Independent Competent Person's Report for the Vele Colliery operated by Coal of Africa Limited in the Limpopo Province, South Africa

Effective date of CPR: 15 January 2016

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List of Abbreviations and Acronyms

Abbreviations and Acronyms	
3D	Three Dimensional
BCM	Bulk cubic meters
CAPEX	Capital Expenditure
cm	Centimetres
CoAL	Coal of Africa Limited
CRM	Certified Reference Materials
CV	Calorific Value
DCF	Discounted cash flow
DD	Diamond Drilling
DEA	Department of Environmental Affairs
DMS	Dense Medium Separation
DTM	Digital Terrain Model
EMC	Environmental Management Committee
ESKOM	Electricity Supply Commission of South Africa
GPS	Global Positioning System
HIA	Heritage Impact Assessment
IAP	Interested and Affected Parties
IWUL	Integrated Water Use License
JORC	Australian Code for Reporting of Exploration Results, Coal Resources and Ore Reserves of 2012 (JORC Code)
kcal	Kilo calorie
kg	Kilogramme
ktpa	Kilo tonne per annum
LDD	Large diameter drill hole
LIDAR	Laser Imaging Detection and Ranging
M	Million
MCL	Mapungubwe Cultural Landscape
MJ/kg	Mega joule per kilogram
MPRDA	Mineral & Petroleum Resources Development Act
Mtpa	Million tonnes per annum
NAR	Nett as received
NEMA	National Environmental Management Act
NEMWA	National Environmental Management Waste Act
NWA	National Water Act
O/C	Opencast
OPEX	Operational Expenditure
PMP	Plant Modification Project
QA/QC	Quality Assurance / Quality Control
RC	Reverse Circulation
RD	Relative density
RoM	Run-of-Mine
t/cub m	Tonne per cubic meter
U/G	Underground
UNESCO	United Nations Educations, Social and Cultural Organisation
VBKom	VBKom Consulting (Pty) Ltd
WHS	World Heritage Site

Executive Summary

The purpose of the Competent Person's Report (CPR) is to identify the current value of the Vele Colliery and describes the asset in terms of historic and resent exploration and mining data, which has a bearing on the techno-economic evaluation of the Vele Colliery.

VBKOM understands that this CPR will form part of the documentation in support of readmission of CoAL to the Alternate Investment Market (AIM) of the London Stock Exchange (LSE). The readmission of CoAL to AIM is in preparation for a merger with Universal Coal Plc (Universal Coal). The Independent Report is in accordance with AIM Rules in connection with the Admission (Admission Document). The CPR has been compiled generally in accordance with the AIM Note for Mining and Oil & Gas Companies dated June 2009.

The Independent Report also provides a financial evaluation (in accordance to the VALMIN Code of 2005) of the Vele Colliery and all references made in the report is in South African Rand (ZAR) unless otherwise mentioned.

The CPR has been prepared according to the guidelines presented in the Australian Code for Reporting of Exploration Results, Coal Resources and Ore Reserves of 2012 (JORC Code).

Project

The Vele Coal Operation is located in South Africa, 40km west from the town of Musina, the last major town before the Beitbridge border crossing between South Africa and Zimbabwe. South Africa is the second largest economy in Africa with the key economic sectors being mining services and transport, energy, manufacturing, tourism and agriculture. The country has excellent transportation infrastructure and well developed telecommunication infrastructure.

CoAL of Africa Limited started with mining activities in late 2011 and produced for a year before the mine was placed under care and maintenance. The mine stoppage was due to the fact that the predicted yields were not obtainable through the plant configuration. It was decided to re-evaluate the analytical methods used to define product recoveries and to optimise the plant accordingly.

A programme of large diameter drilling was initiated on the two areas targeted for opencast mining. The samples gathered for these campaigns were sent for drop shatter and wet tumble test to determine the particle size distribution on the material after mining, crushing and beneficiation. Different yields for different product scenarios were evaluated to determine a new process design that is better aligned with the inherent properties of the coal resource.

A semi-soft coking coal with a 10% ash content and a 5500kcal (NAR) thermal coal product will be produced after the plant upgrade is completed.

Ownership & Mineral Tenure

The extent of the mineral tenement, Prospecting and Mining Rights, is approximately 10,755Ha over 11 farms. CoAL, through its wholly owned subsidiary, Harrissia Investments Holdings (Pty) Ltd, is the surface right owners of the areas considered for opencast mining. For the remainder of farms within the Vele Colliery area CoAL has compensation agreements in place.

Summary of the Mineral Right approved for the Vele Colliery

Farm Name	Portion	Area (Ha)	Company	Type	Permit Number	Date Issued	Expiry Date	Renewed	Surface Rights
Alyth 837MS	N/A	2 092.95	Silkwood Trading 14 (Pty) Ltd	Prospecting Right	LP 1136 PR	25.03.2008	24.03.2013	Yes	No
Bergen op Zoom 124MS	N/A	2 078.13	Limpopo Coal Company (Pty) Ltd	Mining Right	LP 103 MR	19.03.2010	18.03.2040	N/A	Yes
Overvlakte 125MS	Portion 3, 4, 5, 6, 13, 14 & RE	3 554.48							Partial: portion 3, 4 & 5
Semple 155MS	N/A	942.91							No
Voorspoed 836MS	N/A	2 087.22							No

The Alyth Prospecting Right was renewed in 2013 but the approval for the renewal has not yet been received by CoAL.

The company also has an approved Environmental Management Programme under the National Environmental Management Act (NEMA), an approved Water Use License under the Department of Water Affairs and Forestry (DWAF) and an approved Social and Labour Plan under the MRPDA.

Accessibility, Physiography, Climate, Local Resources and Infrastructure

The area that the Vele Colliery occupies is generally flat with a gentle northward slope towards the Limpopo River. The average elevation is 550m amsl. The climate is classified as semi-arid with an annual rainfall of about 238mm per year occurs mostly during summer. No climate factors occur that will influence exploration or mining activities in the Vele area.

Geological setting

The Karoo age Limpopo Coalfield is generally fault bounded, with the southern extent of the basin controlled by erosion. The Main Coal Zone is present in the Madzaringwe Formation, which is approximately 15m thick. Three distinct coal horizons occur in the Middle Ecca Group, locally referred to the Top, Middle and Bottom Coal Horizons. All three coal horizons comprise interbedded coal and mudstone units with varying coal quantities and qualities.

The coal deposition of the Vele Colliery occurred within and intra-continental basin bounded by extensional faulting. Major faults have been interpreted, through field observations and geophysics, for the area. The faults divide the deposit in blocks with varying seam depths.

A serious of dolerite dykes trend predominantly east west across the project Colliery area, the largest is estimated to be more than 15m thick. These dykes were emplaced during the extension tectonics that formed the intra continental basin. The dykes did not have significant displacement associated with their emplacement but have resulted in minor de-volatilisation of coal in the immediate contact.

The Top, Middle and Bottom seams were all intersected through drilling and mining activities within the Vele Colliery area. Top and Bottom seams can further be differentiated into a Top Lower, Top Middle, Top Upper, Bottom Lower and Bottom Upper. The Top Middle and Top Upper are not considered economic.

Exploration

Prior to CoAL's involvement in the project all historic exploration activities was undertaken by Southern Sphere, a reputable exploration company, and it can be expected that best practices were followed and that the data can be regarded as acceptable for Coal Resource estimation.

Two previous Coal Resource estimates were compiled for the Vele Colliery. By The Mineral Corporation (Pty) Ltd in 2010 and by Venmyn Rand (Pty) Ltd (Venmyn) in 2012. Both these Coal Resource estimates are in accordance to the JORC Code (2007). Comparisons between the various models are reported in the CPR.

In 2008, CoAL undertook high-resolution airborne magnetic and radiometric surveys over an area of 111km^2 over the Vele Colliery area. The images were further interpreted and a geological map was generated indicating major structures in the area.

Drill holes incorporated into the geological model are primarily diamond core drilling with secondary percussion drilling to verify the structure of the boxcut area, as well as understanding the structural and quality continuity. The last phase of drilling was Large Diameter Drill holes for metallurgical test work for the plant modification project.

All logging of drill hole data was done in accordance to best practices and has been consistence since CoAL's involvement in the project. The data is capture on a SABLE^{TM} Database, which is checked by a competent geologist on a regular basis. All holes drilled during CoAL's involvement has down-hole geophysics for seam correlation and structural interpretations.

A total of 573 drill holes have been used in the geological model and the Coal Resource estimation. VBKom is of the opinion that the dataset is robust and sufficient to be used for geological modelling and resource estimation.

Sampling

Sampling of whole core samples (in accordance to SANS10320:2004) was done in intervals of between 50cm and 150cm. Samples were initially sent to the South African Bureau of Standards (SABS) laboratory in Secunda, then to Inspectorate M&L, and since December 2008, all samples have been sent to the CAM Analytical Laboratories (Pty) Ltd (CAM) in Polokwane, Limpopo Province. All the laboratories are SANAS accredited for coal analyses.

CoAL geologists do random validations of the results by doing basic tests on cumulative results and testing the values with neighbouring drill holes and the seam characteristics.

The dataset has been subjected to various audits and reviews to check discrepancies in drill hole collar coordinates, seam depths, sample intervals and end-of hole depths and verified captured analytical results with original laboratory certificates.

Coal Resource

The latest geological model was created in Minex ™ software. The model incorporates all available historical and recent drilling and other geological information up to January 2015. The model is based on the Mineral Corporation's model of 2010, with minor changes based on geological information collected subsequently to the completion of the Mineral Corporation's model. From previous audits and reviews there is a high level of confidence in the current geological model and Coal Resource estimate.

The upper surface of the model is a digital terrain model (DTM) based on the LIDAR survey conducted with a high level of spatial accuracy. The physical parameters namely elevation (asml), and depth from surface for the floor and roof of each seam was modelled. The coal seam thickness is also modelled and forms the basis for the calculation of the Coal Resource volumes.

The yields in the model are based on a factorisation exercise based on the information gathered from the metallurgical test work. It is a composite yield for the 10% ash product and the 5500kcal (NAR) product that is the business base case of the PMP (Plant Modification Project).

The following cut-offs were applied before the gross in situ tonnes (GTIS) were calculated for the Vele Colliery:

- The coal was reported separately for the mining right and prospecting right respectively
- The Coal Resource Blocks were limited to the Mineral Right boundaries
- The Coal Resources are limited to the seam sub-crop
- Coal Resource blocks are limited to the extrapolation limits in the model
- Boundary pillars of 50m wide on either side of geological structures and dykes
- Coal Resource blocks are limited to the base of oxidation
- Coal Resource blocks are limited to the 100m year flood line for the Limpopo River
- A seam thickness cut-off of 0.5m are applied

The following cut-off was applied to calculate total tonnes in situ (TTIS):

- Geological losses (confidence in structural continuity and oxidation profiles) of 10%, 15% and 20% are applied to Measured, Indicated and Inferred Coal Resources respectively.

The following cut-off was applied to calculate mineable tonnes in situ (MTIS) resources:

- A minimum seam height of 1.4m and a maximum seam height of 4.5m have been applied to the Bottom Lower Seam for the underground resources

Coal Resource Statement and Classification

The first Coal Resource classification criteria were based on the spacing between points of observation. This method stated that points of observation spaced at 500m are Measured Resources, Indicated Resources were spaced at 1000m and Inferred Resources the spacing was 3km.

In order to bring the resources in line with the guidelines of the JORC Code 2012 a correlation cross was drilled to determine the optimal spacing between drill holes to determine lateral continuity. It was determined that 500m is sufficient for structural estimation and 1000m for quality estimations. This indicates that the current classification used by Vele Colliery is a conservative approach and is acceptable for the current Resource Reporting cycle.

Other criteria was also considered for the Coal Resource Classification criteria, i.e. confidence in drill hole position, confidence in coal analyses and confidence in structural interpretation of a drill hole.

Various economic studies with the consideration of mining metallurgical and environmental modifying factors have been concluded. The factors in these studies form the basis for the reasonable prospect for economic extraction for the resources reported. No resources have been excluded due to this process.

The resource summary in Table 1.1.1 is an extract of the totals from the resource statement.

Table 1.1.1 – Resource categories totals (all tonnages reported is 100% attributable to CoAL) – extract from resource statement

Vele Colliery Resource Category	Gross Tonnes in Situ (GTIS) Mt	Total Tonnes in Situ (TTIS) Mt	Mineable Tonnes in Situ (MTIS) Mt
Total Measured Resources	148.17	133.35	86.11
Total Indicated Resources	426.85	362.83	200.3
Total Inferred Resources	218.93	175.15	75.15
Grand Total Resources	**793.95**	**671.32**	**361.57**

Variation between the 2012 Coal Resource statements and the 2015 Coal Resource statements is the result of depletion that occurred during the operational period of Vele Colliery.

Mining

Vele Colliery is an existing operation with Coal Reserves reported for an opencast mine plan and an underground mine plan. It is important to note that the current business case is only considering a portion of the opencast reserve blocks (16 years LoM) for financial modelling. The additional Coal Reserves outside the 16-year period does not significantly influence the NPV of the project. The current business case scenario is referred to as the Plant Modification Project (PMP).

In addition to the PMP business case, a high-level financial model was compiled for the mining areas that were "additional" RoM reserve tonnes (excluded from the financial model). The reserves are scheduled consecutively and the results indicated viability with long-term price forecasts. Due to the planned mining rate of 2.7Mpta ROM feed to the plant, the mining of the "additional" reserve tonnages will be only after the PMP's 16 year LoM.

Mining, which will be contracted out, is a truck and shovel operation by using the modified strip-mining technique previously employed where rollover mining was achieved. Existing pre-stripped mining blocks will be utilised and additional pre-stripping done to create sufficient exposed benches to achieve the mining rate.

Environmental

Vele Colliery complies to regulatory requirements under the Mining Right allocated with environmental impact and baseline studies done in 2009 prior to the start of mining in 2011. An approved Environmental Management Programme under National Environmental Management Act (NEMA), an approved Water Use License under the Department of Water Affairs and Forestry (DWAF) and an approved Social and Labour Plan under the MRPDA exists for the colliery. Continuous assessment and monitoring feedback is provided to an Environmental Management Committee (EMC) that include all relevant government departments. On 13 Jan 2016 the an Integrated Water Use License (IWUL) was renewed (for a further 20 years) and amended.

Processing

The coal plant upgrade aims to produce a semi-soft coking coal (SSCC) to be sold locally as well as a thermal coal for the export market. Sedgeman did the plant upgrade design and cost based on proven technology. The 10% ash SSCC and 30% ash thermal coal product is based on parallel processing, and not a middling product washed from a primary product. Rail, siding and harbour capacity has been allocated to CoAL.

Reserves

The conversion of Coal Resources to Coal Reserves is based on technical studies. It is the opinion of VBKom that the various studies CoAL has done in addition to the existing infrastructure and opencast mine, are sufficient in detail to warrant the conversion of Coal Resources to Coal Reserves.

Table 1.1.2 Reserve categories totals (all tonnages reported is 100% attributable to CoAL) – extract from resource statement

Operation	Reserve Category	Mineable Tonnes in situ Reserve (Mt)	Run Of Mine Tonnes (ROM) (Mt)	Saleable Primary Product Tonnes (Mt)	Saleable Secondary Product Tonnes (Mt)
Opencast	Proven	23.81	25.28	2.70	8.34
Opencast & Underground	Probable	301.37	266.11	28.47	87.82
Grand Total Reserves		**325.18**	**291.39**	**31.18**	**96.16**

Valuation Summary

The valuation of Vele Colliery was done using a combination of the Market Approach and Discounted Cash Flow (DCF) methods. The DCF valuation is only applicable to the Plant Modification Project and Market Approach method applicable to the "additional" RoM reserve tonnage, not included in the DCF model.

A Monte Carlo simulation indicated that the project is robust, and will still be profitable under various scenarios. The DCF NPV (NPV calculated at 10% discount rate) provides a value of ZAR 889.3M.

The market method valuation of "additional" RoM to Vele Colliery is ZAR837.3M.

Conclusion

In considering the result of both methods, the terminal value for the Vele Colliery is **ZAR 1726.6M**. In the opinion of VBKom, this value is a fair value for the asset considering the current market demand and export coal prices.

1 Introduction

1.1 Scope of Work

Coal of Africa Limited requested VBKom Consultancy (Pty) Limited (VBKom) to provide them with an Independent Technical Report, in the form of a Competent Persons Report (CPR) for their Vele Colliery in the Limpopo Province of South Africa.

CoAL is currently listed on the Australian Securities Exchange (ASX), the AIM market of the London Stock Exchange (AIM) and the Johannesburg Stock Exchange (JSE). The purpose of the CPR is to identify the current value of the Vele Colliery and describes the asset in terms of historic and recent exploration and mining data, which has a bearing on the techno-economic evaluation of the Vele Colliery.

VBKOM understands that this CPR will form part of the documentation in support of readmission of CoAL to the Alternate Investment Market (AIM) of the London Stock Exchange (LSE). The readmission of CoAL to AIM is in preparation for a merger with Universal Coal Plc (Universal Coal).The Independent Report is in accordance with AIM Rules in connection with the Admission (Admission Document). The CPR has been compiled generally in accordance with the AIM Note for Mining and Oil & Gas Companies dated June 2009. The Independent Report also provides an evaluation of the Vele Colliery

The CPR has been prepared according to the guidelines presented in the Australian Code for Reporting of Exploration Results, Coal Resources and Ore Reserves of 2012 (JORC Code), prepared by the Joint Ore Reserves Committee (JORC) of the Australasian Institute of Mining and Metallurgy (AusIMM), Australasian Institute of Geoscientists and the Mineral Council of Australia. The Mineral Asset Evaluation included in the CPR has been prepared in compliance with The Code and Guidelines for Assessment and Valuation of Mineral Assets and Mineral Securities for Independent Expert Reports 2005 (VALMIN Code). The code was prepared by the VALMIN Committee, a joint committee of the Australian Institute of Mining and Metallurgy, the Australasian Institute for Geoscientists and the Mineral Industry Consultants Association with the participation of the Australian Securities and Investment Commission, the ASX, the Mineral Council of Australia, the Petroleum Exploration Society of Australia, the Securities Association of Australia and representatives from the Australian finance sector.

1.2 Source of Information

All information used to complete the CPR was provided by CoAL to VBKom. VBKom reviewed the data presented and assessed it in terms of the JORC Code (2012). VBKom could not verify all third party information as most of the work completed for the Vele Colliery pre-dates the appointment of VBKom. Information provide for review is contained in the following list:

- The Mineral Corporation (Pty) Ltd's Independent Competent Persons Report dated 2010
- The Independent Competent Persons ' Report on the Principle Coal Assets of CoAL Limited by Venmyn Rand (Pty) Ltd
- Independent Assessment and Evaluation of CoAL by Venmyn Deloitte (Pty) Ltd
- Sedgman report on the Process Plant Modifications
- Integrated Environmental Management Plan
- MRM Runge report on the Mine Optimisation and Mine Planning Study

1.3 Units and Currency

All currency references made in the report is South African Rand's (ZAR) unless otherwise mentioned. All units used in the report is metric, unless otherwise stated i.e. tonnes are reported as metric tonnes, all tonnages are quoted on an air-dry basis.

1.4 Site Visit

Mr's B.W. Botha and B.Steyn visited the site on 25 November 2015. The reason for the visit was to inspect the assets reported on in the Competent Person's Report. This included:

- Verification of randomly selected drill hole collars
- Inspection of the current plant and associated infrastructure
- Visit to the section of the eastern opencast that has been excavated

1.5 Participants

The participants consist of technical experts who are in the employment of VBKom to complete the 2015 CPR on the Vele Colliery for Coal of Africa Limited. They are the "Competent Persons" as defined in Section 10 and 11 of the JORC Code (2012) and the AIM Note for Mining and Oil & Gas Companies (2009) (AIM Note).

VBKom has 20 professional mining engineers and geologist in their employment and has offered professional consulting services since 2008. The team has been involved in numerous technical mining studies, project development studies, Mineral Resource and Ore Reserve estimations, due diligence studies and technical reviews in a variety of commodities.

The Competent Persons who have compiled the CPR are as follows:

Brendan Botha, Principle Consultant (Geology) – Competent Person Coal Resources and Evaluation

BSc (Hons) Geology, MSc (ESPM), M(MRM), Pri.Sci.Nat (400224/09)

Brendan Botha has more than 16 years' experience in the field of exploration, production geology, geological modelling and Mineral Resource Estimation. He is a Competent Person under Section 10 and 11 of the JORC Code (2012) and the AiM Note. He is a standing member of the South African Council for Natural Scientific Professions (SACNASP), which is a "Recognised Professional Organisation' under the JORC Code (2012). He has more than 10 years' experience in thermal and coking coal with reference to the estimation, assessment and evaluation of Coal Resources.

Ben Bruwer, Principle Consultant (Mining) – Competent Person Coal Reserves

BEng (Mining), MSAIMM

Ben Bruwer has over 17 years' experience as a mining engineer and has experience in technical studies, project evaluations and Ore Reserve estimations. He is a Competent Person under Section 10 and 11 of the JORC Code (2012) and the AIM Note. He is a standing member of the South African Institute of Mining and Metallurgy (SAIMM), which is a "Recognised Professional Organisation' under the JORC Code (2012). He has more than 5 years' experience in thermal and coking coal with reference to the estimation, assessment, evaluation and economic extraction of Coal Reserves.

The Competent Person's Report was subjected to an internal peer review process to ensure objectivity in the reporting of Coal Resource and Coal Reserve Statements, the Independent Evaluation, and that the report complies with the guidelines of the JORC Code (2012).

1.6 Statement of Independence

VBKom Consulting (Pty) Ltd was contracted by Coal of Africa Limited in its capacity as independent consultancy firm to prepare this report in accordance with the JORC Code (2012) (the Australian Code for Reporting of Exploration Results, Coal Resources and Ore Reserves). VBKOm and its employees are independent of Coal of Africa Limited, its directors, senior management and advisors. VBKom was remunerated on agreed time-based rates, which is not linked to the" Admission" or the value of the assets owned by Coal of Africa Limited.

1.7 Responsibility Statement

For the purpose of the AIM Rules, VBKom (Pty) Ltd accept responsibility for the information contained in this report and declares that it has taken all reasonable care to ensure that the information in this report is to the best of our knowledge and belief in accordance with the facts and makes no omission likely to effect its import.

2 Project Outline

2.1 Project Description

Southern Sphere commenced the first noted exploration from 1973 to 1983. After a hiatus of 22 years, Limpopo Coal acquired the prospecting rights to various properties within the current Vele Colliery tenure. Coal of Africa Limited acquired a 78% stake in Limpopo Coal in 2006. In 2008 Silkwood (Pty) Ltd obtained additional Prospecting Right on the Vele Colliery are, but was subsequently acquired by CoAL in the same year. In 2011, CoAL was awarded a Mining Right over a greater part of the Vele Colliery area.

The geological and metallurgical investigation was geared to produce a single product with a clean coal ash value of 12% for metallurgical use. Coal of Africa Limited started with mining activities in late 2011 and produced for a year before the mine was placed under care and maintenance. The collapse of a bridge on the Matola railway line and predicted yields were not obtainable through the current plant configuration. It was decided to re-evaluate the analytical methods used to define product recoveries and to optimise the plant accordingly.

A programme of large diameter drilling was initiated on the two areas targeted for opencast (O/C) mining. The samples gathered for these campaigns were sent for drop shatter and wet tumble test to determine the particle size distribution on the material after mining, crushing and beneficiation. Different yields for different product scenarios were evaluated to determine a new process design that is better aligned with the inherent properties of the coal deposit.

The new plant up-grade is based on a 10% ash semi-soft coking product and a 5500kcal (NAR) thermal coal product.

CoAL has a 100% stake in the Vele Colliery and the details are presented in Table 2.1.1

Table 2.1.1 Summary Table of Assets

Asset	Holder	CoAL's attributable Interest	Status	Licence expiry date	License area ($km^{2)}$	Comments
1. Vele Colliery Mining Right	Limpopo Coal Company (Pty) Ltd	100%	Development	18 March 2040	86.63	A total 573 drill holes have been drilled and used in the geological modelling and Coal Resource estimation. A total of 39 LDD holes have been drilled in the Plant Modification Project Area and submitted for metallurgical test work. The result of the test work has indicated that the current plant has to be reconfigured to be alighned with the caracteristics of the deposit. The plant upgrades and changes are required before Vele Colliery will return to operation
2. Vele Colliery Prospecting Right	Silkwood Trading 14 (Pty) Ltd	100%	Develoment	24 March 2013*	20.92	

- *Note: The renewal of the Prospecting Right was submitted and approval by the Department of Mineral Resources is still being awaited

2.2 Project Location

The Vele Colliery is located 40km west from the town of Musina and 100km north of the town Alldays in the Limpopo Province, Republic of South Africa. Musina is the last major town before the Beitbridge border crossing between South Africa and Zimbabwe and lies 520km north of Pretoria, the capital of South Africa.

The Limpopo River is the international border between South Africa and Zimbabwe bound the operations to the north. The Mapungubwe National Park's eastern border is 5km west of the western boundary of the Vele Colliery. The Mapungubwe Hills within the park is a World Heritage Site.

The extent of the mineral tenement, prospecting and mining rights, is approximately 10,755Ha over 11 farms.

The locality of the Vele Coal Operation is provided in Figure 2.2.1.

Figure 2.2.1: Locality of the Vele Colliery in the Limpopo Province, South Africa (source Google Maps™ – 18.11.2015)

2.3 Country Profile

The Republic of South Africa (South Africa) is located on the southern tip of Africa with a land surface area 1.2Mkm^2. South Africa is the second largest economy in Africa with the key economic sectors being mining services and transport, energy, manufacturing, tourism and agriculture.

South Africa has a constitutional multiparty democracy with three levels, namely local, provincial and national government). The current Ruling party is the African National Congress with the Democratic Alliance the official opposition. Legislation regarding Mineral Rights and tenure is also well established.

The country has an excellent transportation infrastructure with regards to rail, road and air transportation facilities (international and domestic). There is also very well developed telecommunication infrastructure through the country with easy accessible internet in most major cities and towns. Appendix 2 provides a detailed country profile for South Africa.

2.4 Legal Aspects and Permitting

2.4.1 Mineral Tenure

The application and approval of mining rights falls under the Department of Mineral Resources and is governed by the Mineral Resources and Petroleum Development Act 28 of 2002 (MRPDA). Entities (individuals or companies) apply through regional offices for Prospecting or Mining Rights.

Prospecting Rights are granted for an initial five year period where after is can be renewed for an additional three years. Mining rights are applied for the period of operation up to final closure for a maximum period of 30 years.

A summary of the rights obtained by CoAL for the Vele Colliery and surrounding properties are presented in Table 2.4.1. A diagram indicating the mineral right and the surface rights of the Vele Colliery area is presented in Figure 2.4.1.

Table 2.4.1: A summary of the Mineral Rights approved for the Vele Colliery

Farm Name	Portion	Area (Ha)	Company	Type	Permit Number	Date Issued	Expiry Date	Renewed	Surface Rights
Alyth 837MS	N/A	2 092.95	Silkwood Trading 14 (Pty) Ltd	Prospecting Right	LP 1136 PR	25.03.2008	24.03.2013	Yes	No
Bergen op Zoom 124MS	N/A	2 078.13	Limpopo Coal Company (Pty) Ltd	Mining Right	LP 103 MR	19.03.2010	18.03.2040	N/A	Yes
Overvlakte 125MS	Portion 3, 4, 5, 6, 13, 14 & RE	3 554.48							Partial: portion 3, 4 & 5
Semple 155MS	N/A	9 421.91							No
Voorspoed 836MS	N/A	2 087.22							No

The Alyth Prospecting Right was renewed in 2013 but the approval for the renewal has not yet been received by CoAL.

The company also has an approved Environmental Management Programme under the National Environmental Management Act (NEMA), an approved Water Use License under the Department of Water Affairs and Forestry (DWAF) and an approved Social and Labour Plan under the MRPDA.

