

Attachment C

Acid base accounting of acid sulphate soil laboratory results

*Using Fineness Figure of 1.5

**NALR =no additional lime required

Key ASS analysis				Lithology		pH _{cell}	Sulfidic Titratable Actual Acidity (sTAA)	Potential Chromium Reducible Sulfur (S _{CR})	Potential Acidity - Peroxide Oxidisable Sulfur (S _{POX})	Acid Neutralising Capacity (ANC)	Net Acidity (sulfur units)*	Net Acidity (acidity units)	Is this ASS?	Is this PASS?	ALS limiting rate for net acidity (PASS+ASS) kg CaCO ₃ /t
Units	Subsite	Depth (m)	Sample No.	Analysis											
LOR							% pyrite S	%S	%S	% CaCO ₃	%S	10			1
							0.02	0.02	0.02	0.01 or 0.02	0.02	Trigger value =18			
Pit ID	Subsite	Depth (m)	Sample No.	Analysis											
1	1	1	AS 1/1.0	Cr suite	mud	5.7	<0.02	0.02	-	-	0.03	20	No	Yes	2
1	1	1.5	AS 1/1.5	SPOCAS	muddy sand	6.1	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
1	1	2	AS 1/2.0	Cr suite	muddy sand	6.1	<0.02	<0.02	-	-	0.02	16	No	No	N/A
1	1	2.25	AS 1/2.25	SPOCAS	muddy sand	6.2	<0.02	-	<0.02	0.07	<0.02	<10	No	No	N/A
1	1	2.5	AS 1/2.5	Cr suite	muddy sand	5.9	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
1	1	3	AS 1/3.0	Cr suite	muddy sand	6.2	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
2	2	0.25	AS2/0.25	Cr suite	sandy mud	5.1	0.02	<0.02	-	-	0.04	24	No	Yes	2
2	2	0.75	AS 2/0.75	Cr suite	sandy mud	5.3	<0.02	<0.02	-	-	<0.02	12	No	No	N/A
2	2	1.25	AS 2/1.25	Cr suite	muddy sand	6	<0.02	<0.02	-	-	0.03	18	No	Yes	1
2	2	1.5	AS2/1.5	SPOCAS	muddy sand	6	<0.02	-	<0.02	0.09	<0.02	<10	No	No	N/A
2	2	1.75	AS2/1.75	Cr suite	sandy clay	5.7	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
2	2	2.25	AS2/2.25	SPOCAS	muddy sand	6.2	<0.02	-	<0.02	0.08	<0.02	<10	No	No	N/A
2	2	2.75	AS 2/2.75	SPOCAS	muddy sand	6.3	<0.02	-	0.02	0.06	0.02	15	No	No	N/A
2	2	2.75	AS 2/2.75	Cr suite	muddy sand	6.5	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
2	2	3	AS 2/3.0	SPOCAS	muddy sand	6.4	<0.02	-	<0.02	<0.02	<0.02	<10	No	No	N/A
3	3	1.5	AS 3/1.5	Cr suite	muddy sand	5.9	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
3	2		AS 3/2.0	SPOCAS	muddy sand	5.9	<0.02	-	0.02	-	0.03	21	No	Yes	2
4		0.25	AS 4/0.25	Cr suite	sandy mud	5.7	<0.02	<0.02	-	-	<0.02	10	No	No	N/A
4		0.5	AS 4/0.5	SPOCAS	sandy mud	6.5	<0.02	-	<0.02	0.33	<0.02	<10	No	No	N/A
4		0.75	AS 4/0.75	Cr suite	sandy mud	7.7	<0.02	<0.02	-	0.55	<0.02	<10	No	No	N/A
4		1.25	AS 4/1.25	SPOCAS	sandy mud	6.4	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
4		1.5	AS 4/1.5	Cr suite	sand	5.9	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
4		1.75	AS 4/1.75	Cr suite	sand	6.2	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
