

Closure Costing - Y2012



Closure Costing Summary		Year 1 - 2012	Year 2 - 2013	Year 3 - 2014	Year 4 - 2015	Year 5 - 2016	Year 6 - 2017
Tasks							
1	Closure Aspects						
1	Infrastructural aspects	R 55 940.00	R 55 940.00	R 55 940.00	R 55 940.00	R 219 940.00	R 226 500.00
2	Mining aspects	R 357 408.00	R 689 966.12	R 740 165.92	R 781 346.50	R 1 272 261.88	R 1 004 095.70
3	General surface reclamation	R 222 675.00	R 82 875.00	R 82 875.00	R 82 875.00	R 82 875.00	R 82 875.00
4	Water management	R -	R -	R -	R -	R -	R -
	SUB - TOTAL 1 (for infrastructural and related structures)	R 636 023.00	R 828 781.12	R 878 980.92	R 920 161.50	R 1 575 076.88	R 1 313 470.70
5	Post closure aspects	R 45 000.00	R 81 000.00	R 105 660.00	R 124 380.00	R 144 540.00	R 155 160.00
	SUB - TOTAL 2 (for post - closure aspects)	R 49 500.00	R 89 100.00	R 116 226.00	R 136 818.00	R 158 994.00	R 170 676.00
6	Additional allowances						
6.1	Preliminary and General	R 38 161.38	R 49 726.87	R 52 738.86	R 55 209.69	R 94 504.61	R 78 808.24
6.2	Contingencies	R 63 602.30	R 82 878.11	R 87 898.09	R 92 016.15	R 157 507.69	R 131 347.07
	SUB - TOTAL 3 (for additional allowances)	R 101 763.68	R 132 604.98	R 140 636.95	R 147 225.84	R 252 012.30	R 210 155.31
	Grand - Total (for sub - total 1+2+3)	R 787 286.68	R 1 050 486.10	R 1 135 843.87	R 1 204 205.34	R 1 986 083.18	R 1 694 302.01

Closure Costing - Y2012



Closure Costing Summary		Year 7 - 2018	Year 8 - 2019	Year 9 - 2020	Year 10 - 2021	Scheduled Closure
Tasks						
1	Closure Aspects					
1	Infrastructural aspects	R 233 060.00	R 239 620.00	R 246 180.00	R 252 740.00	R 637 460.00
2	Mining aspects	R 1 004 095.70	R 1 004 095.70	R 1 004 095.70	R 1 004 095.70	R 1 004 095.70
3	General surface reclamation	R 82 875.00	R 82 875.00	R 82 875.00	R 82 875.00	R 82 875.00
4	Water management	R -	R -	R -	R -	R -
	SUB - TOTAL 1 (for infrastructural and related structures)	R 1 320 030.70	R 1 326 590.70	R 1 333 150.70	R 1 339 710.70	R 1 724 430.70
5	Post closure aspects	R 165 780.00	R 176 400.00	R 187 020.00	R 197 640.00	R 382 500.00
	SUB - TOTAL 2 (for post - closure aspects)	R 182 358.00	R 194 040.00	R 205 722.00	R 217 404.00	R 420 750.00
6	Additional allowances					
6.1	Preliminary and General	R 79 201.84	R 79 595.44	R 79 989.04	R 80 382.64	R 103 465.84
6.2	Contingencies	R 132 003.07	R 132 659.07	R 133 315.07	R 133 971.07	R 172 443.07
	SUB - TOTAL 3 (for additional allowances)	R 211 204.91	R 212 254.51	R 213 304.11	R 214 353.71	R 275 908.91
	Grand - Total (for sub - total 1+2+3)	R 1 713 593.61	R 1 732 885.21	R 1 752 176.81	R 1 771 468.41	R 2 421 089.61

Closure Costing - 16 Shaft WRD				Closure Costs - Year 1 - (2013)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolitioning of plant and related structures						
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	-	
8		Demolitioning of all structural structures						
9		Concrete sumps	4.2	m ³	7.81	R	640.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Not applicable						
21		Overland conveyor						
22		Pipeline from sump to PCD dam	5.1,3	m	0.00	R	320.00	Not yet constructed
23		Sub - Total for removal of all linear items	5.2,1	m	1800.00	R	27.00	
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	53600.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2,1	m ³ /m	10.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for Infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ³	0.00	R	20.00	Assumed will be completed during the operating phase. Waste constructed during the operational phase constructed during the operational phase