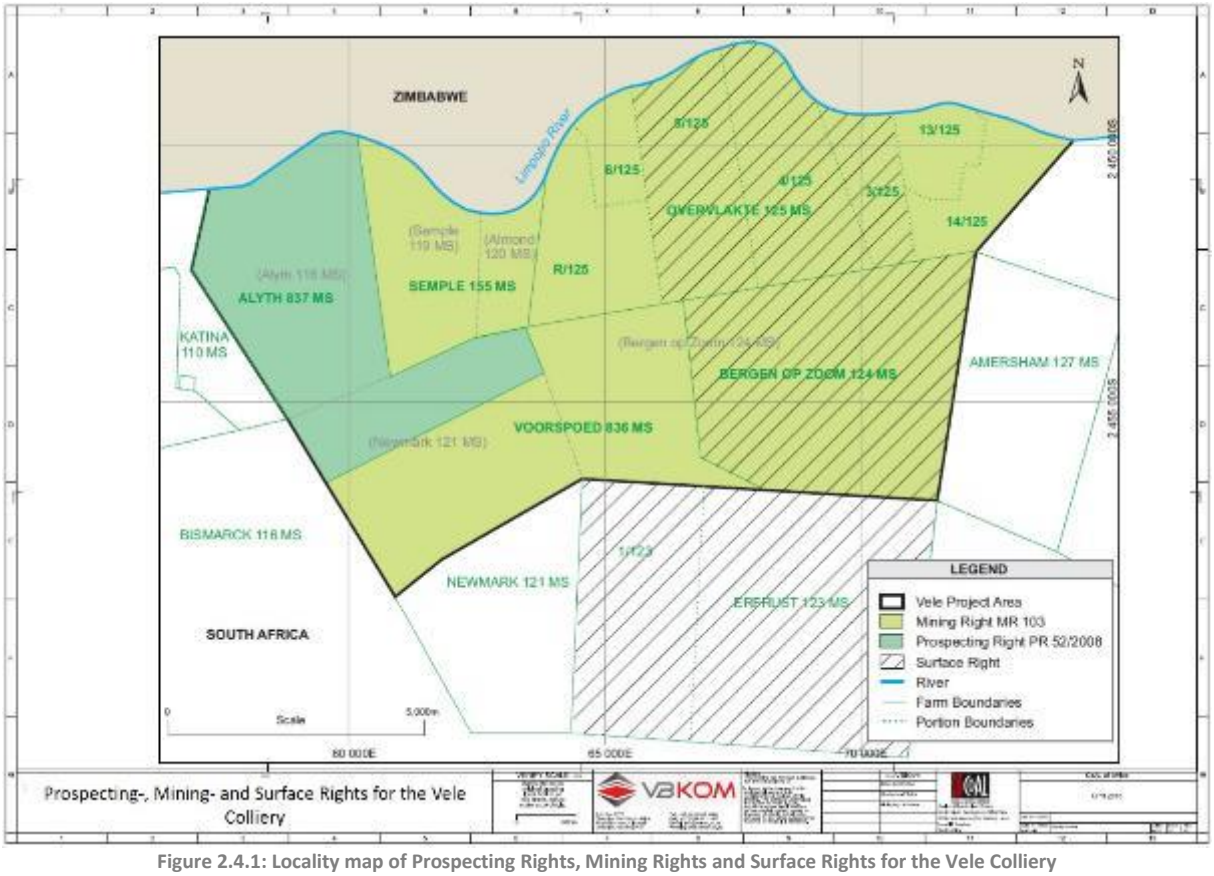


Figure 2.4.1: Locality map of Prospecting Rights, Mining Rights and Surface Rights for the Vele Colliery

2.4.2 Surface Rights

CoAL, through its wholly owned subsidiary, Harrissia Investments Holdings (Pty) Ltd, is the surface right owners of:

- Erfrust 123MS (100% interest)
- Portion 3, 4 and 5 of the farm Overvlakte 125MS (100% interest)
- Bergen Op Zoom 124MS (100% interest)

These farms constitute the areas for opencast mining.

For the remainder of farms within the Vele Colliery area CoAL has compensation agreements in place. The agreements provide CoAL with sufficient access to undertake all activities associated with the Prospecting and Mining Rights. The exception is the northwestern corner of the farm Alyth 837MS where the landowner has not permitted CoAL to do any coal resource drilling. The objection does not include the remainder of the farm.

2.4.3 Land Claims

There are potential land claims on the farms Farm Bergen Op Zoom 124 MS and Farm Semple 155 MS. The land claims on the various properties have not been gazetted by the Department of Rural Development and Land Reform (DRDLR). CoAL recognises land claimants as key stakeholders. The company's stakeholder engagement strategy ensures that regular, meaningful and transparent engagement does occur with the stakeholders. Land Claims do not affect the Mining Right, but may influence surface access once successful; which in turn may influence time lines and costs. The time required to finalise a land claims process is unknown as the DRDLR (through the Land Claims Commissioner) and the relevant claimant/community will determine the unfolding and progressing of the process to finalise security of surface tenure.

2.4.4 Prospecting Right granted to Dinokeng Mining Proprietary Limited

A Prospecting Right; in respect of Chrome, Lead, Iron and Manganese over the farms Bergen op Zoom 124 & Beskow 126 MS was granted to Dinokeng Mining Proprietary Limited (Dinokeng). The prospecting right lapsed on 3 November 2014 and it is uncertain if Dinokeng has applied for the extension of the right.

This Prospecting Right overlaps with the Limpopo Coal Company (Pty) Ltd Mining Right (LP 103 MR) in respect of the farm Bergen op Zoom, on which the processing plant is situated. The MPRDA does not prohibit the granting of rights to different parties in respect of the same properties, where the different entities have applied for different commodities. CoAL's strategy has been to deal with this issue on the basis of geological studies which indicated that very little Chrome, Lead, Iron and Manganese is found in the prospecting area to which Dinokeng's prospecting right relates. CoAL considers that access to the processing plant at the Vele Colliery will not be affected as the chances of any significant base metal find is very limited.

2.4.5 Litigation

Various non-governmental organisations (The Save Mapungubwe Coalition) appealed against the approval of the Mining Right for the Vele Colliery, the approved environmental management plan and the approved water use license. The group initiated court proceedings to stop the project and proposed mining. The High Court has subsequently moved in favour of CoAL and the claims of the Coalition Group were discarded.

2.4.6 Heritage Sites

A total of 48 heritage sites have been identified on the Vele Colliery area. These sites have to be catalogued and excavated before mining can commence in these areas. The current plan is to systematically remove the sites, which can take up to three years, to ensure that the sites do not interfere with the mining operations.

2.4.7 De-Proclamation of Nature Reserves

Two previously proclaimed nature reserves, Sighetti Nature Reserve and Skutwater Nature Reserve, are located on the prospecting right on the Farm Alyth 837MS.

Nature reserves proclaimed in terms of the National Environmental Management: Protected Areas Act, No. 57 of 2003 ("Protected Areas Act") and the Limpopo Environmental Management Act, No. 7 of 2003 ("Limpopo EMA") provide for de-proclamation.

Applications of de- proclamations was submitted to the relevant departments and is still pending. This only affects the Prospecting Right, which is also pending renewal. No Coal Reserves were declared on the Farm Alyth 837MS.

2.5 Royalties and Liabilities

The Mineral and Petroleum Resources Royalty Act (2008) (Royalty Act) imposes a royalty for the benefit of the National Revenue Fund in respect to the transfer of a mineral resources extracted from within the Republic. According to Schedule 2 of the Royalty Act, coal between 19.0MJ/kg and 27.0MJ/kg is categorised as unrefined mineral resources.

The royalty payable for an unrefined mineral resource is calculated through the following formula:

- 0.5 + [earnings before interest and taxes/(gross sales in respect of unrefined mineral resource x 9)] x 100

The royalty payment is required bi-annually with the deficit between forecasted sales and actual sales payable in a third payment.

No other private royalties or liabilities are payable by CoAL.

3 Accessibility, Physiography, Climate, Local Resources and Infrastructure

3.1 Topography, Elevation and Vegetation

The regional topography varies from gently undulating to areas with more rugged relief characterised by steep-sided hills and narrow, boulder-strewn valleys. The area that the Vele Colliery occupy is generally flat with a gentle northward slope towards the Limpopo River. The average elevation is 550m amsl.

The Vele Colliery falls within the Savannah biome, which is characterised by grass ground layer and an upper layer of woody plants dominated by thorn and Mopani trees. A riverine forest is developed along the banks of the Limpopo River.

3.2 Climate and Weather

The climate within the northern parts of South Africa is classified as semi-arid with an annual rainfall of about 255mm per year. Most of the rainfall occurs during the summer months between November and March.

The average temperatures in summer are 26.5 °C with the highest temperatures in January (above 32°C) and the lowest temperatures in July (below 17°C). A graph of monthly temperatures and rainfall is presented in Figure 3.2.1.

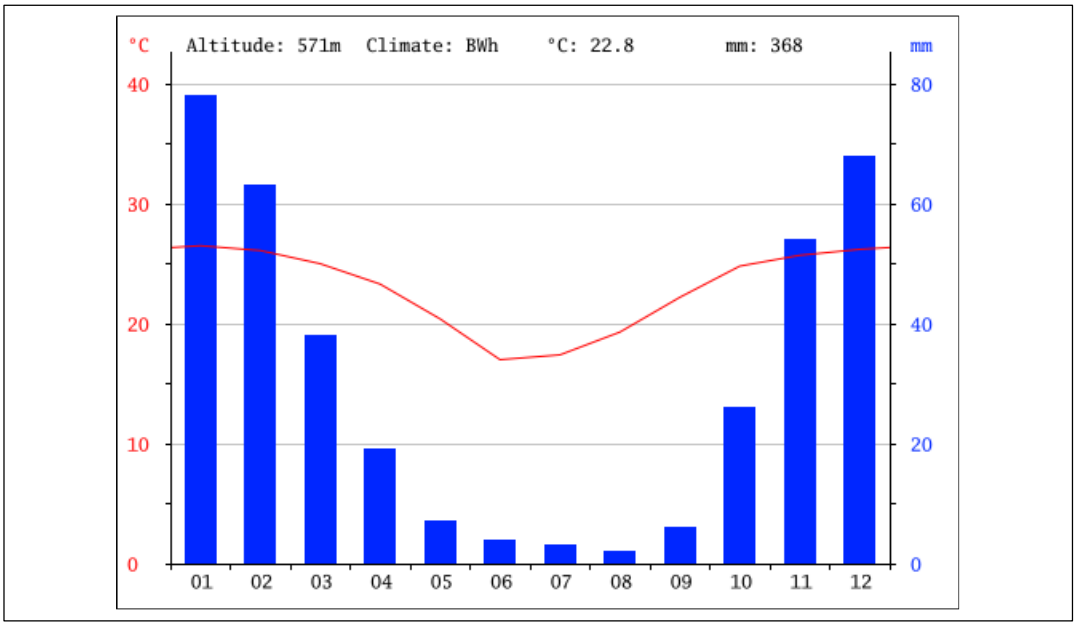


Figure 3.2.1: Distribution of monthly temperatures and rainfall for the Vele Colliery area (source: Climate-data.org)

Exploration and mining activities will not be effected by any climatic conditions.

3.3 Access

The Vele Colliery is well situated with respect to infrastructure such as rail and road. The main South-Africa Zimbabwe road and rail routes pass through Musina. The R572 tarred road from Pontdrift to Musina is located adjacent to the Vele Colliery on the southern boundary.

3.4 Proximity to population centres and nature of transport

The Vele Colliery is 40km west from Musina, which is the where the population within the area is concentrated due to the cross-border activities. There are other smaller towns and villages close to the mine from where the local element of employees will be sourced. The mine can easily be reached through tarred roads and secondary dirt roads.

Musina is the regional centre and provides modern conveniences, including accommodation and services. The town is also a source of fuel and labour with a police station, a number of schools and a hospital. The town has a history of mining and experienced staff and labour will be sourced from here.

3.5 General infrastructure

Due to the proximity of the Vele Colliery to the Mapungubwe National Park all infrastructure on the mine site is limited to a maximum height of 20m. This is to ensure that the visible impact of the mine is minimised as much as practical.

Currently water is supplied to site from a pumping station on the Limpopo River. The amount that can be abstracted is limited to 4.2 mega-litres per day. The current supply is adequate for the current operations. Two potable water treatment plants have been provided for in the capital budget. The first is for the future underground mining area and the second one to serve the current main site infrastructure.

On site offices, include office block, a laboratory, workshops, stores and change houses.

4 Project History

4.1 Previous Ownership

Southern Sphere Mining and Development Company Limited, a division of BHP-Utah Mining, historically investigated the project from 1973 to 1983. After a hiatus of 22 years, Limpopo Coal obtained a Prospecting Right in 2005 over certain portions of the Vele project. GVM (now Coal of Africa Limited) obtained a 74% in Limpopo Coal. In 2008, Silkwood obtained a prospecting right over the farm Alyth 837MS and later that same year CoAL acquired 100% of Silkwoord.

4.2 Previous Exploration and / or Development

Prior to CoAL's involvement in the project Southern Sphere undertook all historic exploration activities.

A total of 61 drill holes were drilled and core recovered through air flush coring. The recovered core is comparable with TNW core size (16.8mm). Further information regarding the drilling process, assurance of quality and sampling protocols used by Southern Sphere is not available for review. Southern Sphere is a reputable exploration company and it can be expected that best practices were followed and that the data can be regarded as acceptable for CoAL Resource estimation. The samples were analysed by McLachlan and Lazar Laboratory (now known as Inspectorate).

Southern Sphere also drilled 36 Large Diameter Drill (LDD) holes in 1984 at three sites on the farm Overvlakte 125MS, portion 5. The coal was send to the Iscor Ltd coal laboratory for washability and coking tests. The results of the test work are not available for review.

4.3 Previous Coal Resource Estimates

Two previous Coal Resource estimates were compiled for the Vele Colliery. The Mineral Corporation (Pty) Ltd in 2010 and by Venmyn Rand (Pty) Ltd (Venmyn) in 2012. Both these Coal Resource estimates are in accordance to the JORC Code (2007). A comparison between the 2010 and 2012 Coal Resource estimates, with a reason of any deviations, were produced by Venmyn and is presented in Table 4.3.1.

Table 4.3.1: Previous Coal Resource estimation completed in 2010 and 2012 by The Mineral Corporation and Venmyn respectively. The reason for changes between the two estimates is also provided.

			2010		2012			DIFFERENCE			
Project	**Resource Category**	**Seam**	**GROSS TONNES IN SITU (GTIS) (Mt)**	**MINEABLE TONNES IN SITU (MTIS) (Mt)***	**GROSS TONNES IN SITU (GTIS) (Mt)**	**TMC COMPARABLE TONNES IN SITU***	**MINEABLE TONNES IN SITU (MTIS) (Mt)****	**GROSS TONNES IN SITU (GTIS) (Mt)**	**MINEABLE TONNES IN SITU (MTIS) (Mt)**	**COMMENTS**	
VELE COLLIERY	Measured	Top Lower	18.603	16.743	17.110	15.093	8.379	-1.493	-8.364	Decrease of 13.4Mt GTIS due to refined geological model. Decrease of 70.7Mt MTIS due to application of 0.5m thickness cut-off, maximum mining height of 4.5m for underground mining and only Bottom Lower Seam considered for underground mining. There is only a 25.8Mt difference between the 2010 MTIS and the TMC Comparable Tonnes for 2011.	
		Middle	16.140	14.527	14.275	12.922	7.220	-1.865	-7.307		
		Bottom Upper	44.553	40.097	40.818	31.137	16.240	-3.735	-23.858		
		Bottom Lower	92.127	82.914	85.832	69.329	62.403	-6.295	-20.511		
	TOTAL/AVERAGE MEASURED RESOURCES		**171.423**	**154.281**	**158.035**	**128.482**	**94.241**	**-13.388**	**-60.040**		
	Indicated	Top Lower	74.969	63.724	72.023	59.113	20.091	-2.946	-43.633	Decrease of 26.1Mt GTIS due to refined geological model. Decrease of 219.1Mt MTIS due to application of 0.5m thickness cut-off, maximum mining height of 4.5m for underground mining and only Bottom Lower Seam considered for underground mining. There is only a 22.1Mt difference between the 2010 MTIS and the TMC Comparable Tonnes for 2011.	
		Middle	49.144	41.772	42.397	36.592	11.662	-6.747	-30.110		
		Bottom Upper	107.973	91.777	102.442	88.249	25.010	-5.531	-66.767		
		Bottom Lower	220.849	187.721	209.992	178.959	143.535	-10.857	-44.186		
	TOTAL/AVERAGE INDICATED RESOURCES		**452.935**	**384.994**	**426.854**	**362.912**	**200.298**	**-26.081**	**-184.696**		
	Inferred	Top Lower	58.317	46.654	57.309	41.948	16.920	-1.008	-29.734	Increase of 29.8Mt GTIS due to refined geological model. Decrease of 84.7Mt MTIS due to application of 0.5m thickness cut-off, maximum mining height of 4.5m for underground mining and only Bottom Lower Seam considered for underground mining. There is only a 12.9Mt difference between the 2010 MTIS and the TMC Comparable Tonnes for 2011.	
		Middle	33.597	26.878	28.333	19.511	7.380	-5.264	-19.498		
		Bottom Upper	45.362	36.289	57.411	37.440	12.520	12.049	-23.769		
		Bottom Lower	51.834	41.467	75.879	39.840	38.270	24.045	-3.197		
	TOTAL/AVERAGE INFERRED RESOURCES		**189.110**	**151.288**	**218.932**	**138.380**	**75.090**	**29.822**	**-76.198**		
GRAND TOTAL/AVERAGE OPENCAST			**332.767**	**285.632**	**N/A**	**250.867**	**229.642**	**N/A**	**-55.990**	**N/A**	**-20%**
GRAND TOTAL/AVERAGE UNDERGROUND			**480.701**	**404.931**	**N/A**	**378.907**	**139.988**	**N/A**	**-264.943**	**N/A**	**-65%**
GRAND TOTAL/AVERAGE VELE COLLIERY			**813.468**	**690.563**	**803.821**	**629.774**	**369.626**	**-9.647**	**-320.934**	**-1%**	**-46%**

Notes:
*All seams not at opencastable depths were considered as underground resources by The Mineral Corporation (TMC) in the reporting of MTIS
** Only the Bottom Lower Seam was considered by Venmyn for the underground resources in the reporting of MTIS. In addition a minimum and maximum seam height of 1.4m and 4.5m, respectively were applied
# Tonnages reported in order to make a direct comparison with the TMC MTIS values, and to demonstrate that while the geological model has not changed, the calculation of MTIS has, in consideration of a number of additional modifying factors. These tonnages are not MTIS tonnes.
TMC did report Total Selected Resources of 466.111Mt MTIS in its September 2011 report, presumably only considering Bottom Lower for underground mining

4.4 Previous Coal Reserve Estimates

Venmyn Rand compiled the previous Coal Reserves in 2012.

Table 4.4.1 provides the Coal Reserve estimate as published by Venmyn Rand in 2012.

Table 4.4.1: Coal Reserves as reported on 30 September 2012 (Venmyn Rand)

Mining Block	OC \ UG	Reserve Category	Mineable Insitu Reserve (Mt)	RoM Tonnage (Mt)	Primary Product Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	Secondary Product Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)
OC central	OC	Proven	24.199	25.697	18.5%	4.743	38.3%	9.842
Total Proved OC			**24.199**	**25.697**	**18.5%**	**4.743**	**38.3%**	**9.842**
OC North	OC	Probable	67.895	72.099	18.3%	13.167	43.8%	31.584
OC South	OC		25.062	26.614	18.4%	4.908	44.0%	11.705
OC west	OC		76.870	81.629	17.8%	14.555	45.7%	37.281
Total Probable OC			**169.828**	**180.342**	**18.1%**	**32.630**	**44.7%**	**80.570**
Total Opencast			**194.027**	**206.039**	**18.1%**	**37.372**	**43.9%**	**90.412**
UG North	UG	Probable	38.335	24.996	18.9%	4.714	40.8%	10.208
UG South	UG		30.317	19.768	17.8%	3.524	39.4%	7.794
UG West	UG		62.891	41.008	17.0%	6.980	46.8%	19.179
Total Probable Underground			**131.544**	**85.773**	**17.7%**	**15.218**	**43.3%**	**37.181**
Grand Total Vele project			**325.570**	**291.812**	**18.0%**	**52.590**	**43.7%**	**127.593**

4.5 Previous Production

The Vele Colliery was only in operation for a short period before it was placed under care and maintenance. A total of 417kt was mined during this period.

5 Geological Setting, Mineralisation and Deposit Types

5.1 Geological setting

5.1.1 Regional Geology

A regional geological map of the Vele Colliery area is presented in Figure 5.1.1.

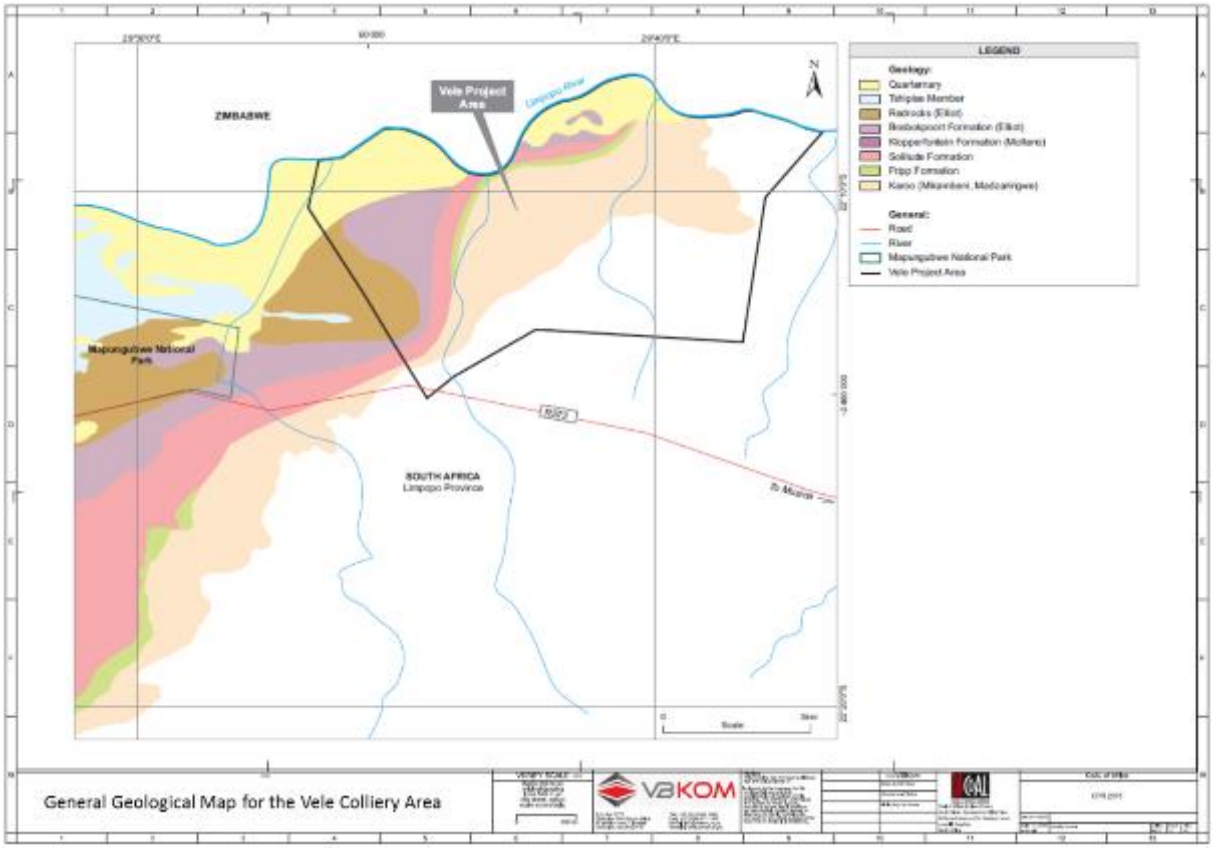


Figure 5.1.1: General Geological Map for the Vele Colliery Area

The Karoo age Limpopo Coalfield is generally fault bounded, with the southern extent of the basin controlled by erosion. The deposition of the Karoo sediments occurred concurrently with movement on pre-existing fault planes. The result is a truncated sequence of lithologies that are distinctly different to those that are encountered in the main Karoo basin to the south in the Mpumalanga Province. The structure of the Tuli Basin reflects the east west regional structural trend of the Limpopo Mobile Belt.

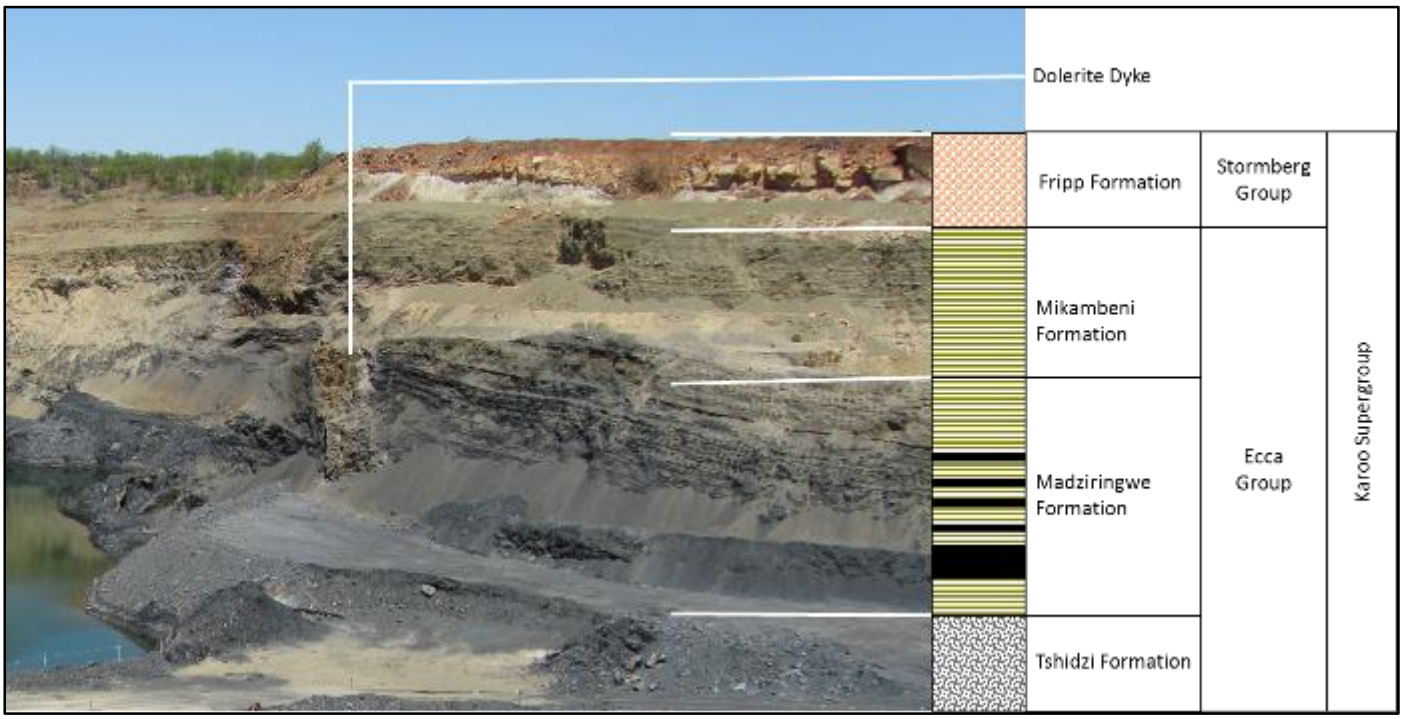
Dwyka-aged glacial deposits of the Karoo Supergroup have been deposited on the irregular Archean basement and overlain by Ecca-equivalent arenaceous mudstone and laminated sandstones. The general stratigraphy of the area can be correlated to the Moltena, Beaufort, and of the main Karoo Sequence. The primary lithologies in the region range from pebbly, coarse, arkosic sandstones to carbonaceous mudstones and coal.

The Main Coal Zone is present in the Madzaringwe Formation, which is approximately 15m thick. Three distinct coal horizons occur in the Middle Ecca Group, locally referred to the Top, Middle and Bottom Coal Horizons. All three coal horizons comprise interbedded coal and mudstone units with varying coal quantities and qualities.

5.1.2 Local Geology

The Main Coal Zone consists of interlaminated carbonaceous shale, mudstones and coal plies. Figure 5.1.2 provides a local stratigraphic column of the area as observed in the current Vele Colliery. The Top, Middle and Bottom seams were all intersected through drilling and mining activities within the Vele Colliery area. The Top and Bottom seams can further be differentiated into a Top Lower, Top Middle, Top Upper, Bottom Lower and Bottom Upper. The Top Middle and Top Upper are not considered economic.

Figure 5.1.2: Stratigraphic Column as observed in the Vele Colliery opencast (B. Botha (26.11.2015) taken on the Vele Colliery Site Visit)



Individual sub-seams can be correlated over the entire area. Correlation is assisted by a distinctly bioturbated marker between the Bottom and Middle seams. The Bottom seam lies directly over the glacial Dwyka-aged sediments or granite-gneiss basement. The coal seams generally dip with no more than 2° north, but can increase to 10° in the vicinity of faults. A series of dolerite dykes occurs in the area and does not appear to have caused any displacement but have devolatilise the coal bordering them.

5.2 Structure and Tectonic setting

The coal deposition of the Vele Colliery occurred within and intra-continental basin bounded by extensional faulting. Major faults have been interpreted, through field observations and geophysics, for the area. The faults divide the deposit in blocks with varying seam depths.

A serious of dolerite dykes trend predominantly east west across the project Colliery area, the largest is estimated to be more than 15m thick. These dykes were emplaced during the extension tectonics that formed the intra continental basin. The dykes did not have significant displacement associated but have resulted in minor de-volatilisation of coal in the immediate contact.

Figure 5.2.1 provides the localities of the interpreted faults and dykes within the Colliery area.

