

# IMPALA PLATINUM LIMITED



## Closure Costing Report for Proposed New Open Pit 8C



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## 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 Limited (Rustenburg Operations)
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 pre-mining 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

## 1 INTRODUCTION

E-TEK Consulting (E-TEK) was requested by Impala Platinum Limited (Impala) to assist with the preliminary closure costing of the proposed new Open Pit 8C project for their Rustenburg Operations. These closure costs were determined to form part of an authorisation process with the Department of Mineral Resources (DMR) for the proposed new project and are aligned to the DMR guideline document for new EIA/EMP applications. Closure cost estimates were calculated for the first ten years of operations and scheduled closure.

Closure costing is categorised according to the DMR guideline:

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

The closure cost estimates quantities were taken from available plans and information provided by Impala. Rates used were obtained from E-TEK's existing data base and in consultation with demolition and earthworks contractors.

The closure cost estimates for the proposed new Open Pit 8C at their Rustenburg Operations for Unscheduled (Year 2) R6,723,131.86 (Year 3) R663,940.64 and Scheduled closure R0 as indicated in the table below:

Executive Summary				
Tasks	Unscheduled - Year 2 (2013)	Unscheduled - Year 3 (2014)	Scheduled Closure	
<b>Closure Aspects</b>				
1 Infrastructural aspects	R -	R -	R -	-
2 Mining aspects	R 4 994 413.00	R 29 304.00	R -	-
3 General surface reclamation	R -	R -	R -	-
4 Water management	R -	R -	R -	-
<b>SUB - TOTAL 1</b> (for infrastructural and related structures)	<b>R 4 994 413.00</b>	<b>R 29 304.00</b>	<b>R -</b>	<b>-</b>
5 Post closure aspects	R 572 680.00	R 572 680.00	R -	-
<b>SUB - TOTAL 2</b> (for post - closure aspects)	<b>R 629 948.00</b>	<b>R 629 948.00</b>	<b>R -</b>	<b>-</b>
<b>Additional allowances</b>				
6.1 Preliminary and General	R 599 329.56	R 1 758.24	R -	-
6.2 Contingencies	R 499 441.30	R 2 930.40	R -	-
<b>SUB - TOTAL 3</b> (for additional allowances)	<b>R 1 098 770.86</b>	<b>R 4 688.64</b>	<b>R -</b>	<b>-</b>
<b>Grand - Total</b> (for sub - total 1+2+3)	<b>R 6 723 131.86</b>	<b>R 663 940.64</b>	<b>R -</b>	<b>-</b>

## 2 APPROACH TO COST DETERMINATION

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

- Sourcing and review of project information from Impala to determine the nature and extent of the proposed new project;
- Agreement that no site visit was required as operations of the proposed new project has not commenced. Furthermore, E-TEK has a good understanding of the general site conditions and nature of operations at Impala due to the involvement in the closure costing for the whole of Impala's current Rustenburg Operations;
- Determination of the various components of rehabilitation of the specified area;
- Compilation of a Bill of Quantities capturing the quantities of the proposed new project;
- Unit rates used were obtained from E-TEK's existing data base and in consultation with demolition and earthworks contractors;
- Application of the above unit rates and associated quantities in pre-determined spreadsheets to determine the latest closure cost estimates;
- Forecast the first ten years of operations to reflect the fluctuating closure costs of the proposed new project; and
- A closure report to summarize the approach, assumptions and findings of the closure costing.

## 3 INFORMATION

Closure costing was based on the following information supplied by Impala:

Description	Person	Date
GA Drawing	Impala (Gerhard van Dyk)	14/08/2012
Project schedule	Impala (Gerhard van Dyk)	20/08/2012

## 4 CLOSURE CRITERIA

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

### 4.1 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, 2005);
- The closure costs for the site could comprise a number of cost components. 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 1-10 year forecast 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.

#### 4.2 Site specific assumptions

- A portion of the new site is located on existing Impala stores, offices and surface infrastructure and will be removed before project development;
- The remainder of the new site is located on vacant veld currently used for grazing;
- The project will commence in Y2013;
- The project will be completed at the end of Y2014 with monitoring and aftercare following; and
- Concurrent rehabilitation will be implemented throughout the project; therefore it was assumed that all rehabilitation will be completed by LoM with zero liability.

### 5 CLOSURE COSTING

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.

#### 5.1 Infrastructural areas

No permanent structures will be erected as part of this project.

#### 5.2 Mining areas

##### Open cast mining area

- General
  - Project development will commence in Y2013; and
  - The mining of pit 8C will be completed within two years.
- Open pit reclamation including final voids and ramps
  - Strip mining with a roll-over of material will be conducted;
  - Topsoil and overburden of the initial boxcut is stripped and stockpiled and mining progress;
  - Material from the initial boxcut will be stockpiled near the position of the final void;
  - Final void will be backfilled on closure with overburden. Pits are overfilled (approximately 20%) to allow for settlement of soil and to avoid ponds being formed on the backfilled area;
  - Approximately 600mm of topsoil will be replaced over the overburden;

- No allowance is made for vegetation re-establishment as the vegetation re-establishes naturally after the topsoil is placed; and
- Allowance was made for ripping and re-establishment of vegetation on stockpile footprint areas and haul roads.
- Reclamation of overburden and spoils
  - All material will be backfilled in the pit void with no residual material remaining;
  - Allowance is made to rip the stockpile footprint areas and to re-establish vegetation on these footprints; and
  - The area for access and haul roads were included under this item as rehabilitation will be similar.

### 5.3 General surface reclamation

Not applicable as all disturbed areas surrounding the pit is included under the item for the footprints of stockpiles and overburden areas.

### 5.4 Water management

Assumed no provision is required.

### 5.5 Post closure aspects

#### 5.5.1 Surface water monitoring

- An overall allowance was made for the monitoring of one surface water position, on a monthly basis, for a period of five years post closure.

#### 5.5.2 Ground water monitoring

- An overall allowance was made for the monitoring of 3 groundwater monitoring positions, on a quarterly basis, for a period of 5 years post closure.

#### 5.5.3 Reclamation monitoring

- An allowance has been included for the reclamation monitoring of reclaimed areas for a five year period.

#### 5.5.4 Care and maintenance

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

### 5.6 Additional allowances

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

#### 5.6.1 Preliminary and general

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

#### 5.6.2 Contingencies

- Additional allowance of 10 percent of the total for infrastructure and related aspects (sub-total 1 on summary costing table), which is aligned to the DMR guidelines.

