mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: BAKGAGA BA MPHAHLELE TRADITIONAL AUTHORITY and DITHABENG MINING (PTY)LTD

PROSPECTING RIGHT: IT252/09 LP30/5/1/1/2/01 PPR

MINING WORK PROGRAMME

SUBMITTED FOR A MINING RIGHT APPLICATION AMENDMENT

AS REQUIRED IN TERMS OF SECTION 23 (a), (b) AND (c) READ TOGETHER WITH REGULATION 11(1) (g) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (ACT 28 of 2002)

STANDARD DIRECTIVE

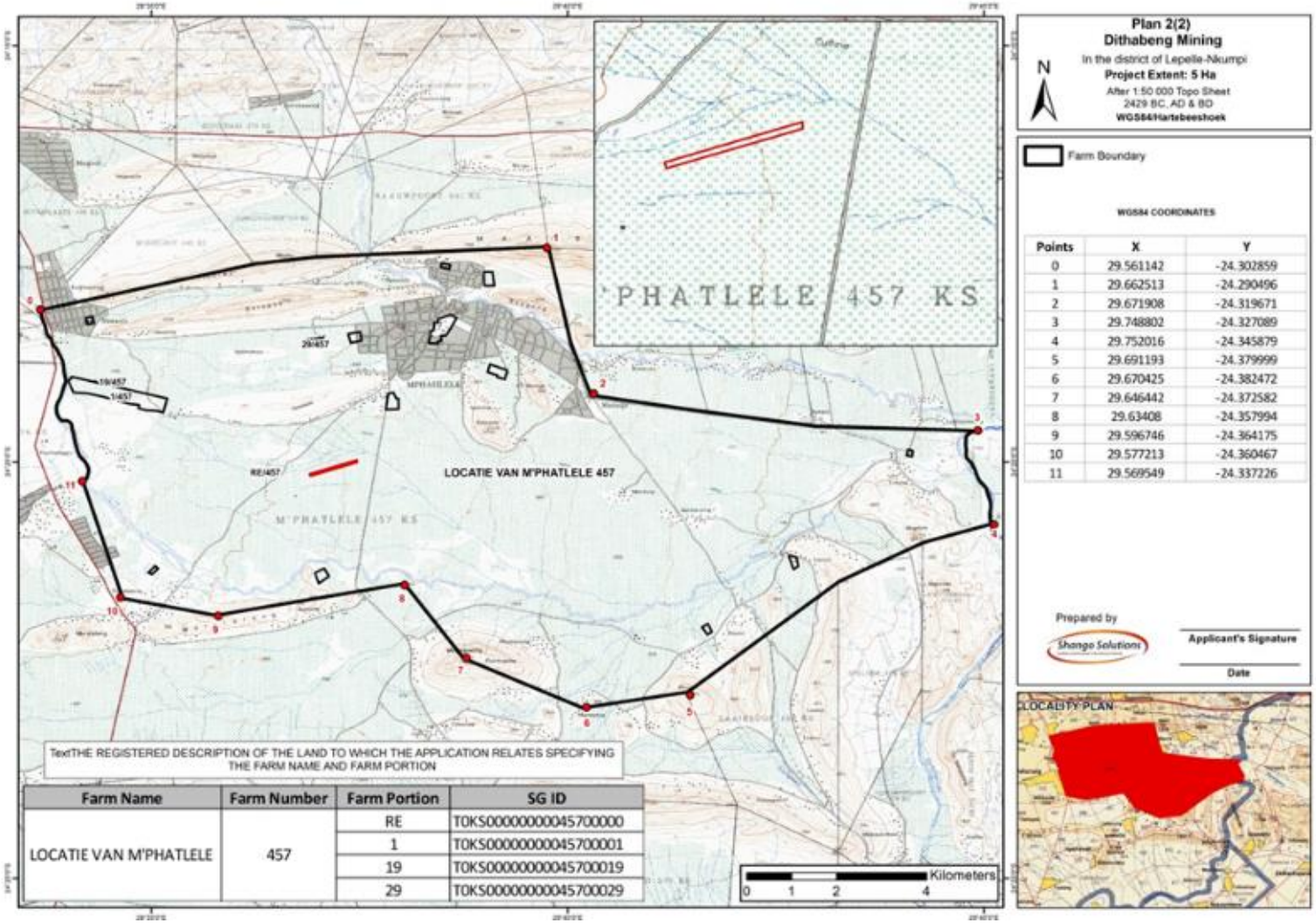
All applicants for mining rights are herewith, in terms of the provisions of Section 23 (a), (b) and (c) and in terms of Regulation 11 (1) (g) of the Mineral and Petroleum Resources Development Act, directed to submit a Mining Work Programme, strictly under the following headings and in the following format together with the application for a mining right.

1 REGULATION 11.1.(a): FULL PARTICULARS OF THE APPLICANT

ITEM	COMPANY CONTACT DETAILS
Name	Bakgaga Ba Mphahlele Traditional Authority & Dithabeng Mining (Pty) Ltd
Tel no	(011) 3276280
Fax no:	(086) 695 1880
Cellular no	083 799 4572
E-mail address	glady@dithabengmining.co.za
Postal address	17 Cardigan Road Parkwood Johannesburg Gauteng 2193

ITEM	CONSULTANT CONTACT DETAILS (If applicable)
Name	
Tel no	
Fax no	
Cellular no	
E-mail address	
Postal address	

2 REGULATION 11.1.(b): PLAN SHOWING THE LAND AND MINING AREA TO WHICH THE APPLICATION RELATES (the plan required in terms of Regulation 2(2))



3 REGULATION 11.1.(c): THE REGISTERED DESCRIPTION OF THE LAND TO WHICH THE APPLICATION RELATES

Farm No	457
Registration Division	KS
Farm Name	LOCATIE van **M'PHATLELE**
Property Details	0
Diagram Deed Number	T13670/989
Extent	11725.0951 H
Province	Lepele-Nkumpi
Title Deed	T13670/1989

4 REGULATION 11.1.(d): THE DETAILS OF THE IDENTIFIED MINERAL DEPOSIT

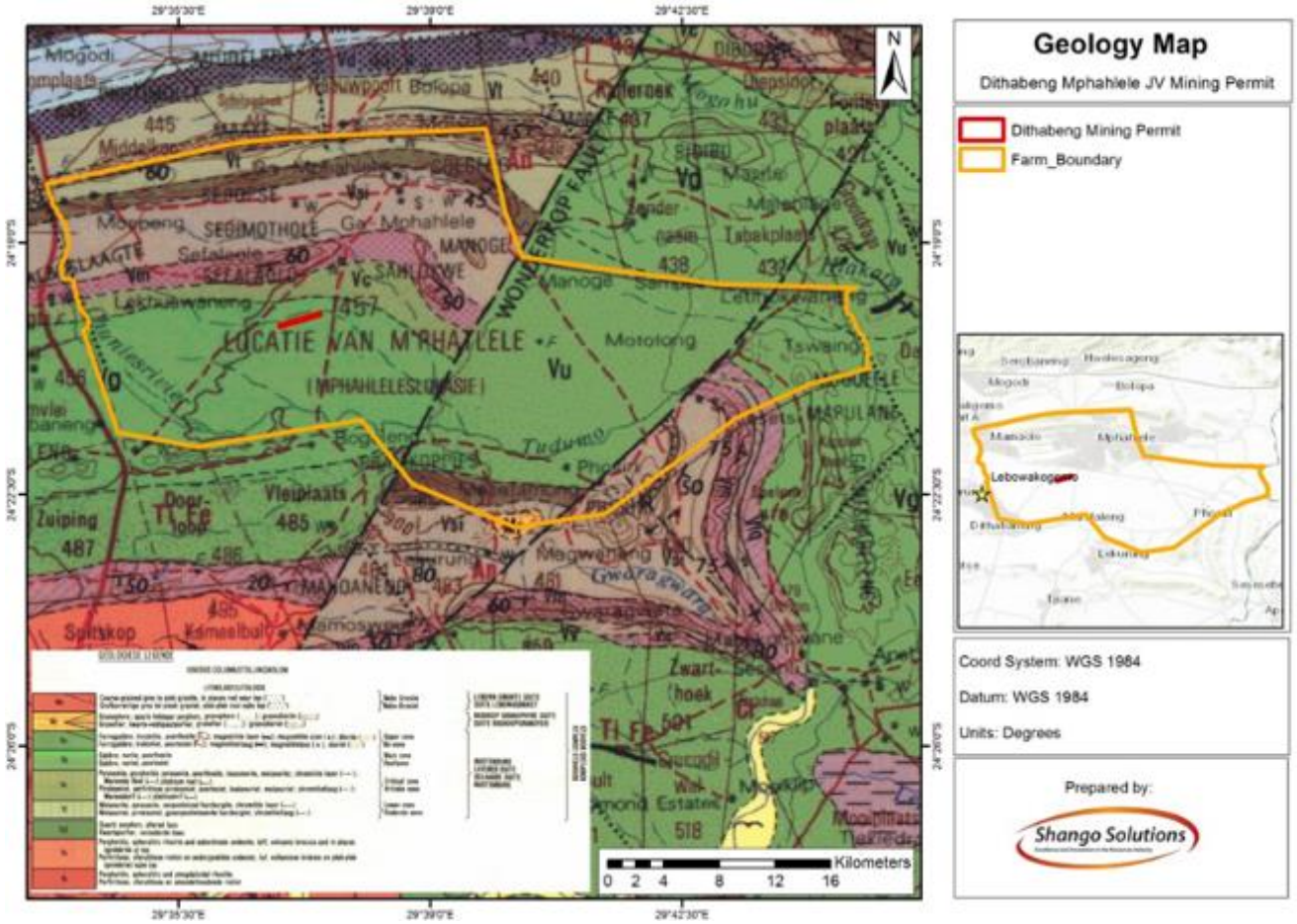
4.1 Resource Particulars

ITEM	DETAIL
Type of Mineral	Chrome ore (Cr), Iron ore (Fe) and Vanadium ore (V).
Locality	10 km South-East of Lebowakgomo in the Limpopo Province
Extent of Area Required for Mining	Total farm is 11725.0951 ha. The opencast area accounts for about 120 Ha for the pit area and another 45 Ha for the overburden and topsoil dumps.
Extent of Area Required for Infrastructure, etc.	Beneficiation plant footprint allows is planned for about 17 Ha and the Tailings storage at 83Ha
Depth of Mineral below Surface	It ranges from surface (sub outcrop) in the North to 600 m in the South of the resource area
Geological Formation	The farm is underlain by typical Bushveld stratigraphy of the Rustenburg Layered Suite.

