IMPALA PLATINUM (PTY) LTD



Closure Costing Report for Impala Platinum's Proposed 17 Shaft Sewage Plant, 18 Shaft Complex and New Central Sewage Plant







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TABLE OF CONTENTS

1	INTR	ODUCTION AND SUMMARY1	١
2	CLOS	SURE COMPONENTS	-
3	APPR	ROACH TO COST DETERMINATION	
4	INFO	RMATION3	
5	CLOS	SURE CRITERIA4	1
	5.1	General assumptions	1
	5.2	Site specific assumptions	1
6	CLOS	SURE COSTING5	:
	6.1	Project schedule	:
	6.2	Infrastructural aspects	
		6.2.2 Linear items	-
	6.3	Mining aspects 6 6.3.1 Shafts 6 6.3.2 Stormwater dams and settling ponds 6 6.3.3 Waste rock dump 6	6
	6.4	General surface reclamation	
	6.5	Water management	7
	6.6	Post closure aspects 6.6.1 Surface water monitoring 6.6.2 Groundwater monitoring 6.6.3 Reclamation monitoring 6.6.4 Care and maintenance	
	6.7	Additional allowances	/
7	CON	CLUSION AND WAY FORWARD7	7
	7.1	Conclusion	7
	7.2	Way forward	
0	DOCI	IMENIT LIMITATIONS	

Appendix

Appendix A: Revised Closure Cost Estimates 2013.





LIST OF TERMS AND ABBREVIATIONS USED

TERMS & ABBREVIATIONS	DESCRIPTION
Care and maintenance	This involves the maintaining and corrective action as requires as well as conducting the required inspection and monitoring to demonstrate achievement of success of the implemented measures
Closure	This involves the application for closure certificate and initiation of transfer of on-going care and maintenance to third parties
Contingencies	This allows for making reasonable allowance for possible oversights/omissions and possible work not foreseen at the time of compilation of the closure costs. Allowance of between 10 percent and 20 percent would usually be made based on the accuracy of the estimations. The South African Department of Minerals and Energy Guideline (January 2005) requires an allowance of 10 percent
Decommissioning	This relates to the situation after cessation of operations involving the deconstruction/removal and/or transfer of surface infrastructure and the initiation of general site reclamation
DMR	Department of Mineral Resources
E-TEK	E-TEK Consulting
Impala	Impala Platinum (Rustenburg Area)
SLR	SLR Consulting
Post-closure	The period after mine closure
Preliminary and Generals (P&Gs)	This is a key cost item which is directly related to whether third party contractors have applied for site reclamation. This cost item comprises both fixed and time-related charges. The former makes allowance for establishment (and de-establishment) of contractors on site, as well as covering their operational requirements for their offices (electricity/water/communications), latrines, etc. Time-related items make allowance for the running costs of the fixed charged items for the contract period
Reclamation	The re-instatement of a disturbed area into a usable state (not necessarily its premining state) as defined by broad land use and related performance objectives
Rehabilitation	The return of a disturbed area to its original state, or as close as possible to this state
Remediation	To assist in the reclamation process by enhancing the quality of an area through specific actions to improve especially bio-physical site conditions
Scheduled closure	Closure that happens at the planned date and/or time horizon
Site relinquishment	Receipt of closure certificate and handover to third parties for on-going care and maintenance, if required
Un-scheduled closure	Immediate closure of a site, representing decommissioning and reclamation of the site in its present state
EMPR	Environmental Management Program Report
WRD	Waste Rock Dump





1 INTRODUCTION AND SUMMARY

E-TEK Consulting (E-TEK), was requested by SLR Consulting (SLR) to update the current closure cost estimates for the proposed new 17 Shaft Sewage Plant, 18 Shaft Complex and Central Sewage Plant to be in line with the current scope of work. These operations will be situated within the current mining lease area of Impala Platinum (Impala) Rustenburg operations.

These closure costs were determined to form part of an authorisation process with the Department of Mineral Resources (DMR) for Impala's proposed new projects and are aligned to the DMR guideline document for new EIA/EMP applications.

This report provides the revised closure cost estimates for the scheduled (planned life of mine) closure situation as well as a forecast for the first ten years of operation.

The closure cost estimate is presented in this document according to the categories supported by the **DMR guideline**: 1 namely:

- Infrastructural aspects;
- Mining aspects;
- General surface reclamation;
- · Water management;
- · Post closure aspects; and
- · Additional allowances.

The closure cost estimates were based on quantities taken from available plans and information supplied by SLR.

The closure cost estimates for the proposed new sewage treatment plant at 17 Shaft Complex for scheduled closure and unscheduled closure year 1 are R600 thousand and R600 thousand respectively as summarized in the table below:

	Closure Costing Summary - 17 Shaft Complex								
	Tasks	S	Scheduled Closure	Unscheduled Closure - Year 1					
1	Closure Aspects								
1.1	Infrastructural aspects	R	519 324.63	R	519 324.63				
1.2	Mining aspects	R	-	R	-				
1.3	General surface reclamation	R	-	R	-				
1.4	Water management	R	-	R	-				
	SUB - TOTAL 1 (for infrastructural and related structures)	R	519 324.63	R	519 324.63				
2	Post closure aspects	R	-	R	-				
	SUB - TOTAL 2 (for post - closure aspects)	R	-	R	-				
3	Additional allowances								
3.1	Preliminary and General	R	31 159.48	R	31 159.48				
3.2	Contingencies	R	51 932.46	R	51 932.46				
	SUB - TOTAL 3 (for additional allowances)	R	83 091.94	R	83 091.94				
	Grand - Total (for sub - total 1+2+3)	R	602 416.57	R	602 416.57				

¹ Guideline document for the evaluation of the quantum of closure-related financial provision provided by a mine



1



The closure cost estimates for the proposed new 18 Shaft Complex for scheduled closure and unscheduled closure year 1 are R58.5 million and R26.8 million respectively as summarized in the table below:

	Closure Costing Summary - 18 Shaft Complex							
	Tasks		Scheduled Closure	Unscheduled Closure - Year 1				
1	Closure Aspects							
1.1	Infrastructural aspects	R	33 052 854.84	R	15 241 100.30			
1.2	Mining aspects	R	10 024 923.50	R	567 724.00			
1.3	General surface reclamation	R	5 687 200.00	R	5 687 200.00			
1.4	Water management	R	-	R	-			
	SUB - TOTAL 1 (for infrastructural and related structures)	R	48 764 978.34	R	21 496 024.30			
2	Post closure aspects	R	1 767 480.00	R	1 715 190.00			
	SUB - TOTAL 2 (for post - closure aspects)	R	1 944 228.00	R	1 886 709.00			
3	Additional allowances							
3.1	Preliminary and General	R	2 925 898.70	R	1 289 761.46			
3.2	Contingencies	R	4 876 497.83	R	2 149 602.43			
	SUB - TOTAL 3 (for additional allowances)	R	7 802 396.53	R	3 439 363.89			
	Grand - Total (for sub - total 1+2+3)	R	58 511 602.87	R	26 822 097.19			

The closure cost estimates for the proposed new Central Sewage Plant for scheduled closure and unscheduled closure year 1 are R1.9 million and R1.9 million respectively as summarized in the table below:

	Closure Costing Summary - Central Sewage Plant								
	Tasks	0)	Scheduled Closure	Unscheduled Closure - Year 1					
1	Closure Aspects								
1.1	Infrastructural aspects	R	1 307 292.80	R	1 307 292.80				
1.2	Mining aspects	R	-	R	-				
1.3	General surface reclamation	R	303 875.00	R	303 875.00				
1.4	Water management	R	-	R	-				
	SUB - TOTAL 1	R	1 611 167.80	R	1 611 167.80				
	(for infrastructural and related structures)	K	1 011 107.00	K	1 011 107.00				
2	Post closure aspects	R	95 865.00	R	95 865.00				
	SUB - TOTAL 2	R	105 451.50	R	105 451.50				
	(for post - closure aspects)	K	103 431.30		103 431.30				
3	Additional allowances								
3.1	Preliminary and General	R	96 670.07	R	96 670.07				
3.2	Contingencies	R	161 116.78	R	161 116.78				
	SUB - TOTAL 3	R	257 786.85	R	257 786.85				
	(for additional allowances)	_	237 700.05	_	237 700.03				
	Grand - Total	R	1 974 406.15	R	1 974 406.15				
	(for sub - total 1+2+3)	K	1 374 400.15		1 374 400.15				

Detail costing spreadsheet is attached in Appendix A





2 CLOSURE COMPONENTS

The following components were identified for each proposed project and form part of the un-scheduled and scheduled closure costing:

- 18 Shaft Complex:
 - Administration buildings and offices;
 - Change rooms and lamp houses;
 - Stores and workshops;
 - Contractors lay down areas;
 - Wash bays;
 - Fuel handling and storage area,
 - o Stockpiles;
 - Explosive magazine;
 - Run of mine (ROM) pad;
 - Haul roads;
 - Temporary access roads;
 - Temporary services (water, electricity);
 - Ventilations Shafts;
 - Main shaft and winder houses;
 - Stormwater dams and settling ponds;
 - Material handling plant;
 - Waste rock dump; and
 - Sewage treatment plant.
- 17 Shaft sewage treatment plant
- Central sewage treatment plant.

3 APPROACH TO COST DETERMINATION

The approach followed with the determination of the closure costs could be summarised as follows:

- Sourcing and review of all relevant information received from SLR;
- Agreement that no site visit was required as construction of the shaft has not yet commenced.
 Furthermore, the project team has a good understanding of the general site conditions and nature
 of operations at Impala due to involvement in the closure costing for the whole of Impala's current
 Rustenburg Operations;
- Based on the review of available information, identification of infrastructure and mining-related activities that would need to be decommissioned at closure;
- Determination of the various components of demolition or rehabilitation related to each structure and/or area;
- Updating the Bill of Quantities capturing the quantities and actions relating to closure of these complexes;
- Unit rates used were obtained from E-TEK's existing data base and in consultation with demolition and earthworks contractors;
- Application of the above-mentioned unit rates and associated quantities to determine the latest closure cost estimates;
- Forecasting the first ten operational years of the increase/fluctuation in closure costs for the proposed shaft complexes; and
- A closure report to summarize the approach, assumptions and findings of the closure costing.

4 INFORMATION





Closure costing was based on the following information:

- Figure 21, Surface layout plan;
- DWG drawing 18 Shaft Complex;
- Correspondence from SLR regarding updated project information;
- Knight Piesold (July, 2009): Recommendations for waste rock dumps. Report 301 00195/01; and
- Golder closure report and costing for 2012. Report 10612628-10781-3.

5 CLOSURE CRITERIA

The following general and site specific assumptions and qualifications for each of the closure components listed in section 2 and 3 for the proposed new projects are described below:

5.1 General assumptions

- The closure cost estimate is aligned to the Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine, by the DMR (January, 2004);
- This report only addresses the decommissioning and reclamation costs, equating to an outside (third party) contractor establishing on-site and conducting reclamation-related work. Other components such as staffing of the site after decommissioning, the infrastructure and support services (e.g. power supply, etc.) for this staff as well as workforce matters such as separation packages, re- training /re-skilling, etc. are outside the scope of this report;
- Based on the above, dedicated contractors would be commissioned to conduct the demolition and reclamation work on the site. This would inter alia require establishment costs for the contractors and hence, the allowance for preliminary and general (P&Gs) in the cost estimate;
- Allowance has also been made for third party contractors and consultants to conduct post-closure care and maintenance work as well as compliance monitoring;
- Closure costs have been determined for both the scheduled and un-scheduled closure situations.
 Specifically, scheduled closure takes place at a planned date and/or within a time horizon, in accordance with overall mine planning. Un-scheduled closure entails immediate closure of a site, representing decommissioning and reclamation of the site in its present state;
- In accordance with the DMR guideline, no cost off-sets due to possible salvage values were considered and gross reclamation costs are reported; and
- Fixed percentages for P&Gs and contingencies as per the DMR guideline have been applied.

5.2 Site specific assumptions

- As the project is still in the planning phase, no development and site disturbance has taken place;
- Allowance was made for the disposal of general demolition waste within a 30 km radius;
- No allowance were made for the removal of roads outside the shafts zone of responsibility as they could serve the surrounding community post closure;
- All steel and salvageable equipment which as a salvage value will be taken down and stored for sale to third parties. However, as per the DMR guideline the salvage value of steel has not been considered as part of the closure costing;
- Sewage treatment plants have been allowed for at each shaft area, an alternative for a central sewage treatment plant to cater for the 2 shafts combined have also been cost. As there is currently uncertainty on which option will be chosen all options have been cost so that adequate provision is available for either options;





- Impala is not the surface rights owner and surface areas are leased from the Bafokeng; and
- Local communities are situated in close proximity of mining operations.

6 CLOSURE COSTING

6.1 PROJECT SCHEDULE

The following project schedules were assumed for completion of the proposed new projects:

- 17 Shaft sewage treatment plant, Commence in Year 1 of operation and completed in Year 1 of operation;
- 18 Shaft Complex, Commence in Year 1 of operation and completed in Year 2 of operation; and
- Central Sewage treatment Plant, Commence in Year 1 of operation and completed in Year 1 of operation.

Detailed spreadsheets for the closure cost estimates for this report are included in Appendix A. The following sub-headings describe all criteria and assumptions used for closure costing.

6.2 INFRASTRUCTURAL ASPECTS

The closure criteria for the following closure cost components are the same for un-scheduled and scheduled closure:

6.2.1 Processing plants, steel structures, reinforced concrete structures, offices, workshops, residential buildings and related structures

- A nominal allowance was made for the removal of salvageable equipment;
- Provision was made for a crane to assist in the removal of salvageable equipment and demolition purposes;
- All infrastructure will be completely dismantled;
- All foundations and subsurface infrastructure will be removed 500 mm below natural ground level (NGL);
- It was assumed that all metal and steel waste will be salvaged, but no allowance was made to
 offset the scrap value of the steel and metal. Allowance is incorporated in the demolition rate for
 steel and related material to be load and hauled for a 30 km distance;
- Eskom sub-stations were excluded from these calculations and stays the responsibility of Eskom;
 and
- General surface rehabilitation will be implemented on footprint areas.

6.2.2 Linear items

- All overland conveyors will be removed including footings;
- All the perimeter fencing will be removed once rehabilitation in the inside perimeter is completed and signed off;
- All delivery pipelines will be removed; and
- All power lines that do not form part of Eskom's supply network will be removed.

No allowance was made for the removal of the new intended sewage pipeline located at 17 Shaft to the intended central sewage treatment plant as the pipeline is buried more than 500 mm below natural ground level.

6.2.3 Roads





- No allowance were made for the removal of roads outside the shafts zone of responsibility as they could serve the surrounding community post closure;
- It was assumed that road areas within the shaft and plant complexes will be rehabilitated as part of the general surface rehabilitation of that specific complex;

6.2.4 Waste

- A 2.5% allowance of the total demolition costs for infrastructural aspects was made for the sorting and screening of waste; and
- Additional allowance was made to load and haul demolition waste and dispose of at a licenced disposal facility within a 30 km radius.

6.3 MINING ASPECTS

The closure criteria for the following closure cost components are the same for scheduled and unscheduled closure:

6.3.1 No 18 Shaft

- Provision was made for the complete dismantling of the headgear and related infrastructure;
- Allowance was made for the dismantling of ventilation fan and cooling towers and related infrastructure; and
- Allowance was made to cap all vertical shafts according to the DMR guideline document.

6.3.2 Stormwater dams and settling ponds

- Allowance was made to remove the concrete liners and dispose of at a licensed disposal facility;
- It was assumed that the dam wall will be breached and the material will be dozed inwards to fill the dam basin;
- Allowance was made to remove a 100 mm thick layer of material from the stormwater dam basin and 300 mm thick material from the settling ponds basin. This material can be disposed of on top of the tailings dams before rehabilitation of the tailings dams commences; and
- Additional allowance was made to establish vegetation which includes soil amelioration cultivation and seeding actions with indigenous grass seed mixture.

6.3.3 Waste rock dump

- The dump will be reshaped to decrease slope angles to at least 1:3 (V:H), a 800 mm capping layer will be placed as prescribed in the Knight Piesold recommendations for waste rock dumps and vegetated; and
- It is stated that concurrent rehabilitation will take placed during the operational phase, but it was assumed that a 20 m strip will require rehabilitation at any given time.

6.4 GENERALSURFACE RECLAMATION

The closure criteria for the following closure cost components are the same for scheduled and unscheduled closure:

- General
 - Rehabilitation of disturbed footprint areas;
- Closure Criteria
 - Disturbed areas will be reshaped and levelled filling all voids and making area free draining:
 - Allowance was made to rip the disturbed area to a depth of 500mm to alleviate compaction;





- Allowance was made to import 250mm topsoil from the local stockpile onto the levelled surface: and
- Additional allowance was made to establish vegetation which includes soil amelioration cultivation and seeding actions with indigenous grass seed mixture.

6.5 Water management

Not applicable, forms part of the greater Impala operation.

6.6 Post closure aspects

The closure criteria for the following closure cost components are the same for scheduled and unscheduled closure:

6.6.1 Surface water monitoring

- It has been assumed that surface water quality monitoring has to continue at a monthly frequency for at least five years post-closure; and
- Allowance was made for six monitoring points.

6.6.2 Groundwater monitoring

- It has been assumed that ground water quality monitoring has to continue at a quarterly frequency for a period of at least five years post-closure; and
- Allowance was made for eight monitoring points.

6.6.3 Reclamation monitoring

 An allowance has been included for the reclamation monitoring of both reclaimed areas and dumps for a 5 year period.

6.6.4 Care and maintenance

 Care and maintenance of the reclaimed areas and dumps, over a 5 year period, has been assumed.

6.7 Additional allowances

The closure criteria for the following closure cost components are the same for scheduled and unscheduled closure:

6.7.1 Preliminary and general

Additional allowance of twelve per cent of the total for infrastructural and related aspects (subtotal 1 on summary costing table) has been made, which is aligned to the DMR guideline.

6.7.2 Contingencies

• Additional allowance of ten per cent of the total for infrastructure and related aspects (sub-total 1 on summary costing table), which is aligned to the DMR guidelines.

7 CONCLUSION AND WAY FORWARD

7.1 CONCLUSION

The closure costs as reflected in this report have been based on information obtained from SLR. In the event of the required information not being available, estimates were made based on experience and benchmarked against similar facilities elsewhere. Unit rates for the costing were obtained from E-TEK's existing data base and/or through previous experience and consultation with demolition, earthworks contractors and rehabilitation practitioners. Where required, these were adapted to reflect site-specific conditions.





Notwithstanding the above, if the closure measures are implemented as envisaged, the reflected costs provide a good indication of the costs for the closure situations as calculated and should provide a good basis for making the required financial provision.

7.2 WAY FORWARD

Certain gaps remain to improve the accuracy of the liability for future updates, these gaps are as follows:

- A more detailed programme regarding the development of the proposed new projects. As the
 costing is detailed over ten years, numerous assumptions was made regarding sequencing of
 construction and development activities; and
- More detailed investigation or trials should be conducted to assess the cover/capping options for the WRD in order to assess the suitability of the on-site black clays as a capping material, especially at steep gradients.
- All options regarding the sewage treatment plant have been cost. Over provision is currently
 made so it is recommended that when a final option is chosen that the cost estimates is to be
 updated to address the current site situation.





8 DOCUMENT LIMITATIONS

This Document has been provided by E-TEK Consulting ("E-TEK") subject to the following limitations:

i)This Document has been prepared for the particular purpose outlined in E-TEK's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.

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iii)Conditions may exist which were undetectable given the limited nature of the enquiry E-TEK was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.

iv)In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. E-TEK's opinions are based upon information that existed at the time of the production of the Document. It is understood that the Services provided allowed E-TEK to form no more than an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

v)Any assessments made in this Document are based on the conditions indicated from published sources and the investigation described. No warranty is included; and either expresses or implies that the actual conditions will conform exactly to the assessments contained in this Document.

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Appendix A: Revised Closure Cost Estimates 2013.





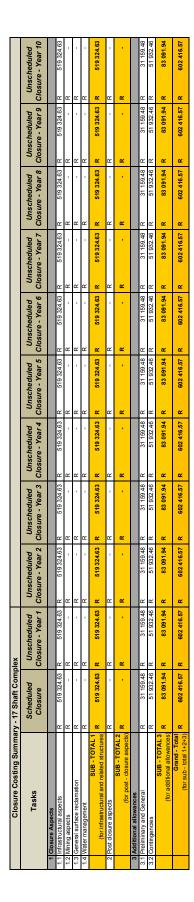
	Closure Costing - Exc	ecutive Summary					
	Tasks		Scheduled Closure	1	UnScheduled osure - Year 1		
1	Closure Aspects						
1.1	Infrastructural aspects	R	34 879 472.26	R	17 067 717.73		
1.2	Mining aspects	R	10 024 923.50	R	567 724.00		
1.3	General surface reclamation	R	5 991 075.00	R	5 991 075.00		
1.4	Water management	R	-	R	-		
	SUB - TOTAL 1 (for infrastructural and related structures)	R	50 895 470.76	R	23 626 516.73		
2	Post closure aspects	R	1 863 345.00	R	1 811 055.00		
	SUB - TOTAL 2 (for post - closure aspects)	R	2 049 679.50	R	1 992 160.50		
3	Additional allowances						
3.1	Preliminary and General	R	3 053 728.25	R	1 417 591.00		
3.2	Contingencies	R	5 089 547.08	R	2 362 651.67		
	SUB - TOTAL 3 (for additional allowances)	R	8 143 275.32	R	3 780 242.68		
	Grand - Total (for sub - total 1+2+3)	R	61 088 425.58	R	29 398 919.90		



Confidential FY 2013

Impala Platinum - Closure Costs

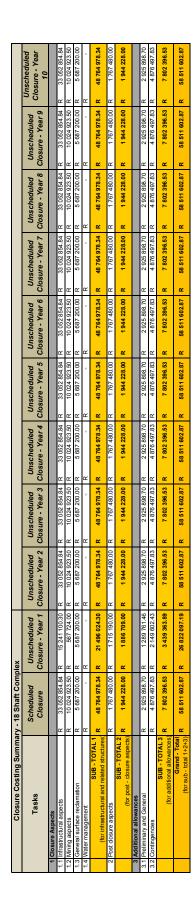
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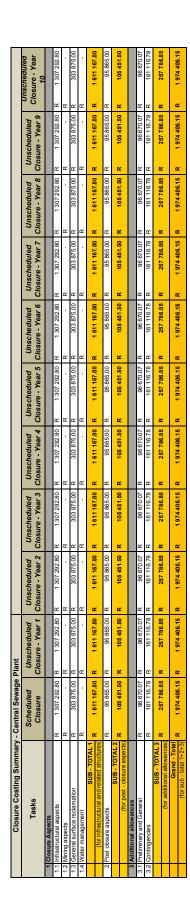


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Impala Platinum - Closure Costs

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		Closure Costing - 17 Shaft Complex					Closure Co	osts -	- <u>Scheduled</u>	!
Item nr	ID	Task	Unit Rate	Unit	Quantity		Rate		Amount	Notes
1		Infrastructural Aspects	Code	Ot	quantity		1.0.0		7 unount	Notes
2		Nominal allowances								
3		Crane	11.2	p/day	0.00	R	6 534.00	R		To assist with demolition and salvage purposes
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00		-	R	-	Nominal allowance
5		Sub - Total for Nominal allowances						R		
6 7		Demolitioning of plant and related structures Sewage treatment plant								
8		Office	3.1.1	m²	33.00		295.00		9 735.00	Normal single story buildinç
9 10		Sludge drying beds Storage tanks	4.3 2.4.2	m³ no	79.00 3.00			R R	31 600.00 79 950.00	Assume concrete is 250mm thick
11		Storage tanks	2.4.1	no	2.00		10 600.00		21 200.00	
12		Structural steel	2.3.1	m²	28.00	R	135.00	R	3 780.00	Assume 80kg of steel per square meter
13		Concrete hardstand	8.4	m²	1820.00	R	135.00	R	245 700.00	Remove concrete hardstand with min. reinforcing
14		Sub - Total for demolitioning of plant and related structures	0.1		1020.00		100.00	R	391 965.00	
15		Demolitioning of all structural structures			0.00	_				
16 17		Not applicable Sub - Total for demolitioning of all structural structures	1.1	na	0.00	R	-	R R	-	
18		Demolitioning of workshops and stores								
19		Not applicable	1.1	na	0.00	R	-	R	-	
20	_	Sub - Total for demolitioning of workshops and stores						R	-	
21		Demolitioning of permanent brick structures and temporary structures								
22 23		Booster pump station Inspection manholes	3.2.1 3.1.1	m² m²	25.00 140.00			R R	12 000.00 41 300.00	Normal single story building
20	\vdash	Sub - Total for demolitioning of permanent brick structures and	J. 1. I	1117	140.00	<u> </u>	290.00	IX.	-1 JUU.UU	Assume every 50m a manhole
24	_	temporary structures		<u> </u>		<u> </u>		R	53 300.00	
25 26	<u> </u>	Removal of all surface related finishes Not applicable	1.1	na	0.00	R	-	R	-	
27	L	Sub - Total for removal of all surface related finishes			5.00	Ė		R	-	
28		Removal of all linear items						_		Name of the second seco
29 30		PVC sewage delivery pipeline Sub - Total for removal of all linear items	1.1	na	0.00	R	-	R R	-	Will remain buried post closure
31	t	Rehabilitation of roads				L			-	
32		Not applicable	1.1	na	0.00	R	-	R	-	
33 34		Sub - Total for rehabilitation of roads Disposal of demolition waste						R	-	
35		Sorting and screening of demolitioning waste	6.1	%	R 445 265.00		2.5%	R	11 131.63	2.50%
36		Disposal of demolition waste	9.6.7	m³/km	368.00	R	171.00	R	62 928.00	Allowance was made for a 30km radius
37 38		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects						R R	74 059.63 519 324.63	
39		Sub - rotal for illinastructural aspects						K	313 324.03	
40		Mining Aspects								
41 42		Open pit reclamation including final voids and ramps	1.1		0.00	В	-	R	_	
42		Not Applicable	1.1	na	0.00	K	-	K	-	
43		Sub - Total open pit reclamation including final voids and ramp	5					R	-	
44 45		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	D	_	R	_	
46		Sub - Total for sealing of shafts and inclines	1.1	nu	0.00			R	-	
47		Rehabilitation of overburden and spoils								
48 49	_	Not Applicable	1.1	na	0.00	R	-	R R	-	
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds						K	•	
50		(non polluting potential)								
51		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R	-	
52		evaporation ponds (non polluting potential)					R		
		Rehabilitation of processing waste deposits and evaporation ponds								
53 54		(polluting potential) Not Applicable	1.1	na	0.00	R	_	R	_	
		Sub - Total for rehabilitation of processing waste deposits and								
55 56	-	evaporation ponds (polluting potential	1	<u> </u>		<u> </u>		R	-	
56	H	Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	-	R	-	
58		Sub - Total for reclamation of subsided areas			2.00			R	-	
59	L	Sub - Total for Mining aspects				<u> </u>		R	-	
60 61		General Surface Reclamation								
62 63	<u> </u>	Not Applicable Sub - Total for General Surface Reclamation	1.1	na	0.00	R	-	R R	-	Assumed within the greater 17 Shaft area
64	\vdash	- Juli 101 Octional Cultiace Recialitation		1		H		14	-	
65		Water Management								
66	_	Not Applicable	1.1	na	0.00	R	-	R	-	
67 68	\vdash	Sub - Total for Water Management						R	•	
69		SUB - TOTAL 1						R	519 324.63	
		(for infrastructural and related structures						.,	0.10 024.03	
70 71		Post - closure aspects Surface water quality monitoring	12.1	уг	0.00	R	119 232.00	R		Assumed included as part of 17 Shaft
72	L	Groundwater quality monitoring	12.2	yr	0.00	R	52 992.00	R	-	Assumed included as part of 17 Shaft
73	Ľ	Reclamation monitoring on reclaimed areas	12.3	ha	0.00		2 430.00		-	Assumed included as part of 17 Shaft
74 75	-	Care and maintenance of reclaimed areas Sub - Total for Post closure aspects	12.4	ha	0.00	R	15 000.00	R R	-	Assumed included as part of 17 Shaft
10	\vdash	Sub - rotal for Post Gostife aspects				 		IX	-	
76	L	Contingencies for post closure aspects	1.2	sum	R -	<u> </u>	10%	R	-	Assumed 10 percent for post closure aspects
77		Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2						R	-	
78		(for post - closure aspects)						R	-	
79		Additional allowances								
80 81	_	Preliminary and General	1.2	sum	R 519 324.63 R 519 324.63	<u> </u>	6% 10%	R R	31 159.48	Assume 6 percent of sub - total 1
		Contingencies SUB - TOTAL 3	1.2	sum	1 319 324.63		10%		51 932.46	Assume 10 percent of sub - total 1
82		(for additional allowances)						R	83 091.94	
83		Grand - Total						R	602 416.57	
		(for sub - total 1+2+3)								





Item nr		Task Infrastructural Aspects Nominal allowances Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Sewage treatment plant Office Sludge drying beds Slorage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures Sub - Total for demolitioning of permanent brick structures and temporary structures and temporary structures and temporary structures Removal of all surface related finishes	11.2 1.2 1.2 1.2 3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4 1.1 1.1 1.1	p/day sum m² m³ no no m² m² an na	Quantity 0.00 1.00 1.00 33.00 79.00 2.00 28.00 1820.00 0.00	R R R R R	295.00 400.00 26.650.00 10.600.00 135.00	R 31 600.00 R 79 950.00 R 21 200.00 R 3780.00 R 245 700.00 R 391 965.00	Notes To assist with demolition and salvage purposes Nominal allowance Only certain infrastructure developed Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square mete Remove concrete hardstand with min. reinforcing
1 2 3 4 4 5 6 7 7 8 9 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 32 3		Infrastructural Aspects Nominal allowances Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Sewage treatment plant Office Sludge drying beds Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Not applicable Sub - Total for demolitioning of all structural structures Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4	p/day sum m² m³ no no m² m²	33.00 79.00 3.00 2.00 28.00	R R R R R	295.00 400.00 26 650.00 10 600.00 135.00	R - R - R - R - R - R - R - R - R - R -	To assist with demolition and salvage purposes Nominal allowance Only certain infrastructure developed Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square mete: Remove concrete hardstand with min.
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Sewage treatment plant Office Sludge drying beds Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4	m² m³ no no m² m² m²	33.00 79.00 3.00 2.00 28.00 1820.00	R R R R R	295.00 400.00 26.650.00 10.600.00 135.00	R R 9735.00 R 31600.00 R 79950.00 R 21200.00 R 3780.00 R 245 700.00 R 391 965.00 R	purposes Nominal allowance Only certain infrastructure developed Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square mete: Remove concrete hardstand with min.
14 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Sewage treatment plant Office Sludge drying beds Storage tanks Storage tanks Storage tanks Storage tanks Storage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Not applicable Sub - Total for demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures an temporary structures an temporary structures	3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4	m² m³ no no m² m² m²	33.00 79.00 3.00 2.00 28.00 1820.00	R R R R R	295.00 400.00 26.650.00 10.600.00 135.00	R R 9735.00 R 31600.00 R 79950.00 R 21200.00 R 3780.00 R 245 700.00 R 391 965.00 R	purposes Nominal allowance Only certain infrastructure developed Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square meter Remove concrete hardstand with min.
14 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Sewage treatment plant Office Sludge drying beds Storage tanks Storage tanks Storage tanks Storage tanks Storage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Not applicable Sub - Total for demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures an temporary structures an temporary structures	3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4	m² m³ no no m² m² m²	33.00 79.00 3.00 2.00 28.00 1820.00	R R R R R	295.00 400.00 26.650.00 10.600.00 135.00	R R 9735.00 R 31600.00 R 79950.00 R 21200.00 R 3780.00 R 245 700.00 R 391 965.00 R	Nominal allowance Only certain infrastructure developed Normal single story building Assume concrete is 250mm thich Assume 80kg of steel per square meter Remove concrete hardstand with min.
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 24 25 26 27 28 29 30 31 32		Sub - Total for Nominal allowances Sewage treatment plant Office Sludge drying beds Storage tanks Storage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Poemolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures and tempor	3.1.1 4.3 2.4.2 2.4.1 2.3.1 8.4 1.1	m² m³ no no m² m²	33.00 79.00 3.00 2.00 28.00 1820.00	R R R R	295.00 400.00 26.650.00 10.600.00 135.00	R 9 735.00 R 31 600.00 R 79 950.00 R 21 200.00 R 3780.00 R 245 700.00 R 391 965.00 R	Only certain infrastructure developed Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square meter Remove concrete hardstand with min.
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 30 31 32		Sewage treatment plant Office Sludge drying beds Slorage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Personal Sub - Total for demolitioning of all structural structures Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	4.3 2.4.2 2.4.1 2.3.1 8.4 1.1	m³ no no m² m²	79.00 3.00 2.00 28.00 1820.00	R R R R	400.00 26 650.00 10 600.00 135.00	R 31 600.00 R 79 950.00 R 21 200.00 R 3780.00 R 245 700.00 R 391 965.00	Normal single story building Assume concrete is 250mm thick Assume 80kg of steel per square meter Remove concrete hardstand with min.
8 9 10 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 32		Office Sludge drying beds Storage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Pemolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures and te	4.3 2.4.2 2.4.1 2.3.1 8.4 1.1	m³ no no m² m²	79.00 3.00 2.00 28.00 1820.00	R R R R	400.00 26 650.00 10 600.00 135.00	R 31 600.00 R 79 950.00 R 21 200.00 R 3780.00 R 245 700.00 R 391 965.00	Assume concrete is 250mm thick Assume 80kg of steel per square metel Remove concrete hardstand with min.
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Sludge drying beds Slorage tanks Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	2.4.2 2.4.1 2.3.1 8.4 1.1	no no m² m²	3.00 2.00 28.00 1820.00	RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	26 650.00 10 600.00 135.00 135.00	R 79 950.00 R 21 200.00 R 3 780.00 R 245 700.00 R 391 965.00	Assume concrete is 250mm thick Assume 80kg of steel per square metel Remove concrete hardstand with min.
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Storage tanks Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	2.4.1 2.3.1 8.4 1.1 1.1	no m² m²	2.00 28.00 1820.00	R	10 600.00 135.00 135.00	R 21 200.00 R 3 780.00 R 245 700.00 R 391 965.00	Remove concrete hardstand with min.
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Structural steel Concrete hardstand Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	2.3.1 8.4 1.1 1.1	m² m² na	28.00 1820.00 0.00	R	135.00 135.00 -	R 3780.00 R 245 700.00 R 391 965.00 R -	Remove concrete hardstand with min.
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Sub - Total for demolitioning of plant and related structures Not applicable Sub - Total for demolitioning of all structural structures Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	R 391 965.00	
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	1.1	na	0.00	R	-	R 391 965.00	Territoring
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Demolitioning of all structural structures Not applicable Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	3.2.1				-	R -	
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures an temporary structures	3.2.1						
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		Demolitioning of workshops and stores Not applicable Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures	3.2.1	na	0.00	R		R -	
20 21 22 23 24 25 26 27 28 29 30 31 32		Sub - Total for demolitioning of workshops and stores Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures an temporary structures	3.2.1	na	0.00	R		R -	
21 22 23 24 25 26 27 28 29 30 31 32		Demolitioning of permanent brick structures and temporary structures Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures				111		R -	
22 23 24 25 26 27 28 29 30 31 32		Booster pump station Inspection manholes Sub - Total for demolitioning of permanent brick structures an temporary structures						R -	
23 24 25 26 27 28 29 30 31 32		Inspection manholes Sub - Total for demolitioning of permanent brick structures and temporary structures							
24 25 26 27 28 29 30 31 32		Sub - Total for demolitioning of permanent brick structures and temporary structures		m²	25.00			R 12 000.00	Normal single story building
25 26 27 28 29 30 31 32		temporary structures	*****	m²	140.00	K	295.00	R 41 300.00	Assume every 50m a manhole
26 27 28 29 30 31 32		Removal of all surface related finishes				<u> </u>		R 53 300.00	
27 28 29 30 31 32		Not applicable	1.1	na	0.00	R	_	R -	
29 30 31 32		Sub - Total for removal of all surface related finishes	1.1	nu	0.00	Ë		R -	
30 31 32		Removal of all linear items							
31 32		PVC sewage delivery pipeline Sub - Total for removal of all linear items	1.1	na	0.00	R		R -	Will remain buried post closure
32		Rehabilitation of roads				1		R -	
33		Not applicable	1.1	na	0.00	R	-	R -	
34		Sub - Total for rehabilitation of roads Disposal of demolition waste				1		R -	
35		Sorting and screening of demolitioning waste	6.1	%	R 445 265.00		2.5%	R 11 131.63	2.50%
36		Disposal of demolition waste	9.6.7	m³/km	368.00	R	171.00	R 62 928.00	Allowance was made for a 30km radius
37 38		Sub - Total for disposal of demolition waste						R 74 059.63 R 519 324.63	
39		Sub - Total for infrastructural aspects						K 515 324.03	<u> </u>
40		Mining Aspects							
41		Open pit reclamation including final voids and ramps			0.00	_			
42		Not Applicable	1.1	na	0.00	R	-	R -	}
43		Sub - Total open pit reclamation including final voids and ramps	;					R -	
44 45		Sealing of shafts and inclines	4.4		0.00			D	
46		Not Applicable Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R		R -	
47		Rehabilitation of overburden and spoils							
48		Not Applicable	1.1	na	0.00	R		R -	
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds						R -	}
50		(non polluting potential)							
51		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R -	<u> </u>
52		evaporation ponds (non polluting potential)						R -	
50		Rehabilitation of processing waste deposits and evaporation ponds							
53 54		(polluting potential) Not Applicable	1.1	na	0.00	R	_	R -	}
		Sub - Total for rehabilitation of processing waste deposits and			3.00	Ė			
55		evaporation ponds (polluting potential				<u> </u>		R -	
56 57		Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	_	R -	
58		Sub - Total for reclamation of subsided areas			5.00	Ė		R -	
59		Sub - Total for Mining aspects				<u> </u>		R -	
60 61		General Surface Reclamation							
62		Not Applicable Sub. Total for General Surface Peclamation	1.1	na	0.00	R	-	R -	Assumed within the greater 17 Shaft area
63 64		Sub - Total for General Surface Reclamation				\vdash		R -	
65		Water Management							
66		Not Applicable	1.1	na	0.00	R		R -	
67 68		Sub - Total for Water Management				1		R -	
69		SUB - TOTAL 1						R 519 324.63	
		(for infrastructural and related structures						010 024.03	
70 71		Post - closure aspects Surface water quality monitoring	12.1	yr	0.00	R	119 232.00	R -	Assumed included as part of 17 Shaft
72	_	Groundwater quality monitoring	12.1	yr	0.00		52 992.00		Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
73		Reclamation monitoring on reclaimed areas	12.3	ha	0.00		2 430.00		Assumed included as part of 17 Shaft
74 75		Care and maintenance of reclaimed areas Sub - Total for Post closure aspects	12.4	ha	0.00	R		R -	Assumed included as part of 17 Shaft
76		Contingencies for post closure aspects	1.2	sum	R -	<u> </u>		R -	Assumed 10 percent for post closure aspects
77		Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2						R -	
78		(for post - closure aspects)						R -	
79		Additional allowances	4.3		D 510 551 1			D 04 155 11	Assume Course of the second
80 81		Preliminary and General	1.2	sum	R 519 324.63 R 519 324.63	1		R 31 159.48 R 51 932.46	Assume 10 percent of sub - total 1
		Contingencies SUB - TOTAL 3	1.4	sum	11 319 324.03		10%		Assume 10 percent of sub - total 1
82		(for additional allowances)						R 83 091.94	
83		Grand - Total						R 602 416.57	
		(for sub - total 1+2+3)							





		Closure Costing - 17 Shaft Complex				Closure	Costs - Year	2
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	5545					
2		Nominal allowances						To posit with demolition and solvers
3		Crane	11.2	p/day	0.00	R 6 534.00	R -	To assist with demolition and salvage purposes
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00		R -	Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6 7		Demolitioning of plant and related structures Sewage treatment plant						
8		Office	3.1.1	m²	33.00	R 295.00	R 9 735.	00 Normal single story building
9		Sludge drying beds	4.3	m³	79.00			OO Assume concrete is 250mm thick
10		Storage tanks	2.4.2 2.4.1	no	3.00 2.00			
11 12		Storage tanks Structural steel	2.3.1	no m²	28.00			
		Concrete hardstand						Remove concrete hardstand with min.
13			8.4	m²	1820.00	R 135.00		
14 15		Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures					R 391 965.	00
16		Not applicable	1.1	na	0.00	R -	R -	
17		Sub - Total for demolitioning of all structural structures					R -	
18 19		Demolitioning of workshops and stores Not applicable	1.1		0.00	R -	R -	
20		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	-	R -	
21		Demolitioning of permanent brick structures and temporary structures	204	2	25.00	D 400.00	D 40.000	OO Named single stars building
22	\vdash	Booster pump station Inspection manholes	3.2.1 3.1.1	m² m²	25.00 140.00			
	Г	Sub - Total for demolitioning of permanent brick structures and		<u> </u>		200.00		,
24	_	temporary structures		<u> </u>			R 53 300.	00
25 26	\vdash	Removal of all surface related finishes Not applicable	1.1	na	0.00	R	R -	+
27	H	Sub - Total for removal of all surface related finishes	1.1	iia	0.00	<u> </u>	R -	
28		Removal of all linear items						
29		PVC sewage delivery pipeline	1.1	na	0.00	R -	R -	Will remain buried post closure
30 31	H	Sub - Total for removal of all linear items Rehabilitation of roads		<u> </u>			R -	
32	_	Not applicable	1.1	na	0.00	R -	R -	
33		Sub - Total for rehabilitation of roads					R -	
34		Disposal of demolition waste						
35		Sorting and screening of demolitioning waste	6.1	%	R 445 265.00	2.5%		
36 37		Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	368.00	R 171.00	R 62 928.	
38		Sub - Total for infrastructural aspects					R 519 324.	
39								
40		Mining Aspects						
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -	
72		Not Applicable	1.1	na	0.00	-	IX.	
43		Sub - Total open pit reclamation including final voids and ramp	6				R -	
44		Sealing of shafts and inclines			0.00			
45 46	_	Not Applicable Sub - Total for sealing of shafts and inclines	1.1	na	0.00	R -	R -	
47		Rehabilitation of overburden and spoils					IX .	
48		Not Applicable	1.1	na	0.00	R -	R -	
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					R -	
50		(non polluting potential)						
51		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
52		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds	,				R -	
53		(polluting potential)						
54		Not Applicable	1.1	na	0.00	R -	R -	
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential					R -	
56		Reclamation of subsided areas					IX.	
57		Not Applicable	1.1	na	0.00	R -	R -	
58	Ĺ	Sub - Total for reclamation of subsided areas					R -	
59 60	\vdash	Sub - Total for Mining aspects		-	 	1	R -	
61		General Surface Reclamation						
62 63	H	Not Applicable Sub - Total for General Surface Reclamation	1.1	na	0.00	R -	R -	Assumed within the greater 17 Shaft area
64	H	oub - I star for General Surface Recidination		 				
65		Water Management						
66		Not Applicable	1.1	na	0.00	R -	R -	
67	H	Sub - Total for Water Management		<u> </u>			R -	
68		SUB - TOTAL 1					_	
69		(for infrastructural and related structures					R 519 324.	63
70		Post - closure aspects						
71	_	Surface water quality monitoring	12.1	yr	0.00			Assumed included as part of 17 Shaft
72 73	\vdash	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	0.00			
74	L	Care and maintenance of reclaimed areas	12.4	ha	0.00			
75		Sub - Total for Post closure aspects					R -	
76	•	Contingencies for nost closure general	12	er inc	R -	400	6 R -	Assumed 10 percent for post closure aspects
76 77	H	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	sum	-	109	R -	
78		SUB - TOTAL 2					R	
		(for post - closure aspects)						
79		Additional allowances	1.0	61.15	D E40 204 C2	^^	D 04.450	19 Accume 6 percent of sub-t-t-1 4
80 81	H	Preliminary and General Contingencies	1.2	sum	R 519 324.63 R 519 324.63	69 109	6 R 31 159.	
		SUB - TOTAL 3	1.4	Suill	318 324.03	10%		
		(for additional allowances)					R 83 091.	94
82	L							
82		Grand - Total (for sub - total 1+2+3)					R 602 416.	57