## 6 CONCLUSION



The closure costs as reflected in this report have been based on information obtained from Impala. In those cases where the required information was not available, estimates were made based on experience and benchmarked against similar facilities. 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. The ten year forecast of closure costs is based on the assumption that all projects will start in Y2013 after the approval has been obtained from the authorities.

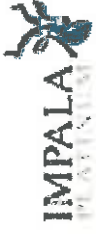
Appendix A: Detailed costing spreadsheet.

Rates Table - 2012					
Unit Rate Code	Costing Items	Currency	Unit Rates	Unit	Notes
<b>1 Structural steel and steel related items</b>					
1.1	Not Applicable	Rands	R -	na	
1.2	Sum	Rands	R -	sum	
1.3	Rate	Rands	R -	unit	
<b>2 Steel and related structures</b>					
2.1	Cladding / Sheeting	Rands	R 21.50	m <sup>2</sup>	
2.2	Structural steelwork	Rands	R 1 280.00	t	
2.3	Super structures				
2.3.1	Light plant structures	Rands	R 107.00	m <sup>2</sup>	up to 100kg of steel per square meter
2.3.2	Medium plant structures	Rands	R 590.00	m <sup>2</sup>	up to 450kg of steel per square meter
2.3.3	Medium / Heavy plant structures	Rands	R 1 280.00	m <sup>2</sup>	up to 1000kg of steel per square meter
2.3.4	Heavy plant structures	Rands	R 1 800.00	m <sup>2</sup>	up to 1500kg of steel per square meter
2.4	Steel tanks with rubber lining				
2.4.1	0-5m	Rands	R 10 600.00	no	diameter
2.4.2	5-10m	Rands	R 26 650.00	no	diameter
2.4.3	10-15m	Rands	R 37 300.00	no	diameter
2.4.4	15-20m	Rands	R 53 300.00	no	diameter
2.4.5	20-30m	Rands	R 69 300.00	no	diameter
2.5	Single steel tanks	Rands	R 5 300.00	no	small enclosed steel tanks
2.6	Carports				
2.6.1	Carports with IBR covering	Rands	R 90.00	m <sup>2</sup>	excludes paving
2.6.2	Carports with Shade net covering	Rands	R 43.00	m <sup>2</sup>	excludes paving
<b>3 Brickwork and related structures</b>					
3.1	Brick buildings				
3.1.1	Single storey building	Rands	R 285.00	m <sup>2</sup>	includes soft strip, excludes disposal of waste
3.1.2	Double storey building	Rands	R 500.00	m <sup>2</sup>	includes soft strip, excludes disposal of waste
3.2	Substations, pump stations and strong rooms				
3.2.1	Single storey building	Rands	R 480.00	m <sup>2</sup>	includes soft strip, excludes disposal of waste
3.2.2	Double storey or double volume building	Rands	R 690.00	m <sup>2</sup>	includes soft strip, excludes disposal of waste
3.3	Prefabricated or temporary buildings	Rands	R 140.00	m <sup>2</sup>	
3.4	110mm Brick wall	Rands	R 15.00	m <sup>2</sup>	
3.5	230mm Brick wall	Rands	R 30.00	m <sup>2</sup>	
3.6	Workshop & Stores	Rands	R 320.00	m <sup>2</sup>	single volume buildings
3.7	Workshop & Stores	Rands	R 380.00	m <sup>2</sup>	double volume buildings
<b>4 Concrete</b>					
4.1	Heavy concrete, thickness greater than 750mm	Rands	R 1 280.00	m <sup>3</sup>	bulk and heavy reinforced concrete
4.2	Medium concrete, thickness between 250 and 750mm	Rands	R 640.00	m <sup>3</sup>	Heavy reinforced concrete
4.3	Light concrete, thickness less than 250mm	Rands	R 400.00	m <sup>3</sup>	reinforced concrete
4.4	Floors, bases and foundations after removal of superstructure	Rands	R 215.00	m <sup>2</sup>	250mm floors with 500mm bases on 30% of the area
4.5	Heavy duty floors, bases and foundations after removal of superstructure	Rands	R 590.00	m <sup>2</sup>	400mm floors with 800mm bases on 30% of the area
4.6	Strip footings	Rands	R 135.00	m	
4.7	Column footings	Rands	R 280.00	no	
<b>5 Conveyor Belts</b>					
5.1	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	Overland conveyor - heavy	Rands	R 320.00	m	
5.1.4	Suspended conveyor - light to medium	Rands	R 535.00	m	
5.1.5	Suspended conveyor - heavy with cladding	Rands	R 640.00	m	
5.2	Pipelines				
5.2.1	Overland steel pipelines on plinths (<200mm)	Rands	R 27.00	m	5m plinth spacing, includes disposal of waste @ 10km
5.2.2	Overland steel pipelines on plinths (200-350mm)	Rands	R 48.00	m	5m plinth spacing, includes disposal of waste @ 10km
5.2.3	Overland steel pipelines on plinths (350-500mm)	Rands	R 64.00	m	5m plinth spacing, includes disposal of waste @ 10km
5.3	Overland power lines				
5.3.1	Minor lines	Rands	R 27.00	m	
5.3.2	Major lines	Rands	R 80.00	m	
5.4	Railway lines				
5.4.1	Electrified	Rands	R 295.00	m	excludes ballast and rehab
5.4.2	Non - electrified	Rands	R 215.00	m	excludes ballast and rehab
5.5	Fencing				
5.5.1	Erect security fencing	Rands	R 133.00	m	
5.5.2	Erect stock fencing	Rands	R 27.00	m	
5.5.3	Dismantling of security fencing	Rands	R 27.00	m	
5.5.4	Dismantling of stock fencing	Rands	R 8.00	m	
5.5.5	Dismantling of steel palisade fencing	Rands	R 58.00	m	
5.5.6	Dismantling of concrete palisade fencing	Rands	R 120.00	m	
<b>6 Waste</b>					
6.1	Sorting and screening of waste	Rands	2.5	%	
6.2	Disposal of waste				
6.2.1	Disposal of inert demolition waste	Rands	R 28.00	m <sup>3</sup> /m	50km haul distance
6.2.2	Disposal of hazardous waste	Rands	R 605.00	m <sup>3</sup>	excludes transport
6.3	Decontamination of equipment				
6.3.1	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
6.4	Removal and disposal of single HDPE liner	Rands	R 6.50	m <sup>2</sup>	
<b>7 Shaft Sealing</b>					
7.1	Shaft				
7.1.1	Sealing of vertical shaft	Rands	R 714 220.00	sum	3m diameter
7.1.2	Sealing of vertical shaft	Rands	R 810 160.00	sum	3.5m diameter
7.1.3	Sealing of vertical shaft	Rands	R 868 050.00	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	Sealing of vertical shaft	Rands	R 1 375 140.00	sum	5.5m diameter