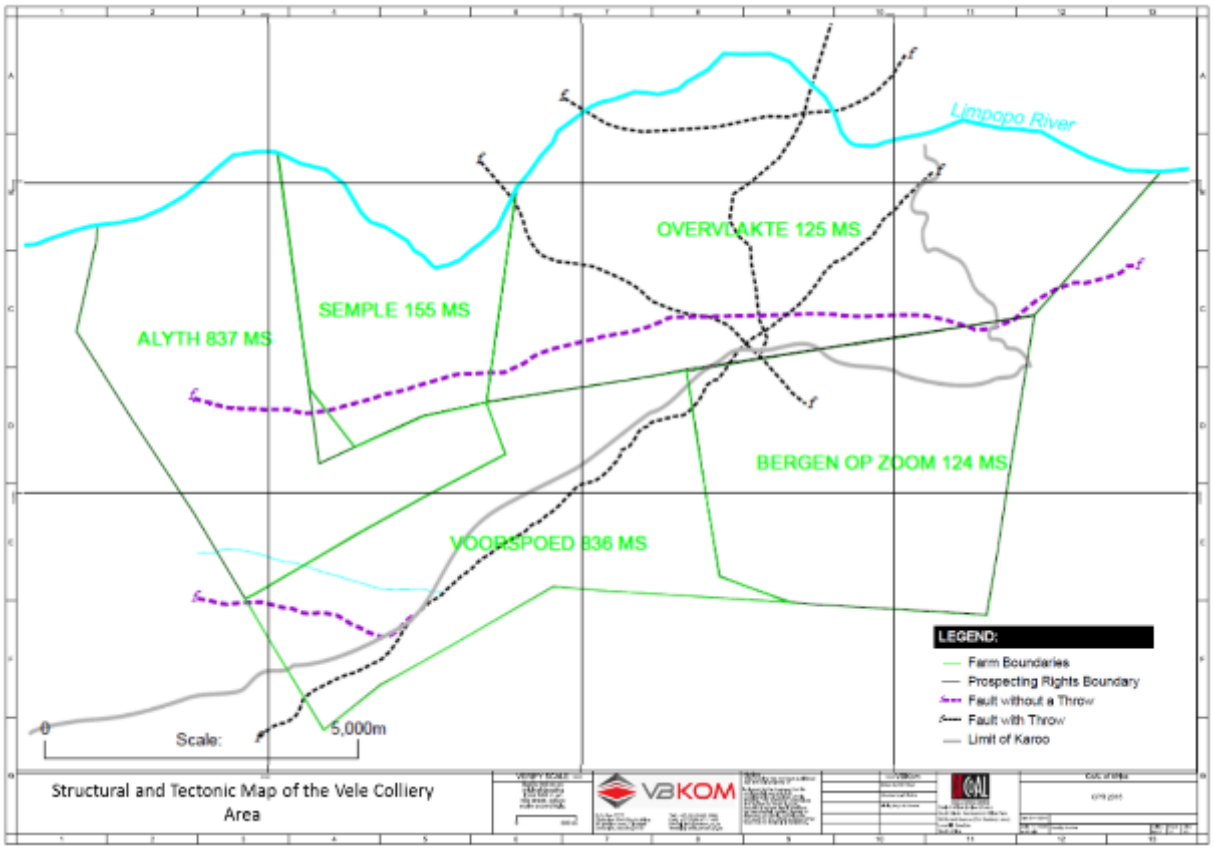


Figure 5.2.1: Structural and Tectonic map of the Vele Colliery area

5.3 Coal Deposit Characteristics

The three coal horizons are interbedded coal and mudstone units with varying coal quantities and qualities. The coal zones can be subdivided into four coal sections or composite seams, namely:

- Inconsistently formed Top Seam, which is 0 – 7.66m thick and contains 55% to 65% coal
- The Middle Seam, which is 0 – 2.19m thick and contains 20% to 45% coal
- The Bottom Upper Seam, which is 0 – 5.48m thick and contains 65% to 80% coal
- The Bottom Lower Seam, which is 0 – 7.87m thick and contains 65% to 80% coal

The deposits outcrops in the east and the southern part of the deposit. The coal seams have been removed during post Karoo erosion towards the south. The seams occur in blocks with different seam floor and roof elevations due to the prevalent faulting within the area. The faulting divided the deposit into opencast minable coal and underground exploitable coal sections.

The deposit covers an area of 4 502.7ha and the floor of the Bottom Lower seam varies between 340m amsl and 480m amsl.

The typical seam coal zone and seam thickness is presented in Table 5.3.1.

Table 5.3.1 - Thickness Parameters for the coal zone and seam within the Vele Colliery area

Seam or Zone	Average Thickness (m)	Maximum Thickness (m)	Minimum Thickness (m)
Coal Zone	16.42	31.95	0.25
Top Lower seam	1.52	7.66	0
Middle seam	1.05	2.19	0
Bottom Upper seam	1.98	5.48	0
Bottom Lower seam	3.68	7.87	0

The thickness contours for the different seams is presented in Figure 5.3.1 to Figure 5.3.4.

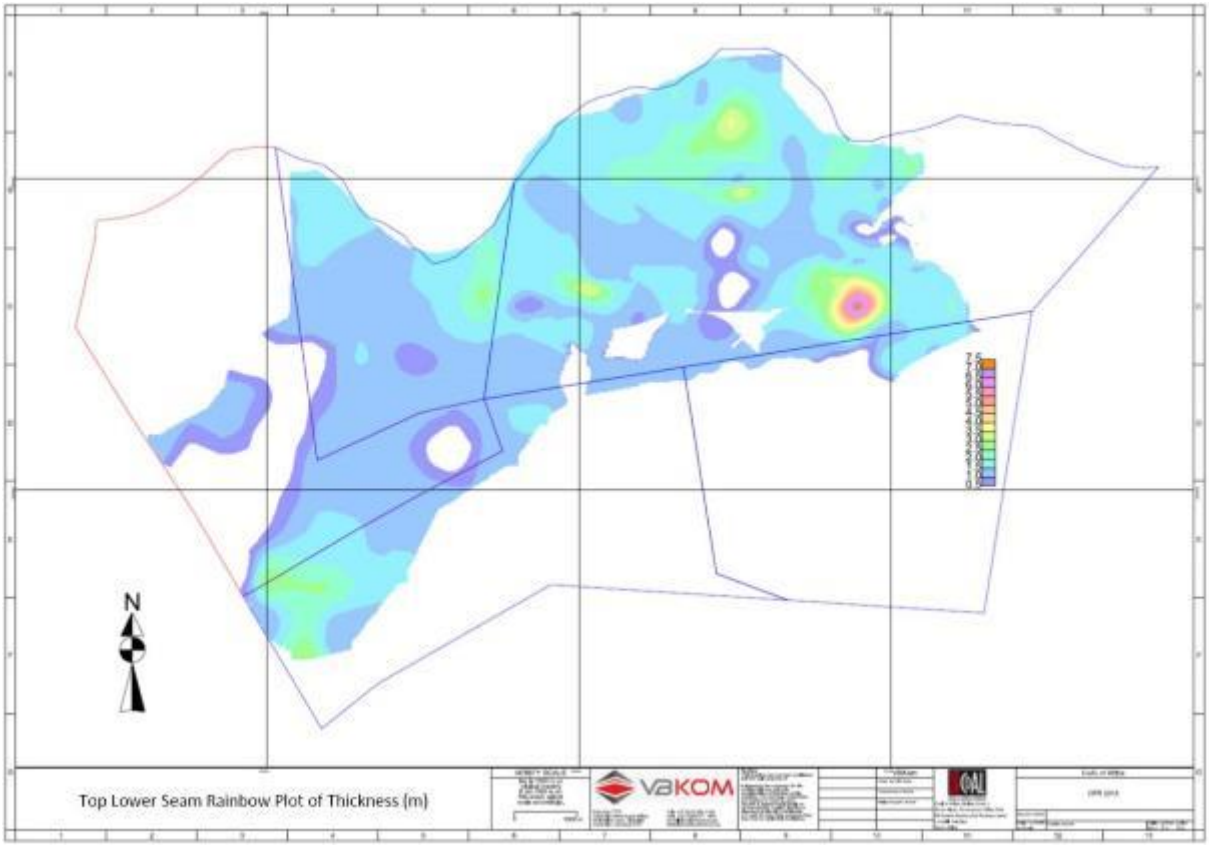


Figure 5.3.1: Thickness plot for the Top Lower Seam

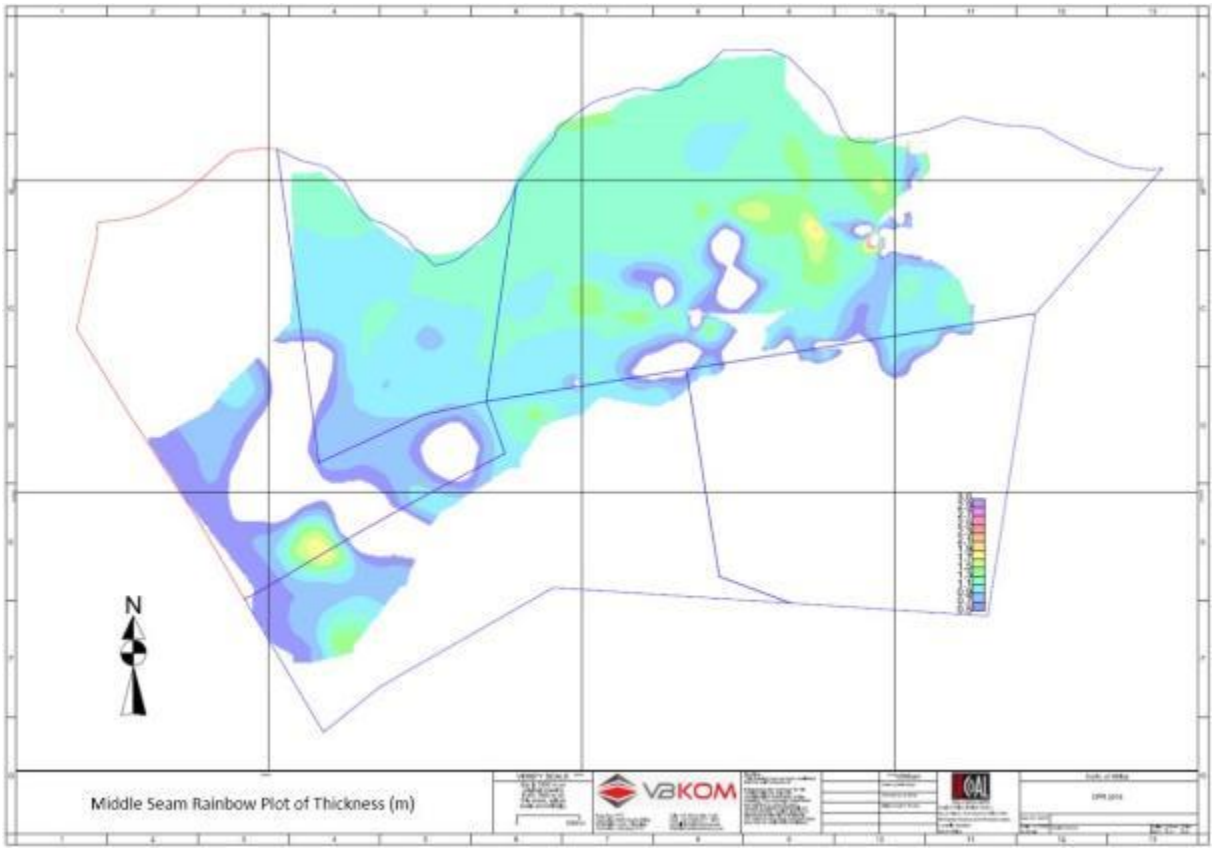


Figure 5.3.2: Thickness plots for the Middle Seam

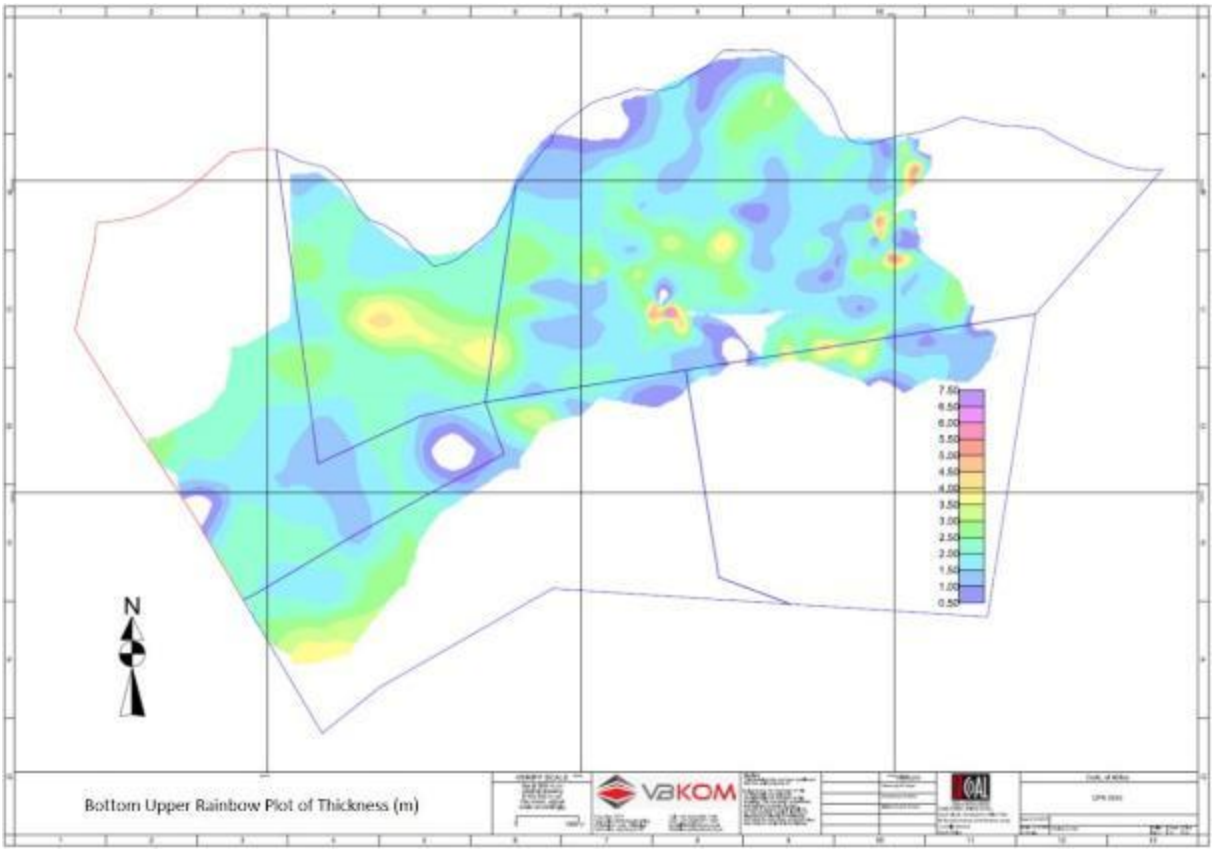


Figure 5.3.3: Thickness plots of the Bottom Upper Seam

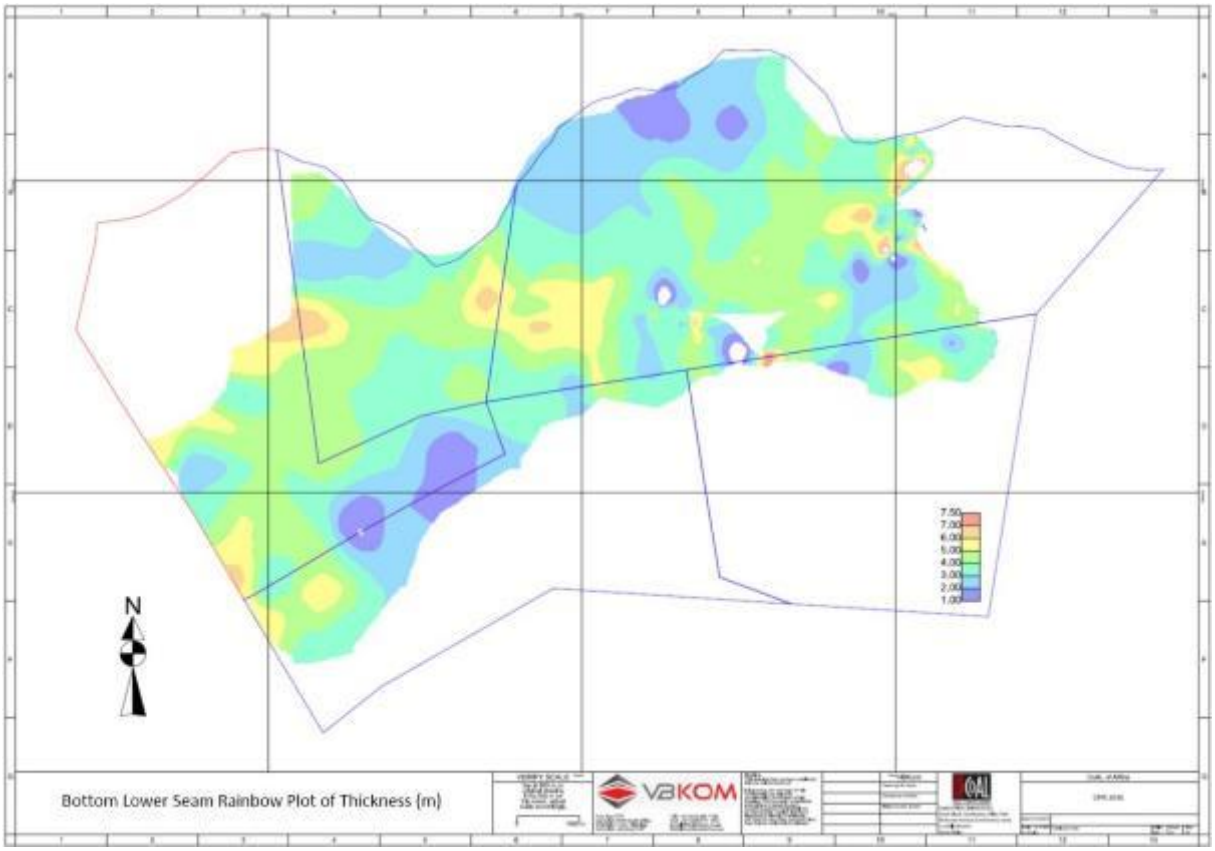


Figure 5.3.4: Thickness plot for the Bottom Lower Seam

Coal petrography was done on the coal seams from the Vele Colliery and it indicates that the coal is a medium rank, high vitrinite content, and C-grade bituminous coal. The coal falls into a semi-soft coking coal category. Figure 5.3.5 indicates the coal quality of the Vele Colliery in relation to petrographic images.

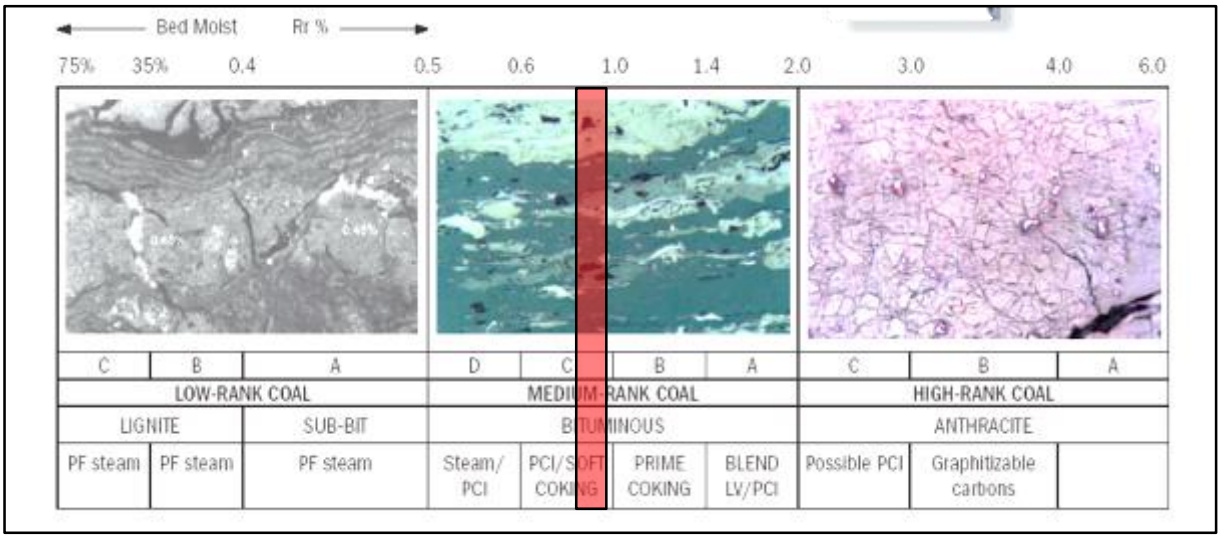


Figure 5.3.5: Classification of the coal at Vele Colliery (Highlighted section in red indicates typical Vele coal category)

6 Exploration Data

6.1 Geophysics

In 2008, CoAL commissioned Furgo Airborne Surveys (Pty) Ltd to undertake a high-resolution airborne magnetic and radiometric survey over an area of 111km2 over the Vele Colliery area. The survey was done at a line spacing of 50m and covered 2 431 line kilometres. The raw data was processed by GAP Geophysics (Pty) Ltd (GAP) in 2009 and presented as a set of plans showing radiometric total counts, ternary K-U-Th counts, a digital terrain model, terrain clearance data and both total and vertical magnetic fields. The images were further interpreted and a geological map was drawn up by GAP.

6.2 Drilling

6.2.1 Drilling Method

Drill holes incorporated into the geological model are primarily diamond core drilling with secondary percussion drilling to verify the structure of the boxcut area, as well as understanding the structural and quality continuity. The last phase of drilling was Large Diameter Drill holes for metallurgical test work for the Plant Modification Project. Table 6.2.1 provides a summary of the drilling completed at the Vele Colliery and the distribution of these drill holes is presented in Figure 6.2.1.

Table 6.2.1: Summary of historic and recent drilling on the Vele Colliery area

Date	Company	Property	Purpose	Drilling Method	Drill hole Size	Total Number of Drill Holes
Pre 2008	Southern Sphere	Overvlakte 125MS, Amond 120MS	Early Exploration	Diamond core	TNW	61
		Overvlakte 125MS	Quality Sampling		LDD	36
2008	CoAL. Supervised by MSA	Overvlakte 125MS, Amond 120MS, Semple 119MS, Alyth 837MS, Voorspoed 836MS	Infill drilling and Resource Estimation	Diamond Core	HQ3, PQ3	73
2008-2010	CoAL		Infill drilling and Resource Estimation		PQ3	115
			Quality Sampling		T6	31
2010		Overvlakte 125MS	Redefining structural model in area of boxcut	Percussion	8 Inch	236
2013		Overvlakte 125MS	LDD for metallurgical test work as part of PMP	Diamond core	PQ3	39

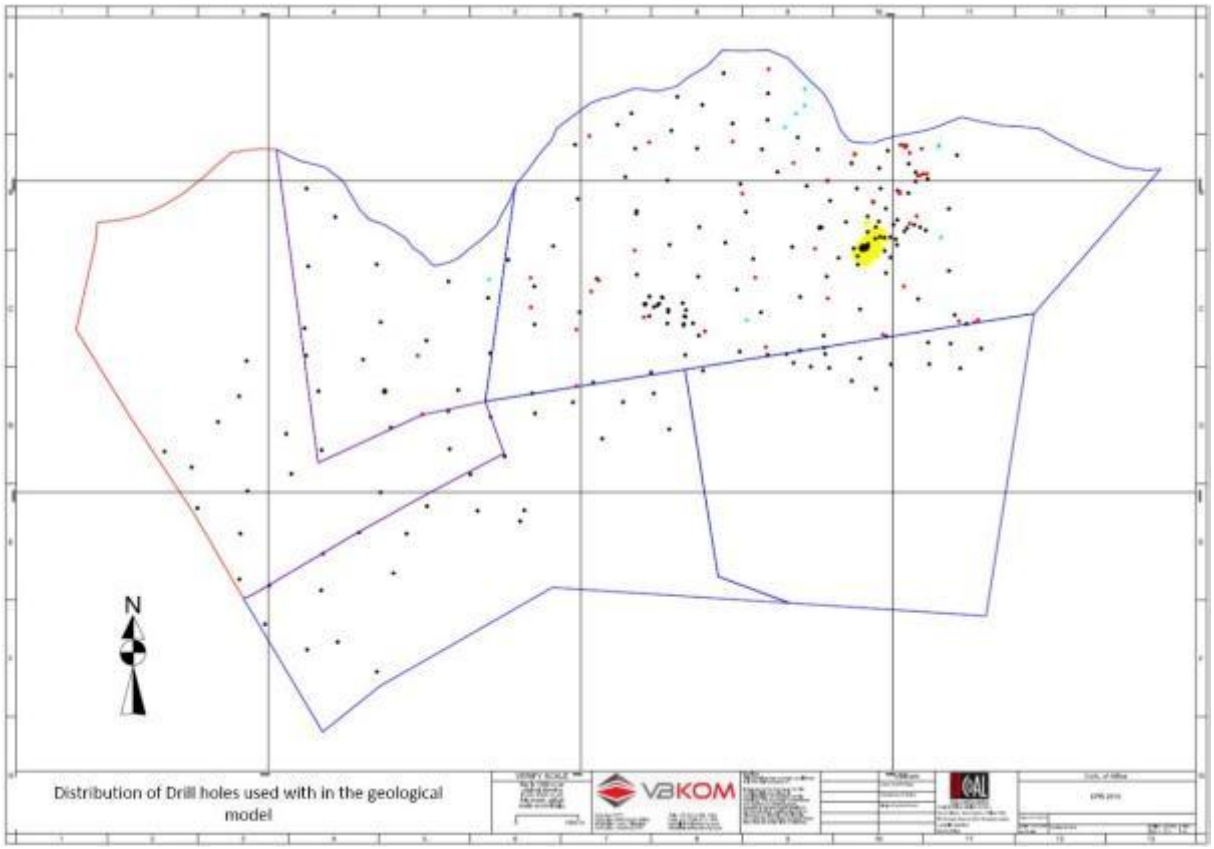


Figure 6.2.1: Distribution of drill holes used in the geological model at Vele Colliery

6.2.1.1 Diamond Core Drilling

Diamond Core Drilling is the industry acceptable method to collect coal intersections for quality test work. The drilling method provides an uncontaminated sample, without the loss of fine coal particles like vitrinite, which is important to determine the coking properties of coal.

Before CoAL started with exploration in the area, Southern Sphere completed 96 diamond core holes, with the structure verified through wire-line geophysics, was sampled and analysed.

After the acquisition of the project by CoAL, they embarked on two separate exploration projects. In the first managed by MSA 73 diamond core holes with wire-line geophysics and samples for quality test work was completed. Subsequently to the MSA programme, CoAL drilled another 146 diamond core holes with wire-line geophysics and samples for quality test work. All diamond core holes were logged and sampled according to the protocol set out in this document.

6.2.1.2 Percussion Drilling

In 2010, CoAL drilled ten percussion boreholes in the area that was earmarked for the initial boxcut to get an understanding of the fault within the area. Percussion drilling is a cost effective method to obtain structural data from coal deposits. The samples (chips) are of inadequate quality to be used for quality analyses. All of the percussion holes were subjected to wire-line geophysics to obtain the structural data.

A series of 247 blast boreholes were drilled around the boxcut. The purpose of the drilling was to identify structures in the current mining area, as well as for quality control purposes. All the holes have wire-line geophysical logs for structural data and was not sampled.

As part of this drilling campaign, a closely spaced correlation cross was drilled in the opencast areas. The aim of the drilling was to determine the optimal drill hole spacing for the deposit concerning structure and quality.

6.2.1.3 Large Diameter Drill Holes (LDD)

A total of 39 PQ3 (85.7mm) drill holes were drilled to preform drop shatter test and wet tumble tests on at ACT Laboratories. The LDD holes were distributed over the Central Mining Area and the Northern Mining Area (Figure 6.2.2). In the Central Mining Area 18 drill holes were drilled with an average spacing of 187m. In the Northern Mining Area 21 drill holes were drilled with an average spacing of 250m between drill holes. The drill holes were logged according to the protocols and sampled. The drill holes also have down-hole geophysical logs. The drill holes and analytical results were included into the geological model.

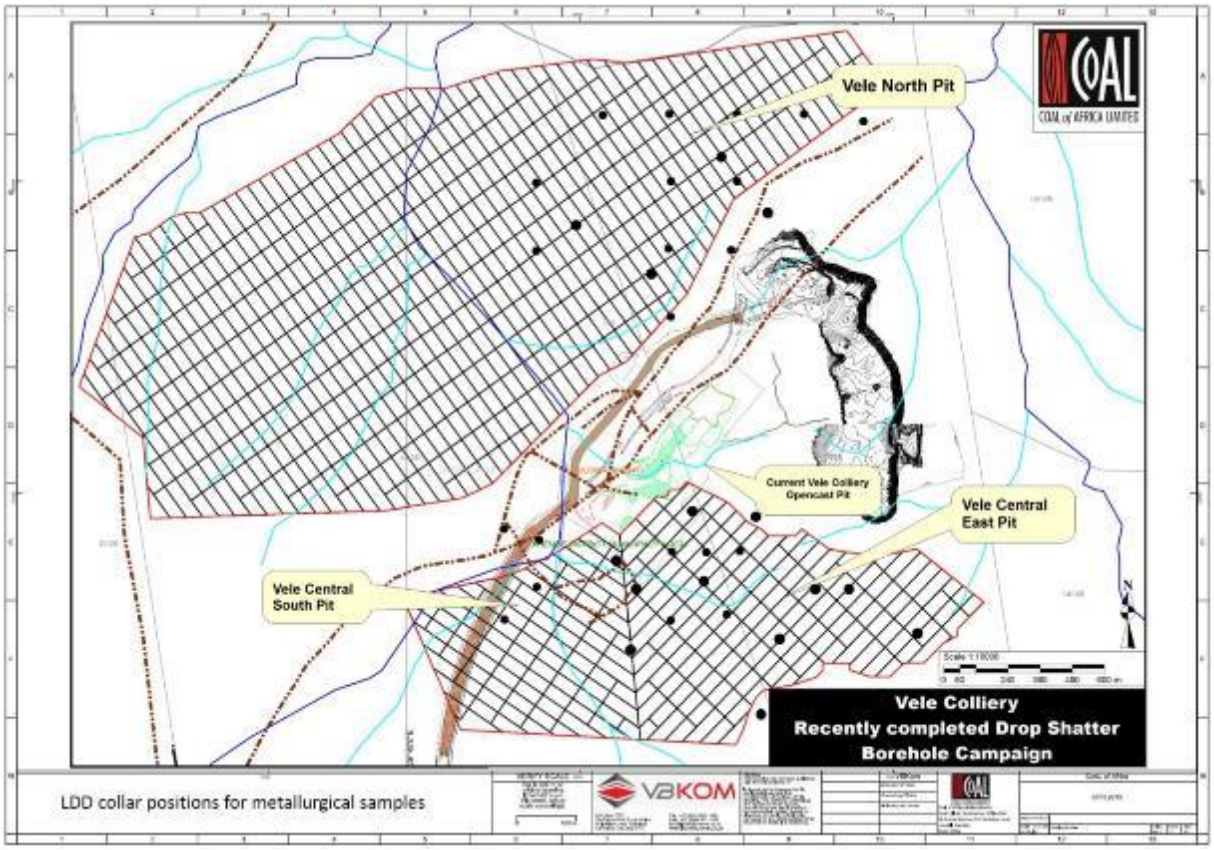


Figure 6.2.2: Localities of LDD holes on the Vele Colliery area (created by Coal of Africa Limited)

6.2.2 Sample Recovery

In accordance to SANS10320:2004 a minimum 95% recovery on coal seams are required to ensure that the sample is representative. During the MSA managed drilling programme core recoveries were recorded in the field by the responsible geologist. Instances when recovery within the coal horizons did not achieve the minimum of 95% recovery, and the reason could be contributed to poor drilling practices, a re-drill of the whole drill hole was required. Instances were badly fractured or faulted ground was encountered the drilling contractor was instructed to take all necessary steps to ensure maximum core recovery.

