

APPENDICES

APPENDIX 1: DETAILED MMTS-1 EROSION PIN DATA

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
M1.1	16.70		16.70	9.20	7.50	9.20	14.20	-5.00	14.20	12.80	1.40	12.80	21.00	-8.20
M1.2	14.50		14.50	9.20	5.30	9.20	15.20	-6.00	15.20	19.50	-4.30	19.50	22.50	-3.00
M1.3	18.50		18.50	16.10	2.40	16.10	20.40	-4.30	20.40	24.60	-4.20	24.60	26.20	-1.60
M1.4	17.00		17.00	15.80	1.20	15.80	20.50	-4.70	20.50	19.50	1.00	19.50	22.60	-3.10
Average change in pin length between transfer					4.10			-5.00			-1.53			-3.98
Accumulated average change in pin length								-0.90			-2.43			-6.40
M1.5 deposition	31.00		31.00	27.40	3.60	27.40	Lost			Lost			Lost	
M2.1	15.50		15.50	15.00	0.50	15.00	18.40	-3.40	18.40	21.00	-2.60	21.00	21.60	-0.60
M2.2	13.40		13.40	16.00	-2.60	16.00	18.00	-2.00	18.00	22.50	-4.50	22.50	24.00	-1.50
M2.3	10.10		10.10	14.50	-4.40	14.50	20.50	-6.00	20.50	26.20	-5.70	26.20	30.00	-3.80
M2.4	11.10		11.10	10.00	1.10	10.00	21.40	-11.40	21.40	22.60	-1.20	22.60	34.50	-11.90
M2.5	17.00		17.00	17.00	0.00	17.00	25.40	-8.40	25.40	23.00	2.40	23.00	22.20	0.80
M2.7						14.80	25.70	-10.90	25.70	37.50	-11.80	9.00	10.30	-1.30
M2.8						19.70	53.50	-33.80	53.50	Lost		8.50	12.20	-3.70
M2.9						15.00	24.70	-9.70	24.70	Lost		14.50	17.60	-3.10
M2.10						20.20	Lost		11.50	Lost		4.50	11.00	-6.50
Average change in pin length between transfer					-1.08			-10.70			-3.90			-3.51
Accumulated average change in pin length								-11.78			-15.68			-19.19
M2.6 Deposition	34.00		34.00	Lost		22.30	27.80	-5.50	27.80	76.90	-49.10	30.00	Lost	

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Mpofana stream)

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
M3.1	7.40		7.40	22.70	-15.30	22.70	19.50	3.20	19.50	30.00	-10.50	30.00	35.30	-5.30
M3.2	15.00		15.00	15.60	-0.60	15.60	Lost		20.50	29.80	-9.30	29.80	39.00	-9.20
M3.3	16.00		16.00	13.80	2.20	13.80	23.80	-10.00	23.80	14.70	9.10	14.70	14.50	0.20
M3.4	15.00		15.00	15.50	-0.50	15.50	52.50	-37.00	52.50	38.60	13.90	38.60	35.20	3.40
M3.7									33.20	45.70	-12.50	45.70	9.50	36.20
M3.8									9.80	22.30	-12.50	22.30	7.30	15.00
M3.9									13.50	40.20	-26.70	40.20	11.30	28.90
M3.10									16.60	Lost		14.90		Lost
M3.11									15.30	30.00	-14.70	30.00	9.10	20.90
Average change in pin length between transfer					-3.55			-14.60			-7.90			11.26
Accumulated average change in pin length								-18.15			-26.05			-14.79
M3.5 inside bend	12.00		12.00	13.00	-1.00	13.00	47.30	-34.30	47.30	Lost		7.30	14.00	-6.70
M3.6 inside bend	11.20		11.20	12.50	-1.30	12.50	31.90	-19.40	31.90	Lost		8.40	25.50	-17.10
Average change in pin length between transfer					-1.15			-26.85						-11.90
Accumulated average change in pin length								-28.00						-39.90

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Mpopfana stream)