7.1.7	Sealing of vertical shaft	:	Rands	R 1 410 500,00	sum	8,0m diameter
7.1.8	Sealing of vertical shaft	:	Rands	R 1 482 400,00	sum	8,5m 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	Sealing of vertical shaft	:	Rands	R 1 838 850,00	sum	8m diameter
7.1.12	Sealing of vertical shaft	:	Rands	R 1 982 760,00	sum	8,5m diameter
7.1.13	Sealing of vertical shaft	:	Rands	R 2 120 000,00	sum	9m diameter
7.1.14	Sealing of vertical shaft	:	Rands	R 2 281 240,00	sum	9,5m diameter
7.1.15	Sealing of vertical shaft	:	Rands	R 2 573 324,00	sum	10m diameter
7.1.16	Sealing of vertical shaft	:	Rands	R 2 665 000,00	sum	11m diameter
7.2	Backfill incline shaft portal	:	Rands	R 31 800,00	sum	
7.3	Plug outlet and seal parateck of tailings dam	:	Rands	R 213 200,00	sum	assume 100 000m³ backfilled with waste rock <1km haul distance, excl topsoil
7.4	Plug surface holdings	:	Rands	R 200 000,00	sum	
7.5	Seal incline shaft	:	Rands	R 159 900,00	sum	
<b>8. Roadworks, hand-paving and paving</b>						
8.1	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
8.2	Major gravel roads with engineered surfaces	:	Rands	R 21,00	m²	layer works buried next to road or 10km load and haul
8.3	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	60m concrete with minimal reinforcing
8.5	Removal of gunited embankments	:	Rands	R 80,00	m²	excludes disposal
8.6	Removal of back paving & stone pitching	:	Rands	R 38,00	m²	
<b>9. Gravel, rubble</b>						
9.1	Dozing	:				
9.1.1	Dozing to profile dumps (60m max)	:	Rands	R 13,50	m²	cut to fill including final profiling
9.1.2	Bulk dozing of material (60m max)	:	Rands	R 11,00	m²	bulk dozing, no profiling
9.2	Excavation	:	Rands	R 20,00	m²	
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	:	Rands	R 27,00	m³	large volumes : 50m haul distance for bulk material
9.4	Compacting	:	Rands	R 3,50	m³	in layers of 250mm
<b>9.5 Ripping</b>						
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
<b>9.6 Transport</b>						
9.6.1	Load and haul	:	Rands	R 28,00	m³	1km, small volumes
9.6.2	Extra over rates for hauling outside free haul distance	:	Rands	R 7,80	m³/km	small volumes
9.6.3	Load and haul for 4km distance	:	Rands	R 51,40	m³/km	small volumes
9.6.4	Load and haul	:	Rands	R 13,20	m³	1km, large volumes
9.6.5	Extra over rates for hauling outside free haul distance	:	Rands	R 22,00	m³/km	large volumes
9.6.6	Load and haul for 4km distance	:	Rands	R 163,20	m³/km	large volumes
9.6.7	Load and haul for 30km distance	:	Rands	R 108,00	m³/km	large volumes
<b>10. Site preparation and site remediation</b>						
<b>10.1 Profiling - dozer work</b>						
10.1.1	Shaping, leveling of infrastructural footprint areas (500mm)	:	Rands	R 55 250,00	ha	includes stockpiling of material, backfilling of excavations in cut to fill operation and final profiling @500mm over footprint
10.1.2	Shaping, leveling of infrastructural footprint areas (750mm)	:	Rands	R 82 875,00	ha	includes stockpiling of material, backfilling of excavations in cut to fill operation and final profiling @750mm over footprint
10.1.3	Reshaping, profiling of dumps (general)	:	Rands	R 110 500,00	ha	
10.1.4	Profiling of disturbed areas (general)	:	Rands	R 939 250,00	ha	minimal dozing to make area free draining
10.1.5	Breach dem 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	:	Rands	R 127 000,00	ha	assume 4km haul distance
10.3	Cepping / impermeable cover	:				
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	:	Rands	R 19 250,00	ha	general in topsoil layer on sloped areas
10.4.3	Establish vegetation on backfilled pit areas	:	Rands	R 4 400,00	ha	
10.4.4	Rip and establish vegetation on stockpile footprint areas and haul roads	:	Rands	R 5 300,00	ha	
<b>11. Plant and machinery</b>						
11.1	Crane	:	Rands	R 38 700,00	p/day	excludes site establishment
11.2	Tlb	:	Rands	R 2 800,00	p/day	excludes site establishment
11.3	Excavator (20ton)	:	Rands	R 4 200,00	p/day	excludes site establishment
11.4	Pecker (20ton)	:	Rands	R 8 850,00	p/day	excludes site establishment
<b>12. Environmental monitoring</b>						
12.1	Surface water	:	Rands	R 32 000,00	yr	1 monitoring points on a monthly basis
12.2	Groundwater	:	Rands	R 60 000,00	yr	3 monitoring points on a quarterly basis
12.3	Reclamation monitoring	:	Rands	R 2 500,00	ha	5 years
12.4	Care and maintenance	:	Rands	R 15 500,00	ha	5 years
<b>13. Specialist fees</b>						
13.1	Specialist, soil and groundwater study	:	Rands	R 330 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.2	Basic Assessment with Public Participation	:	Rands	R 250 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.3	Integrated Water and Waste Management Plan (IWWMP) and Water Use License Application (WULA)	:	Rands	R 220 000,00	sum	Nominal allowance, not for large and complex and integrated sites
13.4	Waste License Application	:	Rands	R 40 000,00	sum	Nominal allowance, not for large and complex and integrated sites
<b>14. Other Specialist Fees</b>						
14.1	Cleaning of Stormwater system	:	Rands	R -	sum	Nominal allowance
14.2	Cleaning of Oily and Chemical Sewer system	:	Rands	R -	sum	Nominal allowance
14.3	xxxxxx	:	Rands	R -	m²	
14.4	yyyyyy	:	Rands	R -	m²	
14.5	zzzzzz	:	Rands	R -	m²	
<b>15. Drilling</b>						
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
<b>16. Other</b>						
16.1	Unspecified	:	Rands	R -	sum	
16.2	Unspecified	:	Rands	R -	sum	
16.3	Unspecified	:	Rands	R -	sum	