		Closure Costing - 17 Shaft Complex				C	Closure	Costs - Year 3	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Ra	ate	Amount	Notes
1		Infrastructural Aspects	Code						
2		Nominal allowances							To assist with demolition and salvage
3		Crane	11.2	p/day	0.00		6 534.00	R -	purposes
4 5		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances	1.2	sum	1.00	R	-	R -	Nominal allowance
6		Demolitioning of plant and related structures							
7 8		Sewage treatment plant Office	3.1.1	m²	33.00	D	295.00	R 9 735.00	Normal single story building
9		Sludge drying beds	4.3	m³	79.00		400.00		Normal single story building Assume concrete is 250mm thick
10		Storage tanks	2.4.2	no	3.00 2.00		6 650.00 0 600.00	R 79 950.00 R 21 200.00	
11 12		Storage tanks Structural steel	2.3.1	no m²	28.00		135.00	R 3 780.00	Assume 80kg of steel per square meter
10		Concrete hardstand	8.4	m²	1820.00	0	135.00	R 245 700.00	Remove concrete hardstand with min. reinforcing
13 14		Sub - Total for demolitioning of plant and related structures	0.4		1020:00	IX	133.00	R 391 965.00	removering
15 16		Demolitioning of all structural structures Not applicable	4.4	na	0.00	R		R -	
17		Sub - Total for demolitioning of all structural structures	1.1	IIa	0.00	IX		R -	
18		Demolitioning of workshops and stores	11	no	0.00	В		R -	
19 20	-	Not applicable Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	R	-	R -	
21 22		Demolitioning of permanent brick structures and temporary structures Booster pump station	3.2.1	m²	25.00	R	480.00	R 12 000.00	Normal single story building
23		Inspection manholes	3.1.1	m²	140.00	R	295.00	R 41 300.00	Assume every 50m a manhole
24		Sub - Total for demolitioning of permanent brick structures and temporary structures						R 53 300.00	
25 26		Removal of all surface related finishes	11	ne	0.00	P	_	R -	
26	H	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	IX		R -	
28		Removal of all linear items							Mell access but to the
29 30	-	PVC sewage delivery pipeline Sub - Total for removal of all linear items	1.1	na	0.00	К	-	R -	Will remain buried post closure
31		Rehabilitation of roads							
32 33	-	Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R	-	R -	
34		Disposal of demolition waste							
35 36	_	Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 445 265.00 368.00	В	2.5% 171.00	R 11 131.63 R 62 928.00	2.50% Allowance was made for a 30km radius
37		Sub - Total for disposal of demolition waste	9.0.7	III /KIII	308.00	K	171.00	R 74 059.63	Allowance was made for a 30km radius
38 39		Sub - Total for infrastructural aspects						R 519 324.63	
40		Mining Aspects							
41		Open pit reclamation including final voids and ramps							
42		Not Applicable	1.1	na	0.00	R	-	R -	
43		Sub - Total open pit reclamation including final voids and ramp	3					R -	
44 45		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R	_	R -	
46		Sub - Total for sealing of shafts and inclines						R -	
47 48	_	Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	P	_	R -	
49		Sub - Total for rehabilitation of overburden and spoils	1.1	IIa	0.00	IX		R -	
50		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)							
51		Not Applicable	1.1	na	0.00	R	-	R -	
52		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R -	
		Rehabilitation of processing waste deposits and evaporation ponds							
53 54	_	(polluting potential) Not Applicable	1.1	na	0.00	R		R -	
		Sub - Total for rehabilitation of processing waste deposits and			0.00				
55 56		evaporation ponds (polluting potential Reclamation of subsided areas	1					R -	
57	L	Not Applicable	1.1	na	0.00	R		R -	
58 59	Ĺ	Sub - Total for reclamation of subsided areas						R -	
60	H	Sub - Total for Mining aspects							
61		General Surface Reclamation							
62		Not Applicable	1.1	na	0.00	R	-	R -	Assumed within the greater 17 Shaft area
63		Sub - Total for General Surface Reclamation						R -	
64 65		Water Management							
66		Not Applicable	1.1	na	0.00	R	-	R -	
67 68	-	Sub - Total for Water Management						R -	
69		SUB - TOTAL 1						R 519 324.63	
70		(for infrastructural and related structures Post - closure aspects						. 010 024.03	
71		Surface water quality monitoring	12.1	yr	0.00		9 232.00		Assumed included as part of 17 Shaft
72		Groundwater quality monitoring	12.2	yr	0.00		2 992.00		Assumed included as part of 17 Shaft
73 74	-	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	0.00		2 430.00 5 000.00		Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
75		Sub - Total for Post closure aspects						R -	·
76		Contingencies for post closure aspects	1.2	sum	R -		10%	R -	Assumed 10 percent for post closure aspects
77		Sub - Total for Contingencies for post closure aspects						R -	
78		SUB - TOTAL 2 (for post - closure aspects)						R -	
79		Additional allowances							
80	Ĺ	Preliminary and General	1.2	sum	R 519 324.63 R 519 324.63		6% 10%	R 31 159.48 R 51 932.46	Assume 6 percent of sub - total 1
81		Contingencies SUB - TOTAL 3	1.2	sum	R 519 324.63		10%		Assume 10 percent of sub - total 1
82		(for additional allowances)						R 83 091.94	
83		Grand - Total (for sub - total 1+2+3)						R 602 416.57	
		(for Sub - total 1+2+3)							





		Closure Costing - 17 Shaft Complex				С	losure	Costs -	Year 4	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rat	te	Am	ount	Notes
1		Infrastructural Aspects	Code							
2		Nominal allowances								To assist with demolition and salvage
3		Crane	11.2	p/day	0.00		3 534.00	R	-	purposes
4 5		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances	1.2	sum	1.00	R	-	R R	-	Nominal allowance
6		Demolitioning of plant and related structures								
7 8		Sewage treatment plant Office	3.1.1	m²	33.00	P	295.00	P	9 735.00	Normal single story building
9		Sludge drying beds	4.3	m³	79.00		400.00	R	31 600.00	Assume concrete is 250mm thick
10 11		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00		650.00		79 950.00 21 200.00	
12		Structural steel	2.3.1	m²	28.00	R	135.00	R	3 780.00	
13		Concrete hardstand	8.4	m²	1820.00	R	135.00	R 2	45 700.00	Remove concrete hardstand with min. reinforcing
14		Sub - Total for demolitioning of plant and related structures	5.1		1020.00		100.00		91 965.00	- common consistency
15 16		Demolitioning of all structural structures Not applicable	1.1	na	0.00	R	_	R		
17		Sub - Total for demolitioning of all structural structures		na	0.00			R	-	
18 19		Demolitioning of workshops and stores Not applicable	1.1	na	0.00	R		R		
20		Sub - Total for demolitioning of workshops and stores	1.1	na	0.00	1		R	-	
21		Demolitioning of permanent brick structures and temporary structures								
22		Booster pump station	3.2.1	m²	25.00				12 000.00	Normal single story building
23		Inspection manholes Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	140.00	R	295.00	R ·	41 300.00	Assume every 50m a manhole
24		temporary structures						R	53 300.00	
25 26	_	Removal of all surface related finishes Not applicable	1.1	na	0.00	R	_	R	_	
27		Sub - Total for removal of all surface related finishes			5.00			R	-	
28 29	Ĺ	Removal of all linear items PVC sewage delivery pipeline	1.1	na	0.00	P		R	_	Will remain buried post closure
30	t	Sub - Total for removal of all linear items	1.1	na	0.00	IX	_	R	-	vvia remain puneu post dosure
31		Rehabilitation of roads	4.4		0.00	Б		R		
32 33		Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R		R	-	
34		Disposal of demolition waste								
35 36	-	Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 445 265.00 368.00	R	2.5% 171.00		11 131.63 62 928.00	2.50% Allowance was made for a 30km radius
37		Sub - Total for disposal of demolition waste						R	74 059.63	
38 39	_	Sub - Total for infrastructural aspects						R 5	19 324.63	
40		Mining Aspects								
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R		R		
42		постирыване	1.1	IIa	0.00	IX	_	IX.		
43 44		Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	3					R	-	
45		Not Applicable	1.1	na	0.00	R	-	R	-	
46		Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils	i					R		
47 48		Not Applicable	1.1	na	0.00	R	-	R	-	
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds	3					R	-	
50		(non polluting potential)								
51		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R	-	
52		evaporation ponds (non polluting potential)					R		
53		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)								
54		Not Applicable	1.1	na	0.00	R	-	R	-	
55		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential						R		
56	t	Reclamation of subsided areas						^		
57		Not Applicable	1.1	na	0.00	R	-	R	-	
58 59	-	Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects						R	-	
60										
61		General Surface Reclamation								
62	_	Not Applicable	1.1	na	0.00	R	-	R	_	Assumed within the greater 17 Shaft area
63 64	<u> </u>	Sub - Total for General Surface Reclamation						R	-	
65		Water Management						<u> </u>		
66 67	_	Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
68										
69		SUB - TOTAL 1 (for infrastructural and related structures						R 5	19 324.63	
70		Post - closure aspects								
71 72		Surface water quality monitoring	12.1 12.2	yr	0.00		9 232.00 2 992.00		-	Assumed included as part of 17 Shaft
73	L	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2	yr ha	0.00	R 2	2 430.00		-	Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
74		Care and maintenance of reclaimed areas	12.4	ha	0.00			R	-	Assumed included as part of 17 Shaft
75	-	Sub - Total for Post closure aspects						R	-	
76 77		Contingencies for post closure aspects	1.2	sum	R -		10%	R	-	Assumed 10 percent for post closure aspects
77		Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2						R	-	
78		(for post - closure aspects)						R	-	
79 80		Additional allowances Preliminary and General	1.2	sum	R 519 324.63		6%	R	31 159.48	Assume 6 percent of sub - total 1
81		Contingencies	1.2	sum	R 519 324.63		10%		51 932.46	
		SUB - TOTAL 3						R	83 091.94	
82										
82		(for additional allowances) Grand - Total						R 6	02 416.57	





		Closure Costing - 17 Shaft Complex	sting - 17 Shaft Complex Closure Costs - <u>Year</u>								
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes			
1		Infrastructural Aspects	5545								
2		Nominal allowances						To assist with domelities and salvage			
3		Crane	11.2	p/day	0.00	R 6 534.00	R -	To assist with demolition and salvage purposes			
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00		R -	Nominal allowance			
5		Sub - Total for Nominal allowances					R -				
6 7		Demolitioning of plant and related structures Sewage treatment plant									
8		Office	3.1.1	m²	33.00	R 295.00	R 9 735.0	Normal single story building			
9		Sludge drying beds	4.3	m³	79.00	R 400.00					
10 11		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00	R 26 650.00 R 10 600.00					
12		Structural steel	2.3.1	m²	28.00						
		Concrete hardstand						Remove concrete hardstand with min.			
13 14		Sub - Total for demolitioning of plant and related structures	8.4	m²	1820.00	R 135.00	R 245 700.0				
15		Demolitioning of all structural structures					10 001 000.0				
16		Not applicable	1.1	na	0.00	R -	R -				
17 18		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R -				
19		Not applicable	1.1	na	0.00	R -	R -				
20		Sub - Total for demolitioning of workshops and stores					R -				
21		Demolitioning of permanent brick structures and temporary structures									
22	H	Booster pump station	3.2.1	m²	25.00	R 480.00					
23		Inspection manholes	3.1.1	m²	140.00						
24		Sub - Total for demolitioning of permanent brick structures and temporary structures					R 53 300.0	0			
25		Removal of all surface related finishes					33 300.0				
26		Not applicable	1.1	na	0.00	R -	R -				
27	-	Sub - Total for removal of all surface related finishes					R -				
28 29	-	Removal of all linear items PVC sewage delivery pipeline	1.1	na	0.00	R -	R -	Will remain buried post closure			
30	E	Sub - Total for removal of all linear items			2.00		R -				
31		Rehabilitation of roads									
32 33		Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -	R -				
34		Disposal of demolition waste					IX -				
35		Sorting and screening of demolitioning waste	6.1	%	R 445 265.00	2.5%	R 11 131.6				
36 37		Disposal of demolition waste	9.6.7	m³/km	368.00	R 171.00	R 62 928.0				
38		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 74 059.6				
39											
40		Mining Aspects									
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -				
72			1.1	na	0.00	-	K -				
43		Sub - Total open pit reclamation including final voids and ramp	•				R -				
44 45		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R -				
46		Sub - Total for sealing of shafts and inclines		na	0.00		R -				
47		Rehabilitation of overburden and spoils									
48		Not Applicable	1.1	na	0.00	R -	R -				
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					R -				
50		(non polluting potential)									
51		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -				
52		evaporation ponds (non polluting potential)				R -				
		Rehabilitation of processing waste deposits and evaporation ponds									
53 54		(polluting potential) Not Applicable	1.1	na	0.00	R -	P -				
		Sub - Total for rehabilitation of processing waste deposits and			0.00						
55		evaporation ponds (polluting potential)				R -				
56 57	-	Reclamation of subsided areas Not Applicable	1.1	na	0.00	R -	R -	+			
58		Sub - Total for reclamation of subsided areas		.10	0.00		R -				
59		Sub - Total for Mining aspects					R -				
60 61		General Surface Reclamation									
UI		Contrar Surface (CeciamadOII									
62		Not Applicable	1.1	na	0.00	R -	R -	Assumed within the greater 17 Shaft area			
63 64	-	Sub - Total for General Surface Reclamation					R -				
65		Water Management									
66		Not Applicable	1.1	na	0.00	R -	R -				
67	Ĺ	Sub - Total for Water Management					R -				
68		SUB - TOTAL 1					_				
69		(for infrastructural and related structures					R 519 324.6	3			
70		Post - closure aspects	4.5								
71 72		Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft			
73		Reclamation monitoring on reclaimed areas	12.3	ha	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft			
74		Care and maintenance of reclaimed areas	12.4	ha	0.00	R 15 000.00	R -	Assumed included as part of 17 Shaft			
75	-	Sub - Total for Post closure aspects					R -				
76		Contingencies for post closure aspects	1.2	sum	R -	10%	R -	Assumed 10 percent for post closure aspects			
77		Sub - Total for Contingencies for post closure aspects					R -				
		SUB - TOTAL 2					R -				
78		(for post - closure aspects) Additional allowances									
	التحد		1.2	sum	R 519 324.63	6%	R 31 159.4	8 Assume 6 percent of sub - total 1			
78 79 80		Preliminary and General									
79		Contingencies	1.2	sum	R 519 324.63	10%	R 51 932.4	6 Assume 10 percent of sub - total 1			
79 80		Contingencies SUB - TOTAL 3				10%	R 51 932.4 R 83 091.9				
79 80 81		Contingencies				10%		4			





		Closure Costing - 17 Shaft Complex					Closure Costs - <u>Year</u>							
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes				
1		Infrastructural Aspects	Code											
2		Nominal allowances								Ti-tiitdlifedh				
3		Crane	11.2	p/day	0.00	R	6 534.00	R	-	To assist with demolition and salvage purposes				
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00	R	-	R	-	Nominal allowance				
5 6		Sub - Total for Nominal allowances Demolitioning of plant and related structures						R						
7		Sewage treatment plant												
8		Office	3.1.1	m²	33.00		295.00		9 735.00	Normal single story building				
9 10		Sludge drying beds Storage tanks	4.3 2.4.2	m³ no	79.00 3.00			R R	31 600.00 79 950.00	Assume concrete is 250mm thick				
11		Storage tanks	2.4.1	no	2.00		10 600.00	R	21 200.00					
12		Structural steel	2.3.1	m²	28.00	R	135.00	R	3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.				
13		Concrete hardstand	8.4	m²	1820.00	R	135.00	R	245 700.00	reinforcing				
14		Sub - Total for demolitioning of plant and related structure	•					R	391 965.00					
15 16		Demolitioning of all structural structures Not applicable	1.1	na	0.00	R	-	R	-					
17		Sub - Total for demolitioning of all structural structures						R	•					
18 19		Demolitioning of workshops and stores Not applicable	1.1	na	0.00	R	-	R	-					
20		Sub - Total for demolitioning of workshops and stores						R	-					
21		Demolitioning of permanent brick structures and temporary structures												
22		Booster pump station	3.2.1	m²	25.00	R	480.00	R	12 000.00	Normal single story building				
23		Inspection manholes	3.1.1	m²	140.00	R	295.00	R	41 300.00	Assume every 50m a manhole				
24		Sub - Total for demolitioning of permanent brick structures and temporary structures	<u></u>	L	<u></u>	L		R	53 300.00					
25		Removal of all surface related finishes				_								
26 27	Н	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	К	-	R R						
28		Removal of all linear items												
29		PVC sewage delivery pipeline	1.1	na	0.00	R	-	R		Will remain buried post closure				
30 31		Sub - Total for removal of all linear items Rehabilitation of roads						R	•					
32		Not applicable	1.1	na	0.00	R	-	R	-					
33		Sub - Total for rehabilitation of roads						R	-					
34 35		Disposal of demolition waste Sorting and screening of demolitioning waste	6.1	%	R 445 265.00		2.5%	R	11 131.63	2.50%				
36		Disposal of demolition waste	9.6.7	m³/km	368.00	R	171.00	R	62 928.00	Allowance was made for a 30km radius				
37 38		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects						R R	74 059.63 519 324.63					
39	_	Sub - Fotal for Infrastructural aspects						ĸ	519 324.63					
40		Mining Aspects												
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	В	_	R	_					
42				IIa	0.00	IX	-	IX	-					
43		Sub - Total open pit reclamation including final voids and ramp	5					R	-					
44 45		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R	-	R	-					
46		Sub - Total for sealing of shafts and incline						R	-					
47		Rehabilitation of overburden and spoils	4.4		0.00	_		_						
48 49		Not Applicable Sub - Total for rehabilitation of overburden and spoil:	1.1	na	0.00	К	-	R R	-					
		Rehabilitation of processing waste deposits and evaporation ponds												
50 51		(non polluting potential) Not Applicable	1.1	na	0.00	R	_	R	_					
		Sub - Total for rehabilitation of processing waste deposits and												
52		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds						R						
53		(polluting potential)												
54		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R	-					
55		evaporation ponds (polluting potential	,					R						
56		Reclamation of subsided areas												
57 58		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	R	-	R R						
59		Sub - Total for reclamation of subsided areas						R	-					
60		Consent Confess Declaration												
61		General Surface Reclamation												
62	Ш	Not Applicable	1.1	na	0.00	R	-	R	-	Assumed within the greater 17 Shaft area				
63 64		Sub - Total for General Surface Reclamation						R	-					
65		Water Management												
66		Not Applicable	1.1	na	0.00	R	-	R	-					
67 68	H	Sub - Total for Water Management				 		R	-					
69		SUB - TOTAL 1						R	519 324.63					
		(for infrastructural and related structures							0.00 024.00					
70 71		Post - closure aspects Surface water quality monitoring	12.1	уг	0.00	R	119 232.00	R	-	Assumed included as part of 17 Shaft				
72		Groundwater quality monitoring	12.2	yr	0.00	R	52 992.00	R	-	Assumed included as part of 17 Shaft				
73 74	H	Reclamation monitoring on reclaimed areas	12.3	ha	0.00		2 430.00 15 000.00	R R	-	Assumed included as part of 17 Shaft				
74 75	H	Care and maintenance of reclaimed areas Sub - Total for Post closure aspects	12.4	ha	0.00	IX	15 000.00	R	-	Assumed included as part of 17 Shaft				
					_					A				
76 77	H	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	sum	R -		10%	R R	-	Assumed 10 percent for post closure aspects				
78		SUB - TOTAL 2						R						
		(for post - closure aspects)												
79 80		Additional allowances Preliminary and General	1.2	sum	R 519 324.63		6%	R	31 159.48	Assume 6 percent of sub - total 1				
81		Contingencies	1.2	sum	R 519 324.63		10%	R	51 932.46	Assume 10 percent of sub - total 1				
		SUB - TOTAL 3						R	83 091.94					
82									00 00					
		(for additional allowances Grand - Total						R	602 416.57					





		Closure Costing - 17 Shaft Complex				ts - <u>Year 7</u>	<u>7</u>			
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
1		Infrastructural Aspects	Code					_		
2		Nominal allowances								Ti-tiith-dlitidh
3		Crane	11.2	p/day	0.00	R	6 534.00	R	-	To assist with demolition and salvage purposes
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00	R	-	R	-	Nominal allowance
5 6		Sub - Total for Nominal allowances Demolitioning of plant and related structures						R		
7		Sewage treatment plant								
8		Office	3.1.1	m²	33.00		295.00		9 735.00	Normal single story building
9 10		Sludge drying beds Storage tanks	4.3 2.4.2	m³ no	79.00 3.00			R R	31 600.00 79 950.00	Assume concrete is 250mm thick
11		Storage tanks	2.4.1	no	2.00		10 600.00	R	21 200.00	
12		Structural steel	2.3.1	m²	28.00	R	135.00	R	3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.
13		Concrete hardstand	8.4	m²	1820.00	R	135.00	R	245 700.00	reinforcing
14		Sub - Total for demolitioning of plant and related structure	•					R	391 965.00	
15 16		Demolitioning of all structural structures Not applicable	1.1	na	0.00	R	-	R	-	
17		Sub - Total for demolitioning of all structural structures						R	-	
18 19		Demolitioning of workshops and stores Not applicable	1.1	na	0.00	R	_	R	_	
20		Sub - Total for demolitioning of workshops and stores						R	-	
21		Demolitioning of permanent brick structures and temporary structures								
22		Booster pump station	3.2.1	m²	25.00	R	480.00	R	12 000.00	Normal single story building
23		Inspection manholes	3.1.1	m²	140.00	R	295.00	R	41 300.00	Assume every 50m a manhole
24	L	Sub - Total for demolitioning of permanent brick structures and temporary structures		L	<u></u>	L		R	53 300.00	
25		Removal of all surface related finishes								-
26 27		Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	К	-	R R	-	
28		Removal of all linear items								
29		PVC sewage delivery pipeline	1.1	na	0.00	R	-	R	-	Will remain buried post closure
30 31		Sub - Total for removal of all linear items Rehabilitation of roads						R	•	
32		Not applicable	1.1	na	0.00	R	-	R	-	
33 34		Sub - Total for rehabilitation of roads						R	-	
35	_	Disposal of demolition waste Sorting and screening of demolitioning waste	6.1	%	R 445 265.00		2.5%	R	11 131.63	2.50%
36		Disposal of demolition waste	9.6.7	m³/km	368.00	R	171.00	R	62 928.00	Allowance was made for a 30km radius
37 38		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects						R	74 059.63 519 324.63	
39		Sub - Total for Illinastructural aspects						Κ	313 324.03	
40		Mining Aspects								
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R	_	R	_	
				110	0.00					
43		Sub - Total open pit reclamation including final voids and ramp	5					R	-	
44 45	_	Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R	-	R	-	
46		Sub - Total for sealing of shafts and incline						R		
47 48		Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	Ь		R		
49		Sub - Total for rehabilitation of overburden and spoils		na .	0.00			R	•	
50		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)								
51		Not Applicable	1.1	na	0.00	R	-	R	-	
50		Sub - Total for rehabilitation of processing waste deposits and						_		
52	_	evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds	,					R	•	
53		(polluting potential)								
54		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R	-	
55		evaporation ponds (polluting potential						R	-	
56 57		Reclamation of subsided areas	11		0.00	Р		D		
57 58	-	Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	ĸ	-	R R	-	
59		Sub - Total for Mining aspects						R	-	
60 61		General Surface Reclamation								
62	_	Not Applicable Sub - Total for General Surface Reclamation	1.1	na	0.00	R	-	R	-	Assumed within the greater 17 Shaft area
63 64	_	Jun - Total for General Surface Reclamation						R	-	
65		Water Management								
66 67		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
68	-	Sub - Total for Water Management		1				IX.	•	
69		SUB - TOTAL 1						R	519 324.63	
70		(for infrastructural and related structures Post - closure aspects								
71		Surface water quality monitoring	12.1	yr	0.00		119 232.00			Assumed included as part of 17 Shaft
72		Groundwater quality monitoring	12.2	yr	0.00		52 992.00		-	Assumed included as part of 17 Shaft
73 74	_	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	0.00		2 430.00 15 000.00	R	-	Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
75		Sub - Total for Post closure aspects						R	-	Process and a second
76		Contingencies for post closure aspects	1.2	sum	R -		10%	R		Assumed 10 percent for post closure aspects
77		Sub - Total for Contingencies for post closure aspects		Juill		L	10 /0	R	-	Farourio Post ground asherts
78		SUB - TOTAL 2						R		
79		(for post - closure aspects) Additional allowances								
80		Preliminary and General	1.2	sum	R 519 324.63		6%	R	31 159.48	Assume 6 percent of sub - total 1
81		Contingencies	1.2	sum	R 519 324.63		10%	R	51 932.46	Assume 10 percent of sub - total 1
82		SUB - TOTAL 3 (for additional allowances)						R	83 091.94	
		Grand - Total						R	602 416.57	
83										





		Closure Costing - 17 Shaft Complex	osting - 17 Shaft Complex Closure Costs - <u>Year</u>								
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes			
1		Infrastructural Aspects	5545								
2		Nominal allowances						To assist with demolition and salvage			
3		Crane	11.2	p/day	0.00	R 6 534.00	R	- purposes			
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00			- Nominal allowance			
5		Sub - Total for Nominal allowances					R	•			
6 7		Demolitioning of plant and related structures Sewage treatment plant									
8		Office	3.1.1	m²	33.00	R 295.00	R 9 735	.00 Normal single story building			
9		Sludge drying beds	4.3	m³	79.00	R 400.00					
10 11		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00	R 26 650.00 R 10 600.00					
12		Structural steel	2.3.1	m²	28.00						
		Concrete hardstand						Remove concrete hardstand with min.			
13 14		Sub - Total for demolitioning of plant and related structures	8.4	m²	1820.00	R 135.00	R 245 700 R 391 965				
15		Demolitioning of all structural structures									
16		Not applicable	1.1	na	0.00	R -		-			
17 18		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R	-			
19		Not applicable	1.1	na	0.00	R -	R	-			
20		Sub - Total for demolitioning of workshops and stores					R	-			
21		Demolitioning of permanent brick structures and temporary structures									
22		Booster pump station	3.2.1	m²	25.00	R 480.00	R 12 000	.00 Normal single story building			
23		Inspection manholes	3.1.1	m²	140.00						
24		Sub - Total for demolitioning of permanent brick structures and temporary structures					R 53 300	00			
25		Removal of all surface related finishes					. 33 300				
26		Not applicable	1.1	na	0.00	R -	R				
27 28	-	Sub - Total for removal of all surface related finishes Removal of all linear items					R	-			
28	-	PVC sewage delivery pipeline	1.1	na	0.00	R -	R	- Will remain buried post closure			
30	E	Sub - Total for removal of all linear items			5.00		_	- Viii Terriain burica post dosaire			
31		Rehabilitation of roads				D					
32 33		Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -		-			
34		Disposal of demolition waste					IX.				
35		Sorting and screening of demolitioning waste	6.1	%	R 445 265.00	2.5%	R 11 131				
36 37		Disposal of demolition waste	9.6.7	m³/km	368.00	R 171.00					
38		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 74 059				
39											
40		Mining Aspects									
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R	-			
72			1.1	na	0.00		T.				
43		Sub - Total open pit reclamation including final voids and ramp	•				R	-			
44 45		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R	-			
46		Sub - Total for sealing of shafts and inclines		na	0.00						
47		Rehabilitation of overburden and spoils									
48		Not Applicable	1.1	na	0.00	R -	R				
49		Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					R	•			
50		(non polluting potential)									
51		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R	-			
52		evaporation ponds (non polluting potential)				R				
		Rehabilitation of processing waste deposits and evaporation ponds									
53 54		(polluting potential) Not Applicable	1.1	na	0.00	R -	P	_			
		Sub - Total for rehabilitation of processing waste deposits and			3.00						
55	<u> </u>	evaporation ponds (polluting potential)				R				
56 57	-	Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	R	-			
58	L	Sub - Total for reclamation of subsided areas	1.1	i i a	0.00		R	-			
59		Sub - Total for Mining aspects									
60		General Surface Reclamation									
61		General Surface Recialitation									
62		Not Applicable	1.1	na	0.00	R -	R	Assumed within the greater 17 Shaft area			
63 64	-	Sub - Total for General Surface Reclamation					R	-			
65		Water Management									
66		Not Applicable	1.1	na	0.00	R -		-			
67	Ĺ	Sub - Total for Water Management					R				
68	H	SUB - TOTAL 1									
69		(for infrastructural and related structures					R 519 324	.63			
70		Post - closure aspects									
71 72	-	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr	0.00			- Assumed included as part of 17 Shaft - Assumed included as part of 17 Shaft			
73	Н	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2	yr ha	0.00			- Assumed included as part of 17 Shaft - Assumed included as part of 17 Shaft			
74		Care and maintenance of reclaimed areas	12.4	ha	0.00		R	- Assumed included as part of 17 Shaft			
75	-	Sub - Total for Post closure aspects					R	-			
76		Contingencies for post closure aspects	1.2	sum	R -	10%	R	- Assumed 10 percent for post closure aspects			
77		Sub - Total for Contingencies for post closure aspects						-			
		SUB - TOTAL 2					R				
78		(for post - closure aspects) Additional allowances									
			1.2	sum	R 519 324.63	6%	R 31 159	.48 Assume 6 percent of sub - total 1			
78 79 80	Г	Preliminary and General	1.2	00111	11 010 02 1.00						
79		Contingencies	1.2	sum	R 519 324.63	10%		.46 Assume 10 percent of sub - total 1			
79 80		Contingencies SUB - TOTAL 3									
79 80 81		Contingencies					R 51 932	.94			





		Closure Costing - 17 Shaft Complex	g - 17 Shaft Complex Closure Costs - <u>Year</u>								
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate	Amount	Notes			
1		Infrastructural Aspects	Code								
2	-	Nominal allowances						To assist with demolition and salvage			
3		Crane	11.2	p/day	0.00			purposes			
5		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances	1.2	sum	1.00	R -	R -	Nominal allowance			
6		Demolitioning of plant and related structures									
7 8		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.00				
9 10		Sludge drying beds Storage tanks	4.3 2.4.2	m³ no	79.00 3.00			Assume concrete is 250mm thick			
11		Storage tanks	2.4.1	no	2.00	R 10 600.00	R 21 200.00				
12		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.00	Assume 80kg of steel per square metel Remove concrete hardstand with min.			
13		Concrete hardstand	8.4	m²	1820.00	R 135.00		reinforcing			
14 15		Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures	•				R 391 965.00				
16		Not applicable	1.1	na	0.00	R -	R -				
17 18		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R -				
19		Not applicable	1.1	na	0.00	R -	R -				
20		Sub - Total for demolitioning of workshops and stores					R -				
21 22		Demolitioning of permanent brick structures and temporary structures Booster pump station	3.2.1	m²	25.00	R 480.00	R 12 000.00	Normal single story building			
23		Inspection manholes	3.1.1	m²	140.00			Assume every 50m a manhole			
24		Sub - Total for demolitioning of permanent brick structures and temporary structures					R 53 300.00				
25		Removal of all surface related finishes	4.4			D					
26 27	-	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	r -	R -				
28		Removal of all linear items	4.4		0.55	D		Will remain busing and and all			
29 30	H	PVC sewage delivery pipeline Sub - Total for removal of all linear items	1.1	na	0.00	R -	R -	Will remain buried post closure			
31 32		Rehabilitation of roads Not applicable	1.1	na	0.00	R -	R -				
33		Sub - Total for rehabilitation of roads	1.1	na	0.00	к -	R -				
34		Disposal of demolition waste	6.4	0/	D 445 005 00	0.50/	D 44.404.00	2.50%			
35 36		Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 445 265.00 368.00	2.5% R 171.00		2.50% Allowance was made for a 30km radius			
37		Sub - Total for disposal of demolition waste					R 74 059.63				
38 39	-	Sub - Total for infrastructural aspects					R 519 324.63				
40		Mining Aspects									
41 42		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -				
42		Sub - Total open pit reclamation including final voids and ramp					В				
43 44		Sealing of shafts and inclines	•				R -				
45 46		Not Applicable	1.1	na	0.00	R -	R -				
47		Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils					к -				
48 49		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -				
49		Rehabilitation of processing waste deposits and evaporation ponds					к -				
50 51		(non polluting potential) Not Applicable	1.1	na	0.00	R -	R -				
		Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	IX -					
52		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds)				R -				
53		(polluting potential)									
54		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -				
55 56		evaporation ponds (polluting potential)				R -				
56 57	L	Reclamation of subsided areas Not Applicable	1.1	na	0.00	R -	R -				
58		Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects					R -				
59 60	L	<u> </u>				<u> </u>	R -				
61		General Surface Reclamation									
62	L	Not Applicable	1.1	na	0.00	R -	R -	Assumed within the greater 17 Shaft area			
63 64		Sub - Total for General Surface Reclamation					R -				
65		Water Management									
66 67	Ĺ	Not Applicable Sub - Total for Water Management	1.1	na	0.00	R -	R -				
68	L										
69		SUB - TOTAL 1 (for infrastructural and related structures					R 519 324.63				
70		Post - closure aspects									
71		Surface water quality monitoring	12.1	yr	0.00			Assumed included as part of 17 Shaft			
72 73	H	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft			
74		Care and maintenance of reclaimed areas	12.4	ha	0.00	R 15 000.00		Assumed included as part of 17 Shaft			
75	-	Sub - Total for Post closure aspects					R -				
76 77	_	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	sum	R -	10%	R -	Assumed 10 percent for post closure aspects			
78		SUB - TOTAL 2					R -				
78		(for post - closure aspects) Additional allowances									
80		Preliminary and General	1.2	sum	R 519 324.63	6%		Assume 6 percent of sub - total 1			
81		Contingencies SUB - TOTAL 3	1.2	sum	R 519 324.63	10%		Assume 10 percent of sub - total 1			
82		SUB - TOTAL 3 (for additional allowances)					R 83 091.94				
83		Grand - Total					R 602 416.57				
		(for sub - total 1+2+3)									





		Closure Costing - 17 Shaft Complex												
		Task	Unit Rate Code	Unit	Quantity		Rate	Amou	nt	Notes				
2		Infrastructural Aspects Nominal allowances												
										To assist with demolition and salvage				
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00		6 534.00	R	-	purposes Nominal allowance				
5	Н	Sub - Total for Nominal allowances	1.2	Sulli	1.00	К		R	-	Norminal allowance				
6		Demolitioning of plant and related structures												
7 8		Sewage treatment plant Office	3.1.1	m²	33.00	P	295.00	P 0	735.00	Normal single story building				
9	Н	Sludge drying beds	4.3	m³	79.00		400.00		600.00	Normal single story building Assume concrete is 250mm thick				
10		Storage tanks	2.4.2	no	3.00		26 650.00		950.00					
11 12	Н	Storage tanks Structural steel	2.4.1	no m²			10 600.00 135.00		200.00 780.00	Assume 80kg of steel per square meter				
		Concrete hardstand	2.0.1				100.00		100.00	Remove concrete hardstand with min.				
13	Ш		8.4	m²	1820.00	R	135.00		700.00	reinforcing				
14 15	Н	Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures	1					R 391	965.00					
16		Not applicable	1.1	na	0.00	R	-	R	-					
17 18	Н	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores	i					R	-					
19	H	Not applicable	1.1	na	0.00	R	-	R	-					
20		Sub - Total for demolitioning of workshops and stores						R	-					
21		Demolitioning of permanent brick structures and temporary structures												
22		Booster pump station	3.2.1	m²	25.00		480.00		00.00	Normal single story building				
23		Inspection manholes	3.1.1	m²	140.00	R	295.00	R 41	300.00	Assume every 50m a manhole				
24		Sub - Total for demolitioning of permanent brick structures and temporary structures						R 53	300.00					
25		Removal of all surface related finishes			_	_								
26 27	Н	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	R	-	R R	-					
28	H	Removal of all linear items	•					••						
29		PVC sewage delivery pipeline	1.1	na	0.00	R	-	R	-	Will remain buried post closure				
30		Sub - Total for removal of all linear items						R	-					
31 32	H	Rehabilitation of roads Not applicable	1.1	na	0.00	R	-	R	-					
33		Sub - Total for rehabilitation of roads						R	-					
34 35		Disposal of demolition waste	6.1	%	R 445 265.00		2.5%	R 11	131.63	2.50%				
36		Sorting and screening of demolitioning waste Disposal of demolition waste	9.6.7	m³/km	R 445 265.00 368.00	R			928.00	Allowance was made for a 30km radius				
37		Sub - Total for disposal of demolition waste						R 74	059.63					
38	Ш	Sub - Total for infrastructural aspects						R 519	324.63					
39 40		Mining Aspects												
41		Open pit reclamation including final voids and ramps												
42		Not Applicable	1.1	na	0.00	R	-	R	-					
43		Sub - Total open pit reclamation including final voids and ramp	5					R						
44		Sealing of shafts and inclines												
45		Not Applicable	1.1	na	0.00	R	-	R	-					
46 47		Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils						R	-					
48		Not Applicable	1.1	na	0.00	R	-	R	-					
49		Sub - Total for rehabilitation of overburden and spoils	•					R	-					
50		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)												
51		Not Applicable	1.1	na	0.00	R	-	R	-					
52		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R						
32		Rehabilitation of processing waste deposits and evaporation ponds						K						
53	Ш	(polluting potential)												
54	Н	Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R	-	R						
55	Ш	evaporation ponds (polluting potential	1			L		R						
56	Ц	Reclamation of subsided areas				_								
57 58	Н	Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	K	-	R R	-					
59		Sub - Total for Tectal later of Subsided areas				L		R	-					
60														
61		General Surface Reclamation												
62		Not Applicable	1.1	na	0.00	R	-	R	-	Assumed within the greater 17 Shaft area				
63	Ц	Sub - Total for General Surface Reclamation						R	-					
64 65		Water Management												
66		Not Applicable	1.1	na	0.00	R	-	R	-					
67		Sub - Total for Water Management						R	-					
68	H	SUB - TOTAL 1												
69		(for infrastructural and related structures						R 519	324.63					
70		Post - closure aspects					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u> </u>						
71 72	H	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00		119 232.00 52 992.00		-	Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft				
73	H	Reclamation monitoring on reclaimed areas	12.3	ha	0.00		2 430.00	R	-	Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft				
74		Care and maintenance of reclaimed areas	12.4	ha	0.00		15 000.00	R	-	Assumed included as part of 17 Shaft				
75	Н	Sub - Total for Post closure aspects						R	-					
	Ll	Contingencies for post closure aspects	1.2	sum	R -	L	10%	R	_	Assumed 10 percent for post closure aspects				
76		Sub - Total for Contingencies for post closure aspects						R	-					
76 77		SUB - TOTAL 2 (for post - closure aspects)						R	-					
77		Additional allowances				_			450.40					
77 78 79 80		Preliminary and General	1.2	sum	R 519 324.63		6%		159.48	Assume 6 percent of sub - total 1				
77 78 79		Preliminary and General Contingencies	1.2 1.2	sum	R 519 324.63 R 519 324.63		6% 10%		932.46	Assume 6 percent of sub - total 1 Assume 10 percent of sub - total 1				
77 78 79 80		Preliminary and General Contingencies SUB - TOTAL 3						R 51						
77 78 79 80 81		Preliminary and General Contingencies						R 51	932.46					