49		Crp compacted outer wall	1.1	na	0.00	R	-	Cut to fill action assumed 10m high at 20 degree angle.
50		Reshape WRD	9.1,1	m ³	4614.40	R	18.00	Assumed 10m haul distance. 500mm waste rock, clay and topsoil mixture
51		Import capping layer	9.6,1	m ³	4200.00	R	28.00	Assumed 10m haul distance. 500mm waste rock, clay and topsoil mixture
52		Spread capping layer	9.1,1	m ³	4200.00	R	18.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m ³	3477.84	R	20.00	Excavate and place material next to berm @ 3.37m ³ /per meter
54		Establish vegetation	10.4,1	ha	0.84	R	11 592.00	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59								
60		Sub - Total for Mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.50	R	95 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final grading @ave 500mm over footprint
63		Rip area to alleviate compaction	9.5,1	ha	1.50	R	9 400.00	500mm deep ripping
64		Import 200mm topsoil from local stockpile	9.6,1	m ³	3750.00	R	28.00	10m haul and haul
65		Establish vegetation	10.4,1	ha	1.50	R	13 800.00	Includes amelioration and seeding actions
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	2.50	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	2.50	R	15 500.00	5 years, area to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	38 161.38	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	63 602.30	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 2 - (2014)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Demolition of plant and related structures	1.1	na	0.00	R	-	
5		Sub - Total for cost and time related items						
6		Demolition of plant and related structures	1.1	na	0.00	R	-	
7		Sub - Total for demolition of plant and related structures						
8		Demolition of all structural structures						
9		Concrete sums	4.2	m³	7.81	R	640.00	Sum constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolition of all structural structures						
11		Demolition of workshops and stores						
12		Not applicable						
13		Sub - Total for demolition of workshops and stores	1.1	na	0.00	R	-	
14		Demolition of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolition of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
19		Removal of all linear items						
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor	5.1.3	m	0.00	R	320.00	Not yet constructed
22		Pipeline from pump to FGD dam	5.2.1	m	1800.00	R	27.00	
23		Sub - Total for removal of all linear items						
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	53600.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2.1	m³/m	100.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable	1.1	na	0.00	R	-	
36		Sub - Total open pit reclamation including final voids and ramps						
37		Sealing of shafts and inclines						
38		Not applicable	1.1	na	0.00	R	-	
39		Sub - Total for sealing of shafts and inclines						
40		Rehabilitation of overburden and spoils						
41		Not applicable	1.1	na	0.00	R	-	
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)						
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable	1.1	na	0.00	R	-	
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m³	0.00	R	20.00	Assumed will be completed during the operating phase. Waste constructed during the operational phase
49		Chip compacted outer wall	1.1	na	0.00	R	-	Cut to fill action assumed 20m high at 82.2m/level meter.
50		Reshape WRD	9.1.1	m²	12375.00	R	18.00	Assumed 10m haul distance. 500mm waste rock, clay and topsoil mixture
51		Import capping layer	9.6.1	m²	7500.00	R	28.00	210 000.00
52		Spread capping layer	9.1.1	m²	7500.00	R	18.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m²	4684.30	R	20.00	Excavate and place material next to berm @ 3.37m/pe meter
54		Establish vegetation	10.4.1	ha	2.07	R	13 800.00	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable	1.1	na	0.00	R	-	
58		Sub - Total for reclamation of subsided areas						
59		Sub - Total for Mining aspects						
60								
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1.1	ha	1.50	R	55 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final grading @ave 500mm over footprint
63		Rip area to alleviate compaction	9.5.1	ha	1.50	R	9 400.00	500mm deep ripping
64		Import 250mm topsoil from local stockpile	9.6.1	m²	3750.00	R	28.00	105 000.00
65		Establish vegetation	10.4.1	ha	1.50	R	13 800.00	Includes amelioration and seeding actions
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable	1.1	na	0.00	R	-	
70		Sub - Total for Water Management						
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	4.50	R	2 500.00	Years' area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	4.50	R	15 500.00	Years' area to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	49 726.87	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	82 978.11	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 3 - (2015)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolitioning of plant and related structures						
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	-	
8		Demolitioning of all structural structures						
9		Concrete sumps	4.2	m ³	7.81	R	640.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Removal of all linear items						
21		Overland conveyor	5.1.3	m	0.00	R	320.00	Not yet constructed
22		Pipeline from sump to PCD dam	5.2.1	m	1800.00	R	27.00	
23		Sub - Total for removal of all linear items						
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	53600.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2.1	m ³ /m	10.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructural aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ³	0.00	R	20.00	Assumed will be completed during the operating phase. Waste constructed during the operational phase
49		Chip compacted outer wall	1.1	na	0.00	R	-	Call to fill action assumed 25m high at 128 driver/meter
50		Reshape WRD	9.1.1	m ²	20 008.40	R	18.00	Assumed 10m haul distance. 500mm waste rock, clay and topsoil mixture