4.2 Detail of Persons who Compiled the Resource Statement

ITEM	DETAIL
Name	Mr. Manie Swart
Qualification	B.Sc. Hons. (Geol.), Pr. Sci. Nat.
Profession	Principal Geologist
Experience	35 Years
Professional Body	SACNASP, FGSSA
Registration Number	Pr. Sci. Nat. 400101/00

4.3 Locality Specific Geological Map (in colour)



4.4 Exploration Results (Supporting Geological Reports to be Listed and Appended)

- Auric Consulting (2010) Independent Geology Report on the Mphahlele Mineral Property. Consultancy Report on request of the Mphahlele Council, 28pp.
- Manie Swart (2019) Geology Report on the Mphahlele Chromitite Project. Consultancy Report on request of Dithabeng Mining Mphahlele, 31pp.

The findings of these reports support the mining of the MG chromitite layers. along the strike length present on the Mining Right (Figure 1). The tonnage estimates on the MG chromitite layers, along the unmined 8 Km strike length is detailed in (Table 1).

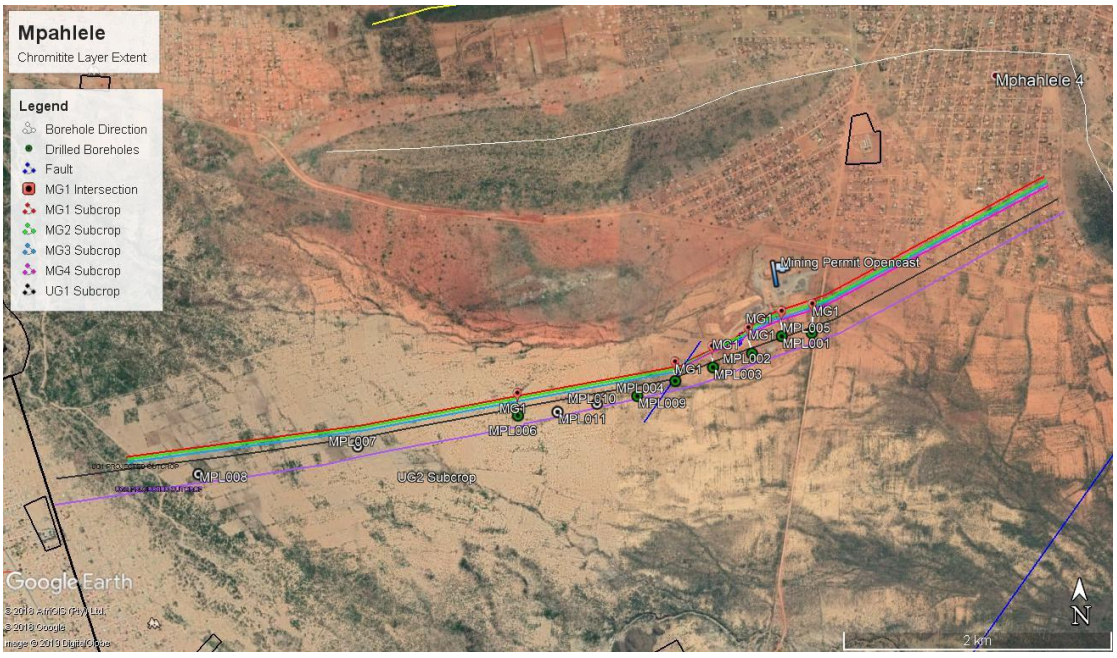


Figure 1: MG chromitite layers along an 8Km strike length targeted for a Mining Right.

Layer	Thickness	Cr_2O_3 %	Cr:Fe Ratio	SG	Tonnes (Mt)
UG1	0.84	30.58	1.18	4.00	46.8
MG4B	0.17	30.46	1.25	3.86	6.3
MG4A	0.50	29.74	1.30	3.84	18.4
MG4	0.95	31.60	1.27	4.00	36.5
MG3	1.10	34.05	1.30	3.87	40.9
MG2C	0.60	34.79	1.33	4.05	23.3
MG2B	1.87	37.10	1.36	4.17	74.9
MG2A	1.05	38.63	1.39	4.23	42.6
MG1	1.89	37.54	1.45	4.15	72.9
MG0	0.50	38.67	1.49	4.18	20.1
Total	**9.47**	**35.18**	**1.34**	**4.08**	**382.7**

Table 1: Tonnage estimate of chromitite layers as of end of November 2019 to a depth of 600m and strike length of 8Km (Manie Swart 2019).

4.5 Information Required in terms of Regulation 8 (in cases where the application was preceded by a Prospecting Right)

Not Applicable

4.6 Mineral Resource Maps

The existing mineral resource maps for the MG chromitite layers (Figure 2) are detailed.

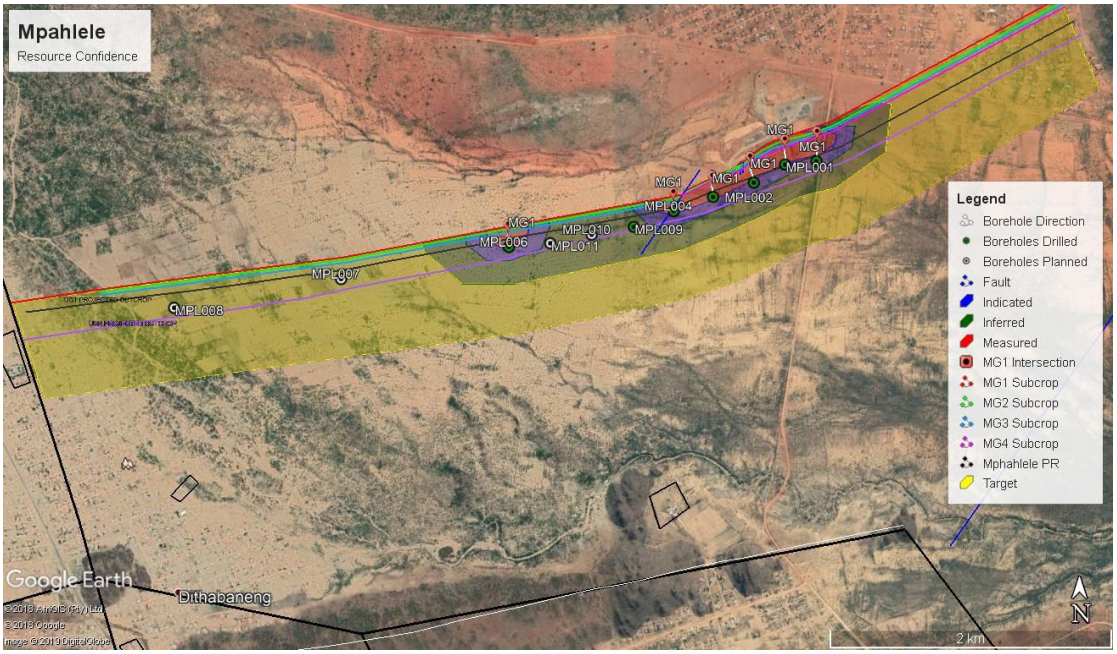


Figure 2: Mineral Resource map in the 2019 resource estimate.

4.7 Resource Statement

The mineral resource statement for the MG horizons is presented in **Table 2 Resource tabulation for the MG chromitite layers**.

Opencast (130m Highwall)	MGs	Measured	4.89	10.37	34.84	1.34	4.08
		Indicated	1.67	10.37	34.60	1.33	4.08
		Inferred	2.973	10.37	34.60	1.33	4.08
		Total	**9.53**	**10.37**	**34.72**	**1.33**	**4.08**
Underground (600m Depth)	MGs	Measured	5.12	10.37	34.84	1.34	4.08
		Indicated	2.89	10.37	34.60	1.33	4.08
		Inferred	11.64	10.37	34.60	1.33	4.08
		Total	**19.65**	**10.37**	**34.66**	**1.33**	**4.08**
Combined	MGs	Measured	10.01	10.37	34.84	1.34	4.08
		Indicated	4.56	10.37	34.60	1.33	4.08
		Inferred	14.61	10.37	34.60	1.33	4.08
		Total	**29.18**	10.37	**34.68**	**1.33**	**4.08**

Table 2 Resource tabulation for the MG chromitite layers.

Notes:

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Calculated at a 130 m highwall and 600m underground depth
Mineral Resources are reported as in-situ tonnes.
Mineral Resources are reported inclusive of Mineral Reserves (no Mineral Reserves estimated to date).
A cut-off grade of 25% Cr_2O_3 has been applied to the geological model.
No potential mining dilution factors are applied.
Apparent computational errors are due to rounding.
Geological losses have been applied to the Mineral Resource categories:

- Measured - 5%
- Indicated - 10%
- Inferred - 20%

An Inferred Mineral Resource is based on limited geological evidence that is sufficient to imply but not verify geological or grade continuity.

5 REGULATION 11.1.(e): THE DETAILS OF THE MARKET, THE MARKET'S REQUIREMENTS AND PRICING IN RESPECT OF THE MINERALS CONCERNED

5.1 A list of Products and their Proportionate Quantities

Chromite is a black to brownish-black cubic mineral with the chemical formula $FeO.Cr_2O_3$, and is the only economic ore of chromium, essential for the production of stainless steel. The theoretical composition of chromite is ~68% Cr_2O_3 and ~32% FeO. In its natural form it occurs in solid solution with other minerals in the spinel group and, as a result, in situ chromite percentages are often lower than the theoretical 68%.

Chromite ore (chromitite) occurs in rocks formed by the intrusion and solidification of magma rich in heavy iron-containing minerals such as pyroxene and olivine. These are present in ultramafic igneous rocks, such as the Bushveld Complex (BC) in South Africa.

Commercial chromite deposits are found in two forms:

- Stratiform seams in igneous intrusions, such as the Bushveld Complex; and
- More irregular podiform or lenticular deposits such as those found in Turkey and Kazakhstan.

South Africa is a major supplier of chromite ore, especially to China, who convert it to ferrochrome for the stainless steel and alloy industries. The ore is hosted within the BC, one of the largest igneous intrusions on Earth, which holds ~75% of the world's known chromite reserves (Teigler and Eales, 1993). The BC is subdivided into the Lower, Critical, Main and Upper zones, on a lithological basis. The chromium ore is mainly concentrated in layers of the Critical Zone (Figure 3). These layers vary in thickness, but several are consistent along strike for some 200 km.