5I		1.25	AS 5/1.25	SPOCAS	sandy mud	6.8	<0.02	-	<0.02	<0.02	<0.02	<10	No	No	N/A
5I	I	1.75	AS 5/1.75	Cr suite	muddy sand	5.8	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
5I		2.25	AS 5/2.25	SPOCAS	muddy sand	5.8	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
6A	A	0.25	AS 6A/0.25	SPOCAS	muddy sand	5.4	<0.02	-	<0.02	-	0.03	17	No	Marginal	1
6A	A	0.5	AS 6A/0.5	Cr suite	mud	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
6A	A	1.75	AS 6A/1.75	Cr suite	muddy sand	8.5	<0.02	<0.02	-	0.38	<0.02	<10	No	No	N/A
6A	A	2	AS 6A/2.0	SPOCAS	muddy sand	6.9	<0.02	-	<0.02	<0.02	<0.02	<10	No	No	N/A
6A	A	3	AS 6A/3.0	Cr suite	muddy sand	7.5	<0.02	<0.02	-	0.46	<0.02	<10	No	No	N/A
7D	D	0.5	AS 7D/0.5	Cr suite	sandy mud	6.4	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
7D	D	1.25	AS 7D/1.25	SPOCAS	muddy clay	6	<0.02	-	0.06	-	0.07	45	No	Yes	3
7D	D	1.75	AS 7D/1.75	Cr suite	sand	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
7D	D	2.25	AS 7D/2.25	Cr suite	sand	6.2	<0.02	<0.02	-	-	0.02	15	No	No	N/A
7D	D	2.75	AS 7D/2.75	SPOCAS	sand	6.1	<0.02	-	0.11	-	0.12	73	No	Yes	5
7D	D	3	AS 7D/3.0	SPOCAS	sand	6	<0.02	-	0.1	-	0.11	69	No	Yes	5
7D	D	3.25	AS 7D/3.25	Cr suite	sand	6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
8C	C	0.5	AS 8C/0.5	SPOCAS	mud	5.7	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A

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Key ASS analysis Units				Lithology		pH _{ACL}	Sulfidic Titratable Actual Acidity (STAA)	Potential Chromium Reducible Sulfur (S _{CR}) %S	Potential Acidity - Peroxide Oxidisable Sulfur (S _{POX}) %S	Acid Neutralising Capacity (ANC)	Net Acidity		Is this ASS?	Is this PASS?	ALS limiting rate for net acidity (PASS+ASS) kg CaCO ₃ /t			
				(Folk Classification)							% pyrite S	%S				% CaCO ₃	%S	mole H ⁺ / t
Pit ID	Subsite	Depth (m)	Sample No.	Analysis								0.02				0.02	0.01 or 0.02	0.02
LOR							0.02	0.02	0.01 or 0.02	0.02	10				1			
16B	B	2.25	AS 16B/2.25	Cr suite	sandy mud	5.1	0.03	<0.02	-	-	0.03	20	Yes	No	2			
16B	B	2.5	AS 16B/2.5	SPOCAS	sandy mud	5.8	<0.02	-	<0.02	0.07	<0.02	<10	No	No	N/A			
16B	B	2.75	AS 16B/2.75	SPOCAS	muddy sand	6.1	<0.02	-	<0.02	0.02	<0.02	<10	No	No	N/A			
16B	B	3	AS 16B/3.0	SPOCAS	muddy sand	6.3	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
17		0.5	AS 17/0.5	SPOCAS	sand	6.5	<0.02	-	<0.02	0.12	<0.02	<10	No	No	N/A			
17		1	AS 17/1.0	Cr suite	muddy sand	6.3	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
17		1.5	AS 17/1.5	SPOCAS	muddy sand	5.6	<0.02	-	<0.02	0.24	<0.02	11	No	No	N/A			
17		2	AS 17/2.0	Cr suite	mud	5.6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