51		Import capping layer	9.6.1	m ²	6872.00	R	28.00	Spread by means of end tipping and clearing
52		Spread capping layer	9.1.1	m ²	6872.00	R	18.00	Excavate and place material next to berm @ 3.37m/pe meter
53		Stormwater berm	9.2	m ²	2 156.80	R	20.00	Includes amelioration and cultivation
54		Establish vegetation	10.4.1	ha	1.37	R	13 800.00	
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59								
60		Sub - Total for Mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1.1	ha	1.50	R	55 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final grading @ave 500mm over footprint
63		Rip area to alleviate compaction	9.5.1	ha	1.50	R	9 400.00	500mm deep ripping
64		Import 250mm topsoil from local stockpile	9.6.1	m ²	3750.00	R	28.00	10m load and haul
65		Establish vegetation	10.4.1	ha	1.50	R	13 800.00	Includes amelioration and seeding actions
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructural and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	5.87	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	5.87	R	15 500.00	to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	52 738.86	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	87 858.09	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 4 - (2016)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolitioning of plant and related structures						
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	-	
8		Demolitioning of all structural structures						
9		Concrete sumps	4.2	m ²	7.81	R	640.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from sump to PCD dam	5.1,3	m	0.00	R	320.00	
23		Sub - Total for removal of all linear items	5.2,1	m	1800.00	R	27.00	
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	53600.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2,1	m ³ /m	10.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructural aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ²	0.00	R	20.00	Assumed will be completed during the operations phase
49		Crp compacted outer wall	1.1	na	0.00	R	-	Crp to fill action assumed 30m high at 1800r/er meter
50		Reshape WRD	9.1,1	m ²	27010.00	R	18.00	Assumed 10m haul distance, 500mm waste rock, clay and topsoil mixture
51		Import capping layer	9.6,1	m ²	5207.50	R	28.00	Assumed 10m haul distance, 500mm waste rock, clay and topsoil mixture
52		Spread capping layer	9.1,1	m ²	5207.50	R	18.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m ²	2062.44	R	20.00	Excavate and place material next to berm @ 3.37m/pe meter
54		Establish vegetation	10.4,1	ha	1.04	R	14 372.70	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59								
60		Sub - Total for Mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.50	R	55 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final grading @ave 500mm over footprint
63		Rip area to alleviate compaction	9.5,1	ha	1.50	R	9 400.00	500mm deep ripping
64		Import 250mm topsoil from local stockpile	9.6,1	m ²	3750.00	R	28.00	10m haul and haul
65		Establish vegetation	10.4,1	ha	1.50	R	13 800.00	Includes amelioration and seeding actions
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructural and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	6.91	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	6.91	R	15 500.00	to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Additional allowances						
82		Preliminary and General	1.2	sum	1.00	R	55 209.69	Assume 6 percent of sub - total 1
83		Contingencies	1.2	sum	1.00	R	92 016.15	Assume 10 percent of sub - total 1
84								
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 5 - (2012)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolition of plant and related structures						
6		Not applicable						
7		Sub - Total for demolition of plant and related structures	1.1	na	0.00	R	-	
8		Demolition of all structural structures						
9		Concrete sumps	4.2	m ³	7.81	R	5 000.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolition of all structural structures						
11		Demolition of workshops and stores						
12		Not applicable						
13		Sub - Total for demolition of workshops and stores	1.1	na	0.00	R	-	
14		Demolition of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolition of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor	5.1,3	m	500.00	R	160 000.00	Assumed will only be constructed when ramp is completed
22		Pipeline from sump to PCD dam	5.2,1	m	1800.00	R	48 800.00	
23		Sub - Total for removal of all linear items						
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	213600.00	R	5 340.00	2.50%
29		Disposal of demolition waste	6.2,1	m ³ /m	10.00	R	1 000.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ³	0.00	R	20.00	Assumed will be completed during the operating phase
49		Crp compacted outer wall	1.1	na	0.00	R	-	Walls constructed during the operational phase
50		Reshape WRD	9.1,1	m ³	53773.70	R	967 826.80	Cut to fill action assumed 4m high at 328 driver/meter
51		Import capping layer	9.6,1	m ³	5576.00	R	28.00	Assumed 1m haul distance, 500mm waste rock, clay and topsoil mixture
52		Spread capping layer	9.1,1	m ³	5576.00	R	156 184.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m ³	1617.60	R	20.00	Excavate and place material next to berm @ 3.37m/pe meter
54		Establish vegetation	10.4,1	ha	1.12	R	15 395.28	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59								
60		Sub - Total for Mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.50	R	55 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final grading @ave 500mm over footprint
63		Rip area to alleviate compaction	9.5,1	ha	1.50	R	9 400.00	14 100.00
64		Import 250mm topsoil from local stockpile	9.6,1	m ³	3750.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.50	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	8.00	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	8.00	R	15 500.00	to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	94 504.61	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	157 507.69	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 6 - (2018)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolitioning of plant and related structures						