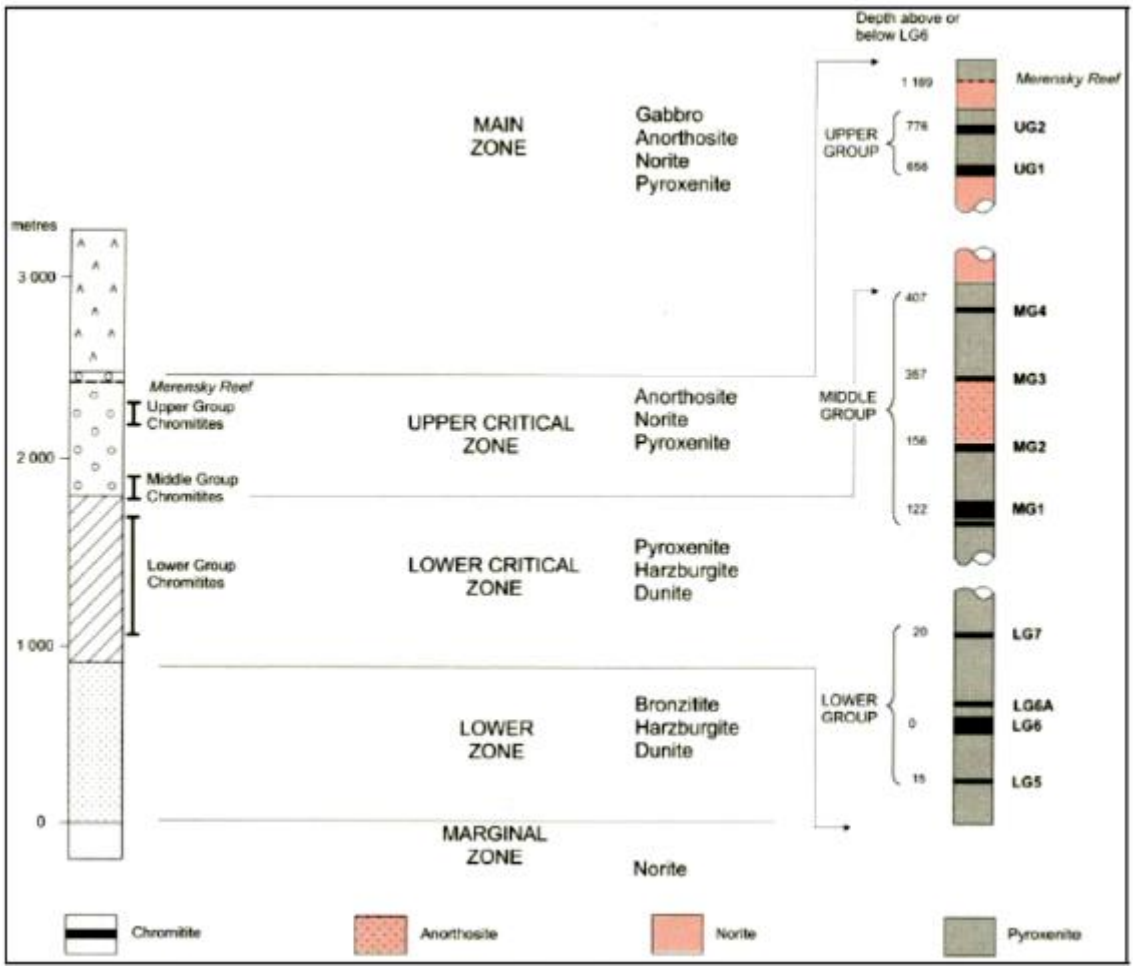

Figure 3: Schematic stratigraphic section illustrating the zones of the Rustenburg Layered Suite. Note the relative positions of the chromitite groups and the associated silicate rocks (Schürmann *et al*., 1998).

In South Africa, chromitite is commonly mined as a primary product, although increasing volumes of chromite concentrates are being recovered from the tailings of UG2 operations (Roskill, 2017).

Product	Percentage split	4E +AU	Cr2O3 content (min)	Cr:Fe (min)
Metallurgical Concentrate	90%	NA	40%	1.25
Chemical Grade Chrome	10%	NA	42%	1.25

Table 3: A list of products and their proportionate quantities.

5.2 Market for each Specific Product in terms of Local, Regional or International

5.2.1 Chrome

The Mphahlele Project is targeting chromite for metallurgical use, specifically in the ferrochrome industry. The exploration results identify that the chromite content meets the requirements for supply to ferrochrome market. The Mphahlele orebodies contain a range of 30% to 39% Cr_2O_3 and Cr/Fe ratio between 1.18 and 1.49, based on the information available. The vast majority of the ore is therefore considered appropriate for the market identified. Chrome products will be sold in the open market mostly to long-term off-take agreement partners.

5.3 Summary of Product Consumers

5.3.1 Chrome

Chromite is mainly utilised in ferrochrome alloys. The major market consumers of the alloys are the stainless steel and steel industries. The chromium metal, produced by electrolytic methods is implemented in metallurgical applications. The use of chrome ore and its concentrate is detailed in Figure 4.

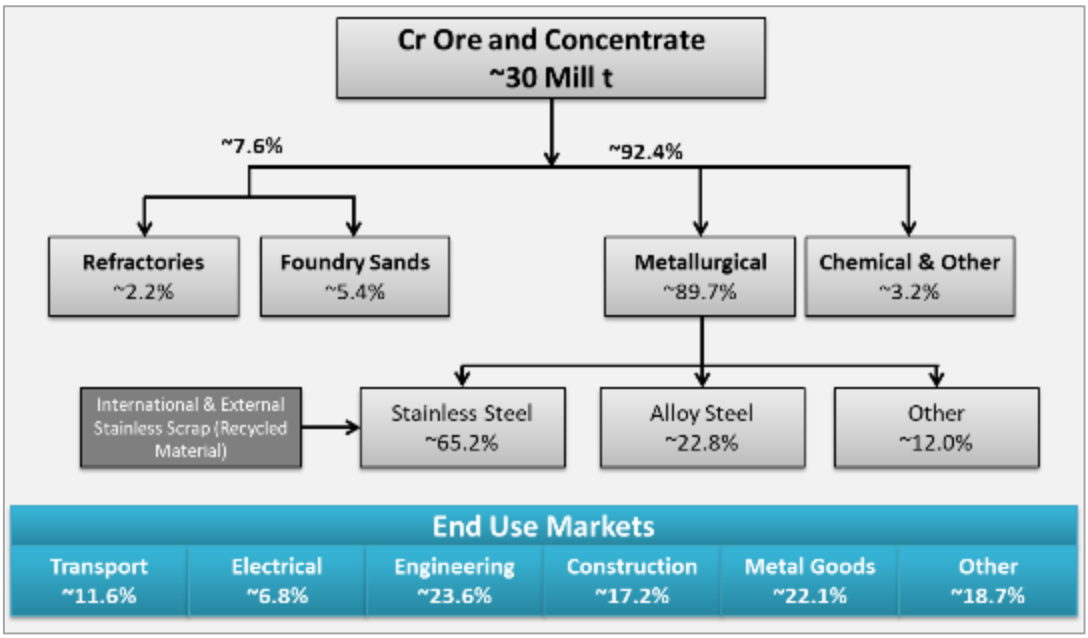

Figure 4: Chromium ore end use markets.

5.4 Summary of Customer Specification and Details of any Proposed Beneficiation of the Products

5.4.1 Chrome

The MGs and UG1 chromitite will be crushed and washed on site to create the final saleable product. The proposed wash plant will process the MGs and UG1 to a 40% metallurgical grade concentrate.

Customer	Product	Particle Size Max	Cr2O3 content (min)	Cr:Fe (min)
Open Market	Metallurgical Concentrate	-2mm P80	40%	1.25
Open Market	Chemical Grade Chrome	-2mm P80	42%	1.25

Table 4: Product Specification

5.5 Summary of Infrastructure Requirements such as Roads, Rail, Electricity and Water

Chrome ore is currently being mined via opencast methods on the Mining Permit. Hence, mine, stockpile, and a water supply already exist on the project.

5.5.1 Roads

The mining area is connected to both the R579 (6.5km to the West) and the R37 (9.1km to the North) with currently existing good condition Unpaved (gravel) roads. Additional roads will be established to access the proposed open pits

5.5.2 Rail

No need for any railway infrastructure is foreseen.

5.5.3 Electricity

Currently power supply in the area is limited due to the surface infrastructure from Eskom not being close to the mine. The Middelpunt distribution substation is located about 23km from the mine. There is also lower voltage supply closer to the mine that will allow for temporary connections.

A total of 25 MVA Nominated Maximum Demand will be applied for from Eskom.

5.5.4 Water

Adequate supply of water is available from the Mining Permit opencast that will be recycled for use in the wash plant.

5.6 Summary of other Information Applied that may Influence Price e.g. Exchange Rates, Duties, Tariff Barriers, etc.

The Rand-Dollar exchange rates as well as the demand for chrome will be the main influencers of the price that the products will achieve.

Operating Expenditure (Opex) is Rand based, but revenue and capital are sensitive to exchange rates and any deterioration in the exchange rate or commodity prices will have a negative impact on the economic viability of the project. The cost of diesel will also affect the price per tonne of the product.

Bakgaga plans to have off-take agreements with identified customers that does provide longer term price stability. It also reduces the impact of foreign exchange fluctuations as all ores are sold in South African Rand.

5.7 The Price to be used in the Cash Flow Forecast

Prices used in the cash flow forecast are a combination of current prices in the Market and educated forecasts by Industry Specialists.

All prices in the industry is based on CIF prices in China (Cost, insurance and freight (CIF) is a trade term requiring the seller to arrange for the carriage of goods by sea to a port of destination, and provide the buyer with the documents necessary to obtain the goods from the carrier)

This is only used for comparative reasons as the bulk of the supply will be for local customers. The prices utilised is detailed in **Error! Reference source not found.**

	South Africa (-37% to 40% Cr_2O_3 FOB		China (SA Lumpy 38% Cr_2O_3 CIF	
2006	115		109	
2007	190	65%	181	65%
2008	353	86%	328	82%
2009	118	-67%	153	-53%
2010	213	81%	256	67%
2011	239	12%	272	6%
2012	188	-21%	184	-32%
2013	175	-7%	177	-4%
2014	168	-4%	175	-1%
2015	160	-5%	164	-6%
2016	144	-10%	150	-9%
2017	168	17%	175	17%
2018	170	1%	177	1%
2019	174	2%	181	2%
2020	185	6%	185	2%
2021	208	12%	189	2%
2022	220	6%	193	2%
Average 2006-2022	181	53%	188	23%
Upper Range (+25%)	226	91%	235	54%
Lower Range (-25%)	136	15%	141	-8%
2023	220	0%	201	4%
2024	229	4%	209	4%
2025	238	4%	217	4%
2026	247	4%	226	4%
2027	257	4%	235	4%
2028	268	4%	245	4%
2029	278	4%	254	4%
Average 2023-2029	248	13%	227	13%
Upper Range (+25%)	310	41%	239	19%
Lower Range (-25%)	186	-15%	143	-29%

