{HCl} %S 20Be		pH_{KCl} A	pH_{OX} B	S_{KCl} %S Ce	S_P %S De	Ca_{KCl} %Ca Vh	Mg_{KCl} %Mg Sm	pH 4A1	EC dS/m 3A1	Cl mg/kg 5A2
1017	1	A1	0.00	0.10	10YR21	ZCL				0.10	4.7	2.1	a		1	0.00	0.10			0.070		0.014			0.121	< 0.02	0.070	0.018	0.018	0.008	0.00	0.152	0.031	21	4.5	5.2	0.02	0.09			5.2	3.65	5020
	2	B21	0.10	0.50	10YR61	ZCL				0.30	4.8	3.0	a		2	0.20	0.30								0.033		0.012	0.000	0.000	0.005	0.00	0.065	0.032	21	4.3	4.8	0.026	0.04			5	0.7	562
	3	2B22ia	0.50	0.80	10YR51	FSCL	J			0.60	5.1	3.6			3	0.50	0.60								0.068		0.037	0.000	0.000	0.114	0.00	0.254	0.186	21	4.5	4.5	0.034	0.07			5.2	0.66	473
										0.80	5.4	3.5																																	
	4	2B23ia	0.80	1.50	N60	FSCL	J			1.00	6.1	4.9			4	0.80	1.00								0.028							0.096	0.068									5.3	0.87	684
										1.25	6.3	5.4																																	
										1.50	6.3	5.6			5	1.30	1.50								0.018							0.082	0.064									6.3	1.37	1306
	5	2B24u	1.50	1.90	N50	FSCL				1.75	6.3	1.7			6	1.70	1.90	S2	Pl						0.060							0.479	0.419									7	1.92	1974
	6	2B25u	1.90	2.00	N50	FSCL			SS	2.00	6.6	2.7			7	1.90	2.00		Pl						0.279							0.827	0.548									6.8	4.66	2000
	7	3D	2.00	2.50	N80	MHC				2.25	7.1	2.4																																	
										2.50	7.7	6.4			8	2.30	2.50								0.020							0.082	0.062									7.6	4.91	1985
1018	1	A1	0.00	0.15	10YR31	ZCL				0.10	4.9	2.0	a		1	0.00	0.10								0.093		0.039	0.000	0.000	0.008	0.00	0.117	0.024	21	4.7	5.3	0.013	0.05			8.5	2.26	2597
	2	B21	0.15	0.40	2.5Y61	FSCL				0.30	5.4	3.4			2	0.20	0.30								0.025							0.042	0.017									5.4	0.38	162
	3	B22	0.40	0.70	2.5Y61	FSCL				0.60	6.5	4.9			3	0.50	0.60								0.028							0.057	0.029									5.6	0.37	260
	4	2B23	0.70	1.30	N60	FSL				0.80	6.6	5.5																																	
										1.00	6.6	6.6			4	0.80	1.00								0.017							0.028	0.011									6.8	0.64	642
										1.25	6.9	5.7																																	
	5	3B24	1.30	1.50	N50	FSCL			SS	1.50	6.4	7.3			5	1.30	1.50								0.020							0.034	0.014									7.4	0.52	570
	6	4D	1.50	1.75	N80	FSLMC									6	1.50	1.70								0.019							0.028	0.009									8.3	0.47	409
										1.75	6.4	6.2																																	
1019	1	A1	0.00	0.15	10YR41	FSCL				0.10	5.2	3.5			1	0.00	0.10								0.031							0.038	0.007									8.2	0.38	285
	2	A2	0.15	0.30	10YR42	FSCL				0.30	4.8	3.5	a		2	0.20	0.30								0.022							0.026	< 0.005									5.3	0.15	70
	3	B21	0.30	0.50	10YR61	FSLC									3	0.40	0.50								0.029							0.033	< 0.004									4.9	0.09	41
	4	B22	0.50	0.80	5Y61	ZLC				0.60	4.4	3.5	a		4	0.50	0.60								0.021							0.025	< 0.005									5	0.08	47
										0.80	4.4	3.7	a																															