		Closure Costing - 18 Shaft Complex					Closure Co	osts - <u>Scheduled</u>	1
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate	Amount	Notes
1		Infrastructural Aspects	0000						
2		Nominal allowances				-			To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	20.00			R 130 680.00 R 2 500 000.00	purposes Nominal allowance
5		Sub - Total for Nominal allowances		ouiii	1.00	Ë	2 000 000.00	R 2 630 680.00	Tonina diorano
6 7		Demolitioning of plant and related structures Compressor house				-			
8 9		Sheeting Structural steel	2.1 2.3.1	m² m²	1628.00 963.00			R 37 444.00 R 130 005.00	Assume 80kg of steel per square meter
		Structural steel Structural concrete							Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00		215.00 610.00	R 207 045.00 R 231 800.00	Assume concrete is 400mm thick
12 13		Winder House Sheeting	2.1	m²	3862.00	R	23.00	R 88 826.00	
14		Structural steel	2.3.1	m²	1932.00		135.00	R 260 820.00	Assume 80kg of steel per square meter
15		Structural concrete	4.4	m²	1932.00	R	215.00	R 415 380.00	Remove concrete floor, foundations and bases
16 17		Rock Winder House Sheeting	2.1	m²	3862.00	P	23.00	R 88 826.00	
18		Structural steel	2.3.1	m²	1932.00			R 260 820.00	Assume 80kg of steel per square meter
19		Structural concrete	4.4	m²	1932.00	R	215.00	R 415 380.00	Remove concrete floor, foundations and bases
20 21		Emergency winder Sheeting	2.1	m²	753.00	R	23.00	R 17 319.00	
22		Structural steel	2.3.1	m²	249.00			R 33 615.00	Assume 80kg of steel per square meter
23		Structural concrete	4.4	m²	249.00	R	215.00	R 53 535.00	Remove concrete floor, foundations and bases
24 25	F	Vent Shaft Structural steel	2.3.1	m²	1908.00	R	135.00	R 257 580.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
26 27	F	Fridge Shaft	4.4	m²	1908.00			R 410 220.00	bases
28 29		Ice thermal store Structural steel	3.1.1 2.3.1	m² m²	781.00 218.00			R 230 395.00 R 29 430.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
30 31		BAC Shaft	4.4	m²	218.00	R	215.00	R 46 870.00	bases
32 33		Plant room Structural steel	3.1.1 2.3.1	m² m²	1167.00 697.00			R 344 265.00 R 94 095.00	Normal single story building Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
34 35		Cooling towers	4.4	m²	1000.00	R	215.00	R 215 000.00	bases
36 37		Sheeting Structural steel	2.1	m² m²	1771.00 1001.00			R 40 733.00 R 135 135.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
38 39		Sewage treatment plant	4.4	m²	1001.00	R	215.00	R 215 215.00	bases
40 41		Office Sludge drying beds	3.1.1 4.3	m² m³	33.00 79.00			R 9 735.00 R 31 600.00	Normal single story building Assume concrete is 250mm thick
42		Storage tanks	2.4.2	no	3.00	R	26 650.00	R 79 950.00	
43 44		Storage tanks Structural steel	2.4.1	no m²	2.00 28.00		10 600.00 135.00	R 21 200.00 R 3 780.00	Assume 80kg of steel per square meter
45		Concrete hardstand	8.4	m²	1820.00		135.00	R 245 700.00	Remove concrete hardstand with min. reinforcing
46		Material transfer towers							
47		Office	3.1.1	m²	27.00	R	295.00	R 7 965.00	Normal single story building Assume concrete is 350mm thick, silos is 10
48 49		Structural concrete (silo) Sheeting	4.2 2.1	m³ m²	206.00 106.00		610.00 23.00	R 125 660.00 R 2 438.00	high
50		Structural steel	2.3.1	m²	106.00		135.00	R 14 310.00	Assume 80kg of steel per square meter
51		Structural concrete	4.4	m²	106.00	R	215.00	R 22 790.00	Remove concrete floor, foundations and bases
52 53		Suspended conveyors Sub - Total for demolitioning of plant and related structures	5.1.5	m	400.00	R	640.00	R 256 000.00 R 5 080 881.00	Heavy conveyors
54		Demolitioning of all structural structures						K 3 000 001.00	
55 56		Headgear Structural steel	2.2	t	1900.00	R	1 350.00	R 2 565 000.00	
57 58		Structural concrete Carports	4.2 2.6.1	m³ m²	285.00 17943.00	R	610.00	R 173 850.00 R 986 865.00	Mass reinforced concrete Assumed IBR sheetinc
59		Winches							Assumed IBIX sheeting
60 61	-	Sheeting Structural steel	2.1	m² m²	1286.00 894.00			R 29 578.00 R 120 690.00	Assume 80kg of steel per square meter
62		Brick wall	3.5	m²	36.00			R 1 080.00	Remove concrete floor, foundations and
63		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	bases
64 65	H	Explosives offloading bay Sheeting	2.1	m²	679.00	R	23.00	R 15 617.00	
66		Structural steel	2.3.1	m²	277.00			R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67		Structural concrete	4.4	m²	277.00			R 59 555.00	bases
68 69	L	Concrete silt traps Concrete stormwater trench	4.3 8.4	m³ m²	318.00 13543.00			R 127 200.00 R 1 828 305.00	Assume concrete is 200mm thick Thin concrete with minimal reinforcing
70		Backfill plant	8.4	m²	5758.00	R	135.00	R 777 330.00	Thin concrete with minimal reinforcing
71 72	H	Storage bins Explosives incinerator	4.3 4.3	m³ m³	456.00 36.00			R 182 400.00 R 14 400.00	Assume concrete is 250mm thick Assume concrete is 250mm thick
73 74		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores						R 7 111 475.00	
75	E	Oil store	3.1.1	m²	407.00			R 120 065.00	Normal single story building
76 77	L	Chemical store Cement/ Shotcrete Material store	3.1.1	m²	407.00	R	295.00	R 120 065.00	Normal single story building
78		Sheeting	2.1	m²	1286.00	_		R 29 578.00	Assume 80kg of steel per square meter
79 80	E	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			R 120 690.00 R 1 080.00	
81		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	Remove concrete floor, foundations and bases
82		Brick Store							
83 84	F	Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00	R	135.00	R 120 690.00	Assume 80kg of steel per square meter
85		Brick wall	3.5	m²	36.00	R	30.00	R 1 080.00	Remove concrete floor, foundations and
86		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	bases
87 88	-	Piping Store Sheeting	2.1	m²	1286.00			R 29 578.00	
89 90		Structural steel	2.3.1	m²	894.00 36.00	R	135.00	R 120 690.00	Assume 80kg of steel per square meter
ยบ	<u> </u>	Brick wall	3.5	m²	36.00	К	30.00	1 1 080.00	





		Closure Costing - 18 Shaft Complex	Closure Costs - <u>Scheduled</u>										
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes			
		Structural concrete				_				Remove concrete floor, foundations and			
91 92		Ventilation Duct Store	4.4	m²	894.00	R	215.00	R	192 210.00	bases			
93		Sheeting	2.1	m²	1286.00		23.00		29 578.00	A server 200kg of sheet servers seeks			
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		135.00 30.00	R R	120 690.00 1 080.00	Assume 80kg of steel per square meter			
96		Structural concrete	4.4	m²	904.00	В	215.00	R	192 210.00	Remove concrete floor, foundations and bases			
96		Fan Store	4.4	m²	894.00	K	215.00	ĸ	192 2 10.00	Dases			
98 99		Sheeting Structural steel	2.1 2.3.1	m² m²	777.00 409.00		23.00 135.00		17 871.00 55 215.00	Assume 80kg of steel per square meter			
99		Structural steer Structural concrete	2.3.1	1117			135.00	K	35 2 15.00	Remove concrete floor, foundations and			
100 101		Locomotive store and wash bay	4.4	m²	409.00	R	215.00	R	87 935.00	bases			
102		Sheeting	2.1	m²	1655.00	R	23.00	R	38 065.00				
103		Structural steel	2.3.1	m²	907.00	R	135.00	R	122 445.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and			
104		Structural concrete	4.4	m²	907.00	R	215.00	R	195 005.00	bases			
105		Sub - Total for demolitioning of workshops and stores				-		R	2 130 898.00				
106		Demolitioning of permanent brick structures and temporary structures											
107 108		Guardhouse Office 1	3.1.1 3.1.1	m² m²	166.00 516.00		295.00 295.00		48 970.00 152 220.00	Normal single story building Normal single story building			
100		Office 2	3.1.1	m²	516.00		295.00	R	152 220.00	Normal single story building			
110		Office 3	3.1.1	m²	516.00	_	295.00	R	152 220.00	Normal single story building			
111 112	H	Office 4 Change House 1	3.1.1	m² m²	516.00 686.00		295.00 295.00	R R	152 220.00 202 370.00	Normal single story building Normal single story building			
113		Change House 2	3.1.1	m²	686.00	R	295.00	R	202 370.00	Normal single story building			
114 115	Н	Change House 3 Change House 4	3.1.1	m² m²	686.00 686.00		295.00 295.00	R R	202 370.00 202 370.00	Normal single story building Normal single story building			
116		Change House 5	3.1.1	m²	686.00	R	295.00	R	202 370.00	Normal single story building			
117	H	Change House 6	3.1.1	m²	686.00		295.00	R	202 370.00 202 370.00	Normal single story building			
118 119	H	Change House 7 Shelter	3.1.1 3.1.1	m² m²	686.00 132.00		295.00 295.00	R R	202 370.00 38 940.00	Normal single story building Normal single story building			
120		First Aid Room	3.1.1	m²	111.00	R	295.00	R	32 745.00	Normal single story building			
121 122	Н	Lamp House Crush	3.1.1	m² m²	745.00 451.00	-	295.00 295.00	R R	219 775.00 133 045.00	Normal single story building Normal single story building			
123		Control Room	3.1.1	m²	141.00		295.00	R	41 595.00	Normal single story building			
124		Main Substation	3.1.1	m²	601.00		295.00	R	177 295.00	Normal single story building			
125 126		Substation 1 Substation 2	3.1.1 3.1.1	m² m²	91.00 162.00		295.00 295.00	R R	26 845.00 47 790.00	Normal single story building Normal single story building			
127		Outside ablution block	3.1.1	m²	26.50		295.00	R	7 817.50	Normal single story building			
128 129		Transformer bays Brickwork	3.5	m²	23.00	R	30.00	R	690.00				
130		Structural concrete	4.3	m³	27.00		400.00	R	10 800.00	Remove concrete plinths and footings			
131		Stormwater pump house	3.1.1	m²	33.00		295.00	R	9 735.00	Normal single story building			
132		Construction offices Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	990.00	R	295.00	R	292 050.00	Normal single story building			
133		temporary structures						R	3 113 562.50				
134 135		Removal of all surface related finishes Remove concrete liner from stormwater dam 1	4.3	m³	1650.00) R	400.00	R	660 000.00	Assume concrete is 150mm thick			
136		Remove concrete liner from stormwater dam 2	4.3	m³	1650.00	R	400.00	R	660 000.00	Assume concrete is 150mm thick			
137 138		Remove concrete liner from settling pond Concrete Hardstands	4.3 8.4	m³ m²	975.00 16490.00		400.00 135.00	R R	390 000.00 2 226 150.00	Assume concrete is 150mm thick Assume hole of mining terrain			
139		Sub - Total for removal of all surface related finishes	0.4		10490.00	, IX	133.00	R	3 936 150.00	Assume note of mining terrain			
140		Removal of all linear items	504		2500.00		07.00	0	67.500.00	Assumed 0500m			
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00		27.00 48.00	R R	67 500.00 120 000.00	Assumed 2500m Assumed 2500m			
143		Remove railway lines	5.4.2	m	5518.00		215.00	R	1 186 370.00				
144 145		Remove security fencing Sub - Total for removal of all linear items	5.5.3	m	8311.00	R	27.00	R R	224 397.00 1 598 267.00				
146		Rehabilitation of roads											
147	Н	Remove minor gravel road	8.3	m²	11707.00	R	4.00	R	46 828.00	Assume all internal roads and carport area			
148		Remove tar road and surfaces	8.1	m²	51444.00		48.00	R	2 469 312.00	has tar surface			
149 150		Remove concrete roads Sub - Total for rehabilitation of roads	4.3	m³	3565.00	R	400.00	R R	1 426 000.00 3 942 140.00	Assume concrete is 250mm thick			
151	H	Disposal of demolition waste				L		Ľ	0 072 140.00				
152	П	Sorting and screening of demolitioning waste	6.1	% m³///m	R 29 544 053.50		2.5%	R	738 601.34	2.50%			
153 154	H	Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	16200.00	иК	171.00	R R	2 770 200.00 3 508 801.34	Allowance was made for a 30km radius			
155		Sub - Total for infrastructural aspects						R	33 052 854.84				
156 157		Mining Aspects											
158		Open pit reclamation including final voids and ramps											
159		Not Applicable	1.1	na	0.00	R	-	R					
160		Sub - Total open pit reclamation including final voids and ramps	<u> </u>			L		R					
161	П	Sealing of shafts and inclines	7115	0.15-	4 00	D D	2 573 324.00	Р	2 572 204 02	10m Shaft Diameter			
162 163	H	Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum	1.00	R	2 573 324.00	R R	2 573 324.00 2 132 000.00	10m Shaft Diameter 9m Shaft Diameter			
164		Seal Fridge Shaft	7.1.10	sum	1.00	R	1 719 458.00	R	1 719 458.00	7.5m Shaft Diameter			
165 166		Seal BAC Shaft Sub - Total for sealing of shafts and inclines	7.1.10	sum	1.00	R	1 719 458.00	R R	1 719 458.00 8 144 240.00	7.5m Shaft Diameter			
167		Rehabilitation of overburden and spoils											
168 169	\sqcup	Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R	-	R R					
109		Rehabilitation of processing waste deposits and evaporation ponds				1		Α.	•				
170	Щ	(non polluting potential)				<u> </u>							
171	H	Stormwater dam 1				\vdash		\vdash		Assumed 100mm thick contaminated			
172	Ш	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R	20.00	R	22 380.00	sediment			
173		Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00	R	73.00	R	81 687.00	Dispose of at tailings dump assumed 10km haul distance			
174		Breach dam wall and reshape	10.1.5	m	425.00		220.00		93 500.00	Doze walls to inside to fill voic			
175		Shape and level dam surface	10.1.1	ha	1.10) R	55 250.00	R	60 775.00	Shape and level surface to make free draining			
176		Rip to alleviate compaction	9.5.1	ha	1.10	R	9 400.00	R	10 340.00	Rip 500mm deep			
177	H	Establish vegetation Stormwater dam 2	10.4.1	ha	1.10	R	13 800.00	R	15 180.00				
1/8				!	 	+		 		Assumed 100mm thick contaminated			
178 179		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00		20.00		22 380.00	sediment			





		Closure Costing - 18 Shaft Complex					Closure Co	osts	- <u>Scheduled</u>	!
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment				_		_		Dispose of at tailings dump assumed 10km haul distance
180 181		Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00 220.00		81 687.00 93 500.00	Doze walls to inside to fill voic
400		Shape and level dam surface	10.1.1			_	55.050.00	1	00 775 00	Channel and level and a series from desirate
182 183	H	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10		13 800.00	R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					R	567 724.00	
		Rehabilitation of processing waste deposits and evaporation ponds								
186		(polluting potential)				-				Assumed 20m strip would not have been
187		Waste Rock dump								rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	K	20.00	R	34 340.00	Assume 250mm thick Cut to fill action assumed 20m high at
189		Reshape WRD	9.1.1	m³	29925.00		13.50		403 987.50	87.5m³/per meter
190 191		Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	10880.00 1.36		26.00 19 250.00	R R	282 880.00 26 180.00	Assumed 1km haul distance
192		Settling ponds								A
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	Assumed 300mm thick contaminated sediment
		Load and haul contaminated sediment								Dispose of at tailings dump assumed 10km
194	┢		9.6.8	m³/km	1969.00	ı K	73.00	R	143 737.00	haul distance
195		Shape and level dam surface	10.1.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining
196 197	1	Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	0.65 0.65		9 400.00 88 400.00		6 110.00 57 460.00	Rip 500mm deep Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65				8 970.00	
199	┝	Hot and Cool Well				!				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00		12 880.00	sediment
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00		50 000.00 6.50		100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
202		Excavate contaminated soil from dam basin and stockpile	0.4		2145.00				10 300.50	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated son from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin Dispose of at tailings dump assumed 10km
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00		73.00	R	66 576.00	haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00	R	220.00	R	40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	R	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1 10.4.1	ha	0.44		9 400.00	R R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	ĸ	6 072.00	
209		evaporation ponds (polluting potential)					R	1 312 959.50	
210 211		Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	-	R	-	
212		Sub - Total for reclamation of subsided areas						R	-	
213 214		Sub - Total for Mining aspects						R	10 024 923.50	
215		General Surface Reclamation								
216 217		Topsoil stockpile Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	P	141 000.00	Rip 500mm deep
217		Typ to alleviate compaction	0.0.1	iiu	10.00				141 000.00	Establish vegetation on stockpile footprint
218 219		Establish vegetation Infrastructural areas	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area
219		illiastitictural areas								
220 221		Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha	32.00 32.00		55 250.00 9 400.00		1 768 000.00 300 800.00	Shape and level surface to make free draining Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha ha	32.00				2 828 800.00	Assumed from local stockpile
223		Establish vegetation	10.4.1	ha	32.00	R	13 800.00	_	441 600.00	
224 225	┢	Sub - Total for General Surface Reclamation				-		R	5 687 200.00	
226		Water Management								
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
229		Sub - Total for Water management				1		K	-	
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00		119 232.00		596 160.00	Assume a 5 year period post closure
233 234	H	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	5.00 52.00		52 992.00 2 430.00		264 960.00 126 360.00	Assume a 5 year period post closure Allowed for 5 years post closure
234		Care and maintenance of reclaimed areas	12.3	na ha	52.00 52.00		15 000.00		780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects						R	1 767 480.00	
237		Contingencies for post closure aspects	1.2	sum	R 1 767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspects
238		Sub - Total for Contingencies for post closure aspects				L		R	176 748.00	
239		SUB - TOTAL 2 (for post - closure aspects)						R	1 944 228.00	
240		Additional allowances								
241		Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242	H	Contingencies SUB - TOTAL 3	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		(for additional allowances)						R	7 802 396.53	
244		Grand - Total (for sub - total 1+2+3)						R	58 511 602.87	
		(ior sub - total 1+2+3)								





tem nr I		Closure Costing - 18 Shaft Complex					Closure	Costs	<u>Year 1</u>	
	ID	Task	Unit Rate Code	Unit	Quantity		Rate	Aı	mount	Notes
2		Infrastructural Aspects	Oode							
	+	Nominal allowances				-				To assist with demolition and salvage
3 4	_	Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	0.00 1.00		6 534.00 250 000.00	R R	250 000.00	purposes Nominal allowance
5		Sub - Total for Nominal allowances	1.2	Suili	1.00	, K	230 000.00		250 000.00 250 000.00	
6 7		Demolitioning of plant and related structures Compressor house								Only certain infrastructure developed
8		Sheeting	2.1	m²	0.00			R	-	Appumo 90kg of stool per aguare meter
9		Structural steel Structural concrete	2.3.1	m²	0.00	K	135.00	R	-	Assume 80kg of steel per square meter Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	0.00		215.00 610.00	R R	-	bases Assume concrete is 400mm thick
12		Winder House								
13 14	\dashv	Sheeting Structural steel	2.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
15		Structural concrete	4.4		0.00	R	215.00	R		Remove concrete floor, foundations and bases
15 16		Rock Winder House	4.4	m²	0.00	K	215.00	ĸ	-	Dases
17 18	4	Sheeting Structural steel	2.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
		Structural concrete								Remove concrete floor, foundations and
19 20	+	Emergency winder	4.4	m²	0.00	R	215.00	R		bases
21 22		Sheeting Structural steel	2.1	m² m²	0.00	_		R R	-	Assume 80kg of steel per square meter
	1	Structural concrete								Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	0.00	R	215.00	R	-	bases
25	1	Structural steel	2.3.1	m²	0.00	R	135.00	R	-	Assume 80kg of steel per square meter
26		Structural concrete	4.4	m²	0.00	R	215.00	R	_	Remove concrete floor, foundations and bases
27 28	7	Fridge Shaft loe thermal store	3.1.1	m²	0.00			R		
29		Structural steel	2.3.1	m²	0.00			R		Assume 80kg of steel per square meter
30		Structural concrete	4.4	m²	0.00	R	215.00	R	_	Remove concrete floor, foundations and bases
31	1	BAC Shaft								
32 33	_	Plant room Structural steel	3.1.1 2.3.1	m² m²	0.00		295.00 135.00	R	-	Normal single story building Assume 80kg of steel per square meter
34		Structural concrete	4.4	m²	0.00	_ B	215.00	D		Remove concrete floor, foundations and bases
35		Cooling towers								buscs
36 37		Sheeting Structural steel	2.1	m² m²	0.00			R R	-	Assume 80kg of steel per square meter
		Structural concrete								Remove concrete floor, foundations and bases
38 39	-	Sewage treatment plant	4.4	m²	0.00	R	215.00	R		Dases
40 41		Office Sludge drying beds	3.1.1 4.3	m² m³	33.00 79.00		295.00 400.00		9 735.00 31 600.00	Normal single story building Assume concrete is 250mm thick
42		Storage tanks	2.4.2	no	3.00	R	26 650.00	R	79 950.00	
43 44	\dashv	Storage tanks Structural steel	2.4.1	no m²	2.00 28.00		10 600.00 135.00	R R	21 200.00 3 780.00	Assume 80kg of steel per square meter
45		Concrete hardstand	4.4		1920.00	R	215.00			Remove concrete hardstand with min. reinforcing
46		Material transfer towers	4.4	m²	1820.00				391 300.00	
47	4	Office	3.1.1	m²	0.00	R	295.00	R	-	Normal single story building Assume concrete is 350mm thick, silos is 10
48		Structural concrete (silo)	4.2	m³	0.00			R	-	high
49 50	\dashv	Sheeting Structural steel	2.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
51		Structural concrete	4.4	m²	0.00	_ B	215.00	R		Remove concrete floor, foundations and bases
52		Suspended conveyors	5.1.5	m	0.00		640.00	R	-	Heavy conveyors
53 54	4	Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures						R	537 565.00	Only certain infrastructure developed
55		Headgear				L				
56 57	-	Structural steel Structural concrete	2.2 4.2	t m³	0.00 285.00		1 350.00 610.00		173 850.00	Mass reinforced concrete
58 59	4	Carports	2.6.1	m²	0.00		55.00		-	Assumed IBR sheeting
60	Ⅎ	Winches Sheeting	2.1	m²	0.00		23.00			
61 62	7	Structural steel Brick wall	2.3.1 3.5	m² m²	0.00		135.00 30.00	R R	-	Assume 80kg of steel per square meter
	1	Structural concrete								Remove concrete floor, foundations and
63 64	-	Explosives offloading bay	4.4	m²	0.00	ηR	215.00	R	-	bases
65 66	4	Sheeting Structural steel	2.1 2.3.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
		Structural steel Structural concrete							-	Remove concrete floor, foundations and
67 68	_	Concrete silt traps	4.4	m² m³	0.00 318.00		215.00 400.00		127 200.00	bases Assume concrete is 200mm thick
69]	Concrete stormwater trench	8.4	m²	13543.00	R	135.00	R 1	828 305.00	Thin concrete with minimal reinforcing
70 71	_	Backfill plant Storage bins	8.4 4.3	m² m³	0.00		135.00 400.00		-	Thin concrete with minimal reinforcing Assume concrete is 250mm thick
72		Explosives incinerator	4.3	m³	0.00		400.00	R	-	Assume concrete is 250mm thick
73 74		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores				L		R 2	129 355.00	Only certain infrastructure developed
		Oil store	3.1.1	m² m²	0.00		295.00		-	Normal single story building
75 76	_	Chemical store Cement/ Shotcrete Material store	3.1.1		0.00		295.00			Normal single story building
76 77	4	Sheeting Structural steel	2.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
76 77 78		Brick wall	3.5	m²	0.00			R		
76 77				m²	0.00	R	215.00	R	_	Remove concrete floor, foundations and bases
76 77 78 79 80		Structural concrete	4.4		0.00	Ė				<u> </u>
76 77 78 79 80 81 82		Brick Store				-	20.00	В		
76 77 78 79 80 81 82 83 84			2.1 2.3.1	m² m²	0.00	R		R R	-	Assume 80kg of steel per square meter
76 77 78 79 80 81 82 83		Brick Store Sheeting Structural steel Brick wall	2.1	m²		R	135.00		-	
76 77 78 79 80 81 82 83 84 85		Brick Store Sheeting Structural steel Brick wall Structural concrete	2.1 2.3.1	m² m²	0.00	R	135.00 30.00	R		Assume 80kg of steel per square meter Remove concrete floor, foundations and bases
76 77 78 79 80 81 82 83 84 85		Brick Store Sheeting Structural steel Brick wall	2.1 2.3.1 3.5	m² m² m²	0.00	R	135.00 30.00	R R R		Remove concrete floor, foundations and





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 1</u>	
Item nr	ID	Task	Unit Rate	Unit	Quantity		Rate		Amount	Notes
		Structural concrete	Code			_		_		Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	0.00	R	215.00	R	-	bases
93 94		Sheeting Structural steel	2.1 2.3.1	m² m²	0.00		23.00 135.00	R R	-	Assume 80kg of steel per square meter
95		Brick wall	3.5	m²	0.00		30.00		-	Assume doky of steel per square meter
96		Structural concrete	4.4	m²	0.00) R	215.00	R		Remove concrete floor, foundations and bases
97		Fan Store								
98 99		Sheeting Structural steel	2.1	m² m²	0.00		23.00 135.00		-	Assume 80kg of steel per square meter
		Structural concrete								Remove concrete floor, foundations and
100 101		Locomotive store and wash bay	4.4	m²	0.00	R	215.00	R	-	bases
102		Sheeting	2.1	m²	0.00		23.00	R	-	Assume 90kg of steel per aguero meta
103		Structural steel	2.3.1	m²	0.00	R	135.00	R	-	Assume 80kg of steel per square meter Remove concrete floor, foundations and
104 105	Ш	Structural concrete Sub - Total for demolitioning of workshops and stores	4.4	m²	0.00	R	215.00	R R	-	bases
105								ĸ	-	
106 107		Demolitioning of permanent brick structures and temporary structures Guardhouse	3.1.1	m²	166.00	R	295.00	R	48 970.00	Only certain infrastructure developed
107	Н	Office 1	3.1.1	m²	0.00	_	295.00	R	46 970.00	Normal single story building Normal single story building
109		Office 2	3.1.1	m²	0.00	_	295.00	R	-	Normal single story building
110 111		Office 3 Office 4	3.1.1	m² m²	0.00		295.00 295.00	R R	-	Normal single story building Normal single story building
112	Ш	Change House 1	3.1.1	m²	0.00	R	295.00	R	-	Normal single story building
113 114	Н	Change House 2 Change House 3	3.1.1	m² m²	0.00		295.00 295.00		-	Normal single story building Normal single story building
115		Change House 4	3.1.1	m²	0.00	R	295.00	R	-	Normal single story building
116 117	H	Change House 5 Change House 6	3.1.1 3.1.1	m² m²	0.00	_	295.00 295.00	R R	-	Normal single story building Normal single story building
118	Ħ	Change House 7	3.1.1	m²	0.00	R	295.00	R	-	Normal single story building
119	H	Shelter First Aid Room	3.1.1	m² m²	0.00		295.00		-	Normal single story building
120 121	H	First Aid Room Lamp House	3.1.1	m² m²	0.00		295.00 295.00	R R	-	Normal single story building Normal single story building
122		Crush	3.1.1	m²	0.00		295.00		-	Normal single story building
123 124		Control Room Main Substation	3.1.1 3.1.1	m² m²	0.00	_	295.00 295.00	R R	-	Normal single story building Normal single story building
125		Substation 1	3.1.1	m²	0.00		295.00	R	-	Normal single story building
126 127		Substation 2 Outside ablution block	3.1.1 3.1.1	m² m²	0.00		295.00 295.00	R R	-	Normal single story building
128	Н	Transformer bays	3.1.1	111	0.00		295.00	K	-	Normal single story building
129		Brickwork	3.5	m²	0.00		30.00		-	
130 131	Н	Structural concrete Stormwater pump house	4.3 3.1.1	m³ m²	0.00 33.00	_	400.00 295.00	R R	9 735.00	Remove concrete plinths and footings Normal single story building
132		Construction offices	3.1.1	m²	990.00		295.00	R	292 050.00	Normal single story building
133		Sub - Total for demolitioning of permanent brick structures and temporary structures						R	350 755.00	
134		Removal of all surface related finishes								Only certain infrastructure developed
135 136		Remove concrete liner from stormwater dam 1 Remove concrete liner from stormwater dam 2	4.3	m³ m³	1650.00 1650.00		400.00 400.00		660 000.00 660 000.00	Assume concrete is 150mm thick Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	0.00		400.00	R	-	Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R	135.00	R R	2 226 150.00 3 546 150.00	Assume hole of mining terrain
140		Removal of all linear items							0 040 100.00	Only certain infrastructure developed
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	0.00		27.00 48.00	R R	-	Assumed 2500m Assumed 2500m
143	Н	Remove railway lines	5.4.2	m	5518.00		215.00	R	1 186 370.00	Assumed 2500m
144		Remove security fencing	5.5.3	m	8311.00	R	27.00	R	224 397.00	
145 146		Sub - Total for removal of all linear items Rehabilitation of roads				\mathbf{I}		R	1 410 767.00	Only certain infrastructure developed
147		Remove minor gravel road	8.3	m²	11707.00	R	4.00	R	46 828.00	
148		Remove tar road and surfaces	8.1	m²	51444.00	R	48.00	R	2 469 312.00	Assume all internal roads and carport area has tar surface
149		Remove concrete roads	4.3	m³	3565.00		400.00	R	1 426 000.00	Assume concrete is 250mm thick
150 151	H	Sub - Total for rehabilitation of roads Disposal of demolition waste		-				R	3 942 140.00	
152		Sorting and screening of demolitioning waste	6.1	%	R 12 166 732.00		2.5%	R	304 168.30	2.50%
153 154	Н	Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	16200.00	R	171.00	R R	2 770 200.00 3 074 368.30	Allowance was made for a 30km radius
155		Sub - Total for disposal of defindition waste Sub - Total for infrastructural aspects						R	15 241 100.30	
156 157		Mining Aspects								
157 158	٥	Open pit reclamation including final voids and ramps								
159	П	Not Applicable	1.1	na	0.00	R	-	R	-	
160		Sub - Total open pit reclamation including final voids and ramps	i					R		
161	Ц	Sealing of shafts and inclines	7			_	0.570.00: -			40 Ch-# Di '
162 163	Н	Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum	0.00	_		R R	-	10m Shaft Diameter 9m Shaft Diameter
164		Seal Fridge Shaft	7.1.10	sum	0.00	R	1 719 458.00	R	-	7.5m Shaft Diameter
165 166	H	Seal BAC Shaft Sub - Total for sealing of shafts and inclines	7.1.10	sum	0.00	R	1 719 458.00	R R		7.5m Shaft Diameter
167		Rehabilitation of overburden and spoils				t				
168	Ц	Not Applicable	1.1	na	0.00	R	-	R	-	
169	H	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds				┢		R	•	
170	Щ	(non polluting potential)				1				
171	Н	Stormwater dam 1				\vdash		<u> </u>		Assumed 100mm thick contaminated
172	Ш	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R	20.00	R	22 380.00	sediment
173		Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00	R	73.00	R	81 687.00	Dispose of at tailings dump assumed 10km haul distance
174		Breach dam wall and reshape	10.1.5	m	425.00		220.00		93 500.00	Doze walls to inside to fill voic
175		Shape and level dam surface	10.1.1	ha	1.10	R	55 250.00	R	60 775.00	Shape and level surface to make free draining
176		Rip to alleviate compaction	9.5.1	ha	1.10	R	9 400.00	R	10 340.00	Rip 500mm deep
177	Н	Establish vegetation Stormwater dam 2	10.4.1	ha	1.10	R	13 800.00	R	15 180.00	
178										
178 179	H	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00		20.00		22 380.00	Assumed 100mm thick contaminated sediment





	Closure Costing - 18 Shaft Complex		Closure Costs - <u>Year 1</u>									
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes		
400		Load and haul contaminated soil and sediment		2.0	4440.00		70.00	1	04.007.00	Dispose of at tailings dump assumed 10km haul distance		
180 181		Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00 220.00		81 687.00 93 500.00	Doze walls to inside to fill voic		
400		Shape and level dam surface	10.1.1				55.050.00	1	00 775 00	Channel and level and a series from desirate		
182 183		Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R R	60 775.00 10 340.00	Shape and level surface to make free drainin Rip 500mm deep		
184		Establish vegetation	10.4.1	ha	1.10		13 800.00	R	15 180.00			
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					R	567 724.00			
		Rehabilitation of processing waste deposits and evaporation ponds										
186		(polluting potential)				-				Assumed 20m strip would not have been		
187		Waste Rock dump				L				rehabilitated		
188		Strip topsoil and stockpile for movement of toe	9.2	m³	0.00	R	20.00	R	-	Assume 250mm thick Cut to fill action assumed 20m high at		
189		Reshape WRD	9.1.1	m³	0.00		13.50	R	-	87.5m³/per meter		
190 191		Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	0.00		26.00 19 250.00	R R		Assumed 1km haul distance		
192		Settling ponds										
193		Remove contaminated sediment	9.2	m³	0.00	R	20.00	R	_	Assumed 300mm thick contaminated sediment		
		Load and haul contaminated sediment								Dispose of at tailings dump assumed 10km		
194	_		9.6.8	m³/km	0.00	R	73.00	R	-	haul distance		
195		Shape and level dam surface	10.1.1	ha	0.00		55 250.00		-	Shape and level surface to make free draining		
196 197	L	Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	0.00		9 400.00 88 400.00		-	Rip 500mm deep Assumed from local stockpile		
198	E	Establish vegetation	10.4.1	ha	0.00		13 800.00		-	- Stoonpile		
199		Hot and Cool Well				-				Assumed 300mm thick contaminated		
200	L	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	0.00		20.00			sediment		
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	0.00				-	Nominal allowance Assumed dam is lined with a HDPE line		
202			0.4	m²	0.00	, K	6.50	K		Assume 250mm thick on 50 percent of dam		
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	0.00	R	20.00	R	-	basin		
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	0.00	R	73.00	R	-	Dispose of at tailings dump assumed 10km haul distance		
205		Breach dam wall and reshape	10.1.5	m	0.00	R	220.00	R	-	Doze walls to inside to fill voic		
206		Shape and level dam surface	10.1.1	ha	0.00	R	55 250.00	R	-	Shape and level surface to make free draining		
207		Rip to alleviate compaction	9.5.1	ha	0.00		9 400.00		-	Rip 500mm deep		
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.00	R	13 800.00	R	-			
209		evaporation ponds (polluting potential)					R	-			
210 211		Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	-	R				
212		Sub - Total for reclamation of subsided areas						R	-			
213 214	_	Sub - Total for Mining aspects						R	567 724.00			
215		General Surface Reclamation										
216 217		Topsoil stockpile Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	1	141 000.00	Rip 500mm deep		
217		Rip to alleviate compaction	9.5.1	IId	15.00	, K	9 400.00	K	141 000.00	Establish vegetation on stockpile footprint		
218		Establish vegetation	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area		
219		Infrastructural areas				 						
220		Shape and level surface	10.1.1	ha	32.00		55 250.00		1 768 000.00	Shape and level surface to make free draining		
221 222		Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	32.00 32.00				300 800.00 2 828 800.00	Rip 500mm deep Assumed from local stockpile		
223		Establish vegetation	10.4.1	ha	32.00	R	13 800.00	R	441 600.00	-		
224 225	_	Sub - Total for General Surface Reclamation		-		<u> </u>		R	5 687 200.00			
226		Water Management										
227		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R	-			
228 229		Sub - Total for Water Management				 		R	-			
230		SUB - TOTAL 1						R	21 496 024.30			
231		(for infrastructural and related structures Post - closure aspects										
232		Surface water quality monitoring	12.1	yr	5.00		119 232.00		596 160.00	Assume a 5 year period post closure		
233	Ĺ	Groundwater quality monitoring	12.2	yr	5.00		52 992.00 2 430.00		264 960.00	Assume a 5 year period post closure		
234 235	-	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	49.00 49.00		2 430.00 15 000.00		119 070.00 735 000.00	Allowed for 5 years post closure Allowed for 5 years post closure		
236		Sub - Total for Post closure aspects						R	1 715 190.00	,		
237		Contingencies for post closure aspects	1.2	sum	R 1 715 190.00		10%	R	171 519.00	Assumed 10 percent for post closure aspects		
238		Sub - Total for Contingencies for post closure aspects					.570	R	171 519.00	acposite		
239		SUB - TOTAL 2 (for post - closure aspects)						R	1 886 709.00			
240		Additional allowances										
241		Preliminary and General	1.2	sum	R 21 496 024.30		6%	R	1 289 761.46	Assume 6 percent of sub - total 1		
242		Contingencies SUB - TOTAL 3	1.2	sum	R 21 496 024.30		10%	R	2 149 602.43	Assume 10 percent of sub - total 1		
243		(for additional allowances)						R	3 439 363.89			
244		Grand - Total						R	26 822 097.19			
		(for sub - total 1+2+3)										





tem nr ID 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Task Infrastructural Aspects Nominal allowances Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Compressor house Sheeting Structural steel Structural concrete	11.2 1.2	Dnit p/day sum	Quantity 20.00 1.00		Amount R 130 680.00 R 2 500 000.00	Notes To assist with demolition and salvage purposes Nominal allowance
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16 17	Infrastructural Aspects Nominal allowances Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Compressor house Sheeting Structural steel	11.2 1.2	p/day	20.00	R 6 534.00		To assist with demolition and salvage purposes
3 4 5 6 7 8 9 10 11 12 13 14	Crane Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Compressor house Sheeting Structural steel	2.1					purposes
4 5 6 7 8 9 10 11 12 13 14 15 16 17	Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances Demolitioning of plant and related structures Compressor house Sheeting Structural steel	2.1					purposes
5 6 7 8 9 10 11 12 13 14 15 16 17	Sub - Total for Nominal allowances Demolitioning of plant and related structures Compressor house Sheeting Structural steel	2.1	sum	1.00	R 2 500 000.00	R 2 500 000.00	
7 8 9 10 11 12 13 14 15 16 17	Compressor house Sheeting Structural steel					R 2 630 680.00	
10 11 12 13 14 15 16 17	Sheeting Structural steel						
10 11 12 13 14 15 16 17			m²	1628.00			
11 12 13 14 15 16 17	Structural concrete	2.3.1	m²	963.00	R 135.00	R 130 005.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
12 13 14 15 16 17	Concrete plinths	4.4 4.2	m² m³	963.00 380.00			bases Assume concrete is 400mm thick
14 15 16 17	Winder House						Assume concrete is 400mm ther
16 17	Sheeting Structural steel	2.1	m² m²	3862.00 1932.00		R 88 826.00 R 260 820.00	Assume 80kg of steel per square meter
16 17	Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
	Rock Winder House						buscs
	Sheeting Structural steel	2.1	m² m²	3862.00 1932.00		R 88 826.00 R 260 820.00	Assume 80kg of steel per square meter
19	Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
20	Emergency winder						
21	Sheeting Structural steel	2.1	m² m²	753.00 249.00		R 17 319.00 R 33 615.00	Assume 80kg of steel per square meter
23	Structural concrete	4.4	m²	249.00	R 215.00	R 53 535.00	Remove concrete floor, foundations and bases
24	Vent Shaft						
25	Structural steel Structural concrete	2.3.1	m²	1908.00	R 135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26 27	Structural concrete Fridge Shaft	4.4	m²	1908.00	R 215.00	R 410 220.00	bases
28	Ice thermal store	3.1.1	m²	781.00			
29	Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
30 31	Structural concrete BAC Shaft	4.4	m²	218.00	R 215.00	R 46 870.00	bases
32	Plant room	3.1.1	m²	1167.00			Normal single story building
33	Structural steel	2.3.1	m²	697.00	R 135.00	R 94 095.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
34 35	Structural concrete Cooling towers	4.4	m²	1000.00	R 215.00	R 215 000.00	bases
36	Sheeting	2.1	m²	1771.00			
37	Structural steel	2.3.1	m²	1001.00	R 135.00	R 135 135.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
38 39	Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.00	bases
40	Sewage treatment plant Office	3.1.1	m²	33.00			Normal single story building
41 42	Sludge drying beds Storage tanks	4.3 2.4.2	m³ no	79.00 3.00			Assume concrete is 250mm thick
43 44	Storage tanks	2.4.1	no	2.00 28.00	R 10 600.00	R 21 200.00	Assume 80kg of steel per square meter
	Structural steel Concrete hardstand	2.3.1	m²				Remove concrete hardstand with min.
45 46	Material transfer towers	8.4	m²	1820.00	R 135.00	R 245 700.00	reinforcing
47	Office	3.1.1	m²	27.00	R 295.00	R 7 965.00	Normal single story building Assume concrete is 350mm thick, silos is
48	Structural concrete (silo)	4.2	m³	206.00			high
49 50	Sheeting Structural steel	2.1	m² m²	106.00 106.00			Assume 80kg of steel per square meter
51	Structural concrete	4.4	m²	106.00	R 215.00	R 22 790.00	Remove concrete floor, foundations and bases
52	Suspended conveyors	5.1.5	m	400.00	R 640.00	R 256 000.00	Heavy conveyors
53 54	Sub - Total for demolitioning of plant and related structures Demolitioning of all structural structures					R 5 080 881.00	
55	Headgear Structural steel	2.2		1000.00	D 1350.00	R 2 565 000.00	
56 57	Structural steel Structural concrete	2.2 4.2	t m³	1900.00 285.00	R 610.00	R 173 850.00	
58 59	Carports Winches	2.6.1	m²	17943.00	R 55.00	R 986 865.00	Assumed IBR sheeting
60	Sheeting	2.1	m²	1286.00			Assume 90kg of steel per aguara mate
61 62	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			Assume 80kg of steel per square meter
63	Structural concrete	4.4	m²	894.00	R 215.00	R 192 210.00	Remove concrete floor, foundations and bases
64	Explosives offloading bay						
65 66	Sheeting Structural steel	2.1	m² m²	679.00 277.00			
67	Structural concrete	4.4	m²	277.00	R 215.00	R 59 555.00	Remove concrete floor, foundations and bases
68	Concrete silt traps	4.3	m³	318.00	R 400.00	R 127 200.00	Assume concrete is 200mm thick
69 70	Concrete stormwater trench Backfill plant	8.4 8.4	m² m²	13543.00 5758.00			Thin concrete with minimal reinforcing Thin concrete with minimal reinforcing
71	Storage bins	4.3	m³	456.00		R 182 400.00	Assume concrete is 250mm thick
72 73	Explosives incinerator Sub - Total for demolitioning of all structural structures	4.3	m³	36.00	R 400.00	R 14 400.00 R 7 111 475.00	
74 75	Demolitioning of workshops and stores Oil store	3.1.1	m²	407.00	R 295.00	R 120 065.00	Normal single story building
76	Chemical store	3.1.1	m²	407.00			
77 78	Cement/ Shotcrete Material store Sheeting	2.1	m²	1286.00		R 29 578.00	
79	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
	Structural concrete						Remove concrete floor, foundations and
80		4.4	m²	894.00	R 215.00	R 192 210.00	bases
80	Brick Store			1206.00	R 23.00	R 29 578.00	
80 81 82 83	Sheeting	2.1	m²	1286.00			Annuma 90kg -f -t!
80 81 82		2.1 2.3.1 3.5	m² m² m²	894.00 36.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
80 81 82 83 84 85	Sheeting Structural steel	2.3.1 3.5	m² m²	894.00 36.00	R 135.00 R 30.00	R 120 690.00 R 1 080.00	Remove concrete floor, foundations and
81 82 83 84	Sheeting Structural steel Brick wall	2.3.1	m²	894.00	R 135.00 R 30.00 R 215.00	R 120 690.00 R 1 080.00 R 192 210.00	Remove concrete floor, foundations and