Table 5 - Chrome Ore Price Forecast

5.8 Confirmation that a Specialist Market Analysis is attached as an Appendix which Explains the Assumptions Made and how the Price was Determined

5.8.1 Price

The South African chrome ore prices from January 2016 to September 2022 (Cost, Insurance and Freight, CIF) are displayed in Figure 5. Following an all-time high towards the end of 2016 and start of 2017, the prices dropped rapidly, from an average of 400 US$/mt (metric tonnes) to around 150 US$/mt, during the first quarter of 2017. Following this rapid decline the prices started to increase again in mid-2017. Prices has remained Cyclic and has been up and down regularly based on several international economic criteria, but the average price has remained fairly stable in a range between $180 and $220/ton

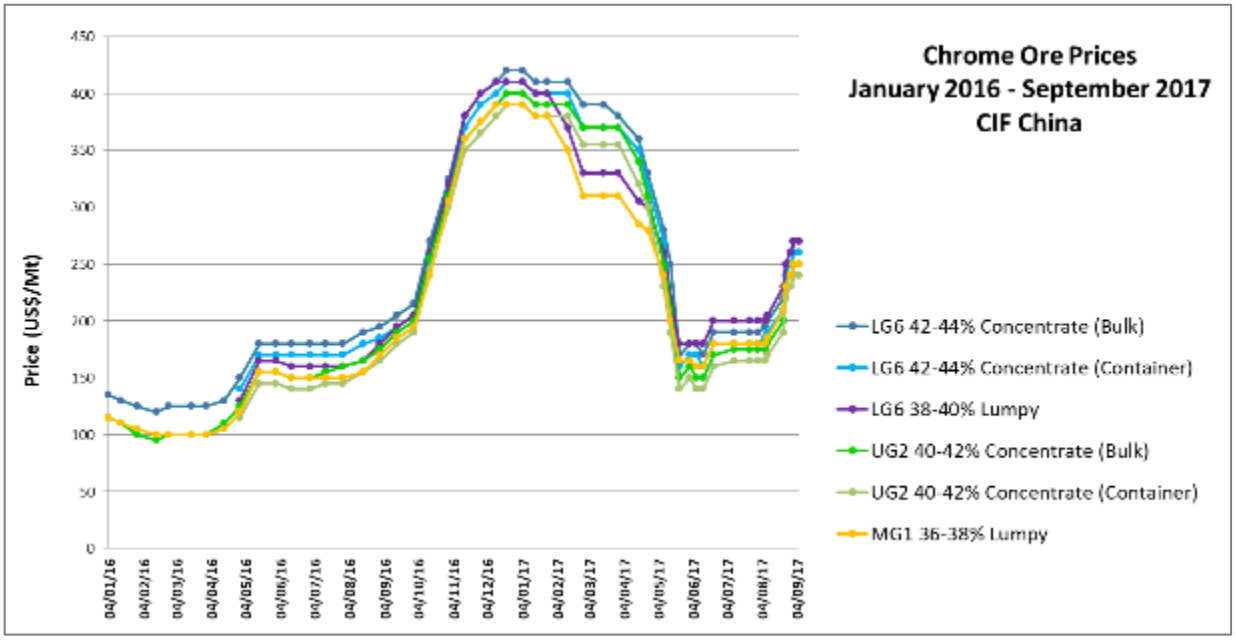

Figure 5: Chrome ore prices 2016 to 2017, CIF, China (FerroAlloyNet 2017).

5.8.2 Uses and Applications

Chromium is a versatile element and has a wide variety of uses (Figure 4) and applications in the steel and alloy, chemical, and refractory industries. Approximately 93% of chromite produced globally is utilised for smelting into ferrochrome alloys. These alloys are implemented in the stainless steel, steel, and other alloy industries. Chromium metal, which is produced by aluminothermic or electrolytic processes, is mainly consumed in metallurgical applications (Venmyn Deloitte, 2016).

Grades produced include metallurgical and non-metallurgical applications (Optimin, 2016):

- Metallurgical grade (high chromium chromite, minimum 40% Cr_2O_3);
- Chemical grade (high iron chromite, 46% Cr_2O_3);
- Foundry grade (low silica chromite, 45% Cr_2O_3); and
- Refractory grade (high aluminium chromite, 46% Cr_2O_3).

The primary chemical product from chromite is sodium chromate. From this, a variety of other chemical products are produced (e.g. tanning agents, pigments, and metal finishing such as chromium plating). Refractory chromite is used in sectors of ferrous and non-ferrous metallurgy, in cement kilns and in the glass industry (Venmyn Deloitte, 2016).

The specifications of chromite ore for smelting purposes in general are becoming less rigid due to the introduction of open top Direct Current (DC) arc furnaces. However, whilst the minimum required Cr_2O_3 grade for the production of high-carbon ferrochrome has decreased from 48% to 40%, the specifications of the ores for charge chrome production are still rigid. A similar trend is also noted in the grades of the refractory-grade ore. In addition, the use of technologies such as pelletisation, agglomeration, plasma arc technology, and direct reduction has meant that ores that were previously considered uneconomic can now be used to produce ferrochrome (Venmyn Deloitte, 2016).

5.8.3 Supply and Demand

In 2015 chromium was listed as a critical mineral (Figure 6) by the EU owing to its high economic importance, as well as increasing risk due to governance challenges in dominating ore supply countries, such as South Africa and Turkey (European Commission, 2015).

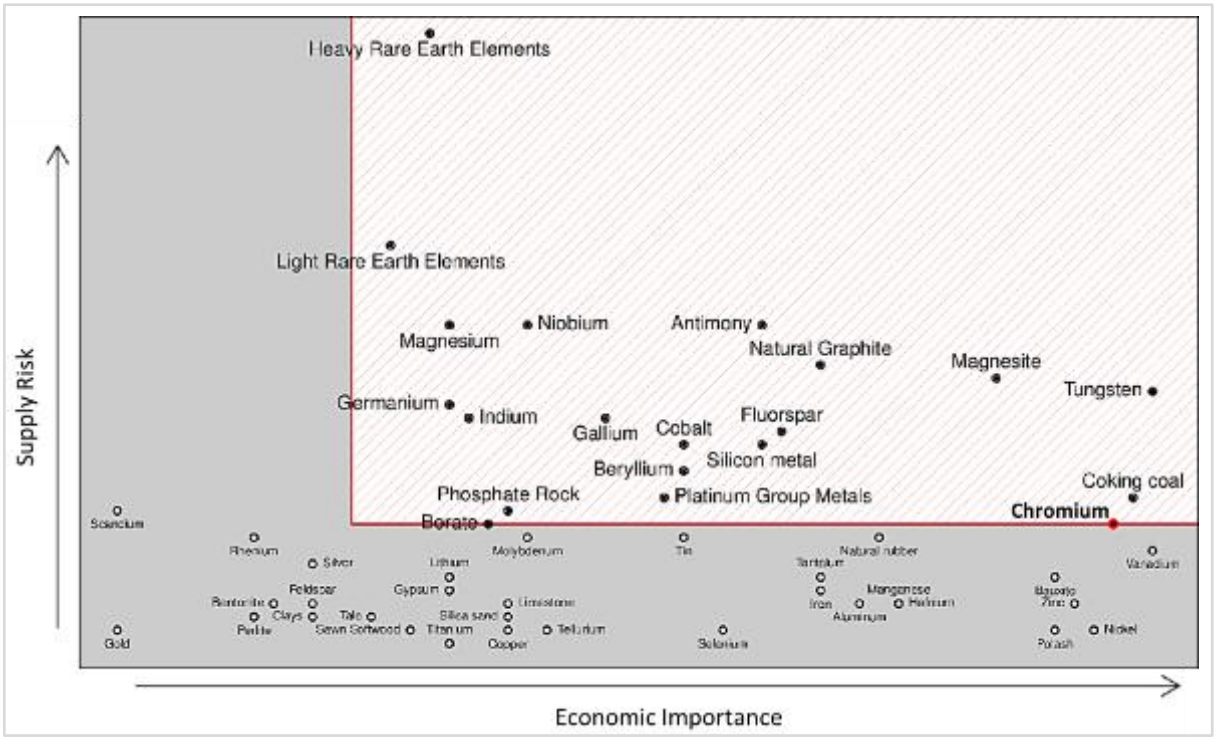

Figure 6: Minerals that are regarded by the EU as critical, based on their economic importance and supply risk (modified after the European Commission, 2015).

South Africa is the leading producer of chromite ore, having produced an estimated ~45% of global chromite production in 2015 (Table 6). South African chromite production is primarily made up of chromite with less than 44% Cr_2O_3, with a smaller fraction of its production being made up of chromite with a Cr_2O_3 content of between 44% and 48%. The South African chromite production and sales is detailed in Table 7.

World Mine Production and Reserves:	Mine production[8] 2015	Mine production[8] 2016[e]	Reserves[9] (shipping grade)[10]
United States	—	—	620
India	3,200	3,200	54,000
Kazakhstan	5,490	5,500	230,000
South Africa	14,000	14,000	200,000
Turkey	3,500	3,500	12,000
Other countries	4,220	4,200	NA
World total (rounded)	30,400	30,400	500,000

Table 6: Global mine production (USGS, 2017b).

Notes:

[e] Estimated. NA Not available. — Zero.
[1] Recycling production is based on reported stainless steel scrap receipts.
[2] Defined as production (from mines and recycling) + imports – exports + adjustments for Government and industry stock changes.
[3] Defined as imports – exports + adjustments for Government and industry stock changes.
[4] In addition to the tariff items listed, certain imported chromium materials (see 26 U.S.C. sec. 4661, 4662, and 4672) are subject to excise tax.
[5] See Appendix B for definitions.
[6] Units are thousand tons of material by gross weight.

[7] High-carbon and low-carbon ferrochromium, combined.
[8] Mine production units are thousand tons, gross weight, of marketable chromite ore.
[9] See Appendix C for resource and reserve definitions and information concerning data sources.
[10] Reserves units are thousand tons of shipping-grade chromite ore, which is deposit quantity and grade normalized to 45% Cr2O3.