	5	B23	0.80	1.00	2.5Y61	ZLC				1.00	4.6	3.7	a		5	0.80	1.00								0.023							0.026	< 0.004									5	0.08	52
	6	2D	1.00	1.10	2.5Y51	LC									6	1.00	1.10								0.019							0.024	< 0.005									5.3	0.09	86
1020	1	A1	0.00	0.15	7.5YR31	CL				0.10	5.6	4.1			1	0.00	0.10	S0	Pl			0.099			0.608	0.099	0.301	0.000	0.000	0.107	0.00	0.927	0.319	21	4.8	6.2	0.177	0.48			5.4	0.09	91
	2	B21	0.15	0.40	10YR71	MC				0.30	4.7	2.7	a		2	0.20	0.30								0.046		0.014	0.000	0.000	0.032	0.00	0.185	0.139	21	3.9	4.2	0.096	0.11			5.3	0.09	21190
	3	B22a	0.40	0.70	10YR51	MHC	J			0.60	4.2	2.4	a		3	0.50	0.60								0.099							0.358	0.259									4.3	5.37	9870
	4	B23u	0.70	1.50	5Y41	LMC				0.80	4.5	2.6	a																																	
										1.00	4.6	1.1	a		4	0.80	1.00		Pc						0.706	0.209						0.928	0.222									4	7.91	14740
										1.25	4.7	1.2	a																															
										1.50	4.8	1.2	a		5	1.30	1.50		Pc						2.355							2.74	0.385									3.4	13.1	24860
	5	B24u	1.50	2.80	N60	MHC				1.75	5.1	1.2																																	
										2.00	5.7	1.1			6	1.80	2.00		Pc						2.249							2.62	0.371									3.5	11.6	20000
										2.25	6.5	1.4																																	
										2.50	6.9	1.4			7	2.30	2.50		Pc						1.153							1.42	0.267									3.6	6.2	8100
										2.75	7.0	1.6																																	
	6	2D	2.80	3.30	5B71	ZLC				3.00	7.7	7.5			8	2.80	3.00		Pc						0.294							0.365	0.071									7.4	4.55	6913
										3.25	7.5	8.1																																	
1022	1	A1	0.00	0.20	10YR32	ZLC				0.10	4.3	3.0	a		1	0.00	0.10			0.233					0.147	0.089	0.058	0.130		0.072	0.07	0.308	0.161	21	4.1	4.6	0.065	0.15			4.3	1.25	1370
	2	B21	0.20	0.45	10YR51	MC				0.30	4.3	2.9	a		2	0.20	0.30								0.042							0.15	0.108									3.9	0.68	576
	3	B22ia	0.45	1.00	2.5Y51	MC	J			0.60	4.1	2.6	a		3	0.50	0.60						0.281		0.126	< 0.02				0.090	0.18	0.285	0.159	23	3.6		0.039		0.031	0.077	4	0.68	618
										0.80	4.3	2.5	a																															
										1.00	4.1	2.2	a		4	0.80	1.00								0.522	< 0.02						1.23	0.708									4	0.58	533
	4	B23i	1.00	1.25	5B71	MHC									5	1.00	1.20								0.036							0.162	0.126									4	0.8	893
										1.25	4.4	2.6	a																															
	5	B24i	1.25	2.10	5B71	HC				1.50	4.5	2.7	a		6	1.30	1.50								0.035							0.149	0.114									4.1	1.23	1438
										1.75	4.5	2.8	a																															
										2.00	4.8	3.0	a		7	1.80	2.00								0.033							0.118	0.085									4.4	1.43	1799
	6	B25i	2.10	2.90	5B71	MHC				2.25	4.6	2.8	a																																	
										2.50	4.5	2.8	a		8	2.30	2.50								0.025							0.087	0.062									4.5	1.53	2026
										2.75	4.5	3.0	a																															