Executive Summary		Unscheduled - Year 1 (2012)	Unscheduled - Year 2 (2013)	Unscheduled - Year 3 (2014)	Unscheduled - Year 4 (2015)	Unscheduled - Year 5 (2016)	Unscheduled - Year 6 (2017)
Tasks							
<b>Closure Aspects</b>							
1	Infrastructural aspects	R -	R -	R -	R -	R -	R -
2	Mining aspects	R -	R 4 994 413.00	R 29 304.00	R -	R -	R -
3	General surface reclamation	R -	R -	R -	R -	R -	R -
4	Water management	R -	R -	R -	R -	R -	R -
	<b>SUB - TOTAL 1</b> (for infrastructural and related structures)	R -	R 4 994 413.00	R 29 304.00	R -	R -	R -
5	Post closure aspects	R -	R 572 680.00	R 572 680.00	R -	R -	R -
	<b>SUB - TOTAL 2</b> (for post - closure aspects)	R -	R 629 948.00	R 629 948.00	R -	R -	R -
<b>Additional Allowances</b>							
6.1	Preliminary and General	R -	R 599 329.56	R 1 768.24	R -	R -	R -
6.2	Contingencies	R -	R 499 441.30	R 2 930.40	R -	R -	R -
	<b>SUB - TOTAL 3</b> (for additional allowances)	R -	R 1 098 770.86	R 4 688.64	R -	R -	R -
	<b>Grand - Total</b> (for sub - total 1+2+3)	R -	R 6 723 131.86	R 663 940.64	R -	R -	R -



Executive Summary						
Tasks	Unscheduled - Year 7 (2018)	Unscheduled - Year 8 (2019)	Unscheduled - Year 9 (2020)	Unscheduled - Year 10 (2021)	Scheduled Closure	
<b>Closure Aspects</b>						
1 Infrastructure aspects	R	-	R	-	R	-
2 Mining aspects	R	-	R	-	R	-
3 General surface reclamation	R	-	R	-	R	-
4 Water management	R	-	R	-	R	-
<b>SUB - TOTAL 1</b> (for infrastructural and related structures)	R	-	R	-	R	-
5 Post closure aspects	R	-	R	-	R	-
<b>SUB - TOTAL 2</b> (for post - closure aspects)	R	-	R	-	R	-
<b>Additional Allowances</b>						
6.1 Preliminary and General	R	-	R	-	R	-
6.2 Contingencies	R	-	R	-	R	-
<b>SUB - TOTAL 3</b> (for additional allowances)	R	-	R	-	R	-
<b>Grand - Total</b> (for sub - total 1+2+3)	R	-	R	-	R	-

Closure Costing - Opencast Area			Closure Costs - Year 1 (2012)					
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Not applicable						
2		Not applicable	1.1	na	0.00	R	-	
3		Sub - Total for Infrastructural aspects					R	-
4								
5								
6		Open pit reclamation including final voids and ramps						
7		PR & C						Operations to start in 2013
8		Backfill pit void	1.1	na	0.00	R	-	
9		Replace topsoil on pit area	1.1	na	0.00	R	-	
10		Establish vegetation on pit area	1.1	na	0.00	R	-	
11		Rip and establish vegetation on footprint areas and haul roads	1.1	na	0.00	R	-	
12		Sub - Total for Mining aspects					R	-
13								
14								
15		Not applicable	1.1	na	0.00	R	-	
16		Sub - Total for General Surface Reclamation					R	-
17								
18								
19		Not applicable	1.1	na	0.00	R	-	
20		Sub - Total for Water Management					R	-
21								
22		<b>SUB - TOTAL 1</b> (for infrastructural and related structures)					R	-
23								
24		Surface water quality monitoring	12.1	yr	0.00	R	32 000.00	No disturbance taken place
25		Groundwater quality monitoring	12.2	yr	0.00	R	50 000.00	No disturbance taken place
26		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R	2 500.00	No disturbance taken place
27		Care and maintenance of reclaimed areas	12.4	ha	0.00	R	15 500.00	No disturbance taken place
28		Sub - Total for Post closure aspects					R	-
29		Contingencies for post closure aspects	1.2	sum	1.00	R	-	Assume 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R	-
31		<b>SUB - TOTAL 2</b> for post - closure aspects					R	-
32								
33		Preliminary and General	1.2	sum	1.00	R	-	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R	-	Assume 10 percent of sub - total 1
35		<b>SUB - TOTAL 3</b> (for additional allowances)					R	-
36		<b>Grand - Total</b> (for sub - total 1 + 2 + 3)					R	-