17		2.25	AS 17/2.25	SPOCAS	mud	5.8	<0.02	-	<0.02	0.02	<0.02	<10	No	No	N/A			
18		0.25	AS 18/0.25	SPOCAS	muddy sand	6	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
18		1	AS 18/1.0	SPOCAS	muddy sand	5.9	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
18		1.5	AS 18/1.5	Cr suite	muddy sand	6.4	<0.02	<0.02	-	-	<0.02	11	No	No	N/A			
18		1.75	AS 18/1.75	SPOCAS	muddy sand	6.3	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
19		0.25	AS 19/0.25	Cr suite	sandy mud	6.2	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
19		0.5	AS 19/0.5	Cr suite	sandy mud	5.8	<0.02	<0.02	-	-	0.03	18	No	Yes	1			
19		1.5	AS 19/1.5	Cr suite	gravelly sand	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
20		0.5	AS 20/0.5	SPOCAS	sandy mud	5.7	<0.02	-	0.1	-	0.11	66	No	Yes	5			
20		1	AS 20/1.0	Cr suite	sandy mud	5.5	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
20		1.25	AS 20/1.25	SPOCAS	sandy mud	6.1	<0.02	-	0.08	<0.02	0.08	50	No	Yes	4			
20		2	AS 20/2.0	SPOCAS	clay	6.7	<0.02	-	0.1	0.34	<0.02	<10	No	Yes	NALR			
20		2.25	AS 20/2.25	SPOCAS	clay	6.7	<0.02	-	0.09	0.34	<0.02	<10	No	Yes	NALR			
20		2.5	AS 20/2.5	SPOCAS	clay	7.2	<0.02	-	0.06	-	0.02	13	No	Yes	NALR			
20		2.75	AS 20/2.75	SPOCAS	clay	6.9	<0.02	-	0.08	-	0.23	141	No	Yes	10			
20		3	AS 20/3.0	Cr suite	clay	6.9	<0.02	0.49	-	0.59	0.37	230	No	Yes	17			
20		3.25	AS 20/3.25	Cr suite	sand	6.5	<0.02	0.04	-	-	0.04	24	No	Yes	2			
21		0.5	AS 21/0.5	Cr suite	sandy mud	5.6	0.03	<0.02	-	-	0.03	17	Marginal	No	1			
21		0.75	AS 21/0.75	Cr suite	mud	5.5	0.03	<0.02	-	-	0.03	16	Marginal	No	1			
21		1.25	AS 21/1.25	Cr suite	sandy mud	5.9	<0.02	<0.02	-	-	0.03	18	Yes	No	1			
21		1.5	AS 21/1.5	SPOCAS	mud	5.6	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
21		2.25	AS 21/2.25	Cr suite	gravelly sand	5.6	<0.02	<0.02	-	-	<0.02	12	No	No	N/A			
22		0.25	AS 22/0.25	Cr suite	sandy mud	5.6	<0.02	<0.02	-	-	<0.02	11	No	No	N/A			
22		1	AS 22/1.0	Cr suite	gravelly sand	6.2	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
23		1	AS 23/1.0	Cr suite	sand	6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
23		2	AS 23/2.0	Cr suite	sand	5.6	<0.02	<0.02	-	-	<0.02	11	No	No	N/A			
24		1.25	AS 24/1.25	SPOCAS	gravelly sand	7.5	<0.02	-	0.03	<0.02	<0.02	<10	No	Yes	NALR			
25		0.5	AS 25/0.5	SPOCAS	sand	5.9	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A			
25		0.75	AS 25/0.75	Cr suite	sand	6.3	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
25		1.5	AS 25/1.5	SPOCAS	sand	6.6	<0.02	-	<0.02	0.14	<0.02	<10	No	No	N/A			
26		0.25	AS 26/0.25	SPOCAS	sand	6.1	<0.02	-	0.03	-	0.04	24	No	Yes	2			
26		0.5	AS 26/0.5	SPOCAS	sand	6.1	<0.02	-	0.04	-	0.04	27	No	Yes	2			