During the CoAL managed drilling campaign a minimum core recovery of 98% in coal horizons and 95% in non-coal sediments were stipulated. Core recoveries were recorded by the driller through the comparison of run lengths against recovered core lengths. However, CoAL geologists calculated core recoveries by comparing the seam thickness between the down-hole geophysical survey and the actual core recovered. Drill holes that did not meet the criteria were then re-drilled.

6.2.3 Logging

6.2.3.1 Core Logging

The logging protocols used by Southern Sphere are not available for review.

The logging procedures employed by MSA during the first drilling campaign initialised by CoAL are as follows:

- In the beginning of the project core was laid down on 10m plastic sheets, but as the project progressed the core was packed into 1m or 1,5m long core trays
- Coal intersections were split lengthwise with a hammer and a chisel so that the cross section of the core could be described
- For each lithological unit the rock type, colour, grain size, fabric, core bedding angle, mineralisation and other characteristics were noted
- Thin coal intersections (<30cm) were recorded as coal bands and thicker intersections were recorded as coal seams and described in detail on a separate log sheet.
- The 'from-to' depths of each unit was reconciled with down-hole geophysical logs

In later drilling campaigns, the core was not split in two along the extent of the coal zone. This was done to minimise fine generation and provide intact core for tumble tests (drop shatter load tests).

During the drilling managed by CoAL a similar logging protocol was adhered to. The difference was that the lithology and coal seams were described on the same log sheet. CoAL also endeavoured to split the core, log it and sample it on the same day to minimise possible oxidation that can influence the coking properties of the coal for testing.

The data from hand written logs were captured on MS Excel™ and subsequently imported into a SABLE™ Database.

The entire core length recovered per drill hole was photographed at the core shed prior to sampling during the CoAL managed drilling campaign. No core photography was done during the MSA managed drilling campaign.

The 5m preceding the Bottom Lower Seam and following the seam was geotechnically logged according to the modified rock mass rating system that is commonly employed by South African geotechnical engineers.

6.2.3.2 Downhole Geophysical Logging

During both of CoAL's exploration programmes, Weatherford UK Limited undertook down-hole geophysical wire-line on a routine basis. Geophysical methods employed include dual-density and gamma. Calliper measurements was also undertaken to determine the rugosity of the drilled hole. Additional to the techniques mentioned tools such as acoustic televiewer, magnetic susceptibility and electrical resistivity were used occasionally to assist with structural interpretations. Figure 6.2.3 provides and illustration of the results of geological logging and the down-hole geophysical logging.

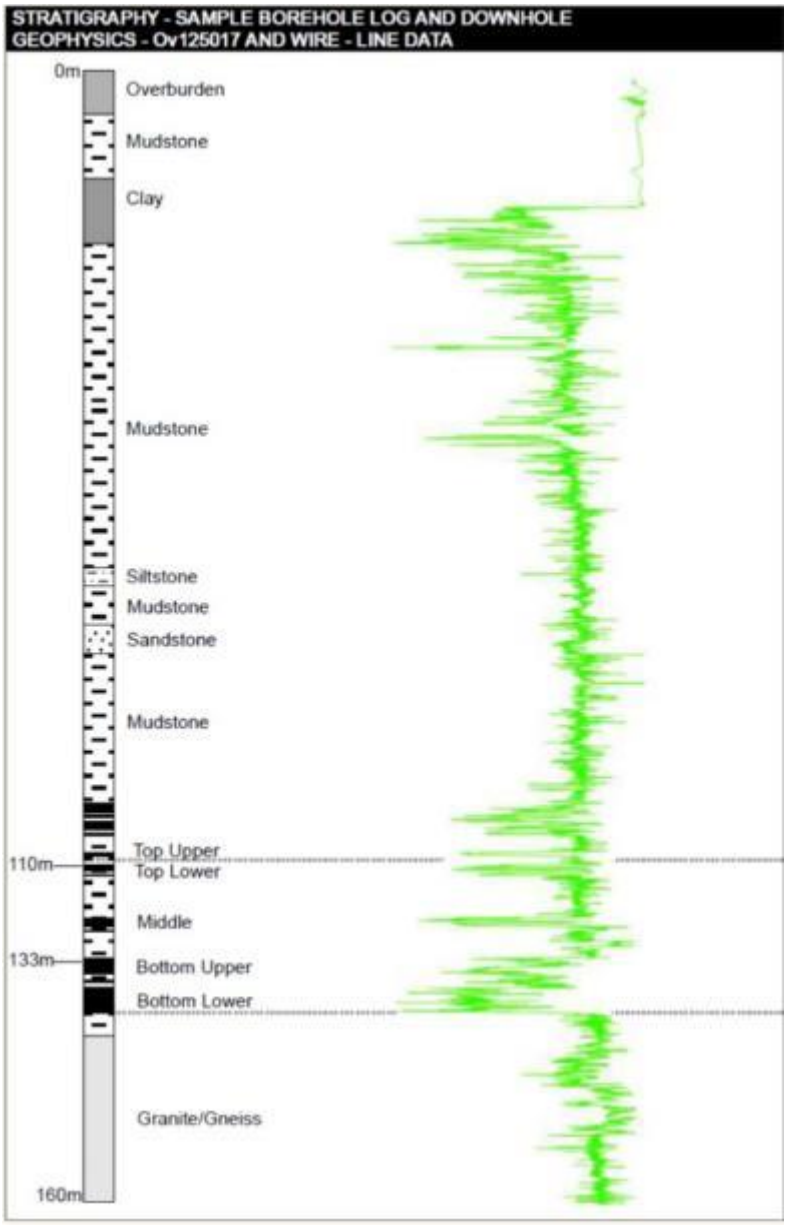


Figure 6.2.3: Interpreted down-hole geophysical log with associated geology

6.2.4 Orientation of data in relation to geological structure

The coal seams present at Vele Colliery dips at 2° to the north. All the drill holes drilled in the area and used for geological modelling and Coal Resource estimation is vertical and intersects the seams at approximately 90°. No thickness adjustments were required to calculate the true thickness of the coal seams.

6.2.5 Drill hole information

The drill holes used in the geological modelling and Coal Resource estimation is tabulated in Appendix 3. A total of 573 drill holes were used in geological modelling and Coal Resource estimation. Seventeen drill holes were excluded from the modelling and estimation. These drill holes are primarily water drill holes or drill holes without geology or data.

It is the opinion of VBKom that the drill holes excluded from the geological modelling and Coal Resource estimation will not affect the results materially.

6.3 Sampling

6.3.1 Sampling

The sampling protocols employed by Southern Sphere during their activities are not documented. The sampling techniques employed by MSA and CoAL are described in the following text. In both cases, sample intervals usually ranged between 50cm and 150cm and the whole core was sampled (as prescribed by SANS10320:2004) to minimise any bias.

Samples collected by MSA were packed into double plastic bags, which were sealed with staples. The samples were labelled using pre-numbered sequential cable ties.

Samples collected by CoAL in the subsequent exploration phase were similarly packed, with sample numbers written with a black permanent marker on the outside of the bag and manila tags (with the corresponding sample number) placed inside and outside the bag, which was closed with staples. Sample inventories, recording the batch number, individual sample numbers and the number of samples in each batch, accompanied samples sent to the laboratory.

During the MSA exploration programme, the bagged samples were stored in a locked core shed prior to dispatch to the laboratory. Coal and core from the CoAL managed exploration programme were stored in a secure refrigerated container on site before being dispatched to the laboratory every fortnight. The laboratory was provided with written instructions, in advance, regarding sample preparation and the specific test work required.

6.3.2 Sample Preparation

During the MSA managed programme, all samples were initially sent to the South African Bureau of Standards (SABS) laboratory in Secunda, Mpumalanga Province. The laboratory is accredited through the South African National Accreditation System (SANAS) and SABS/ISO/IEC 17025:2005. Due to long turnaround times for the reporting of results, CoAL relocated all unprocessed samples to Inspectorate M&L, which is also a SANAS accredited laboratory.

Since December 2008, all samples were sent to the CAM Analytical Laboratories (Pty) Ltd laboratory (CAM) in Polokwane, Limpopo Province. The laboratory is a joint venture between CoAL and Arcelor Mittal and is managed by Inspectorate. CAM is also an accredited laboratory under SANAS.

All analytical test work and associated sample preparation is preformed to internationally acceptable standards. All starnd proceduers are available on request.

In short, the following processes were followed by the laboratories for the preparation and analysis of slim core samples:

- Air dry samples received
- Determine the raw relative density (RD) of the sample
- Crush sample to -25mm and screen out the -0.5mm
- Preform a raw coal proximate analysis, calorific value (CV) and total Sulphur (S) on the +0.5mm and -0.5mm size fractions
- Analyse the +0.5mm to -25mm fraction for phosphorous (P_2O_5)
- Conduct float/sink analyses on the +0.5mm to -25mm size fraction at densities ranging from 1,30t/m^3 to 1.80t/m^3 in increments of 0.05t/m^3.
- Preform proximate analyses, CV, total sulphur and phosphorous for each float fraction and the sink product from the 1.80 RD fraction
- The float fractions at RD 1.30, 1.35, 1.40 and 1.45 the Free Swelling Index (FSI) and Roga Index was determined

Drop shatter tests and wet tumble tests are methods to simulate the breakage that occurs in coal processing, prior to classification (separation into different size fractions) and washing in the preparation plant. The process applies repeated dropping of lump coal to establish a RoM size description, followed by a wet tumbling phase where the RoM coal is tumbled in a drum with steel blocks and water to simulate the breakage, which occurs in pumping, cycloning, and screening phases in the preparation plant. The procedure is as follows

- Standard 20 drops of unbroken coal from two meters
- Dry tumble broken coal with 10 steel cubes for three minutes
- Wet tumble coal with 18 steel cubes (for a 50kg sample mass) for five minutes

Thereafter the resulting coal package was screened into a +0.25mm to -2mm, +2mm to -12.5mm, +12.5mm to -25mm and +25mm to -50mm size fractions. Each fraction was submitted for float/sink analyses. The float/sink analyses was performed on the following RD's (t/m^3); 1.35, 1.38, 1.40, 1.42, 1.45, 1.50, 1.60, 1.80, 2.00 and 2.30. Proximate analyses were performed on each float fraction.

6.4 Database Management

Coal uses SABLE Database™ for the storage of drill hole information and analytical results. SABLE provides the user to store data on a server onsite and off-site and the printing of hard copy logs for safe keeping. The database system has built in data verification tools and Sequel queries can be executed to do various validations. Typical validation of the SABLE Database package is as follows:

- "From-to" depths. Ensures there are no gaps or overlaps within sequentially logged borehole
- Standardised code for description fields to ensure standardisation of descriptions in logs
- Ensure end of hole correlates with down-hole survey depth
- Preforms various correlations and checks on cumulative wash tables

Various checks have been done on the dataset by reputable consultancies and they found no major discrepancies in the database.

6.5 QA/QC Analysis

Laboratories are required to calibrate their coal analytical equipment daily and is required to partake in round robin proficiency tests to ensure a high level of analytical accuracy. The laboratory manager verify all result reports and any inconsistencies or variations about the laboratory's specifications are re-analysed. CoAL has requested that the laboratories plot ash% versus CV curves for all samples. Any sample with a correlation outside a 10% deviation line is re-analysed.

Inspectorate undertakes the following measures to ensure accuracy of analytical results:

- 25% of all samples are analysed in duplicate, and any sample outside the tolerance levels are re-analysed
- They partake in monthly and quarterly proficiency tests
- They partake in monthly internal round robin tests
- A certified reference material is tested every shifts and result are evaluated
- A hidden duplicate is inserted in every batch of ten samples
- One in every 20 samples is screened at 212microns to confirm that the oversize is less than 95%
- The records of the validation methods and result are available for scrutiny

CoAL geologists also do random validations of the results by doing basic tests on cumulative results and testing the values with neighbouring drill holes and the seam characteristics.

6.6 Spatial Data

6.6.1 Survey Information

It cannot be confirmed what method Southern Sphere used to survey their drill holes. It can be accepted that they did use the services of a professional surveyor as most of the work was done before hand-held GPS systems become popular.

In the drilling campaigns managed by CoAL all drill holes were sited with a hand-held GPS. After the drilling was completed the collars were accurately surveyed using Leica™ GPS equipment. P. Matibe and Associates did the final survey, whose surveyors are registered with the South African Council for Professional and Technical Surveyors (PLATO).

A LIDAR survey has been flown over the Vele Colliery area providing elevation data of the topography with a 15cm vertical and 30cm horizontal accuracy.

VBKom is of the opinion that the survey methods used for the drill hole collars and the confidence in the topography is suitable for Coal Resource estimation with a high confidence in the spatial distribution of data points.

6.6.2 Data spacing & Distribution

Drill holes are variably spaced throughout the project area. Figure 6.6.1 provides a diagram that indicates the distribution of drill hole data in the colliery area. The distances between the drill holes in certain areas is less that 250m and in other areas it can go up to 500m. The areas were the drilling is more closely spaced is the areas were the first mining operations started.

A correlation cross of closely spaced drill holes were drilled to determine the drill spacing for long, medium and short term planning (Figure 6.6.1). The results were as follows:

- For long term planning 500m is adequate for structural continuity
- For long term planning 1000m is adequate for quality continuity

Therefore, the current data point spacing is adequate to prove continuity of the deposit structure and quality and to be used in geological modelling and subsequent Coal Resource estimation.

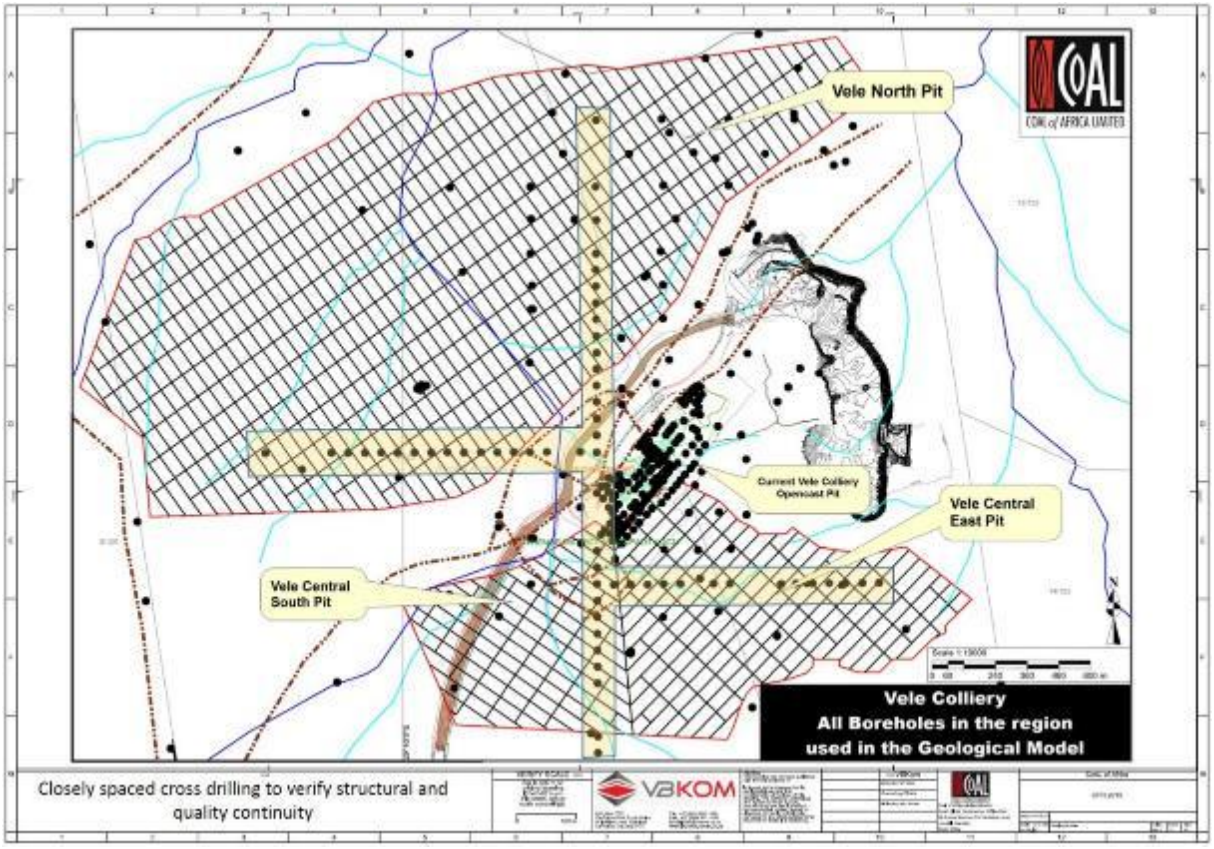


Figure 6.6.1: Closely spaced cross drilling to investigate structural and quality continuity

6.7 Data Verification, Audits and Reviews

The dataset has been subjected to various audits and reviews.

During the Mineral Corporation's Coal Resource Estimation process in 2010, the datasets supplied to the Mineral Corporation by CoAL were checked for any discrepancies in drill hole collar coordinates, seam depths, sample intervals and end-of hole depths. Approximately 10% of entries were checked against the original laboratory reports and no significant differences were found.

Venmyn Rand (Venmyn Deloitte) has randomly selected 10 drill hole logs and associated laboratory certificates with the Access database and no errors were found.

7 Coal Resource Estimates

7.1 Estimation and Modelling Techniques

7.1.1 Coal Deposit Modelling

Over the existence of the project, various coal deposit models have been prepared for the Vele Colliery. In September 2010, The Mineral Corporation constructed a 3D Minex ™ digital model.

Mr J Sparrow, a competent geologist, prepared the current model used for resource estimation and mine planning and designs. Mr Sparrow is CoAL's chief consulting geologist and has been involved in the project since 2011. The latest geological model was created in Minex ™ software. The model incorporates all available historical and recent drilling and other geological information up to January 2015. The model is based on the Mineral Corporation's model of 2010, with minor changes based on geological information collected subsequently to the completion of the Mineral Corporation's model. From previous audits and reviews by reputable independent consultants, there is a high level of confidence in the geological model.

The upper surface of the model is a digital terrain model (DTM) based on the LIDAR survey conducted with a high level of spatial accuracy. Figure 7.1.1 provides the topography as a DTM. Dolerite dykes and fault planes were incorporated in the 3D structural model. The structural model assisted in identifying areas for opencast mining and underground mining.

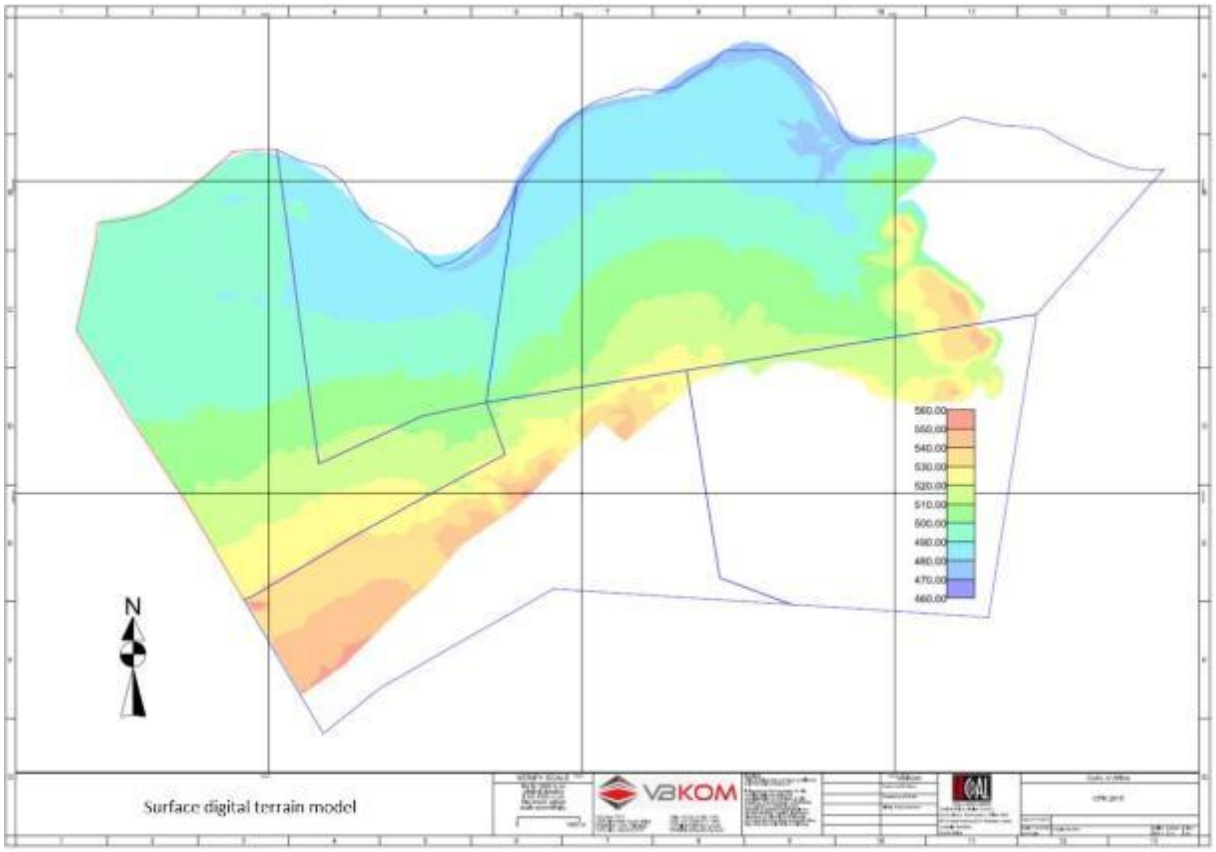


Figure 7.1.1: DTM used as the upper surface (topography) for geological modelling

Both the physical and quality parameters of the various seams were modelled. Grids with a 25m mesh were estimated using Minex's™ general-purpose gridding function using a 3km search radius. The model of the physical parameters of the seam was cut along any significant structures but the quality data was modelled across these structures. All the physical and quality parameters modelled was plotted and inspected to ensure coherence to the geological interpretation and understanding.

7.1.2 Structural Interpretation

The physical parameters namely elevation (asml), and depth from surface for the floor and roof of each seam was modelled. The coal seam thickness was also modelled and forms the basis for the calculation of the Coal Resource volumes. Only the modelling of the seam floor elevation, depth from surface and seam thickness will be discussed as it has the biggest influence on the mine design criteria and Coal Resource estimation.

7.1.2.1 Seam Floor Elevation

The Top Lower, Middle, Bottom Upper and Bottom Lower Seam floor elevations were modelled to identify any sudden changes in elevation, which indicates the presence of faulting, as well as to obtain the general dip of the deposit. Only the seam floor elevation of the Bottom Lower Seam is presented in Figure 7.1.2. The Figure indicates the effect faulting had on the area by sub dividing the deposit into various block with different elevations. The faulting was also a driver in discriminating between opencast mining blocks and underground mining blocks.

The seam floor elevation plot also indicates that the coal generally dips to the north and sub-outcrops in the south in the Vele Colliery area.

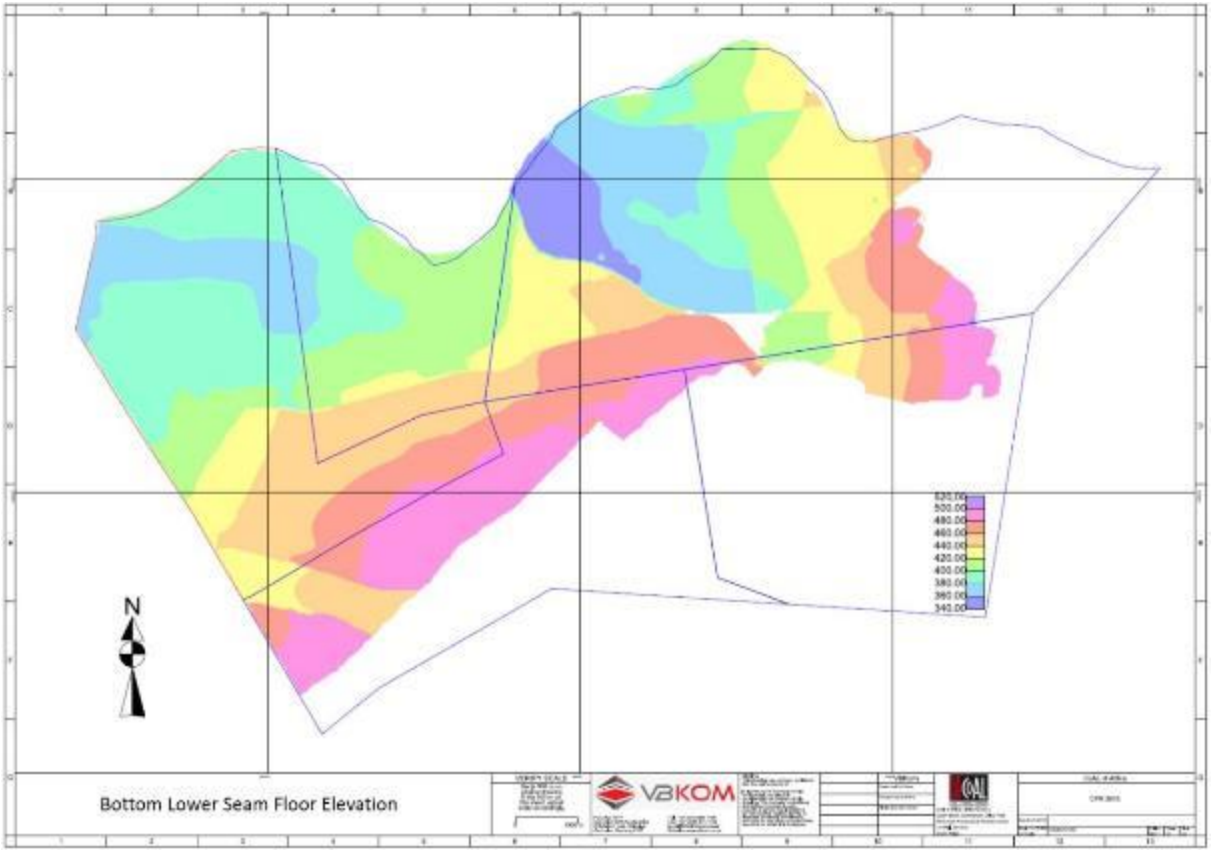


Figure 7.1.2: Rainbow plot of the Bottom Lower Seam floor elevation

7.1.2.2 Depth from surface

The seam depth from surface has an impact on the economic viability of the extraction of the coal seams. For underground mines, the depth from surface also plays a critical role in the design criteria to safely extract the coal. Figure 7.1.3 to Figure 7.1.6 provides plots of the depth below surface of the various seams. The plots indicate the areas were the coal could be extracted through opencast mining and underground mining. For the underground mining, only the Bottom Lower Seam is targeted.

