

Appendix C

**ACID SULPHATE SOILS
ASSESSMENT—FIELD
ANALYSIS RESULTS**

Table C1 Acid sulphate soils assessment—field analysis results

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{fox})	Reaction temperature °C			React with H ₂ O ₂
					15 min.	30 min.	70 min.	
TP1 (surf. RL 2.9 m AHD)	0.4 to 0.5	2.5 to 2.4	4.6	4.0	-	23.0	22.5	weak no org bubbles
	1.1 to 1.2	1.8 to 1.7	4.2	4.3	-	21.8	21.8	weak no org bubbles
	1.6 to 1.7	1.3 to 1.2	4.0	4.3	-	21.1	21.3	weak no org bubbles
	2.4 to 2.5	0.5 to 0.4	3.7	4.1	-	20.9	20.9	weak no org bubbles
					(Ambient 22.7°C)			
TP2 (surf. RL 2.8 m AHD)	0.3 to 0.4	2.5 to 2.4	5.3	4.1	-	-	29.2	slow org bubbles
	1.0 to 1.1	1.8 to 1.7	5.0	3.8	-	-	28.8	organic bubbles
	1.5 to 1.6	1.3 to 1.2	4.1	5.0	-	-	27.5	slow—nil
	2.4 to 2.5	0.4 to 0.3	3.8	4.4	-	-	27.5	slow—nil
	3.1 to 3.3	-0.3 to -0.5	4.8	4.2	-	-	28.6	fine bubbles slow
	3.7 to 3.8	-0.9 to -1.0	4.9	6.3	-	-	28.0	fine bubbles slow
4.1 to 4.2	-1.3 to -1.4	4.5	5.4	-	-	28.2	fine bubbles slow	
					(Ambient 26.5°C)			
TP3 (surf. RL 2.8 m AHD)	0.4 to 0.5	2.4 to 2.3	5.1	3.7	-	-	30.2	slow org bubbles
	0.7 to 0.8	2.1 to 2.0	5.0	4.5	-	-	28.4	slight org bubbles
	2.0 to 2.2	0.8 to 0.6	4.9	4.8	-	-	28.0	slight—nil
	2.8 to 3.0	0.0 to -0.2	4.3	4.8	-	-	27.1	slow—nil
	3.5 to 3.6	-0.7 to -0.8	4.8	5.2	-	-	27.5	slow—nil
	4.0 to 4.2	-1.2 to -1.4	5.0	4.1	-	-	28.6	fine bubbles
	4.2 to 4.3	-1.4 to -1.5	5.2	4.2	-	-	29.7	fine bubbles
					(Ambient 25.0°C)			
TP4 (surf. RL 2.8 m AHD)	0.4 to 0.5	2.4 to 2.3	5.1	4.2	-	33.5	30.5	slow bubbling
	1.2 to 1.4	1.6 to 1.4	5.1	4.6	-	30.7	28.7	slight—nil
	2.0 to 2.2	0.8 to 0.6	5.0	4.6	-	29.6	27.5	slight—nil
	2.6 to 2.8	0.2 to 0.0	4.9	4.9	-	29.3	27.4	slow bubbles
	3.7 to 3.9	-0.9 to -1.1	5.1	3.8	-	29.3	27.5	slight—nil