		Closure Costing - 18 Shaft Complex				Clo	sure	Costs - Year 2	
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate		Amount	Notes
		Structural concrete	Code						Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 2	15.00	R 192 210.00	bases
93		Sheeting	2.1	m²	1286.00		23.00		
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		35.00 30.00	R 120 690.00 R 1 080.00	
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 2	15.00	R 192 210.00	bases
98		Sheeting	2.1	m²	777.00		23.00		
99		Structural steel	2.3.1	m²	409.00	K 1	35.00	R 55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100 101		Structural concrete Locomotive store and wash bay	4.4	m²	409.00	R 2	15.00	R 87 935.00	bases
101	H	Sheeting	2.1	m²	1655.00	R	23.00	R 38 065.00	
103	Н	Structural steel	2.3.1	m²	907.00	R 1	35.00	R 122 445.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
104		Structural concrete	4.4	m²	907.00	R 2	15.00	R 195 005.00	
105		Sub - Total for demolitioning of workshops and stores						R 2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		95.00		0 , 0
108 109		Office 1 Office 2	3.1.1	m² m²	516.00 516.00		95.00 95.00	R 152 220.00 R 152 220.00	
110	_	Office 3	3.1.1	m²	516.00	R 2	95.00	R 152 220.00	Normal single story building
111 112		Office 4 Change House 1	3.1.1 3.1.1	m² m²	516.00 686.00		95.00 95.00	R 152 220.00 R 202 370.00	
113		Change House 2	3.1.1	m²	686.00	R 2	95.00	R 202 370.00	Normal single story building
114	_	Change House 3	3.1.1	m²	686.00		95.00	R 202 370.00	
115 116		Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00		95.00 95.00	R 202 370.00 R 202 370.00	
117		Change House 6	3.1.1	m²	686.00	R 2	95.00	R 202 370.00	Normal single story building
118 119		Change House 7 Shelter	3.1.1	m² m²	686.00 132.00		95.00 95.00	R 202 370.00 R 38 940.00	
120		First Aid Room	3.1.1	m²	111.00	R 2	95.00	R 32 745.00	Normal single story building
121	Д	Lamp House	3.1.1	m²	745.00		95.00		Normal single story building
122 123		Crush Control Room	3.1.1	m² m²	451.00 141.00		95.00 95.00	R 133 045.00 R 41 595.00	
124		Main Substation	3.1.1	m²	601.00	R 2	95.00	R 177 295.00	Normal single story building
125 126	-	Substation 1 Substation 2	3.1.1	m² m²	91.00 162.00		95.00 95.00	R 26 845.00 R 47 790.00	
127		Outside ablution block	3.1.1	m²	26.50		95.00	R 7 817.50	
128		Transformer bays				_			
129 130		Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00		30.00		
131		Stormwater pump house	3.1.1	m²	33.00	R 2	95.00	R 9 735.00	Normal single story building
132		Construction offices Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	990.00	R 2	95.00	R 292 050.00	Normal single story building
133		temporary structures						R 3 113 562.50	
134 135		Removal of all surface related finishes	4.0	3	1650.00	D 4	00.00	R 660 000.00	Assume concrete is 150mm thick
136	Н	Remove concrete liner from stormwater dam 1 Remove concrete liner from stormwater dam 2	4.3	m³ m³	1650.00		00.00		
137		Remove concrete liner from settling pond	4.3	m³	975.00		00.00	R 390 000.00	
138 139	Н	Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 1	35.00	R 2 226 150.00 R 3 936 150.00	
140		Removal of all linear items							
141 142	H	Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00		27.00 48.00	R 67 500.00 R 120 000.00	
143	_	Remove railway lines	5.4.2	m	5518.00		15.00	R 1 186 370.00	
144		Remove security fencing	5.5.3	m	8311.00	R	27.00	R 224 397.00	
145 146		Sub - Total for removal of all linear items Rehabilitation of roads						R 1 598 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R	4.00	R 46 828.00	
148		Remove tar road and surfaces	8.1	m²	51444.00	R	48.00	R 2 469 312.00	Assume all internal roads and carport area has tar surface
149	Ц	Remove concrete roads	4.3	m³	3565.00		00.00	R 1 426 000.00	Assume concrete is 250mm thick
150 151	Н	Sub - Total for rehabilitation of roads Disposal of demolition waste						R 3 942 140.00	
152		Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50		2.5%	R 738 601.34	
153	Ц	Disposal of demolition waste	9.6.7	m³/km	16200.00	R 1	71.00		
154 155	Н	Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects						R 3 508 801.34 R 33 052 854.84	
156									
157 158		Mining Aspects Open pit reclamation including final voids and ramps							
159		Not Applicable	1.1	na	0.00	R	-	R -	
160	ΙŢ	Sub - Total open pit reclamation including final voids and ramps						R -	
161	Н	Sealing of shafts and inclines							
162		Seal Main Shaft	7.1.15	sum	1.00			R 2 573 324.00	
163 164		Seal Vent Shaft Seal Fridge Shaft	7.1.13 7.1.10	sum	1.00 1.00			R 2 132 000.00 R 1 719 458.00	
165		Seal BAC Shaft	7.1.10	sum	1.00			R 1 719 458.00	7.5m Shaft Diameter
166 167	Н	Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils						R 8 144 240.00	
168		Not Applicable	1.1	na	0.00	R	-	R -	
169	П	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds						R -	
170	Ll	(non polluting potential)		<u></u>	<u> </u>	<u></u>			
171	Ц	Stormwater dam 1							A
172		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R	20.00	R 22 380.00	Assumed 100mm thick contaminated sediment
	H	Load and haul contaminated soil and sediment							Dispose of at tailings dump assumed 10km
173 174	Н	Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00	R 81 687.00 R 93 500.00	
	H	Shape and level dam surface							
175	Н	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		50.00		
176	. 1				1.10		00.00		
176 177		Establish vegetation	10.4.1	ha	1.10	10 0	00.00	K 15 160.00	<u></u>
		Establish vegetation Stormwater dam 2	10.4.1	na	1.10	100	00.00	K 15 160.00	Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex					Closure	Co	sts - <u>Year 2</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
100		Load and haul contaminated soil and sediment		2.0	4440.00	_	70.00	1	04.007.00	Dispose of at tailings dump assumed 10km haul distance
180 181		Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00 220.00		81 687.00 93 500.00	Doze walls to inside to fill voic
		Shape and level dam surface								
182 183	H	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R R	60 775.00 10 340.00	Shape and level surface to make free drainin Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10		13 800.00	R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					R	567 724.00	
		Rehabilitation of processing waste deposits and evaporation ponds								
186		(polluting potential)								Assumed 20m strip would not have been
187		Waste Rock dump								rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	K	20.00	R	34 340.00	Assume 250mm thick Cut to fill action assumed 20m high at
189		Reshape WRD	9.1.1	m³	29925.00		13.50		403 987.50	87.5m³/per meter
190 191		Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	10880.00 1.36		26.00 19 250.00	R R	282 880.00 26 180.00	Assumed 1km haul distance
192		Settling ponds								A
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	Assumed 300mm thick contaminated sediment
		Load and haul contaminated sediment								Dispose of at tailings dump assumed 10km
194	┢		9.6.8	m³/km	1969.00	K	73.00	К	143 737.00	haul distance
195	L	Shape and level dam surface	10.1.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining
196 197	1	Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	0.65 0.65		9 400.00 88 400.00		6 110.00 57 460.00	Rip 500mm deep Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65				8 970.00	
199	┝	Hot and Cool Well				-				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00		12 880.00	sediment
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00		50 000.00 6.50		100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
202		Excavate contaminated soil from dam basin and stockpile	0.4		2145.00				10 300.50	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated son from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin Dispose of at tailings dump assumed 10km
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00				66 576.00	haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00	R	220.00	R	40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	R	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1 10.4.1	ha	0.44		9 400.00 13 800.00	R R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	ĸ	6 072.00	
209		evaporation ponds (polluting potential)					R	1 312 959.50	
210 211		Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	-	R	-	
212		Sub - Total for reclamation of subsided areas						R	-	
213 214		Sub - Total for Mining aspects						R	10 024 923.50	
215		General Surface Reclamation								
216 217	-	Topsoil stockpile Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	P	141 000.00	Rip 500mm deep
217		Typ to alleviate compaction	0.0.1	iiu	10.00				141 000.00	Establish vegetation on stockpile footprint
218 219		Establish vegetation Infrastructural areas	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area
219		illiastiticulai aleas								
220		Shape and level surface Rip to alleviate compaction	10.1.1	ha	32.00		55 250.00		1 768 000.00	Shape and level surface to make free draining Rip 500mm deep
221 222		Import 250mm topsoil	9.5.1 10.2.1	ha ha	32.00 32.00				300 800.00 2 828 800.00	Assumed from local stockpile
223		Establish vegetation	10.4.1	ha	32.00	R	13 800.00		441 600.00	
224 225	┢	Sub - Total for General Surface Reclamation				1		R	5 687 200.00	
226		Water Management								
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
229		Sub - Total for Water management						K	-	
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00		119 232.00		596 160.00	Assume a 5 year period post closure
233 234	H	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	5.00 52.00		52 992.00 2 430.00		264 960.00 126 360.00	Assume a 5 year period post closure Allowed for 5 years post closure
234		Care and maintenance of reclaimed areas	12.3	na ha	52.00 52.00		15 000.00		780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects						R	1 767 480.00	
237		Contingencies for post closure aspects	1.2	sum	R 1 767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspects
238		Sub - Total for Contingencies for post closure aspects						R	176 748.00	
239		SUB - TOTAL 2 (for post - closure aspects)						R	1 944 228.00	
240		Additional allowances								
241		Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242	H	Contingencies SUB - TOTAL 3	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		(for additional allowances)						R	7 802 396.53	
244		Grand - Total (for sub - total 1+2+3)						R	58 511 602.87	
		(ior sub - total 1+2+3)								





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 3	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	Code					
2		Nominal allowances						To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	20.00		R 130 680.00 R 2 500 000.00	purposes Nominal allowance
5		Sub - Total for Nominal allowances	1.2	Juili	1.00	10 2 000 000.00	R 2 630 680.00	Normal anowaries
6 7		Demolitioning of plant and related structures Compressor house						
8		Sheeting	2.1	m²	1628.00 963.00		R 37 444.00	Assume 80kg of steel per square meter
9		Structural steel Structural concrete	2.3.1	m²	963.00	R 135.00	R 130 005.00	Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00		R 207 045.00 R 231 800.00	Assume concrete is 400mm thick
12		Winder House						
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
15		Structural concrete	4.4	m²	1932.00	R 215.00		Remove concrete floor, foundations and bases
16		Rock Winder House						bases
17 18		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
19		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
20		Emergency winder						54303
21 22		Sheeting Structural steel	2.1	m² m²	753.00 249.00		R 17 319.00 R 33 615.00	Assume 80kg of steel per square meter
		Structural concrete						Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	249.00			bases
25	\dashv	Structural steel	2.3.1	m²	1908.00	R 135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26	Ц	Structural concrete	4.4	m²	1908.00	R 215.00	R 410 220.00	bases
27 28	\boxminus	Fridge Shaft Ice thermal store	3.1.1	m²	781.00		R 230 395.00	
29		Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R 215.00	R 46 870.00	bases
31 32		BAC Shaft Plant room	3.1.1	m²	1167.00	R 295.00	R 344 265.00	Normal single story building
33		Structural steel	2.3.1	m²	697.00			Assume 80kg of steel per square meter Remove concrete floor, foundations and
34		Structural concrete	4.4	m²	1000.00	R 215.00	R 215 000.00	bases
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R 23.00	R 40 733.00	
37		Structural steel	2.3.1	m²	1001.00			Assume 80kg of steel per square meter
38		Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.00	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.00	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R 400.00	R 31 600.00	Assume concrete is 250mm thick
42 43		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00			
44		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.
45		Concrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.00	reinforcing
46 47		Material transfer towers Office	3.1.1	m²	27.00	R 295.00	R 7 965.00	Normal single story buildinç
48		Structural concrete (silo)	4.2	m³	206.00	R 610.00	R 125 660.00	Assume concrete is 350mm thick, silos is 10 high
49		Sheeting	2.1	m²	106.00	R 23.00	R 2 438.00	
50		Structural steel	2.3.1	m²	106.00	R 135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51 52		Structural concrete Suspended conveyors	4.4 5.1.5	m² m	106.00 400.00			bases Heavy conveyors
53		Sub - Total for demolitioning of plant and related structures	0.1.0		400.00	10 040.00	R 5 080 881.00	rioury conveyore
54 55		Demolitioning of all structural structures Headgear						
56 57		Structural steel	2.2 4.2	t	1900.00			Mass reinforced concrete
58		Structural concrete Carports	2.6.1	m³ m²	285.00 17943.00			Assumed IBR sheeting
59 60		Winches Sheeting	2.1	m²	1286.00	R 23.00	R 29 578.00	
61		Structural steel	2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
62	\vdash	Brick wall Structural concrete	3.5	m²	36.00			Remove concrete floor, foundations and
63 64	Ц	Structural concrete Explosives offloading bay	4.4	m²	894.00	R 215.00	R 192 210.00	bases
65		Sheeting	2.1	m²	679.00			001 ()
66	\dashv	Structural steel	2.3.1	m²	277.00	R 135.00	R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67 68	Щ	Structural concrete Concrete silt traps	4.4	m² m³	277.00 318.00			bases Assume concrete is 200mm thick
69		Concrete stormwater trench	8.4	m²	13543.00	R 135.00	R 1 828 305.00	Thin concrete with minimal reinforcing
70 71		Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00			Thin concrete with minimal reinforcing Assume concrete is 250mm thick
72		Explosives incinerator	4.3	m³	36.00		R 14 400.00	Assume concrete is 250mm thick
73 74	\dashv	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 7 111 475.00	
75		Oil store	3.1.1	m²	407.00			Normal single story building
76 77	\boxminus	Chemical store Cement/ Shotcrete Material store	3.1.1	m²	407.00			Normal single story building
	H	Sheeting Structural steel	2.1	m² m²	1286.00 894.00		R 29 578.00 R 120 690.00	Assume 80kg of steel per square meter
78 79		Brick wall	3.5	m²	36.00			
78 79 80				m²	894.00	R 215.00	R 192 210.00	Remove concrete floor, foundations and bases
79		Structural concrete	4.4	1111		1	1	
79 80 81 82		Structural concrete Brick Store			1000.00	D 22.00	D 20 570 00	
79 80 81 82 83 84		Structural concrete Brick Store Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
79 80 81 82 83		Structural concrete Brick Store Sheeting Structural steel Brick wall	2.1	m²		R 135.00	R 120 690.00	
79 80 81 82 83 84 85		Structural concrete Brick Store Sheeting Structural steel Brick wall Structural concrete	2.1 2.3.1	m² m²	894.00	R 135.00 R 30.00	R 120 690.00 R 1 080.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and bases
79 80 81 82 83 84 85		Structural concrete Brick Store Sheeting Structural steel Brick wall	2.1 2.3.1 3.5	m² m² m²	894.00 36.00	R 135.00 R 30.00 R 215.00 R 23.00	R 120 690.00 R 1 080.00 R 192 210.00	Remove concrete floor, foundations and





		Closure Costing - 18 Shaft Complex				Closur	e Co	sts - <u>Year 3</u>	
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate		Amount	Notes
		Structural concrete	Code						Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.00) R	192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_	29 578.00	Assume 80kg of steel per square meter
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			120 690.00 1 080.00	Assume 80kg of steel per square meter
96		Structural concrete	4.4	m²	894.00	R 215.00) R	192 210.00	Remove concrete floor, foundations and bases
97		Fan Store		- 111					bases
98 99		Sheeting Structural steel	2.1	m² m²	777.00 409.00			17 871.00 55 215.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
100 101		Locomotive store and wash bay	4.4	m²	409.00	R 215.00) R	87 935.00	bases
102 103		Sheeting	2.1 2.3.1	m²	1655.00 907.00			38 065.00	Assume 80kg of steel per square meter
103		Structural steel	2.3.1	m²	907.00	K 135.00	, K	122 445.00	Remove concrete floor, foundations and
104 105		Structural concrete Sub - Total for demolitioning of workshops and stores	4.4	m²	907.00	R 215.00	R	195 005.00 2 130 898.00	bases
								2 100 000.00	
106 107		Demolitioning of permanent brick structures and temporary structures Guardhouse	3.1.1	m²	166.00	R 295.00	R	48 970.00	Normal single story building
108		Office 1	3.1.1	m²	516.00	R 295.00	R	152 220.00	Normal single story building
109 110		Office 2 Office 3	3.1.1	m² m²	516.00 516.00		_	152 220.00 152 220.00	Normal single story building Normal single story building
111		Office 4	3.1.1	m²	516.00	R 295.00) R	152 220.00	Normal single story building
112 113		Change House 1 Change House 2	3.1.1 3.1.1	m² m²	686.00 686.00			202 370.00 202 370.00	Normal single story building Normal single story building
114		Change House 3	3.1.1	m²	686.00	R 295.00	R	202 370.00	Normal single story building
115 116		Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00			202 370.00 202 370.00	Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.00	R	202 370.00	Normal single story building
118 119		Change House 7 Shelter	3.1.1 3.1.1	m² m²	686.00 132.00			202 370.00 38 940.00	Normal single story building Normal single story building
120		First Aid Room	3.1.1	m²	111.00	R 295.00	R	32 745.00	Normal single story building
121 122		Lamp House	3.1.1	m²	745.00 451.00			219 775.00	Normal single story building
123		Crush Control Room	3.1.1 3.1.1	m² m²	141.00			133 045.00 41 595.00	Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00			177 295.00	Normal single story building
125 126	-	Substation 1 Substation 2	3.1.1	m² m²	91.00 162.00		_	26 845.00 47 790.00	Normal single story building Normal single story building
127		Outside ablution block	3.1.1	m²	26.50	R 295.00) R	7 817.50	Normal single story building
128 129		Transformer bays Brickwork	3.5	m²	23.00	R 30.00) R	690.00	
130		Structural concrete	4.3	m³	27.00			10 800.00	Remove concrete plinths and footings
131 132		Stormwater pump house Construction offices	3.1.1	m² m²	33.00 990.00			9 735.00 292 050.00	Normal single story building Normal single story building
400		Sub - Total for demolitioning of permanent brick structures and					_		5 , 5
133 134		temporary structures Removal of all surface related finishes					R	3 113 562.50	
135		Remove concrete liner from stormwater dam 1	4.3	m³	1650.00			660 000.00	Assume concrete is 150mm thick
136 137		Remove concrete liner from stormwater dam 2 Remove concrete liner from settling pond	4.3	m³ m³	1650.00 975.00			390 000.00	Assume concrete is 150mm thick Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.00	_	2 226 150.00	Assume hole of mining terrain
140		Removal of all linear items					R	3 936 150.00	
141 142		Remove overland steel pipelines (<200mm)	5.2.1 5.2.2	m	2500.00 2500.00			67 500.00 120 000.00	Assumed 2500m
143		Remove overland steel pipelines (200-350mm) Remove railway lines	5.4.2	m m	5518.00			1 186 370.00	Assumed 2500m
144 145		Remove security fencing Sub - Total for removal of all linear items	5.5.3	m	8311.00	R 27.00	_	224 397.00	
146		Rehabilitation of roads					R	1 598 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.00) R	46 828.00	Assume all internal roads and carport area
148		Remove tar road and surfaces	8.1	m²	51444.00			2 469 312.00	has tar surface
149 150	Ц	Remove concrete roads Sub - Total for rehabilitation of roads	4.3	m³	3565.00	R 400.00	R R	1 426 000.00 3 942 140.00	Assume concrete is 250mm thick
151		Disposal of demolition waste							
152 153		Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 29 544 053.50 16200.00	2.5°		738 601.34 2 770 200.00	2.50% Allowance was made for a 30km radius
154	∄	Sub - Total for disposal of demolition waste	J.U.1	ni /Alil	10200.00	1/1.00	R	3 508 801.34	,owanoc was made for a SUMII faulus
155 156	Ц	Sub - Total for infrastructural aspects					R	33 052 854.84	
157		Mining Aspects							
158 159		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R		
	\dashv		1.1	ııd	0.00				
160 161	Н	Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	1				R	-	
162		Seal Main Shaft	7.1.15	sum	1.00			2 573 324.00	10m Shaft Diameter
163 164		Seal Vent Shaft Seal Fridge Shaft	7.1.13 7.1.10	sum	1.00			2 132 000.00 1 719 458.00	9m Shaft Diameter 7.5m Shaft Diameter
165	∄	Seal BAC Shaft	7.1.10	sum	1.00			1 719 458.00	7.5m Shaft Diameter 7.5m Shaft Diameter
166 167	\Box	Sub - Total for sealing of shafts and inclines					R	8 144 240.00	
107		Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	R -	R	-	
168	_	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					R	-	
168 169	\dashv								
169 170		(non polluting potential)			1				
169		(non polluting potential) Stormwater dam 1							Assumed 100mm thick contaminated
169 170		(non polluting potential)	9.2	m³	1119.00	R 20.00	R	22 380.00	Assumed 100mm thick contaminated sediment
169 170 171 172		(non polluting potential) Stormwater dam 1							
169 170 171		(non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile	9.2 9.6.8 10.1.5	m³ m³/km m	1119.00 1119.00 425.00	R 73.00	R	22 380.00 81 687.00 93 500.00	sediment Dispose of at tailings dump assumed 10km
169 170 171 172 173		(non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00	R 73.00 R 220.00) R	81 687.00	sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill voic
169 170 171 172 173 174 175 176		(non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface Rip to alleviate compaction	9.6.8 10.1.5 10.1.1 9.5.1	m³/km m ha ha	1119.00 425.00 1.10 1.10	R 73.00 R 220.00 R 55 250.00 R 9 400.00) R) R) R	81 687.00 93 500.00 60 775.00 10 340.00	sediment Dispose of at tailings dump assumed 10km haul distance
169 170 171 172 173 174		(non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface	9.6.8 10.1.5 10.1.1	m³/km m	1119.00 425.00 1.10	R 73.00 R 220.00 R 55 250.00 R 9 400.00) R) R) R	81 687.00 93 500.00 60 775.00	sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill voic Shape and level surface to make free drainir





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 3</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment								Dispose of at tailings dump assumed 10km
180 181	_	Breach dam wall and reshape	9.6.8	m³/km m	1119.00 425.00		73.00 220.00	R R	81 687.00 93 500.00	haul distance Doze walls to inside to fill voic
		Shape and level dam surface								
182 183		Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10			R	15 180.00	
105		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R	E67 724 00	
185		Rehabilitation of processing waste deposits and evaporation ponds	<u>' </u>					ĸ	567 724.00	
186		(polluting potential)				<u> </u>				
187		Waste Rock dump								Assumed 20m strip would not have been rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick
189		Reshape WRD	9.1.1	m³	29925.00	R	13.50	R	403 987.50	Cut to fill action assumed 20m high at 87.5m³/per meter
190		Import capping layers	9.6.1	m ³	10880.00		26.00	R	282 880.00	Assumed 1km haul distance
191 192		Establish vegetation	10.4.2	ha	1.36	R	19 250.00	R	26 180.00	
192		Settling ponds								Assumed 300mm thick contaminated
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	sediment
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	Dispose of at tailings dump assumed 10km haul distance
	П	Shape and level dam surface								
195 196	Щ	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	0.65 0.65		55 250.00 9 400.00	R R	35 912.50 6 110.00	Shape and level surface to make free draining Rip 500mm deep
197		Import 250mm topsoil	10.2.1	ha	0.65		88 400.00		57 460.00	Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65	R	13 800.00	R	8 970.00	
199	Н	Hot and Cool Well				┝				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00	R	12 880.00	sediment
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00			R	100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
202			0.4	- ""	2143.00	<u> </u>	0.30	IX	13 900.30	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00	R	73.00	R	66 576.00	Dispose of at tailings dump assumed 10km haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00		220.00		40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	P	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1	ha	0.44		9 400.00	R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	R	6 072.00	
209		evaporation ponds (polluting potential						R	1 312 959.50	
210		Reclamation of subsided areas								
211 212		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00) R	-	R	-	
213		Sub - Total for Mining aspects						R	10 024 923.50	
214										
215 216		General Surface Reclamation Topsoil stockpile								
217		Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	R	141 000.00	Rip 500mm deep
218		Establish vegetation	10.4.1	ha	15.00		13 800.00	R	207 000.00	Establish vegetation on stockpile footprint area
219		Infrastructural areas	10.4.1	nu	15.00	1	10 000.00		207 000.00	u.ou
220		Chang and lavel aurions	10.4.4	b	20.00	_	55 250.00	Р	1 760 000 00	Shape and level surface to make free draining
220 221		Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha ha	32.00 32.00		9 400.00		1 768 000.00 300 800.00	Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha	32.00				2 828 800.00	Assumed from local stockpile
223 224		Establish vegetation Sub - Total for General Surface Reclamation	10.4.1	ha	32.00	R	13 800.00	R R	441 600.00 5 687 200.00	
225		San of Solida Salado Nobianatori				t			0 007 200.00	
226		Water Management			-	Ē				
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
229		oub - Total for Water management								
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00			R	596 160.00	Assume a 5 year period post closure
233		Groundwater quality monitoring	12.2	yr	5.00				264 960.00	Assume a 5 year period post closure
234 235		Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	52.00 52.00		2 430.00 15 000.00		126 360.00 780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects			02.00	Ë	. 2 000.00	R	1 767 480.00	
237		Continuencies for nost closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect
238		Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	oulli	1. 1707 400.00	t	10%	R	176 748.00	resumed to personation post diosure aspect
239		SUB - TOTAL 2				Г		R	1 944 228.00	
240		(for post - closure aspects)								
240		Additional allowances Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242		Contingencies	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		SUB - TOTAL 3						R	7 802 396.53	
		(for additional allowances) Grand - Total				H		_	50 544 555	
244								R	58 511 602.87	





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 4	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	Code					
2	_	Nominal allowances						To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	20.00			
5		Sub - Total for Nominal allowances	1.2	Juin	1.00	X 2 000 000.00	R 2 630 680.00	Nonina allowance
6 7		Demolitioning of plant and related structures Compressor house						
8		Sheeting	2.1	m²	1628.00 963.00			Assume 80kg of steel per square meter
9		Structural steel Structural concrete	2.3.1	m²	963.00	R 135.00		Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00	R 215.00 R 610.00	R 207 045.00 R 231 800.00	bases Assume concrete is 400mm thick
12		Winder House						
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
15		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
16		Rock Winder House						D0303
17 18	_	Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
19		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and
20		Emergency winder						D0303
21 22	-	Sheeting Structural steel	2.1	m² m²	753.00 249.00		R 17 319.00 R 33 615.00	Assume 80kg of steel per square meter
		Structural concrete						Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	249.00			
25	4	Structural steel	2.3.1	m²	1908.00	R 135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26	_	Structural concrete	4.4	m²	1908.00	R 215.00	R 410 220.00	
27 28	_	Fridge Shaft Ice thermal store	3.1.1	m²	781.00		R 230 395.00	
29	4	Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.00	Assume 80kg of steel per square metel Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R 215.00	R 46 870.00	
31 32	_	BAC Shaft Plant room	3.1.1	m²	1167.00	R 295.00	R 344 265.00	Normal single story building
33		Structural steel	2.3.1	m²	697.00			Assume 80kg of steel per square metel Remove concrete floor, foundations and
34		Structural concrete	4.4	m²	1000.00	R 215.00	R 215 000.00	
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R 23.00	R 40 733.00	
37		Structural steel	2.3.1	m²	1001.00			
38		Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.00	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.00	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R 400.00	R 31 600.00	Assume concrete is 250mm thick
42 43	_	Storage tanks Storage tanks	2.4.2	no no	3.00 2.00			
44		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.
45		Concrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.00	
46 47		Material transfer towers Office	3.1.1	m²	27.00	R 295.00	R 7 965.00	Normal single story building
48		Structural concrete (silo)	4.2	m³	206.00	R 610.00	R 125 660.00	Assume concrete is 350mm thick, silos is 1 high
49		Sheeting	2.1	m²	106.00	R 23.00	R 2 438.00	
50	_	Structural steel	2.3.1	m²	106.00	R 135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51 52	_	Structural concrete Suspended conveyors	4.4 5.1.5	m² m	106.00 400.00			bases Heavy conveyors
53		Sub - Total for demolitioning of plant and related structures	5.1.5		400.00	10 040.00	R 5 080 881.00	
54 55	_	Demolitioning of all structural structures Headgear						
56 57		Structural steel	2.2 4.2	t	1900.00			
58		Structural concrete Carports	2.6.1	m³ m²	285.00 17943.00			
59 60		Winches Sheeting	2.1	m²	1286.00	R 23.00	R 29 578.00	
61		Structural steel	2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
62		Brick wall Structural concrete	3.5	m²	36.00			Remove concrete floor, foundations and
63 64	_	Explosives offloading bay	4.4	m²	894.00	R 215.00	R 192 210.00	bases
65		Sheeting	2.1	m²	679.00			A
66	+	Structural steel	2.3.1	m²	277.00	R 135.00	R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67 68	_	Structural concrete Concrete silt traps	4.4	m² m³	277.00 318.00			bases
69		Concrete stormwater trench	8.4	m²	13543.00	R 135.00	R 1 828 305.00	Thin concrete with minimal reinforcing
70 71	_	Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00			
72		Explosives incinerator	4.3	m³	36.00		R 14 400.00	Assume concrete is 250mm thick
73 74	_	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 7 111 475.00	
75 76		Oil store Chemical store	3.1.1 3.1.1	m² m²	407.00 407.00			
77		Cement/ Shotcrete Material store						
78 79	4	Sheeting Structural steel	2.1	m² m²	1286.00 894.00			
80		Brick wall	3.5	m²	36.00			
0.4		Structural concrete	4.4	m²	894.00	R 215.00	R 192 210.00	Remove concrete floor, foundations and bases
81	\exists	Brick Store Sheeting	2.1	m²	1286.00			
82			2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
82 83 84		Structural steel	_				R 1 080.00	
82 83		Brick wall	3.5	m²	36.00	R 30.00	1 000.00	Remove concrete floor, foundations and
82 83 84 85		Brick wall Structural concrete	3.5 4.4	m² m²	36.00 894.00			Remove concrete floor, foundations and
82 83 84 85		Brick wall				R 215.00	R 192 210.00	Remove concrete floor, foundations and bases





		Closure Costing - 18 Shaft Complex				Closu	re C	Costs - <u>Year 4</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	T	Amount	Notes
		Structural concrete							Remove concrete floor, foundations and
91 92	Н	Ventilation Duct Store	4.4	m²	894.00	R 215.	00 F	R 192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_		
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		00 F	R 120 690.00 R 1 080.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 215.	00 F	R 192 210.00	bases
98		Sheeting	2.1	m²	777.00		00 F		A
99		Structural steel	2.3.1	m²	409.00	R 135.	00 F	R 55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100		Structural concrete	4.4	m²	409.00	R 215.	00 F	R 87 935.00	bases
101 102		Locomotive store and wash bay Sheeting	2.1	m²	1655.00	R 23.	00 F	R 38 065.00	
103		Structural steel	2.3.1	m²	907.00				Assume 80kg of steel per square meter
104		Structural concrete	4.4	m²	907.00	R 215.	00 F	R 195 005.00	Remove concrete floor, foundations and bases
105		Sub - Total for demolitioning of workshops and stores					F	R 2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		_		Normal single story building
108 109		Office 1 Office 2	3.1.1	m² m²	516.00 516.00				Normal single story building Normal single story building
110		Office 3	3.1.1	m²	516.00	R 295.	00 F	R 152 220.00	Normal single story building
111	Н	Office 4 Change House 1	3.1.1 3.1.1	m² m²	516.00 686.00			R 152 220.00 R 202 370.00	Normal single story building Normal single story building
113	H	Change House 2	3.1.1	m²	686.00				Normal single story building Normal single story building
114	П	Change House 3	3.1.1	m²	686.00				Normal single story building
115 116	H	Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.	00 F	R 202 370.00	Normal single story building
118 119	Н	Change House 7 Shelter	3.1.1 3.1.1	m² m²	686.00 132.00				Normal single story building Normal single story building
120	H	First Aid Room	3.1.1	m²	111.00	R 295.	00 F	R 32 745.00	Normal single story building
121	П	Lamp House	3.1.1	m²	745.00			R 219 775.00	Normal single story building
122 123		Crush Control Room	3.1.1	m² m²	451.00 141.00				Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00	R 295.	00 F	R 177 295.00	Normal single story building
125 126		Substation 1 Substation 2	3.1.1	m² m²	91.00 162.00	R 295. R 295.	_		Normal single story building Normal single story building
127		Outside ablution block	3.1.1	m²	26.50	R 295.		R 7 817.50	Normal single story building
128		Transformer bays	0.5		00.00		20 .	202.00	
129 130		Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00				Remove concrete plinths and footings
131		Stormwater pump house	3.1.1	m²	33.00	R 295.	00 F	R 9 735.00	Normal single story building
132		Construction offices Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	990.00	R 295.	00 F	R 292 050.00	Normal single story building
133		temporary structures					F	R 3 113 562.50	
134 135		Removal of all surface related finishes Remove concrete liner from stormwater dam 1	4.3	m³	1650.00	P 400	00 F	R 660 000.00	Assume concrete is 150mm thick
136		Remove concrete liner from stormwater dam 2	4.3	m³	1650.00				Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	975.00				Assume concrete is 150mm thick
138 139	Н	Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.	_	R 2 226 150.00 R 3 936 150.00	Assume hole of mining terrain
140		Removal of all linear items							
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00			R 67 500.00 R 120 000.00	Assumed 2500m Assumed 2500m
143		Remove railway lines	5.4.2	m	5518.00	R 215.	00 F	R 1 186 370.00	
144		Remove security fencing Sub - Total for removal of all linear items	5.5.3	m	8311.00	R 27.	_	R 224 397.00 R 1 598 267.00	
146		Rehabilitation of roads					_	R 1 596 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.	00 F	R 46 828.00	A
148		Remove tar road and surfaces	8.1	m²	51444.00	R 48.	00 F	R 2 469 312.00	Assume all internal roads and carport area has tar surface
149		Remove concrete roads	4.3	m³	3565.00		00 F	R 1 426 000.00	Assume concrete is 250mm thick
150 151	H	Sub - Total for rehabilitation of roads Disposal of demolition waste					F	R 3 942 140.00	
152		Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50	2.		R 738 601.34	2.50%
153 154	Н	Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	16200.00	R 171.		R 2 770 200.00 R 3 508 801.34	Allowance was made for a 30km radius
155	H	Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects						R 33 052 854.84	
156		Mining Acrests					Ţ		
157 158		Mining Aspects Open pit reclamation including final voids and ramps							
159		Not Applicable	1.1	na	0.00	R -	I	R -	
160		Sub - Total open pit reclamation including final voids and ramps	i					R -	
161		Sealing of shafts and inclines							
162 163	Ы	Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum	1.00			R 2 573 324.00 R 2 132 000.00	10m Shaft Diameter 9m Shaft Diameter
163	H	Seal Fridge Shaft	7.1.13	sum	1.00				9m Shaft Diameter 7.5m Shaft Diameter
165		Seal BAC Shaft	7.1.10	sum	1.00		00 F	R 1 719 458.00	7.5m Shaft Diameter
166 167	H	Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils					-	R 8 144 240.00	
168		Not Applicable	1.1	na	0.00	R -		R -	
169	H	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					F	R -	
170		(non polluting potential)							
171	Ц	Stormwater dam 1					1		Assumed 100mm thick contaminated
172	L	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R 20.	00 F	R 22 380.00	Assumed 100mm thick contaminated sediment
		Load and haul contaminated soil and sediment							Dispose of at tailings dump assumed 10ki haul distance
173 174	Н	Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00			R 81 687.00 R 93 500.00	Doze walls to inside to fill voic
175		Shape and level dam surface							
	Н	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10				Shape and level surface to make free drain Rip 500mm deep
176									
176 177		Establish vegetation	10.4.1	ha	1.10	K 13 000.	00 1	R 15 180.00	
176		Establish vegetation Stormwater dam 2 Excavate contaminated sediment from dam basin and stockpile	10.4.1	ha	1.10	K 13 800.	00 1	R 15 180.00	Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex					Closure	Co	sts - <u>Year 4</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
100		Load and haul contaminated soil and sediment		2.0	4440.00	_	70.00	1	04.007.00	Dispose of at tailings dump assumed 10km haul distance
180 181		Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00 220.00		81 687.00 93 500.00	Doze walls to inside to fill voic
		Shape and level dam surface								
182 183	H	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10		13 800.00	R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					R	567 724.00	
		Rehabilitation of processing waste deposits and evaporation ponds								
186		(polluting potential)								Assumed 20m strip would not have been
187		Waste Rock dump								rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	K	20.00	R	34 340.00	Assume 250mm thick Cut to fill action assumed 20m high at
189		Reshape WRD	9.1.1	m³	29925.00		13.50		403 987.50	87.5m³/per meter
190 191		Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	10880.00 1.36		26.00 19 250.00	R R	282 880.00 26 180.00	Assumed 1km haul distance
192		Settling ponds								A
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	Assumed 300mm thick contaminated sediment
		Load and haul contaminated sediment								Dispose of at tailings dump assumed 10km
194	┢		9.6.8	m³/km	1969.00	K	73.00	К	143 737.00	haul distance
195	L	Shape and level dam surface	10.1.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining
196 197	1	Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	0.65 0.65		9 400.00 88 400.00		6 110.00 57 460.00	Rip 500mm deep Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65				8 970.00	
199	┝	Hot and Cool Well				-				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00		12 880.00	sediment
201 202	-	Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00		50 000.00 6.50		100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
		Excavate contaminated soil from dam basin and stockpile								Assume 250mm thick on 50 percent of dam
203		Excavate contaminated son from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin Dispose of at tailings dump assumed 10km
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00				66 576.00	haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00	R	220.00	R	40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	R	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1 10.4.1	ha	0.44		9 400.00 13 800.00	R R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	ĸ	6 072.00	
209		evaporation ponds (polluting potential)					R	1 312 959.50	
210 211		Reclamation of subsided areas Not Applicable	1.1	na	0.00	R	-	R	-	
212		Sub - Total for reclamation of subsided areas						R	-	
213 214		Sub - Total for Mining aspects						R	10 024 923.50	
215		General Surface Reclamation								
216 217		Topsoil stockpile Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	P	141 000.00	Rip 500mm deep
217		Typ to alleviate compaction	0.0.1	iiu	10.00				141 000.00	Establish vegetation on stockpile footprint
218 219		Establish vegetation Infrastructural areas	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area
219		illiastiticulai aleas								
220		Shape and level surface Rip to alleviate compaction	10.1.1	ha	32.00		55 250.00		1 768 000.00	Shape and level surface to make free draining Rip 500mm deep
221 222		Import 250mm topsoil	9.5.1 10.2.1	ha ha	32.00 32.00				300 800.00 2 828 800.00	Assumed from local stockpile
223		Establish vegetation	10.4.1	ha	32.00	R	13 800.00		441 600.00	
224 225		Sub - Total for General Surface Reclamation						R	5 687 200.00	
226		Water Management								
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
229		Sub - Total for Water management						K	-	
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00		119 232.00		596 160.00	Assume a 5 year period post closure
233 234	H	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	5.00 52.00		52 992.00 2 430.00		264 960.00 126 360.00	Assume a 5 year period post closure Allowed for 5 years post closure
234		Care and maintenance of reclaimed areas	12.3	na ha	52.00 52.00		15 000.00		780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects						R	1 767 480.00	
237		Contingencies for post closure aspects	1.2	sum	R 1 767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspects
238		Sub - Total for Contingencies for post closure aspects						R	176 748.00	
239		SUB - TOTAL 2 (for post - closure aspects)						R	1 944 228.00	
240		Additional allowances								
241		Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242	H	Contingencies SUB - TOTAL 3	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		(for additional allowances)						R	7 802 396.53	
244		Grand - Total (for sub - total 1+2+3)						R	58 511 602.87	
		(ior sub - total 1+2+3)								





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 5	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	Code					
2	_	Nominal allowances						To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	20.00			
5		Sub - Total for Nominal allowances	1.2	Julii	1.00	TC 2 000 000.00	R 2 630 680.00	
6 7		Demolitioning of plant and related structures Compressor house						
8		Sheeting	2.1	m²	1628.00 963.00			
9		Structural steel Structural concrete	2.3.1	m²	963.00	R 135.00		Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00	R 215.00 R 610.00	R 207 045.00	bases Assume concrete is 400mm thick
12		Winder House						
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			
15		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
16		Rock Winder House						
17 18	_	Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			
19		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and
20		Emergency winder						
21 22	-	Sheeting Structural steel	2.1	m² m²	753.00 249.00			
		Structural concrete						Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	249.00			
25	4	Structural steel	2.3.1	m²	1908.00	R 135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26	_	Structural concrete	4.4	m²	1908.00	R 215.00	R 410 220.00	
27 28	_	Fridge Shaft Ice thermal store	3.1.1	m²	781.00			
29	4	Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.00	Assume 80kg of steel per square metel Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R 215.00	R 46 870.00	
31 32	-	BAC Shaft Plant room	3.1.1	m²	1167.00	R 295.00	R 344 265.00	Normal single story building
33		Structural steel	2.3.1	m²	697.00			Assume 80kg of steel per square meter Remove concrete floor, foundations and
34		Structural concrete	4.4	m²	1000.00	R 215.00	R 215 000.00	
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R 23.00	R 40 733.00	
37		Structural steel	2.3.1	m²	1001.00			Assume 80kg of steel per square meter
38		Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.00	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.00	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R 400.00	R 31 600.00	Assume concrete is 250mm thick
42 43	_	Storage tanks Storage tanks	2.4.2	no no	3.00 2.00			
44		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.
45		Concrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.00	
46 47		Material transfer towers Office	3.1.1	m²	27.00	R 295.00	R 7 965.00	Normal single story building
48		Structural concrete (silo)	4.2	m³	206.00	R 610.00	R 125 660.00	Assume concrete is 350mm thick, silos is 1 high
49		Sheeting	2.1	m²	106.00	R 23.00	R 2 438.00	
50	-	Structural steel	2.3.1	m²	106.00	R 135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51 52		Structural concrete Suspended conveyors	4.4 5.1.5	m² m	106.00 400.00			bases Heavy conveyors
53		Sub - Total for demolitioning of plant and related structures	J. 1.J	- ""	400.00	N 040.00	R 5 080 881.00	
54 55	_	Demolitioning of all structural structures Headgear						
56 57		Structural steel	2.2 4.2	t	1900.00			
58		Structural concrete Carports	2.6.1	m³ m²	285.00 17943.00			
59 60		Winches Sheeting	2.1	m²	1286.00	R 23.00	R 29 578.00	
61	_	Structural steel	2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
62		Brick wall Structural concrete	3.5	m²	36.00			Remove concrete floor, foundations and
63 64	_	Explosives offloading bay	4.4	m²	894.00	R 215.00	R 192 210.00	bases
65		Sheeting	2.1	m²	679.00			
66	+	Structural steel	2.3.1	m²	277.00	R 135.00	R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67 68	_	Structural concrete Concrete silt traps	4.4	m² m³	277.00 318.00			bases
69		Concrete stormwater trench	8.4	m²	13543.00	R 135.00	R 1 828 305.00	Thin concrete with minimal reinforcing
70 71	_	Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00			
72		Explosives incinerator	4.3	m³	36.00		R 14 400.00	Assume concrete is 250mm thick
73 74	_	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 7 111 475.00	
75 76		Oil store Chemical store	3.1.1 3.1.1	m² m²	407.00 407.00			
77		Cement/ Shotcrete Material store						
78 79	4	Sheeting Structural steel	2.1	m² m²	1286.00 894.00			
80		Brick wall	3.5	m²	36.00			
81		Structural concrete	4.4	m²	894.00	R 215.00	R 192 210.00	Remove concrete floor, foundations and bases
	\exists	Brick Store Sheeting	2.1	m²	1286.00			
82		Structural steel	2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
82 83 84				- m2	36.00	R 30.00	R 1 080.00	1
82 83		Brick wall	3.5	m²	36.00	11 00.00		Remove concrete floor, foundations and
82 83 84 85		Brick wall Structural concrete	4.4	m²	894.00			Remove concrete floor, foundations and
82 83 84 85		Brick wall				R 215.00	R 192 210.00	Remove concrete floor, foundations and bases