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	-	
8		Demolitioning of all structural structures						
9		Concrete sums	4.2	m³	7.81	R	640.00	Sum constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from pump to FGD dam	5.1,3	m	620.00	R	320.00	166 400.00
23		Rehabilitation of roads	5.2,1	m	1800.00	R	27.00	48 600.00
24		Sub - Total for removal of all linear items						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	215 000.00
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	220000.00	R	2.50%	5 500.00
29		Disposal of demolition waste	6.2,1	m³/m	10.00	R	100.00	1 000.00
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructural aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m³	0.00	R	20.00	R
49		Chip compacted outer wall	1.1	na	0.00	R	-	
50		Reshape WRD	9.1,1	m²	46945.80	R	18.00	843 224.40
51		Import capping layer	9.6,1	m³	2967.50	R	28.00	83 060.00
52		Spread capping layer	9.1,1	m³	2967.50	R	18.00	53 415.00
53		Stormwater berm	9.2	m²	808.80	R	20.00	16 176.00
54		Establish vegetation	10.4,1	ha	0.99	R	130.00	8 190.30
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59		Sub - Total for Mining aspects						
60								
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.90	R	55 250.00	82 875.00
63		Rip area to alleviate compaction	9.5,1	ha	1.90	R	9 400.00	14 100.00
64		Import 250mm topsoil from local stockpile	9.6,1	m²	3790.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.90	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructural and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	R
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	R
76		Reclamation monitoring on reclaimed areas	12.3	ha	8.62	R	2 500.00	21 550.00
77		Care and maintenance of reclaimed areas	12.4	ha	8.62	R	15 500.00	133 610.00
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	15 616.00
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	78 808.24	78 808.24
84		Contingencies	1.2	sum	1.00	R	131 347.07	131 347.07
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 7 - (2019)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items	1.1	na	0.00	R	-	
5		Demolitioning of plant and related structures						
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	-	
8		Demolitioning of all structural structures						
9		Concrete sumps	4.2	m ²	7.81	R	5 000.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from sump to PCD dam	5.1,3	m	540.00	R	320.00	172 800.00
23		Sub - Total for removal of all linear items	5.2,1	m	1890.00	R	27.00	48 800.00
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	228400.00	R	2.50%	5 660.00
29		Disposal of demolition waste	6.2,1	m ³ /m	10.00	R	100.00	1 000.00
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructural aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ²	0.00	R	20.00	R
49		Chip compacted outer wall	1.1	na	0.00	R	-	
50		Reshape WRD	9.1,1	m ²	46945.80	R	18.00	843 224.40
51		Import capping layer	9.6,1	m ²	2967.50	R	28.00	83 060.00
52		Spread capping layer	9.1,1	m ²	2967.50	R	18.00	53 415.00
53		Stormwater berm	9.2	m ²	808.80	R	20.00	16 176.00
54		Establish vegetation	10.4,1	ha	0.99	R	130.00	8 190.30
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59								
60		Sub - Total for Mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.90	R	55 250.00	82 875.00
63		Rip area to alleviate compaction	9.5,1	ha	1.90	R	9 400.00	14 100.00
64		Import 250mm topsoil from local stockpile	9.6,1	m ²	3790.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.90	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructural and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	R
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	R
76		Reclamation monitoring on reclaimed areas	12.3	ha	9.21	R	2 500.00	23 025.00
77		Care and maintenance of reclaimed areas	12.4	ha	9.21	R	15 900.00	142 755.00
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	16 678.00
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	79 201.84	79 201.84
84		Contingencies	1.2	sum	1.00	R	132 003.07	132 003.07
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 9 - (2020)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Demolition of plant and related structures	1.1	na	0.00	R	-	
5		Sub - Total for cost and time related items						
6		Demolition of plant and related structures	1.1	na	0.00	R	-	
7		Sub - Total for demolition of plant and related structures						
8		Demolition of all structural structures						
9		Concrete sums	4.2	m³	7.81	R	640.00	Sum constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolition of all structural structures						
11		Demolition of workshops and stores						
12		Not applicable						
13		Sub - Total for demolition of workshops and stores	1.1	na	0.00	R	-	
14		Demolition of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolition of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
19		Removal of all linear items						
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor	5.1,3	m	660.00	R	320.00	179 200.00
22		Pipeline from pump to FGD dam	5.2,1	m	1600.00	R	27.00	48 800.00
23		Sub - Total for removal of all linear items						
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	232 800.00	R	2,50%	5 820.00
29		Disposal of demolition waste	6.2,1	m³/m	10.00	R	100.00	1 000.00
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructural aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable	1.1	na	0.00	R	-	
36		Sub - Total open pit reclamation including final voids and ramps						
37		Sealing of shafts and inclines						
38		Not applicable	1.1	na	0.00	R	-	
39		Sub - Total for sealing of shafts and inclines						
40		Rehabilitation of overburden and spoils						
41		Not applicable	1.1	na	0.00	R	-	
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)						