Closure Costing - Open-pit Area			Closure Costs - Year 2 (2013)					
Item n.	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Note
1		Infrastructure Aspects						
2		Not applicable	1.1	na	0.00	R -	R -	
3								
4		Sub - Total for Infrastructural aspects					R -	
5								
6		Open pit reclamation including final voids and ramps						
7		Pit fill						Operational
8		Backfill pit void	8.3.1	m <sup>3</sup>	286108.00	R 15.50	R 4 124 643.00	Provided by operational staff
9		Replace topsoil on pit area	8.1.2	m <sup>3</sup>	78406.00	R 11.00	R 840 466.00	Provided by operational staff
10		Establish vegetation on pit area	10.4.3	ha	4.86	R 4 400.00	R 20 904.00	Measured from drawing
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	1.80	R 5 500.00	R 8 800.00	Measured from drawing
12		Sub - Total for Mining aspects					R 4 994 413.00	
13								
14		Water Management Aspects						
15		Not applicable	1.1	na	0.00	R -	R -	
16		Sub - Total for General Services Reclamation					R -	
17								
18		Not applicable	1.1	na	0.00	R -	R -	
19								
20		Sub - Total for Water Management					R -	
21								
22		SUB - TOTAL 1 (for infrastructural and related structures)					P 4 994 413.00	
23								
24		Surface water quality monitoring	12.1	yr	5.00	R 32 000.00	R 160 000.00	Allowance for 5 years post closure
25		Groundwater quality monitoring	12.2	yr	5.00	R 60 000.00	R 300 000.00	Allowance for 5 years post closure
26		Reclamation monitoring on reclaimed areas	12.3	ha	8.25	R 2 500.00	R 15 850.00	Assumed over a 5 year period, over the entire disturbed operational areas
27		Care and maintenance of reclaimed areas	12.4	ha	8.25	R 15 500.00	R 87 030.00	Assumed over a 5 year period, over the entire disturbed operational areas
28		Sub - Total for Post closure aspects					R 372 880.00	
29		Contingencies for post closure aspects	1.2	sum	1.00	R 57 288.00	R 57 288.00	Assumed 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R 57 288.00	
31		SUB - TOTAL 2 (for post - closure aspects)					P 628 847.98	
32								
33		Preliminary and General	1.2	sum	1.00	R 599 329.58	R 599 329.58	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R 488 441.30	R 488 441.30	Assume 10 percent of sub - total 1
35		SUB - TOTAL 3 (for additional allowances)					R 1 088 770.88	
36		Grand - Total (for sub - total 1+2+3)					R 6 753 131.88	



Closur. Costing - Opencast Area			Closure Costs - Year 3 (2012)					
Item nr	ID	Task	Unit Rate Loads	Unit	Quantity	Rate	Amount	Notes
2		Not applicable	1,1	na	0,00	R -	R -	
3		<b>Sub - Total for Infrastructural aspects</b>					R -	
4								
6		Open pit reclamation including final voids and ramps						
7		Pit 6C						Operational
8		Backfill pit void	8,3,1	m <sup>3</sup>	0,00	R 15,60	R -	Completed in month 19
9		Replace topsoil on pit areas	8,1,2	m <sup>2</sup>	0,00	R 11,00	R -	Completed in month 20
10		Establish vegetation on pit areas	10,4,3	ha	4,66	R 4.400,00	R 20 504,00	Measured from drawing
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10,4,4	ha	1,60	R 5 500,00	R 8 800,00	Measured from drawing
12		<b>Sub - Total for Mining aspects</b>					P 28 904,00	
13								
15		Not applicable	1,1	na	0,00	R -	R -	
16		<b>Sub - Total for General Surface Reclamation</b>					R -	
17								
19		Not applicable	1,1	na	0,00	R -	R -	
20		<b>Sub - Total for Water Management</b>					R -	
21								
22		<b>SUB - TOTAL 1 (for infrastructural and related structures)</b>					R 28 904,00	
24		Surface water quality monitoring	12,1	yr	5,00	R 32 000,00	R 160 000,00	Allowance for 5 years post closure
25		Groundwater quality monitoring	12,2	yr	5,00	R 60 000,00	R 300 000,00	Allowance for 5 years post closure
26		Reclamation monitoring on reclaimed areas	12,3	ha	6,28	R 2 500,00	R 15 650,00	Assumed over a 5 year period, over the entire disturbed opencast areas
27		Care and maintenance of reclaimed areas	12,4	ha	6,28	R 15 500,00	R 97 630,00	Assumed over a 5 year period, over the entire disturbed opencast areas.
28		<b>Sub - Total for Post closure aspects</b>					R 473 680,00	
29		Contingencies for post closure aspects	1,2	sum	1,00	R 57 268,00	R 57 268,00	Assumed 10 percent for post closure aspects
30		<b>Sub - Total for Contingencies for post closure aspects</b>					R 57 268,00	
31		<b>SUB - TOTAL 2 (for post - closure aspects)</b>					P 828 948 00	
33		Preliminary and General	1,2	sum	1,00	R 3 616,48	R 3 616,48	Assume 12 percent of sub - total 1
34		Contingencies	1,2	sum	1,00	R 2 921,40	R 2 921,40	Assume 10 percent of sub - total 1
35		<b>SUB - TOTAL 3 (for additional allocations)</b>					R 6 446 88	
36		<b>Grand - Total (for sub - total 1+2+3)</b>					P 388 894,88	

Closure Costing - Opencast Area			Closure Costs - Year 4 (2015)					
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure Aspects						
2		Not applicable	1.1	na	0.00	R	-	
3		<b>Sub - Total for Infrastructural aspects</b>					R	
4								
5		Open pit reclamation including final voids and ramps						
6		Pit BC						Rehabilitated
7		Backfill pit void	9.3.1	m³	0.00	R	15.60	
8		Rampers topped on pit area	9.1.2	m³	0.00	R	11.00	
9		Establish vegetation on pit area	10.4.3	ha	0.00	R	4 400.00	
10								
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	0.00	R	5 500.00	
12		<b>Sub - Total for Mining aspects</b>					R	
13								
14		Not applicable	1.1	na	0.00	R	-	
15		<b>Sub - Total for General Surface Reclamation</b>					R	
16								
17		Not applicable	1.1	na	0.00	R	-	
18		<b>Sub - Total for Water Management</b>					R	
19								
20								
21		<b>SUB - TOTAL 1 (for infrastructural and related aspects)</b>					R	
22								
23		Surface water quality monitoring	12.1	yr	0.00	R	32 000.00	Area fully rehabilitated
24		Groundwater quality monitoring	12.2	yr	0.00	R	60 000.00	Area fully rehabilitated
25								
26		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R	2 500.00	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12.4	ha	0.00	R	15 900.00	Area fully rehabilitated
28		<b>Sub - Total for Post closure aspects</b>					R	
29		Contingencies for post closure aspects	1.2	sum	1.00	R	-	Assumed 10 percent for post closure aspects
30		<b>Sub - Total for Contingencies for post closure aspects</b>					R	
31		<b>SUB - TOTAL 2 (for post - closure aspects)</b>					R	
32								
33		Preliminary and General	1.2	sum	1.00	R	-	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R	-	Assume 10 percent of sub - total 1
35		<b>SUB - TOTAL 3 (to address allowances)</b>					P	
36		<b>Grand Total (for sub - total 1+2+3)</b>					R	