	Production	Local sales		Export sales		Total sales	
Year	tonnes	Mass 1,000t	Value R'000	Mass 1,000t	Value R'000	Mass 1,000t	Value R'000
2004	7,676,800	6,743	1,368,846	513	318,894	7,256	1,687,739
2005	7,552,237	6,128	1,468,521	657	442,045	6,785	1,910,566
2006	7,425,860	6,387	1,803,587	741	506,177	7,128	2,309,764
2007	9,664,656	7,389	2,346,982	893	659,466	8,282	3,006,448
2008	9,682,640	7,116	4,131,020	762	1,267,931	7,878	5,398,951
2009	7,560,938	4,880	2,081,058	1,709	1,571,311	6,589	3,652,368
2010	10,871,095	7,267	4,159,308	1,929	2,459,473	9,196	6,618,781
2011	10,721,360	7,434	5,382,328	2,000	3,237,219	9,434	8,619,547
2012	11,310,223	6,685	4,683,023	2,470	3,594,282	9,154	8,277,305
2013	13,644,699	8,483	5,870,717	4,168	5,891,833	12,651	11,762,549
2014	13,661,244	10,048	7,771,424	3,695	5,834,876	13,743	13,606,301
2015	14,037,722	9,864	8,112,016	4,821	8,104,128	14,685	16,216,145
2016	16,272,362	10,223	8,951,605	4,682	6,783,465	14,905	15,735,070

Table 7: South African chromite production and sales (Chamber of Mines, 2017).

Chromium is consumed in the form of ferrochrome in the production of stainless steel. China is the leading chromium-consuming and ferrochromium-producing country, as well as the leading stainless steel producer. South Africa is the leading chromite ore and a leading ferrochromium producer upon which world stainless steel producers depend directly or indirectly for chromium supply. Ferrochromium production is electrical energy intensive, so constrained electrical power supply results in constrained ferrochromium production. World stainless steel production rose from the first to the second quarter of 2016 and then declined from the second to the third quarter. However, third quarter production still exceeded that of the first quarter. China is the leading stainless-steel producer, accounting for about one-half of world production. As a result of declining chromite ore prices early in 2016, it was thought that chromite ore stocks on the ground may have increased. However, selling this chrome in the market place was limited due to the unavailability of transport in South Africa and Zimbabwe. The price of South African UG2 chromite concentrate, used in China to produce ferrochromium for its stainless-steel-producing industry, nearly doubled during this year. In Turkey, miners shifted away from chromite ore production when chromite ore prices declined early in 2016.

5.8.4 Outlook

Chromite ore prices are notoriously volatile and subject to change depending on stainless steel and alloys industry demand. After reaching a five year high towards

the end of 2016, a six-month price slide in the first half of 2017, due to weaker demand from the oversupplied stainless steel industry, has stalled the chrome ore market. However, the chrome prices have now begun to rebound and this positive trend may continue into the first quarter of next year (2018), as cutbacks and cost pressures keep the ore supply curtailed. In addition, surface UG2 stockpiles are not as prevalent anymore, as they were historically.

Prices used in the cash flow forecast are a combination of current market prices in the Market and educated forecasts by Industry Specialist.

All prices in the industry is based on CIF prices in China (Cost, insurance and freight (CIF) is a trade term requiring the seller to arrange for the carriage of goods by sea to a port of destination, and provide the buyer with the documents necessary to obtain the goods from the carrier)

6 REGULATION 11(1)(f): THE DETAILS WITH REGARD TO THE APPLICABLE TIMEFRAMES AND SCHEDULING OF THE VARIOUS IMPLEMENTATION PHASES AND A TECHNICALLY JUSTIFIED ESTIMATE OF THE PERIOD REQUIRED

6.1 Timeframes and Scheduling of Implementation Phases

6.1.1 Explanation of Time Taken to Develop the Mine and Commence Production

It will take about a month to complete site establishment for the opencast mining and then a further 3 months until the first Run of Mine (ROM) material hits the floor.

The Beneficiation Plant will be built in a modular basis to allow for the build in tons but will only be completed six to eight months after the mine starts

6.1.2 Explanation of Production Build up Period Once Production Commences

Due to the steep dipping Reef Seams a lot of preparation is required to open the Reef. As explained in section 6.1.1 it will take at least three to four months for the material to be opened and removed.

6.1.3 Explanation of Production Decline Period (as Grades Deteriorate)

It is not envisaged that the grade will deteriorate, but obviously as the resource is being mined it will eventually reach a point where the available face length does not allow for cost effective mining as the tonnages produced cannot cover the fixed cost of the operation

6.1.4 Production Forecast for Each Year over Full Period of 30 Years (Not Life of Mine calculation).

BAKGAGA PROJECT MINERAL RESOURCE DEPLETION SCHEDULE											
Material	TOTAL Year 1-10	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
MG Opencast ROM	13,200	960	960	1,200	1,440	1,440	1,440	1,440	1,440	1,440	1,440
Met Conc	5,762	240	614	614	614	614	614	614	614	614	614
Chemical	640	27	68	68	68	68	68	68	68	68	68
Total Saleble	6,402	267	682	682	682	682	682	682	682	682	682

Table 8: Annual Production Forecast ('000 tons).

6.2 Technically Justified Estimate of Period Required

The expected Life of Mine of the opencast is 20 Years at 100ktpm after which the Underground infrastructure would be developed mainly looking at mining the MG1 and MG2 seams, which would allow for a further 80 million tons to be accessed. Thus, the requested period for this application is 30 years as per the minimum legal requirement.

7 REGULATION 11(1)(g) (i) THE DETAILS WITH REGARD TO THE COSTING OF THE MINING TECHNIQUE, MINING TECHNOLOGY AND PRODUCTION RATES (excluding labour and capital)

7.1 Mine Design Maps

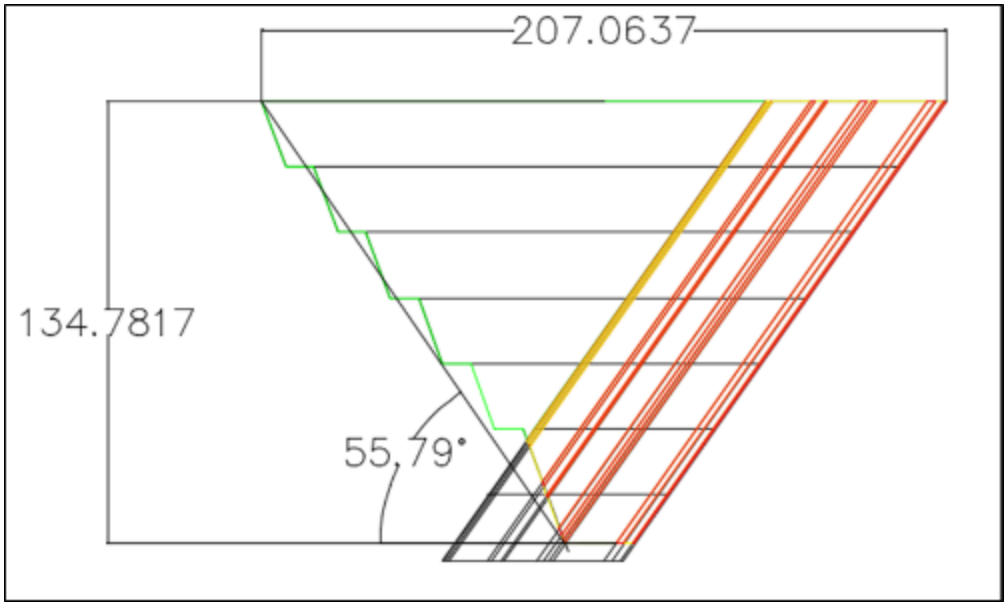

Figure 7: High Level Mine Design Plan.

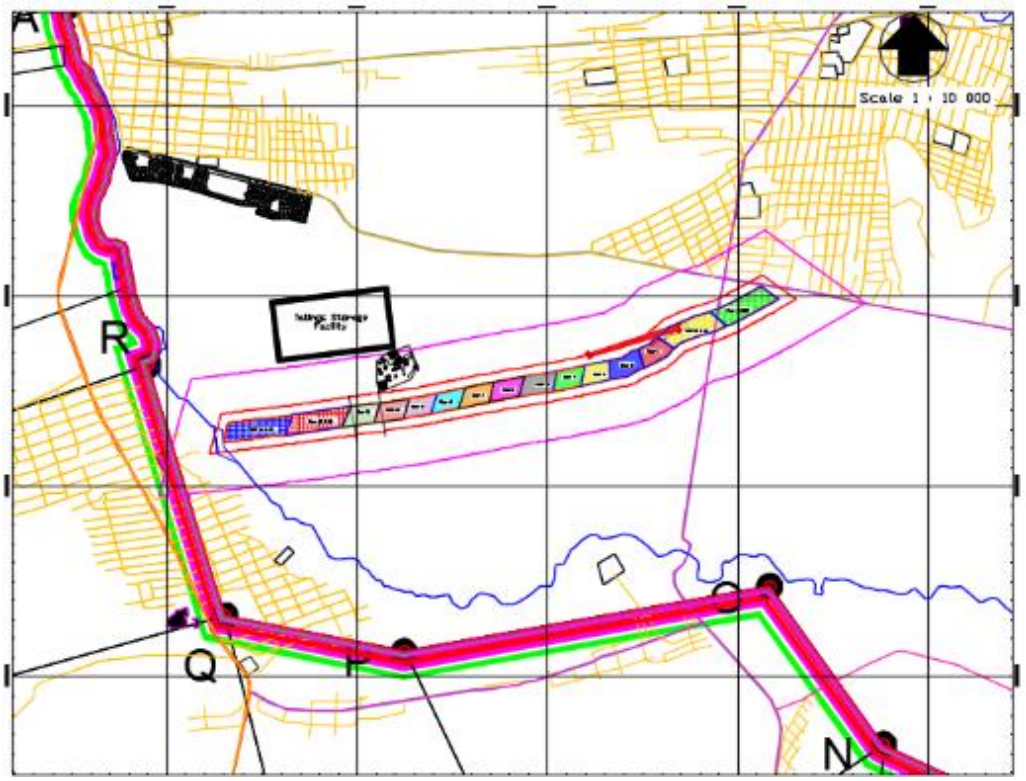

Figure 8: Open pit design and schedule.

7.2 Description of the Mining Methods' Impact on Operating Cost

7.2.1 Basic Overview of the Mining Method

7.2.1.1 Mine Design

After having defined the resources for the targeted chromitite seams, a method of accessing them was determined.

In the design of the access to the resources, a number of factors were taken into account:

- Minimising the safety risk to the workforce and members of the surrounding communities
- Minimising impact on residential areas
- Working within legal distances of buildings and structures
- Minimising time taken to access ore
- Maximising production build up
- Optimising output in terms of benefits of scale
- Minimising operating cost
- Ensuring site/location suitability to contain total infrastructure
- Minimising capital cost - maximising the use of existing infrastructure where possible
- Mitigating areas of project and operational risk
- Maximising the project return in an uncertain financial environment
- Ensuring that the LOM production profile can be maintained
- Utilising existing technology (proven) and known mining methods
- The geometry of the orebody

7.2.1.2 Resource Extraction Strategy

Two mining methods are identified. Resources situated close to surface will be mined via open pit type mining up to a depth of approximately 130m. Below the MG pit underground mining will target the MG1 reef horizon.