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable	1.1	na	0.00	R	-	
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m³	0.00	R	20.00	R
49		Chip compacted outer wall	1.1	na	0.00	R	-	
50		Reshape WRD	9.1,1	m²	46 845.80	R	18.00	843 224.40
51		Import capping layer	9.6,1	m³	2 967.50	R	28.00	83 060.00
52		Spread capping layer	9.1,1	m³	2 967.50	R	18.00	53 415.00
53		Stormwater berm	9.2	m²	808.80	R	20.00	16 176.00
54		Establish vegetation	10.4,1	ha	0.99	R	130.00	8 190.30
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable	1.1	na	0.00	R	-	
58		Sub - Total for reclamation of subsided areas						
59		Sub - Total for Mining aspects						
60								
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.90	R	55 250.00	82 875.00
63		Rip area to alleviate compaction	9.5,1	ha	1.90	R	9 400.00	14 100.00
64		Import 200mm topsoil from local stockpile	9.6,1	m²	3790.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.90	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable	1.1	na	0.00	R	-	
70		Sub - Total for Water Management						
71								
72		Sub - TOTAL 1 (for infrastructural and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	R
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	R
76		Reclamation monitoring on reclaimed areas	12.3	ha	9.80	R	2 500.00	24 500.00
77		Care and maintenance of reclaimed areas	12.4	ha	9.80	R	15 900.00	151 900.00
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	17 640.00
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	79 595.44	79 595.44
84		Contingencies	1.2	sum	1.00	R	132 659.07	132 659.07
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Year 9 - (2022)				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Demolition of plant and related structures	1.1	na	0.00	R	-	
5		Sub - Total for cost and time related items						
6		Demolition of plant and related structures	1.1	na	0.00	R	-	
7		Sub - Total for demolition of plant and related structures						
8		Demolition of all structural structures						
9		Concrete sums	4.2	m³	7.81	R	640.00	Sum constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolition of all structural structures						
11		Demolition of workshops and stores						
12		Not applicable						
13		Sub - Total for demolition of workshops and stores	1.1	na	0.00	R	-	
14		Demolition of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolition of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from pump to FGD dam	5.1,3	m	680.00	R	320.00	Assume will extend 20m per year
23		Sub - Total for removal of all linear items	5.2,1	m	1800.00	R	27.00	
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	239200.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2,1	m³/m	10.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m³	0.00	R	20.00	Assumed will be completed during the operating phase
49		Chip compacted outer wall	1.1	na	0.00	R	-	While constructed during the operational phase
50		Reshape WRD	9.1,1	m²	46945.80	R	18.00	Cut to fill action assumed 40m high at 328 500m² meter
51		Import capping layer	9.6,1	m³	2967.50	R	28.00	Assumed 10m haul distance, 500mm waste rock, clay and topsoil mixture
52		Spread capping layer	9.1,1	m³	2967.50	R	18.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m²	805.80	R	20.00	Excavate and place material next to berm @ 3.37m/pe meter
54		Establish vegetation	10.4,1	ha	0.99	R	130.30	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59		Sub - Total for mining aspects						
60								
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.90	R	55250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final piling @ 500mm over footprint
63		Rip area to alleviate compaction	9.5,1	ha	1.90	R	9400.00	14 100.00
64		Import 250mm topsoil from local stockpile	9.6,1	m²	3790.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.90	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	10.38	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	10.38	R	15 500.00	to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	79 989.04	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	133 315.07	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD					Closure Costs - Year 10 - (2022)			
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Demolition of plant and related structures	1.1	na	0.00	R	-	
5		Sub - Total for cost and time related items						
6		Demolition of plant and related structures	1.1	na	0.00	R	-	
7		Sub - Total for demolition of plant and related structures						
8		Demolition of all structural structures						
9		Concrete sums	4.2	m³	7.81	R	640.00	Sum constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolition of all structural structures						
11		Demolition of workshops and stores						
12		Not applicable						
13		Sub - Total for demolition of workshops and stores	1.1	na	0.00	R	-	
14		Demolition of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolition of permanent brick structures and temporary structures	1.1	na	0.00	R	-	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	-	V shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from pump to PCD dam	5.1,3	m	600.00	R	320.00	Assume will extend 20m per year
23		Sub - Total for removal of all linear items	5.2,1	m	1800.00	R	27.00	
24		Rehabilitation of roads						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	245600.00	R	2.50%	2.50%
29		Disposal of demolition waste	6.2,1	m³/m	10.00	R	100.00	Assume 30km distance
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	-	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	-	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	-	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	-	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m³	0.00	R	20.00	Assumed will be completed during the operating phase
49		Chip compacted outer wall	1.1	na	0.00	R	-	While constructed during the operational phase
50		Reshape WRD	9.1,1	m²	46945.80	R	18.00	Cut to fill action assumed 40m high at 328 500m² meter