Closure Costing - Opencast Area			Closure Costs - Year 6 (2016)					
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructural Aspects						
2		Not applicable	1,1	na	0,00	R	- R	
3		Sub - Total for Infrastructural aspects					R	
4								
5		Mining Aspects						
6		Open pit reclamation including final voids and ramps						
7		PR 8C						Rehabilitated
8		Backfill pit void	8,5,1	m³	0,00	R	15,50 R	
9		Regrade topsoil on pit area	8,1,2	m³	0,00	R	11,00 R	
10		Establish vegetation on pit area	10,4,3	ha	0,00	R	4 400,00 R	
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10,4,4	ha	0,00	R	5 500,00 R	
12		Sub - Total for Mining aspects					R	
13								
14		General Surface Reclamation						
15		Not applicable	1,1	na	0,00	R	- R	
16		Sub - Total for General Surface Reclamation					R	
17								
18		Water Management						
19		Not applicable	1,1	na	0,00	R	- R	
20		Sub - Total for Water Management					R	
21								
22		SUB - TOTAL 1 (for infrastructural and related structures)					R	
23								
24		Surface water quality monitoring	12,1	yr	0,00	R	32 000,00 R	Area fully rehabilitated
25		Groundwater quality monitoring	12,2	yr	0,00	R	60 000,00 R	Area fully rehabilitated
26		Reclamation monitoring on reclaimed areas	12,3	ha	0,00	R	2 500,00 R	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12,4	ha	0,00	R	16 500,00 R	Area fully rehabilitated
28		Sub - Total for Post closure aspects					R	
29		Contingencies for post closure aspects	1,2	sum	1,00	R	- R	Assumed 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R	
31		SUB - TOTAL 2 (for post - closure aspects)					R	
32								
33		Preliminary and General	1,2	sum	1,00	R	- R	Assume 12 percent of sub - total 1
34		Contingencies	1,2	sum	1,00	R	- R	Assume 10 percent of sub - total 1
35		SUB - TOTAL 3 (for additional allowances)					R	
36		Grand - Total (for sub - total 1-2+3)					R	

Closure Costing - Opencast Area			Closure Costs - Year 6 (2017)					
Item nr	IC	Year:	Unit Rate Code	Unit	Quantity	Rate	Amount	Note
1		Infrastructure Aspects						
2		Not applicable	1.1	na	0.00	R -	R -	
3								
4		Sub - Total for Infrastructural aspects					R -	
5								
6		Open pit reclamation including land voids and ramps						
7		Pit fill						Rehabilitated
8		Backfill pit void	9.3.1	m³	0.00	R 15.50	R -	
9		Replace topsoil on pit area	9.1.2	m³	0.00	R 11.00	R -	
10		Establish vegetation on pit area	10.4.3	ha	0.00	R 4 400.00	R -	
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	0.00	R 5 500.00	R -	
12		Sub - Total for Mining aspects					R -	
13								
14								
15		Not applicable	1.1	na	0.00	R -	R -	
16		Sub - Total for General Surface Reclamation					R -	
17								
18		Not applicable	1.1	na	0.00	R -	R -	
19								
20		Sub - Total for Water Management					R -	
21								
22		SUB - TOTAL 1 (for infrastructural and related structures)					R -	
23								
24		Surface water quality monitoring	12.1	yr	0.00	R 32 000.00	R -	Area fully rehabilitated
25		Groundwater quality monitoring	12.2	yr	0.00	R 60 000.00	R -	Area fully rehabilitated
26		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R 2 500.00	R -	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12.4	ha	0.00	R 15 900.00	R -	Area fully rehabilitated
28		Sub - Total for Post closure aspects					R -	
29		Contingencies for post closure aspects	1.2	sum	1.00	R -	R -	Assume 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R -	
31		SUB - TOTAL 2 (for post - closure aspects)					R -	
32								
33		Preliminary and General	1.2	sum	1.00	R -	R -	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R -	R -	Assume 10 percent of sub - total 1
35								
36		SUB - TOTAL 3 (for additional allowances)					R -	
37		Grand - Total (for sub - total 1+2+3)					R -	

Closure Costing - Opencast Area			Closure Costs - Year 7 (2018)					
Item nr	ID	Task	Unit Rate Cost	Unit	Quantity	Rate	Amount	Notes
1		Infrastructureal Aspects						
2		Not applicable	1,1	na	0,00	R	-	
3		Sub - Total for Infrastructureal aspects					R	
4								
5		Mining Aspects						
6		Open pit reclamation including final voids and ramps						
7		Pit BC						Rehabilitated
8		Backfill pit void	9,3,1	m³	0,00	R	15,50	
9		Replace topsoil on pit area	9,1,2	m³	0,00	R	11,00	
10		Establish vegetation on pit area	10,4,3	ha	0,00	R	4,400,00	
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10,4,4	ha	0,00	R	5,500,00	
12		Sub - Total for Mining aspects					P	
13								
14		General Surface Reclamation						
15		Not applicable	1,1	na	0,00	R	-	
16		Sub - Total for General Surface Reclamation					R	
17								
18		Water Management						
19		Not applicable	1,1	na	0,00	R	-	
20		Sub - Total for Water Management					R	
21								
22		SUB - TOTAL 1 (for infrastructureal and related structures)					P	
23								
24		Surface water quality monitoring	12,1	yr	0,00	R	32,000,00	Area fully rehabilitated
25		Groundwater quality monitoring	12,2	yr	0,00	R	60,000,00	Area fully rehabilitated
26		Reclamation monitoring on reclaimed areas	12,3	ha	0,00	R	2,500,00	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12,4	ha	0,00	R	15,500,00	Area fully rehabilitated
28		Sub - Total for Post closure aspects					R	
29		Contingencies for post closure aspects	1,2	sum	1,00	R	-	Assumed 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R	
31		SUB - TOTAL 2 (for post - closure aspects)					R	
32								
33		Preliminary and General	1,2	sum	1,00	R	-	Assume 12 percent of sub - total 1
34		Contingencies	1,2	sum	1,00	R	-	Assume 10 percent of sub - total 1
35		SUB - TOTAL 3 (for additional allowances)					P	
36		Grand - Total (for sub - total 1+2+3)					R	