	7	2D	2.90	3.30	N80	ZLC				3.00	4.8	2.8	a		9	2.90	3.00								0.023							0.068	0.045									4.7	1.84	2627
										3.25	5.0	3.0	a																															
1152	1	A1	0.00	0.20	10YR42	FSCL				0.10	5.6	2.7			1	0.00	0.10								0.028							0.049	0.021									5.7	0.17	37
	2	B21	0.20	0.70	10YR52	ZCL				0.30	5.5	2.9			2	0.20	0.30								0.013							0.028	0.015									5.8	0.09	25.7
										0.60	5.3	2.8			3	0.50	0.60								0.014							0.032	0.018									5.5	0.08	< 20
	3	B22	0.70	2.10	10YR53	ZCL				0.80	5.3	2.8																																	
										1.00	5.6	3.4			4	0.80	1.00								0.010							0.026	0.016									5.9	0.07	< 20
										1.25	6.1	3.5																																	
										1.50	6.2	3.6			5	1.30	1.50								0.010							0.032	0.022									6	0.08	< 20
										1.75	5.7	3.6																																	
										2.00	5.6	3.2			6	1.80	2.00								0.007							0.028	0.021									5.3	0.08	< 20
	4	B23	2.10	2.70	10YR42	LC				2.25	5.0	3.3	a																																	
										2.50	4.6	2.7	a		7	2.30	2.50								0.006							0.036	0.03									4.5	0.12	< 20
	5	2B2a	2.70	3.00	10YR51	FSLC	J			2.75	4.3	2.5	a																																	
										3.00	4.2	2.3	a		8	2.80	3.00								0.043							0.094	0.051									4.6	0.11	< 20
	6	3C1u	3.00	3.20	10YR41	SLC																																							
	7	3C2u	3.20	3.50	N40	SLC				3.25	5.4	0.9																																	
										3.50	5.4	1.2			9	3.30	3.50	S4	Pc						1.746	0.515						2	0.254									3	2.11	26.4

Field Morphology Summary

Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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)
1153	1	A	0.00	0.30	10YR41	LC				0.10	5.1	2.9		
										0.30	5.1	2.8		
	2	B21	0.30	0.60	10YR51	LC				0.60	5.4	2.0		
	3	B22	0.60	0.80	10YR51	LMC				0.80	4.9	2.8	a	
	4	B24	0.80	1.00	N50	MC				1.00	4.8	2.8	a	
	5	C1u	1.00	1.40	5Y41	MC				1.25	5.9	2.2		
	6	2C2u	1.40	1.50	5Y41	FSCL				1.50	6.0	1.2		
	7	3C3u	1.50	2.00	2.5Y61	LS				1.75	6.3	1.8		
										2.00	6.5	2.0		
	8	3C4u	2.00	3.00	2.5Y61	KS				2.25	6.7	2.1		
										2.50	6.9	2.4		
										2.75	7.1	2.5		
										3.00	7.4	3.0		
	9	3C5	3.00	3.50		GR				3.25	6.8	3.5		
										3.50	6.9	2.9		
	10	3C6	3.50	4.00		GR				3.75	6.7	2.3		
										4.00	7.2	4.5		
1154	1	A1	0.00	0.30	10YR31	L				0.10	5.2	1.5		
										0.30	5.4	2.6		
	2	B21	0.30	0.50	10YR62	CL								
	3	2B2	0.50	0.70	10YR62	SCL				0.60	5.6	2.5		
	4	3C1	0.70	1.20	10YR61	SLMC				0.80	4.6	2.3	a	
										1.00	4.8	2.9	a	
	5	3C2	1.20	1.60	2.5Y61	MHC				1.25	4.5	2.5	a	
										1.50	4.2	2.4	a	
	6	3C3	1.60	1.80	N60	MHC				1.75	4.8	2.6	a	
1155	1	A11	0.00	0.10	10YR43	CL				0.10	6.0	4.9		