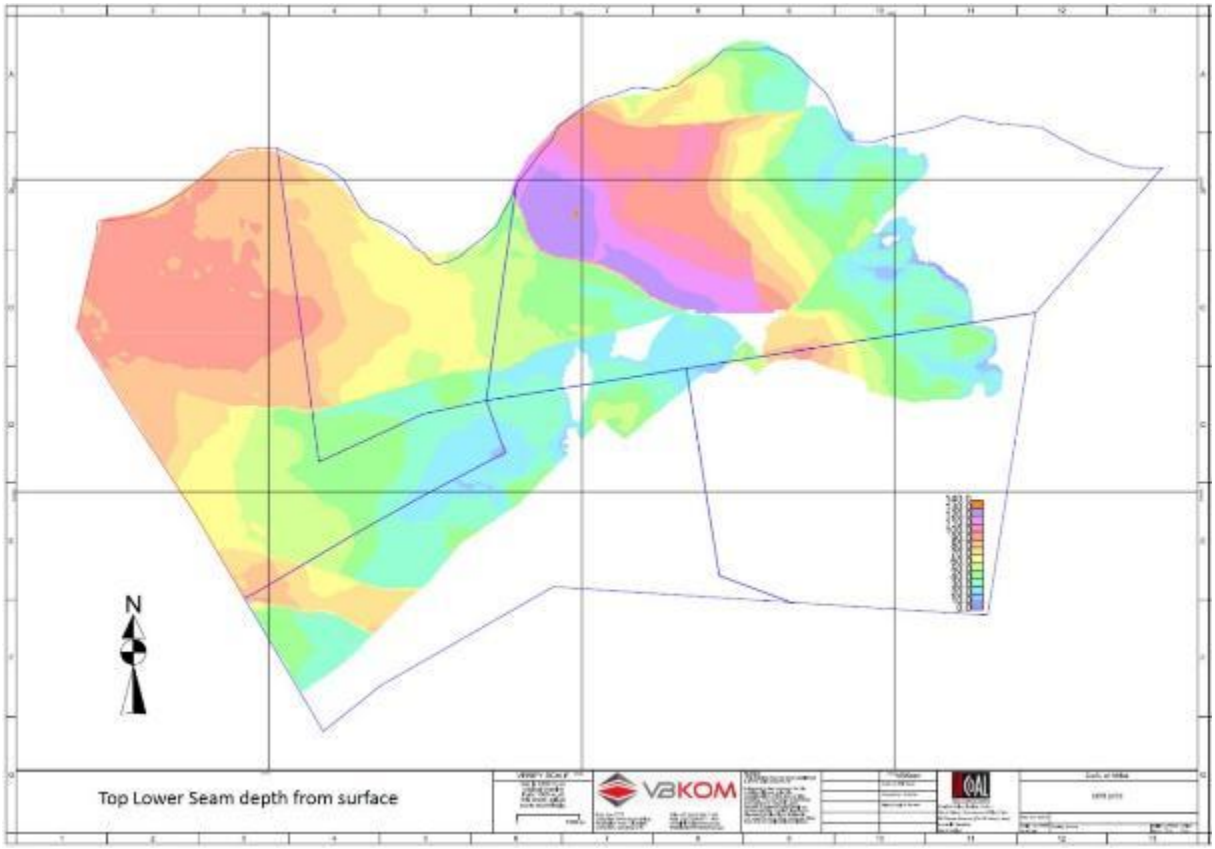


Figure 7.1.3: Rainbow plot of the Top Lower Seam depth from surface

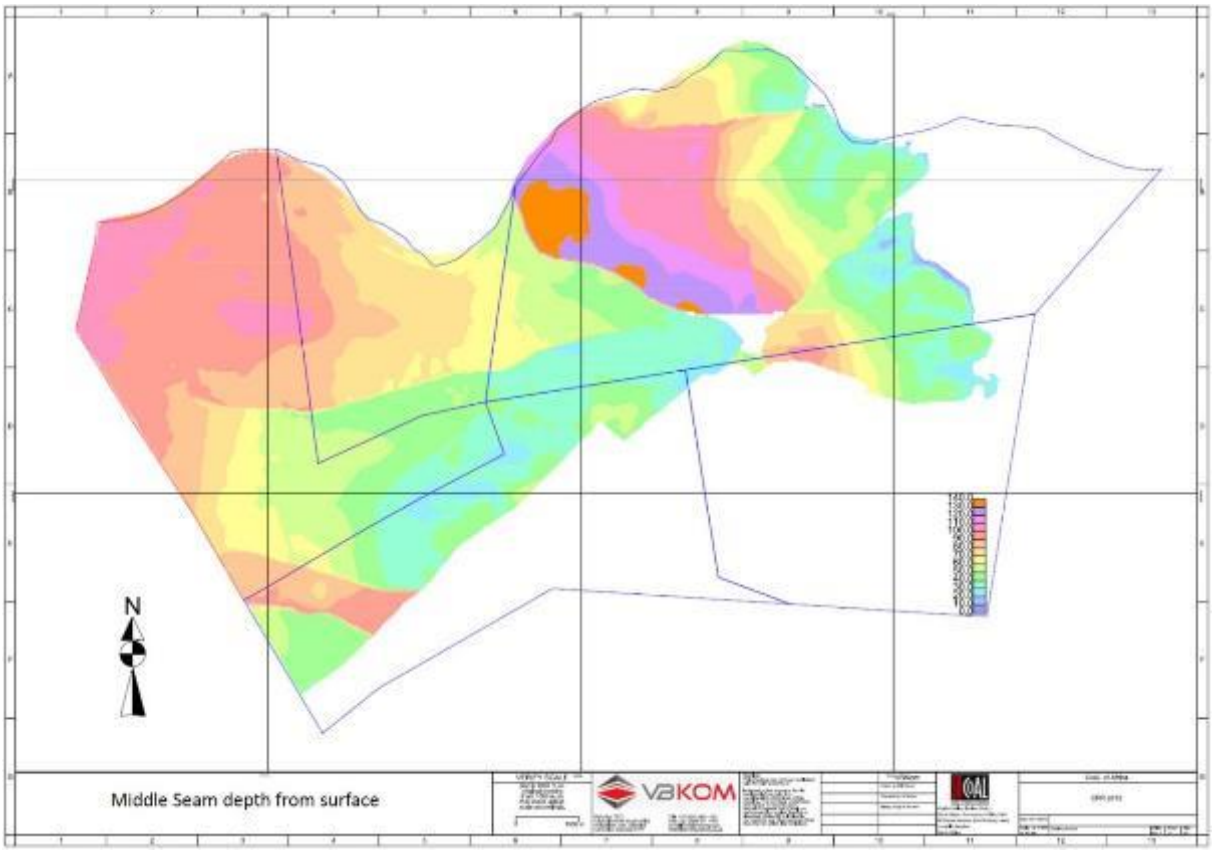


Figure 7.1.4: Rainbow plot of the Middle Seam depth from surface

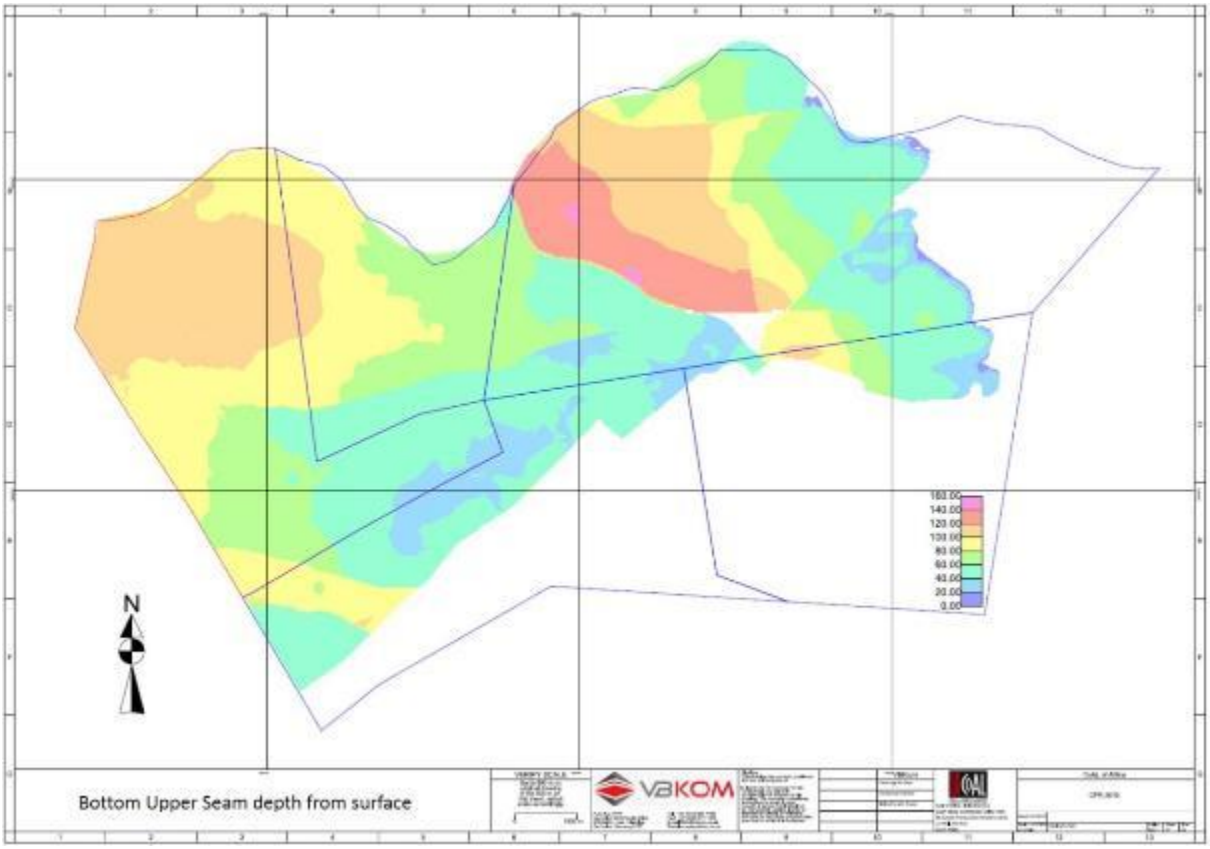


Figure 7.1.5: Rainbow plot of the Bottom Upper Seam from surface

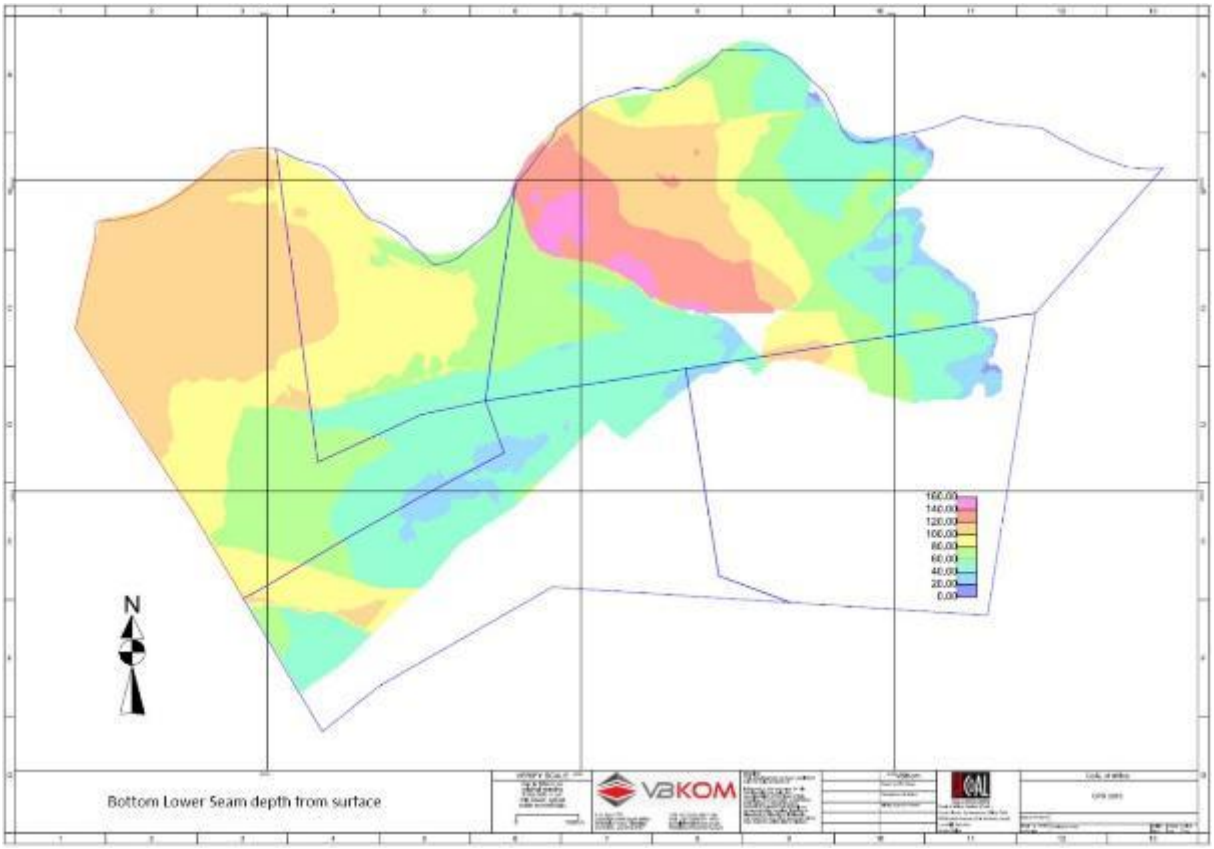


Figure 7.1.6: Rainbow plot of the Bottom Lower Seam depth below surface

7.1.3 Quality Model

The quality results of the raw proximate analyses (ash, volatiles, fixed carbon, moisture content and sulphur) and the raw CV values (from combustion tests), for each of the Top Lower, Middle, Bottom Upper and Bottom Lower seams were modelled. The results of the modelling is presented in Figure 7.1.3 to Figure 7.1.12.

The coal was also analysed for its coking characteristics, but these were not modelled. The metallurgical test work indicated that the vitrinite (one of the biggest components of coals coking characteristics) reports to the fine fractions, which exhibits coking characteristics.

The full washabilities are currently not used to model the yield for various products. This is due to the amount of high value coal that reports to the -0.5mm size fraction, which is discarded in the float/sink analyses. The yields in the model is based on a factorisation exercise based on the information gathered from the metallurgical test work. The yields are presented in Figure 7.1.7 to Figure 7.1.22. The presented yield is a composite yield for the 10% ash product and the 5500kcal (NAR) product that is the business base case of the PMP.