51		Import capping layer	9.6,1	m³	2967.50	R	28.00	Assumed 10m haul distance, 500mm waste rock, clay and topsoil mixture
52		Spread capping layer	9.1,1	m³	2967.50	R	18.00	Spread by means of end tipping and clearing
53		Stormwater berm	9.2	m²	805.80	R	20.00	Excavate and place material next to berm @ 3.37m/pe meter
54		Establish vegetation	10.4,1	ha	0.99	R	8 190.30	Includes amelioration and cultivation
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	
59		Sub - Total for mining aspects						
60								
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1,1	ha	1.90	R	55 250.00	Includes stockpiling of material, backfilling of excavations in cut to fill operation and final piling @ 500mm over footprint
63		Rip area to alleviate compaction	9.5,1	ha	1.90	R	9 400.00	14 100.00
64		Import 200mm topsoil from local stockpile	9.6,1	m²	3790.00	R	28.00	105 000.00
65		Establish vegetation	10.4,1	ha	1.90	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	-	
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	Part of greater Impala 16 Shaft Complex
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	Part of greater Impala 16 Shaft Complex
76		Reclamation monitoring on reclaimed areas	12.3	ha	10.98	R	2 500.00	5 years, area to be added to the greater 16 Shaft Complex
77		Care and maintenance of reclaimed areas	12.4	ha	10.98	R	15 500.00	5 years, area to be added to the greater 16 Shaft Complex
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00	R	10%	Assumed 10 percent for post closure aspects
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	80 382.64	Assume 6 percent of sub - total 1
84		Contingencies	1.2	sum	1.00	R	133 971.07	Assume 10 percent of sub - total 1
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Closure Costing - 16 Shaft WRD				Closure Costs - Scheduled				
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Nominal cost and time related items						
3		Not applicable						
4		Sub-TOTAL for cost and time related items						
5		Demolitioning of plant and related structures	1.1	na	0.00	R	R	
6		Not applicable						
7		Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R	R	
8		Demolitioning of all structural structures						
9		Concrete sumps	4.2	m ²	7.81	R	5 000.00	Sump constructed of reinforced concrete, 2.5m * 2.5m * 2.5m
10		Sub - Total for demolitioning of all structural structures						
11		Demolitioning of workshops and stores						
12		Not applicable						
13		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	R	
14		Demolitioning of permanent brick structures and temporary structures						
15		Not applicable						
16		Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	R	
17		Removal of all surface related finishes						
18		Interception trench						
19		Removal of all linear items	1.1	na	0.00	R	R	V-shaped earth trench constructed from clay
20		Sub - Total for removal of all surface related finishes						
21		Overland conveyor						
22		Pipeline from sump to PCD dam	5.1.3	m	1665.00	R	320.00	532 800.00
23		Rehabilitation of roads	5.2.1	m	1800.00	R	27.00	48 600.00
24		Sub - Total for removal of all linear items						
25		Not applicable						
26		Sub - Total for rehabilitation of roads	1.1	na	0.00	R	R	
27		Disposal of demolition waste						
28		Sorting and screening of waste	6.1	%	596400.00	R	2.50%	14 660.00
29		Disposal of demolition waste	6.2.1	m ³ /m	364.00	R	100.00	36 400.00
30		Sub - Total for disposal of demolition waste						
31		Sub - Total for infrastructure aspects						
32								
33		Mining Aspects						
34		Open pit reclamation including final voids and ramps						
35		Not applicable						
36		Sub - Total open pit reclamation including final voids and ramps	1.1	na	0.00	R	R	
37		Sealing of shafts and inclines						
38		Not applicable						
39		Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R	R	
40		Rehabilitation of overburden and spoils						
41		Not applicable						
42		Sub - Total for rehabilitation of overburden and spoils (non polluting potential)	1.1	na	0.00	R	R	
43		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
44		Not applicable						
45		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	1.1	na	0.00	R	R	
46		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
47		Waste rock Dump						
48		Strip topsoil and stockpile for movement of ice	9.2	m ²	0.00	R	20.00	R
49		Crp compacted outer wall	1.1	na	0.00	R	R	
50		Reshape WRD						
51		Import capping layer	9.1.1	m ²	46945.80	R	18.00	843 224.40
52		Spread capping layer	9.6.1	m ²	2967.50	R	28.00	83 060.00
53		Stormwater berm	9.1.1	m ²	2967.50	R	18.00	53 415.00
54		Establish vegetation	9.2	m ²	808.80	R	20.00	16 176.00
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	10.4.1	ha	0.59	R	13 800.00	8 190.30
56		Reclamation of subsided areas						
57		Not applicable						
58		Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	R	
59		Not applicable						
60		Sub - Total for mining aspects						
61		General Surface Reclamation						
62		Shape and level disturbed area	10.1.1	ha	1.50	R	55 250.00	82 875.00
63		Rip area to alleviate compaction	9.5.1	ha	1.50	R	9 400.00	14 100.00
64		Import 250mm topsoil from local stockpile	9.6.1	m ²	3750.00	R	28.00	105 000.00
65		Establish vegetation	10.4.1	ha	1.50	R	13 800.00	20 700.00
66		Sub - Total for General Surface Reclamation						
67								
68		Water Management						
69		Not applicable						
70		Sub - Total for Water Management	1.1	na	0.00	R	R	
71								
72		Sub - TOTAL 1 (for infrastructure and related structures)						
73		Post - closure aspects						
74		Surface water quality monitoring	12.1	yr	0.00	R	106 000.00	R
75		Groundwater quality monitoring	12.2	yr	0.00	R	150 000.00	R
76		Reclamation monitoring on reclaimed areas	12.3	ha	21.25	R	2 500.00	53 125.00
77		Care and maintenance of reclaimed areas	12.4	ha	21.25	R	15 500.00	329 375.00
78		Sub - Total for Post closure aspects						
79		Contingencies for post closure aspects	1.2	sum	1.00		10%	38 250.00