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey Length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
M6.1	11.00		11.00	17.30	-6.30	17.30	Lost			Lost		11.50	9.30	2.20
M6.2	10.40		10.40	12.50	-2.10	12.50	32.80	-20.30	32.80	39.70	-6.90	11.30	13.50	-2.20
M6.3	17.80		17.80	20.60	-2.80	20.60	35.00	-14.40	35.00	44.70	-9.70	11.00	16.50	-5.50
M6.4	12.30		12.30	14.30	-2.00	14.30	Lost			Lost		7.80	12.50	-4.70
M6.5	11.70		11.70	20.20	-8.50	20.20	20.30	-0.10	20.30	23.30	-3.00	11.80	17.50	-5.70
Average change in pin length between transfer					-4.34			-11.60			-6.53			-3.18
Accumulated average change in pin length								-15.94			-22.47			-25.65
M6.6 deposition	76.20		76.20	66.20	10.00	66.20	64.50	1.70	64.50	50.40	14.10	50.40	51.00	-0.60
M7.1	17.00		17.00	13.50	3.50	13.50	13.80	-0.30	13.80	18.80	-5.00	18.80	28.00	-9.20
M7.2	17.00		17.00	14.40	2.60	14.40	16.50	-2.10	16.50	Lost		11.40	7.50	3.90
M7.3	12.50		12.50	9.50	3.00	9.50	14.00	-4.50	14.00	27.40	-13.40	14.00	15.00	-1.00
M7.4	18.00		18.00	16.50	1.50	16.50	18.80	-2.30	18.80	37.20	-18.40	20.50	33.00	-12.50
M7.5	14.00		14.00	10.70	3.30	10.70	9.40	1.30	9.40	17.30	-7.90	14.80	30.50	-15.70
Average change in pin length between transfer					2.78			-1.58			-11.18			-6.90
Accumulated average change in pin length								1.20			-9.98			-16.88
M7.6 deposition	23.40		23.40	14.90	8.50	14.90	Lost			Lost			15.10	

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Mpofana stream)

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
M8.1	12.80		12.80	13.00	-0.20	13.00	14.00	-1.00	14.00	13.80	0.20	13.80	19.60	-5.80
M8.2	17.30		17.30	18.90	-1.60	18.90	12.20	6.70	12.20	15.50	-3.30	15.50	20.90	-5.40
M8.3	11.20		11.20	11.00	0.20	11.00	16.20	-5.20	16.20	18.50	-2.30	18.50	22.60	-4.10
M8.4	16.50		16.50	15.20	1.30	15.20	16.50	-1.30	16.50	15.50	1.00	15.50	16.40	-0.90
Average change in pin length between transfer					-0.07			-0.20			-1.10			-4.05
Accumulated average change in pin length								-0.27			-1.38			-5.43
M8.5 inside bend	36.20		36.20	Lost		15.90	14.60	1.30	14.60	13.80	0.80	13.80	27.20	-13.40
M8.6 inside bend	12.00		12.00	11.20	0.80	11.20	14.00	-2.80	14.00	15.00	-1.00	15.00	36.40	-21.40
Average change in pin length between transfer					0.80			-0.75			-0.10			-17.40
Accumulated average change in pin length								0.05			-0.05			-17.45
M11.1	11.00		11.00	12.10	-1.10	12.10	13.20	-1.10	Lost and Replaced all pins	13.80		Lost and Replaced all pins	9.00	
M11.2	12.40		12.40	13.40	-1.00	13.40	13.30	0.10		15.50			11.00	
M11.3	9.50		9.50	12.80	-3.30	12.80	19.80	-7.00		18.50			10.00	
M11.4	8.30		8.30	27.60	-19.30	27.60	27.80	-0.20		15.50			11.00	
Average change in pin length between transfer					-6.18			-2.05						
Accumulated average change in pin length								-8.23						
M11.5 deposition	31.80		31.80	32.40	-0.60	32.40	45.00	-12.60	Lost	13.80		Lost	13.70	

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Lions River)

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
L1.1	18.40		18.40	14.50	3.90	14.50	12.80	1.70	12.80	10.80	-2.00	10.80	Lost	
L1.2	30.50		30.50	25.80	4.70	25.80	26.10	-0.30	26.10	26.70	0.60	26.70	26.00	0.70
L1.3	29.50		29.50	29.00	0.50	29.00	39.70	-10.70	39.70	38.60	-1.10	38.60	45.00	-6.40
L1.4	11.50		11.50	Lost		15.00	16.50	-1.50	16.50	14.80	-1.70	14.80	Lost	
L1.5	7.00		7.00	8.10	-1.10	8.10	14.00	-5.90	14.00	Lost		11.00	13.00	-2.00
Average change in pin length between transfer					2.00			-3.34			-1.05			-2.57
Accumulated average change in pin length								1.34			-2.40			-2.96
L 3.1	10.50		10.50	11.20	-0.70	11.20	34.20	-23.00	34.20	Lost		9.00	Lost	
L 3.2	12.30		12.30	15.20	-2.90	15.20	26.30	-11.10	26.30	Lost		9.60	Lost	
L 3.3	10.60		10.60	10.50	0.10	10.50	21.30	-10.80	21.30	Lost		10.60	Lost	
L 3.4	10.40		10.40	10.70	-0.30	10.70	23.20	-12.50	23.20	Lost		10.70	14.00	-3.30
L 3.5	14.00		14.00	13.60	0.40	13.60	21.40	-7.80	21.40	39.10	-17.70	9.30	38.50	-29.20
L 3.6	16.80		16.80	11.80	5.00	11.80	25.30	-13.50	25.30	36.80	-11.50	11.80	42.00	-30.20
Average change in pin length between transfer					0.27			-13.12			-14.60			-20.90
Accumulated average change in pin length								-12.85			-27.45			-48.35

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Lions River)