	2	A12	0.10	0.20	10YR21	CL								
	3	2B21	0.20	0.60	2.5Y61	FSCL				0.30	5.2	4.0		
										0.60	4.1	3.6	a	
	4	3B22i	0.60	1.20	N80	FSLC				0.80	4.4	1.4	a	
										1.00	4.1	1.4	a	
										1.20	3.9	1.2	A	A1
1156	1	A1	0.00	0.10	2.5Y41	CL				0.10	5.3	2.9		
	2	B21	0.10	0.20	10YR52	LMC								
	3	B22	0.20	0.45	2.5Y62	MHC				0.30	5.5	4.3		
	4	2D	0.45	0.80	N60	FSCL				0.60	5.6	4.8		
										0.80	5.7	4.8		
	5	3D	0.80	1.00	10YR51	SLC				1.00	5.2	4.4		
	6	4D	1.00	1.30	10YR31	FSLMC				1.25	5.3	3.8		
	7	5C	1.30	1.80	10YR71	LS				1.50	5.4	3.0		
										1.75	5.7	3.9		
1157	1	A1	0.00	0.15	10YR32	CL				0.10	5.8	3.6		
	2	B21	0.15	0.30	2.5Y42	LC				0.30	4.8	3.6	a	
	3	B22	0.30	0.45	2.5Y52	LMC								
	4	B23	0.45	0.60	2.5Y62	MC				0.60	4.4	3.3	a	
	5	B24	0.60	0.80	2.5YR44	MC				0.80	4.8	3.8	a	
1158	1	A1	0.00	0.20	10YR32	CL				0.10	5.2	3.1		
	2	B21	0.20	0.45	10YR42	LC				0.30	5.6	3.9		
	3	B22	0.45	0.80	10YR54	LMC				0.60	5.4	3.9		
										0.80	4.7	3.5	a	
	4	2B23	0.80	1.00	10YR61	MC				1.00	4.6	3.6	a	
	5	3D	1.00	1.30	10YR61	FSCL				1.25	4.7	3.6	a	
	6	4D1	1.30	2.20	2.5Y71	SLMC				1.50	4.5	3.7	a	
										1.75	4.4	3.4	a	
										2.00	4.6	3.6	a	
	7	4D2	2.20	2.70	5GY71	SLC				2.25	4.7	4.2	a	
										2.50	5.4	4.8		
	8	5D3	2.70	2.90	5GY61	SLC				2.75	5.7	5.4		
	9	6C	2.90	3.00	5G71	ZLC				3.00	7.3	6.6		
1159	1	A1	0.00	0.15	10YR32	LC				0.10	5.4	3.6		
	2	B21	0.15	0.45	10YR53	LMC				0.30	4.4	3.3	a	
	3	B22	0.45	0.80	10YR51	MHC				0.60	4.3	3.4	a	
										0.80	4.3	3.5	a	
	4	B23	0.80	1.30	10YR51	MHC				1.00	4.3	3.2	a	
										1.25	4.2	3.8	a	
	5	2B21	1.30	1.40	10YR51	SLMC				1.40	4.3	3.2	a	
1160	1	A1	0.00	0.15	10YR32	LC				0.10	6.2	2.9		
	2	B21	0.15	0.30	10YR52	LMC				0.30	5.3	3.3		
	3	B22	0.30	0.70	10YR61	MC				0.60	4.3	3.1	a	
	4	B23	0.70	1.30	10YR61	MC				0.80	4.0	3.2	A	A1
										1.00	3.9	3.3	A	
										1.25	4.3	3.5	a	
	5	B24	1.30	2.00	N70	MC				1.50	4.2	2.7	a	
										1.75	4.6	4.5	a	
										2.00	5.0	4.3	a	

Site ID	Lab Sample No	Upp Depth (m)	Low Depth (m)	Action Criteria: Depth 1st Action Level	Action Criteria: Action Level Select %S	SPOCAS ABA: <=4.5 pH KCl <6.5 (%S, s-TAA)	SPOCAS ABA: pH KCl <4.5 (%S, $s\text{-}S_{NAS}$)	Chromium (S_{CR}) Suite ABA: <=5.5 pH KCl <6.5 (%S, s-TAA)	Chromium (S_{CR}) Suite ABA: <=4.5 pH KCl <5.5 (%S, s-TAA)	Chromium (S_{CR}) Suite ABA: pH KCl <4.5 (%S, $s\text{-}S_{NAS}$)	Potential Acidity: S_{TOS} (%S, 20C1e)	S_{CR} (%S, 22B)	S_{POS} (%S, 21Ee|23Ee)	s-TSA (%S, s-21L|s-23H)	s-TPA (%S, s-21G|s-23G)	Retained Acidity: $s\text{-}S_{NAS}$ (%S, s-20J)	Actual Acidity: s-TAA (%S, s-21J|s-23F)	TOS: S_T (%S, 20A1)	TOS: S_{HCl} (%S, 20Be)	Method	POCASm(21) /SPOCAS(23): pH_{KCl} (A)	pH_{OX} (B)	S_{KCl} (%S, Ce)	S_P (%S, De)	Ca_{KCl} (%Ca, Vh)	Mg_{KCl} (%Mg, Sm)	1:5 WATER: pH (4A1)	EC (dS/m, 3A1)	Cl (mg/kg, 5A2)