Due to the volume-based cost model of opencast mining it was decided to mine the reef from a depth of 0 to 130 meters. This allows more flexibility in terms of mining cost as the strip ratio varies according to the depth of mining.
The mining will be done at a strip ratio of ±3.8m3 overburden for every ton of reef to be removed.

7.2.2 SURFACE OPERATIONS

7.2.2.1 Resource Geometry

The surface resources have the following characteristics:

- Dip 55°
- The strike length is 8 000m
- Economic mining depth below surface topography is about 130m

7.2.2.2 Reef Access System

Access to the surface resources will be via a typical open pit layout using ramps inclined at 8% on the southern edge of the pit.

7.2.2.3 Open Pit Design Parameters

The principal parameters of the open pit design are listed in Table 9. The 3-dimensional model of the pit is illustrated in **Figure 8**.

Parameter	Unit	Amount
Face angle (degree)	°	70
Bench height (m)	m	25
Pit wall height (m)	m	135
Numbers of Bench	#	7
Step-out offset (m)	m	10
Number of bench in stack	#	1
Number of stacks	#	3
Catch Berm Width (m)	m	15.0
Overall slope angle (degree)	°	52

Table 9: Open pit design parameters.

7.2.2.4 Production System

The production methods to be used are typical of open pit operations and consist of the following steps on a daily basis:

- Strip the 10m of top soil and stockpile for future rehabilitation work
- Strip overburden until solid rock is encountered and stockpile this for future rehabilitation
- Drill and blast the solid overburden, remove for stockpiling and at a later stage, perform roll-over back filling of the pits
- On encountering the ore seams reduce bench height and drill and blast the ore
- Load the ore into trucks using hydraulic shovels or front end loaders

- Transport the ore to the processing plant ROM pad for stockpiling
- Drill and blast the internal solid overburden and remove for stockpiling

7.2.3 Logistics

7.2.3.1 Ore Handling Logistics

The broken ore is loaded using hydraulic shovels with 3m³ capacity loading, into articulated dump trucks. The trucks then transport the ore to the plant ROM pad.

7.2.3.2 Top Soil Handling Logistics

The free dig top soil is loaded into trucks using the same equipment as utilised for the ore extraction process. This soil is then transported and stockpiled for future rehabilitation activities. Once Roll-over rehabilitation is in place the topsoil will be placed on the already backfilled areas

7.2.3.3 Overburden Handling Logistics

The broken overburden rock is loaded into trucks and transported to a stockpile. This stockpiled material is used as a feed for back filling operations as mining progresses. Backfill into the pit will commence once enough bench area has been generated. This forms part of the pit rehabilitation.

7.2.3.4 Material Handling Logistics

All operational material will be stored on site and transported around the operations using light vehicles.

7.2.3.5 Labour Force Handling Logistics

All personnel will be transported around site in either mini busses or appropriately equipped light vehicles.

7.2.3.6 Sequential Planning

The extraction of the surface resources within each pit will occur simultaneously and the mining extraction plan is shown in Figure 9.

Figure 9: Mine extraction plan.

7.2.3.7 Operating Cost

Due to the limited life of the mineable surface resources it is intended to use a contractor for the open pit mining operations.

7.2.4 Description of Equipment and Activities Impacting Electricity Cost

Equipment and activities that will impact on electricity costs are summarised in Table 10: **Equipment and Activities impacting on electrical costs** below:

	Equipment	Comments/ Mining Activity
1	Feeder screen	Waste scalping
2	Conveyor belts	Chrome ore clearance
3	Main and auxiliary fans	Ventilation
4	Pumps	Water reticulation and dewatering
5	Underground Lighting	Illumination (Safety)

Table 10: Equipment and Activities impacting on electrical costs

7.2.5 Description of Equipment and Activities Impacting on Fuel Cost

The open pit operations will be making use of diesel-powered equipment for the duration of the pit life. The list of opencast equipment is detailed in Table 11.

.

	Equipment	Comments/ Mining Activity
1	Articulated Dump Trucks	Move overburden and transport reef to the plant
2	Drill Rigs	Drilling of blast holes
3	Excavator	Loading of dump trucks
4	Dozer	Levelling tipping areas and road maintenance
5	Utility Vehicles	Service and supervision
6	Explosives Truck	Loading of blast holes
7	Water Cart	Road maintenance and dust suppression
8	Grader	Road maintenance
9	Front end loaders	Loading of product
10	Standby Generators	Alternative power supply

Table 11: Mining equipment impacting on fuel costs

7.2.6 Description of Equipment and Activities Impacting on Cost of Stores and Materials

Equipment and activities impacting on the cost of stores and materials are summarised in **Table 12** below. Spares and other critical parts for this equipment need to be stored on site, which add to the cost of stores and materials.

	Equipment	Comments/ Mining Activity
1	Drill Rig	Blast hole Drilling
2	Skid steer Loader	Lashing around plant
3	Utility Vehicles	Men & Material Transportation
4	Explosives Truck	Charging Blast holes
5	Hydraulic Rock Breaker	For Breaking Oversized boulders
6	Dump Truck	1 per triple decline for sinking
7	Conveyor belts	Reef clearance
8	Pumps	Water reticulation
9	Lighting plants	Illumination (Safety)
10	PPE	Health and Safety
11	Mill spares	Liberation of Chrome
12	Vibrating Screens	Sizing of material
13	Spirals	Separation of different density materials
14	Crushers	Feed preparation

Table 12: Equipment and activities impacting on the cost of stores and materials

7.2.7 Description of Equipment and Activities Impacting on Cost of Water

Water will be obtained from drill wells and water in the pit. The equipment impacting on water usage are detailed in Table 13. Where dust is created by activities performed by this equipment, necessary dust allying will be done by using water.

	Equipment	Comments/ Mining Activity
1	Drill Rig	Blast hole Drilling (wet drilling)
2	Roof Bolter	Ground Support (wet drilling)
3	Grizzly Feeders	Dust suppression
4	Conveyor belts	Chrome ore clearance (Dust suppression)
6	Change house	Sanitation

Table 13: Underground mining equipment impacting on water costs.

7.2.8 Description of Activities Impacting on Other Costs not Included Above

Other costs that have not yet been accounted for are: Geological services, Surveyor services, Laboratory fees, Legal fees, management and administration fees, rock engineer services, Health & Safety compliance services, standby ambulance service, security services, insurance, social and labour plan costs, community costs, general repairs and maintenance of equipment (excluding mining equipment).

7.2.9 Operating Cost Forecast (Excluding the Processing Plant and Labour) for First 10 Years

The mining costs for the combined underground and open pit operations are given in Table 14.

Cost Category	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Cost Category	**Total**	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Fuel	**1,552,767**	95,796	91,408	120,220	148,364	157,266	166,702	176,704	187,306	198,545	210,457
Electricity	**65,408**	2,036	5,515	5,846	6,196	6,568	6,962	7,380	7,823	8,292	8,790
Stores and Material	**882,924**	50,369	52,233	68,697	84,779	89,866	95,258	100,974	107,032	113,454	120,261
Other	**73,577**	4,197	4,353	5,725	7,065	7,489	7,938	8,414	8,919	9,455	10,022
Consumables	**294,308**	16,790	17,411	22,899	28,260	29,955	31,753	33,658	35,677	37,818	40,087
Water and pumping	**294,308**	16,790	17,411	22,899	28,260	29,955	31,753	33,658	35,677	37,818	40,087

Table 14: Mining costs for open pit mining. Water is obtained from drill wells.

NB! The costs determined here must explain the costs used in line item 4 of the cash flow forecast required herein under Regulation 11 (1) (g) (vi)

Please note that the mining operational cost is based on current contracted rates adjusted for assumed inflationary escalations of 6% per annum. Contracted mining rates are at a dry rate. Fuel costs are based on currently contracted fuel cap or expected usage. All labour cost and capital is included in the price and forms part of the total cost structure.

8 REGULATION 11 (1) (g) (ii): DETAILS AND COSTING OF THE TECHNOLOGICAL PROCESS APPLICABLE TO THE EXTRACTION AND PREPARATION OF THE MINERAL OR MINERALS TO COMPLY WITH MARKET REQUIREMENTS

8.1 High Level Description of the Processing Plant

Processing of the ore that is produced will be performed by crushing and washing the ore in a plant.

8.1.1 Basic Plant Design

The basic crusher and wash plant design is illustrated in Figure 10.

The plant is designed to treat 120 000 tons ROM per month, based on the criteria listed below.

Running Time:

- 22 Hrs per day (accounting 2 hours for unplanned stoppages, maintenance and breakdowns)
- 28 Days per month
- 616 Hrs running time per month

The plant will crush and screen material on surface to split products in terms of sizing into Lumpy and Fines materials.

The lumpy material will be milled to a size relevant for liberation of the Chrome material

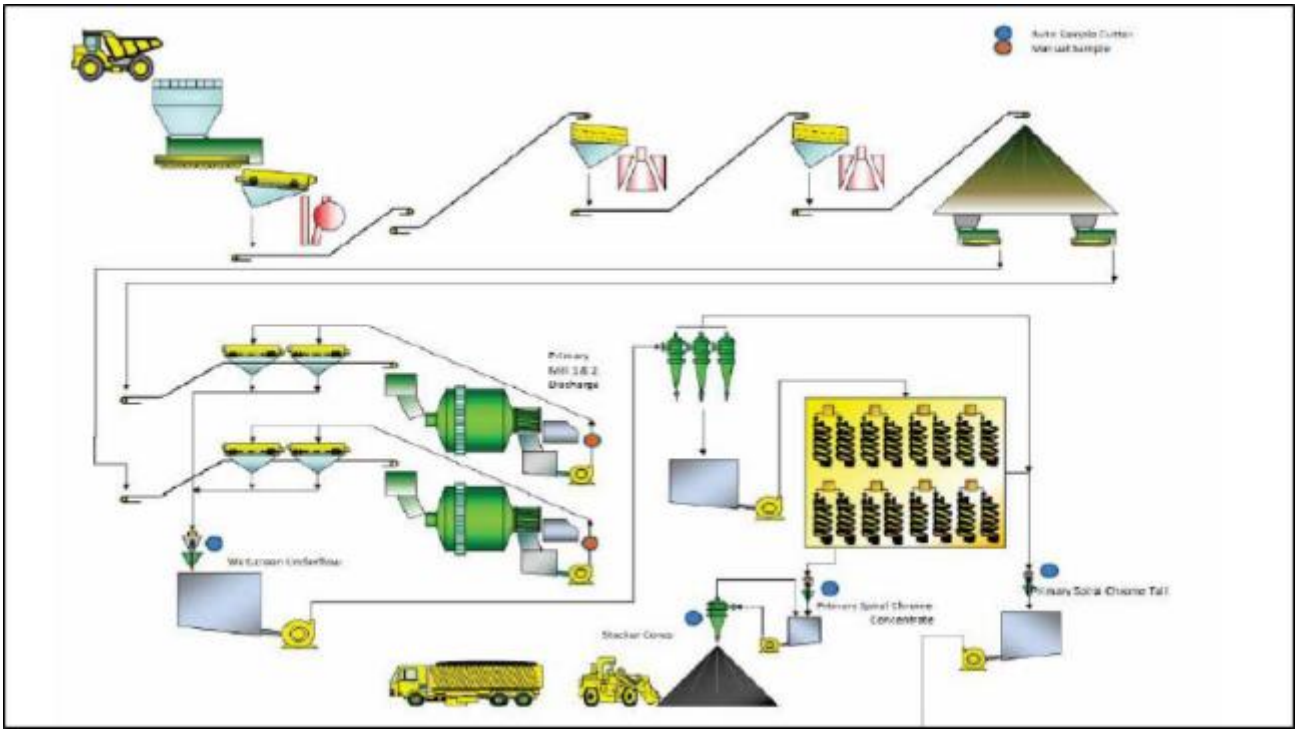

Figure 10: Processing plant design.