		Closure Costing - 18 Shaft Complex				Closu	re C	Costs - <u>Year 5</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	T	Amount	Notes
		Structural concrete			-		+		Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.	00 F	R 192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_		
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		00 F	R 120 690.00 R 1 080.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 215.	00 F	R 192 210.00	bases
98		Sheeting	2.1	m²	777.00		00 F		A
99		Structural steel	2.3.1	m²	409.00	R 135.	00 F	R 55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100		Structural concrete	4.4	m²	409.00	R 215.	00 F	R 87 935.00	bases
101 102		Locomotive store and wash bay Sheeting	2.1	m²	1655.00	R 23.	00 F	₹ 38 065.00	
103		Structural steel	2.3.1	m²	907.00				Assume 80kg of steel per square meter
104		Structural concrete	4.4	m²	907.00	R 215.	00 F	R 195 005.00	Remove concrete floor, foundations and bases
105		Sub - Total for demolitioning of workshops and stores					F	R 2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		_		Normal single story building
108 109	Н	Office 1 Office 2	3.1.1	m² m²	516.00 516.00				Normal single story building Normal single story building
110		Office 3	3.1.1	m²	516.00	R 295.	00 F	R 152 220.00	Normal single story building
111	H	Office 4 Change House 1	3.1.1 3.1.1	m² m²	516.00 686.00			R 152 220.00 R 202 370.00	Normal single story building Normal single story building
113	H	Change House 2	3.1.1	m²	686.00				Normal single story building Normal single story building
114	П	Change House 3	3.1.1	m²	686.00				Normal single story building
115 116	H	Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.	00 F	R 202 370.00	Normal single story building
118 119	Н	Change House 7 Shelter	3.1.1	m² m²	686.00 132.00				Normal single story building Normal single story building
120	H	First Aid Room	3.1.1	m²	111.00	R 295.	00 F	R 32 745.00	Normal single story building
121	П	Lamp House	3.1.1	m²	745.00			219 775.00	Normal single story building
122 123	H	Crush Control Room	3.1.1	m² m²	451.00 141.00				Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00	R 295.	00 F	R 177 295.00	Normal single story building
125 126		Substation 1 Substation 2	3.1.1	m² m²	91.00 162.00	R 295. R 295.	_		Normal single story building Normal single story building
127		Outside ablution block	3.1.1	m²	26.50	R 295.		R 7 817.50	Normal single story building
128		Transformer bays	2.5	2	22.00	D 20	00 5	000.00	
129 130		Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00				Remove concrete plinths and footings
131		Stormwater pump house	3.1.1	m²	33.00	R 295.	00 F	9 735.00	Normal single story building
132		Construction offices Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	990.00	R 295.	00 F	R 292 050.00	Normal single story building
133		temporary structures					F	R 3 113 562.50	
134 135		Removal of all surface related finishes Remove concrete liner from stormwater dam 1	4.3	m³	1650.00	P 400	00 F	R 660 000.00	Assume concrete is 150mm thick
136		Remove concrete liner from stormwater dam 2	4.3	m³	1650.00				Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	975.00				Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.	_	R 2 226 150.00 R 3 936 150.00	Assume hole of mining terrain
140		Removal of all linear items							
141 142	Н	Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00			R 67 500.00 R 120 000.00	Assumed 2500m Assumed 2500m
143		Remove railway lines	5.4.2	m	5518.00			R 1 186 370.00	
144		Remove security fencing Sub - Total for removal of all linear items	5.5.3	m	8311.00	R 27.	_	R 224 397.00 R 1 598 267.00	
146		Rehabilitation of roads						1 000 207.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.	00 F	R 46 828.00	Assume all internal roads and carport area
148	Ш	Remove tar road and surfaces	8.1	m²	51444.00				has tar surface
149 150	Н	Remove concrete roads Sub - Total for rehabilitation of roads	4.3	m³	3565.00	R 400.	_	R 1 426 000.00	Assume concrete is 250mm thick
151	H	Disposal of demolition waste					_	3 342 140.00	
152		Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50	2.		738 601.34	2.50%
153 154	H	Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	16200.00	R 171.		R 2 770 200.00 R 3 508 801.34	Allowance was made for a 30km radius
155		Sub - Total for infrastructural aspects						R 33 052 854.84	
156 157		Mining Aspects							
158		Open pit reclamation including final voids and ramps							
159	H	Not Applicable	1.1	na	0.00	R -	F	₹ -	
160		Sub - Total open pit reclamation including final voids and ramps	;				F	₹ -	
161	Ц	Sealing of shafts and inclines	7			D 0577			40 Ch-A Dia
162 163	H	Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum	1.00			R 2 573 324.00 R 2 132 000.00	10m Shaft Diameter 9m Shaft Diameter
164		Seal Fridge Shaft	7.1.10	sum	1.00	R 1719 458.	00 F	R 1 719 458.00	7.5m Shaft Diameter
165 166	Ы	Seal BAC Shaft Sub - Total for sealing of shafts and inclines	7.1.10	sum	1.00	R 1719 458.	_	R 1719 458.00	7.5m Shaft Diameter
167	Н	Sub - Total for sealing of snafts and inclines Rehabilitation of overburden and spoils					_ ['	U 144 Z40.00	
168		Not Applicable	1.1	na	0.00	R -		₹ -	-
169	H	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds					-	R -	
170	Ш	(non polluting potential)					┙		
171	Н	Stormwater dam 1					+		Assumed 100mm thick contaminated
172		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R 20.	00 F	R 22 380.00	sediment
173		Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00	R 73.	₀₀ T,	R 81 687.00	Dispose of at tailings dump assumed 10k haul distance
174		Breach dam wall and reshape	10.1.5	m 7km	425.00			R 93 500.00	Doze walls to inside to fill voic
17F		Shape and level dam surface	10.1.1	ha	1 40	D 55.050	00 ,	0 60 775 00	Shape and level surface to make free dra
175 176	Н	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10	R 9 400.	00 F		Rip 500mm deep
		Establish vegetation	10.4.1	ha	1.10				
177		Stormwater dam 2							
177 178		Stormwater dam 2 Excavate contaminated sediment from dam basin and stockpile					+		Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 5</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment								Dispose of at tailings dump assumed 10km
180 181	_	Breach dam wall and reshape	9.6.8	m³/km m	1119.00 425.00		73.00 220.00	R R	81 687.00 93 500.00	haul distance Doze walls to inside to fill voic
		Shape and level dam surface								
182 183		Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10			R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R	567 724.00	
100		Rehabilitation of processing waste deposits and evaporation ponds	,					ĸ	567 724.00	
186		(polluting potential)				<u> </u>				
187		Waste Rock dump								Assumed 20m strip would not have been rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick
189		Reshape WRD	9.1.1	m³	29925.00	R	13.50	R	403 987.50	Cut to fill action assumed 20m high at 87.5m³/per meter
190		Import capping layers	9.6.1	m³	10880.00		26.00	R	282 880.00	Assumed 1km haul distance
191		Establish vegetation	10.4.2	ha	1.36	R	19 250.00	R	26 180.00	
192		Settling ponds				╁				Assumed 300mm thick contaminated
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	sediment
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	Dispose of at tailings dump assumed 10km haul distance
	П	Shape and level dam surface								
195 196	Щ	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	0.65 0.65		55 250.00 9 400.00	R R	35 912.50 6 110.00	Shape and level surface to make free draining Rip 500mm deep
197		Import 250mm topsoil	10.2.1	na ha	0.65		88 400.00		57 460.00	Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65		13 800.00		8 970.00	
199		Hot and Cool Well		<u> </u>		1				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00	R	12 880.00	sediment
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00			R	100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
202			0.4	- ""	2149.00	1	0.50	IX	13 900.30	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00	R	73.00	R	66 576.00	Dispose of at tailings dump assumed 10km haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00		220.00		40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	P	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1	ha	0.44		9 400.00	R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	R	6 072.00	
209		evaporation ponds (polluting potential						R	1 312 959.50	
210		Reclamation of subsided areas								
211 212		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00) R	-	R	-	
213		Sub - Total for Mining aspects						R	10 024 923.50	
214										
215 216		General Surface Reclamation Topsoil stockpile								
217		Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	R	141 000.00	Rip 500mm deep
218		Establish vegetation	10.4.1	ha	15.00	P	13 800.00	R	207 000.00	Establish vegetation on stockpile footprint area
219		Infrastructural areas	10.4.1	na	15.00	Ë	10 000.00		201 000.00	4.04
220		Shape and level curface	10 1 1	ha	22.00	B	55 250.00	Ь	1 769 000 00	Shape and level surface to make free draining
221		Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha ha	32.00 32.00		9 400.00	R	1 768 000.00 300 800.00	Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha	32.00	R	88 400.00	R	2 828 800.00	Assumed from local stockpile
223 224	Н	Establish vegetation Sub - Total for General Surface Reclamation	10.4.1	ha	32.00	ı R	13 800.00	R R	441 600.00 5 687 200.00	
225						L			U 00. 100.00	
226		Water Management				-		_		
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00) R	-	R R	-	
229		ous rotal for trater management								
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00			R	596 160.00	Assume a 5 year period post closure
233		Groundwater quality monitoring	12.2	yr	5.00				264 960.00	Assume a 5 year period post closure
234 235		Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	52.00 52.00		2 430.00 15 000.00		126 360.00 780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects			02.00	Ë	. 2 000.00	R	1 767 480.00	
237		Continuencies for nost closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect
238	Н	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	oulli	1. 1707 400.00	H	10%	R	176 748.00	reconnect to personal for post diosure aspect
239		SUB - TOTAL 2				Ī		R	1 944 228.00	
240		(for post - closure aspects)								
240		Additional allowances Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242		Contingencies	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		SUB - TOTAL 3						R	7 802 396.53	
244		(for additional allowances) Grand - Total				f		_	F0 F44 000 C	
		(for sub - total 1+2+3)						K	58 511 602.87	





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 6	
Item nr	ID Tasi	;k	Unit Rate	Unit	Quantity	Rate	Amount	Notes
1		astructural Aspects	Code		4		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2	Non	minal allowances						To assist with demolition and salvage
3	Crar		11.2	p/day	20.00			purposes
4 5	Allo	wance for the removal of salvageable equipment Sub - Total for Nominal allowances	1.2	sum	1.00	R 2 500 000.00	R 2 500 000.00 R 2 630 680.00	Nominal allowance
6		nolitioning of plant and related structures npressor house						
8	Sh	heeting	2.1	m²	1628.00			
9		tructural steel	2.3.1	m²	963.00	R 135.00	R 130 005.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
10 11		tructural concrete oncrete plinths	4.4	m² m³	963.00 380.00			bases Assume concrete is 400mm thick
12	Win	ider House						
13 14		heeting tructural steel	2.1	m² m²	3862.00 1932.00		R 88 826.00 R 260 820.00	
15	St	tructural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
16 17		k Winder House	2.1	m²	3862.00			
18		heeting tructural steel	2.3.1	m²	1932.00		R 260 820.00	Assume 80kg of steel per square meter
19	St	tructural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and bases
20 21		ergency winder heetina	2.1	m²	753.00		R 17 319.00	
22		tructural steel	2.3.1	m²	249.00		R 33 615.00	
23	St	tructural concrete	4.4	m²	249.00	R 215.00	R 53 535.00	Remove concrete floor, foundations and bases
24 25		nt Shaft tructural steel	2.3.1	m²	1908.00			Assume 80kg of steel per square meter
		tructural sees						Remove concrete floor, foundations and
26 27		lge Shaft	4.4	m²	1908.00		R 410 220.00	bases
28 29	Ice	te thermal store tructural steel	3.1.1 2.3.1	m² m²	781.00 218.00			Assume 80kg of steel per square meter
		tructural seei						Remove concrete floor, foundations and
30 31		C Shaft	4.4	m²	218.00	R 215.00	R 46 870.00	bases
32 33		lant room tructural steel	3.1.1 2.3.1	m² m²	1167.00 697.00			Normal single story building Assume 80kg of steel per square meter
		tructural concrete						Remove concrete floor, foundations and
34 35	Coo	oling towers	4.4	m²	1000.00	R 215.00	R 215 000.00	bases
36 37		heeting tructural steel	2.1	m² m²	1771.00 1001.00		R 40 733.00 R 135 135.00	Assume 80kg of steel per square meter
		tructural concrete						Remove concrete floor, foundations and
38 39		vage treatment plant	4.4	m²	1001.00	R 215.00	R 215 215.00	bases
40 41		iffice ludge drying beds	3.1.1 4.3	m² m³	33.00 79.00			Normal single story building Assume concrete is 250mm thick
42	St	torage tanks	2.4.2	no	3.00	R 26 650.00	R 79 950.00	7 todamo donoroto lo 200mm uno
43 44		torage tanks tructural steel	2.4.1	no m²	2.00 28.00	R 10 600.00 R 135.00		Assume 80kg of steel per square meter
45	Co	oncrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.00	Remove concrete hardstand with min. reinforcing
46		terial transfer towers						
47		ffice tructural concrete (silo)	3.1.1	m²	27.00			Normal single story building Assume concrete is 350mm thick, silos is
48 49		heeting	4.2 2.1	m³ m²	206.00 106.00			high
50		tructural steel	2.3.1	m²	106.00			
51	St	tructural concrete	4.4	m²	106.00	R 215.00	R 22 790.00	
52 53	Sı	uspended conveyors Sub - Total for demolitioning of plant and related structures	5.1.5	m	400.00	R 640.00	R 256 000.00 R 5 080 881.00	
54		nolitioning of all structural structures						
55 56		adgear tructural steel	2.2	t	1900.00	R 1 350.00	R 2 565 000.00	
57 58	St	tructural concrete ports	4.2 2.6.1	m³ m²	285.00 17943.00	R 610.00	R 173 850.00	
59	Win	nches						
60 61		heeting tructural steel	2.1	m² m²	1286.00 894.00	R 135.00		Assume 80kg of steel per square meter
62		rick wall	3.5	m²	36.00	R 30.00	R 1 080.00	Remove concrete floor, foundations and
63		tructural concrete	4.4	m²	894.00	R 215.00	R 192 210.00	
64 65		olosives offloading bay heeting	2.1	m²	679.00			
66	St	tructural steel	2.3.1	m²	277.00	R 135.00		Assume 80kg of steel per square meter Remove concrete floor, foundations and
67		tructural concrete	4.4	m²	277.00			bases
68 69		ncrete silt traps herete stormwater trench	4.3 8.4	m³ m²	318.00 13543.00			Assume concrete is 200mm thick Thin concrete with minimal reinforcing
70 71	Bac	ckfill plant rage bins	8.4 4.3	m² m³	5758.00 456.00		R 777 330.00 R 182 400.00	Thin concrete with minimal reinforcing Assume concrete is 250mm thick
72		losives incinerator	4.3	m³	36.00		R 14 400.00	Assume concrete is 250mm thick
73 74	Den	Sub - Total for demolitioning of all structural structures nolitioning of workshops and stores					R 7 111 475.00	
75	Oil s	store	3.1.1	m²	407.00		R 120 065.00	Normal single story building
76 77		emical store ment/ Shotcrete Material store	3.1.1	m²	407.00	R 295.00	R 120 065.00	Normal single story building
		heeting tructural steel	2.1 2.3.1	m² m²	1286.00 894.00			Assume 80kg of steel per square meter
78				m²	36.00			
	St	rick wall	3.5					Remove concrete floor, foundations and
78 79	St Br		4.4	m²	894.00	R 215.00	R 192 210.00	bases
78 79 80 81 82	St Br St Brick	rick wall tructural concrete :k Store	4.4	m²	894.00			
78 79 80 81 82 83 84	St Brick Brick St St	rick wall tructural concrete kk Store heeting tructural steel	4.4 2.1 2.3.1	m² m²	1286.00 894.00	R 23.00 R 135.00	R 29 578.00 R 120 690.00	bases
78 79 80 81 82 83	St Brick St St St Brick	rick wall tructural concrete kk Store heeting tructural steel rick wall	4.4 2.1	m²	1286.00	R 23.00 R 135.00	R 29 578.00 R 120 690.00	bases Assume 80kg of steel per square meter
78 79 80 81 82 83 84 85	St Brick St St St St St St	rick wall tructural concrete k Store heeting tructural steel rick wall tructural concrete	4.4 2.1 2.3.1	m² m²	1286.00 894.00	R 23.00 R 135.00 R 30.00	R 29 578.00 R 120 690.00 R 1 080.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
78 79 80 81 82 83 84 85	St Brick St St St St Pipin	rick wall tructural concrete kk Store heeting tructural steel rick wall	2.1 2.3.1 3.5	m² m² m²	1286.00 894.00 36.00	R 23.00 R 135.00 R 30.00	R 29 578.00 R 120 690.00 R 1 080.00 R 192 210.00	Assume 80kg of steel per square mete Remove concrete floor, foundations and





		Closure Costing - 18 Shaft Complex				Clo	sure	Costs - Year 6	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate		Amount	Notes
	П	Structural concrete				_			Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 2	15.00	R 192 210.00	bases
93		Sheeting	2.1	m²	1286.00		23.00		Assume 80kg of steel per square meter
94 95	H	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		35.00 30.00	R 120 690.00 R 1 080.00	Assume boxg of steel per square meter
96		Structural concrete	4.4	m²	894.00	D 1	15.00	R 192 210.00	Remove concrete floor, foundations and bases
97		Fan Store	4.4	III	894.00		15.00		Dases
98 99		Sheeting Structural steel	2.1 2.3.1	m² m²	777.00 409.00		23.00 35.00		Assume 80kg of steel per square meter
99	H	Structural sceen Structural concrete	2.3.1	111			35.00	K 55 2 15.00	Remove concrete floor, foundations and
100 101		Locomotive store and wash bay	4.4	m²	409.00	R 2	15.00	R 87 935.00	bases
102		Sheeting	2.1	m²	1655.00		23.00	R 38 065.00	
103		Structural steel	2.3.1	m²	907.00	R 1	35.00	R 122 445.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
104		Structural concrete	4.4	m²	907.00	R 2	15.00	R 195 005.00	bases
105		Sub - Total for demolitioning of workshops and stores						R 2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107 108		Guardhouse Office 1	3.1.1 3.1.1	m² m²	166.00 516.00		95.00	R 48 970.00 R 152 220.00	ŭ , ŭ
109		Office 2	3.1.1	m²	516.00		95.00	R 152 220.00	Normal single story building
110		Office 3	3.1.1	m²	516.00		95.00	R 152 220.00	
111 112		Office 4 Change House 1	3.1.1 3.1.1	m² m²	516.00 686.00		95.00	R 152 220.00 R 202 370.00	
113		Change House 2	3.1.1	m²	686.00	R 2	95.00	R 202 370.00	Normal single story building
114 115	H	Change House 3 Change House 4	3.1.1	m² m²	686.00 686.00		95.00	R 202 370.00 R 202 370.00	
116		Change House 5	3.1.1	m²	686.00	R 2	95.00	R 202 370.00	Normal single story building
117	H	Change House 7	3.1.1	m²	686.00		95.00	R 202 370.00 R 202 370.00	
118 119	H	Change House 7 Shelter	3.1.1	m² m²	686.00 132.00		95.00 95.00		
120	П	First Aid Room	3.1.1	m²	111.00	R 2	95.00	R 32 745.00	Normal single story building
121 122	Н	Lamp House Crush	3.1.1 3.1.1	m² m²	745.00 451.00		95.00	R 219 775.00 R 133 045.00	
123		Control Room	3.1.1	m²	141.00		95.00	R 41 595.00	
124 125		Main Substation Substation 1	3.1.1	m² m²	601.00 91.00		95.00 95.00	R 177 295.00	
125	H	Substation 1 Substation 2	3.1.1	m²	162.00		95.00	R 26 845.00 R 47 790.00	
127		Outside ablution block	3.1.1	m²	26.50	R 2	95.00	R 7 817.50	Normal single story building
128 129	H	Transformer bays Brickwork	3.5	m²	23.00	R	30.00	R 690.00	
130		Structural concrete	4.3	m³	27.00		00.00	R 10 800.00	Remove concrete plinths and footings
131 132	Ш	Stormwater pump house Construction offices	3.1.1	m² m²	33.00 990.00		95.00 95.00	R 9 735.00	
132		Sub - Total for demolitioning of permanent brick structures and	3.1.1	III	990.00	K 2	95.00	R 292 050.00	Normal single story building
133		temporary structures						R 3 113 562.50	
134 135	H	Removal of all surface related finishes Remove concrete liner from stormwater dam 1	4.3	m³	1650.00	R 4	00.00	R 660 000.00	Assume concrete is 150mm thick
136		Remove concrete liner from stormwater dam 2	4.3	m³	1650.00	R 4	00.00	R 660 000.00	Assume concrete is 150mm thick
137 138	H	Remove concrete liner from settling pond Concrete Hardstands	4.3 8.4	m³ m²	975.00 16490.00		00.00 35.00	R 390 000.00 R 2 226 150.00	
139		Sub - Total for removal of all surface related finishes	0.4		10-30.00	IX I	00.00	R 3 936 150.00	
140		Removal of all linear items	504		2500.00	В	07.00	D 67.500.00	A
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00		27.00 48.00	R 67 500.00 R 120 000.00	
143		Remove railway lines	5.4.2	m	5518.00		15.00	R 1 186 370.00	
144 145	H	Remove security fencing Sub - Total for removal of all linear items	5.5.3	m	8311.00	R	27.00	R 224 397.00 R 1 598 267.00	
146		Rehabilitation of roads							
147	H	Remove minor gravel road	8.3	m²	11707.00	R	4.00	R 46 828.00	Assume all internal roads and carport area
148		Remove tar road and surfaces	8.1	m²	51444.00		48.00	R 2 469 312.00	has tar surface
149 150	H	Remove concrete roads Sub - Total for rehabilitation of roads	4.3	m³	3565.00	R 4	00.00	R 1 426 000.00 R 3 942 140.00	
151	H	Disposal of demolition waste					_	3 342 140.00	
152		Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50		2.5%	R 738 601.34	
153 154	H	Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	16200.00	к 1	71.00	R 2 770 200.00 R 3 508 801.34	
155		Sub - Total for infrastructural aspects						R 33 052 854.84	
156 157	Н	Mining Aspects							
158		Open pit reclamation including final voids and ramps							
159	П	Not Applicable	1.1	na	0.00	R	-	R -	
160		Sub - Total open pit reclamation including final voids and ramps	•					R -	
161		Sealing of shafts and inclines				5			40.01.00
162 163	H	Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum	1.00			R 2 573 324.00 R 2 132 000.00	
164		Seal Fridge Shaft	7.1.10	sum	1.00	R 17194	58.00	R 1719 458.00	7.5m Shaft Diameter
165 166	H	Seal BAC Shaft Sub - Total for sealing of shafts and inclines	7.1.10	sum	1.00	R 17194	58.00	R 1 719 458.00 R 8 144 240.00	
167	H	Sub - Total for sealing of snafts and inclines Rehabilitation of overburden and spoils					_	0 144 240.00	
168	П	Not Applicable	1.1	na	0.00	R	-	R -	
169	H	Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds						R -	
170	Ш	(non polluting potential)							
171	Н	Stormwater dam 1							Assumed 100mm thick contaminated
172	Ш	Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R	20.00	R 22 380.00	sediment
173		Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00	R	73.00	R 81 687.00	Dispose of at tailings dump assumed 10km haul distance
174		Breach dam wall and reshape	10.1.5	m	425.00		20.00	R 93 500.00	Doze walls to inside to fill voic
175		Shape and level dam surface	10.1.1	ha	1.10	B 55.0	50.00	R 60 775.00	Shape and level surface to make free draining
176	Н	Rip to alleviate compaction	9.5.1	na ha	1.10	R 94	00.00	R 10 340.00	Rip 500mm deep
		Establish vegetation	10.4.1	ha	1.10	R 138	00.00	R 15 180.00	
177									
177 178		Stormwater dam 2 Excavate contaminated sediment from dam basin and stockpile							Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 6</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment								Dispose of at tailings dump assumed 10km
180 181	_	Breach dam wall and reshape	9.6.8	m³/km m	1119.00 425.00		73.00 220.00	R R	81 687.00 93 500.00	haul distance Doze walls to inside to fill voic
		Shape and level dam surface								
182 183		Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10			R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R	567 724.00	
100		Rehabilitation of processing waste deposits and evaporation ponds	,					ĸ	367 724.00	
186		(polluting potential)				<u> </u>				
187		Waste Rock dump								Assumed 20m strip would not have been rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick
189		Reshape WRD	9.1.1	m³	29925.00	R	13.50	R	403 987.50	Cut to fill action assumed 20m high at 87.5m³/per meter
190		Import capping layers	9.6.1	m³	10880.00		26.00	R	282 880.00	Assumed 1km haul distance
191		Establish vegetation	10.4.2	ha	1.36	R	19 250.00	R	26 180.00	
192	_	Settling ponds				1				Assumed 300mm thick contaminated
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	sediment
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	Dispose of at tailings dump assumed 10km haul distance
	П	Shape and level dam surface								
195 196	Щ	Rip to alleviate compaction	10.1.1 9.5.1	ha ha	0.65 0.65		55 250.00 9 400.00	R R	35 912.50 6 110.00	Shape and level surface to make free draining Rip 500mm deep
197		Import 250mm topsoil	10.2.1	ha	0.65		88 400.00		57 460.00	Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65		13 800.00		8 970.00	
199		Hot and Cool Well		<u> </u>		1				Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00		20.00	R	12 880.00	sediment
201 202		Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00			R	100 000.00 13 968.50	Nominal allowance Assumed dam is lined with a HDPE line
202			0.4	- ""	2149.00	1	0.50	IX	13 900.30	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00	R	73.00	R	66 576.00	Dispose of at tailings dump assumed 10km haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00		220.00		40 700.00	Doze walls to inside to fill voic
206		Shape and level dam surface	10.1.1	ha	0.44	R	55 250.00	P	24 310.00	Shape and level surface to make free draining
207		Rip to alleviate compaction	9.5.1	ha	0.44		9 400.00	R	4 136.00	Rip 500mm deep
208		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	R	13 800.00	R	6 072.00	
209		evaporation ponds (polluting potential						R	1 312 959.50	
210		Reclamation of subsided areas								
211 212		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00) R	-	R	-	
213		Sub - Total for Mining aspects						R	10 024 923.50	
214										
215 216		General Surface Reclamation Topsoil stockpile				+				
217		Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	R	141 000.00	Rip 500mm deep
218		Establish vegetation	10.4.1	ha	15.00		13 800.00	R	207 000.00	Establish vegetation on stockpile footprint area
219		Infrastructural areas	10.4.1	TIQ.	15.00	1	10 000.00		207 000.00	4.04
220		Chang and lavel gurface	10.1.1	F	20.00	_	55 250.00	Р	1 700 000 00	Shape and level surface to make free draining
220 221		Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha ha	32.00 32.00		9 400.00		1 768 000.00 300 800.00	Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha	32.00				2 828 800.00	Assumed from local stockpile
223 224		Establish vegetation Sub - Total for General Surface Reclamation	10.4.1	ha	32.00	R	13 800.00	R R	441 600.00 5 687 200.00	
225						t			0 001 200.00	
226		Water Management	4 :			_		_		
227 228		Not Applicable Sub - Total for Water Management	1.1	na	0.00	R	-	R R	-	
229		oub - Total for Water management								
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00			R	596 160.00	Assume a 5 year period post closure
233		Groundwater quality monitoring	12.2	yr	5.00		52 992.00		264 960.00	Assume a 5 year period post closure
234 235		Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	52.00 52.00		2 430.00 15 000.00		126 360.00 780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects			02.00	Ë		R	1 767 480.00	
237		Continuencies for nost closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect
238	Н	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	oulli	1. 1707 400.00	H	10%	R	176 748.00	, assumed to personation post diosure aspect
239		SUB - TOTAL 2				Ī		R	1 944 228.00	
240		(for post - closure aspects)								
241		Additional allowances Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242		Contingencies	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		SUB - TOTAL 3						R	7 802 396.53	
		(for additional allowances) Grand - Total				H		_	F0 F44	
244		(for sub - total 1+2+3)						R	58 511 602.87	





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 7	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	Code					
2		Nominal allowances						To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	20.00			
5		Sub - Total for Nominal allowances	1.2	Juin	1.00	10 2 300 000.00	R 2 630 680.00	Nonina allowance
6 7		Demolitioning of plant and related structures Compressor house						
8		Sheeting	2.1 2.3.1	m²	1628.00 963.00			Assume 80kg of steel per square meter
9		Structural steel Structural concrete	2.3.1	m²	963.00	R 135.00		Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00		R 207 045.00 R 231 800.00	bases Assume concrete is 400mm thick
12		Winder House						
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
15		Structural concrete	4.4	m²	1932.00	R 215.00		Remove concrete floor, foundations and
16		Rock Winder House						D0303
17 18	-	Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			Assume 80kg of steel per square meter
19		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.00	Remove concrete floor, foundations and
20		Emergency winder						D0303
21 22		Sheeting Structural steel	2.1	m² m²	753.00 249.00			Assume 80kg of steel per square meter
		Structural concrete						Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	249.00			
25	\dashv	Structural steel	2.3.1	m²	1908.00	R 135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26	Ц	Structural concrete	4.4	m²	1908.00	R 215.00	R 410 220.00	
27 28	H	Fridge Shaft Ice thermal store	3.1.1	m²	781.00			
29	\exists	Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.00	Assume 80kg of steel per square metel Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R 215.00	R 46 870.00	
31 32	-	BAC Shaft Plant room	3.1.1	m²	1167.00	R 295.00	R 344 265.00	Normal single story building
33		Structural steel	2.3.1	m²	697.00			Assume 80kg of steel per square metel Remove concrete floor, foundations and
34		Structural concrete	4.4	m²	1000.00	R 215.00	R 215 000.00	
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R 23.00	R 40 733.00	
37		Structural steel	2.3.1	m²	1001.00			
38		Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.00	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.00	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R 400.00	R 31 600.00	Assume concrete is 250mm thick
42 43		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00			
44		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.00	Assume 80kg of steel per square metel Remove concrete hardstand with min.
45		Concrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.00	
46 47		Material transfer towers Office	3.1.1	m²	27.00	R 295.00	R 7 965.00	Normal single story building
48		Structural concrete (silo)	4.2	m³	206.00	R 610.00	R 125 660.00	Assume concrete is 350mm thick, silos is 1 high
49		Sheeting	2.1	m²	106.00	R 23.00	R 2 438.00	
50	-	Structural steel	2.3.1	m²	106.00	R 135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51 52		Structural concrete Suspended conveyors	4.4 5.1.5	m² m	106.00 400.00			bases Heavy conveyors
53		Sub - Total for demolitioning of plant and related structures	3.1.3	- ""	400.00	K 040.00	R 5 080 881.00	
54 55		Demolitioning of all structural structures Headgear						
56 57		Structural steel	2.2 4.2	t3	1900.00			
58		Structural concrete Carports	2.6.1	m³ m²	285.00 17943.00			
59 60	_	Winches Sheeting	2.1	m²	1286.00	R 23.00	R 29 578.00	
61		Structural steel	2.3.1	m²	894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
62	H	Brick wall Structural concrete	3.5	m²	36.00			Remove concrete floor, foundations and
63 64	Н	Structural concrete Explosives offloading bay	4.4	m²	894.00	R 215.00	R 192 210.00	bases
65		Sheeting	2.1	m²	679.00			4 00 ()
66	H	Structural steel	2.3.1	m²	277.00	R 135.00	R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67 68	Ц	Structural concrete Concrete silt traps	4.4	m² m³	277.00 318.00			bases
69		Concrete stormwater trench	8.4	m²	13543.00	R 135.00	R 1 828 305.00	Thin concrete with minimal reinforcing
70 71	\dashv	Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00			
72		Explosives incinerator	4.3	m³	36.00		R 14 400.00	Assume concrete is 250mm thick
73 74	H	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores	1				R 7 111 475.00	
75		Oil store	3.1.1	m²	407.00			
76 77	Н	Chemical store Cement/ Shotcrete Material store	3.1.1	m²	407.00			
	Н	Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00			
78 79		Brick wall	3.5	m²	36.00			
78 79 80			4.4	m²	894.00	R 215.00	R 192 210.00	Remove concrete floor, foundations and bases
79	T	Structural concrete	4.4					
79 80 81 82		Brick Store		m²	1205 00	D 33 00	D 20 570 00	
79 80 81 82 83 84		Brick Store Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00	R 135.00	R 120 690.00	Assume 80kg of steel per square meter
79 80 81 82 83		Brick Store Sheeting Structural steel Brick wall	2.1			R 135.00	R 120 690.00	Assume 80kg of steel per square meter
79 80 81 82 83 84 85		Brick Store Sheeting Structural steel Brick wall Structural concrete	2.1 2.3.1	m²	894.00	R 135.00 R 30.00	R 120 690.00 R 1 080.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
79 80 81 82 83 84 85		Brick Store Sheeting Structural steel Brick wall	2.1 2.3.1 3.5	m² m²	894.00 36.00	R 135.00 R 30.00 R 215.00 R 23.00	R 120 690.00 R 1 080.00 R 192 210.00	Assume 80kg of steel per square metei Remove concrete floor, foundations and bases





		Closure Costing - 18 Shaft Complex				Closur	e Co	sts - <u>Year 7</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate		Amount	Notes
		Structural concrete							Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.00) R	192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_	29 578.00	
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			120 690.00 1 080.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 215.00) R	192 210.00	bases
98		Sheeting	2.1	m²	777.00			17 871.00	Assume 90kg of steel per aguare meter
99		Structural steel	2.3.1	m²	409.00	R 135.00) R	55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100 101		Structural concrete Locomotive store and wash bay	4.4	m²	409.00	R 215.00) R	87 935.00	bases
101		Sheeting	2.1	m²	1655.00	R 23.00) R	38 065.00	
103		Structural steel	2.3.1	m²	907.00	R 135.00) R	122 445.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
104		Structural concrete	4.4	m²	907.00	R 215.00	R	195 005.00	bases
105		Sub - Total for demolitioning of workshops and stores					R	2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		_	48 970.00	Normal single story building
108 109	Н	Office 1 Office 2	3.1.1	m² m²	516.00 516.00			152 220.00 152 220.00	Normal single story building Normal single story building
110		Office 3	3.1.1	m²	516.00	R 295.00		152 220.00	Normal single story building
111 112		Office 4 Change House 1	3.1.1	m² m²	516.00 686.00			152 220.00 202 370.00	Normal single story building Normal single story building
113		Change House 2	3.1.1	m²	686.00	R 295.00	R	202 370.00	Normal single story building
114	Ц	Change House 3	3.1.1	m²	686.00			202 370.00	Normal single story building
115 116	H	Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00			202 370.00 202 370.00	Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.00	R	202 370.00	Normal single story building
118 119	Н	Change House 7 Shelter	3.1.1	m² m²	686.00 132.00			202 370.00 38 940.00	Normal single story building Normal single story building
120	H	First Aid Room	3.1.1	m²	111.00	R 295.00) R	32 745.00	Normal single story building
121	П	Lamp House	3.1.1	m²	745.00			219 775.00	Normal single story building
122 123	Н	Crush Control Room	3.1.1	m² m²	451.00 141.00			133 045.00 41 595.00	Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00	R 295.00	R	177 295.00	Normal single story building
125 126		Substation 1 Substation 2	3.1.1	m² m²	91.00 162.00		_	26 845.00 47 790.00	Normal single story building Normal single story building
127		Outside ablution block	3.1.1	m²	26.50	R 295.00		7 817.50	Normal single story building
128		Transformer bays							
129 130		Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00			690.00 10 800.00	Remove concrete plinths and footings
131		Stormwater pump house	3.1.1	m²	33.00	R 295.00) R	9 735.00	Normal single story building
132		Construction offices Sub - Total for demolitioning of permanent brick structures and	3.1.1	m²	990.00	R 295.00) R	292 050.00	Normal single story building
133		temporary structures					R	3 113 562.50	
134		Removal of all surface related finishes	4.2	m3	1650.00	R 400.00) D	660 000.00	Assume concrete is 150mm thick
135 136		Remove concrete liner from stormwater dam 1 Remove concrete liner from stormwater dam 2	4.3	m³ m³	1650.00			660 000.00	Assume concrete is 150mm thick Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	975.00			390 000.00	Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.00	R R	2 226 150.00 3 936 150.00	Assume hole of mining terrain
140		Removal of all linear items							
141 142	Н	Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00			67 500.00 120 000.00	Assumed 2500m Assumed 2500m
143		Remove railway lines	5.4.2	m	5518.00			1 186 370.00	Assumed 2500m
144		Remove security fencing	5.5.3	m	8311.00	R 27.00	_	224 397.00	
145 146	Н	Sub - Total for removal of all linear items Rehabilitation of roads					R	1 598 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.00	R	46 828.00	
148		Remove tar road and surfaces	8.1	m²	51444.00	R 48.00	R	2 469 312.00	Assume all internal roads and carport area has tar surface
149		Remove concrete roads	4.3	m³	3565.00) R	1 426 000.00	Assume concrete is 250mm thick
150 151	Ы	Sub - Total for rehabilitation of roads Disposal of demolition waste					R	3 942 140.00	
152	Н	Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50	2.5%	6 R	738 601.34	2.50%
153		Disposal of demolition waste	9.6.7	m³/km	16200.00	R 171.00		2 770 200.00	Allowance was made for a 30km radius
154 155	H	Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R	3 508 801.34 33 052 854.84	
156									
157 158		Mining Aspects Open pit reclamation including final voids and ramps							
159	H	Not Applicable	1.1	na	0.00	R -	R		
160		Sub - Total open pit reclamation including final voids and remain					В		
160	H	Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	-				R		
162		Seal Main Shaft	7.1.15	sum	1.00			2 573 324.00	10m Shaft Diameter
163 164	Н	Seal Vent Shaft Seal Fridge Shaft	7.1.13 7.1.10	sum sum	1.00 1.00			2 132 000.00 1 719 458.00	9m Shaft Diameter 7.5m Shaft Diameter
165	H	Seal BAC Shaft	7.1.10	sum	1.00			1 719 458.00	7.5m Shaft Diameter 7.5m Shaft Diameter
		Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils					R	8 144 240.00	
166	Н			na	0.00	R -	R	-	
	H	Not Applicable	1.1	<u> </u>	2.00		R		
166 167		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1				1		
166 167 168		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds	1.1						
166 167 168 169		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1						
166 167 168 169 170 171		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)		m³	1110.00	B 20.00) P	22 380 00	Assumed 100mm thick contaminated sediment
166 167 168 169 170 171		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00			22 380.00	sediment Dispose of at tailings dump assumed 10km
166 167 168 169 170 171 172		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment	9.2	m³/km	1119.00	R 73.00) R	81 687.00	sediment Dispose of at tailings dump assumed 10km haul distance
166 167 168 169 170 171		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape	9.2			R 73.00) R		sediment Dispose of at tailings dump assumed 10km
166 167 168 169 170 171 172 173 174		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface	9.2 9.6.8 10.1.5 10.1.1	m³/km m	1119.00 425.00 1.10	R 73.00 R 220.00 R 55 250.00	R R R	81 687.00 93 500.00 60 775.00	sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill voic Shape and level surface to make free drainir
166 167 168 169 170 171 172 173 174		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape	9.2 9.6.8 10.1.5	m³/km m	1119.00 425.00	R 73.00 R 220.00 R 55 250.00 R 9 400.00) R) R) R	81 687.00 93 500.00	sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill voic
166 167 168 169 170 171 172 173 174 175 176		Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface Rip to alleviate compaction	9.2 9.6.8 10.1.5 10.1.1 9.5.1	m³/km m ha ha	1119.00 425.00 1.10 1.10	R 73.00 R 220.00 R 55 250.00 R 9 400.00) R) R) R	81 687.00 93 500.00 60 775.00 10 340.00	sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill voic Shape and level surface to make free drainir





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 7</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment								Dispose of at tailings dump assumed 10km
180 181	_	Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00		73.00 220.00	R R	81 687.00 93 500.00	haul distance Doze walls to inside to fill voic
		Shape and level dam surface								
182 183		Rip to alleviate compaction	10.1.1 9.5.1	ha ha	1.10 1.10		55 250.00 9 400.00	R	60 775.00 10 340.00	Shape and level surface to make free draining Rip 500mm deep
184		Establish vegetation	10.4.1	ha	1.10		13 800.00	R	15 180.00	
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential						R	567 724.00	
100		Rehabilitation of processing waste deposits and evaporation ponds	<u>' </u>					ĸ	567 724.00	
186		(polluting potential)				<u> </u>				
187		Waste Rock dump								Assumed 20m strip would not have been rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick
189		Reshape WRD	9.1.1	m³	29925.00	R	13.50	R	403 987.50	Cut to fill action assumed 20m high at 87.5m³/per meter
190		Import capping layers	9.6.1	m³	10880.00		26.00	R	282 880.00	Assumed 1km haul distance
191		Establish vegetation	10.4.2	ha	1.36	R	19 250.00	R	26 180.00	
192		Settling ponds				1				Assumed 300mm thick contaminated
193		Remove contaminated sediment	9.2	m³	1969.00	R	20.00	R	39 380.00	sediment
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00		73.00	R	143 737.00	Dispose of at tailings dump assumed 10km haul distance
104	Н	Chang and lovel dam surface	5.5.0	III /KIII	1909.00	11			1-0 / 5/ .00	
195	Щ	Shape and level dam surface	10.1.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining
196 197		Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha ha	0.65 0.65		9 400.00 88 400.00	R R	6 110.00 57 460.00	Rip 500mm deep Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65		13 800.00		8 970.00	
199		Hot and Cool Well				Ľ				Assumed 200mm thick conteminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00	R	20.00	R	12 880.00	Assumed 300mm thick contaminated sediment
201		Remove water storage tanks	1.2	sum	2.00	R	50 000.00	R	100 000.00	Nominal allowance
202		Remove HDPE liner	6.4	m²	2149.00) R	6.50	R	13 968.50	Assumed dam is lined with a HDPE line Assume 250mm thick on 50 percent of dam
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
004		Load and haul contaminated soil and sediment		20	040.00		70.00	_	00 570 00	Dispose of at tailings dump assumed 10km
204 205		Breach dam wall and reshape	9.6.8	m³/km m	912.00 185.00		73.00 220.00		66 576.00 40 700.00	haul distance Doze walls to inside to fill voic
200		Shape and level dam surface	10.1.0		100.00	Ť	220.00		10 700.00	
206 207		*	10.1.1 9.5.1	ha ha	0.44 0.44		55 250.00 9 400.00		24 310.00 4 136.00	Shape and level surface to make free draining Rip 500mm deep
208		Rip to alleviate compaction Establish vegetation	10.4.1	ha	0.44		13 800.00		6 072.00	Kip Sooniin deep
		Sub - Total for rehabilitation of processing waste deposits and								
209 210		evaporation ponds (polluting potential Reclamation of subsided areas)			 		R	1 312 959.50	
211		Not Applicable	1.1	na	0.00	R	-	R	-	
212		Sub - Total for reclamation of subsided areas						R	-	
213 214		Sub - Total for Mining aspects				 		R	10 024 923.50	
215		General Surface Reclamation								
216		Topsoil stockpile	0.5.4		45.00		0.400.00	_	444.000.00	Die 500eres dans
217		Rip to alleviate compaction	9.5.1	ha	15.00	K	9 400.00	К	141 000.00	Rip 500mm deep Establish vegetation on stockpile footprint
218		Establish vegetation	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area
219		Infrastructural areas				₩				
220		Shape and level surface	10.1.1	ha	32.00	R	55 250.00	R	1 768 000.00	Shape and level surface to make free draining
221		Rip to alleviate compaction	9.5.1	ha	32.00	R	9 400.00	R	300 800.00	Rip 500mm deep
222 223		Import 250mm topsoil Establish vegetation	10.2.1 10.4.1	ha ha	32.00 32.00				2 828 800.00 441 600.00	Assumed from local stockpile
224	H	Sub - Total for General Surface Reclamation	10.4.1	ııa.	32.00	. 15	13 000.00	R	5 687 200.00	
225										
226 227		Water Management Not Applicable	1.1	na	0.00) P		R		
228		Sub - Total for Water Management	1.1	IId	0.00	, K	-	R	-	
229										
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00		119 232.00	R	596 160.00	Assume a 5 year period post closure
233	\square	Groundwater quality monitoring	12.2	yr	5.00				264 960.00	Assume a 5 year period post closure
234 235		Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	52.00 52.00		2 430.00 15 000.00		126 360.00 780 000.00	Allowed for 5 years post closure Allowed for 5 years post closure
236		Sub - Total for Post closure aspects			52.00	Ë		R	1 767 480.00	
237		Continuencies for nost closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect
238	Н	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	oulli	1. 1707 400.00	H	10%	R	176 748.00	reconnect to personal for post diosure aspect
239		SUB - TOTAL 2				Ī		R	1 944 228.00	
240		(for post - closure aspects)								
240		Additional allowances Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242		Contingencies	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 10 percent of sub - total 1
243		SUB - TOTAL 3						R	7 802 396.53	
		(for additional allowances) Grand - Total				H				
244		(for sub - total 1+2+3)						R	58 511 602.87	