1153	1	0.00	0.10								0.038							0.074	0.036								5.2	0.35	196
	2	0.20	0.30								0.046							0.081	0.035								5.4	0.32	198
	3	0.50	0.60								0.021							0.058	0.037								5.7	0.37	278
	4	0.80	1.00								0.015							0.036	0.021								5.6	0.34	310
	5	1.10	1.30								0.202	0.065						0.221	0.019								6.2	0.36	301
	6	1.40	1.50	S2	Pl						0.679							0.752	0.073								4.4	0.71	135
	7	1.80	2.00		Ps						0.037							0.051	0.014								6.3	0.09	< 20
	8	2.30	2.50		Ps						0.032							0.044	0.012								6.5	0.07	< 20
	9	2.80	3.00								0.020							0.032	0.012								6.5	0.06	< 20
	10	3.50	3.80								0.011							0.02	0.009								7	0.04	< 20
1154	1	0.00	0.10								0.152	< 0.02						0.183	0.031								5	0.35	143
	2	0.20	0.30								0.043							0.064	0.021								5.4	0.15	66.6
	3	0.40	0.50								0.019							0.033	0.014								5.5	0.1	41
	4	0.50	0.60								0.012							0.022	0.01								5.3	0.07	42.1
	5	0.80	1.00								0.035							0.046	0.011								5.2	0.07	< 20
	6	1.30	1.50								0.013							0.049	0.036								4.3	0.26	251
	7	1.60	1.80								0.017							0.066	0.049								4.6	0.55	607
1155	1	0.00	0.10								0.344	0.049						0.447	0.103								5.8	10	12000
	2	0.20	0.30								0.022							0.083	0.061								5.7	4.41	6880
	3	0.50	0.60								0.018							0.084	0.066								4.9	5.06	7980
	4	0.80	1.00								0.104	0.049						0.176	0.072								4.7	4.35	7510
1156	1	0.00	0.10								0.020							0.034	0.014								5	0.12	58.4
	2	0.20	0.30								0.021							0.055	0.034								5.5	0.29	69.2
	3	0.50	0.60								0.013							0.041	0.028								6.2	0.32	91.4
	4	0.80	1.00								0.017							0.044	0.027								6	0.3	54.7
	5	1.20	1.30								0.037							0.07	0.033								5.9	0.4	64.3
	6	1.40	1.50								0.016							0.034	0.018								5.8	0.2	43.6
	7	1.60	1.80								0.010							0.029	0.019								6.3	0.19	45.8
1157	1	0.00	0.10								0.025							0.04	0.015								5.9	0.12	27.1
	2	0.20	0.30								0.027							0.051	0.024								5.2	0.15	114
	3	0.30	0.40								0.039							0.067	0.028								4.9	0.22	253
	4	0.50	0.60								0.034							0.09	0.056								4.9	0.46	637
	5	0.60	0.80								0.043							0.093	0.05								5.2	0.41	599
1158	1	0.00	0.10								0.031							0.06	0.029								4.9	0.2	36.2
	2	0.20	0.30								0.014							0.035	0.021								5.2	0.12	27.5
	3	0.50	0.60								0.032							0.064	0.032								5.6	0.2	98.2
	4	0.80	1.00								0.015							0.06	0.045								5.3	0.63	465
	5	1.10	1.30								0.011							0.028	0.017								5.5	0.23	178
	6	1.30	1.50								0.009							0.066	0.057								5	0.18	440
	7	1.80	2.00								0.008							0.04	0.032								5.4	0.5	463