26		0.75	AS 26/0.75	Cr suite	sand	6.2	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
27		1.25	AS 27/1.25	Cr suite	clay	5.8	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
27		1.5	AS 27/1.5	SPOCAS	sand	6.3	<0.02	-	<0.02	0.02	<0.02	<10	No	No	N/A			
27		2	AS 27/2.0	Cr suite	sand	6.3	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A			
27		2.75	AS 27/2.75	SPOCAS	sand	6.6	<0.02	-	0.03	<0.02	<0.02	<10	No	Yes	NALR			
27		3	AS 27/3.0	Cr suite	sand	6.6	<0.02	<0.02	-	0.36	<0.02	<10	No	No	N/A			

Key ASS analysis				Lithology		pH _{cell}	Sulfidic Titratable Actual Acidity (STAA)	Potential Chromium Reducible Sulfur (S _{cr})	Potential Acid - Peroxide Oxidisable Sulfur (S _{op})	Acid Neutralising Capacity (ANC)	Net Acidity (sulfur units)*	Net Acidity (acidic units) mole H ⁺ / t	Is this ASS?	Is this PASS?	ALS liming rate for net acidity (PASS+ASS) kg CaCO ₃ /t
Units	Subsite	Depth (m)	Sample No.	Analysis	(Folk Classification)										
LOR							% pyrite S	%S	%S	% CaCO ₃	%S	10			1
Pit ID							0.02	0.02	0.02	0.01 or 0.02	Trigger value =0.03	Trigger value =18			
28		1	AS 28/1.0	SPOCAS	mud	6.7	<0.02	-	0.05	-	0.03	17	No	Yes	1
28		1.75	AS 28/1.75	Cr suite	muddy sand	6	<0.02	<0.02	-	-	0.02	14	No	No	N/A
28		2	AS 28/2.0	Cr suite	muddy sand	4.6	0.03	<0.02	-	-	0.03	22	Yes	No	2
28		2.25	AS 28/2.25	Cr suite	muddy sand	4.6	0.03	<0.02	-	-	0.05	32	Yes	No	2
28		2.5	AS 28/2.5	SPOCAS	muddy sand	4.7	<0.02	-	0.02	-	0.04	25	No	Yes	2
28		2.75	AS 28/2.75	SPOCAS	muddy sand	5.1	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
28		3	AS 28/3.0	Cr suite	muddy sand	4.9	0.02	<0.02	-	-	0.02	14	No	No	N/A
29		0.5	AS 29/0.5	Cr suite	muddy sand	6.4	0.02	<0.02	-	-	<0.02	<10	No	No	N/A
29		0.75	AS 29/0.75	Cr suite	muddy sand	6.6	<0.02	<0.02	-	0.41	<0.02	<10	No	No	N/A
30		0.75	AS 30/0.75	Cr suite	sandy clay	5.7	<0.02	<0.02	-	-	0.03	19	No	Yes	1
30		1	AS 30/1.0	Cr suite	sand	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
30		1.25	AS 30/1.25	Cr suite	sand	6	<0.02	<0.02	-	-	0.02	15	No	No	N/A
30		1.75	AS 30/1.75	SPOCAS	sand	6.1	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
30		2.25	AS 30/2.25	SPOCAS	sand	4.8	0.03	-	0.02	-	0.05	31	Yes	No	2
31		1.25	AS 31/1.25	SPOCAS	muddy sand	5.5	<0.02	-	<0.02	-	<0.02	10	No	No	N/A
31		1.75	AS 31/1.75	Cr suite	muddy sand	5.6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
31		2.25	AS 31/2.25	Cr suite	muddy sand	5.6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
31		2.5	AS 31/2.5	SPOCAS	muddy sand	5.4	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
31		2.75	AS 31/2.75	Cr suite	muddy sand	5.5	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