Closure Costing - Opencast Area			Closure Costs - Year 8 (2012)					
Item n.	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		General Reclamation Aspects						
2		Not applicable	1.1	na	0.00	R -	R -	
3								
4		Sub - Total for Infrastructural aspects					R -	
5								
6		Open pit reclamation including final voids and ramps						Rehabilitated
7		PK BC						
8		Backfill pit void	9.3.1	m³	0.00	R 16.50	R -	
9		Replace topsoil on pit area	9.1.2	m³	0.00	R 11.00	R -	
10		Establish vegetation on pit area	10.4.3	ha	0.00	R 4 400.00	R -	
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	0.00	R 5 500.00	R -	
12		Sub - Total for Mining aspects					R -	
13								
14								
15		Not applicable	1.1	na	0.00	R -	R -	
16		Sub - Total for General Surface Reclamation					R -	
17								
18		Not applicable	1.1	na	0.00	R -	R -	
19								
20		Sub - Total for Water Management					R -	
21								
22		Sub - TOTAL 1 (for infrastructural and related structures)					R -	
23								
24		Surface water quality monitoring	12.1	yr	0.00	R 32 000.00	R -	Area fully rehabilitated
25		Groundwater quality monitoring	12.2	yr	0.00	R 60 000.00	R -	Area fully rehabilitated
26								Area fully rehabilitated
27		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R 2 500.00	R -	Area fully rehabilitated
28		Care and maintenance of reclaimed areas	12.4	ha	0.00	R 15 500.00	R -	Area fully rehabilitated
29		Sub - Total for Post closure aspects					R -	
30		Contingencies for post closure aspects	1.2	sum	1.00	R -	R -	Assumed 10 percent for post closure aspects
31		Sub - Total for Contingencies for post closure aspects					R -	
32		Sub - TOTAL 2 (for post - closure aspects)					R -	
33		Preliminary and General	1.2	sum	1.00	R -	R -	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R -	R -	Assume 10 percent of sub - total 1
35		Sub - TOTAL 3 (for additional allowances)					R -	
36		Grand - Total (see sub - total 1+2+3)					R -	

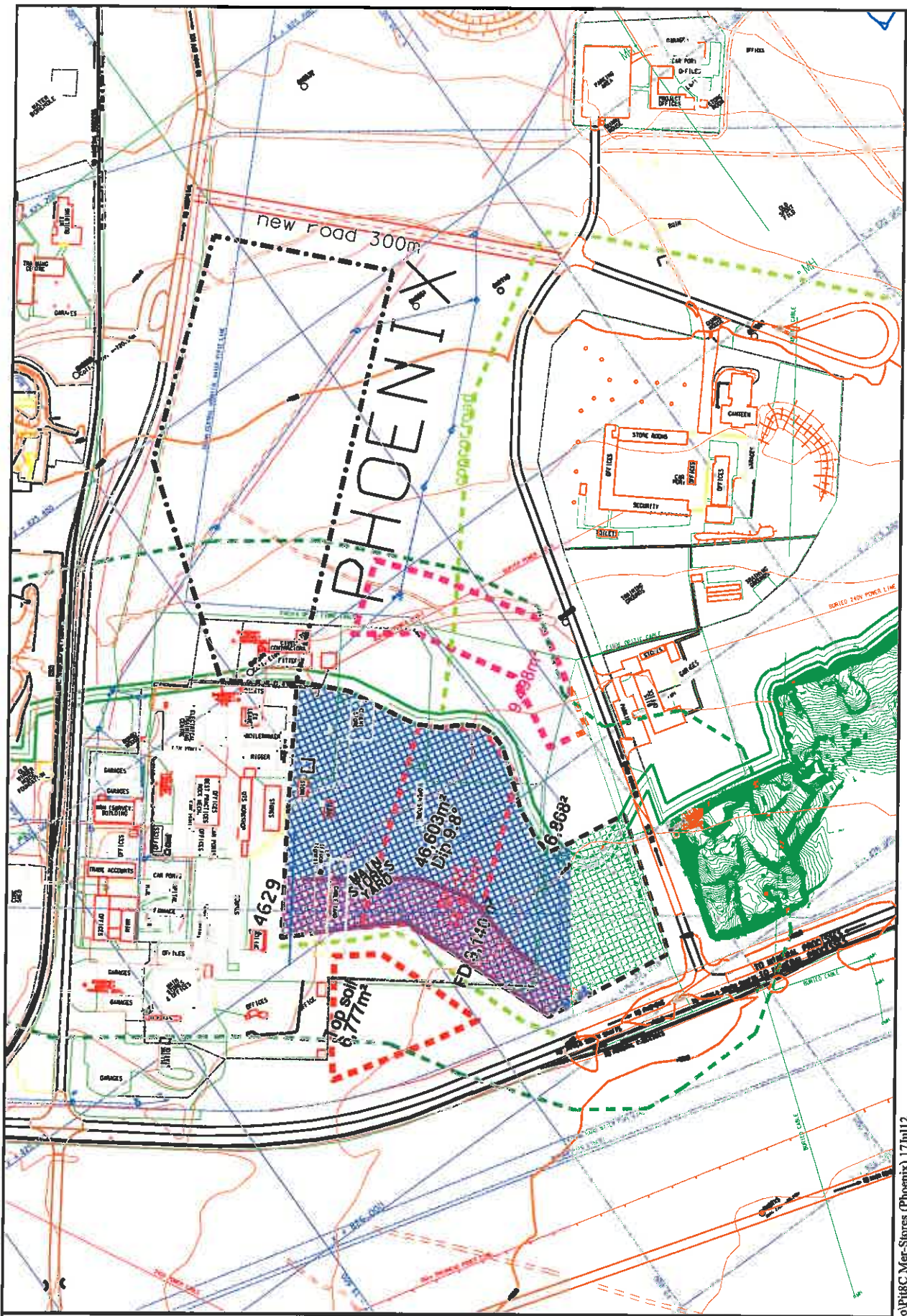
Closure Costing - Opencast Area			Closure Costs - Year 9 (2020)					
Rev. nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		Infrastructure aspects						
2		Not applicable	1.1	na	0.00	R	-	
3		Sub - Total for infrastructural aspects					R	-
4								
5		Mining aspects						
6		Open pit reclamation including final voids and ramps						
7		Pit & C						Rehabilitated
8		Backfill pit void	9.3.1	m <sup>3</sup>	0.00	R	15.50	
9		Replace topsoil on pit area	9.1.2	m <sup>3</sup>	0.00	R	11.00	
10		Establish vegetation on pit area	10.4.3	ha	0.00	R	4 400.00	
11		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	0.00	R	5 500.00	
12		Sub - Total for Mining aspects					R	-
13								
14								
15		Not applicable	1.1	na	0.00	R	-	
16		Sub - Total for General Surface Reclamation					R	-
17								
18								
19		Not applicable	1.1	na	0.00	R	-	
20		Sub - Total for Water Management					R	-
21								
22		SUB - TOTAL 1 (for infrastructural and related structures)					R	-
23								
24		Surface water quality monitoring	12.1	yr	0.00	R	32 000.00	Area fully rehabilitated
25		Groundwater quality monitoring	12.2	yr	0.00	R	60 000.00	Area fully rehabilitated
26		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R	2 500.00	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12.4	ha	0.00	R	15 500.00	Area fully rehabilitated
28		Sub - Total for Post closure aspects					R	-
29		Contingencies for post closure aspects	1.2	sum	1.00	R	-	Assumed 10 percent for post closure aspects
30		Sub - Total for Contingencies for post closure aspects					R	-
31		SUB - TOTAL 2 (for post - closure aspects)					R	-
32								
33		Preliminary and General	1.2	sum	1.00	R	-	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R	-	Assume 10 percent of sub - total 1
35		SUB - TOTAL 3 (for additional allowances)					R	-
36		Grand - Total (for sub - total 1+2+3)					R	-