Survey Date	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
L 4.1	11.30		11.30	10.00	1.30	10.00	27.30	-17.30	27.30	37.30	-10.00	16.30	18.00	-1.70
L 4.2	13.50		13.50	13.90	-0.40	13.90	21.60	-7.70	21.60	23.80	-2.20	12.80	37.50	-24.70
L 4.3	10.20		10.20	11.00	-0.80	11.00	16.80	-5.80	16.80	19.10	-2.30	21.20	27.50	-6.30
L 4.4	11.60		11.60	11.80	-0.20	11.80	37.60	-25.80	37.60	44.50	-6.90	11.60	16.00	-4.40
Average change in pin length between transfer					-0.03			-14.15			-5.35			-9.28
Accumulated average change in pin length								-14.18			-19.53			-28.80
L 4.5 deposition	40.00		40.00	57.50	-17.50	57.50	Lost		35.00	Lost			Lost	
L 5.1	21.30		21.30	10.00	11.30	10.00	25.80	-15.80	25.80	33.10	-7.30	33.10	34.70	-1.60
L 5.2	12.50		12.50	13.90	-1.40	13.90	18.00	-4.10	18.00	16.70	1.30	16.70	17.00	-0.30
L 5.3	12.80		12.80	11.00	1.80	11.00	12.40	-1.40	12.40	13.20	-0.80	13.20	16.80	-3.60
L 5.4	11.70		11.70	11.80	-0.10	11.80	15.40	-3.60	15.40	17.20	-1.80	17.20	18.00	-0.80
L 5.5	16.00		16.00	57.50	-41.50	57.50	14.20	43.30	14.20	15.40	-1.20	15.40	16.00	-0.60
Average change in pin length between transfer					-5.98			3.68			-1.96			-1.38
Accumulated average change in pin length								-2.30			-4.26			-5.64

Appendix 1 : Detailed MMTS-1 Erosion Pin Data Continued (Lions River)

	Pre MMTS-1 transfer		Survey 1 Period transferred 10/04/2003 to 10/06/2003 Total volume transferred 41295 M ³			Survey 2 Period transferred 21/11/2003 to 03/03/2004 Total volume transferred 138990 M ³			Survey 3 Period transferred 22/10/2004 to 18/3/2005 Total volume transferred 104280 M ³			Survey 4 Period transferred 23/12/2005 to 22/03/06 Total volume transferred 55545 M ³		
Survey Date	14 February 2003		20 June 2003			03 June 2004			08 November 2005			30 May 2006		
Survey site no.	Survey length		Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth	Previous survey length	Survey length	Eroded depth
	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm
L 6.1	12.20		12.20	14.40	-2.20	14.40	24.30	-9.90	24.30	33.10	-8.80	33.10	23.20	9.90
L 6.2	12.50		12.50	15.00	-2.50	15.00	25.50	-10.50	25.50	39.40	-13.90	39.40	29.50	9.90
L 6.3	15.50		15.50	18.30	-2.80	18.30	24.60	-6.30	24.60	Lost		21.00	27.00	-6.00
L 6.4	12.00		12.00	12.00	0.00	12.00	16.70	-4.70	16.70	21.30	-4.60	21.30	21.50	-0.20
L 6.5	12.60		12.60	13.20	-0.60	13.20	16.60	-3.40	16.60	23.40	-6.80	23.40	37.50	-14.10
Average length eroded between transfer					-0.77			-6.96			-6.82			-0.10
Accumulated average change in pin length								-7.73			-14.55			-14.65
L 6.6 Deposition pin	27.00		27.00	23.50	3.50	23.50	Lost		Lost			23.00	Lost	
L 7.1	9.40		9.40	10.80	-1.40	10.80	16.60	-5.80	16.60	21.20	-4.60	21.20	23.00	-1.80
L 7.2	10.50		10.50	12.60	-2.10	12.60	18.00	-5.40	18.00	21.40	-3.40	21.40	23.00	-1.60
L 7.3	9.50		9.50	11.50	-2.00	11.50	14.60	-3.10	14.60	17.50	-2.90	17.50	20.00	-2.50
L 7.4	11.00		11.00	14.30	-3.30	14.30	18.40	-4.10	18.40	22.30	-3.90	22.30	32.00	-9.70
L 7.5	11.00		11.00	13.90	-2.90	13.90	17.60	-3.70	17.60	19.60	-2.00	19.60	27.50	-7.90
L 7.6	10.50		10.50	17.40	-6.90	17.40	21.20	-3.80	21.20	24.70	-3.50	24.70	25.00	-0.30
L 7.7	12.00		12.00	16.80	-4.80	16.80	19.90	-3.10	19.90	21.60	-1.70	21.60	23.00	-1.40
L 7.8	9.00		9.00	10.80	-1.80	10.80	12.70	-1.90	12.70	16.70	-4.00	16.70	17.00	-0.30
Average length eroded between transfer					-3.62			-3.28			-3.00			-3.68
Accumulated average change in pin length								-6.90			-9.90			-13.58