		Closure Costing - 18 Shaft Complex					Closure	Costs - Year 8	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate	Amount	Notes
1		Infrastructural Aspects	Code						
2		Nominal allowances				-			To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	20.00			R 130 680.00 R 2 500 000.00	purposes Nominal allowance
5		Sub - Total for Nominal allowances		ouiii	1.00	Ë	2 000 000.00	R 2 630 680.00	Tonina diorano
6 7		Demolitioning of plant and related structures Compressor house				-			
8		Sheeting Structural steel	2.1 2.3.1	m² m²	1628.00 963.00			R 37 444.00 R 130 005.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00		215.00 610.00	R 207 045.00 R 231 800.00	Assume concrete is 400mm thick
12 13		Winder House Sheeting	2.1	m²	3862.00	R	23.00	R 88 826.00	
14		Structural steel	2.3.1	m²	1932.00		135.00	R 260 820.00	Assume 80kg of steel per square meter
15		Structural concrete	4.4	m²	1932.00	R	215.00	R 415 380.00	Remove concrete floor, foundations and bases
16 17		Rock Winder House Sheeting	2.1	m²	3862.00	R	23.00	R 88 826.00	
18		Structural steel	2.3.1	m²	1932.00		135.00	R 260 820.00	Assume 80kg of steel per square meter
19		Structural concrete	4.4	m²	1932.00	R	215.00	R 415 380.00	Remove concrete floor, foundations and bases
20 21		Emergency winder Sheeting	2.1	m²	753.00	R	23.00	R 17 319.00	
22		Structural steel	2.3.1	m²	249.00		135.00	R 33 615.00	Assume 80kg of steel per square meter
23		Structural concrete	4.4	m²	249.00	R	215.00	R 53 535.00	Remove concrete floor, foundations and bases
24 25	٦	Vent Shaft Structural steel	2.3.1	m²	1908.00	R	135.00	R 257 580.00	Assume 80kg of steel per square meter
	T	Structural concrete							Remove concrete floor, foundations and
26 27		Fridge Shaft	4.4	m²	1908.00			R 410 220.00	bases
28 29		loe thermal store Structural steel	3.1.1 2.3.1	m² m²	781.00 218.00		295.00 135.00	R 230 395.00 R 29 430.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
30 31		BAC Shaft	4.4	m²	218.00	R	215.00	R 46 870.00	bases
32 33		Plant room Structural steel	3.1.1 2.3.1	m² m²	1167.00 697.00			R 344 265.00 R 94 095.00	Normal single story building Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
34 35		Cooling towers	4.4	m²	1000.00	R	215.00	R 215 000.00	bases
36 37		Sheeting Structural steel	2.1	m² m²	1771.00 1001.00			R 40 733.00 R 135 135.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
38 39		Sewage treatment plant	4.4	m²	1001.00	R	215.00	R 215 215.00	bases
40 41		Office Sludge drying beds	3.1.1 4.3	m² m³	33.00 79.00			R 9 735.00 R 31 600.00	Normal single story building Assume concrete is 250mm thick
42		Storage tanks	2.4.2	no	3.00	R	26 650.00	R 79 950.00	
43 44		Storage tanks Structural steel	2.4.1	no m²	2.00 28.00		10 600.00 135.00	R 21 200.00 R 3 780.00	Assume 80kg of steel per square meter
45		Concrete hardstand	8.4	m²	1820.00	R	135.00	R 245 700.00	Remove concrete hardstand with min. reinforcing
46		Material transfer towers							Normal single story building
47		Office Structural concrete (silo)	3.1.1	m²	27.00				Assume concrete is 350mm thick, silos is 10
48 49		Sheeting	4.2 2.1	m³ m²	206.00 106.00		610.00 23.00	R 125 660.00 R 2 438.00	high
50		Structural steel	2.3.1	m²	106.00	R	135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51		Structural concrete	4.4	m²	106.00			R 22 790.00	bases
52 53		Suspended conveyors Sub - Total for demolitioning of plant and related structures	5.1.5	m	400.00	R	640.00	R 256 000.00 R 5 080 881.00	Heavy conveyors
54		Demolitioning of all structural structures				L			
55 56		Headgear Structural steel	2.2	t	1900.00	R	1 350.00		
57 58		Structural concrete Carports	4.2 2.6.1	m³ m²	285.00 17943.00			R 173 850.00 R 986 865.00	Mass reinforced concrete Assumed IBR sheeting
59		Winches							
60 61		Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00	R	135.00	R 29 578.00 R 120 690.00	Assume 80kg of steel per square meter
62	٦	Brick wall	3.5	m²	36.00	R	30.00	R 1 080.00	Remove concrete floor, foundations and
63 64		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	bases
65		Explosives offloading bay Sheeting	2.1	m²	679.00			R 15 617.00	
66		Structural steel	2.3.1	m²	277.00	R	135.00	R 37 395.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
67		Structural concrete Concrete silt traps	4.4	m²	277.00			R 59 555.00 R 127 200.00	bases
68 69		Concrete stormwater trench	4.3 8.4	m³ m²	318.00 13543.00	R	135.00	R 1 828 305.00	Assume concrete is 200mm thick Thin concrete with minimal reinforcing
70 71	J	Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00			R 777 330.00 R 182 400.00	Thin concrete with minimal reinforcing Assume concrete is 250mm thick
72		Explosives incinerator	4.3	m³	36.00		400.00	R 14 400.00	Assume concrete is 250mm thick
73 74	-	Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores	•			-		R 7 111 475.00	
75		Oil store	3.1.1	m²	407.00			R 120 065.00	Normal single story building
76 77		Chemical store Cement/ Shotcrete Material store	3.1.1	m²	407.00		295.00	R 120 065.00	Normal single story building
78 79	J	Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00		23.00 135.00	R 29 578.00 R 120 690.00	Assume 80kg of steel per square meter
80		Brick wall	3.5	m²	36.00			R 1 080.00	
81		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	Remove concrete floor, foundations and bases
82 83		Brick Store	2.1	m²	1286.00		23.00		
84		Sheeting Structural steel	2.3.1	m²	894.00	R	135.00	R 120 690.00	Assume 80kg of steel per square meter
85	-	Brick wall	3.5	m²	36.00	R	30.00	R 1 080.00	Remove concrete floor, foundations and
86 87	4	Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	bases
88		Piping Store Sheeting	2.1	m²	1286.00		23.00		
89	_	Structural steel	2.3.1	m²	894.00		135.00	R 120 690.00	Assume 80kg of steel per square meter





		Closure Costing - 18 Shaft Complex				Closur	e Co	osts - <u>Year 8</u>	
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate		Amount	Notes
		Structural concrete	Code						Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.0) R	192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_		
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00				Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 215.0) R	192 210.00	bases
98		Sheeting	2.1	m²	777.00				A service OOLs of start and service starts
99		Structural steel	2.3.1	m²	409.00	R 135.0) R	55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100		Structural concrete	4.4	m²	409.00	R 215.0) R	87 935.00	bases
101 102		Locomotive store and wash bay Sheeting	2.1	m²	1655.00	R 23.0	R	38 065.00	
103		Structural steel	2.3.1	m²	907.00			122 445.00	Assume 80kg of steel per square meter
104		Structural concrete	4.4	m²	907.00	R 215.0) R	195 005.00	Remove concrete floor, foundations and bases
105		Sub - Total for demolitioning of workshops and stores					R	2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		_		Normal single story building
108 109	Н	Office 1 Office 2	3.1.1	m² m²	516.00 516.00				Normal single story building Normal single story building
110		Office 3	3.1.1	m²	516.00		_		Normal single story building
111		Office 4	3.1.1	m²	516.00				Normal single story building
112 113	H	Change House 1 Change House 2	3.1.1 3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
114		Change House 3	3.1.1	m²	686.00	R 295.0) R	202 370.00	Normal single story building
115 116	Н	Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.0) R	202 370.00	Normal single story building
118 119	Ы	Change House 7	3.1.1	m² m²	686.00 132.00				Normal single story building Normal single story building
119	H	Shelter First Aid Room	3.1.1 3.1.1	m² m²	132.00 111.00				Normal single story building Normal single story building
121		Lamp House	3.1.1	m²	745.00	R 295.0) R	219 775.00	Normal single story building
122 123		Crush Control Room	3.1.1	m² m²	451.00 141.00				Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00				Normal single story building
125		Substation 1	3.1.1	m²	91.00		_		Normal single story building
126 127	Н	Substation 2 Outside ablution block	3.1.1	m² m²	162.00 26.50	R 295.0 R 295.0			Normal single story building Normal single story building
128		Transformer bays							
129 130	Н	Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00				Remove concrete plinths and footings
131		Stormwater pump house	3.1.1	m²	33.00				Normal single story building
132		Construction offices	3.1.1	m²	990.00	R 295.0) R	292 050.00	Normal single story building
133		Sub - Total for demolitioning of permanent brick structures and temporary structures					R	3 113 562.50	
134		Removal of all surface related finishes							
135 136		Remove concrete liner from stormwater dam 1 Remove concrete liner from stormwater dam 2	4.3	m³ m³	1650.00 1650.00				Assume concrete is 150mm thick Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	975.00	R 400.0) R	390 000.00	Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.0	R R		Assume hole of mining terrain
140		Removal of all linear items						0 300 100.00	
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00				Assumed 2500m Assumed 2500m
143	Н	Remove railway lines	5.4.2	m	5518.00				Assumed 2500m
144		Remove security fencing	5.5.3	m	8311.00	R 27.0	_		
145 146		Sub - Total for removal of all linear items Rehabilitation of roads					R	1 598 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.0	R	46 828.00	
148		Remove tar road and surfaces	8.1	m²	51444.00	R 48.0) R	2 469 312.00	Assume all internal roads and carport area has tar surface
149		Remove concrete roads	4.3	m³	3565.00) R	1 426 000.00	Assume concrete is 250mm thick
150 151		Sub - Total for rehabilitation of roads Disposal of demolition waste					R	3 942 140.00	
152	H	Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50	2.5	% R	738 601.34	2.50%
153		Disposal of demolition waste	9.6.7	m³/km	16200.00	R 171.0		2 770 200.00	Allowance was made for a 30km radius
154 155	H	Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R		
156							Í		
157 158		Mining Aspects Open pit reclamation including final voids and ramps					Ŧ		
159	H	Not Applicable	1.1	na	0.00	R -	R	-	
160		Sub - Total open pit reclamation including final voids and remain					В		
160	H	Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	-				R	•	
162		Seal Main Shaft	7.1.15	sum	1.00				10m Shaft Diameter
163 164	H	Seal Vent Shaft Seal Fridge Shaft	7.1.13 7.1.10	sum	1.00 1.00				9m Shaft Diameter 7.5m Shaft Diameter
165		Seal BAC Shaft	7.1.10	sum	1.00		0 R	1 719 458.00	7.5m Shaft Diameter
166 167	Ы	Sub - Total for sealing of shafts and inclines					R	8 144 240.00	
168	H	Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	R -	R	-	
169	Ц	Sub - Total for rehabilitation of overburden and spoils					R		
170		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					1		
171		Stormwater dam 1					Ţ		
172		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R 20.0) R	22 380.00	Assumed 100mm thick contaminated sediment
	H	Load and haul contaminated soil and sediment							Dispose of at tailings dump assumed 10k
173 174	Н	Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00				haul distance Doze walls to inside to fill voic
11.44	H			- '''					
		Shape and level dam surface Rip to alleviate compaction	10.1.1 9.5.1	ha	1.10				Shape and level surface to make free dra Rip 500mm deep
175			9.D.T	ha	1.10				rup oddinin deep
175 176 177		Establish vegetation	10.4.1	ha	1.10	R 13 800.0	0 R	15 180.00	
176			10.4.1	ha	1.10	R 13 800.0	0 R	15 180.00	Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex	Closure Costs - <u>Year 8</u>									
Item nr	ID	Task	Unit Rate	Unit	Quantity		Rate		Amount	Notes		
			Code							Dispose of at tailings dump assumed 10km		
180		Load and haul contaminated soil and sediment	9.6.8	m³/km	1119.00			R	81 687.00	haul distance		
181	<u> </u>	Breach dam wall and reshape	10.1.5	m	425.00	R	220.00	R	93 500.00	Doze walls to inside to fill voic		
182		Shape and level dam surface	10.1.1	ha	1.10	R	55 250.00	R	60 775.00	Shape and level surface to make free draining		
183		Rip to alleviate compaction	9.5.1	ha	1.10		9 400.00		10 340.00	Rip 500mm deep		
184	<u> </u>	Establish vegetation	10.4.1	ha	1.10	R	13 800.00	R	15 180.00			
185		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential	,					R	567 724.00			
	t	Rehabilitation of processing waste deposits and evaporation ponds										
186		(polluting potential)										
187		Waste Rock dump								Assumed 20m strip would not have been rehabilitated		
188	H	Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick		
		Reshape WRD								Cut to fill action assumed 20m high at		
189 190	<u> </u>	·	9.1.1	m³	29925.00 10880.00		13.50 26.00	R	403 987.50	87.5m³/per meter		
190	1	Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	1.36			R	282 880.00 26 180.00	Assumed 1km haul distance		
192	t	Settling ponds										
		Remove contaminated sediment								Assumed 300mm thick contaminated		
193	<u> </u>		9.2	m³	1969.00	R	20.00	R	39 380.00	sediment Dispose of at tailings dump assumed 10km		
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	haul distance		
	T	Chang and level dam surface			7.000.00	Ħ	. 0.00					
195		Shape and level dam surface	10.1.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining		
196 197	H	Rip to alleviate compaction Import 250mm topsoil	9.5.1 10.2.1	ha	0.65 0.65		9 400.00 88 400.00		6 110.00 57 460.00	Rip 500mm deep Assumed from local stockpile		
197	H	Import 250mm topsoil Establish vegetation	10.2.1	ha ha	0.65			R	8 970.00	, assumed from local stockpile		
199	T	Hot and Cool Well	1		5.05	<u> </u>	.0 000.00	••	5 57 5.50			
		Excavate contaminated sediment from dam basin and stockpile								Assumed 300mm thick contaminated		
200	<u> </u>	'	9.2	m³	644.00			R	12 880.00	sediment Nominal allowance		
201	-	Remove water storage tanks Remove HDPE liner	1.2 6.4	sum m²	2.00 2149.00			R	100 000.00 13 968.50	Assumed dam is lined with a HDPE line		
202	H		0.1		2110.00	 ``	0.00		10 000.00	Assume 250mm thick on 50 percent of dam		
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin		
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00	B	72.00	R	66 576 00	Dispose of at tailings dump assumed 10km haul distance		
204	<u> </u>	Breach dam wall and reshape	10.1.5	m	185.00		73.00 220.00	R	66 576.00 40 700.00	Doze walls to inside to fill voic		
200	t		10.1.0		100.00		220.00		10 700.00			
206		Shape and level dam surface	10.1.1	ha	0.44		55 250.00	R	24 310.00	Shape and level surface to make free draining		
207 208	<u> </u>	Rip to alleviate compaction	9.5.1 10.4.1	ha	0.44 0.44			R R	4 136.00	Rip 500mm deep		
200	H	Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	0.44	, K	13 800.00	K	6 072.00			
209		evaporation ponds (polluting potential)					R	1 312 959.50			
210		Reclamation of subsided areas										
211	<u> </u>	Not Applicable	1.1	na	0.00	R	-	R	-			
212 213	H	Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects				-		R	10 024 923.50			
214	H	Cas Total of mining aspects				1			10 024 020.00			
215		General Surface Reclamation										
216		Topsoil stockpile	0.5.4		45.00		0.400.00	_	111 000 00	Dia 500 da		
217	┢	Rip to alleviate compaction	9.5.1	ha	15.00	К	9 400.00	R	141 000.00	Rip 500mm deep Establish vegetation on stockpile footprint		
218		Establish vegetation	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area		
219		Infrastructural areas										
						l_		_				
220 221	-	Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha ha	32.00 32.00			R R	1 768 000.00 300 800.00	Shape and level surface to make free draining Rip 500mm deep		
222	H	Import 250mm topsoil	10.2.1	ha	32.00		88 400.00		2 828 800.00	Assumed from local stockpile		
223		Establish vegetation	10.4.1	ha	32.00			R	441 600.00			
224	L	Sub - Total for General Surface Reclamation						R	5 687 200.00			
225 226		Water Management										
226		Not Applicable	1.1	na	0.00	R		R				
228	H	Sub - Total for Water Management		·iu	3.00	ľ	-	R	-			
229												
230		SUB - TOTAL 1						R	48 764 978.34			
		(for infrastructural and related structures										
231 232		Post - closure aspects Surface water quality monitoring	12.1	yr	5.00	R	119 232.00	R	596 160.00	Assume a 5 year period post closure		
233	H	Groundwater quality monitoring	12.1	yr	5.00		52 992.00		264 960.00	Assume a 5 year period post closure Assume a 5 year period post closure		
234		Reclamation monitoring on reclaimed areas	12.3	ha	52.00	R	2 430.00	R	126 360.00	Allowed for 5 years post closure		
235		Care and maintenance of reclaimed areas	12.4	ha	52.00	R	15 000.00		780 000.00	Allowed for 5 years post closure		
236	L	Sub - Total for Post closure aspects				<u> </u>		R	1 767 480.00			
237		Contingencies for post closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect		
238	H	Sub - Total for Contingencies for post closure aspects		Jam			1070	R	176 748.00	The second deposits deposits deposits		
239		SUB - TOTAL 2						R	1 944 228.00			
		(for post - closure aspects)							1 344 220.00			
240		Additional allowances			D 40 704 1				0.005.055.	A		
241 242	1	Preliminary and General Contingencies	1.2	sum	R 48 764 978.34 R 48 764 978.34	<u> </u>		R R	2 925 898.70 4 876 497.83	Assume 6 percent of sub - total 1		
	H	SUB - TOTAL 3	1.2	Sum	1 40 / 04 9 / 8.34		10%			Assume 10 percent of sub - total 1		
243		(for additional allowances)						R	7 802 396.53			
	Г	Grand - Total						R	58 511 602.87			
244												





		Closure Costing - 18 Shaft Complex					Closure	Costs - Year 9	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate	Amount	Notes
1		Infrastructural Aspects	Code						
2	_	Nominal allowances							To assist with demolition and salvage
3		Crane	11.2 1.2	p/day sum	20.00		6 534.00	R 130 680.00 R 2 500 000.00	purposes
5		Allowance for the removal of salvageable equipment Sub - Total for Nominal allowances	1.2	sum	1.00	R Z	500 000.00	R 2 630 680.00	Nominal allowance
6 7		Demolitioning of plant and related structures Compressor house							
8		Sheeting	2.1	m²	1628.00		23.00		A source OOL of the land of the land
9		Structural steel	2.3.1	m²	963.00	R	135.00	R 130 005.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
10 11		Structural concrete Concrete plinths	4.4 4.2	m² m³	963.00 380.00	R	215.00 610.00	R 207 045.00 R 231 800.00	bases Assume concrete is 400mm thick
12		Winder House							Addition Controller is 400mm unor
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00		23.00 135.00		Assume 80kg of steel per square meter
15		Structural concrete		m²	1932.00		215.00		Remove concrete floor, foundations and bases
16		Rock Winder House	4.4	m²					udses
17 18		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00		23.00 135.00	R 88 826.00 R 260 820.00	Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and bases
19 20		Emergency winder	4.4	m²	1932.00	R	215.00	R 415 380.00	Dases
21 22		Sheeting Structural steel	2.1	m² m²	753.00 249.00		23.00 135.00		Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
23 24		Vent Shaft	4.4	m²	249.00	R	215.00	R 53 535.00	bases
25	\exists	Structural steel	2.3.1	m²	1908.00	R	135.00	R 257 580.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26	Щ	Structural concrete	4.4	m²	1908.00	R	215.00	R 410 220.00	bases
27 28	Н	Fridge Shaft Ice thermal store	3.1.1	m²	781.00	R	295.00	R 230 395.00	
29	П	Structural steel	2.3.1	m²	218.00	R	135.00		Assume 80kg of steel per square metel Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R	215.00	R 46 870.00	bases
31 32		BAC Shaft Plant room	3.1.1	m²	1167.00	R	295.00	R 344 265.00	Normal single story building
33		Structural steel	2.3.1	m²	697.00	R	135.00		Assume 80kg of steel per square meter
34		Structural concrete	4.4	m²	1000.00	R	215.00	R 215 000.00	Remove concrete floor, foundations and bases
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R	23.00	R 40 733.00	
37		Structural steel	2.3.1	m²	1001.00		135.00		Assume 80kg of steel per square meter
38		Structural concrete	4.4	m²	1001.00	R	215.00	R 215 215.00	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R	295.00	R 9 735.00	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R	400.00	R 31 600.00	Assume concrete is 250mm thick
42		Storage tanks Storage tanks	2.4.2	no no	3.00 2.00	R R	26 650.00 10 600.00		
44		Structural steel	2.3.1	m²	28.00	R	135.00	R 3 780.00	Assume 80kg of steel per square meter Remove concrete hardstand with min.
45		Concrete hardstand	8.4	m²	1820.00	R	135.00	R 245 700.00	reinforcing
46 47		Material transfer towers Office	3.1.1	m²	27.00	R	295.00	R 7 965.00	Normal single story building
48		Structural concrete (silo)	4.2	m³	206.00	R	610.00	R 125 660.00	Assume concrete is 350mm thick, silos is 1 high
49		Sheeting	2.1	m²	106.00	R	23.00	R 2 438.00	
50		Structural steel	2.3.1	m²	106.00	R	135.00	R 14 310.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51 52		Structural concrete Suspended conveyors	4.4 5.1.5	m² m	106.00 400.00		215.00 640.00		bases Heavy conveyors
53		Sub - Total for demolitioning of plant and related structures	J. 1.J		400.00	IX	040.00	R 5 080 881.00	Ticavy conveyore
54 55		Demolitioning of all structural structures Headgear							
56 57		Structural steel	2.2 4.2	t m³	1900.00 285.00		1 350.00		Mass reinforced concrete
58		Structural concrete Carports	2.6.1	m³ m²	17943.00		610.00 55.00		Assumed IBR sheeting
59 60		Winches Sheeting	2.1	m²	1286.00	R	23.00	R 29 578.00	
61	\Box	Structural steel	2.3.1	m²	894.00	R	135.00	R 120 690.00	Assume 80kg of steel per square meter
62		Brick wall Structural concrete	3.5	m²	36.00		30.00		Remove concrete floor, foundations and
63 64		Explosives offloading bay	4.4	m²	894.00	R	215.00	R 192 210.00	bases
65		Sheeting Structural steel	2.1	m²	679.00		23.00		Assume 80kg of steel per square meter
66	\dashv	Structural steel Structural concrete	2.3.1	m²	277.00		135.00		Remove concrete floor, foundations and
67 68	\vdash	Concrete silt traps	4.4	m² m³	277.00 318.00		215.00 400.00		bases Assume concrete is 200mm thick
69		Concrete stormwater trench	8.4	m²	13543.00	R	135.00	R 1 828 305.00	Thin concrete with minimal reinforcing
70 71		Backfill plant Storage bins	8.4 4.3	m² m³	5758.00 456.00		135.00 400.00		Thin concrete with minimal reinforcing Assume concrete is 250mm thick
72 73		Explosives incinerator Sub - Total for demolitioning of all structural structures	4.3	m³	36.00		400.00	R 14 400.00	Assume concrete is 250mm thick
74		Demolitioning of workshops and stores							
75 76		Oil store Chemical store	3.1.1 3.1.1	m² m²	407.00 407.00		295.00 295.00		Normal single story building Normal single story building
77		Cement/ Shotcrete Material store							
78 79	\dashv	Sheeting Structural steel	2.1	m² m²	1286.00 894.00		23.00 135.00		Assume 80kg of steel per square meter
80		Brick wall	3.5	m²	36.00		30.00		
81		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	Remove concrete floor, foundations and bases
82	H	Brick Store Sheeting	2.1	m²	1286.00	R	23.00	R 29 578.00	
	H	Structural steel	2.3.1	m²	894.00	R	135.00	R 120 690.00	Assume 80kg of steel per square meter
83 84	_		3.5	m²	36.00	К	30.00	R 1 080.00	
83		Brick wall							Remove concrete floor, foundations and
83 84 85 86		Structural concrete	4.4	m²	894.00	R	215.00	R 192 210.00	Remove concrete floor, foundations and bases
83 84 85				m² m² m²	894.00 1286.00 894.00	R	215.00 23.00 135.00	R 29 578.00	





		Closure Costing - 18 Shaft Complex				Closur	e Co	osts - <u>Year 9</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate		Amount	Notes
		Structural concrete					_		Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.0	0 R	192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_		
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00		0 R 0 R		Assume 80kg of steel per square meter
		Structural concrete							Remove concrete floor, foundations and
96 97		Fan Store	4.4	m²	894.00	R 215.0	0 R	192 210.00	bases
98		Sheeting	2.1	m²	777.00		0 R		A service OOks of start and services made
99	Н	Structural steel	2.3.1	m²	409.00	R 135.0	0 R	55 215.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
100		Structural concrete	4.4	m²	409.00	R 215.0	0 R	87 935.00	bases
101 102		Locomotive store and wash bay Sheeting	2.1	m²	1655.00	R 23.0	0 R	38 065.00	
103		Structural steel	2.3.1	m²	907.00			122 445.00	Assume 80kg of steel per square meter
104		Structural concrete	4.4	m²	907.00	R 215.0	0 R	195 005.00	Remove concrete floor, foundations and bases
105		Sub - Total for demolitioning of workshops and stores					R		
106		Demolitioning of permanent brick structures and temporary structures							
107		Guardhouse	3.1.1	m²	166.00		_		Normal single story building
108 109		Office 1 Office 2	3.1.1	m² m²	516.00 516.00				Normal single story building Normal single story building
110		Office 3	3.1.1	m²	516.00		_		Normal single story building
111	П	Office 4	3.1.1	m²	516.00				Normal single story building
112 113	H	Change House 1 Change House 2	3.1.1 3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
114	Ц	Change House 3	3.1.1	m²	686.00	R 295.0	0 R	202 370.00	Normal single story building
115 116	Н	Change House 4 Change House 5	3.1.1	m² m²	686.00 686.00				Normal single story building Normal single story building
117		Change House 6	3.1.1	m²	686.00	R 295.0	0 R	202 370.00	Normal single story building
118 119	Ы	Change House 7 Shelter	3.1.1 3.1.1	m² m²	686.00 132.00				Normal single story building Normal single story building
119	H	Shelter First Aid Room	3.1.1	m² m²	132.00 111.00				Normal single story building Normal single story building
121		Lamp House	3.1.1	m²	745.00	R 295.0	0 R	219 775.00	Normal single story building
122 123		Crush Control Room	3.1.1	m² m²	451.00 141.00				Normal single story building Normal single story building
124		Main Substation	3.1.1	m²	601.00				Normal single story building
125		Substation 1	3.1.1	m²	91.00		_		Normal single story building
126 127	Н	Substation 2 Outside ablution block	3.1.1	m² m²	162.00 26.50	R 295.0 R 295.0			Normal single story building Normal single story building
128		Transformer bays							
129 130	Н	Brickwork Structural concrete	3.5 4.3	m² m³	23.00 27.00				Remove concrete plinths and footings
131		Stormwater pump house	3.1.1	m²	33.00				Normal single story building
132		Construction offices	3.1.1	m²	990.00	R 295.0	0 R	292 050.00	Normal single story building
133		Sub - Total for demolitioning of permanent brick structures and temporary structures					R	3 113 562.50	
134		Removal of all surface related finishes					Į		
135 136		Remove concrete liner from stormwater dam 1 Remove concrete liner from stormwater dam 2	4.3	m³ m³	1650.00 1650.00				Assume concrete is 150mm thick Assume concrete is 150mm thick
137		Remove concrete liner from settling pond	4.3	m³	975.00	R 400.0	0 R	390 000.00	Assume concrete is 150mm thick
138 139		Concrete Hardstands Sub - Total for removal of all surface related finishes	8.4	m²	16490.00	R 135.0	0 R		Assume hole of mining terrain
140		Removal of all linear items						0 300 100.00	
141 142		Remove overland steel pipelines (<200mm) Remove overland steel pipelines (200-350mm)	5.2.1 5.2.2	m m	2500.00 2500.00				Assumed 2500m Assumed 2500m
143	Н	Remove railway lines	5.4.2	m	5518.00				Assumed 2500m
144		Remove security fencing	5.5.3	m	8311.00	R 27.0	_		
145 146		Sub - Total for removal of all linear items Rehabilitation of roads					R	1 598 267.00	
147		Remove minor gravel road	8.3	m²	11707.00	R 4.0	0 R	46 828.00	
148		Remove tar road and surfaces	8.1	m²	51444.00	R 48.0	0 R	2 469 312.00	Assume all internal roads and carport area has tar surface
149		Remove concrete roads	4.3	m³	3565.00			1 426 000.00	Assume concrete is 250mm thick
150 151	Ц	Sub - Total for rehabilitation of roads Disposal of demolition waste					R	3 942 140.00	
151	H	Sorting and screening of demolitioning waste	6.1	%	R 29 544 053.50	2.5	% R	738 601.34	2.50%
153		Disposal of demolition waste	9.6.7	m³/km	16200.00		0 R	2 770 200.00	Allowance was made for a 30km radius
154 155	H	Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R		
156							工		
157 158		Mining Aspects Open pit reclamation including final voids and ramps					4		
158	H	Not Applicable	1.1	na	0.00	R -	R	-	
		Sub. Total open nit reclamation including final yeld-							
160 161	H	Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines)				R	•	
162		Seal Main Shaft	7.1.15	sum	1.00				10m Shaft Diameter
163 164	Н	Seal Vent Shaft Seal Fridge Shaft	7.1.13 7.1.10	sum sum	1.00 1.00				9m Shaft Diameter 7.5m Shaft Diameter
165		Seal BAC Shaft	7.1.10	sum	1.00			1 719 458.00	7.5m Shaft Diameter
166	H	Sub - Total for sealing of shafts and inclines					R	8 144 240.00	
167 168	H	Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	R -	R	-	
169		Sub - Total for rehabilitation of overburden and spoils					R		
170		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)					1		
171		Stormwater dam 1					工		
172		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	1119.00	R 20.0	0 R	22 380.00	Assumed 100mm thick contaminated sediment
	H	Load and haul contaminated soil and sediment							Dispose of at tailings dump assumed 10k
173 174	Н	Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00				haul distance Doze walls to inside to fill voic
	H			- '''					
	Ш	Shape and level dam surface Rip to alleviate compaction	10.1.1 9.5.1	ha	1.10				Shape and level surface to make free dra Rip 500mm deep
175			9.D.T	ha	1.10				rup oddinin deep
175 176 177		Establish vegetation	10.4.1	ha	1.10	R 13 800.0	0 R	15 180.00	
176			10.4.1	ha	1.10	R 13 800.0	0 R	15 180.00	Assumed 100mm thick contaminated





		Closure Costing - 18 Shaft Complex					Closure	Cos	sts - <u>Year 9</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment	Code							Dispose of at tailings dump assumed 10km
180 181		Breach dam wall and reshape	9.6.8 10.1.5	m³/km m	1119.00 425.00				81 687.00 93 500.00	haul distance Doze walls to inside to fill voic
181			10.1.5	m	425.00	K	220.00	R	93 500.00	Doze wans to miside to fin voic
182		Shape and level dam surface	10.1.1	ha	1.10		55 250.00		60 775.00	Shape and level surface to make free draining
183 184		Rip to alleviate compaction Establish vegetation	9.5.1 10.4.1	ha ha	1.10 1.10		9 400.00 13 800.00		10 340.00 15 180.00	Rip 500mm deep
		Sub - Total for rehabilitation of processing waste deposits and	10.1.1	110			10 000.00	i i	10 100.00	
185		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds)					R	567 724.00	
186		(polluting potential)						ł		
		Waste Rock dump								Assumed 20m strip would not have been
187 188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	rehabilitated Assume 250mm thick
		Reshape WRD								Cut to fill action assumed 20m high at
189		'	9.1.1	m³	29925.00			R	403 987.50	87.5m³/per meter
190 191		Import capping layers Establish vegetation	9.6.1 10.4.2	m³ ha	10880.00 1.36		26.00 19 250.00		282 880.00 26 180.00	Assumed 1km haul distance
192		Settling ponds				Ë		Ė		
193		Remove contaminated sediment	9.2	m3	1969.00	R	20.00	R	39 380.00	Assumed 300mm thick contaminated sediment
193			9.2	m³	1969.00	K	20.00	K	39 380.00	Dispose of at tailings dump assumed 10km
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	haul distance
195		Shape and level dam surface	10.1.1	ha	0.65	R	55 250.00	Ь	35 912.50	Shape and level surface to make free draining
195	H	Rip to alleviate compaction	9.5.1	na ha	0.65		9 400.00		6 110.00	Rip 500mm deep
197		Import 250mm topsoil	10.2.1	ha	0.65	R	88 400.00	R	57 460.00	Assumed from local stockpile
198		Establish vegetation	10.4.1	ha	0.65	R	13 800.00	R	8 970.00	
199	H	Hot and Cool Well				<u> </u>		\vdash		Assumed 300mm thick contaminated
200		Excavate contaminated sediment from dam basin and stockpile	9.2	m³	644.00				12 880.00	sediment
201		Remove water storage tanks	1.2	sum	2.00				100 000.00	Nominal allowance Assumed dam is lined with a HDPE line
202		Remove HDPE liner	6.4	m²	2149.00	R	6.50	R	13 968.50	Assume 250mm thick on 50 percent of dam
203		Excavate contaminated soil from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	040.00		70.00		66 576.00	Dispose of at tailings dump assumed 10km haul distance
204		Breach dam wall and reshape	10.1.5	m m	912.00 185.00		73.00 220.00		40 700.00	Doze walls to inside to fill voic
		Shape and level dam surface								
206 207		*	10.1.1 9.5.1	ha ha	0.44			R R	24 310.00 4 136.00	Shape and level surface to make free draining Rip 500mm deep
208		Rip to alleviate compaction Establish vegetation	10.4.1	ha	0.44		13 800.00		6 072.00	Rip Sooniin deep
		Sub - Total for rehabilitation of processing waste deposits and								
209 210		evaporation ponds (polluting potential Reclamation of subsided areas						R	1 312 959.50	
211		Not Applicable	1.1	na	0.00	R	-	R		
212		Sub - Total for reclamation of subsided areas						R	-	
213		Sub - Total for Mining aspects						R	10 024 923.50	
214 215		General Surface Reclamation								
216		Topsoil stockpile								
217		Rip to alleviate compaction	9.5.1	ha	15.00	R	9 400.00	R	141 000.00	Rip 500mm deep
218		Establish vegetation	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	Establish vegetation on stockpile footprint area
219		Infrastructural areas				Ë		Ė		
220		Channel and land and	40.4.4		22.00		55 250.00		1 768 000.00	Chang and level surface to make free draining
220 221		Shape and level surface Rip to alleviate compaction	10.1.1 9.5.1	ha ha	32.00 32.00		9 400.00		300 800.00	Shape and level surface to make free draining Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha	32.00	R	88 400.00		2 828 800.00	Assumed from local stockpile
223	Н	Establish vegetation	10.4.1	ha	32.00	R	13 800.00	R	441 600.00	
224 225	Н	Sub - Total for General Surface Reclamation				 		R	5 687 200.00	
226		Water Management								
227		Not Applicable	1.1	na	0.00	R	-	R	-	
228 229	H	Sub - Total for Water Management				├		R	-	
	۲	SUB - TOTAL 1							40.704.555	
230		(for infrastructural and related structures						R	48 764 978.34	
231		Post - closure aspects	46 :				140		500 : :	
232	H	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	5.00 5.00			R R	596 160.00 264 960.00	Assume a 5 year period post closure Assume a 5 year period post closure
234	H	Reclamation monitoring on reclaimed areas	12.3	ha	52.00				126 360.00	Allowed for 5 years post closure
235		Care and maintenance of reclaimed areas	12.4	ha	52.00			R	780 000.00	Allowed for 5 years post closure
236	Н	Sub - Total for Post closure aspects				-		R	1 767 480.00	
237		Contingencies for post closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspects
238		Sub - Total for Contingencies for post closure aspects						R	176 748.00	
239		SUB - TOTAL 2						R	1 944 228.00	
240		(for post - closure aspects) Additional allowances								
241		Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
242		Contingencies	1.2	sum	R 48 764 978.34				4 876 497.83	Assume 10 percent of sub - total 1
		SUB - TOTAL 3						R	7 802 396.53	
243										
243		(for additional allowances) Grand - Total				H			58 511 602.87	





		Closure Costing - 18 Shaft Complex				Closure	Costs - Year 10	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects	Code					
2		Nominal allowances		$\vdash \vdash$				To assist with demolition and salvage
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	20.00			
5		Sub - Total for Nominal allowances	1.2	Juin	1.00	10 2 300 000.00	R 2 630 680.0	
6 7		Demolitioning of plant and related structures Compressor house		$\vdash \vdash \vdash$				
8		Sheeting	2.1	m²	1628.00 963.00			
9		Structural steel Structural concrete	2.3.1	m²	963.00	R 135.00		Remove concrete floor, foundations and
10 11		Concrete plinths	4.4	m² m³	963.00 380.00			
12		Winder House						
13 14		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			
15		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.0	Remove concrete floor, foundations and bases
16		Rock Winder House						
17 18		Sheeting Structural steel	2.1	m² m²	3862.00 1932.00			
19		Structural concrete	4.4	m²	1932.00	R 215.00	R 415 380.0	Remove concrete floor, foundations and bases
20		Emergency winder						
21 22		Sheeting Structural steel	2.1	m² m²	753.00 249.00			
23		Structural concrete	4.4	m²	249.00	R 215.00	R 53 535.0	Remove concrete floor, foundations and bases
24		Vent Shaft						
25	H	Structural steel	2.3.1	m²	1908.00	R 135.00	R 257 580.0	Assume 80kg of steel per square meter Remove concrete floor, foundations and
26 27	Ц	Structural concrete	4.4	m²	1908.00	R 215.00	R 410 220.0	
28		Fridge Shaft Ice thermal store	3.1.1	m²	781.00			
29	H	Structural steel	2.3.1	m²	218.00	R 135.00	R 29 430.0	Assume 80kg of steel per square meter Remove concrete floor, foundations and
30		Structural concrete	4.4	m²	218.00	R 215.00	R 46 870.0	
31 32		BAC Shaft Plant room	3.1.1	m²	1167.00	R 295.00	R 344 265.0	Normal single story building
33		Structural steel	2.3.1	m²	697.00	R 135.00	R 94 095.0	Assume 80kg of steel per square meter Remove concrete floor, foundations and
34		Structural concrete	4.4	m²	1000.00	R 215.00	R 215 000.0	
35 36		Cooling towers Sheeting	2.1	m²	1771.00	R 23.00	R 40 733.0	0
37		Structural steel	2.3.1	m²	1001.00			Assume 80kg of steel per square meter
38		Structural concrete	4.4	m²	1001.00	R 215.00	R 215 215.0	Remove concrete floor, foundations and bases
39 40		Sewage treatment plant Office	3.1.1	m²	33.00	R 295.00	R 9 735.0	Normal single story building
41		Sludge drying beds	4.3	m³	79.00	R 400.00	R 31 600.0	Assume concrete is 250mm thick
42 43	-	Storage tanks Storage tanks	2.4.2	no no	3.00 2.00			
44		Structural steel	2.3.1	m²	28.00	R 135.00	R 3 780.0	
45		Concrete hardstand	8.4	m²	1820.00	R 135.00	R 245 700.0	Remove concrete hardstand with min. reinforcing
46 47		Material transfer towers Office	3.1.1	m²	27.00	R 295.00	R 7 965.0	Normal single story building
		Structural concrete (silo)						Assume concrete is 350mm thick, silos is 10
48 49		Sheeting	4.2 2.1	m³ m²	206.00 106.00			
50		Structural steel	2.3.1	m²	106.00	R 135.00	R 14 310.0	Assume 80kg of steel per square meter Remove concrete floor, foundations and
51		Structural concrete	4.4	m²	106.00			bases
52 53		Suspended conveyors Sub - Total for demolitioning of plant and related structures	5.1.5	m	400.00	R 640.00	R 256 000.0	Heavy conveyors
54 55		Demolitioning of all structural structures Headgear						
56		Structural steel	2.2	t	1900.00			
57 58	H	Structural concrete Carports	4.2 2.6.1	m³ m²	285.00 17943.00			
59		Winches						
60 61	H	Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00	R 135.00	R 120 690.0	Assume 80kg of steel per square meter
62	Н	Brick wall	3.5	m²	36.00	R 30.00	R 1 080.0	Remove concrete floor, foundations and
63		Structural concrete	4.4	m²	894.00	R 215.00	R 192 210.0	
64 65	Н	Explosives offloading bay Sheeting	2.1	m²	679.00	R 23.00	R 15 617.0	
66		Structural steel	2.3.1	m²	277.00			
67		Structural concrete	4.4	m²	277.00			bases
68 69	H	Concrete silt traps Concrete stormwater trench	4.3 8.4	m³ m²	318.00 13543.00			
70		Backfill plant	8.4	m²	5758.00	R 135.00	R 777 330.0	Thin concrete with minimal reinforcing
71 72	H	Storage bins Explosives incinerator	4.3	m³ m³	456.00 36.00			
73		Sub - Total for demolitioning of all structural structures					R 7 111 475.0	
74 75	H	Demolitioning of workshops and stores Oil store	3.1.1	m²	407.00	R 295.00	R 120 065.0	Normal single story building
76 77		Chemical store	3.1.1	m²	407.00			
78		Cement/ Shotcrete Material store Sheeting	2.1	m²	1286.00			
79 80	\dashv	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			
	Ħ	Structural concrete						Remove concrete floor, foundations and
81 82	Н	Brick Store	4.4	m²	894.00	R 215.00	R 192 210.0) bases
83		Sheeting	2.1	m²	1286.00			
84 85	Н	Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			
_		Structural concrete	4.4	m²	894.00			Remove concrete floor, foundations and
88			4.4		094.00			
86 87		Piping Store						
		Piping Store Sheeting Structural steel	2.1 2.3.1	m² m²	1286.00 894.00			