8.1.2 Efficiency of the Process

The plant design is for feed of 120kt per month with an expected mass yield of 50% of the feed material. This will create discard material that will be deposited on the tailings dam

8.2 Description of Equipment and Activities Impacting Electricity Cost

Both the crusher and wash plant will impact on electricity costs. The scalping and screening cost is already accounted for under section 7.3 of this document

8.3 Description of Equipment and Activities Impacting Fuel Cost

No equipment will utilise fuel and hence no fuel costs will be incurred.

8.4 Description of Equipment and Activities Impacting on Cost of Stores

Both the crusher and wash plant will impact on cost of stores.

Equipment	Activity
1. Jaw Crusher	Chrome sizing and classification
2. Vibrating Feeders	Chrome withdrawal
3. Conveyor Belts	Chrome transfer
4. Conveyor Belt Magnet	Tramp metal removal
5. Weightometers	Chrome weighing
6. Screens	Chrome sizing and water drainage
7. Mineral Sizer	Chrome crushing
8. Pumps	Slurry transport and water reticulation

Table 15 - Activities impacting on stores and material cost

8.5 Description of Equipment and Activities Impacting on Cost of Water

Water will be obtained from drill wells. The wash plant will impact on water costs. However, these costs are minimised by the water treatment process which recycles the water for reuse in the wash plant process.

Activity	Description
Dust suppression	Suppressing dust on haul roads and in the plant
Milling	Grinding of material to assist with liberation of Chrome
Chrome Beneficiation	Water is used in the density separation on spirals
Change houses	Toilets, showers, and laundry
Offices	Toilets and kitchens
Tailings Storage Facility	Water is used as a transport medium for waste material

8.6 Description of Equipment and Activities Impacting on Cost not Included Above

There are no other activities impacting on costs which have not already been included above.

8.7 Processing Plant Operating Cost Forecast (Excluding Labour) for First 10 Years

The operating cost forecast for the processing plant is detailed in Table 16.

	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Electricity	**541,304**	16,848	45,639	48,378	51,280	54,357	57,619	61,076	64,740	68,625	72,742
Stores and Material	**481,159**	14,976	40,568	43,002	45,583	48,318	51,217	54,290	57,547	61,000	64,660
Other	**511,232**	15,912	43,104	45,690	48,431	51,337	54,418	57,683	61,144	64,812	68,701
Consumables	**180,435**	5,616	15,213	16,126	17,093	18,119	19,206	20,359	21,580	22,875	24,247
Water and pumping	**180,435**	5,616	15,213	16,126	17,093	18,119	19,206	20,359	21,580	22,875	24,247
Tailings storage	**148,708**	4,629	12,538	13,290	14,088	14,933	15,829	16,779	17,786	18,853	19,984

Table 16: Operating cost forecast for the processing plant. Note that electricity is diesel generated and indicated under fuel cost. Water is obtained from drill wells.

NB! The costs determined here must explain the costs used in line item 5 of the cash flow forecast required herein under Regulation 11 (1) (g) (vi).

9 REGULATION 11 (1) (g) (iii): DETAILS AND COSTING OF THE TECHNICAL SKILLS AND EXPERTISE AND EXPERTISE ASSOCIATED LABOUR IMPLICATIONS REQUIRED TO CONDUCT THE PROPOSED MINING OPERATION

9.1 Organisational Structure of the Mine

9.1.1 Description of Positions Requiring Certificates of Competency and Under which Skill Category they have Budgeted for.

The positions requiring certificates of competency are listed in Table 17.

.

Position	Skills Category
1. Mine Manager	Top Management
2. Engineer	Senior Management
3. Mine Overseer	Middle Management
4. Occupational Hygiene Officer	Skilled technical and academically qualified workers
5. Surveyor	Skilled technical and academically qualified workers

Table 17: Positions requiring certificates

9.1.2 Description of which Part or Parts of the Mining Operation will be Outsourced (if any)

The mine is planned to be operated fully by Dithabeng Mining Mphahlele but this option may be revised in future depending on pricing structures and availability of suitable contractors. In the case of outsourcing the parts of the mining process to be outsourced are listed in Table 18.

Skills Category	Job Title	Headcount	Cost to Company	Service provider
Professionally qualified and experienced specialists and mid-management	Geologists	1	360 000	Outsourced service provider
Professionally qualified and experienced specialists and mid-management	Rock engineer	1	480 000	Outsourced service provider
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	Occupational Hygiene -	1	480 000	Outsourced service provider
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	Surveyors	1	360 000	Outsourced service provider
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	Laboratory fees	3	900 000	Outsourced service provider
Professionally qualified and experienced specialists and mid-management	Legal fees	1	600 000	Outsourced service provider
Professionally qualified and experienced specialists and mid-management	Security	1	720 000	Outsourced service provider
Professionally qualified and experienced specialists and mid-management	Social and labour plan consultant	1	480 000	Outsourced service provider

Table 18: Positions to be outsourced.

9.2 Costing of Skill Categories in the Mining Operation to Determine if Technical Competence has been Budgeted for: Complete the Following Tables:

Table 19 illustrates the number of personnel and positions to be filled by mine personnel (including opencast and underground mining contractors) for the first 10 years of operation.

Category	FY1				FY2				FY3	
	Heads	Cost	Heads	Cost	Heads	Cost	Heads	Cost	Heads	Cost
Top Management (F)	0	-	0	-	0	-	0	-	0	-
Senior Management (E)	1	2,100	1	2,226	1	2,360	1	2,501	1	2,651
Professional and Middle Management (D)	6	7,596	6	9,464	6	10,032	6	10,633	6	11,271
Skilled Technical and Supervisors (C)	6	5,058	21	21,448	21	22,735	21	24,099	21	25,545
Semi-Skilled (B)	139	82,238	199	121,328	199	128,608	199	136,324	199	144,504
Unskilled (A)	25	10,624	40	18,576	40	19,691	40	20,872	40	22,125
Non-Permanent Employees	0	0	0	0	0	0	0	0	0	0
Total	177	107,617	267	173,042	267	183,425	267	194,430	267	206,096

Table 19: Personnel on Mine's Payroll (Years 1 – 5).

Category	FY6		FY7		FY8		FY9		FY10	
	Heads	Cost	Heads	Cost	Heads	Cost	Heads	Cost	Heads	Cost
Top Management (F)	0	-	0	-	0	-	0	-	0	-
Senior Management (E)	1	2,810	1	2,979	1	3,158	1	3,347	1	3,548
Professional and Middle Management (D)	6	11,948	6	12,665	6	13,424	6	14,230	6	15,084
Skilled Technical and Supervisors (C)	21	27,078	21	28,702	21	30,424	21	32,250	21	34,185
Semi-Skilled (B)	199	153,174	199	162,365	199	172,106	199	182,433	199	193,379
Unskilled (A)	40	23,452	40	24,859	40	26,351	40	27,932	40	29,608
Non-Permanent Employees	0	0	0	0	0	0	0	0	0	0
Total	267	218,462	267	231,570	267	245,464	267	260,192	267	275,803

Table 20 Personnel on Mine's Payroll (Years 6 – 10).

9.2.1 Subcontractors

No subcontracting employees are currently envisaged and this will be reassessed after the construction phase. The mine will employ more people if required during the Construction phase.

9.3 SERVICE PROVIDERS

Service providers will be used for environmental and geo-hydrological monitoring work while contractors and consultants will be used during the construction phase.

10 REGULATION 11(1) (g) (iv): DETAILS AND COSTING OF REGULATORY REQUIREMENTS IN TERMS OF THE ACT AND OTHER APPLICABLE LAW, RELEVANT TO THE PROPOSED MINING OPERATION

10.1 Environmental Cost Forecast

10.1.1 Rehabilitation Cost Estimate

(Refer to the guideline for Financial provision (described in Regulation 54 (1) (2) published on the Departments website. Complete 10 forecasts and paste them into this section, i.e. one for the progressive impact in each of the first 10 years of operation. The progressive total (10th year must be stated under this heading and also included into the first year of the cash flow under Regulation 11 (1) (g) (vi) below in the environmental cost category).

The provision for environmental costs is made on a Rand per ROM ton basis of R3.14/t and to allow for rehabilitation and mine closure. This will allow for a forecast of R83.15m accounted for closing the opencast pits closure in the next ten years.

10.1.2 Socio-economic Impact Cost Estimate

Refer to the guidelines on community consultation, and the scoping report template. Estimate the risk of compensation to persons whose socio-economic conditions may be directly affected by the mining operation. Provide the estimated total under this heading and also include it into the first year of the cash flow under regulation 11 (1) (g) (vi) below in the environmental cost category).

LED projects to the value of R4.7m are budgeted for the first 5 years. Year one has R3.5m allocated towards it in the budget. Further clarification on the final costs in this regard will become clearer during the final SLP, EIA and EMP processes. The total amount budgeted for in order to eliminate risk to affected persons and communities is ZAR 17 301 000.

10.1.3 Summary of Estimated Environmental Cost

CATEGORY	COST ESTIMATE (ZAR) (PA)
a) Progressive total for rehabilitation	5,000,000
b) Cost to mitigate socio-economic conditions of directly affected persons	5,000,000
TOTAL COSTS (Transfer amount to cash flow forecast – Line 7 Year 1 only)	**10,000,000**

10.1.4 Other Regulatory Costs

Cost	Amount per annum	Explanation on how amount was calculated
Royalty Payments	4,204,857	Section 4(1) of MPRDA of 2008
Mine Health and Safety Regulations	1,477,895	R1.25 per ROM tonne
Occupational Health	346,134	R1.50 per ROM tonne
National Skills fund	2,106,169	1% of Basic Salary plus average Overtime
UIF contributions	2,106,169	1% of Basic Salary plus average Overtime up to a maximum of R148.72/employee
SLP Projects	16,021	Calculated as per the Mining Charter Requirements
Other: Specify		
Other: Specify		
Other: Specify		
TOTAL COSTS (Include amount into the cash flow forecast – Line 7)	10,257,246	

The costs thus derived must be clearly explained and used to justify the numbers that are reflected in line item 7 of the cash flow forecast required in terms of regulation 11 (1) (g) (vi).