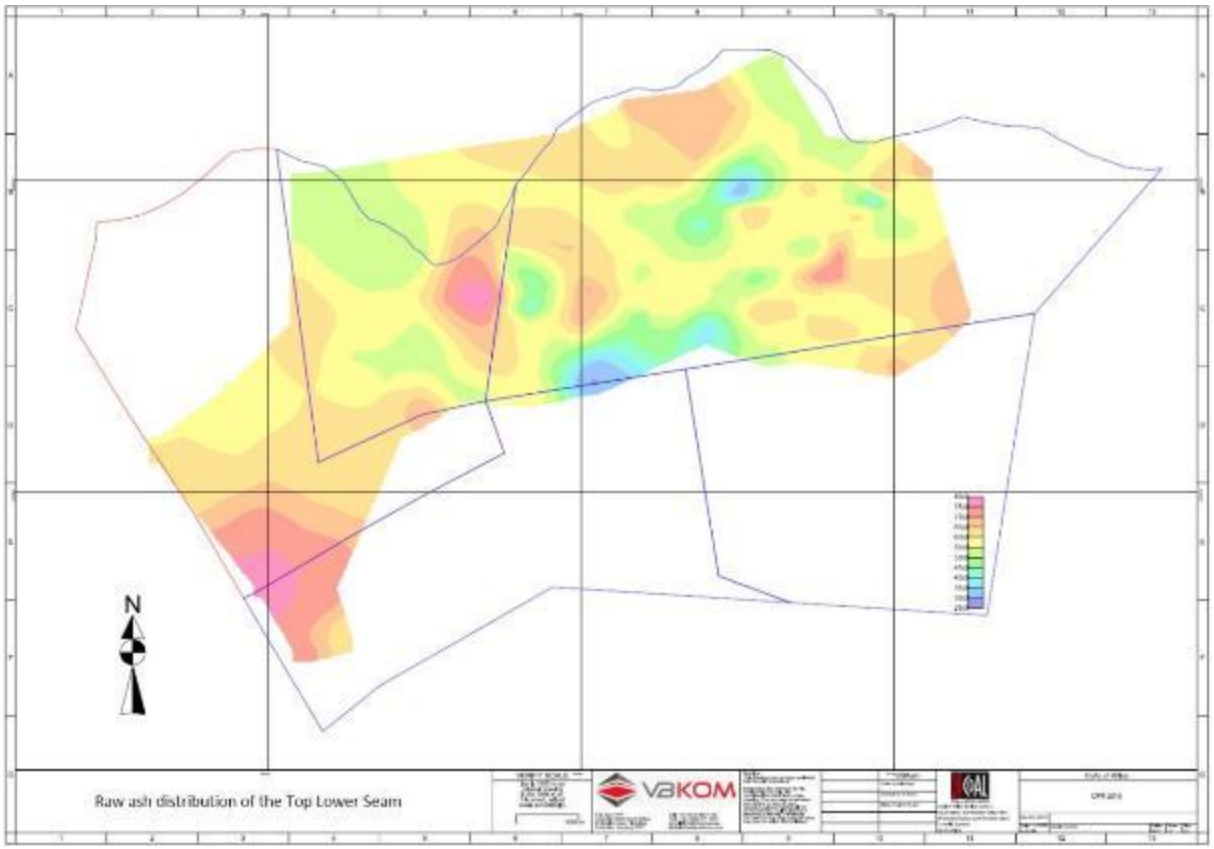


Figure 7.1.7: Raw ash distribution of the Top Lower Seam

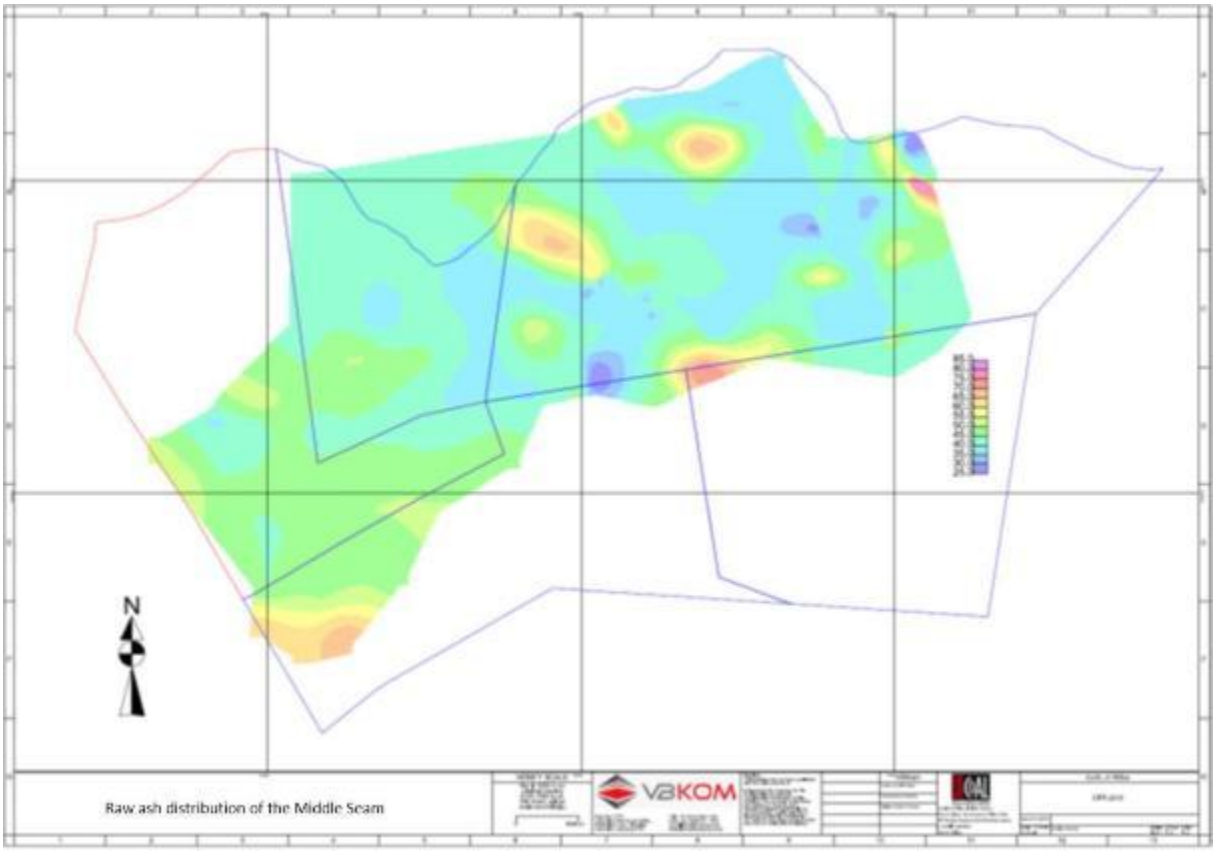


Figure 7.1.8: Raw ash distribution for the Middle Seam

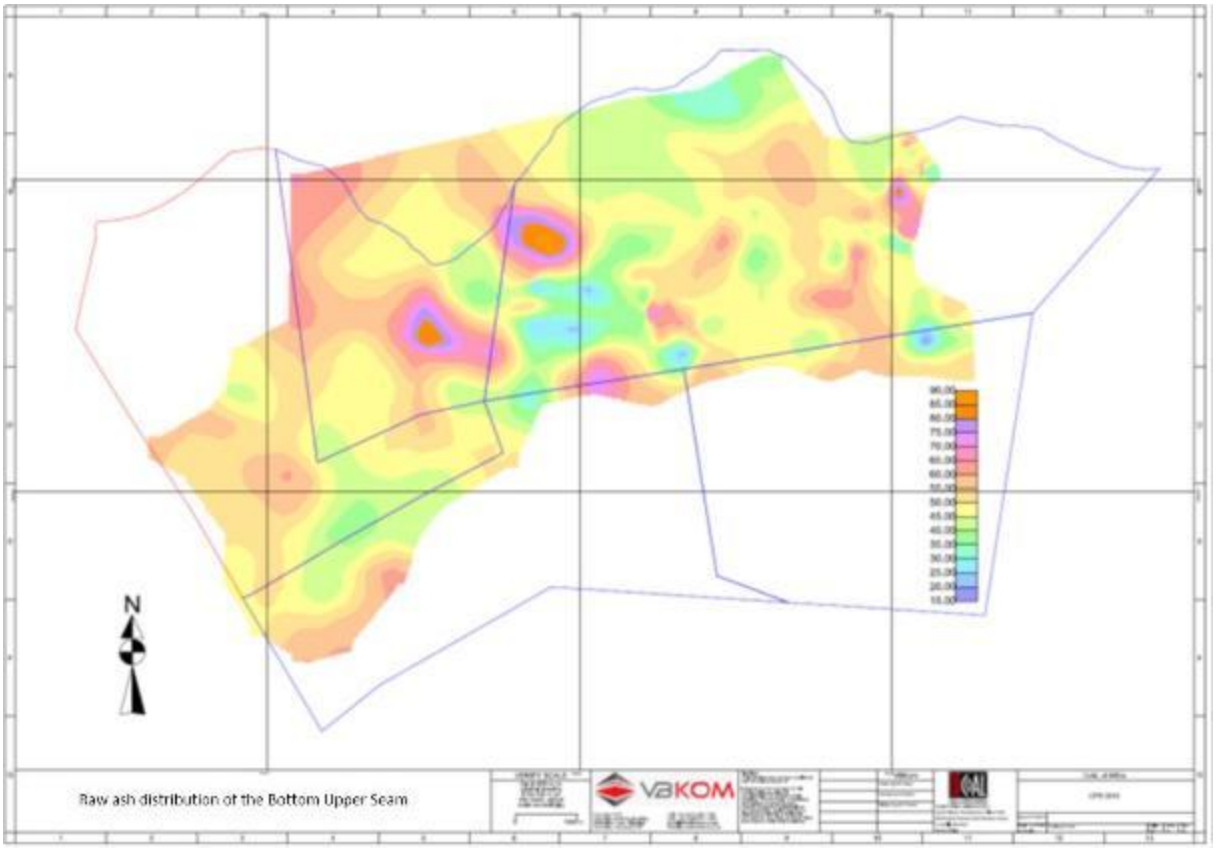


Figure 7.1.9: Raw ash distribution for the Bottom Upper Seam

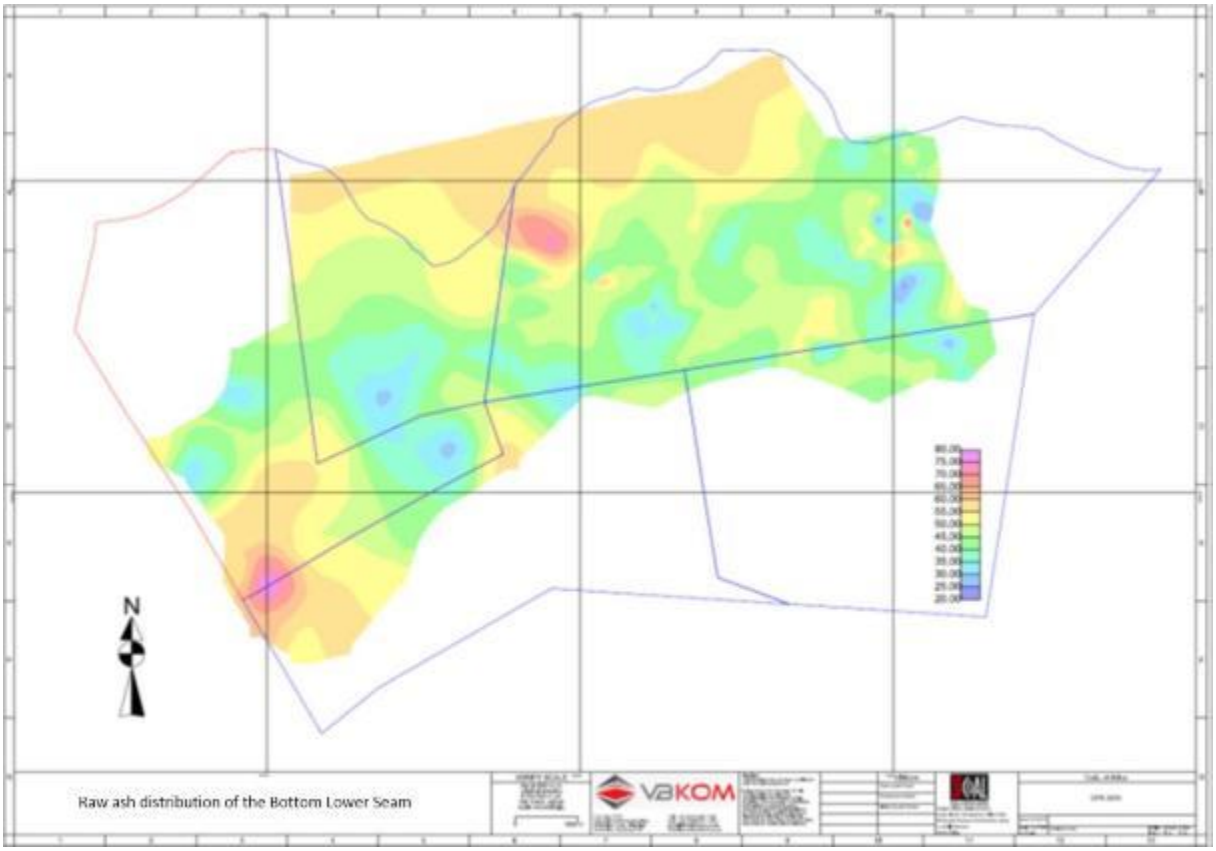


Figure 7.1.10: Raw ash distribution of the Bottom Lower Seam

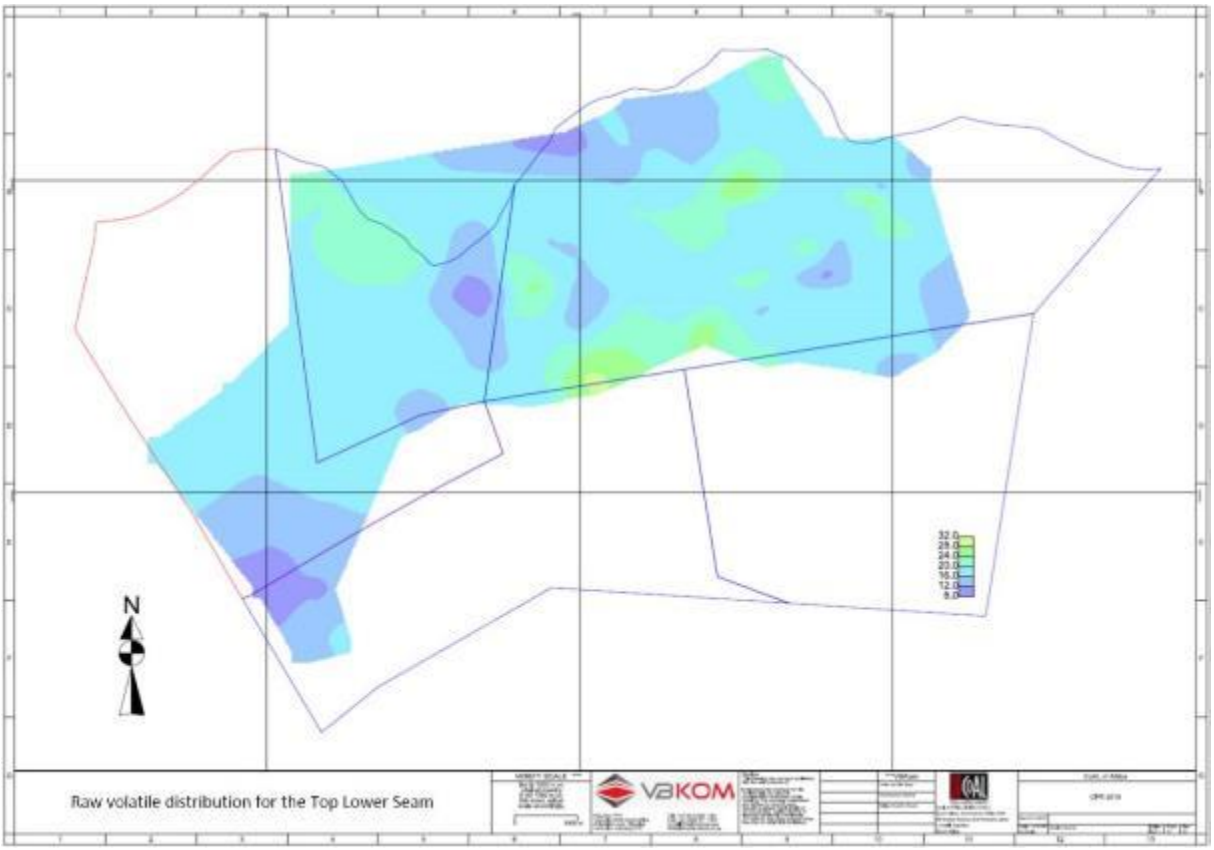


Figure 7.1.11: Raw volatile distribution for the Top Lower Seam

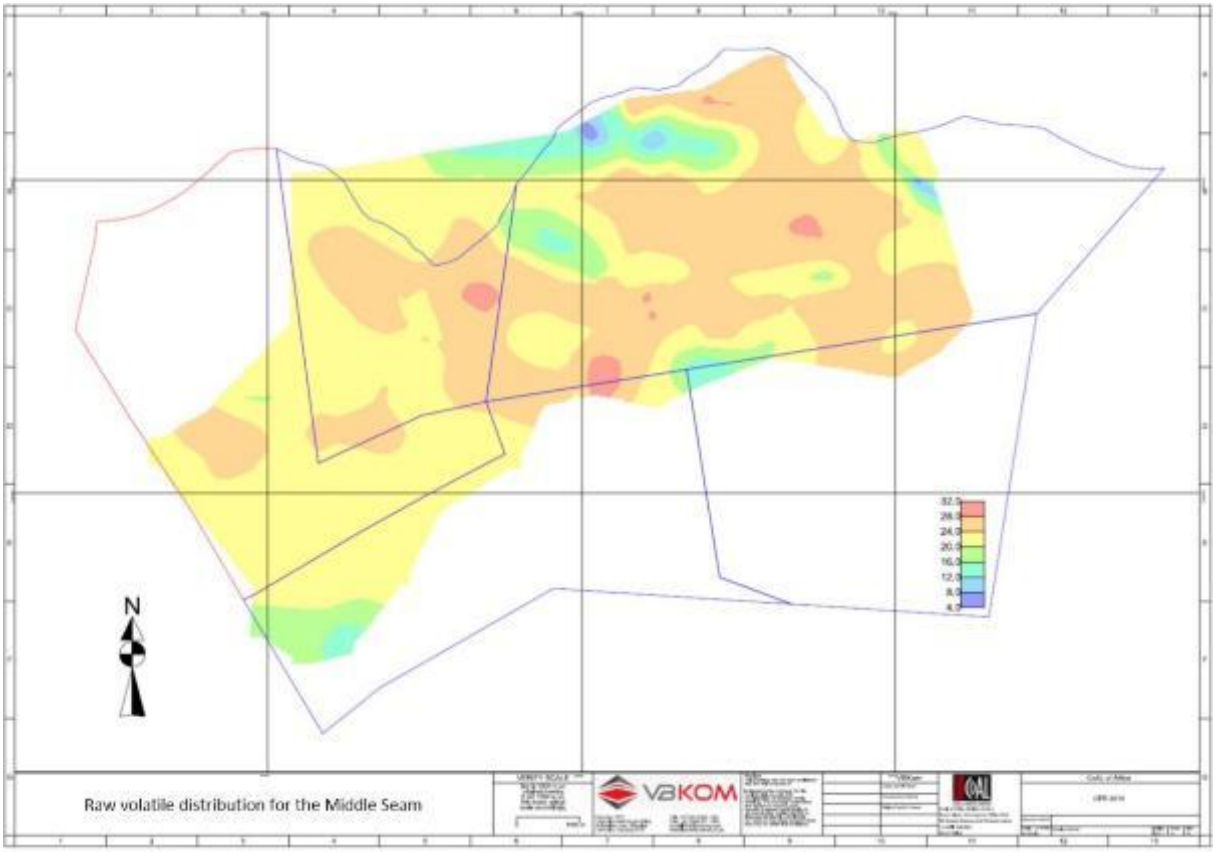


Figure 7.1.12: Raw volatile distribution for the Middle Seam

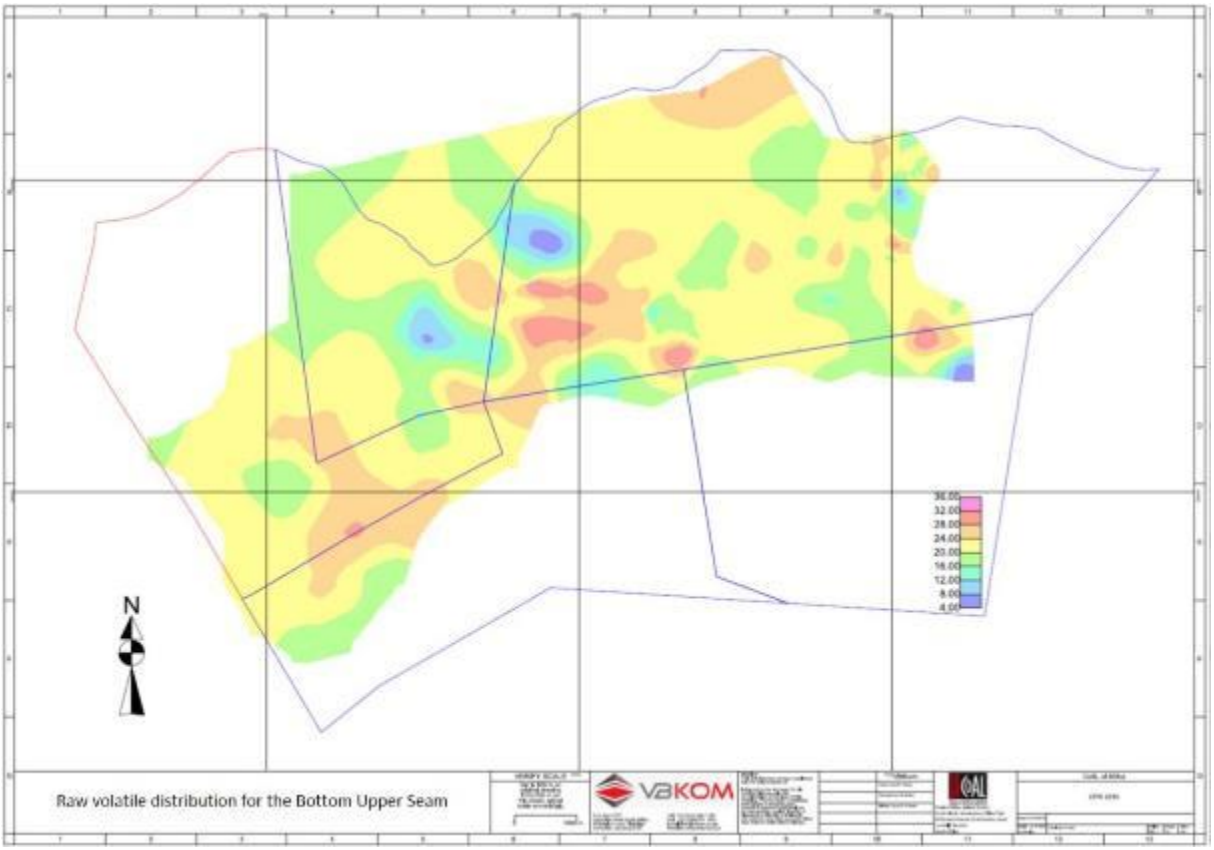


Figure 7.1.13: Raw volatile distribution for the Bottom Upper Seam

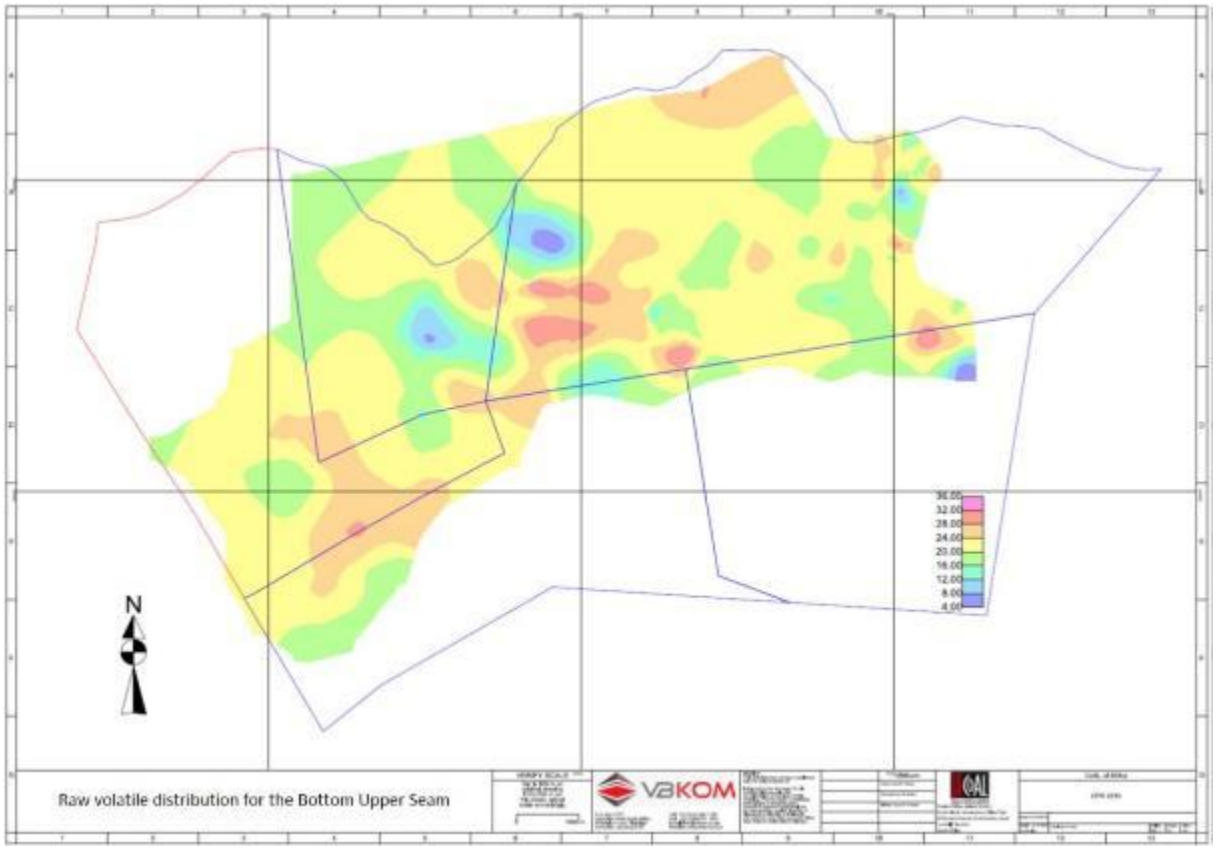


Figure 7.1.14: Raw volatile distribution for the Bottom Lower Seam

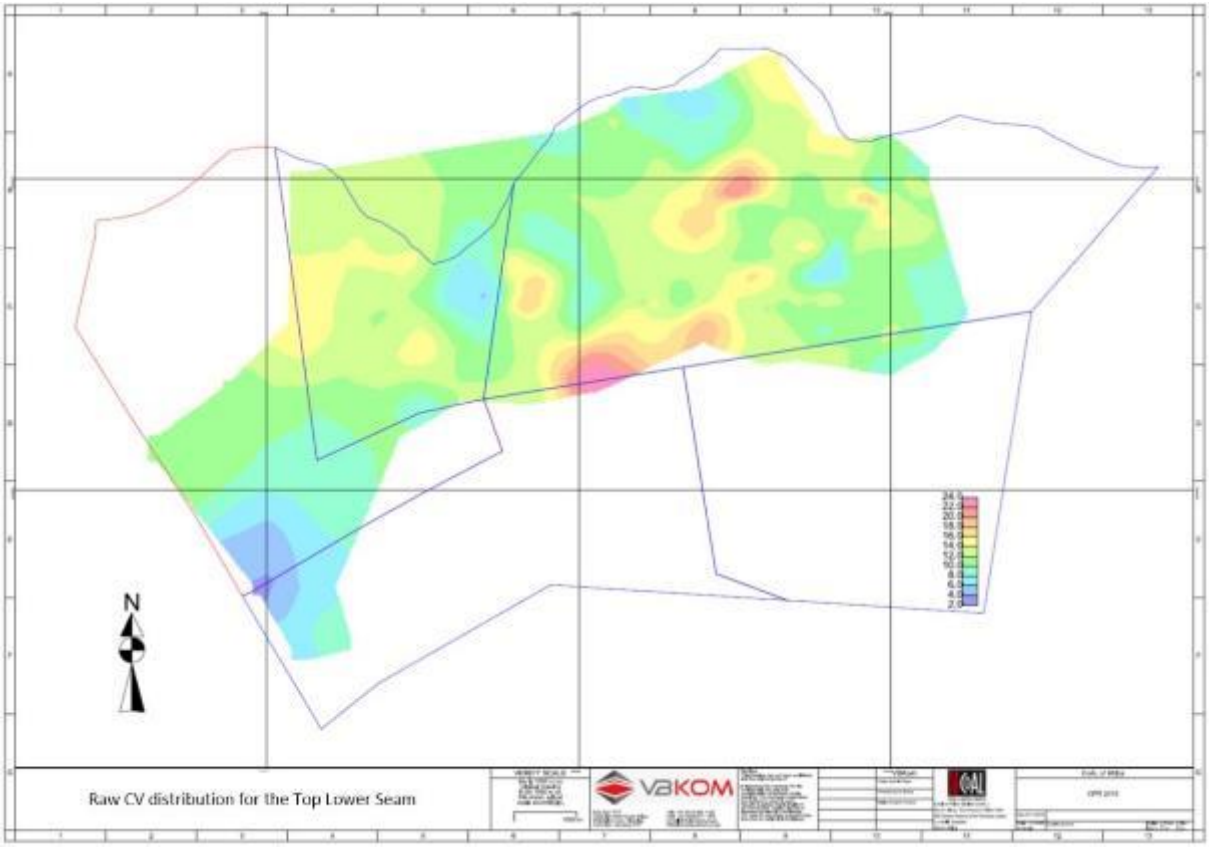


Figure 7.1.15: Raw CV distribution for the Top Lower Seam

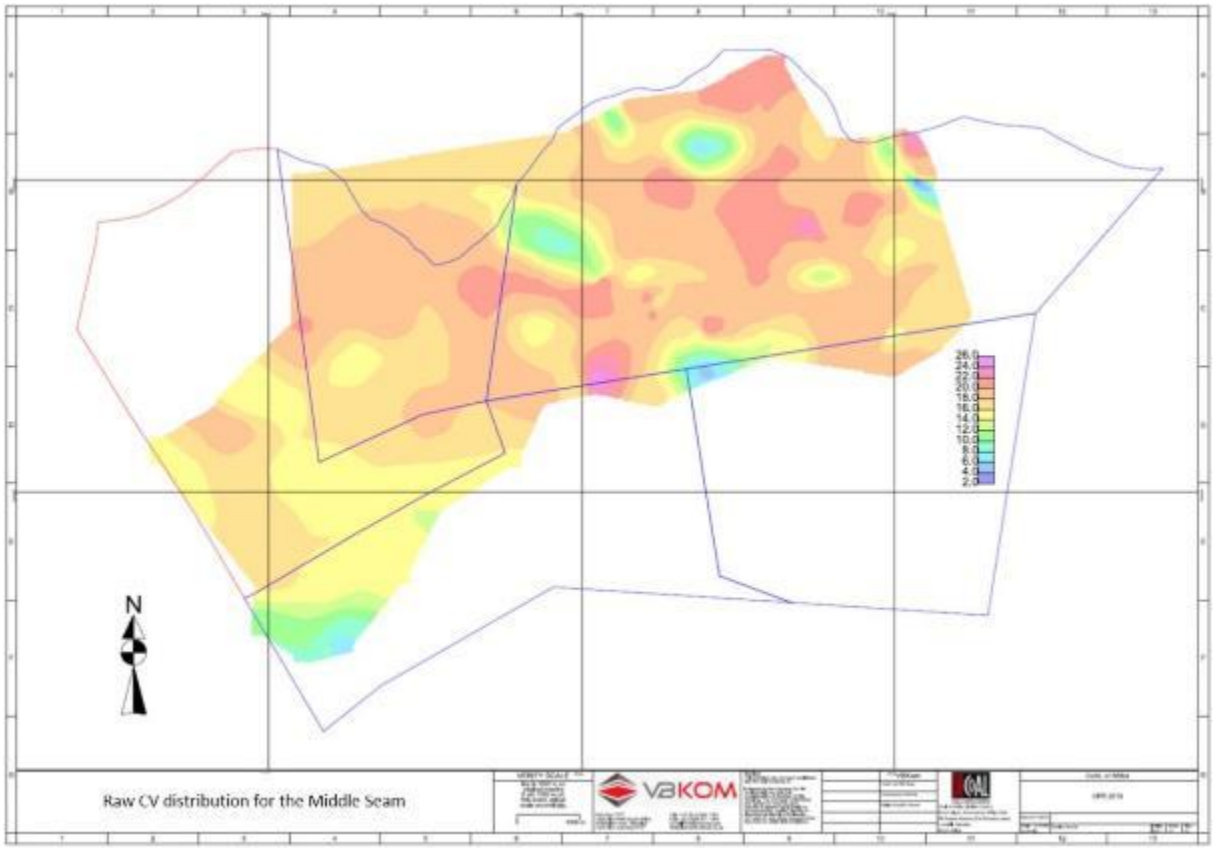


Figure 7.1.16: Raw CV distribution for the Middle Seam

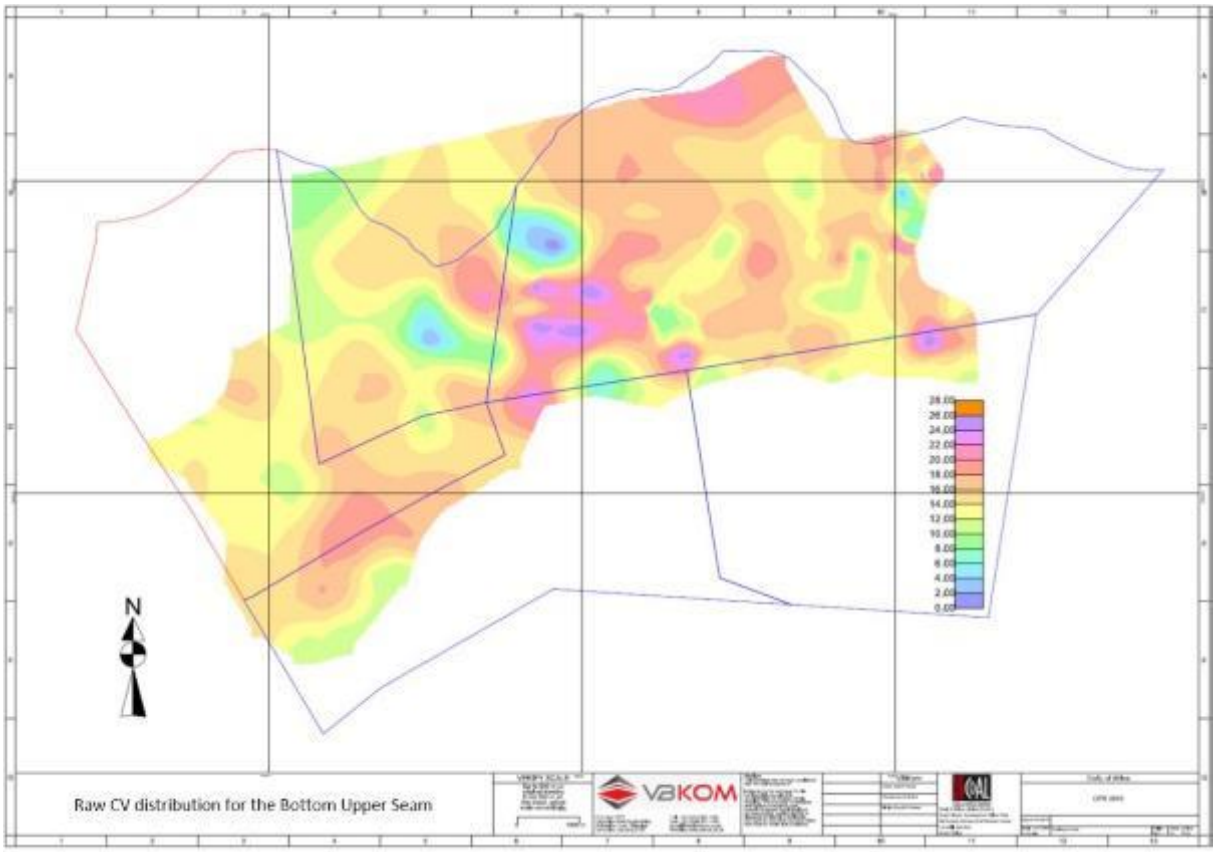


Figure 7.1.17: Raw CV distribution for the Bottom Upper Seam

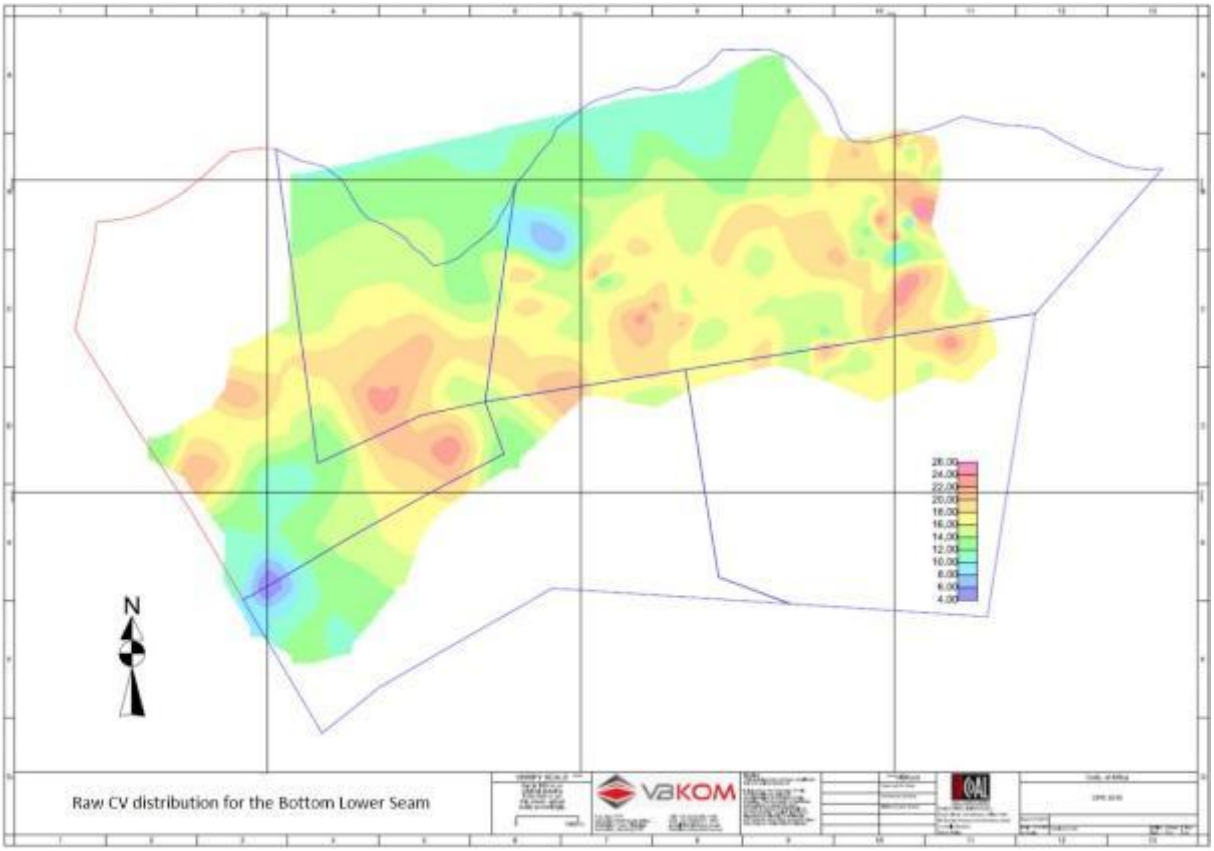


Figure 7.1.18: Raw CV distribution for the Bottom Lower Seam

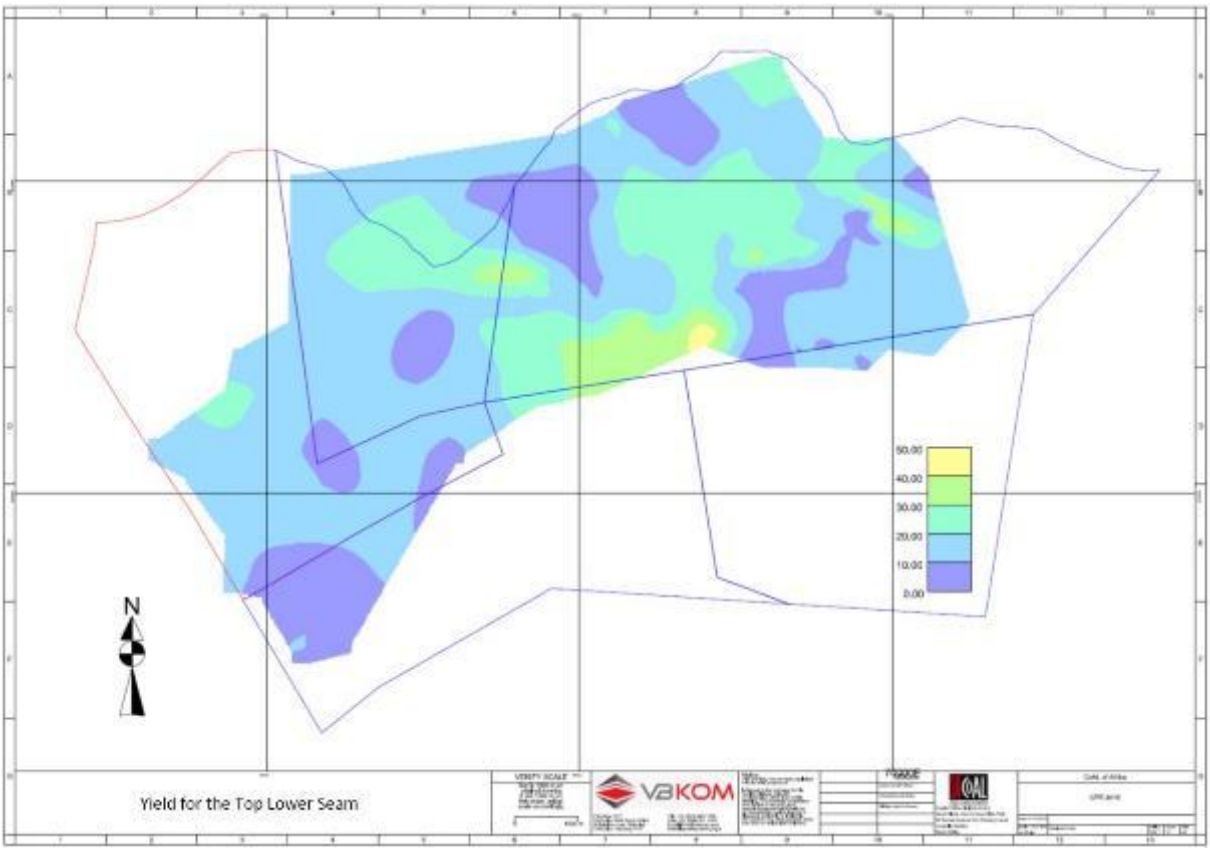


Figure 7.1.19: Yield distribution for the Top Lower Seam based on metallurgical test work

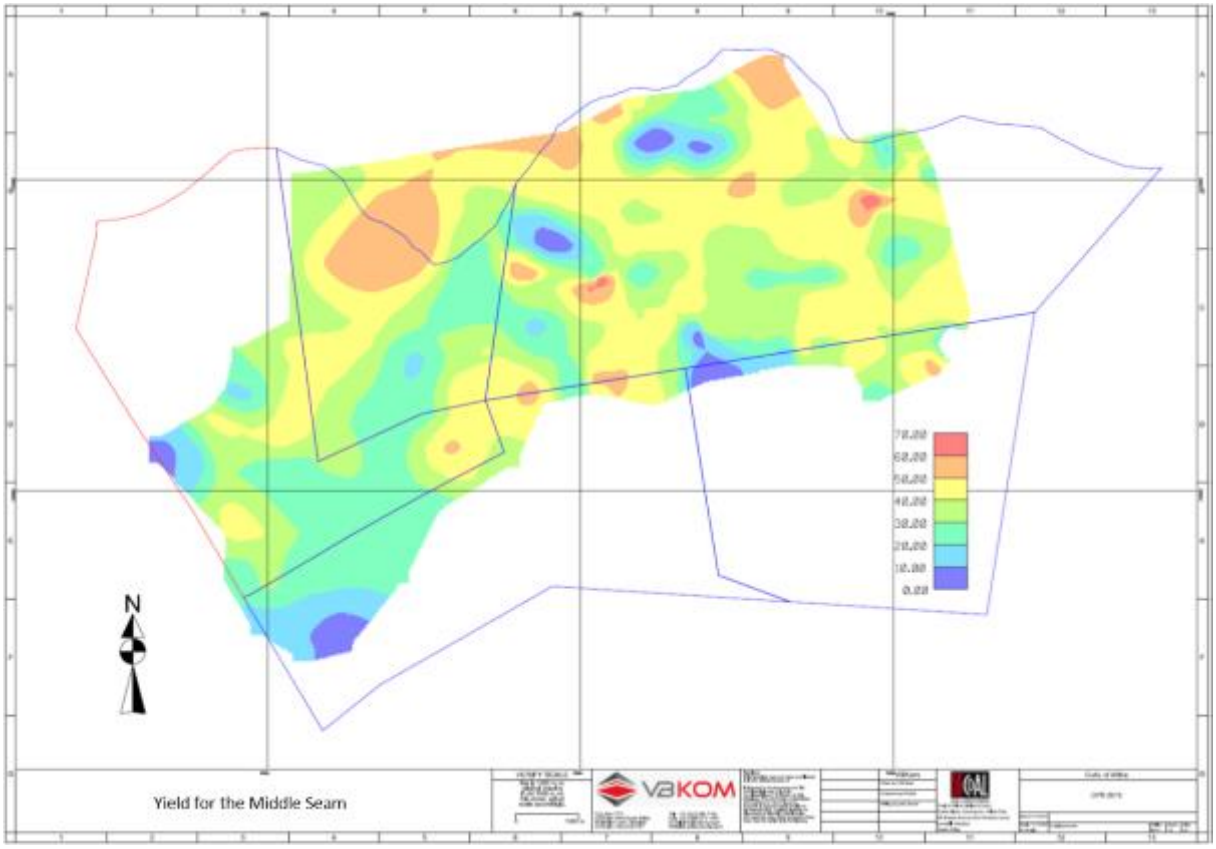


Figure 7.1.20: Yield distribution for the Middle Seam based on metallurgical test work