Closure Costing - Openset Area			Closure Costs - Year: 10 (2021)						
Item nr	ID	Task	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes	
1		Infrastructure Aspects							
2		Not applicable	1,1	na	0,00	R	-		
3		<b>Sub - Total for infrastructural aspects</b>					R	-	
4									
5		Open pit reclamation including final roads and ramps							
6		Pit DC							
7		Backfill pit void	8,3,1	m <sup>3</sup>	0,00	R	15,60	R	Rehabilitated
8		Replace topsoil on pit area	8,1,2	m <sup>3</sup>	0,00	R	11,00	R	
9		Establish vegetation on pit area	10,4,3	ha	0,00	R	4 400,00	R	
10		Rip and establish vegetation on stockpile footprint areas and haul roads	10,4,4	ha	0,00	R	5 500,00	R	
11		<b>Sub - Total for Mining aspects</b>							
12									
13									
14		Not applicable	1,1	na	0,00	R	-		
15		<b>Sub - Total for General Surface Reclamation</b>							
16									
17									
18		Not applicable	1,1	na	0,00	R	-		
19		<b>Sub - Total for Water Management</b>							
20									
21		<b>SUB - TOTAL 1 (for infrastructural and related structures)</b>					R	-	
22									
23		Surface water quality monitoring	12,1	yr	0,00	R	32 000,00	R	Area fully rehabilitated
24		Groundwater quality monitoring	12,2	yr	0,00	R	60 000,00	R	Area fully rehabilitated
25		Reclamation monitoring on reclaimed areas	12,3	ha	0,00	R	2 500,00	R	Area fully rehabilitated
26		Care and maintenance of reclaimed areas	12,4	ha	0,00	R	15 500,00	R	Area fully rehabilitated
27		<b>Sub - Total for Post closure aspects</b>							
28									
29		Contingencies for post closure aspects	1,2	sum	1,00	R	-	R	Assumed 10 percent for post closure aspects
30		<b>Sub - Total for Contingencies for post closure aspects</b>							
31		<b>SUB - TOTAL 2 (for post - closure aspects)</b>					R	-	
32									
33		Preliminary and General	1,2	sum	1,00	R	-	R	Assume 12 percent of sub - total 1
34		Contingencies	1,2	sum	1,00	R	-	R	Assume 10 percent of sub - total 1
35		<b>SUB - TOTAL 3 (for additional site aspects)</b>					R	-	
36		<b>Grand - Total (for sub - total 1+2+3)</b>					R	-	



Closure Costing - Opencast Area			Closure Costs - <i>Scheduled</i>					
Item nr	ID	Task:	Unit Rate Code	Unit	Quantity	Rate	Amount	Notes
1		<b>Infrastructure Aspects</b>						
2		Not applicable	1.1	ha	0.00	R	-	
3								
4								
5								
6		<b>Mining Aspects</b>						
7		Open pit reclamation including final voids and ramps						Rehabilitated
8		PH BC						
9		Backfill pit void	9.3.1	m³	0.00	R	15.50	
10		Replace topsoil on pit area	9.1.2	m³	0.00	R	11.00	
11		Establish vegetation on pit area	10.4.3	ha	0.00	R	4 400.00	
12		Rip and establish vegetation on stockpile footprint areas and haul roads	10.4.4	ha	0.00	R	5 500.00	
13								
14								
15		<b>General Surface Reclamation</b>	1.1	ha	0.00	R	-	
16								
17								
18		<b>Water Management</b>						
19		Not applicable	1.1	ha	0.00	R	-	
20								
21								
22		<b>SUB - TOTAL 1</b> (for infrastructural and related structures)					R	-
23		<b>Soil - closure aspects</b>						
24		Surface water quality monitoring	12.1	yr	0.00	R	32 000.00	Area fully rehabilitated
25		Groundwater quality monitoring	12.2	yr	0.00	R	60 000.00	Area fully rehabilitated
26		Reclamation monitoring on reclaimed areas	12.3	ha	0.00	R	2 500.00	Area fully rehabilitated
27		Care and maintenance of reclaimed areas	12.4	ha	0.00	R	15 500.00	Area fully rehabilitated
28								
29		<b>Sub - Total for Post closure aspects</b>					R	-
30		Contingencies for post closure aspects	1.2	sum	1.00	R	-	Assumed 10 percent for post closure aspects
31		<b>SUB - TOTAL 2</b> (for post - closure aspects)					R	-
32		<b>Final Closure Assessment</b>						
33		Preliminary and General	1.2	sum	1.00	R	-	Assume 12 percent of sub - total 1
34		Contingencies	1.2	sum	1.00	R	-	Assume 10 percent of sub - total 1
35		<b>SUB - TOTAL 3</b> (for additional allowances)					R	-
36		<b>Grand - Total</b> (for sub - total 1+2+3)					R	-





**IMPALA PLATINUM LIMITED**  
**Pit 8C Merensky - Stores (Phoenix)**

Scale 1:1000

07/02/2012



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Appendix B: General Arrangement Drawing.

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