		Closure Costing - 18 Shaft Complex				Closure	Co	sts - <u>Year 10</u>	
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate		Amount	Notes
		Structural concrete	Code						Remove concrete floor, foundations and
91 92		Ventilation Duct Store	4.4	m²	894.00	R 215.0) R	192 210.00	bases
93		Sheeting	2.1	m²	1286.00		_	29 578.00	Assume 80kg of steel per square meter
94 95		Structural steel Brick wall	2.3.1 3.5	m² m²	894.00 36.00			120 690.00 1 080.00	Assume borkg of steel per square meter
96		Structural concrete	4.4	m²	894.00	D 215.0	R	192 210.00	Remove concrete floor, foundations and bases
96		Fan Store	4.4	m-	894.00			192 2 10.00	udses
98 99		Sheeting Structural steel	2.1	m² m²	777.00 409.00			17 871.00 55 215.00	Assume 80kg of steel per square meter
99		Structural sceen Structural concrete	2.3.1	1117			, K	55 2 15.00	Remove concrete floor, foundations and
100 101		Locomotive store and wash bay	4.4	m²	409.00	R 215.0) R	87 935.00	bases
102		Sheeting	2.1	m²	1655.00			38 065.00	
103		Structural steel	2.3.1	m²	907.00	R 135.0) R	122 445.00	Assume 80kg of steel per square meter Remove concrete floor, foundations and
104		Structural concrete	4.4	m²	907.00	R 215.0		195 005.00	bases
105		Sub - Total for demolitioning of workshops and stores					R	2 130 898.00	
106		Demolitioning of permanent brick structures and temporary structures							
107 108		Guardhouse Office 1	3.1.1 3.1.1	m² m²	166.00 516.00		_	48 970.00 152 220.00	Normal single story building Normal single story building
109		Office 2	3.1.1	m²	516.00			152 220.00	Normal single story building
110		Office 3	3.1.1	m²	516.00			152 220.00	Normal single story building
111 112	H	Office 4 Change House 1	3.1.1 3.1.1	m² m²	516.00 686.00	R 295.0	R	152 220.00 202 370.00	Normal single story building Normal single story building
113		Change House 2	3.1.1	m²	686.00	R 295.0		202 370.00	Normal single story building
114 115	H	Change House 3 Change House 4	3.1.1	m² m²	686.00 686.00			202 370.00 202 370.00	Normal single story building Normal single story building
116		Change House 5	3.1.1	m²	686.00	R 295.0	R	202 370.00	Normal single story building
117 118	Н	Change House 6 Change House 7	3.1.1	m² m²	686.00 686.00		_	202 370.00 202 370.00	Normal single story building Normal single story building
119	H	Shelter	3.1.1	m²	132.00			38 940.00	Normal single story building
120		First Aid Room	3.1.1	m²	111.00			32 745.00	Normal single story building
121 122	H	Lamp House Crush	3.1.1	m² m²	745.00 451.00		_	219 775.00 133 045.00	Normal single story building Normal single story building
123		Control Room	3.1.1	m²	141.00	R 295.0	R	41 595.00	Normal single story building
124 125		Main Substation Substation 1	3.1.1 3.1.1	m² m²	601.00 91.00			177 295.00 26 845.00	Normal single story building Normal single story building
126		Substation 2	3.1.1	m²	162.00	R 295.0	_	47 790.00	Normal single story building
127		Outside ablution block	3.1.1	m²	26.50	R 295.0) R	7 817.50	Normal single story building
128 129		Transformer bays Brickwork	3.5	m²	23.00	R 30.00) R	690.00	
130		Structural concrete	4.3	m³	27.00	R 400.0	R	10 800.00	Remove concrete plinths and footings
131 132	-	Stormwater pump house Construction offices	3.1.1	m² m²	33.00 990.00			9 735.00 292 050.00	Normal single story building Normal single story building
102		Sub - Total for demolitioning of permanent brick structures and	0.1.1		330.00	10 255.01	, IX		Normal single story building
133 134		temporary structures Removal of all surface related finishes					R	3 113 562.50	
135		Remove concrete liner from stormwater dam 1	4.3	m³	1650.00	R 400.0	R	660 000.00	Assume concrete is 150mm thick
136		Remove concrete liner from stormwater dam 2	4.3	m³	1650.00			660 000.00	Assume concrete is 150mm thick
137 138		Remove concrete liner from settling pond Concrete Hardstands	4.3 8.4	m³ m²	975.00 16490.00		_	390 000.00 2 226 150.00	Assume concrete is 150mm thick Assume hole of mining terrain
139		Sub - Total for removal of all surface related finishes					R	3 936 150.00	
140 141		Removal of all linear items Remove overland steel pipelines (<200mm)	5.2.1	m	2500.00	R 27.0) R	67 500.00	Assumed 2500m
142		Remove overland steel pipelines (200-350mm)	5.2.2	m	2500.00	R 48.00) R	120 000.00	Assumed 2500m
143 144		Remove railway lines Remove security fencing	5.4.2 5.5.3	m m	5518.00 8311.00			1 186 370.00 224 397.00	
145		Sub - Total for removal of all linear items	0.0.0		0011.00	10 27.00	R	1 598 267.00	
146		Rehabilitation of roads	0.0	2	44707.00	D 400	, [40,000,00	
147	H	Remove minor gravel road	8.3	m²	11707.00	R 4.00) R	46 828.00	Assume all internal roads and carport area
148	Щ	Remove tar road and surfaces	8.1	m²	51444.00			2 469 312.00	has tar surface
149 150	H	Remove concrete roads Sub - Total for rehabilitation of roads	4.3	m³	3565.00	R 400.0	R R	1 426 000.00 3 942 140.00	Assume concrete is 250mm thick
151		Disposal of demolition waste							
152		Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 29 544 053.50	2.59		738 601.34	2.50%
153					16200.00	R 171 0) R	2 / / 0 200 00 1	
153 154		Sub - Total for disposal of demolition waste			16200.00	R 171.0	R	2 770 200.00 3 508 801.34	Allowance was made for a 30km radius
154 155					16200.00	R 171.0			Allowance was made for a 30km radius
154		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects			16200.00	R 171.00	R	3 508 801.34	Allowance was made for a Sommadius
154 155 156 157 158		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps		25			R	3 508 801.34	Autowalice was made for a South radius
154 155 156 157		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects	1.1	na	0.00		R	3 508 801.34	Autowalice was fliade for a SUATH radius
154 155 156 157 158 159		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps		na			R	3 508 801.34	Allowance was made for a SUMIT radius
154 155 156 157 158 159 160 161		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines	1.1	na		R -	R R R	3 508 801.34 33 052 854.84	
154 155 156 157 158 159 160 161 162 163		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum sum	0.00 1.00 1.00	R - 2 573 324.0 R 2 132 000.0	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 - - 2 573 324.00 2 132 000.00	10m Shaft Diameter 9m Shaft Diameter
154 155 156 157 158 159 160 161 162 163 164		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Went Shaft Seal Vent Shaft Seal Fridge Shaft	7.1.15 7.1.13 7.1.10	sum sum sum	0.00 1.00 1.00	R - 2 573 324.0 R 2 132 000.0 R 1 719 458.0	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 - - 2 573 324.00 2 132 000.00 1 719 458.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter
154 155 156 157 158 159 160 161 162 163		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft	7.1.15 7.1.13	sum sum	0.00 1.00 1.00	R - 2 573 324.0 R 2 132 000.0 R 1 719 458.0	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 - - 2 573 324.00 2 132 000.00	10m Shaft Diameter 9m Shaft Diameter
154 155 156 157 158 159 160 161 162 163 164 165 166 167		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Want Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils	7.1.15 7.1.13 7.1.10 7.1.10	sum sum sum sum	1.00 1.00 1.00	R 2 573 324.0 R 2 132 000.0 R 1719 458.0	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 2 573 324.00 2 132 000.00 1 719 455.00 1 719 455.00 8 144 240.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter
154 155 156 157 158 159 160 161 162 163 164 165 166		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines	7.1.15 7.1.13 7.1.10	sum sum sum	0.00 1.00 1.00	R 2 573 324.0 R 2 132 000.0 R 1719 458.0	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter
154 155 156 157 158 158 159 160 161 162 163 164 165 166 167 168		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Want Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds	7.1.15 7.1.13 7.1.10 7.1.10	sum sum sum sum	1.00 1.00 1.00	R 2 573 324.0 R 2 132 000.0 R 1719 458.0	R R R R R R R R R R R R R R R R R	2 573 324.00 2 179 458.00 1 719 458.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)	7.1.15 7.1.13 7.1.10 7.1.10	sum sum sum sum	1.00 1.00 1.00	R 2 573 324.0 R 2 132 000.0 R 1719 458.0	R R R R R R R R R R R R R R R R R	2 573 324.00 2 179 458.00 1 719 458.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1	7.1.15 7.1.13 7.1.10 7.1.10	sum sum sum sum	1.00 1.00 1.00 1.00	R 2573 324.0 R 2573 324.0 R 1719 458.0 R 1719 458.0	R R R R R R R R R R R R	3 508 801.34 33 052 854.84 2 573 324.00 2 132 000 00 1 719 458.00 1 719 458.00 8 144 240.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter Assumed 100mm thick contaminated
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile	7.1.15 7.1.13 7.1.10 7.1.10	sum sum sum sum	1.00 1.00 1.00	R 2573324.0 R 257332000.0 R 1719 458.0 R 1719 458.0	R R R R R R R R R R R R	2 573 324.00 2 179 458.00 1 719 458.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter Assumed 100mm thick contaminated sediment
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment	7.1.15 7.1.13 7.1.10 7.1.10 7.1.10	sum sum sum sum na na	0.00 1.00 1.00 1.00 0.00	R 2573 324.0 R 2132 000.0 R 1719 458.0 R 1719 458.0 R -	R R R R R R R R R R R R R R R R R R R	2 573 324.00 2 173 200.00 1 719 458.00 8 144 240.00 8 1687.00 8 1687.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter Assumed 100mm thick contaminated sediment Dispose of at tailings dump assumed 10km haul distance
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Fridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile	7.1.15 7.1.13 7.1.10 7.1.10 1.1	sum sum sum sum	0.00 1.00 1.00 1.00 0.00	R 2573 324.0 R 2132 000.0 R 1719 458.0 R 1719 458.0 R -	R R R R R R R R R R R R R R R R R R R	3 508 801.34 33 052 854.84 2 573 324.00 2 132 000.00 1 719 455.00 8 144 240.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter Assumed 100mm thick contaminated sediment Dispose of at tailings dump assumed 10km
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Vent Shaft Seal Pridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface	7.1.15 7.1.13 7.1.10 7.1.10 7.1.10 9.2 9.6.8 10.1.5	sum sum sum sum na m³ m³/km m	1.00 1.00 1.00 1.00 0.00 1119.00 425.00	R 2573 324.0 R 2132 000.0 R 1719 458.0 R 1719 458.0 R R 20.0 R 73.0 R 73.0 R 220.0 R 55 250.0	R R R R R R R R R R R R R R R R R R R	2 573 324.00 2 173 200.00 1 719 458.00 8 144 240.00 2 2 380.00 8 1687.00 93 500.00 60 775.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 0.5m Shaf
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Fridge Shaft Seal Fridge Shaft Seal Fridge Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape am level dam surface Rip to alleviate compaction	1.1 7.1.15 7.1.13 7.1.10 7.1.10 1.1 9.2 9.6.8 10.1.5 10.1.1	sum sum sum sum na m³ m³/km m ha	1.00 1.00 1.00 1.00 1.00 1.119.00 1119.00 425.00 1.10	R 2573 324.0 R 2132 000.0 R 1719 458.0 R 1719 458.0 R R R 20.0 R 73.0 R 720.0 R 55 250.0 R 9400.0	R R R R R R R R R R R R R R R R R R R	2 573 324.00 2 132 000.00 1 719 458.00 1 719 458.00 2 2 380.00 8 144 240.00 8 1687.00 93 500.00 10 340.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter Assumed 100mm thick contaminated sediment Dispose of at tailings dump assumed 10km haul distance Doze walls to inside to fill vok
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Mining Aspects Open pit reclamation including final voids and ramps Not Applicable Sub - Total open pit reclamation including final voids and ramps Sealing of shafts and inclines Seal Main Shaft Seal Vent Shaft Seal Vent Shaft Seal Pridge Shaft Seal BAC Shaft Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils Not Applicable Sub - Total for rehabilitation of overburden and spoils Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Stormwater dam 1 Excavate contaminated sediment from dam basin and stockpile Load and haul contaminated soil and sediment Breach dam wall and reshape Shape and level dam surface	7.1.15 7.1.13 7.1.10 7.1.10 7.1.10 9.2 9.6.8 10.1.5	sum sum sum sum na m³ m³/km m	1.00 1.00 1.00 1.00 0.00 1119.00 425.00	R 2573 324.0 R 2132 000.0 R 1719 458.0 R 1719 458.0 R R 20.0 R 220.0 R 73.0 R 220.0 R 55 250.0 R 9400.0	R R R R R R R R R R R R R R R R R R R	2 573 324.00 2 173 200.00 1 719 458.00 8 144 240.00 2 2 380.00 8 1687.00 93 500.00 60 775.00	10m Shaft Diameter 9m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 7.5m Shaft Diameter 0.5m Shaf





		Closure Costing - 18 Shaft Complex					Closure (Cos	ts - <u>Year 10</u>	
Item nr	ID	Task	Unit Rate Code	Unit	Quantity		Rate		Amount	Notes
		Load and haul contaminated soil and sediment	Code							Dispose of at tailings dump assumed 10km
180			9.6.8	m³/km	1119.00		73.00	R	81 687.00	haul distance
181		Breach dam wall and reshape	10.1.5	m	425.00	K	220.00	К	93 500.00	Doze walls to inside to fill voic
182		Shape and level dam surface	10.1.1	ha	1.10	R	55 250.00	R	60 775.00	Shape and level surface to make free draining
183		Rip to alleviate compaction	9.5.1	ha	1.10		9 400.00		10 340.00	Rip 500mm deep
184		Establish vegetation Sub - Total for rehabilitation of processing waste deposits and	10.4.1	ha	1.10	R	13 800.00	R	15 180.00	
185		evaporation ponds (non polluting potential)					R	567 724.00	
		Rehabilitation of processing waste deposits and evaporation ponds								
186		(polluting potential)				-				Assumed 20m strip would not have been
187		Waste Rock dump								rehabilitated
188		Strip topsoil and stockpile for movement of toe	9.2	m³	1717.00	R	20.00	R	34 340.00	Assume 250mm thick
400		Reshape WRD			20005 20		40.50	_	400 007 50	Cut to fill action assumed 20m high at
189 190		Import capping layers	9.1.1 9.6.1	m³ m³	29925.00 10880.00		13.50 26.00	R	403 987.50 282 880.00	87.5m³/per meter Assumed 1km haul distance
191		Establish vegetation	10.4.2	ha	1.36			R	26 180.00	Assumed Triff flau distance
192		Settling ponds								
400		Remove contaminated sediment	0.0	3	4000.00		20.00	_	20 200 00	Assumed 300mm thick contaminated
193			9.2	m³	1969.00	R	20.00	R	39 380.00	sediment Dispose of at tailings dump assumed 10km
194		Load and haul contaminated sediment	9.6.8	m³/km	1969.00	R	73.00	R	143 737.00	haul distance
		Shape and level dam surface								
195	<u> </u>		10.1.1 9.5.1	ha	0.65		55 250.00		35 912.50	Shape and level surface to make free draining Rip 500mm deep
196 197	-	Rip to alleviate compaction Import 250mm topsoil	9.5.1	ha ha	0.65 0.65		9 400.00 88 400.00		6 110.00 57 460.00	Assumed from local stockpile
198	L	Establish vegetation	10.4.1	ha	0.65		13 800.00	R	8 970.00	
199		Hot and Cool Well					_			
200		Excavate contaminated sediment from dam basin and stockpile	0.0				00.00	г.	40.000.00	Assumed 300mm thick contaminated sediment
200 201		Remove water storage tanks	9.2 1.2	m³ sum	644.00 2.00		20.00 50 000.00	R R	12 880.00 100 000.00	Nominal allowance
202		Remove HDPE liner	6.4	m²	2149.00			R	13 968.50	Assumed dam is lined with a HDPE line
		Excavate contaminated soil from dam basin and stockpile								Assume 250mm thick on 50 percent of dam
203		Excavate contaminated son from dam basin and stockpile	9.2	m³	268.00	R	20.00	R	5 360.00	basin
204		Load and haul contaminated soil and sediment	9.6.8	m³/km	912.00	R	73.00	R	66 576.00	Dispose of at tailings dump assumed 10km haul distance
205		Breach dam wall and reshape	10.1.5	m	185.00		220.00	R	40 700.00	Doze walls to inside to fill voic
		Shape and level dam surface								
206 207		· ·	10.1.1 9.5.1	ha ha	0.44		55 250.00 9 400.00	R R	24 310.00 4 136.00	Shape and level surface to make free drainin Rip 500mm deep
208	\vdash	Rip to alleviate compaction Establish vegetation	10.4.1	ha	0.44			R	6 072.00	Rip Sooniin deep
200		Sub - Total for rehabilitation of processing waste deposits and	10.1.1		0.11	Ť	10 000.00	<u> </u>	0.012.00	
209		evaporation ponds (polluting potential	1					R	1 312 959.50	
210		Reclamation of subsided areas			0.00	_		_		
211 212		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	K	-	R R	-	
213		Sub - Total for Mining aspects				+		R	10 024 923.50	
214										
215		General Surface Reclamation								
216 217	_	Topsoil stockpile Rip to alleviate compaction	9.5.1	ha	15.00) D	9 400.00	R	141 000.00	Rip 500mm deep
217		Trip to alleviate compaction	3.3.1	IIa	13.00	1	9 400.00	11	141 000.00	Establish vegetation on stockpile footprint
218		Establish vegetation	10.4.1	ha	15.00	R	13 800.00	R	207 000.00	area
219		Infrastructural areas								
220		Shape and level surface	10.1.1	ha	32.00	R	55 250.00	R	1 768 000.00	Shape and level surface to make free draining
221	-	Rip to alleviate compaction	9.5.1	ha	32.00			R	300 800.00	Rip 500mm deep
222		Import 250mm topsoil	10.2.1	ha	32.00				2 828 800.00	Assumed from local stockpile
223		Establish vegetation	10.4.1	ha	32.00	R	13 800.00	R	441 600.00	-
224	<u> </u>	Sub - Total for General Surface Reclamation				1		R	5 687 200.00	
225 226		Water Management								
227		Not Applicable	1.1	na	0.00	R		R	-	
228		Sub - Total for Water Management		Ĺ	1.00	Ė		R	-	
229										-
230		SUB - TOTAL 1						R	48 764 978.34	
231		(for infrastructural and related structures Post - closure aspects								
232		Surface water quality monitoring	12.1	yr	5.00	R	119 232.00	R	596 160.00	Assume a 5 year period post closure
233		Groundwater quality monitoring	12.2	yr	5.00	R	52 992.00		264 960.00	Assume a 5 year period post closure
234	Ĺ	Reclamation monitoring on reclaimed areas	12.3	ha	52.00			R	126 360.00	Allowed for 5 years post closure
235	_	Care and maintenance of reclaimed areas	12.4	ha	52.00) R	15 000.00		780 000.00	Allowed for 5 years post closure
236	-	Sub - Total for Post closure aspects		-		1		R	1 767 480.00	
237		Contingencies for post closure aspects	1.2	sum	R 1767 480.00		10%	R	176 748.00	Assumed 10 percent for post closure aspect
238		Sub - Total for Contingencies for post closure aspects				L		R	176 748.00	
239		SUB - TOTAL 2						R	1 944 228.00	
		(for post - closure aspects)								
240 241		Additional allowances Preliminary and General	1.2	sum	R 48 764 978.34		6%	R	2 925 898.70	Assume 6 percent of sub - total 1
241	-	Contingencies	1.2	sum	R 48 764 978.34		10%	R	4 876 497.83	Assume 6 percent of sub - total 1 Assume 10 percent of sub - total 1
		SUB - TOTAL 3					. 270			and the same of th
243		(for additional allowances)						R	7 802 396.53	
244		Grand - Total						R	58 511 602.87	
		(for sub - total 1+2+3)								





		Closure Costing - Central Sewage Plant				Closure C	osts - <u>Schedule</u>	ed
Item nr	ın	Task	Unit Rate	Unit	Quantity	Rate	Amount	Notes
1	טו	Infrastructural Aspects	Code	Offic	Quantity	Rate	Amount	Notes
2	Ш	Nominal allowances						
3		Crane	11.2	p/day	0.00	R 6 534.00	R -	To assist with demolition and salvage purposes
4		Allowance for the removal of salvageable equipment	1.2	sum	1.00		R -	Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6 7		Demolitioning of plant and related structures Not applicable	1.1	na	0.00	R -	R -	
8		Sub - Total for demolitioning of plant and related structures		na	0.00		R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.0	0
12		Tip area						
13 14		Structural Concrete Sub - Total for demolitioning of all structural structures	4.2	m³	1400.00	R 610.00	R 854 000.0 R 858 617.0	-
15		Demolitioning of workshops and stores					K 856 617.0	
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores	i				R 12 095.0	0
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.0	Single story brick building
23	L	Effluent pump station Sub-station	3.2.1 3.2.1	m²	50.00 50.00			
24	H	Sub-station Sub - Total for demolitioning of permanent brick structures and	J.Z. I	m²	50.00	. 480.00	1 24 000.0	Single story brick building
25	_	temporary structures					R 116 250.0	0
26 27	-	Removal of all surface related finishes Not applicable	1.1	na	0.00	R :	R -	+
28		Sub - Total for removal of all surface related finishes	1.1	ıld	0.00	-	R -	
29		Removal of all linear items						
30	L	Sub. Total for removal of all linear items	5.5.3	m	970.00	R 27.00		
31 32	-	Sub - Total for removal of all linear items Rehabilitation of roads					R 26 190.0	
33		Not applicable	1.1	na	0.00	R -	R -	
34		Sub - Total for rehabilitation of roads					R -	
35 36		Disposal of demolition waste Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%	R 25 328.8	0 2.50%
37		Disposal of demolition waste	9.6.7	m³/km	1572.00			
38		Sub - Total for disposal of demolition waste					R 294 140.8	
39 40		Sub - Total for infrastructural aspects					R 1 307 292.8	0
41		Mining Aspects						
42	Ш	Open pit reclamation including final voids and ramps						
43		Not Applicable	1.1	na	0.00	R -	R -	
44		Sub - Total open pit reclamation including final voids and ramp					R -	
45		Sealing of shafts and inclines						
46		Not Applicable	1.1	na	0.00	R -	R -	
47 48		Sub - Total for sealing of shafts and inclines Rehabilitation of overburden and spoils					R -	
49		Not Applicable	1.1	na	0.00	R -	R -	
50		Sub - Total for rehabilitation of overburden and spoils					R -	
51		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
52		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
53		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds					R -	
54		(polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
56		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential					R -	
57		Reclamation of subsided areas						
58		Not Applicable	1.1	na	0.00	R -	R -	
59 60		Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects		 			R -	
61	Н	Sub - Total for willing aspects						
62		General Surface Reclamation						
63 64	-	General shaping and levelling of infrastructural area Import topsoil on footprint areas	10.1.1 9.6.1	ha m³	5.50 6875.00			
65	H	Rip to alleviate compactior	9.5.1	ha	5.50		R 51 700.0	0 Rip 500mm deep
66		Re-establish vegetatior	10.4.1	ha	5.50		R 75 900.0	0
67 68	-	Sub - Total for General Surface Reclamation		<u> </u>			R 303 875.0	0
68 69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71	Ĺ	Sub - Total for Water Management					R -	
72		SUB - TOTAL 1						
73		(for infrastructural and related structures					R 1 611 167.8	
74		Post - closure aspects						
75 76		Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
77		Reclamation monitoring on reclaimed areas	12.2	ha	5.50			
78		Care and maintenance of reclaimed areas	12.4	ha	5.50		R 82 500.0	Assumed included as part of 17 Shaft
79	L	Sub - Total for Post closure aspects					R 95 865.0	0
80		Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%	R 9 586.5	0 Assumed 10 percent for post closure aspect
81		Sub - Total for Contingencies for post closure aspects				.070	R 9 586.5	
82		SUB - TOTAL 2					R 105 451.5	0
83		(for post - closure aspects) Additional allowances						
84		Preliminary and General	1.2	sum	R 1 611 167.80	6%	R 96 670.0	7 Assume 6 percent of sub - total 1
85		Contingencies	1.2	sum	R 1611 167.80	10%		
86		SUB - TOTAL 3					R 257 786.8	5
		(for additional allowances) Grand - Total						
87		(for sub - total 1+2+3)					R 1 974 406.1	5





		Closure Costing Control Sowage Plant				Closuro	Costs Voar 1	
		Closure Costing - Central Sewage Plant	Unit Rate	ı			Costs - Year 1	
Item nr	ID	Task	Code	Unit	Quantity	Rate	Amount	Notes
2		Infrastructural Aspects Nominal allowances						
_							_	To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00		R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances	1.2	Suili	1.00	К -	R -	Nonlinarallowance
6		Demolitioning of plant and related structures						
7 8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures	•				K -	
10		Dosing syphon box						
11 12		Structural steelwork Tip area	2.2	t	3.42	R 1 350.00	R 4 617.0	0
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14		Sub - Total for demolitioning of all structural structures					R 858 617.0	0
15 16		Demolitioning of workshops and stores Workshop and store	3.1.1	m²	41.00	R 295.00	R 12 095.0	Single story brick building
17		Sub - Total for demolitioning of workshops and stores					R 12 095.0	0
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00	R 295.00	R 14 750.0	
20		Office and store	3.1.1	m²	50.00			
21 22		Pump station Filter building	3.2.1 3.1.1	m² m²	50.00 50.00			
23	L	Effluent pump station	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building
24	Ĺ	Sub-station	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building
25		Sub - Total for demolitioning of permanent brick structures and temporary structures					R 116 250.0	D
26		Removal of all surface related finishes				_		
27 28	L	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	R -	R -	
28	H	Removal of all linear items		 			-	
30		Security fencing	5.5.3	m	970.00	R 27.00	R 26 190.0	
31	L	Sub - Total for removal of all linear items					R 26 190.0	0
32 33	\vdash	Rehabilitation of roads Not applicable	1.1	na	0.00	R -	R -	
34		Sub - Total for rehabilitation of roads					R -	
35		Disposal of demolition waste			D 4 040 450 00	0.50/	D 05.000.0	0.50%
36 37		Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 1 013 152.00 1572.00	2.5% R 171.00	R 25 328.80 R 268 812.00	
38		Sub - Total for disposal of demolition waste	0.0.7		1072.00	171.00	R 294 140.8	
39		Sub - Total for infrastructural aspects					R 1 307 292.8	0
40 41		Mining Aspects						
42		Open pit reclamation including final voids and ramps						
43		Not Applicable	1.1	na	0.00	R -	R -	
44		Sub. Total open hit reelemation including final voids and rame					В	
44 45		Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	5				R -	
46		Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines	1				R -	
48 49		Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	P -	R -	
50		Sub - Total for rehabilitation of overburden and spoils	1.1 i	IIa	0.00	-	R -	
		Rehabilitation of processing waste deposits and evaporation ponds						
51 52		(non polluting potential) Not Applicable	1.1	na	0.00	R -	R -	
<i>32</i>		Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	IX -		
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
5.C	ĺ	Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential			<u></u>		В	
56 57	H	evaporation ponds (polluting potential Reclamation of subsided areas		 			R -	
58	L	Not Applicable	1.1	na	0.00	R -	R -	
59	Ľ	Sub - Total for reclamation of subsided areas	_				R -	
60 61	⊢	Sub - Total for Mining aspects		-			R -	
62		General Surface Reclamation						
63	E	General shaping and levelling of infrastructural area	10.1.1	ha	5.50			
64 65	-	Import topsoil on footprint areas Rip to alleviate compactior	9.6.1 9.5.1	m³ ha	6875.00 5.50			
66	E	Re-establish vegetatior	10.4.1	ha	5.50		R 75 900.0	0
67		Sub - Total for General Surface Reclamation			-		R 303 875.0	0
68 69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71		Sub - Total for Water Management					R -	
72		SUB - TOTAL 1						
73		(for infrastructural and related structures					R 1 611 167.8	0
74		Post - closure aspects						
75	Ĺ	Surface water quality monitoring	12.1	yr	0.00			Assumed included as part of 17 Shaft
76 77	⊢	Groundwater quality monitoring Reclamation monitoring on reclaimed areas	12.2 12.3	yr ha	0.00 5.50			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
78	L	Care and maintenance of reclaimed areas	12.4	ha	5.50			
79		Sub - Total for Post closure aspects					R 95 865.0	
80		Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%	R 9 586.5	Assumed 10 percent for post closure aspect:
81	L	Sub - Total for Contingencies for post closure aspects		Jani	30 000.00	1070	R 9 586.5	
82		SUB - TOTAL 2					R 105 451.5	
83		(for post - closure aspects)					110 10 10	
83		Additional allowances Preliminary and General	1.2	sum	R 1 611 167.80	6%	R 96 670.0	7 Assume 6 percent of sub - total 1
85		Contingencies	1.2	sum	R 1611 167.80	10%		
86		SUB - TOTAL 3					R 257 786.8	5
	H	(for additional allowances) Grand - Total						
87		(for sub - total 1+2+3)					R 1 974 406.1	5
		(3.333						





		Closure Costing - Central Sewage Plant				Closuro	Costs - Year 2	
			Unit Rate	l		1		
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2	_	Nominal allowances						
0		0	44.0	- (-)	0.00	D 0.504.00	Б	To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00	R 6 534.00	R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6		Demolitioning of plant and related structures	4.4		0.00	R -	R -	
8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.0	0.1
12		Tip area	2.2		5.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		- 1
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 858 617.0	0
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores					R 12 095.0	0
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.0	Single story brick building
23		Effluent pump station	3.2.1	m²	50.00	R 480.00		
24	H	Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building
25	<u> </u>	temporary structures		<u> </u>			R 116 250.0	0
26 27	-	Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -	+
28		Sub - Total for removal of all surface related finishes			5.00		R -	
29	F	Removal of all linear items	E.F.0		070.00	D 07.00	D 00.400.0	
30 31	-	Security fencing Sub - Total for removal of all linear items	5.5.3	m	970.00	R 27.00	R 26 190.0 R 26 190.0	
32		Rehabilitation of roads						
33 34	H	Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -	R -	
35		Disposal of demolition waste					к -	
36		Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%		
37		Disposal of demolition waste	9.6.7	m³/km	1572.00	R 171.00		
38 39		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 294 140.8 R 1 307 292.8	
40		ous round minutation actual appoint					1 007 202.0	
41		Mining Aspects						
42 43		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -	
40			1.1	IIa	0.00	Κ -	K -	
44		Sub - Total open pit reclamation including final voids and ramp	i				R -	
45 46		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines			0.00		R -	
48		Rehabilitation of overburden and spoils						
49 50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -	
30		Rehabilitation of processing waste deposits and evaporation ponds					К -	
51		(non polluting potential)				_		
52		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -	
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
56 57	-	evaporation ponds (polluting potential Reclamation of subsided areas	1	-			R -	
58	L	Not Applicable	1.1	na	0.00	R -	R -	
59		Sub - Total for reclamation of subsided areas			-		R -	
60 61	\vdash	Sub - Total for Mining aspects		 			R -	
62		General Surface Reclamation						
63		General shaping and levelling of infrastructural area	10.1.1	ha	5.50			
64 65	-	Import topsoil on footprint areas Rip to alleviate compactior	9.6.1 9.5.1	m³ ha	6875.00 5.50			
66	L	Re-establish vegetatior	10.4.1	ha	5.50		R 75 900.0	0
67		Sub - Total for General Surface Reclamation			-		R 303 875.0	0
68 69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71		Sub - Total for Water Management			-		R -	
72		SUB - TOTAL 1						
73		(for infrastructural and related structures					R 1 611 167.8	0
74		Post - closure aspects Surface water quality monitoring	10.4	1.00	0.00	D 440,000,00	D	Assumed included as part of 47 Ch - 4
75 76	 	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
77		Reclamation monitoring on reclaimed areas	12.3	ha	5.50	R 2 430.00	R 13 365.0	Assumed included as part of 17 Shaft
78		Care and maintenance of reclaimed areas	12.4	ha	5.50	R 15 000.00		
79	\vdash	Sub - Total for Post closure aspects		 			R 95 865.0	
80		Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%		
81		Sub - Total for Contingencies for post closure aspects					R 9 586.5	
82		SUB - TOTAL 2 (for post - closure aspects)					R 105 451.5	0
83		Additional allowances						
84	L	Preliminary and General	1.2	sum	R 1 611 167.80	6%	R 96 670.0	
85	H	Contingencies SUB - TOTAL 3	1.2	sum	R 1 611 167.80	10%		
86		(for additional allowances)					R 257 786.8	5
87		Grand - Total					R 1 974 406.1	5
		(for sub - total 1+2+3)						





1 2 3 4 4 5 6 7 8 9 10 11 12 13 14 15 16 17 17 18 19 20 21 22 23 24 25	ID	Closure Costing - Central Sewage Plant Task Infrastructural Aspects Nominal allowances Crane	Unit Rate Code	Unit	Quantity	Rate	Costs - <u>Year</u>	Notes
1 2 3 4 4 5 6 7 8 9 10 11 12 13 14 15 16 17 17 18 19 20 21 22 23 24 25		Infrastructural Aspects Nominal allowances	Code	Unit	Quantity	Rate	Amount	Notes
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Nominal allowances						
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25		Crane						
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25		Crane	44.0	- (-)	0.00	D 0.504.00	В	To assist with demolition and salvage
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00	R 6 534.00	R -	purposes Nominal allowance
7 8 9 10 11 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Sub - Total for Nominal allowances					R -	
8 9 10 11 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25		Demolitioning of plant and related structures	4.4		0.00	R -	R -	
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
11 12 13 14 15 16 17 18 19 20 21 22 23 24		Demolitioning of all structural structures						
12 13 14 15 16 17 18 19 20 21 22 23 24		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.	20
14 15 16 17 18 19 20 21 22 22 23 24		Tip area	2.2		5.42	1 330.00		
15 16 17 18 19 20 21 22 23 24 25		Structural Concrete	4.2	m³	1400.00	R 610.00		
16 17 18 19 20 21 22 23 24		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 858 617.	30
18 19 20 21 22 23 24 25		Workshop and store	3.1.1	m²	41.00	R 295.00		
19 20 21 22 23 24 25		Sub - Total for demolitioning of workshops and stores					R 12 095.	00
20 21 22 23 24 25		Demolitioning of permanent brick structures and temporary structures						
21 22 23 24 25		Operators building	3.1.1	m²	50.00			
22 23 24 25		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
24 25		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.	OO Single story brick building
25		Effluent pump station	3.2.1	m²	50.00	R 480.00		
		Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00		
		temporary structures		<u> </u>			R 116 250.	00
26 27	-	Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -	+
28		Sub - Total for removal of all surface related finishes			5.00		R -	
29		Removal of all linear items	E.F.0		070.00	D 07.00	D 00.400	20
30 31	-	Security fencing Sub - Total for removal of all linear items	5.5.3	m	970.00	R 27.00	R 26 190. R 26 190.	
32		Rehabilitation of roads						
33 34		Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -	R -	
35		Sub - Total for rehabilitation of roads Disposal of demolition waste		 				
36		Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%		
37		Disposal of demolition waste	9.6.7	m³/km	1572.00	R 171.00		
38 39		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 294 140. R 1 307 292.	
40								
41		Mining Aspects						
42 43		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -	-
				- na	0.00			
44		Sub - Total open pit reclamation including final voids and ramp	3				R -	
45 46		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines	i				R -	
48		Rehabilitation of overburden and spoils			0.00			
49 50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -	
		Rehabilitation of processing waste deposits and evaporation ponds						
51 52		(non polluting potential) Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and		na	0.00	-		
53		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds					R -	
54		(polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
56		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential					R -	
57		Reclamation of subsided areas						
58		Not Applicable	1.1	na	0.00	R -	R -	
59 60	-	Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects					R -	
61	-	Sub - Total for Milning aspects		1			R -	
62		General Surface Reclamation	46					
63 64		General shaping and levelling of infrastructural area Import topsoil on footprint areas	10.1.1 9.6.1	ha m³	5.50 6875.00			
65		Rip to alleviate compactior	9.5.1	ha	5.50	R 9 400.00	R 51 700.	00 Rip 500mm deep
66		Re-establish vegetation	10.4.1	ha	5.50	R 13 800.00		
67 68	-	Sub - Total for General Surface Reclamation		1			R 303 875.	, , , , , , , , , , , , , , , , , , ,
69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71 72		Sub - Total for Water Management		 			R -	-
73		SUB - TOTAL 1					R 1 611 167.	80
		(for infrastructural and related structures						
74 75		Post - closure aspects Surface water quality monitoring	12.1	yr	0.00	R 119 232.00	R -	Assumed included as part of 17 Shaft
76		Groundwater quality monitoring	12.2	yr	0.00	R 52 992.00	R -	Assumed included as part of 17 Shaft
77		Reclamation monitoring on reclaimed areas	12.3	ha	5.50			
78 79	-	Care and maintenance of reclaimed areas Sub - Total for Post closure aspects	12.4	ha	5.50	R 15 000.00	R 82 500. R 95 865.	
80 81		Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%	R 9 586.	
		Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2						
82		(for post - closure aspects)					R 105 451.	70
83 84		Additional allowances	1 2	Ci inc	R 1611167.80	6%	R 96 670.	07 Assume 6 percent of sub-total 4
85	-	Preliminary and General Contingencies	1.2	sum sum	R 1611 167.80	10%		
86		SUB - TOTAL 3				.370	R 257 786.	
_		(for additional allowances) Grand - Total						
87		Grand - Total (for sub - total 1+2+3)					R 1 974 406.	15





		Closure Costing - Central Sewage Plant	Closure Costs - <u>Year 4</u>						
Item nr	ID	Task	Unit Rate	Unit	Quantity	Rate	Amount	Notes	
1		Infrastructural Aspects	Code						
2		Nominal allowances						To assist with demolition and salvage	
3		Crane Allowance for the removal of salvageable equipment	11.2 1.2	p/day sum	0.00 1.00		R -	purposes Nominal allowance	
5		Sub - Total for Nominal allowances	1.2	Suili	1.00	К -	R -	Nonlina allowance	
6 7		Demolitioning of plant and related structures Not applicable	1.1	na	0.00	R -	R -		
8		Sub - Total for demolitioning of plant and related structures	1.1	iiu.	0.00		R -		
9 10		Demolitioning of all structural structures Dosing syphon box							
11		Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.0	0	
12 13		Tip area Structural Concrete	4.2	m³	1400.00	R 610.00	R 854 000.0	0	
14 15		Sub - Total for demolitioning of all structural structures					R 858 617.0	0	
16		Demolitioning of workshops and stores Workshop and store	3.1.1	m²	41.00	R 295.00			
17		Sub - Total for demolitioning of workshops and stores					R 12 095.0	0	
18		Demolitioning of permanent brick structures and temporary structures							
19 20		Operators building Office and store	3.1.1	m² m²	50.00 50.00				
21 22		Pump station Filter building	3.2.1 3.1.1	m² m²	50.00 50.00				
23		Effluent pump station	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building	
24		Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building	
25		temporary structures					R 116 250.0	0	
26 27		Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -		
28		Sub - Total for removal of all surface related finishes					R -		
29 30		Removal of all linear items Security fencing	5.5.3	m	970.00	R 27.00	R 26 190.0	0	
31		Sub - Total for removal of all linear items					R 26 190.0		
32 33		Rehabilitation of roads Not applicable	1.1	na	0.00	R -	R -	<u> </u>	
34		Sub - Total for rehabilitation of roads					R -		
35 36		Disposal of demolition waste Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%	R 25 328.8	0 2.50%	
37		Disposal of demolition waste	9.6.7	m³/km	1572.00		R 268 812.0		
38 39		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 294 140.8 R 1 307 292.8		
40									
41 42		Mining Aspects Open pit reclamation including final voids and ramps							
43		Not Applicable	1.1	na	0.00	R -	R -		
44		Sub - Total open pit reclamation including final voids and ramp	3				R -		
45 46		Sealing of shafts and inclines	1.1		0.00	n	R -		
46		Not Applicable Sub - Total for sealing of shafts and inclines	1.1	na	0.00	к -	R -		
48 49		Rehabilitation of overburden and spoils	1.1		0.00	R -	R -		
50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	К -	R -		
51		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)							
52		Not Applicable	1.1	na	0.00	R -	R -		
53		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (non polluting potential	,				R -		
F4		Rehabilitation of processing waste deposits and evaporation ponds							
54 55		(polluting potential) Not Applicable	1.1	na	0.00	R -	R -		
56		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential					R -		
57		Reclamation of subsided areas							
58 59		Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	R -	R -		
60		Sub - Total for Mining aspects					R -		
61 62		General Surface Reclamation							
63		General shaping and levelling of infrastructural area	10.1.1	ha	5.50				
64 65	H	Import topsoil on footprint areas Rip to alleviate compactior	9.6.1 9.5.1	m³ ha	6875.00 5.50				
66		Re-establish vegetatior Sub - Total for General Surface Reclamation	10.4.1	ha	5.50		R 75 900.0	0	
67 68	۲	Sub - Total for General Surface Reclamation					R 303 875.0		
69 70		Water Management Not Applicable	1.1	na	0.00	P	R -		
71		Not Applicable Sub - Total for Water Management	Id.	ıld	0.00	-	R -		
72		SUB - TOTAL 1							
73		(for infrastructural and related structures					R 1 611 167.8	0	
74 75		Post - closure aspects Surface water quality monitoring	12.1	уг	0.00	R 119 232.00	R -	Assumed included as part of 17 Shaft	
76		Groundwater quality monitoring	12.2	yr	0.00	R 52 992.00	R -	Assumed included as part of 17 Shaft	
77 78	\vdash	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	5.50 5.50	R 2 430.00 R 15 000.00			
79		Sub - Total for Post closure aspects	14.7	na	3.50	10 000.00	R 95 865.0		
80		Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%	R 9 586.5	Assumed 10 percent for post closure aspect	
81		Sub - Total for Contingencies for post closure aspects				.370	R 9 586.5		
82		SUB - TOTAL 2 (for post - closure aspects)					R 105 451.5	0	
83		Additional allowances							
84 85	H	Preliminary and General Contingencies	1.2	sum	R 1 611 167.80 R 1 611 167.80	6% 10%	R 96 670.0 R 161 116.7		
86		SUB - TOTAL 3				.070	R 257 786.8		
		(for additional allowances) Grand - Total							
87	_						R 1 974 406.1	51	