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{FOX})	Reaction temperature °C			React with H ₂ O ₂
					15 min.	30 min.	70 min.	
TP5 (surf. RL 2.9 m AHD)	0.2 to 0.3	2.7 to 2.6	4.9	2.7	-	39.2	38.5	organic bubbles
	0.8 to 0.9	2.1 to 2.0	5.2	4.3	-	31.0	31.5	slight—nil
	1.5 to 1.7	1.4 to 1.2	4.8	4.9	-	30.0	30.1	slight—nil
	2.6 to 2.8	0.3 to 0.1	4.2	4.8	-	30.2	29.2	slight—nil
	2.8 to 3.0	0.1 to -0.1	3.9	4.8	-	29.0	28.1	slow bubbles
	3.8 to 4.0	-0.9 to -1.1	3.9	4.8	-	28.8	27.7	slow bubbles
(Ambient 25°C)								
TP6 (surf. RL 2.7 m AHD)	0.2 to 0.3	2.5 to 2.4	4.5	4.2	21.0	-	-	weak, nil
	0.7 to 0.8	2.0 to 1.9	3.9	3.9	18.8	-	-	weak, nil
	1.3 to 1.5	1.4 to 1.2	3.7	3.8	18.6	-	-	weak, nil
	2.0 to 2.1	0.7 to 0.6	3.9	4.1	18.8	-	-	weak, nil
	2.9 to 3.0	-0.2 to -0.3	5.2	6.1	20.5	-	-	weak, nil
	3.9 to 4.0	-1.2 to -1.3	4.3	4.4	18.8	-	-	weak, nil
(Ambient 13.8°C)								
TP7 (surf. RL 2.7 m AHD)	0.2 to 0.3	2.5 to 2.4	5.1	4.3	-	-	-	few bubbles, organic
	0.8 to 0.9	1.9 to 1.8	4.7	3.9	-	-	-	few bubbles, organic
	1.5 to 1.6	1.2 to 1.1	4.9	4.3	-	-	-	few bubbles, organic
	2.6 to 2.7	0.1 to 0.0	3.8	4.0	-	-	-	few bubbles, organic
	3.9 to 4.0	-1.2 to -1.3	4.5	3.3	-	-	-	few bubbles, organic
	(Ambient 26°C)							
TP8 (surf. RL 2.7 m AHD)	0.3 to 0.4	2.4 to 2.3	5.1	4.8	-	32.5	29.1	slight org bubbles
	0.8 to 1.0	1.9 to 1.7	4.9	5.1	-	32.4	28.1	slow—nil
	1.8 to 2.0	0.9 to 0.7	4.4	5.8	-	30.4	28.6	slow—nil
	2.6 to 2.8	0.1 to -0.1	4.5	7.1	-	30.8	27.3	slow—nil
	3.0 to 3.2	-0.3 to -0.5	4.2	7.0	-	30.2	27.2	slow—nil
	3.4 to 3.6	-0.7 to -0.9	5.2	7.3	-	32.9	30.3	slow fine bubbles

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{Fox})	Reaction temperature °C			React with H ₂ O ₂	
					15 min.	30 min.	70 min.		
TP9/BH9 (surf. RL 2.6 m AHD)	0.2 to 0.3	2.4 to 2.3	5.1	3.7	(Ambient 28.1°C) 34.0	-	27.2	slow, nil	
	0.9 to 1.1	1.7 to 1.5	4.3	4.8	34.0	-	25.6	slow, nil	
	1.5 to 1.7	1.1 to 0.9	4.7	5.1	32.0	-	25.5	slow, nil	
	2.4 to 2.6	0.2 to 0.0	4.8	5.8	32.5	-	25.5	slow, nil	
	3.0 to 3.2	-0.4 to -0.6	4.3	7.1	36.5	-	26.9	slow, nil	
	4.5 to 4.6	-1.9 to -2.0	5.7	4.3	37.7	37.5	37.7	weak	
	4.6 to 4.7	-2.0 to -2.1	5.7	4.2	38.1	37.5	38.5	weak	
	6.0 to 6.1	-3.4 to -3.5	6.1	4.8	37.5	36.9	37.5	moderate	
	7.5 to 7.7	-4.9 to -5.1	5.7	4.2	37.3	36.7	38.1	moderate	
	9.0 to 9.2	-6.4 to -6.6	5.9	4.6	37.1	37.0	37.3	weak	
	10.5 to 10.7	-7.9 to -8.1	5.7	5.0	37.0	36.8	37.0	weak	
	12.0 to 12.2	-9.4 to -9.6	5.4	4.4	36.8	36.0	36.3	weak	
	16.5 to 16.8	-13.9 to -14.2	5.6	5.9	45.1	42.0	37.6	vigorous	
	TP10/BH10 (surf. RL 2.5 m AHD)	0.2 to 0.3	2.3 to 2.2	5.6	3.9	(Ambient 25°C) -	-	25.7	weak
		1.0 to 1.2	1.5 to 1.3	5.4	4.2	-	-	25.3	weak
2.2 to 2.4		0.3 to 0.1	5.2	4.7	-	-	24.5	weak	
2.6 to 2.8		-0.1 to -0.3	5.4	5.0	-	-	25.6	weak	
2.8 to 3.0		-0.3 to -0.5	5.4	4.7	-	-	25.6	weak	
4.5 to 4.7		-2.0 to -2.2	5.7	3.7	34.4	33.2	31.1	weak	
6.2 to 6.4		-3.7 to -3.9	6.5	4.4	32.3	30.8	29.0	weak	
7.4 to 7.6		-4.9 to -5.1	6.1	3.1	36.0	34.0	32.6	moderate	
7.6 to 7.7		-5.1 to -5.2	5.9	3.4	33.3	31.4	29.5	moderate	
9.0 to 9.2		-6.5 to -6.7	5.2	1.9	63.3	35.8	33.3	strong, vigorous	
9.2 to 9.3		-6.7 to -6.8	5.0	1.9	62.5	33.0	31.0	strong, vigorous	
10.5 to 10.6		-8.0 to -8.1	5.7	2.2	39.5	35.1	32.6	moderate	
12.0 to 12.2		-9.5 to -9.7	6.0	2.3	34.2	37.8	32.6	moderate	
14.0 to 14.1		-11.5 to -11.6	5.4	3.0	34.5	31.0	29.2	moderate	