	8	2.30	2.50								0.008							0.03	0.022								6.3	0.6	603
	9	2.80	2.90								0.007							0.032	0.025								7	0.71	736
	10	2.90	3.00								0.010							0.033	0.023								8.6	0.77	868
1159	1	0.00	0.10								0.045							0.077	0.032								5.5	0.32	225
	2	0.20	0.30								0.030							0.083	0.053								4.7	0.33	225
	3	0.50	0.60								0.010							0.066	0.056								4.6	0.42	310
	4	0.80	1.00								0.013							0.085	0.072								4.9	0.87	803.7
	5	1.30	1.40								0.011							0.066	0.055								5	0.75	717
1160	1	0.00	0.10								0.041							0.068	0.027								5.7	0.19	87.9
	2	0.20	0.30								0.039							0.083	0.044								5.4	0.21	76.7
	3	0.50	0.60								0.013							0.086	0.073								4.5	0.71	483
	4	0.80	1.00								0.014							0.085	0.071								4.7	1.09	991
	5	1.30	1.50								0.018							0.081	0.063								5.2	1.09	1160
	6	1.80	2.00								0.013							0.064	0.051								5.8	0.7	587

Field Morphology Summary																Lab Sample			Action Criteria		SPOCAS ABA		Chromium (S_{CR}) Suite ABA			Potential Acidity					Retained Acidity	Actual Acidity	TOS		Method	POCASm(21) /SPOCAS(23)						1:5 WATER		
Site ID	Hor No	Horizon Name	Upp Depth (m)	Low Depth (m)	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_{TOS} %S 20C1e	S_{CR} %S 22B	S_{POS} %S 21Ee|23Ee	s-TSA %S s-21L|s-23H	s-TPA %S s-21G|s-23G	s-S_{NAS} %S s-20J	s-TAA %S s-21J|s-23F	S_T %S 20A1	S_{HCl} %S 20Be		pH_{KCl} A	pH_{OX} B	S_{KCl} %S Ce	S_P %S De	Ca_{KCl} %Ca Vh	Mg_{KCl} %Mg Sm	pH 4A1	EC dS/m 3A1	Cl mg/kg 5A2
1161	1	A1	0.00	0.15	10YR41	FSCL				0.10	5.1	2.4			1	0.00	0.10								0.037							0.052	0.015								5.4	0.13	85.1
	2	B21	0.15	0.40	10YR51	LC				0.30	4.5	1.8	a		2	0.20	0.30								0.068							0.093	0.025								4.9	0.22	180
	3	B22	0.40	1.10	2.5Y41	LMC				0.60	4.3	1.0	a		3	0.50	0.60								0.032							0.048	0.016								4.9	0.12	108
										0.80	4.5	2.2	a																														
										1.00	4.3	2.4	a		4	0.80	1.00								0.020							0.036	0.016								5	0.11	95.8
	4	B23	1.10	1.60	2.5Y41	MC				1.25	5.0	3.0	a																														
										1.50	4.7	1.7	a		5	1.30	1.50								0.032							0.046	0.014								5.3	0.11	100
	5	2B3i	1.60	2.40	10YR52	FSLMC				1.75	4.7	1.2	a																														
										2.00	4.7	0.9	a		6	1.80	2.00	S2	Pc						0.176							0.195	0.019								5	0.13	71.6
										2.25	4.8	1.3	a																														
															7	2.30	2.40		Pc						0.235							0.263	0.028								4.5	0.26	128
	6	3C1u	2.40	3.00	5Y41	SL				2.50	5.1	1.0																														
										2.75	5.5	1.0																														
										3.00	5.4	1.3			8	2.80	3.00		Pl						1.129							1.48	0.351								2.9	1.97	82.3