11 REGULATION 11 (1) (g) (viii): PROVISIONS FOR THE EXECUTION OF THE SOCIAL AND LABOUR PLAN

The following table must be duplicated here from the table in Section 5: Financial Provision of the Social and Labour Plan.

Table 21 details the categories and cost provision for implementing the social and labour plan.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	**Total 10 Years**
HUMAN RESOURCES DEVELOPMENT ('000)	37	148	45	48	51	54	57	61	64	68	**635**
LOCAL ECONOMIC DEVELOPMENT ('000)	372	1,482	455	482	511	541	574	608	645	684	**6,354**
MANAGEMENT OF DOWNSCALING ('000)	56	222	68	72	77	81	86	91	97	103	**953**
TOTAL	**466**	**1,852**	**568**	**602**	**639**	**677**	**717**	**761**	**806**	**855**	**7,943**

Table 21: Provision from the social and labour plan.

The costs quantified in the aforesaid categories must justify the numbers that are reflected in line item 8 of the cash flow forecast required in terms of Regulation 11(1)(g)(vi).

12 REGULATION 11 (1) (g) (iv): DETAILS REGARDING OTHER RELEVANT COSTING, CAPITAL EXPENDITURE REQUIREMENTS AND EXPECTED REVENUE APPLICABLE TO THE PROPOSED MINING OPERATIONS

12.1 Expected Revenue

12.1.1 Explanation of Revenue Determination

The revenue determination is based on current market conditions. The Chrome market is very variable but the average cost in the last five years in in the region of between $150 to $175 per ton CIF China. The accounts to an average free on truck (FOT) cost of R1,350 per ton. Due to various factors affecting this price like the diesel price (FOT to FOB) and the ZAR/UD$ exchange rate and average annual increase of 6% is assumed in line with escalation.

12.1.2 Revenue Forecast

The revenue forecast for the total tonnes yearly produced is detailed in Table 22.

Revenue	Selling Price	Tons	Revenue
Year 1	1,685	237,120	399,547
Year 2	1,786	711,360	1,270,560
Year 3	1,893	681,720	1,290,677
Year 4	2,007	681,720	1,368,118
Year 5	2,127	681,720	1,450,205
Year 6	2,255	681,720	1,537,217
Year 7	2,390	681,720	1,629,450
Year 8	2,534	681,720	1,727,217
Year 9	2,686	681,720	1,830,850
Year 10	2,847	681,720	1,940,701
Total	**2,256**	**6,402,240**	**14,444,544**

Table 22: Revenue forecast in ZAR '000

12.2 Estimated Capital Expenditure

12.2.1 Initial Capital Expenditure

The list of initial capital expenditure is presented in Table 23.

CAPEX REQUIREMENTS	Capex as in LOM model	Progressive
Year 1	245,000	245,000
Year 2	140,000	385,000
Year 3	0	385,000
Year 4	0	385,000
Year 5	0	385,000
Year 6	0	385,000
Year 7	0	385,000
Year 8	0	385,000
Year 9	0	385,000
Year 10	0	385,000
Total	**385,000**	**385,000**

Table 23: Initial capital expenditure.

12.2.2 Ongoing Capital Expenditure

The ongoing capital expenditure is detailed in Table 24.

.

CAPEX REQUIREMENTS	Ongoing stay-in-business capex	Progressive
Year 1	523	523
Year 2	1,925	2,448
Year 3	2,216	4,664
Year 4	2,362	7,026
Year 5	2,519	9,546
Year 6	2,688	12,234
Year 7	2,869	15,103
Year 8	3,063	18,166
Year 9	3,272	21,438
Year 10	3,497	24,935
Total	**24,935**	**24,935**

Table 24: Ongoing capital expenditure

12.2.3 Summary, in a 10-year Tabular Format. (stating the initial, ongoing, and total amount of capital expenditure in each of the first ten years in which it will be incurred.)

The total capital expenditure (initial and on-going) is presented in **Error! Reference source not found.**.

CAPEX REQUIREMENTS	Capex as in LOM model	Ongoing stay-in-business capex	Total
Year 1	245,000	523	245,523
Year 2	140,000	1,925	141,925
Year 3	0	2,216	2,216
Year 4	0	2,362	2,362
Year 5	0	2,519	2,519
Year 6	0	2,688	2,688
Year 7	0	2,869	2,869
Year 8	0	3,063	3,063
Year 9	0	3,272	3,272
Year 10	0	3,497	3,497
Total	**385,000**	**24,935**	**409,935**

Table 25: Initial and on-going capital expenditure

12.3 Explanation and Summary of Other Costs

No other capital cost is foreseen.

12.4 Summary of capital and other costs, in a 10 Year Tabular Format.

The summary of capital and other costs is detailed in Table 26.

CAPEX REQUIREMENTS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Initial capital expenditure	245,000	140,000	0	0	0	0	0	0	0	0
Ongoing capital expenditure	523	1,925	2,216	2,362	2,519	2,688	2,869	3,063	3,272	3,497
Other costs specified in 12.3 above	0	0	0	0	0	0	0	0	0	0
TOTAL CAPITAL AND OTHER (To be reflected in the cash flow forecast)	245,523	141,925	2,216	2,362	2,519	2,688	2,869	3,063	3,272	3,497

Table 26: Summary of capital and other costs

(Note! These total amounts must be transferred to line item 9 of the cash flow forecast required in terms of Regulation 11 (1) (g) (vi) below.

13 REGULATION 11 (1) (g) (vi): A DETAILED CASH FLOW FORECAST AND VALUATION, EXCLUDING FINANCING OF THE PROPOSED MINING OPERATION

(The following cash flow forecast must be submitted in accordance with the line items provided. The applicant may not change the line items or their sequence. The applicant may, however provide for escalation within accepted practice, and provide other indicators such as IRR in addition)

The cash flow forecast is presented in

		Year 1 R '000	Year 2 R '000	Year 3 R '000	Year 4 R '000	Year 5 R '000	Year 6 R '000	Year 7 R '000	Year 8 R '000	Year 9 R '000	Year 10 R '000	Total R '000
1	REGULATIONS 11(1) (d) and (f) PRODUCTION	237,120	711,360	681,720	681,720	681,720	681,720	681,720	681,720	681,720	681,720	6,402,240
2	REGULATION 11(1)(e) PRICE	1,685	1,786	1,893	2,007	2,127	2,255	2,390	2,534	2,686	2,847	2,256
3	**REVENUE '000**	**399,547**	**1,270,560**	**1,290,677**	**1,368,118**	**1,450,205**	**1,537,217**	**1,629,450**	**1,727,217**	**1,830,850**	**1,940,701**	**14,444,544**
4	REGULATION 11(1) (g) (i) MINING COST	543,351	535,875	698,458	859,317	910,876	965,529	1,023,461	1,084,868	1,149,960	1,218,958	8,990,653
5	REGULATION 11(1) (g) (ii) TECHNOLOGY COST	63,597	172,276	182,612	193,569	205,183	217,494	230,544	244,377	259,039	274,582	2,043,273
6	REGULATION 11(1) (g) (iii) TECHNICAL SKILLS COST	105,658	162,658	186,263	212,484	225,233	238,747	253,072	268,256	284,351	301,413	2,238,135
7	REGULATION 11(1) (g) (iv) REGULATORY REQUIREMENTS	16,724	53,663	38,863	28,580	30,295	32,113	34,039	36,082	38,247	40,541	349,147
	ENVIRONMENTAL COST	5,467	7,365	9,439	12,040	12,942	13,719	14,542	15,414	16,339	17,319	124,586
8	REGULATION 11 (1)(G) (viii) SOCIAL AND LABOUR PLAN COST	4,824	16,634	10,885	6,706	7,109	7,535	7,987	8,466	8,974	9,513	88,634
9	REGULATION 11(1) (g) (v) CAPITAL AND OTHER	251,216	140,961	1,103	1,173	1,247	1,326	1,410	1,500	1,597	1,699	403,231
10	**WORKING PROFIT/LOSS**	**-591,290**	**181,129**	**163,054**	**54,249**	**57,320**	**60,755**	**64,395**	**68,254**	**72,343**	**76,676**	**206,885**
11	**TAX**	0	0	48,344	16,534	16,905	17,919	18,994	20,134	21,342	22,622	182,793
12	**NET CASH FLOW**	-576,529	231,539	149,847	62,045	66,206	70,174	74,379	78,837	83,561	88,567	328,626
13	**DISCOUNTED CASH FLOW**	**-576,529**	**218,433**	**133,364**	**52,094**	**52,441**	**52,438**	**52,434**	**52,431**	**52,427**	**52,423**	**183,503**

Table 27: Cash flow forecast.

14 REGULATION 11 (1) (g) (vii): DETAILS REGARDING THE APPLICANTS RESOURCES OR PROPOSED MECHANISMS TO FINANCE THE PROPOSED MINING OPERATION, AND DETAILS REGARDING THE IMPACT OF SUCH FINANCING ARRANGEMENTS ON THE CASH FLOW FORECAST

14.1 Financing the Cash Flow

The Applicant has sufficient funds to provide the necessary capital for this operation Any financing needs will be funded out of current cash reserves as well as future cash flows and if necessary, with loans obtained and secured from the shareholders of Bakgaga.

14.2 Detail Regarding the Financing Arrangements

No external financing arrangements are required at this immediate point in time, but if needed the Applicant will procure the necessary capital for the development of the project from its shareholders and third-party financiers.

14.3 Confirmation of Supporting Evidence Appended

Support for Funding of the Dithabeng Mphahlele mine attached

Appendix: Financial Capability from

Dithabeng Resources (Pty) Ltd

Freightway Logistics (Pty) Ltd

15 REGULATION 11 (1) (h): UNDERTAKING, SIGNED BY THE APPLICANT, TO ADHERE TO THE PROPOSALS AS SET OUT IN THE MINING WORK PROGRAMME

Herewith I, the person whose name and identity number is stated below, confirm that I am the Applicant or the person authorised to act as representative of the Applicant in terms of the resolution submitted with the application, and undertake to implement this prospecting work programme and adhere to the proposals set out herein.	
Full Names and Surname	Gladstone Reuben
Identity Number	6402165179088

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