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{FOX})	Reaction temperature °C			React with H ₂ O ₂	
					15 min.	30 min.	70 min.		
TP11 (surf. RL 2.9 m AHD)	0.1 to 0.2	2.8 to 2.7	5.1	3.0	(Ambient 23.5°C)	25.2	32.8	organic bubbles	
	0.3 to 0.4	2.6 to 2.5	5.1	3.6	-	23.0	29.0	organic bubbles	
	0.8 to 1.0	2.1 to 1.9	5.2	4.9	-	22.2	28.0	organic bubbles	
	1.4 to 1.5	1.5 to 1.4	5.1	5.3	-	22.2	28.0	organic bubbles	
	1.8 to 1.9	1.1 to 1.0	5.0	5.3	-	22.4	28.0	organic bubbles	
	2.4 to 2.5	0.5 to 0.4	4.7	5.1	-	23.0	28.0	organic bubbles	
	3.5 to 3.6	-0.6 to -0.7	4.1	3.9	-	23.6	31.0	organic bubbles	
	TP12 (surf. RL 2.6 m AHD)	0.2 to 0.3	2.4 to 2.3	5.5	3.8	(Ambient 16.5°C)	-	18.7	few bubbles, organic
		0.8 to 0.9	1.8 to 1.7	4.7	4.0	-	-	16.2	few bubbles, organic
1.5 to 1.6		1.1 to 1.0	5.4	4.5	-	-	16.8	few bubbles, organic	
2.1 to 2.2		0.5 to 0.4	5.9	5.6	-	-	16.3	few bubbles, organic	
3.0 to 3.2		-0.4 to -0.6	4.6	3.8	-	-	16.3	few bubbles, organic	
TP13 (surf. RL 2.3 m AHD)		0.2 to 0.3	2.1 to 2.0	4.9	4.4	(Ambient 16.2°C)	-	18.5	-
	0.8 to 0.9	1.5 to 1.4	5.3	4.3	-	-	18.0	-	
	1.7 to 1.8	0.6 to 0.5	4.6	4.8	-	-	17.3	-	
	2.8 to 3.0	-0.5 to -0.7	5.4	5.3	-	-	17.0	-	
	3.7 to 3.9	-1.4 to -1.6	4.0	4.7	-	-	17.0	-	
	TP14 (surf. RL 2.4 m AHD)	0.2 to 0.3	2.2 to 2.1	5.6	4.9	(Ambient 21.0°C)	19.7	27.6	-
1.0 to 1.1		1.4 to 1.3	5.2	5.0	-	19.0	23.3	-	
2.0 to 2.2		0.4 to 0.2	5.3	5.0	-	18.4	22.6	-	
3.0 to 3.2		-0.6 to -0.8	5.1	3.5	-	18.8	23.3	-	
3.3 to 3.4		-0.9 to -1.0	4.7	4.9	-	18.6	23.7	-	
TP15 (surf. RL 2.3 m AHD)		0.3 to 0.4	2.0 to 1.9	5.8	5.2	(Ambient 21.0°C)	19.7	24.7	-
	0.7 to 0.9	1.6 to 1.4	5.7	5.5	-	19.0	23.8	-	
	1.6 to 1.7	0.7 to 0.6	5.4	5.3	-	18.4	23.5	-	
	2.2 to 2.3	0.1 to 0.0	5.2	6.2	-	18.5	22.4	-	
	2.4 to 2.5	-0.1 to -0.2	5.2	7.6	-	18.7	23.7	-	
	2.7 to 2.9	-0.4 to -0.6	5.2	6.4	-	19.7	24.2	-	