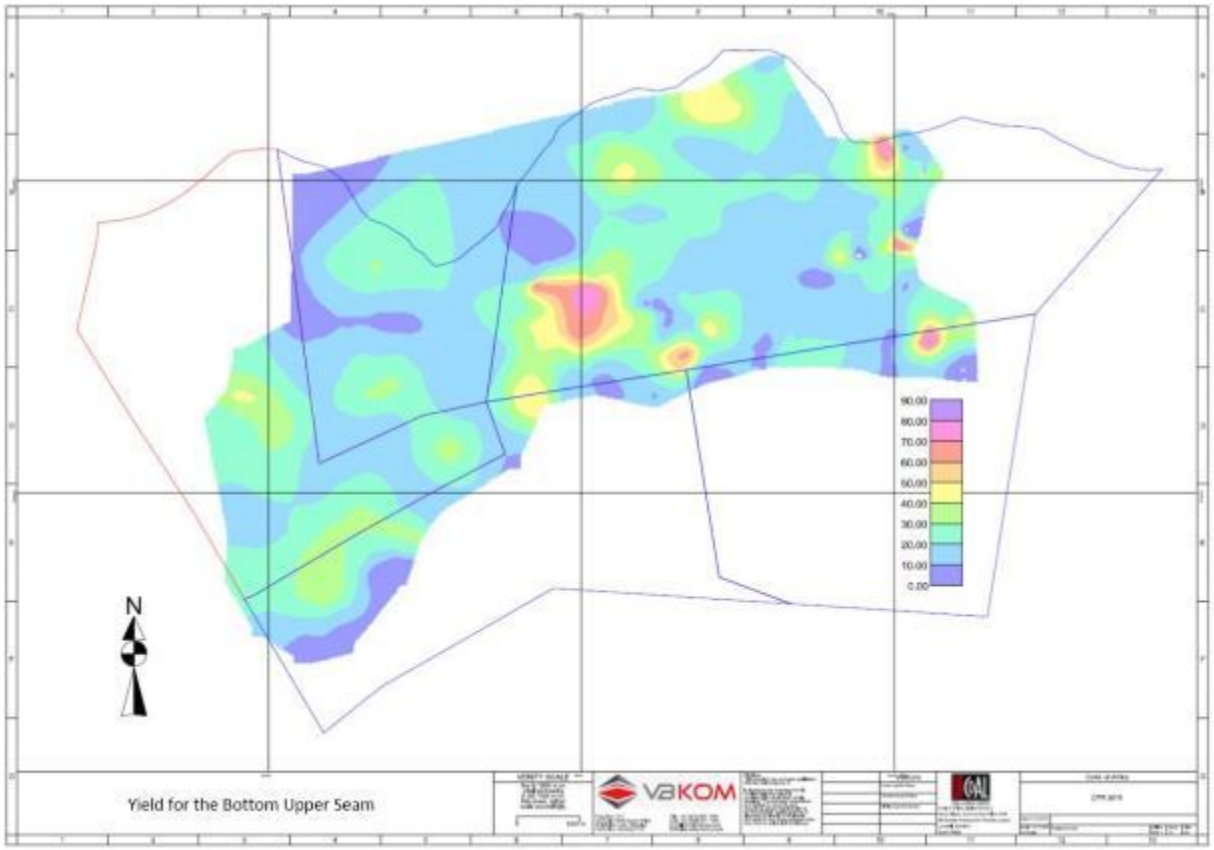


Figure 7.1.21: Yield distribution for the Bottom Upper Seam based on metallurgical test work

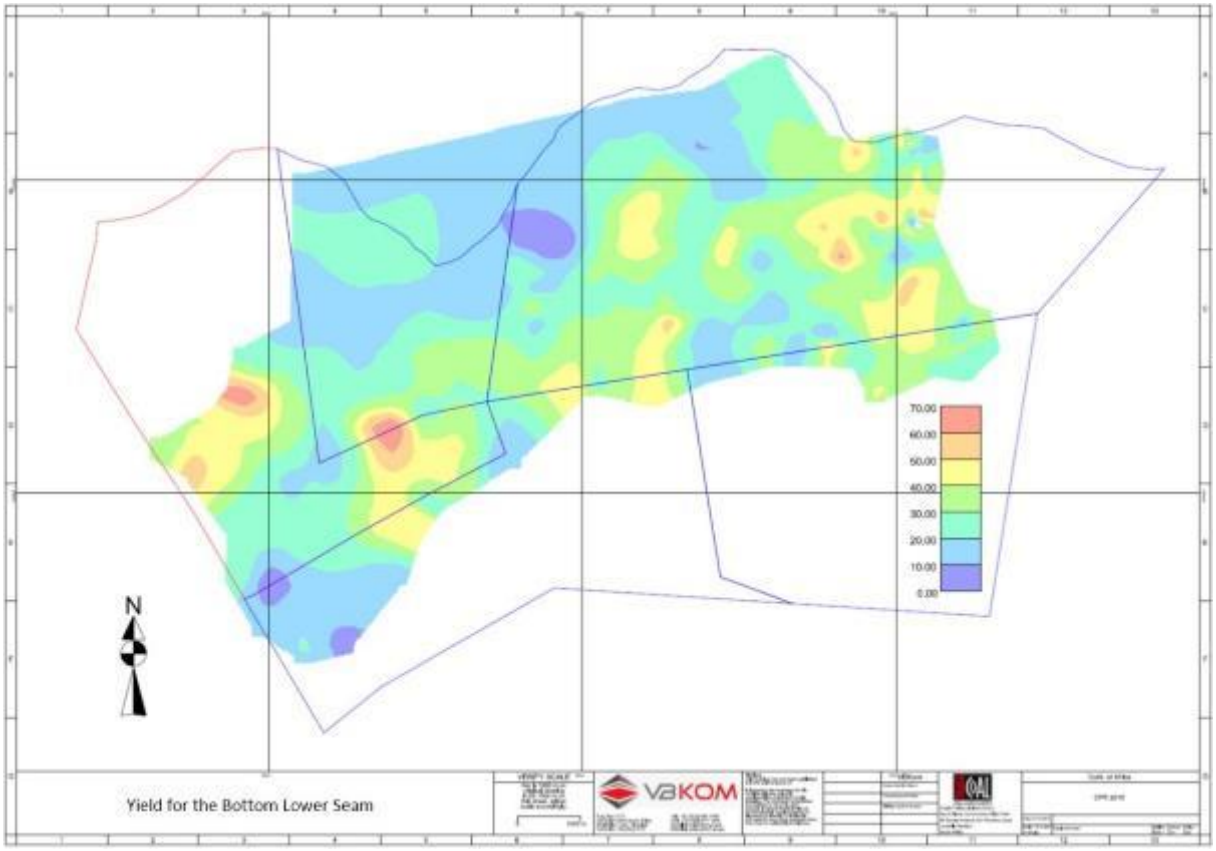


Figure 7.1.22: Yield distribution for the Bottom Lower Seam based on metallurgical test work

7.1.4 Cut-offs Applied in the Calculation of Resources

The following cut-offs were applied before the gross tonnes in situ (GTIS) were calculated for the Vele Colliery:

- The coal was reported separately for the mining right and prospecting right respectively
- The Coal Resource Blocks were limited to the Mineral Right boundaries
- The Coal Resources are limited to the seam sub-crop
- Coal Resource blocks are limited to the extrapolation limits in the model
- Boundary pillars of 50m wide on either side of geological structures and dykes
- Coal Resource blocks are limited to the base of oxidation
- Coal Resource blocks are limited to the 100m year flood line for the Limpopo River
- A seam thickness cut-off of 0.5m are applied
- Volatiles less than 18% (dry ash free) to ensure devolatilised coal was excluded

The following cut-off was applied to calculate total tonnes in situ (TTIS):

- Geological losses (confidence in structural continuity and oxidation profiles) of 10%, 15% and 20% are applied to Measured, Indicated and Inferred Coal Resources respectively.

The following cut-off was applied to calculate mineable tonnes in situ (MTIS) resources:

- A minimum seam height of 1.4m and a maximum seam height of 4.5m have been applied to the Bottom Lower Seam for the underground resources

7.2 Coal Resource Classification Criteria

The first Coal Resource classification was based on the spacing between points of observation (point with structural and / or quality data). This method stated that points of observation spaced at 500m are Measured Resources, Indicated Resources were spaced at 1000m and Inferred Resources the spacing was 3km.

In order to bring the Coal Resource statement in line with the guidelines of the JORC Code 2012 a correlation cross was drilled to determine the optimal spacing between drill holes to determine lateral continuity. It was determined that 500m is sufficient for structural estimation and 1000m for quality estimations. No variography was done, but resource estimation were done at different grid spacing, which indicated little change to the resource tonnage and quality within the advised spacing. This indicates that the current classification used by Vele Colliery is a conservative approach and is acceptable for the current Resource Reporting cycle.

Other criteria was also considered for the Coal Resource Classification criteria, i.e. confidence in drill hole position, confidence in coal analyses and confidence in structural interpretation of a drill hole.

Figure 7.2.1 provides the Resource Classification for the Vele Colliery area.

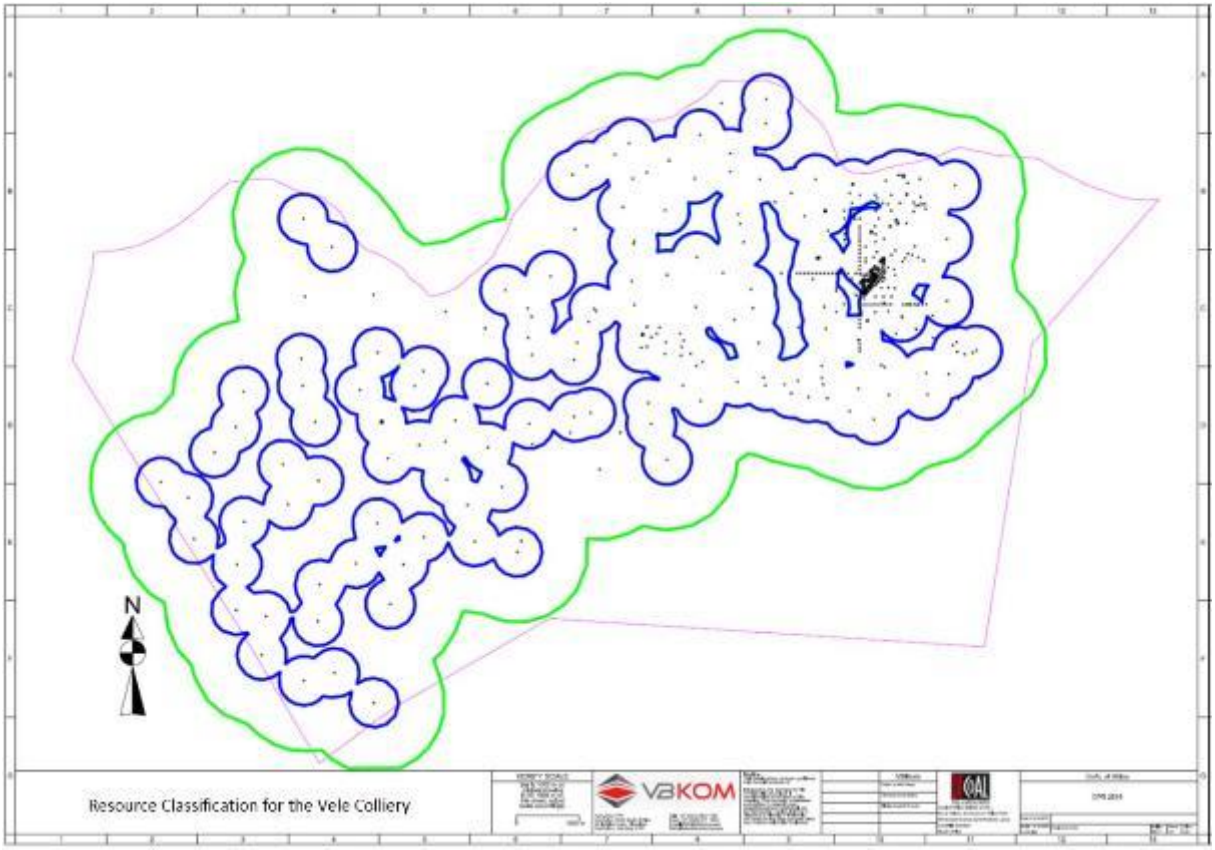


Figure 7.2.1: Resource classification of the Vele Colliery. Areas within the Blue is categorised as Measured Coal Resources and areas outside the blue and inside the green is categorised as Indicated Coal Resources

7.3 Reasonable and Realistic Prospects for Eventual Economic Extraction

Mining, Processing and Environmental factors as per the studies discussed under Technical studies have been applied to determine the reasonable and realistic prospects for eventual economic extraction. No resources were excluded based on these criteria.

7.4 Coal Resource Statement

The updated Coal Resource statement is reported in two statements. The first Coal Resource statement provides only the TTIS based on the 0.5m seam thickness cut-off. The second statement reports the MTIS resource based on the minimum seam thickness of 1.4m and the maximum seam thickness of 4.5m (theoretical mining height) for the underground resources.

Table 7.4.1: Coal Resource Statement for the Vele Colliery at 30 November 2015. Resource reported as TTIS (based on 0.5m cut-off)

Mineral Right	Resource Category	Seam	Avg width (m)	Coal Raw RD (t\m³)	Gross tonnes Insitu (GTIS) (Mt) (ad)	Geol. losses (%)	Total Tonnes in situ (TTIS) (Mt) (ad)	Net Attributable to CoAL (TTIS) (Mt) (ad)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulp (%)	Inherent Moist (%)
Mining Right	Measured	Top Lower	1.65	1.87	11.65	10%	10.48		12.00	58.55	17.90	21.58	2.02	1.97
		Middle	1.11	1.68	12.77	10%	11.61		18.19	42.14	23.62	32.56	2.88	1.68
		Bottom Upper	2.14	1.80	37.55	10%	34.14		14.05	52.38	20.08	25.85	1.58	1.69
		Bottom Lower	3.95	1.72	78.60	10%	71.46		16.62	45.27	22.46	30.74	1.66	1.53
	Total Measured		**8.85**	**1.75**	**140.58**	**10%**	**126.52**	**126.52**	**15.69**	**47.99**	**21.55**	**28.84**	**1.78**	**1.62**
	Indicated	Top Lower	1.66	1.90	69.42	15%	59.01		11.41	60.10	17.13	20.79	2.05	1.98
		Middle	1.07	1.72	39.40	15%	33.49		17.38	44.22	23.00	31.04	2.82	1.74
		Bottom Upper	2.05	1.79	83.71	15%	71.15		14.71	50.94	20.80	26.61	1.61	1.65
		Bottom Lower	3.65	1.76	164.39	15%	139.73		15.51	48.19	21.59	28.74	1.54	1.48
	Total Indicated		**8.43**	**1.79**	**356.92**	**15%**	**303.39**	**303.39**	**14.73**	**50.71**	**20.69**	**26.95**	**1.80**	**1.65**
	Inferred	Top Lower	1.59	1.86	45.31	20%	36.25		11.88	59.18	17.82	21.05	2.19	1.95
		Middle	1.05	1.69	22.77	20%	18.22		17.65	43.60	23.53	31.11	2.23	1.76
		Bottom Upper	1.98	1.78	44.91	20%	35.93		14.30	51.92	20.60	25.82	1.68	1.66
		Bottom Lower	3.54	1.75	54.95	20%	43.96		15.56	48.05	21.66	28.83	1.57	1.46
	Total Inferred		**8.16**	**1.78**	**167.93**	**20%**	**134.35**	**134.35**	**14.51**	**51.48**	**20.59**	**26.24**	**1.86**	**1.69**
	Total MR	**All**	**8.45**	**1.78**	**665.43**	**15%**	**564.25**	**562.25**	**14.88**	**50.33**	**20.85**	**27.17**	**1.81**	**1.65**

Mineral Right	Resource Category	Seam	Avg width (m)	Coal Raw RD (t\m³)	Gross tonnes Insitu (GTIS) (Mt) (ad)	Geol. losses (%)	Total Tonnes in situ (TTIS) (Mt) (ad)	Net Attributable to CoAL (TTIS) (Mt) (ad)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulp (%)	Inherent Moist (%)
Prospecting Right	Measured	Top Lower												
		Middle												
		Bottom Upper	2.22	1.77	2.509	10%	2.258		14.05	52.38	20.08	25.85	1.58	1.69
		Bottom Lower	4.49	1.78	5.081	10%	4.573		16.62	45.27	22.46	30.74	1.66	1.53
	Total Measured		**6.71**	**1.78**	**7.590**	**10%**	**6.831**	**6.831**	**15.69**	**47.99**	**21.55**	**28.84**	**1.78**	**1.62**
	Indicated	Top Lower	1.32	2.09	2.599	15%	2.209		11.41	60.10	17.13	20.79	2.05	1.98
		Middle	0.76	1.73	2.994	15%	2.545		17.38	44.22	23.00	31.04	2.82	1.74
		Bottom Upper	1.87	1.77	18.732	15%	15.922		14.71	50.94	20.80	26.61	1.61	1.65
		Bottom Lower	3.79	1.72	45.605	15%	38.764		15.51	48.19	21.59	28.74	1.54	1.48
	Total Indicated		**7.74**	**1.75**	**69.929**	**15%**	**59.440**	**59.440**	**14.73**	**50.71**	**20.69**	**26.95**	**1.80**	**1.65**
	Inferred	Top Lower	1.12	1.95	12.002	20%	9.602		11.88	59.18	17.82	21.05	2.19	1.95
		Middle	0.79	1.74	5.563	20%	4.450		17.65	43.60	23.53	31.11	2.23	1.76
		Bottom Upper	1.70	1.76	12.505	20%	10.004		14.30	51.92	20.60	25.82	1.68	1.66
		Bottom Lower	3.67	1.75	20.931	20%	16.745		15.56	48.05	21.66	28.83	1.57	1.46
	Total Inferred		**7.28**	**1.80**	**51.000**	**20%**	**40.800**	**40.800**	**14.51**	**51.48**	**20.59**	**26.24**	**1.86**	**1.69**
	Total PR	**All**	**7.49**	**1.77**	**128.520**	**17%**	**107.071**	**107.071**	**14.88**	**50.33**	**20.85**	**27.17**	**1.81**	**1.65**
Vele Colliery			**8.30**	**1.78**	**793.95**	**15%**	**671.32**	**671.32**	**14.80**	**50.43**	**20.86**	**27.05**	**1.81**	**1.66**

Table 7.4.2: Coal Resource Statement for the Vele Colliery at 30 November 2015. Resource reported as MTIS (resources) (based on minimum seam thickness of 1.4m and a maximum seam thickness of 4.5m for the underground Bottom Lower resources)

Mineral Right	Resource Category	Seam	Avg width (m)	Coal Raw RD (t\m³)	Gross tonnes Insitu GTIS (Mt) (ad)	Geol. losses (%)	Total Tonnes in situ TTIS (Mt) (ad)	Mining Method	Mining Layout Losses	Mineable tonnes in situ MTIS (Mt) (ad)	Net Attributable to CoAL (MTIS) (Mt) (ad)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulp (%)	Inherent Moist (%)
Mining Right	Measured	Top Lower	1.76	1.88	4.040	10%	3.636	OC	2%	3.563		11.78	59.0	17.8	21.32	2.14	1.9
		Middle	1.17	1.66	6.742	10%	6.129	OC	2%	6.009		18.54	41.1	24.6	32.60	3.02	1.7
		Bottom Upper	1.90	1.80	17.853	10%	16.230	OC	2%	15.912		14.10	52.1	19.9	26.28	1.61	1.7
		Bottom Lower	3.88	1.70	39.817	10%	36.197	OC	2%	35.487		16.98	44.3	22.7	31.45	1.62	1.6
			3.85	1.72	28.267	10%	25.440	UG	10%	22.896		16.62	45.6	22.5	30.44	1.76	1.5
	Total Measured		**8.71**	**1.73**	**96.719**	**10%**	**87.047**		**4%**	**83.271**	**83.271**	**16.23**	**46.5**	**22.1**	**29.86**	**1.78**	**1.6**
	Indicated	Top Lower	1.69	1.87	23.104	15%	19.639	OC	2%	19.246		12.03	57.9	18.1	22.02	2.46	1.9
		Middle	1.06	1.67	13.389	15%	11.381	OC	2%	11.153		18.53	41.0	24.6	32.68	2.92	1.7
		Bottom Upper	1.81	1.77	27.804	15%	23.633	OC	2%	23.161		15.63	48.2	21.8	28.39	1.70	1.6
		Bottom Lower	3.47	1.70	54.526	15%	46.347	OC	2%	45.421		17.05	44.2	22.9	31.44	1.45	1.5
			3.59	1.77	84.632	15%	71.937	UG	10%	64.743		15.31	48.8	21.2	28.52	1.67	1.5
	Total Indicated		**8.03**	**1.76**	**203.456**	**15%**	**172.938**		**5%**	163.724	**163.724**	**15.66**	**48.0**	**21.6**	**28.82**	**1.79**	**1.5**
	Inferred	Top Lower	1.62	1.88	19.169	20%	15.335	OC	2%	15.029		11.89	58.4	18.1	21.54	2.52	1.9
		Middle	1.02	1.68	8.081	20%	6.465	OC	2%	6.335		18.14	41.8	24.4	32.11	2.35	1.7
		Bottom Upper	1.72	1.75	13.277	20%	10.622	OC	2%	10.409		16.29	46.5	22.5	29.45	1.95	1.6
		Bottom Lower	3.60	1.71	19.407	20%	15.526	OC	2%	15.215		16.81	44.8	22.8	30.96	1.52	1.5
			3.27	1.77	16.226	20%	12.980	UG	10%	11.682		14.57	50.6	20.8	27.17	1.63	1.4
	Total Inferred		**7.96**	**1.77**	**76.160**	**20%**	**60.928**		**4%**	**58.671**	**58.671**	**15.14**	**49.4**	**21.3**	**27.64**	**1.96**	**1.6**
	Total MR	**All**	**8.19**	**1.75**	**376.335**	**15%**	**320.913**		**5%**	**305.686**	**305.686**	**15.70**	**47.92**	**21.67**	**28.85**	**1.82**	**1.57**

Mineral Right	Resource Category	Seam	Avg width (m)	Coal Raw RD (t\m³)	Gross tonnes Insitu GTIS (Mt) (ad)	Geol. losses (%)	Total Tonnes in situ TTIS (Mt) (ad)	Mining Method	Mining Layout Losses	Mineable tonnes in situ MTIS (Mt) (ad)	Net Attributable to CoAL (MTIS) (Mt) (ad)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulp (%)	Inherent Moist (%)
Prospecting Right	Measured	Top Lower															
		Middle															
		Bottom Upper															
		Bottom Lower															
			3.76	1.66	3.507	10%	3.156	UG	10%	2.841		16.72	44.33	23.20	30.95	1.20	1.52
	Total Measured		**3.76**	**1.66**	**3.507**	**10%**	**3.156**		**10%**	**2.841**	**2.841**	**16.72**	**44.33**	**23.20**	**30.95**	**1.20**	**1.52**
	Indicated	Top Lower	1.05	1.96	1.016	15%	0.863	OC	2%	0.846		9.48	64.54	14.75	18.85	2.33	1.86
		Middle	0.76	1.72	0.611	15%	0.519	OC	2%	0.509		18.01	42.46	22.96	32.66	3.74	1.92
		Bottom Upper	1.66	1.78	2.222	15%	1.889	OC	2%	1.851		14.95	48.14	21.40	29.04	1.34	1.42
		Bottom Lower	2.28	1.65	5.732	15%	4.872	OC	2%	4.775		18.95	39.36	24.25	35.01	1.57	1.38
			3.98	1.73	37.384	15%	31.776	UG	10%	28.599		15.25	48.73	21.44	28.23	1.62	1.60
	Total Indicated		**5.75**	**1.73**	**46.964**	**15%**	**39.920**		**8%**	**36.579**	**36.579**	**15.60**	**47.82**	**21.66**	**28.95**	**1.64**	**1.57**
	Inferred	Top Lower	1.08	1.96	2.433	20%	1.947	OC	2%	1.908		10.12	62.01	16.70	19.66	3.84	1.63
		Middle	0.76	1.73	1.349	20%	1.079	OC	2%	1.057		15.82	46.99	22.19	28.90	2.24	1.92
		Bottom Upper	1.39	1.76	2.712	20%	2.170	OC	2%	2.126		15.79	46.54	22.76	29.17	1.45	1.53
		Bottom Lower	2.65	1.68	2.744	20%	2.195	OC	2%	2.151		17.92	41.56	23.65	33.38	1.51	1.41
			3.88	1.77	12.833	20%	10.266	UG	10%	9.240		14.36	50.82	20.76	26.86	1.94	1.56
	Total Inferred		**5.88**	**1.78**	**22.071**	**20%**	**17.657**		**7%**	**16.483**	**16.483**	**14.60**	**50.14**	**21.00**	**27.29**	**2.05**	**1.57**
	Total PR	**All**	**5.70**	**1.74**	**72.542**	**16%**	**60.733**		**8%**	**55.920**	**55.920**	**15.35**	**48.36**	**21.53**	**28.54**	**1.75**	**1.57**
Vele Project			**7.79**	**1.75**	**448.877**	**15%**	**381.646**		**5%**	**361.576**	**361.576**	**15.65**	**47.99**	**21.65**	**28.80**	**1.81**	**1.57**

7.5 Coal Resource Reconciliation

The variation between the 2012 Coal Resource statements and the 2015 Coal Resource statements is the result of depletion that occurred during the operational period of Vele Colliery.

8 Technical Studies

The conversion of Coal Resources to Coal Reserves is based on technical studies, which is to the same level of a pre-feasibility study or feasibility study. The studies must have investigated the modifying factors, which are required to convert a Coal Resource to a Coal Reserve. These modifying factors can be divided in to cost drivers, income drivers, legislative constraints, environmental constraints and community factors.

These modifying factors are normally addressed under the following headings

- Geotechnical and Geohydrological Studies
- Mine design and scheduling
- Process Engineering
- Infrastructure
- Market analyses
- Legislative and Regulatory requirements
- Market analyses
- Environmental
- Social and Labour
- Economic criteria
- And is concluded in the financial model

CoAL has done various studies to different degrees of detail, but it is the opinion of VBKom that the studies are sufficient in detail to warrant the conversion of Coal Resources to Coal Reserves.

Vele Colliery is an existing operation with Coal Reserves reported for an opencast mine plan and an underground mine plan. It is important to note that the current business case is only considering a portion of the opencast reserve blocks (16 years LoM) for financial modelling. The additional Coal Reserves outside the 16-year period does not significantly influence the NPV of the project. The current business case scenario is referred to as the Plant Modification Project (PMP).

A high-level financial model was completed where the mining areas that were additional RoM reserve tonnes (excluded from the financial model). The additional reserves were scheduled consecutively and the results indicated viability with long-term price forecasts. Due to the planned mining rate, mining the additional reserve tonnages will be only after the Plant Modification Project's 16 year LoM.

8.1 Geotechnical and Geohydrological Studies

8.1.1 Geotechnical Studies

Geopractica performed a geotechnical study in 2009 prior to the erection of the modular plant to assess the soil, for civil foundation requirements and to comment on any possible geotechnical risks to construction around the plant area. Data from drill holes, core samples, dynamic probing, and laboratory test work and trial pits was interpreted and the bedrock reported as geotechnically sound. The report considered the site suitable for the proposed development. Further Geotechnical investigation was recommended for other surface infrastructure to be constructed beyond the area investigated (e.g. access roads, power lines, water pipes, waste dumps).

Saxum Mining and Trading conducts routine bi-annual rock engineering assessments. This includes geotechnical high wall risks in the existing opencast (Central pit) area. Specialist reports and risk assessments were also done during active mining to ensure slope angles were within design parameters. A site-specific physical and performance risk rating form for easy tracking was developed and tracking in 2012 and 2015 rated Vele Central Pit on their own parameters as "Moderate" Physical Risk, and "Good" high wall performance risk.

Underground designs done by MRM Mining Services used the Salamon formula for mine design criteria, as the coal strength was not known at the time. The influence of the overlaying rock strata and its ability to create a beam and width of the beam, as well as additional rock mechanical support and cost required was not investigated in detail. The Salamon formula is normally a conservative estimation of the rock strength and a more detailed study, closer to the commissioning of the underground areas can unlock additional resources.