80		Sub - Total for Contingencies for post closure aspects						
81		Sub - TOTAL 2 (for post - closure aspects)						
82		Additional allowances						
83		Preliminary and General	1.2	sum	1.00	R	103 465.84	103 465.84
84		Contingencies	1.2	sum	1.00	R	172 443.07	172 443.07
85		Sub - TOTAL 3 (for additional allowances)						
86		Grand - Total (for sub - total 1+2+3)						

Rates Table - 2012

Unit Rate Code	Costing Items	Currency	Unit Rates	Unit	Notes
1 Nominal cost and time related items					
1.1	Not Applicable	Rands	R -	na	
1.2	Sum	Rands	R -	sum	
1.3	Rate	Rands	R -	unit	
2 Steel and related structures					
2.1	Bedding / Sheeting	Rands	R 21,50	m ²	
2.2	Structural steelwork	Rands	R 1 280,00	t	
2.3	Super structures	Rands	R 107,00	m ²	
2.3.1	Light plant structures	Rands	R 990,00	m ²	up to 100kg of steel per square meter
2.3.2	Medium plant structures	Rands	R 1 280,00	m ²	up to 1000kg of steel per square meter
2.3.3	Medium / Heavy plant structures	Rands	R 1 900,00	m ²	up to 1500kg of steel per square meter
2.3.4	Heavy plant structures	Rands	R -		
2.4	Steel tanks with rubber lining	Rands	R -		
2.4.1	0-5m	Rands	R 10 600,00	no	diameter
2.4.2	5-10m	Rands	R 28 650,00	no	diameter
2.4.3	10-15m	Rands	R 37 900,00	no	diameter
2.4.4	15-20m	Rands	R 53 300,00	no	diameter
2.4.5	20-30m	Rands	R 69 300,00	no	diameter
2.5	Single steel tanks	Rands	R 5 300,00	no	small enclosed steel tanks
2.6	Carports	Rands	R 90,00	m ²	excludes paving
2.6.1	Carports with IFR covering	Rands	R 43,00	m ²	excludes paving
2.6.2	Carports with Shade net covering	Rands	R -		
3 Buildings and related structures					
3.1	Brick buildings	Rands	R -		
3.1.1	Single storey building	Rands	R 295,00	m ²	includes soft strip, excludes disposal of waste
3.1.2	Double storey building	Rands	R 500,00	m ²	includes soft strip, excludes disposal of waste
3.2	Substations, pump stations and strong rooms	Rands	R -		
3.2.1	Single storey building	Rands	R 480,00	m ²	includes soft strip, excludes disposal of waste
3.2.2	Double storey or double volume building	Rands	R 690,00	m ²	includes soft strip, excludes disposal of waste
3.3	Prehabitated or temporary buildings	Rands	R 140,00	m ²	
3.4	10mm Brick wall	Rands	R 15,00	m ²	
3.5	230mm Brick wall	Rands	R 30,00	m ²	
3.6	Workshop & Stores	Rands	R 320,00	m ²	single volume buildings
3.7	Workshop & Stores	Rands	R 380,00	m ²	double volume buildings
4 Concrete					
4.1	Heavy concrete thickness greater than 750mm	Rands	R 1 280,00	m ³	bulk and heavy reinforced concrete
4.2	Medium concrete, thickness between 250 and 750mm	Rands	R 640,00	m ³	Heavy reinforced concrete
4.3	Light concrete, thickness less than 250mm	Rands	R 400,00	m ³	reinforced concrete
4.4	Floors, bases and foundations after removal of superstructure	Rands	R 215,00	m ²	250mm floors with 500mm bases on 30% of the area
4.5	Heavy duty floors, bases and foundations after removal of superstructure	Rands	R 690,00	m ²	400mm floors with 800mm bases on 30% of the area
4.6	Strip footings	Rands	R 135,00	m	
4.7	Column footings	Rands	R 280,00	no	
5 Linear items					
5.1	Conveyors	Rands	R -		
5.1.1	Overland conveyor - light, no cladding	Rands	R 215,00	m	
5.1.2	Overland conveyor - medium	Rands	R 265,00	m	
5.1.3	Overland conveyor - heavy	Rands	R 320,00	m	
5.1.4	Suspended conveyor - light to medium	Rands	R 535,00	m	
5.1.5	Suspended conveyor - heavy with cladding	Rands	R 640,00	m	
5.2	Pipelines	Rands	R -		
5.2.1	Overland steel pipelines on pilings (<200mm)	Rands	R 27,00	m	5m piling spacing, includes disposal of waste @ 10km
5.2.2	Overland steel pipelines on pilings (200-350mm)	Rands	R 48,00	m	5m piling spacing, includes disposal of waste @ 10km
5.2.3	Overland steel pipelines on pilings (350-500mm)	Rands	R 64,00	m	5m piling spacing, includes disposal of waste @ 10km
5.3	Overland power lines	Rands	R -		
5.3.1	Minor lines	Rands	R 27,00	m	
5.3.2	Major lines	Rands	R 800,00	m	
5.4	Railway lines	Rands	R -		
5.4.1	Electrified	Rands	R 295,00	m	excludes ballast and rehab
5.4.2	Non - electrified	Rands	R 215,00	m	excludes ballast and rehab
5.5	Fencing	Rands	R -		
5.5.1	Erect security fencing	Rands	R 133,00	m	
5.5.2	Erect stock fencing	Rands	R 27,00	m	
5.5.3	Dismantling of security fencing	Rands	R 27,00	m	
5.5.4	Dismantling of stock fencing	Rands	R 8,00	m	
5.5.5	Dismantling of steel palisade fencing	Rands	R 58,00	m	
5.5.6	Dismantling of concrete palisade fencing	Rands	R 120,00	m	
6 Waste					
6.1	Sorting and screening of waste	Rands	R 2,5	%	
6.2	Disposal of waste	Rands	R 100,00	m ³ /km	30km haul distance
6.2.1	Disposal of inert demolition waste	Rands	R 100,00	m ³ /km	excludes transport
6.2.2	Disposal of hazardous waste	Rands	R 895,00	m ³	
6.3	Decontamination of equipment	Rands	R -		
6.3.1	Decontamination of equipment - small projects	Rands	R 5	%	of overall dismantling of steel structures
6.3.2	Decontamination of equipment - large projects	Rands	R 2,5	%	of overall dismantling of steel structures
6.4	Removal and disposal of single HDPE liner	Rands	R 6,50	m ²	
7 Shaft and portals					
7.1	Shafts	Rands	R -		
7.1.1	Sealing of vertical shaft	Rands	R 714 220,00	sum	3m diameter
7.1.2	Sealing of vertical shaft	Rands	R 810 160,00	sum	3.5m diameter
7.1.3	Sealing of vertical shaft	Rands	R 995 050,00	sum	4m diameter
7.1.4	Sealing of vertical shaft	Rands	R 1 087 320,00	sum	4.5m diameter
7.1.5	Sealing of vertical shaft	Rands	R 1 332 900,00	sum	5m diameter
7.1.6	Sealing of vertical shaft	Rands	R 1 375 140,00	sum	5.5m diameter
7.1.7	Sealing of vertical shaft	Rands	R 1 410 500,00	sum	6m diameter
7.1.8	Sealing of vertical shaft	Rands	R 1 492 400,00	sum	6.5m diameter

7.19	Sealing of vertical shaft	:	Rands	R	1 599 000,00	sum	7m diameter
7.1.10	Sealing of vertical shaft	:	Rands	R	1 719 458,00	sum	7.5m diameter
7.1.11	Sealing of vertical shaft	:	Rands	R	1 838 850,00	sum	8m diameter
7.1.12	Sealing of vertical shaft	:	Rands	R	1 982 780,00	sum	8.5m diameter
7.1.13	Sealing of vertical shaft	:	Rands	R	2 132 000,00	sum	9m diameter