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{FOX})	Reaction temperature °C			React with H ₂ O ₂
					15 min.	30 min.	70 min.	
TP16 (surf. RL 2.6 m AHD)	0.2 to 0.3	2.4 to 2.3	5.3	3.5	(Ambient 25.6°C)			organic bubbles
	0.6 to 0.7	2.0 to 1.9	5.5	5.0	28.6	-	28.0	nil
	0.9 to 1.0	1.7 to 1.6	5.6	5.2	27.3	-	28.0	nil
	1.4 to 1.5	1.2 to 1.1	5.4	7.5	26.5	-	28.0	nil
	2.2 to 2.3	0.4 to 0.3	5.3	7.9	26.7	-	28.0	nil
	2.8 to 3.0	-0.2 to -0.4	5.7	7.7	26.5	-	28.0	nil
	3.7 to 3.8	-1.1 to -1.2	6.0	7.9	26.4	-	28.0	nil
	4.4 to 4.5	-1.8 to -1.9	6.0	6.9	26.6	-	28.0	nil
					27.3	-	28.0	nil
TP17/BH17 (surf. RL 2.8 m AHD)	0.2 to 0.3	2.6 to 2.5	5.4	5.8	(Ambient 23.0°C)			nil
	0.5 to 0.6	2.3 to 2.2	5.3	5.7	-	21.9	21.2	nil
	0.8 to 0.9	2.0 to 1.9	5.3	5.3	-	21.5	20.2	nil
	1.5 to 1.6	1.3 to 1.2	5.6	7.7	-	21.1	20.0	nil
	2.0 to 2.1	0.8 to 0.7	5.1	8.1	-	20.6	19.5	nil
	3.0 to 3.1	-0.2 to -0.3	5.8	8.2	-	20.3	19.5	nil
	4.0 to 4.2	-1.2 to -1.4	5.2	8.1	-	20.1	19.6	nil
	4.5 to 4.8	-1.7 to 2.0	6.0	6.5	-	20.2	20.0	nil
	6.0 to 6.1	-3.2 to -3.3	6.3	6.4	34.0	38.1	35.9	moderate
	9.5 to 9.7	-6.7 to -6.9	5.9	5.5	32.0	34.0	33.0	weak
10.5 to 10.7	-7.7 to -7.9	5.4	5.5	31.4	33.2	32.6	weak	
14.0 to 14.2	-11.2 to -11.4	6.2	4.1	31.2	35.0	33.4	moderate	
14.2 to 14.3	-11.4 to -11.5	5.5	3.2	33.0	35.4	34.3	moderate	
				32.4	34.8	34.1	weak	
TP18 (surf. RL 2.4 m AHD)	0.1 to 0.2	2.3 to 2.2	5.5	3.7	(Ambient 16.2°C)			weak, nil
	0.4 to 0.5	2.0 to 1.9	5.3	4.6	-	-	14.0	weak, nil
	0.9 to 1.0	1.5 to 1.4	5.3	4.3	-	-	14.0	weak, nil
	1.4 to 1.5	1.0 to 0.9	5.2	5.1	-	-	12.0	weak, nil
	2.0 to 2.1	0.4 to 0.3	5.4	5.9	-	-	12.0	weak, nil
	3.0 to 3.1	-0.6 to -0.7	5.8	5.5	-	-	14.0	weak, nil
	4.4 to 4.5	-2.0 to -2.1	5.8	5.2	-	-	13.0	weak, nil