31		3	AS 31/3.0	SPOCAS	muddy sand	5.4	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
32		1.75	AS 32/1.75	SPOCAS	sandy mud	6	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
32		1.75	AS 32/1.75 (dup)	SPOCAS	sandy mud	6.5	<0.02	-	0.08	0.22	<0.02	<10	No	Yes	NALR
32		2.25	AS 32/2.25	SPOCAS	sandy mud	5.3	<0.02	-	0.05	-	0.06	40	No	Yes	3
32		2.5	AS 32/2.5	Cr suite	sandy mud	4.7	0.04	<0.02	-	-	0.04	26	Yes	No	2
32		2.75	AS 32/2.75	SPOCAS	sandy mud	4.6	0.03	-	<0.02	-	0.04	28	Yes	No	3
32		3	AS 32/3.0	Cr suite	sandy mud	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
32		3.25	AS 32/3.25	SPOCAS	sandy mud	5.9	<0.02	-	0.06	-	0.07	44	No	Yes	3
33		0.5	AS 33/0.5	Cr suite	sandy mud	5.5	<0.02	<0.02	-	-	<0.02	11	No	No	N/A
33		1.5	AS 33/1.5	SPOCAS	muddy sand	5.8	<0.02	-	<0.02	0.04	<0.02	<10	No	No	N/A
33		2.25	AS 33/2.25	Cr suite	muddy sand	5.7	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
33		2.5	AS 33/2.5	Cr suite	muddy sand	6	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
33		3	AS 33/3.0	SPOCAS	gravely muddy sand	6.4	<0.02	-	<0.02	0.02	<0.02	<10	No	No	N/A
34		0.75	AS 34/0.75	Cr suite	sandy mud	5.2	0.02	<0.02	-	-	0.02	16	No	No	1
34		2	AS 34/2.0	Cr suite	sandy mud	4.6	0.04	<0.02	-	-	0.04	28	Yes	No	2
34		2.25	AS 34/2.25	SPOCAS	sandy clay	4.6	0.05	-	<0.02	-	0.05	33	Yes	No	2
34		2.5	AS 34/2.50	Cr suite	sandy clay	4.5	0.06	<0.02	-	-	0.06	34	Yes	No	2
34		2.75	AS 34/2.75	SPOCAS	sandy clay	4.5	0.05	-	0.02	-	0.08	49	Yes	No	4
34		3	AS 34/3.0	SPOCAS	sandy clay	4.5	0.06	-	<0.02	-	0.07	45	Yes	No	3
35		1	AS 35/1.0	Cr suite	sandy mud	6.1	<0.02	<0.02	-	-	<0.02	<10	No	No	N/A
35		1.25	AS 35/1.25	SPOCAS	sandy mud	5.9	<0.02	-	<0.02	-	<0.02	<10	No	No	N/A
35		1.75	AS 35/1.75	SPOCAS	sandy clay	4.7	0.04	-	<0.02	-	0.05	34	Yes	No	2
35		2	AS 35/2.0	Cr suite	sandy clay	4.7	0.04	<0.02	-	-	0.04	24	Yes	No	2
35		2.5	AS 35/2.5	SPOCAS	sandy clay	4.5	0.05	-	<0.02	-	0.07	44	Yes	No	3
35		2.75	AS 35/2.75	SPOCAS	sandy clay	4.6	0.05	-	<0.02	-	0.07	41	Yes	No	3
35		3	AS 35/3.0	Cr suite	sandy clay	4.9	0.04	0.05	-	-	0.09	57	Yes	No	4

Key ASS analysis																
Units																
LOR	Pit ID	Subsite	Depth (m)	Sample No.	Analysis	Lithology	pH _{cell}	Sulfidic Titratable Actual Acidity (STAA)	Potential Acidity – Chromium Reducible Sulfur (S _{CR})	Potential Acidity - Peroxide Oxidisable Sulfur (S _{PO})	Acid Neutralising Capacity (ANC)	Net Acidity (sulfur units)*	Net Acidity (acidity units)	Is this ASS?	Is this PASS?	ALS liming rate for net acidity (PASS+ASS) kg CaCO ₃ /t
						(Folk Classification)		% pyrite S	%S	%S	% CaCO ₃ 0.01 or 0.02	%S	10			1
								0.02	0.02	0.02	Trigger value =0.03	Trigger value	Trigger value			-