7.1.14	Sealing of vertical shaft	:	Rands	R	2 281 240,00	sum	9.5m diameter
7.1.15	Sealing of vertical shaft	:	Rands	R	2 573 324,00	sum	10m diameter
7.1.16	Sealing of vertical shaft	:	Rands	R	2 665 000,00	sum	11m diameter
7.2	Backfill incline shaft panel	:	Rands	R	31 990,00	sum	
7.3	Plug outer and seal peritock of ballings dam	:	Rands	R	213 200,00	sum	assume 100 000m ² backfilled with waste rock <11m haul distance, exd topsoil
7.4	Plug surface holding's	:	Rands	R	200 000,00	sum	
7.5	Seal incline shaft	:	Rands	R	159 900,00	sum	
8 Roads, hardstands and paving							
8.1	Remove tar roads with 600mm layer works	:	Rands	R	48,00	m ²	layer works buried in trench next to road or 10km haul and haul, but excludes disposal of tar
8.2	Major gravel roads with engineered surfaces	:	Rands	R	21,00	m ²	layer works buried next to road or 10km haul and haul
8.3	Minor gravel roads and tracks	:	Rands	R	4,00	m ²	minor gravel roads and tracks (no layer works) - ripped, profiled and vegetated
8.4	Concrete slab or concrete liners	:	Rands	R	135,00	m ²	thin concrete with minimal reinforcing
8.5	Removal of granited embankments	:	Rands	R	80,00	m ²	excludes disposal
8.6	Removal of brick paving & stone pitching	:	Rands	R	38,00	m ²	
9 Earthworks							
9.1	Dozing	:	Rands	R	18,00	m ²	cut to fill including final profiling
9.1.1	Dozing to profile dumps (116m max)	:	Rands	R	11,00	m ²	bulk dozing, no profiling
9.1.2	Bulk dozing of material (80m max)	:	Rands	R	20,00	m ²	
9.2	Excavation	:	Rands	R	20,00	m ²	
9.3	Backfilling	:	Rands	R	15,50	m ²	large volumes; 50% dozing & 50% load and haul
9.3.1	Backfilling of final void	:	Rands	R	27,00	m ²	large volumes; 5km haul distance for bulk material
9.3.2	Backfilling of final void	:	Rands	R	3,50	m ²	in layers of 250mm
9.4	Compacting	:	Rands	R	9 400,00	ha	500mm deep ripping
9.5	Ripping	:	Rands	R	13 800,00	ha	1000mm deep ripping
9.5.1	Ripping of areas to alleviate compaction	:	Rands	R	28,00	m ²	1km, small volumes
9.5.2	Deep ripping	:	Rands	R	7,80	m ² /km	small volumes
9.6	Transport	:	Rands	R	51,40	m ² /km	small volumes
9.6.1	Load and haul	:	Rands	R	13,20	m ²	1km, large volumes
9.6.2	Extra over-rates for hauling outside free haul distance	:	Rands	R	3,00	m ² /km	large volumes
9.6.3	Load and haul for 4km distance	:	Rands	R	463,20	m ² /km	large volumes
9.6.4	Load and haul	:	Rands	R	663,20	m ² /km	large volumes
9.6.5	Extra over-rates for hauling outside free haul distance	:	Rands	R	663,20	m ² /km	large volumes
9.6.6	Load and haul for 4km distance	:	Rands	R	663,20	m ² /km	large volumes
9.6.7	Load and haul for 50km distance	:	Rands	R	663,20	m ² /km	large volumes
10 Reclamation on disturbed areas							
10.1	Profiling - dozer work	:	Rands	R	55 250,00	ha	includes stockpiling of material, backfilling of excavations in cut to fill operation and final profiling @ave 500mm over footprint
10.1.1	Shaping, leveling of infrastructural footprint areas (500mm)	:	Rands	R	82 675,00	ha	@ave 750mm over footprint
10.1.2	Shaping, leveling of infrastructural footprint areas (750mm)	:	Rands	R	110 800,00	ha	minimal dozing to make area free draining
10.1.3	Restoring, profiling of dumps (general)	:	Rands	R	220,00	m	approx. 5m high @ 1:5
10.1.4	Profiling of disturbed areas (general)	:	Rands	R	88 400,00	ha	2500m ² over 1km average @ R32/m ²
10.1.5	Breast dam wall & reshape 1:5	:	Rands	R	127 000,00	ha	assume 4km haul distance
10.2	Import clean / removing contaminated soil	:	Rands	R	94,00	m ²	includes soil amelioration, cultivation and seeding actions
10.2.1	Import cover material and spread (250m)	:	Rands	R	13 800,00	ha	general on flat surfaces
10.2.2	Remove contaminated soil to 250mm average depth	:	Rands	R	19 250,00	ha	general in topsoil layer on sloped areas
10.3	Seeding / impermeable cover	:	Rands	R	4 400,00	ha	
10.3.1	Instal 2mm HDPE liner	:	Rands	R	4 400,00	ha	
10.4	Establish vegetation	:	Rands	R	4 400,00	ha	
10.4.1	Establishment of vegetation (General)	:	Rands	R	4 400,00	ha	
10.4.2	Establishment of vegetation on WRD and ballings dams	:	Rands	R	4 400,00	ha	
10.4.3	Establish vegetation on backfilled pit areas	:	Rands	R	4 400,00	ha	
10.4.4	Rip and establish vegetation on stockpile topmtn areas and haul roads	:	Rands	R	5 500,00	ha	
11 Plant and machinery							
11.1	Crane	:	Rands	R	38 700,00	pd/day	excludes site establishment
11.2	10t Excavator (20m)	:	Rands	R	2 800,00	pd/day	excludes site establishment
11.3	Excavator (20m)	:	Rands	R	4 200,00	pd/day	excludes site establishment
11.4	Pecker (20m)	:	Rands	R	6 850,00	pd/day	excludes site establishment
12 Post closure aspects							
12.1	Surface water	:	Rands	R	106 000,00	yr	8 monitoring points on a monthly basis
12.2	Groundwater	:	Rands	R	150 000,00	yr	15 monitoring points on a quarterly basis
12.3	Reclamation monitoring	:	Rands	R	2 500,00	ha	5 years
12.4	Care and maintenance	:	Rands	R	15 900,00	ha	5 years
13 Specialists Work							
13.1	Specialist, soil and groundwater study	:	Rands	R	330 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.2	Base Assessment with Public Participation	:	Rands	R	250 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.3	Integrated Water and Waste Management Plan (IWWMP) and 13.3 Water Use License Application (WULA)	:	Rands	R	220 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.4	Waste License Application	:	Rands	R	40 000,00	sum	Nominal allowance, not for large and complex and integrated sites
14 Water Treatment Cost							
14.1	Cleaning of Stormwater system	:	Rands	R	-	sum	Nominal allowance
14.2	Cleaning of Oily and Chemical Sewer system	:	Rands	R	-	sum	Nominal allowance
14.3	xxxxxx	:	Rands	R	-	m ²	
14.4	yyyyyy	:	Rands	R	-	m ²	
14.5	zzzzzz	:	Rands	R	-	m ²	
15 Boreholes							
15.1	Drilling of borehole	:	Rands	R	33 000,00	sum	Nominal allowance
15.2	Equipping of borehole (Pump, electrical and piping)	:	Rands	R	55 000,00	sum	Nominal allowance
16 Other							
16.1	Unspecified	:	Rands	R	-	sum	
16.2	Unspecified	:	Rands	R	-	sum	
16.3	Unspecified	:	Rands	R	-	sum	