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{FOX})	Reaction temperature °C			React with H ₂ O ₂	
					15 min.	30 min.	70 min.		
TP19 (surf. RL 2.5 m AHD)	0.2 to 0.3	2.3 to 2.2	5.6	4.6	-	-	17.0	nil	
	0.5 to 0.6	2.0 to 1.9	5.0	4.8	-	-	12.0	nil	
	1.7 to 1.8	0.8 to 0.7	4.6	4.8	-	-	11.0	nil	
	2.2 to 2.3	0.3 to 0.2	4.5	5.1	-	-	12.0	nil	
	2.4 to 2.5	0.1 to 0.0	4.9	6.5	-	-	12.0	nil	
	3.0 to 3.1	-0.5 to -0.6	5.7	6.6	-	-	13.0	nil	
	4.0 to 4.1	-1.5 to -1.6	5.6	5.8	-	-	13.0	nil	
					(Ambient 16.2°C)				
TP20 (surf. RL 2.2 m AHD)	0.1 to 0.2	2.1 to 2.0	5.7	3.5	-	-	20.4	organic bubbles	
	0.7 to 0.8	1.5 to 1.4	5.1	4.5	-	-	19.5	organic bubbles	
	1.2 to 1.3	1.0 to 0.9	5.0	4.6	-	-	19.2	organic bubbles	
	2.0 to 2.1	0.2 to 0.1	4.9	4.0	-	-	19.1	organic bubbles	
	3.0 to 3.2	-0.8 to -1.0	5.5	5.2	-	-	19.6	organic bubbles	
	4.5 to 4.6	-2.3 to -2.4	6.0	6.0	-	-	25.5	organic bubbles	
					(Ambient 19.4°C)				
TP21 (surf. RL 2.4 m AHD)	0.2 to 0.3	2.2 to 2.1	6.5	3.3	-	16.8	22.6	lots org bubbles	
	0.4 to 0.5	2.0 to 1.9	6.2	4.7	-	17.0	21.1	few bubbles	
	0.9 to 1.1	1.5 to 1.3	5.9	4.3	-	17.0	20.5	few bubbles	
	1.3 to 1.4	1.1 to 1.0	5.6	4.7	-	17.0	20.3	few bubbles	
	2.2 to 2.4	0.2 to 0.0	5.6	5.3	-	17.0	20.0	few bubbles	
	3.8 to 4.0	-1.4 to -1.6	6.1	5.8	-	17.0	23.6	few bubbles	
	4.4 to 4.6	-2.0 to -2.2	6.2	6.2	-	17.0	23.0	few bubbles	
					(Ambient 18.5°C)				
TP22/BH22 (surf. RL 2.1 m AHD)	0.2 to 0.3	1.9 to 1.8	5.4	4.2	-	-	-	small bubbles	
	0.9 to 1.0	1.2 to 1.1	5.1	5.0	-	-	-	small bubbles	
	1.4 to 1.5	0.7 to 0.6	4.8	3.9	-	-	-	small bubbles	
	2.4 to 2.5	-0.3 to -0.4	5.4	5.7	-	-	-	small bubbles	
	3.5 to 3.6	-1.4 to -1.5	6.3	6.7	-	-	-	small bubbles	
	4.6 to 4.8	-2.5 to -2.7	5.9	6.3	-	-	-	small bubbles	
	6.0 to 6.1	-3.9 to -4.0	5.9	7.0	30.1	36.0	36.1	small bubbles	
	6.1 to 6.2	-4.0 to -4.1	5.7	7.2	30.2	37.1	36.1	small bubbles	
	9.1 to 9.3	-7.0 to -7.2	5.4	6.8	29.7	35.3	33.8	small bubbles	
	12.0 to 12.1	-9.9 to -10.0	6.0	7.2	29.1	34.9	34.0	small bubbles	
	17.5 to 17.6	-15.4 to -15.5	6.2	7.7	33.9	38.3	35.9	small bubbles	
					(Ambient 30.4°C)				

Table C1 Acid sulphate soils assessment—field analysis results (continued)

Test hole number and elevation	Depth (m)	RL (m AHD)	Initial pH pH _F (1:5)	Oxid pH (pH _{FOX})	Reaction temperature °C			React with H ₂ O ₂
					15 min.	30 min.	70 min.	
TP23 (surf. RL 2.0 m AHD)	0.2 to 0.3	1.8 to 1.7	5.5	3.3	(Ambient 19.4°C)			
	0.4 to 0.5	1.6 to 1.5	5.5	4.6	-	16.1	19.2	few bubbles
	1.3 to 1.5	0.7 to 0.5	5.3	4.8	-	16.5	18.3	few bubbles
	2.4 to 2.5	-0.4 to -0.5	5.1	4.4	-	16.7	17.9	few bubbles
TP24 (surf. RL 2.0 m AHD)	0.1 to 0.2	1.9 to 1.8	4.8	2.7	(Ambient 22.7°C)			
	0.3 to 0.4	1.7 to 1.6	4.2	3.0	-	30.1	29.6	strong org bubbles
	1.0 to 1.1	1.0 to 0.9	4.2	3.5	-	24.1	24.7	strong org bubbles
	1.9 to 2.0	0.1 to -0.0	4.3	4.4	-	22.8	22.8	strong org bubbles
	2.6 to 2.7	-0.6 to -0.7	4.9	5.0	-	21.5	21.5	strong org bubbles
	2.9 to 3.0	-0.9 to -1.0	5.3	5.6	-	21.4	21.5	strong org bubbles
					22.0	22.3	strong org bubbles	