		Closure Costing - Central Sewage Plant				Closure	Costs - Year	5
.			Unit Rate	l		T	1	1
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2	_	Nominal allowances						
		0	44.0	- (-)	0.00	D 0.534.00		To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00	R 6 534.00	R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6		Demolitioning of plant and related structures	4.4		0.00	R -	R .	
8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617	00
12		Tip area	2.2		5.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores	1				R 858 617.	30
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores					R 12 095	00
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00			
23		Effluent pump station	3.2.1	m²	50.00	R 480.00		
24		Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00	R 24 000	00 Single story brick building
25	L	temporary structures		<u></u>		<u> </u>	R 116 250	00
26		Removal of all surface related finishes			2	В	В	
27 28	-	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	к -	R -	_
29	H	Removal of all linear items		L				
30		Security fencing	5.5.3	m	970.00	R 27.00		
31 32	-	Sub - Total for removal of all linear items Rehabilitation of roads		 			R 26 190	00
33		Not applicable	1.1	na	0.00	R -	R -	+
34		Sub - Total for rehabilitation of roads					R -	
35		Disposal of demolition waste	0.4	0/	D 4 042 452 00	0.50/	D 05.000	00 0 500/
36 37	_	Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 1 013 152.00 1572.00	2.5% R 171.00		
38		Sub - Total for disposal of demolition waste	0.0.7		1072.00		R 294 140	
39		Sub - Total for infrastructural aspects					R 1 307 292	80
40 41		Mining Aspects						
42		Mining Aspects Open pit reclamation including final voids and ramps						
43		Not Applicable	1.1	na	0.00	R -	R -	
							_	
44 45		Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	5				R -	
46		Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines	i				R -	
48		Rehabilitation of overburden and spoils	4.4		0.00			
49 50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	K -	R -	
		Rehabilitation of processing waste deposits and evaporation ponds						
51		(non polluting potential)			0.00	-		
52		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -	
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and			. 93		_	
56 57	-	evaporation ponds (polluting potential Reclamation of subsided areas)	<u> </u>			R -	_
58		Not Applicable	1.1	na	0.00	R -	R -	+
59		Sub - Total for reclamation of subsided areas					R -	
60	L	Sub - Total for Mining aspects					R -	
61 62		General Surface Reclamation						1
63		General shaping and levelling of infrastructural area	10.1.1	ha	5.50			
64	E	Import topsoil on footprint areas	9.6.1	m³	6875.00			
65 66	\vdash	Rip to alleviate compactior Re-establish vegetatior	9.5.1 10.4.1	ha ha	5.50 5.50			
67		Sub - Total for General Surface Reclamation					R 303 875	
68								
69 70		Water Management Not Applicable	1.1	na	0.00	R -	R -	
71	Н	Sub - Total for Water Management	1.1	na na	0.00		R -	
72								
73		SUB - TOTAL 1 (for infrastructural and related structures					R 1 611 167	80
74		Post - closure aspects						
75		Surface water quality monitoring	12.1	yr	0.00			
76		Groundwater quality monitoring	12.2	yr	0.00			Assumed included as part of 17 Shaft
77 78	-	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	5.50 5.50			
78	Н	Sub - Total for Post closure aspects	12.4	ıld	5.50	15 000.00	R 95 865	
80	-	Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%		
81		Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2					R 9 586	
82		(for post - closure aspects)					R 105 451	50
83		Additional allowances			D 45		n	
84 85	-	Preliminary and General	1.2	sum	R 1 611 167.80 R 1 611 167.80	6% 10%	R 96 670	
		Contingencies SUB - TOTAL 3	1.2	sum	101.107.80	10%		
86		(for additional allowances)					R 257 786	55
0-		Grand - Total					R 1 974 406	15
87		(for sub - total 1+2+3)						





		Closure Costing - Central Sewage Plant				Closure	Costs - Year 6	
.,			Unit Rate	l		1	1	
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2	Г	Nominal allowances						
,		0	44.0	- (-)	0.00	D 0.534.00		To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00		R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6 7		Demolitioning of plant and related structures	4.4		0.00	R -	R -	
8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11	-	Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.0	00
12		Tip area	2.2		3.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 858 617.0	100
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores					R 12 095.0	00
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21	-	Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00			
23		Effluent pump station	3.2.1	m²	50.00	R 480.00	R 24 000.0	00 Single story brick building
24	1	Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00	R 24 000.0	Single story brick building
25		temporary structures		<u></u>			R 116 250.0	00
26		Removal of all surface related finishes						
27 28	┢	Not applicable Sub - Total for removal of all surface related finishes	1.1	na	0.00	К -	R -	
29		Removal of all linear items					-	
30		Security fencing	5.5.3	m	970.00	R 27.00		
31	<u> </u>	Sub - Total for removal of all linear items					R 26 190.0	00
32 33	\vdash	Rehabilitation of roads Not applicable	1.1	na	0.00	R -	R -	
34		Sub - Total for rehabilitation of roads					R -	
35		Disposal of demolition waste		0/	D 4040 150 55	0.50	B 05.005	2.509/
36 37	-	Sorting and screening of demolitioning waste Disposal of demolition waste	6.1 9.6.7	% m³/km	R 1 013 152.00 1572.00	2.5% R 171.00		
38		Sub - Total for disposal of demolition waste	5.0.7	III /KIII	1072.00	171.00	R 294 140.8	
39		Sub - Total for infrastructural aspects					R 1 307 292.8	30
40 41		Mining Aspects						
42	Н	Mining Aspects Open pit reclamation including final voids and ramps						
43		Not Applicable	1.1	na	0.00	R -	R -	
							_	
44 45		Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	š				R -	
46		Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines					R -	
48		Rehabilitation of overburden and spoils	4.4		0.00			
49 50	H	Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -	
		Rehabilitation of processing waste deposits and evaporation ponds						
51		(non polluting potential)			0.00			
52	H	Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -	
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
56 57	┝	evaporation ponds (polluting potential Reclamation of subsided areas		<u> </u>			R -	
58		Not Applicable	1.1	na	0.00	R -	R -	
59		Sub - Total for reclamation of subsided areas					R -	
60	\vdash	Sub - Total for Mining aspects				1	R -	
61 62		General Surface Reclamation						
63		General shaping and levelling of infrastructural area	10.1.1	ha	5.50			
64		Import topsoil on footprint areas	9.6.1	m³	6875.00			
65 66	┢	Rip to alleviate compactior Re-establish vegetatior	9.5.1 10.4.1	ha ha	5.50 5.50			
67	L	Sub - Total for General Surface Reclamation					R 303 875.0	
68								
69 70		Water Management Not Applicable	1.1	na	0.00	R -	R -	
71		Sub - Total for Water Management	1.1	na na	0.00		R -	
72								
73		SUB - TOTAL 1					R 1 611 167.8	30
74		(for infrastructural and related structures Post - closure aspects						
75		Surface water quality monitoring	12.1	yr	0.00	R 119 232.00	R -	Assumed included as part of 17 Shaft
76		Groundwater quality monitoring	12.2	yr	0.00			Assumed included as part of 17 Shaft
77 78	┝	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	5.50 5.50			
78	H	Sub - Total for Post closure aspects	14.4	ıld	5.50	13 000.00	R 95 865.0	
80 81	1	Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%		
	H	Sub - Total for Contingencies for post closure aspects SUB - TOTAL 2					R 9 586.5	
82	L	(for post - closure aspects)					R 105 451.5	ou
83		Additional allowances			D 4011 :== ::		D 65.55	NT Assume Const. 1 ()
84 85	-	Preliminary and General Contingencies	1.2	sum sum	R 1 611 167.80 R 1 611 167.80	6% 10%	R 96 670.0	
		SUB - TOTAL 3	1.4	Juill		10%		
86	L	(for additional allowances)					R 257 786.8	
87		Grand - Total (for sub - total 1+2+3)					R 1 974 406.1	5
		(101 Sub - total 1+2+3)						





		Closure Costing - Central Sewage Plant				Closure	Costs - Year	7
1			Unit Rate				1	1
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2	_	Nominal allowances						
,		0	44.0	- (-)	0.00	D 0.534.00	В	To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00	R 6 534.00	R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances		-			R -	
6		Demolitioning of plant and related structures	4.4		0.00	R -	R -	
8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.	00
12		Tip area	2.2	-	5.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores	1				R 858 617.	00
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores	1				R 12 095.	00
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.	OO Single story brick building
23 24		Effluent pump station Sub-station	3.2.1 3.2.1	m² m²	50.00 50.00	R 480.00 R 480.00		
	H	Sub - Total for demolitioning of permanent brick structures and	J.E. I		30.00	400.00		
25	Щ	temporary structures		igwdown			R 116 250.	00
26 27	H	Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -	1
28		Sub - Total for removal of all surface related finishes			2.00		R -	
29 30	Н	Removal of all linear items	5.5.3	m	970.00	R 27.00	R 26 190.	00
31	H	Security fencing Sub - Total for removal of all linear items	J.U.J	m	970.00	1.00	R 26 190.	
32		Rehabilitation of roads			_			
33 34	H	Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -	R -	
35		Disposal of demolition waste					K	
36		Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%		
37 38		Disposal of demolition waste Sub - Total for disposal of demolition waste	9.6.7	m³/km	1572.00	R 171.00	R 268 812.	
39		Sub - Total for infrastructural aspects					R 1 307 292.	
40		·						
41 42		Mining Aspects Open pit reclamation including final voids and ramps						
43		Not Applicable	1.1	na	0.00	R -	R -	
							_	
44 45		Sub - Total open pit reclamation including final voids and ramp Sealing of shafts and inclines	5				R -	
46		Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines					R -	
48 49		Rehabilitation of overburden and spoils Not Applicable	1.1	na	0.00	R -	R -	
50		Sub - Total for rehabilitation of overburden and spoils			0.00		R -	
F4		Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential)						
51 52		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and						
53		evaporation ponds (non polluting potential Rehabilitation of processing waste deposits and evaporation ponds)				R -	
54		(polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
56		Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential					R -	
57		Reclamation of subsided areas						
58	Щ	Not Applicable Sub - Total for reclamation of subsided areas	1.1	na	0.00	R -	R -	
59 60	H	Sub - Total for reclamation of subsided areas Sub - Total for Mining aspects		\vdash			R -	
61								
62		General Surface Reclamation General shaping and levelling of infrastructural area	10.1.1	ho	5.50	R 55 250.00	R 303 875.	20.
64	Н	Import topsoil on footprint areas	9.6.1	ha m³	6875.00			
65		Rip to alleviate compactior	9.5.1	ha	5.50	R 9 400.00	R 51 700.	00 Rip 500mm deep
66 67	H	Re-establish vegetatior Sub - Total for General Surface Reclamation	10.4.1	ha	5.50	R 13 800.00	R 75 900.	
68	Ħ						000 075.	
69		Water Management				D	D	
70 71	H	Not Applicable Sub - Total for Water Management	1.1	na	0.00	к -	R -	
71	H	Gub - Total for Water Management						
73		SUB - TOTAL 1					R 1 611 167	во
74		(for infrastructural and related structures Post - closure aspects						
75	٥	Surface water quality monitoring	12.1	yr	0.00	R 119 232.00	R -	Assumed included as part of 17 Shaft
76		Groundwater quality monitoring	12.2	yr	0.00	R 52 992.00	R -	Assumed included as part of 17 Shaft
77 78	Н	Reclamation monitoring on reclaimed areas Care and maintenance of reclaimed areas	12.3 12.4	ha ha	5.50 5.50	R 2 430.00 R 15 000.00		
79	Ħ	Sub - Total for Post closure aspects	14.7	na	5.50	15 000.00	R 95 865.	
			1.0	01:	D 05 005 00	400/		
80 81	Н	Contingencies for post closure aspects Sub - Total for Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%	R 9 586.	
82		SUB - TOTAL 2					R 105 451.	
		(for post - closure aspects)						
83 84		Additional allowances Preliminary and General	1.2	sum	R 1 611 167.80	6%	R 96 670.	07 Assume 6 percent of sub - total 1
85		Contingencies	1.2	sum	R 1611 167.80	10%		
		SUB - TOTAL 3					R 257 786.	85
86							R 257 786.	00
86 87		(for additional allowances) Grand - Total					R 257 786.	





		Closure Costing - Central Sewage Plant				Closure	Costs - Year 8	
			Unit Rate	l		1	1	1
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2	_	Nominal allowances						
0		0	44.0	- (-)	0.00	D 0.534.00		To assist with demolition and salvage
3 4		Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00		R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6		Demolitioning of plant and related structures	4.4		0.00	R -	R -	
8		Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.0	0
12		Tip area	2.2		5.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 858 617.0	0
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores					R 12 095.0	0
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.0	Single story brick building
23		Effluent pump station	3.2.1	m²	50.00			
24	H	Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00		
25	<u> </u>	temporary structures		<u> </u>			R 116 250.0	0
26 27	-	Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -	+
28		Sub - Total for removal of all surface related finishes			5.00		R -	
29	F	Removal of all linear items	E.F.0		070.00	D 07.00	D 00.400.0	
30 31	-	Security fencing Sub - Total for removal of all linear items	5.5.3	m	970.00	R 27.00	R 26 190.0	
32		Rehabilitation of roads						
33 34	H	Not applicable Sub - Total for rehabilitation of roads	1.1	na	0.00	R -	R -	
35		Disposal of demolition waste					-	
36		Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%		
37		Disposal of demolition waste	9.6.7	m³/km	1572.00	R 171.00		
38 39		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 294 140.8 R 1 307 292.8	
40		ous round minutation actual appoint					1 007 202.0	
41		Mining Aspects						
42 43		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -	
40			1.1	IIa	0.00		IX -	
44		Sub - Total open pit reclamation including final voids and ramp	i				R -	
45 46		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R -	+
47		Sub - Total for sealing of shafts and inclines			0.00		R -	
48		Rehabilitation of overburden and spoils						
49 50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -	
30		Rehabilitation of processing waste deposits and evaporation ponds					-	
51		(non polluting potential)				_	_	
52		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -	
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
56 57	-	evaporation ponds (polluting potential Reclamation of subsided areas	1	-			R -	
58	L	Not Applicable	1.1	na	0.00	R -	R -	
59		Sub - Total for reclamation of subsided areas			-		R -	
60 61	\vdash	Sub - Total for Mining aspects		 			R -	
62		General Surface Reclamation						
63		General shaping and levelling of infrastructural area	10.1.1	ha	5.50			
64 65	-	Import topsoil on footprint areas Rip to alleviate compactior	9.6.1 9.5.1	m³ ha	6875.00 5.50			
66		Re-establish vegetatior	10.4.1	ha	5.50		R 75 900.0	0
67		Sub - Total for General Surface Reclamation			-		R 303 875.0	0
68 69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71		Sub - Total for Water Management			-		R -	
72		SUB - TOTAL 1						_
73		(for infrastructural and related structures					R 1 611 167.8	0
74		Post - closure aspects	10.1		2	D 440.000 ==	В	Accumed included as and 147.01.6
75 76	\vdash	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
77		Reclamation monitoring on reclaimed areas	12.3	ha	5.50	R 2 430.00	R 13 365.0	Assumed included as part of 17 Shaft
78		Care and maintenance of reclaimed areas	12.4	ha	5.50	R 15 000.00		
79	\vdash	Sub - Total for Post closure aspects		 			R 95 865.0	
80		Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%		
81		Sub - Total for Contingencies for post closure aspects					R 9 586.5	
82		SUB - TOTAL 2 (for post - closure aspects)					R 105 451.5	0
83		Additional allowances						
84	L	Preliminary and General	1.2	sum	R 1 611 167.80	6%	R 96 670.0	
85	H	Contingencies SUB - TOTAL 3	1.2	sum	R 1 611 167.80	10%		
86		(for additional allowances)					R 257 786.8	5
87		Grand - Total					R 1 974 406.1	5
		(for sub - total 1+2+3)						





		Closure Costing - Central Sewage Plant				Closure	Costs - Year 9	
.			Unit Rate			I		
Item nr	ID	Task Infrastructural Aspects	Code	Unit	Quantity	Rate	Amount	Notes
2		Nominal allowances						
		0	44.0	- (-)	0.00	D 0.534.00		To assist with demolition and salvage
3 4	_	Crane Allowance for the removal of salvageable equipment	11.2	p/day sum	0.00 1.00	R 6 534.00	R -	purposes Nominal allowance
5		Sub - Total for Nominal allowances					R -	
6 7		Demolitioning of plant and related structures	11	no	0.00	R -	R -	
8	_	Not applicable Sub - Total for demolitioning of plant and related structures	1.1	na	0.00	R -	R -	
9		Demolitioning of all structural structures						
10 11		Dosing syphon box Structural steelwork	2.2	t	3.42	R 1 350.00	R 4 617.	20
12		Tip area	2.2		5.42	1 330.00		
13		Structural Concrete	4.2	m³	1400.00	R 610.00		
14 15		Sub - Total for demolitioning of all structural structures Demolitioning of workshops and stores					R 858 617.	JO
16		Workshop and store	3.1.1	m²	41.00	R 295.00		
17		Sub - Total for demolitioning of workshops and stores					R 12 095.	10
18		Demolitioning of permanent brick structures and temporary structures						
19		Operators building	3.1.1	m²	50.00			
20 21		Office and store Pump station	3.1.1 3.2.1	m² m²	50.00 50.00			
22		Filter building	3.1.1	m²	50.00	R 295.00	R 14 750.	O Single story brick building
23		Effluent pump station	3.2.1	m²	50.00	R 480.00		
24	H	Sub-station Sub - Total for demolitioning of permanent brick structures and	3.2.1	m²	50.00	R 480.00		
25	L	temporary structures					R 116 250.	10
26 27	\vdash	Removal of all surface related finishes Not applicable	1.1	na	0.00	R -	R -	+
28		Sub - Total for removal of all surface related finishes			5.00		R -	
29	Ľ	Removal of all linear items	E.F.0		070.00	D 07.00	D 00.400	20
30 31	\vdash	Security fencing Sub - Total for removal of all linear items	5.5.3	m	970.00	R 27.00	R 26 190.	
32		Rehabilitation of roads						
33 34	Ľ	Not applicable	1.1	na	0.00	R -	R -	
35		Sub - Total for rehabilitation of roads Disposal of demolition waste					к -	
36		Sorting and screening of demolitioning waste	6.1	%	R 1 013 152.00	2.5%		
37		Disposal of demolition waste	9.6.7	m³/km	1572.00	R 171.00		
38 39		Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects					R 294 140.8	
40								
41		Mining Aspects						
42 43		Open pit reclamation including final voids and ramps Not Applicable	1.1	na	0.00	R -	R -	+
40				na	0.00	-	IX -	
44		Sub - Total open pit reclamation including final voids and ramp	3				R -	
45 46		Sealing of shafts and inclines Not Applicable	1.1	na	0.00	R -	R -	
47		Sub - Total for sealing of shafts and inclines		na -	0.00		R -	
48		Rehabilitation of overburden and spoils						
49 50		Not Applicable Sub - Total for rehabilitation of overburden and spoils	1.1	na	0.00	R -	R -	
- 50		Rehabilitation of processing waste deposits and evaporation ponds						
51		(non polluting potential)			0.00	-		
52		Not Applicable Sub - Total for rehabilitation of processing waste deposits and	1.1	na	0.00	R -	R -	
53		evaporation ponds (non polluting potential)				R -	
54		Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)						
55		Not Applicable	1.1	na	0.00	R -	R -	
		Sub - Total for rehabilitation of processing waste deposits and					_	
56 57	\vdash	evaporation ponds (polluting potential Reclamation of subsided areas	1				R -	1
58		Not Applicable	1.1	na	0.00	R -	R -	
59	Ľ	Sub - Total for reclamation of subsided areas					R -	
60 61	⊢	Sub - Total for Mining aspects					R -	
62		General Surface Reclamation						
63	E	General shaping and levelling of infrastructural area	10.1.1	ha 3	5.50			
64 65	⊢	Import topsoil on footprint areas Rip to alleviate compactior	9.6.1 9.5.1	m³ ha	6875.00 5.50			
66		Re-establish vegetatior	10.4.1	ha	5.50		R 75 900.	00
67	Ľ	Sub - Total for General Surface Reclamation					R 303 875.	10
68 69		Water Management						
70		Not Applicable	1.1	na	0.00	R -	R -	
71		Sub - Total for Water Management			-		R -	
72		SUB - TOTAL 1					_	_
73		(for infrastructural and related structures					R 1 611 167.	10
74		Post - closure aspects	10.1		2	D 440.000.00	В	Assumed individual and 4.47.01.6
75 76	H	Surface water quality monitoring Groundwater quality monitoring	12.1 12.2	yr yr	0.00			Assumed included as part of 17 Shaft Assumed included as part of 17 Shaft
77	L	Reclamation monitoring on reclaimed areas	12.3	ha	5.50	R 2 430.00	R 13 365.	O Assumed included as part of 17 Shaft
78	Ĺ	Care and maintenance of reclaimed areas	12.4	ha	5.50	R 15 000.00		
79	H	Sub - Total for Post closure aspects					R 95 865.	
80	L	Contingencies for post closure aspects	1.2	sum	R 95 865.00	10%		
81		Sub - Total for Contingencies for post closure aspects					R 9 586.	
82		SUB - TOTAL 2 (for post - closure aspects)					R 105 451.	90
83		Additional allowances						
84	L	Preliminary and General	1.2	sum	R 1 611 167.80	6%		
85	H	Contingencies SUB - TOTAL 3	1.2	sum	R 1 611 167.80	10%		
86		(for additional allowances)					R 257 786.	J5
0.7		Grand - Total					R 1 974 406.	15
87		(for sub - total 1+2+3)						





Name		ete - Voar 10	Cos	Closure					Closure Costing - Central Sewage Plant		
The color of the			Lus					Unit Rate		1	
Additional analysis of the company	Notes	Amount		Rate		Quantity	Unit			nr ID	Item nr
Company Comp											2
Absoration for the remote of an appeals to a company of the comp	sist with demolition and salvage ses		R	6 534 00	n R	0.00	n/day	11.2	Crane		3
Descriptioning of persons and related shoutcares 1		-		-							
2		•	R							_	
2		-		-	0 R	0.00	na	1.1	Not applicable		
Opening patient book Commission of the commission of all structural structures Commission of the		•	R					;		_	
10 2000 2000 10 2000									Dosing syphon box		10
Structural Concrete 42 pt 1600 0 R 9100 0 R 8500 0 R 858 0000 0 R 8500 0 R		4 617.00	R	1 350.00	2 R	3.42	t	2.2		-	
15 Workshops and store				610.00	0 R	1400.00	m³	4.2	Structural Concrete		13
1.0		858 617.00	ĸ								
Demolitioning of permanent brick structures and temporary structures S.1.1 Pr S.000 R. 280.00 R. 1470.00 Stripl entry	story brick building		_	295.00	0 R	41.00	m²	3.1.1			
13 Operators butking		12 030.00			+						
Office and allower 1.1 1	story brick building	14 750.00	R	295.00	0 R	50.00	m²	3.1.1			
Filter building	story brick building	14 750.00	R	295.00	0 R	50.00	m²	3.1.1	Office and store		20
Effect pump station	story brick building story brick building									-	
Sub - Total for infrastructural principal structures and the property structures and	story brick building		R	480.00							
Removal of all surface related finishes	otory orion building			480.00	J K	50.00	1117	J.Z. I	Sub - Total for demolitioning of permanent brick structures and		
Not appointable Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for removal of all surface related finishes Sub - Total for rehabilitation of roads Sub - Total for subsidiary Sub - Total		116 250.00	R		-					_	
Removal of all lines terms Sub - Total for removal of all lines items Sub - Total for removal of processing waste deposits and evaporation ponds Sub - Total for remabilitation of processing waste deposits and evaporation ponds Sub - Total for remabilitation of processing waste deposits and evaporation ponds Sub - Total for remabilitation of processing waste deposits and evaporation ponds Sub - Total for remabilitation of subsidied areas Sub - Total for remabilitation of subsidied areas Sub - Total for remabilitation of subsidied areas		-	_	-	0 R	0.00	na	1.1	Not applicable		27
Security ferroring		-	R		+						
33				27.00	0 R	970.00	m	5.5.3	Security fencing		30
33		26 190.00	R		-						
35			_	-	0 R	0.00	na	1.1	Not applicable		33
38 Sub - Total for disposal of demolition waste Sub - Total for infrastructural aspects Sub - Total for infrastructural aspects Sub - Total for infrastructural aspects Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total open pit reclamation including final voids and ramps Sub - Total for sealing of shafts and inclines Sub - Total for sealing of shafts and inclines Sub - Total for sealing of shafts and inclines Sub - Total for rehabilitation of overburden and spoils Sub - Total for rehabilitation of overburden and spoils Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Sub - Total for mining aspects Sub - Total for Water Management Sub - Total for Water Management Sub - Total for Post cl		•	ĸ								
33 Sub - Total for disposal of demolition waste R 294140.06											
41	ance was made for a 30km radius		_	1/1.00	UR	1572.00	m ² /km	9.6.7		-	
Mining Aspects		1 307 292.80	R						Sub - Total for infrastructural aspects		
1.1 na									Mining Aspects		
Sub-Total open pit reclamation including final voids and ramps R -			0		0 0	0.00		- 11			
Sealing of shafts and inclines		-	K		UR	0.00	na	1.1			43
48		•	R					3			
A		-	_	-	0 R	0.00	na	1.1	Not Applicable		46
Mol Applicable Sub - Total for rehabilitation of overburden and spolis Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) Not Applicable Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) Not Applicable Not Not Not Applicable Not Not Applicable Not Not Applicable Not Not Appl		-	R		+						
Rehabilitation of processing waste deposits and evaporation ponds (non polluting potential) 1.1 na		-	_	-	0 R	0.00	na		Not Applicable		49
1.1		-	R					•		-	50
Sub - Total for rehabilitation of processing waste deposits an evaporation ponds (no polluting potential) R			_		0 0	0.00					
Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)		-	K		UR	0.00	na	1.1			52
55		•	R					1		_	53
Sub - Total for rehabilitation of processing waste deposits and evaporation ponds (polluting potential) R									(polluting potential)		
Section Sub-Total for General Surface Reclamation Sub-Total for Water Management Sub-Total for Post closure aspects Sub-Total for Post closure aspects Sub-Total for Contingencies for post closure aspects Sub-Total for Contingencies for post closure aspects Sub-Total for Contingencies for post closure aspects Su		-	R	-	0 R	0.00	na	1.1		-	55
S8			R		-						
Sub - Total for Mining aspects R		<u> </u>			0 R	0.00	na	1.1	Not Applicable		58
61											
Sub-rotal for Water Management Sub-rotal for Post closure aspects Sub-rotal for Contingencies for post closure aspects Sub-rotal for Contingencies for post closure aspects Sub-rotal for Contingencies for post closure aspects Sub-rotal glowances Sub-rotal for Contingencies for post closure aspects Sub-rotal for Contingencies for post closure aspects Sub-rotal glowances Sub-rotal for Contingencies for post closure aspects			^		t						61
Import topsoil on footprint area:		303 875.00	R	55 250.00	0 R	5.50	ha	10.1.1			
Re-establish vegetatior	ne 250mm on 50% of footprint	178 750.00	R	26.00	0 R	6875.00	m³	9.6.1	Import topsoil on footprint areas		64
Sub - Total for General Surface Reclamation R 303 875.00	umm deep										
Mot Applicable 1.1 na 0.00 R - R -					F						67
Not Applicable									Water Management		
73 SUB - TOTAL 1			_	-	0 R	0.00	na	1.1	Not Applicable		70
74 Post - closure aspects		-	K						Sub - Total for Water Management		
Post - closure aspects		1 611 167.80	R								73
76 Groundwater quality monitoring 12.2 yr 0.00 R 52 992.00 R - Assumed inc 77 Reclamation monitoring on reclaimed areas 12.3 ha 5.50 R 2 430.00 R 13 365.00 Assumed inc 78 Care and maintenance of reclaimed areas 12.4 ha 5.50 R 15 000.00 R 82 500.00 Assumed inc 79 Sub - Total for Post closure aspects R 95 865.00 80 Contingencies for post closure aspects 1.2 sum R 95 865.00 10% R 9 586.50 81 Sub - Total for Contingencies for post closure aspects R 9 586.50 82 Sub - Total for Contingencies for post closure aspects R 9 586.50 83 Additional allowances Additional allowances R 105 451.50 84 Contingencies for post closure aspects R 105 451.50 85 Contingencies for post closure aspects R 105 451.50 86 Contingencies for post closure aspects R 105 451.50 87 Contingencies for post closure aspects R 105 451.50 88 Additional allowances Contingencies for post closure aspects R 105 451.50 89 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Contingencies for post closure aspects R 105 451.50 80 Co									Post - closure aspects		
77 Reclamation monitoring on reclaimed areas 12.3 ha 5.50 R 2430.00 R 13 365.00 Assumed inc 78	ned included as part of 17 Shaft ned included as part of 17 Shaft	-									
Sub - Total for Post closure aspects R 95 865.00	ned included as part of 17 Shaft		R	2 430.00	0 R	5.50	ha	12.3	Reclamation monitoring on reclaimed areas		77
80 Contingencies for post closure aspects 1.2 sum R 95 865.00 10% R 9 586.50 Assumed 10	ned included as part of 17 Shaft			15 000.00	0 R	5.50	ha	12.4			
Sub - Total for Contingencies for post closure aspects R 9 586.50	and 10 percent for post classes			1001		D 05.005.00		4.0			
82 SUB - TOTAL 2 (for post - closure aspects) R 105 451.50 83 Additional allowances Image: Control of the control of th	ned 10 percent for post closure aspects			10%	,	к 95 865.00	sum	1.2			
83 Additional allowances									SUB - TOTAL 2		
									Additional allowances		
	ne 6 percent of sub - total 1 ne 10 percent of sub - total 1									=	
86 SUB - TOTAL 3 R 257 786 85	ic to percent or sub - total 1			10%		10/11/07.80	aulii	1.2	SUB - TOTAL 3		
(tor additional allowances)					F					+	
87 R 1 974 406.15 R 1 974 406.15		1 974 406.15	R								87





	Rates Table - 20				2013		
Unit Rate Code	Costing Items		Currency	U	nit Rates	Unit	Notes
	Nominal cost and time related items						
	Not Applicable	:	Rands	R	-	na	
-	Sum	:	Rands	R	-	sum	
	Rate Percentage	-	Rands Rands	R	0.00%	unit %	
	Steel and related structures	Ė	rands		0.00 %	70	
	Cladding / Sheeting	:	Rands	R	23.00	m²	
2.2	Structural steelwork Super structures	:	Rands	R	1 350.00	t	
2.3.1	Light plant structures	:	Rands	R	135.00	m²	up to 100kg of steel per square meter
2.3.2	Medium plant structures		Rands	R	607.00	m²	up to 450kg of steel per square meter
2.3.3	Medium / Heavy plant structures Heavy plant structures	-	Rands Rands	R R	1 350.00 2 025.00	m² m²	up to 1000kg of steel per square meter up to 1500kg of steel per square meter
	Steel tanks with rubber lining		rando	i`	2 020.00		ap to roung or other per oquation meter
2.4.1	0-5m	:	Rands	R	10 600.00	no	diameter
2.4.2	5-10m 10-15m		Rands Rands	R R	26 650.00 37 300.00	no no	diameter 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 Carports	-	Rands	R	5 300.00	no	small enclosed steel tanks
2.6.1	Carports with IBR covering		Rands	R	55.00	m²	excludes paving
2.6.2	Carports with Shade net covering	-	Rands	R	35.00	m²	excludes paving
	Buildings and related structures Brick buildings						
3.1.1	Single storey building	:	Rands	R	295.00	m²	includes soft strip, excludes disposal of waste
3.1.2 3.1.3	Double storey building Three storey building	-	Rands Rands	R R	500.00 650.00	m² m²	includes soft strip, excludes disposal of waste includes soft strip, excludes disposal of waste
	Substations, pump stations and strong rooms	-	Ranus	K	030.00		indudes soit strip, excludes disposal of waste
3.2.1	Single storey building	:	Rands	R	480.00	m²	includes soft strip, excludes disposal of waste
3.2.2	Double storey or double volume building	-	Rands Rands	R R	690.00 140.00	m² m²	includes soft strip, excludes disposal of waste
3.4	Prefabricated or temporary buildings 110mm Brick wall		Rands	R	15.00	m²	
3.5	230mm Brick wall	:	Rands	R	30.00	m²	
3.6.1	Workshops and shed type structures 0m – 5m high		Rands	R	160.00	m²	
3.6.2	5m – 10m high		Rands	R	190.00	m²	
3.6.3	10m – 15m high		Rands	R	250.00	m²	
3.6.4	15m – 20m high Concrete	1	Rands	R	310.00	m²	
	Heavy concrete, thickness greater than 750mm		Rands	R	1 280.00	m³	bulk and heavy reinforced concrete
	Medium concrete, thickness between 250 and 750mm		Rands	R	610.00	m³	Heavy reinforced concrete
	Light concrete, thickness less than 250mm Floors, bases and foundations after removal of superstructure	-	Rands Rands	R R	400.00 215.00	m³ m²	reinforced concrete 250mm floors with 500mm bases on 30% of the area
	Heavy duty floors, bases and foundations after removal of superstructure			R			400mm floors with 800mm bases on 30% of the area
	Strip footings	-	Rands Rands	R	590.00 135.00	m² m	400mm noors with oounim bases on 30% of the area
	Column footings		Rands	R	280.00	no	
	Linear items Conveyors						
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 5.1.4	Overland conveyor - heavy Suspended conveyor - light to medium	:	Rands Rands	R R	320.00 535.00	m m	
5.1.5	Suspended conveyor - heavy with cladding		Rands	R	640.00	m	
5.2	Pipelines						
5.2.1 5.2.2	Overland steel pipelines on plinths (<200mm) Overland steel pipelines on plinths (200-350mm)	-	Rands Rands	R R	27.00 48.00	m m	5m plinth spacing, includes disposal of waste @ 10km 5m plinth spacing, includes disposal of waste @ 10km
5.2.3	Overland steel pipelines on plinths (200-330nm) Overland steel pipelines on plinths (350-500mm)	÷	Rands	R	64.00	m	5m plinth spacing, includes disposal of waste @ 10km
5.2.4	Overland HDPE pipelines on plinths (<200mm)	:	Rands	R	13.00	m	
5.2.5 5.2.6	Overland HDPE pipelines on plinths (200-350mm) Overland HDPE pipelines on plinths (350-500mm)	Ė	Rands Rands	R R	18.00 24.00	m m	
5.2.7	Concrete stormwater pipelines (<750mm)	:	Rands	R	85.00	m	
5.2.8	Concrete stormwater pipelines (<1000mm) Concrete stormwater pipelines (<1500mm)	:	Rands	R R	95.00 105.00	m	
5.2.9	Concrete stormwater pipelines (<1500mm) Overland power lines		Rands	r.	105.00	m	
5.3.1	Minor lines	:	Rands	R	27.00	m	
5.3.2 5.4	Major lines	:	Rands	R	55.00	m	
5.4.1	Railway lines 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 5.5.1	Fencing Erect security fencing	÷	Rands	R	133.00	m	
5.5.1	Erect stock fencing Erect stock fencing	Ė	Rands	R	27.00	m	
5.5.3	Dismantling of security fencing	:	Rands	R	27.00	m	
5.5.4 5.5.5	Dismantling of stock fencing Dismantling of steel palisade fencing	-	Rands Rands	R R	8.00 58.00	m m	
5.5.6	Dismantling of steer palisade fencing Dismantling of concrete palisade fencing	Ė	Rands	R	120.00	m	
	Waste						
	Sorting and screening of waste Disposal of waste	-	Rands		2.5	%	
6.2.1	Disposal of waste Disposal of inert demolition waste	Ŀ	Rands	R	28.00	m³/km	1km load and haul
6.2.2	Disposal of hazardous waste	:	Rands	R	805.00	m³	excludes transport
6.3.1	Decontamination of equipment Decontamination of equipment - small projects	-	Rands		5	%	of overall dismantling of steel structures
6.3.2	Decontamination of equipment - large projects		Rands		2.5	%	of overall dismantling of steel structures
	Removal and disposal of single HDPE liner		Rands	R	6.50	m²	





	Rates Table - 2013							
Unit Rate Code	Costing Items		Currency		Unit Rates	Unit	Notes	
7	Shaft and portals							
	Shafts							
7.1.1	Sealing of vertical shaft	-	Rands Rands	R R	714 220.00 810 160.00	sum	3m diameter 3.5m diameter	
7.1.2 7.1.3	Sealing of vertical shaft Sealing of vertical shaft	:	Rands	R	986 050.00	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	1 332 500.00	sum	5m diameter	
7.1.6 7.1.7	Sealing of vertical shaft Sealing of vertical shaft	-	Rands Rands	R R	1 375 140.00 1 410 500.00	sum	5.5m diameter 6.0m diameter	
7.1.8	Sealing of vertical shaft	-	Rands	R	1 492 400.00	sum	6.5m diameter	
7.1.9	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 7.1.12	Sealing of vertical shaft Sealing of vertical shaft	-	Rands Rands	R R	1 838 850.00 1 982 760.00	sum	8m diameter 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 Backfill incline shaft portal	-	Rands Rands	R R	2 665 000.00 31 980.00	sum	11m diameter	
7.3	Plug outlet and seal penstock of tailings dam	-	Rands	R	213 200.00	sum	assume 100 000m³ backfilled with waste rock <1km haul distance, excl topsoil	
	Plug surface holing's	**	Rands	R	200 000.00	sum		
7.5	Seal incline shaft		Rands	R	159 900.00	sum		
8 1	Roads, hardstands and paving Remove tar roads with 600mm layer works	-	Rands	R	48.00	m²	layer works buried in trench next to road or 10km load and haul, but excludes disposal of tar	
	Major gravel roads with engineered surfaces	Ė	Rands	R	21.00	m²	layer works buried next to road or 10km load and haul	
	Minor gravel roads and tracks	:	Rands	R	4.00	m²	minor gravel roads and tracks (no layer works) - ripped, profiled and vegetated	
8.4	Concrete slab or concrete liners	-	Rands	R	135.00	m²	thin concrete with minimal reinforcing	
	Removal of gunited embankments Removal of brick paving & stone pitching	:	Rands Rands	R R	80.00 38.00	m² m²	excludes disposal	
9	Earthworks				55.00			
9.1	Dozing							
9.1.1	Dozing to profile dumps (60m max)	:	Rands	R R	13.50 11.00	m ³	cut to fill including final profiling	
9.1.2	Bulk dozing of material (60m max) Excavation	-	Rands Rands	R	20.00	m³ m³	bulk dozing, no profiling	
9.3	Backfilling							
9.3.1	Backfilling of final void	:	Rands	R	15.50	m³	large volumes: 50% dozing & 50% load and haul	
9.3.2	Backfilling of final void Compacting	-	Rands Rands	R R	27.00 3.50	m³ m²	large volumes : 5km haul distance for bulk material in layers of 250mm	
9.5	Ripping		rando		0.00		in ayoro or zoonin	
9.5.1	Ripping of areas to alleviate compaction	**	Rands	R	9 400.00	ha	500mm deep ripping	
9.5.2	Deep ripping	:	Rands	R	13 800.00	ha	1000mm deep ripping	
9.6.1	Transport Load and haul	:	Rands	R	26.00	m³		
9.6.2	Extra over rates for hauling outside free haul distance		Rands	R	5.00	m³/km		
9.6.3	Load and haul for 2km distance		Rands	R	31.00	m³/km		
9.6.4	Load and haul for 3km distance Load and haul for 4km distance	:	Rands Rands	R R	36.00 41.00	m³/km m³/km		
9.6.6	Load and haul for 5km distance	-	Rands	R	46.00	m³/km		
9.6.7	Load and haul for 30km distance	:	Rands	R	171.00	m³/km		
9.6.8	Load and haul for 10km distance	:	Rands	R	73.00	m³/km		
	Reclamation on disturbed areas Profiling - dozer work							
				_			includes stockpiling of material, backfilling of excavations in cut to fill operation and final profiling @av	
10.1.1	Shaping, leveling of infrastructural footprint areas (500mm)	:	Rands	R	55 250.00	ha	500mm over footprint includes stockpilling of material, backfilling of excavations in cut to fill operation and final profiling @av	
10.1.2	Shaping, leveling of infrastructural footprint areas (750mm)	:	Rands	R	82 875.00	ha	750mm over footprint	
10.1.3	Reshaping, profiling of dumps (general) Profiling of disturbed areas (general)	-	Rands Rands	R R	110 500.00 939 250.00	ha ha	minimal dozing to make area free draining	
10.1.5	Breach dam wall & reshape 1:5	:	Rands	R	220.00	m	approx. 5m high @ 1:5	
10.2	Import clean / removing contaminated soil							
10.2.1	Import cover material and spread (250m)	:	Rands	R	88 400.00	ha	2500m³ over 1km average @ R32/m³	
10.2.2	Remove contaminated soil to 250mm average depth Capping / impermeable cover	-	Rands	R	127 000.00	ha	assume 4km haul distance	
10.3.1	Install 2mm HDPE liner	:	Rands	R	94.00	m²		
10.4	Establish vegetation						includes soil amelioration, cultivation and seeding actions	
10.4.1	Establishment of vegetation (general)	:	Rands	R	13 800.00	ha	general on flat surfaces	
10.4.2	Establishment of vegetation on WRD and tailings dams Establish vegetation on backfilled pit areas	:	Rands Rands	R R	19 250.00 4 400.00	ha ha	general in topsoil layer on sloped areas	
	Rip and establish vegetation on stockpile footprint areas and hau	Ė						
10.4.4	roads Plant and machinery	÷	Rands	R	5 500.00	ha		
	Crane 25 ton	:	Rands	R	3 960.00	p/day	excludes site establishment	
11.2	Crane 50 ton		Rands	R	6 534.00	p/day	excludes site establishment	
_	Crane 100 ton		Rands	R	15 290.00	p/day	excludes site establishment	
11.4	Tib Excavator (20ton)	-	Rands Rands	R R	1 710.00 2 979.00	p/day p/day	excludes site establishment excludes site establishment	
11.6	Pecker (20ton)	÷	Rands	R	4 860.00	p/day p/day	excludes site establishment	
	Grader		Rands	R	4 149.00	p/day	excludes site establishment	
	Patfoot roller		Rands	R	1 845.00	p/day	excludes site establishment	
	Smooth roller Articulated dumper 20 ton		Rands Rands	R R	1 782.00 3 276.00	p/day p/day	excludes site establishment	
	8 cube tipper		Rands	R	2 286.00	p/day p/day	excludes site establishment excludes site establishment	
	· · · · · · · · · · · · · · · · · · ·				_ 200.00	p. 309		





	Rates Table - 2013										
Unit Rate Code	Costing Items		Currency	Unit Rates		Unit	Notes				
12	Post closure aspects										
12.1	Surface water	:	Rands	R	119 232.00	yr	6 monitoring points on a monthly basis				
12.2	Groundwater	:	Rands	R	52 992.00	yr	8 monitoring points on a quarterly basis				
12.3	Reclamation monitoring	:	Rands	R	2 430.00	ha	5 years				
12.4	Care and maintenance	:	Rands	R	15 000.00	ha	5 years				
13	Specialists Work										
	Specialist, soil and groundwater study	:	Rands	R		sum	Nominal allowance, not for large and complex and integrated sites				
13.2	Basic Assessment with Public Participation	:	Rands	R		sum	Nominal allowance, not for large and complex and integrated sites				
13.3	Integrated Water and Waste Management Plan (IWWMP) and Water Use License Application (WULA)	:	Rands	R	-	sum	Nominal allowance, not for large and complex and integrated sites				
13.4	Waste License Application	:	Rands	R		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	xxxxxxx	:	Rands	R		m³					
14.4	уууууу	:	Rands	R		m³					
14.5	ZZZZZZZZ	:	Rands	R		m³					
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					