8.1.2 Geohydrological Studies

WSM Leshika Consulting (Pty) Ltd. completed surface and Groundwater Geohydrological studies as part of the EIA in 2009. The results of the investigations were used in the preparation of the EMPr and monitoring and managements systems were put in place. The water use requirements of the DWS and DEA were met, with the amended Integrated Water Use License (IWUL) renewed for a further 20 years On 13 January 2016. The Environmental Authorisation Amendment was granted in January 2015.

The studies indicated insignificant risk of water inflow into the opencast areas, which is manageable, except in the event of exceptional climatic conditions.

The influence of the Limpopo aquifer, which is on top of the underground reserves, on the underground mining is not currently seen as a risk due to the presence of an aquitard in the stratigraphic sequences following the coal zone.

8.2 Mine Design and Schedule

There are two types of mine designs for the Vele Colliery. The first is the opencast (o/c) mines on which the Plant Modification Project's financial modelling is based. VBKom completed this design and associated schedule. The second design is the underground mine. MRM Runge did the design and VBKom reviewed the design parameters.

The opencast mine has a detailed schedule for the first 16 years (mineable reserves until the west opencast will be accessed), where after it is a straight-line production approach.

Venmyn Rand has also audited the underground reserves in 2012 who found the design criteria robust and acceptable. Here the underground design will be summarised, but the focus will be more on the modifying factors that influences the opencast reserves that forms the basis of the financial model.

The PMP opencast mining area as identified in Figure 8.2.1 targets high value areas in the opencast Central and opencast North mining blocks.

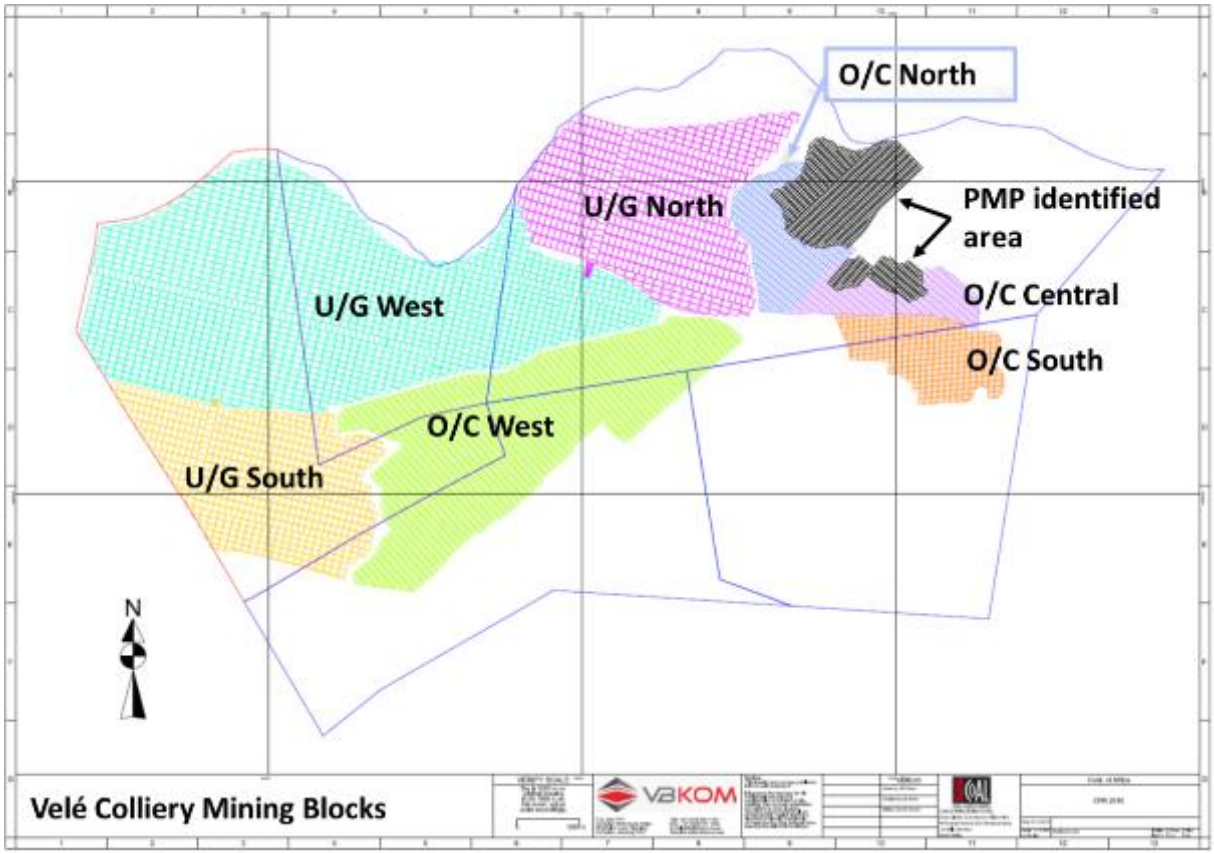


Figure 8.2.1: Different mining blocks – the PMP mining area is indicated

8.2.1 Cut-offs applied

The conversion of Coal Resources to Coal Reserves includes the application of cut-offs. The cut-offs can be geological, mining related or related to the processing plant. Here only the mining cut-offs will be discussed.

Mining related cut-offs are as follows for the underground mine at Vele Colliery:

- Bord and pillar dimensions (65% coal extraction)
- Minimum seam thickness of 1.4m and a maximum seam thickness of 4.5m

Cut-offs related to the opencast mining:

- Mining layout

No other cut-offs were applied to the opencast mine areas. Mining layouts were constrained by major faults and the sub-outcrop of the resource.

8.2.2 Mining method

After various trade-of studies between only opencast mining, combination of opencast and underground mining and underground mining the best option was the combination of the two methods. The opencast mining was seen as a concern in such an environmentally sensitive area, but was opted for due to the economics of the opencast reserves.

The underground mining method and design criteria is summarised as follows:

- Underground mining will target the Bottom Lower Seam only, using a bord and pillar mining pattern. Underground mining has only been considered suitable in those areas where the depth of the roof of the Lower Seam generally exceeds 60m in depth due to the weak coal strength and poor overburden stability. The bord and pillar mining layout should be achieving a relatively high extraction rate of approximately 65% by virtue of the low seam height to depth ratio.
- For underground access, a decline is to be sunken on the border with the opencast Coal Reserves. Staff and material will be transported by trackless vehicles (tractor and trailer or light delivery vehicles), while coal is transported out of the mine on conveyors. Ventilation will be by means of up-cast ventilation shafts, with intake air provided through the decline shafts.
- The underground development will continue in a northerly direction and have main developments mining east and west. The East underground mining area will need to negotiate a downthrown fault to access the Coal Reserves in the central graben area.
- For the underground mining, five continuous miner sections will be required. Each section will be equipped with a high seam continuous miner, four coal haulers, two roof bolters, a feeder breaker and an LHD. Five continuous miner sections with shuttle cars are planned to meet the production requirements, utilising five Joy 12 HM 31 AAA high seam production sections at an average of 75,000tpm of RoM coal. Pillars will be designed using the Salamon and Munro formula.

The opencast mine will be accessed through two separate boxcuts, one in the central pit and one in the northern pit. The opencast mining process as designed will not significantly differ change after the plant modification process is implemented. The process can be described as follows:

- Base case after Plant Modification Project is 2.6Mtpa of RoM at an average strip ratio of 3.6 over a period of 16 years
- The Top Lower, Middle, Bottom Upper and Bottom Lower seams will be extracted
- Mining is based on a truck and shovel operation (contract mining) with the following equipment (as used for the boxcut):
  - A 9350 Liebherr excavator
  - A 974 Liebherr excavator (or CAT 988 loader)
  - Four CAT 785 trucks ad four CAT 773 trucks
  - A watercart
  - A D10 dozer
  - A grader
- The opencast strip and block design was based on the following criteria:
  - Block lengths of 100m
  - Block widths of 50m
  - Strip lengths are variable and based on the geometry of the design
- A total of 1m of topsoil has to be stripped and stockpiled separately
- Overburden is blasted using electronic detonation to minimise air blast
- To maintain the required production rates, inclusive of ramps and free faces, a stripping ratio of 3.6 BCM is required per tonne of RoM over the current planned 16 years of operations in the Central Pit
- The overburden will be truck around the pit to backfill the void over the discard from the plant as part of the roll over rehabilitation
- The coal seams are free dig by backhoe excavators

The production profile for the first 16 years from the Central pit is presented in Figure 8.2.2.

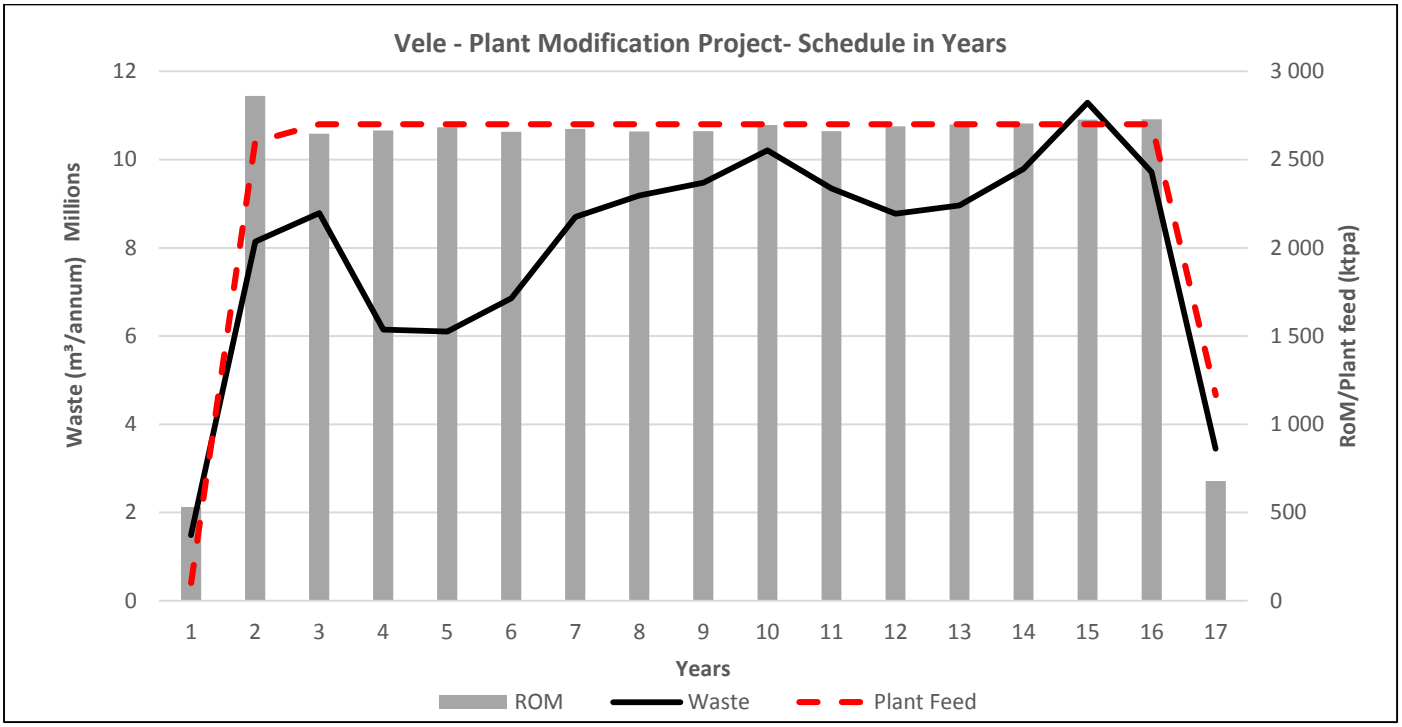


Figure 8.2.2: Vele Plant Modification Project opencast RoM and waste mining profile

The schedule for the first 16 years has parameters constraints build in to open strips sufficiently to cater for drilling, blasting, loading and in-pit stockpiling, which translates into additional pre-strip mining in the schedule.

Since the mine schedule Vele Colliery depleted 417kt RoM from the opencast before the operations were halted in 2013. Figure 8.2.3 depicts the current pit (As seen on the site visit of 26 November 2015) and indicates the faces open and rollover rehabilitation with carbonaceous discard up to the original level of the coal zone.

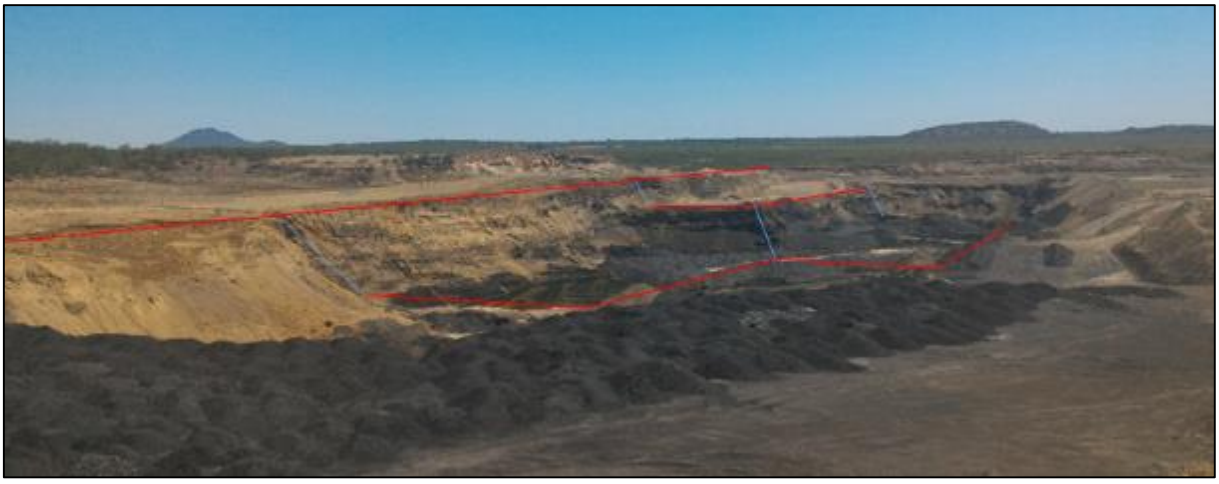


Figure 8.2.3: Existing opencast with open benches indicated by red lines, and carbonaceous backfilling in foreground

The North Pit boxcut plan has a small footprint, which will influence extraction and start-up from the mining area. Overlap exists between mining in the Central and Northern Pit. The schedule is based on annual tonnages, and the stockpile capacity at the plant and in-pit stockpiles (exposed coal) will assist in mitigating the influence of the ramp down of the Central Pit and the start-up of the Northern Pit on the planned annual production.

8.2.3 Optimisation

8.2.3.1 Major Assumptions and Coal Resource model used for Optimisation

The resource model used for identifying the target mining area for the PMP schedule was constrained to the Central and North pit, due to the existing box-cut and mining operation, infrastructure, haul roads, and proximity to the plant. This area contained primarily measured resource and 25mx25m blocks were used to rank areas concerning strip ratio and yield combined.

A high level evaluation in a 25 x25m grid using contractor costing quotes, averaged fixed costs and owner costs versus producing either SSCC (10% Ash) with either a 23.4% Ash (5500kCal) or a 26.75% Ash (5200kCal) product was traded off in July 2013 by VBKom using the same input parameters as in the financial model.

The evaluation indicated areas where higher profit can be achieved, and were scheduled to form the basis of the Plant Modification Project LoM. The evaluation is not a full optimisation study, but a long term planning schedule for an operational opencast mine on care and maintenance. Coal Resource with relative lower revenue values were excluded from the Plant Modification Project LoM schedule.

The Mineable Resource Tonnes in-Situ (MTIS) resource which is not in the initial target area of the Plant Modification Project LoM is included in the reserve statement as “additional RoM”, as it is still part of previous studies and deemed viable to mine when prices for coking- and thermal coal increases according to forecasted averages. These “additional RoM” tonnages (in the U/G and O/C mining blocks) were evaluated with a high-level complete LoM financial evaluation subsequent to the Plant Modification Project.

8.2.4 Modifying Factors

8.2.4.1 Mining Dilution Factors

The Practical yield includes organic plant efficiencies and yield reduction due to dilution for the different streams to be produced.

8.2.4.2 Mining recovery factors used (DCF mining layout only)

Additional Geological losses of 5% was subtracted from resource tonnes in the Plant Modification Project opencast layout plan, as coal affected by small dykes and faults has been identified and removed from the plan, as well as possible oxidised coal mining strips near the sub-outcrop.

A mining recovery of 92% was used in the Phase 1 opencast plan, as an existing opencast exists, with proven extraction. The high recovery is also possible due to free digging of the coal using a backhoe excavator, enabling lower losses and dilution from blasting.

The in situ Coal to RoM calculation for mining blocks inside the optimisation layout of the PMP schedule is presented in Table 8.2.1.

Table 8.2.1: Calculation of RoM in designed mining blocks of DCF model:

Description:	Factor	Value	Unit
In Situ Tonnes (> 0.5m seam width):		**100**	**t**
After geological losses:	× 0.95	95	t
After mining losses:	× 0.92	87.4	t
RoM:		**91.8**	**t**
Primary product:		**9.8**	**t**
Primary Product effective yield:		**10.7**	**%**
Secondary Product:		**30.3**	**T**
Secondary Product effective yield:		**33**	**%**

8.2.4.3 Minimum mining widths used

A minimum mining width of 0.5m of coal seam was used, as multiple layers of seam exist, and blasting of waste and selective loading methods, enabled the selectivity in seam mining. The PMP LoM schedule accommodated multiple active coaling seams, requiring more active strips, and the extra waste stripping required to achieve this is included in the mining plan.

Mining strips of varying length were divided into blocks with a width of 50m and length varying between 50-100m. Blasting blocks were identified based on seam contacts, and no SMU or bench height or bench elevation was traded off.

The underground mine tonnages that was reported by CoAL applied a minimum 1.4m mining height and 4.5m maximum mining height for underground mining of Bottom Lower coal seam.

8.2.5 Infrastructure requirements

Vele Colliery is an existing opencast operation, currently under care and maintenance. Coal is delivered to customers through the existing infrastructure, available in Musina, which is able to support the operation.

The nearest town is Musina, which is the seat of the local Municipality with a history of mining activity and there are active mines in the region. Services include schools, rail linkage, a hospital, wide tar roads and electricity from the national grid.

8.2.5.1 Accommodation:

No accommodation is provided on site. Accommodation for employees is currently provided at the CoAL owned Dongola Lodge, which also serves as the administrative centre for the Vele Colliery. It is accepted that employees will require their own accommodation in Musina.

8.2.5.2 Mining and plant Equipment:

Vele Colliery has an existing opencast mine, a laboratory, contractors yard, workshops, change houses, processing plant and RoM stockpile, transportation infrastructure, a wash bay, tyres storage yard, various stores and pollution control dams, with fencing and security in place.

8.2.5.3 Contractor's yard:

The contractor's yard was constructed by MCC, which included a tyre, oil and general servicing yards, bunded, and with dirty water drains.

Figure 8.2.4 Power line has bene extended to the contractor's yard. Existing plant in background

8.2.5.4 Transport of Coal:

Coal is transported from the mine to an existing and upgraded rail siding in Musina approximately 50km from the colliery by tar road. CoAL has upgraded a bypass road to the siding whereby the route does not pass through Musina town anymore. A concrete base has also been casted at the siding with pollution control drains.

Figure 8.2.5: Rail siding stockpile area in Musina with concrete base

Hauling of coal product to the siding is done by a contractor using road link trucks and placed on the siding according to coal quality. Front End loader performs loading of train wagons. The siding has sufficient capacity. Additional capacity is available due to the closure of Tshikondeni Coal Mine who also utilised the siding.

A rail transport option from the colliery has been investigated should the colliery be expanded beyond the PMP project product capacity. The construction of a rail link and spurs to the colliery will be a second phase of plant modifications and will be determined by quantities moved, which is linked to prevailing market conditions.

CoAL has secured 3Mtpa allocation through the Matola terminal in Maputo, Mozambique. CoAL has secured the option of taking up a hundred per cent of the increased capacity due to the planned expansion at the port.

Further infrastructure, except for the Plant Modification project, is only planned after the Plant Modification Project, before starting the underground mining, or other opencast mining areas.

It is noted that almost all the main infrastructure required for the initial Phase 1 of the Vele Colliery, as outlined in the surface layout plan, has been constructed. The following are however scheduled and expected to be constructed in the next phases; the sewage plant facility, the 'permanent' mine access road, the above ground bulk storage facility, ventilation shafts, an extension of the haul roads and the construction of water containment structures.

Current ongoing infrastructure work done on the mining side includes the fixing of internal berms used on haul roads, which segregates production and support equipment. The repairs on berms will include an erosion resistant polymer, thus reducing maintenance in the future.

Weighbridge and road access to the colliery has been built. The access road will still be moved, as per the amended IWUL application.

An existing contract on all CoAL's coal product trucking is in place with MAC Transco and the contract includes the possible enlargement of the siding at Musina by Mac Transco, against a transport agreement for future coal. This enlargement also includes the construction of concrete pads and drainage channels to improve on the environmental footprint of the existing Transnet siding used by CoAL and previously Exxaro's Tshikondeni Coal Mine.

8.3 Coal Processing

The plant was put on care and maintenance to allow for the plant modification. The objective of the plant modification is to create capability to produce multiple products, reduce the amount of fines generated through materials crushing and handling, improving product yield by introducing a higher efficiency reflux classifier to complement the current spiral concentrators and reducing operational costs by improving materials handling systems in the plant. The plant also produced a 10% ash semi-soft coking coal on a test basis to produce a sample coking tests at ArcelorMittal South Africa's Newcastle steel plant.

Previously, coal produced at Vele Colliery coal sold to customers was a blend of Vele and Mooiplaats coal at the Matola harbour.

8.3.1 Process design

8.3.1.1 Metallurgical Processing – Existing plant

The existing plant design was based on a production rate of 2.7Mtpa RoM, producing a single product (semi-soft coking coal). Coal beneficiation through the existing plant started in February 2012 and a thermal export product (18% Ash) was produced at an average yield of 32% (February – September 2012), using temporary equipment in certain sections, which resulted in sub-optimal design (performance) in terms of RoM handling and throughput, product recovery, slurry management and operational costs.

Vele utilised a contractor, Minopex (Pty) Ltd (Minopex), to operate the CoAL owned plant. The current plant consists of the following main sections:

- Temporary crushing and screening plant;
- de-stoning plant (modular);
- secondary washing plant (modular);
- spiral plant (modular); and
- product and discard stockpiles
- general plant services and
- a slurry pond

RoM consists of material supplied from the opencast mining activities with a top size of 300mm. The plant was designed for a RoM feed of 500tph into the crushing and screening plant and is depicted in Figure 8.3.1 and Figure 8.3.2 below. The temporary crushing and screening plant in use could only produce a maximum of 300tph RoM due to inefficient materials handling around it.

Figure 8.3.1: Existing Coal processing plant module

Dirty process water containing slimes is treated and clarified in a thickener and the recovered water is re-used as process water in the processing plant. The high-density thickener underflow is pumped to a lined temporary slimes dam.

Figure 8.3.2: (a) Existing stockpile facility (lined, with rathole) (b) Cyclone and thickener module

Vele Colliery plant was operational for several months in 2011-2012. This confirms process concept, but with yield and product losses. During this period, investigations into low yields and low product qualities indicated the quality of coal in the smaller size fractions are being spoiled either to slimes or discard due to crushing inefficiencies.

The efficiency of the spiral plant, the size distribution produced by the crusher section and the higher revenue available by producing a dual stream product is the basis for the Plant Modification Project.

The metallurgical process has been in a series of conceptual designs, quotations and currently Sedgman is completing a FEED (Front End Engineering Design).

8.3.1.2 Processing –Plant upgrade (Vele Plant Modification Project)

A Front End Engineer & Design (FEED) study was performed by Sedgman to modify the existing coal handling and processing (CHPP) plant to process 500tph RoM and produce a semi soft coking coal and a thermal coal product.

The plant upgrade study included:

- A new RoM dual tip hopper, with an 800mm top size,
- A new feeder breaker to size the RoM coal to nominal 50mm
- New and extending conveyors to transport coal between new plant modules, discard and stockpiles,
- A feed bin for surge capacity
- Upgrading of the de-stoning plant
- New discard bin and discard extraction system
- Tertiary screening plant for nuts & peas as well as stacking system
- Modification to coking coal plant feed system (larger openings, vibrating feeder chutes)
- Upgrading the existing metallurgical DMS cyclone

- New thermal coal stockpile facilities
- The upgrade for the fines beneficiation by incorporation of reflux classifier and flotation circuit, and
- Dewatering using a high frequency screen for thermal coal and screen bowl centrifuge for coking coal.
- Dust and fire suppressing systems as well as integrated control and communication system.

The nominal capital cost estimate accuracy was considered at ±10%, based on the methods and basis of the capital cost estimate. Qualification of the estimate assumes the adequate capacity of electrical supply and reticulation, and an agreed exclusion list regarding environmental issues and existing plant.

The general arrangement process flow diagram for the planned upgrade is presented in Figure 8.3.3.

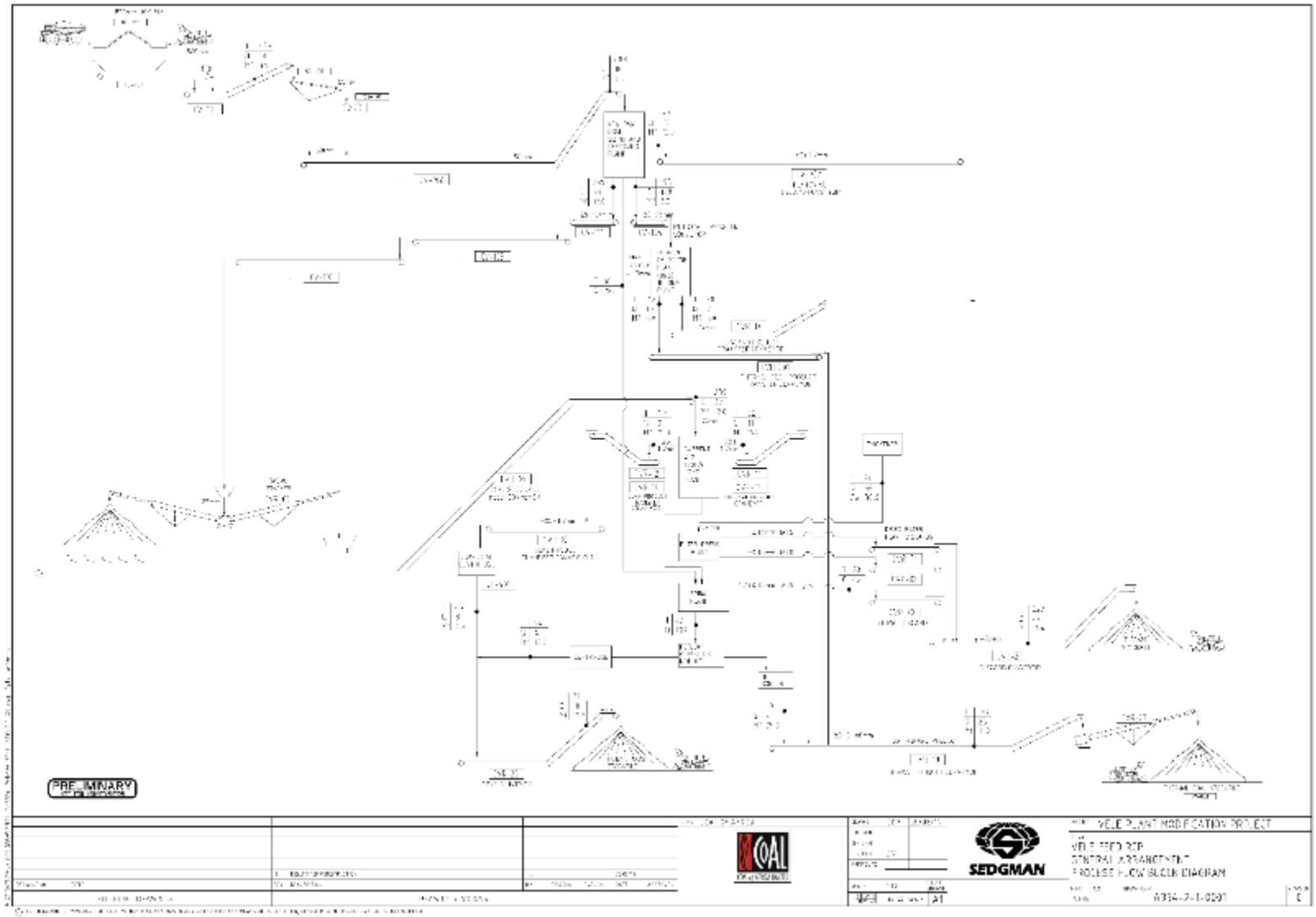


Figure 8.3.3 Process flow sheet for the Plant Modification Project (Source: Sedgman FEED study)

8.4 Project Infrastructure

Infrastructure required for Phase 1 of Vele Colliery is completed, except for structures that still required approval under the IWUL application (granted in January 2016) and the beneficiation plant upgrade (Vele Plant Modification Project).

The following capital infrastructure is scheduled and expected to be constructed as the basis of the Plant Modification Project:

- The upgrading of the plant to produce two product streams,
- construction of sewage system and bulk fuel storage
- Construction of the remaining 5km of power line to Pontdrift substation
- River diversion and pollution control dam construction

The Vele infrastructure and lease boundaries are indicated in Figure 8.4.1.

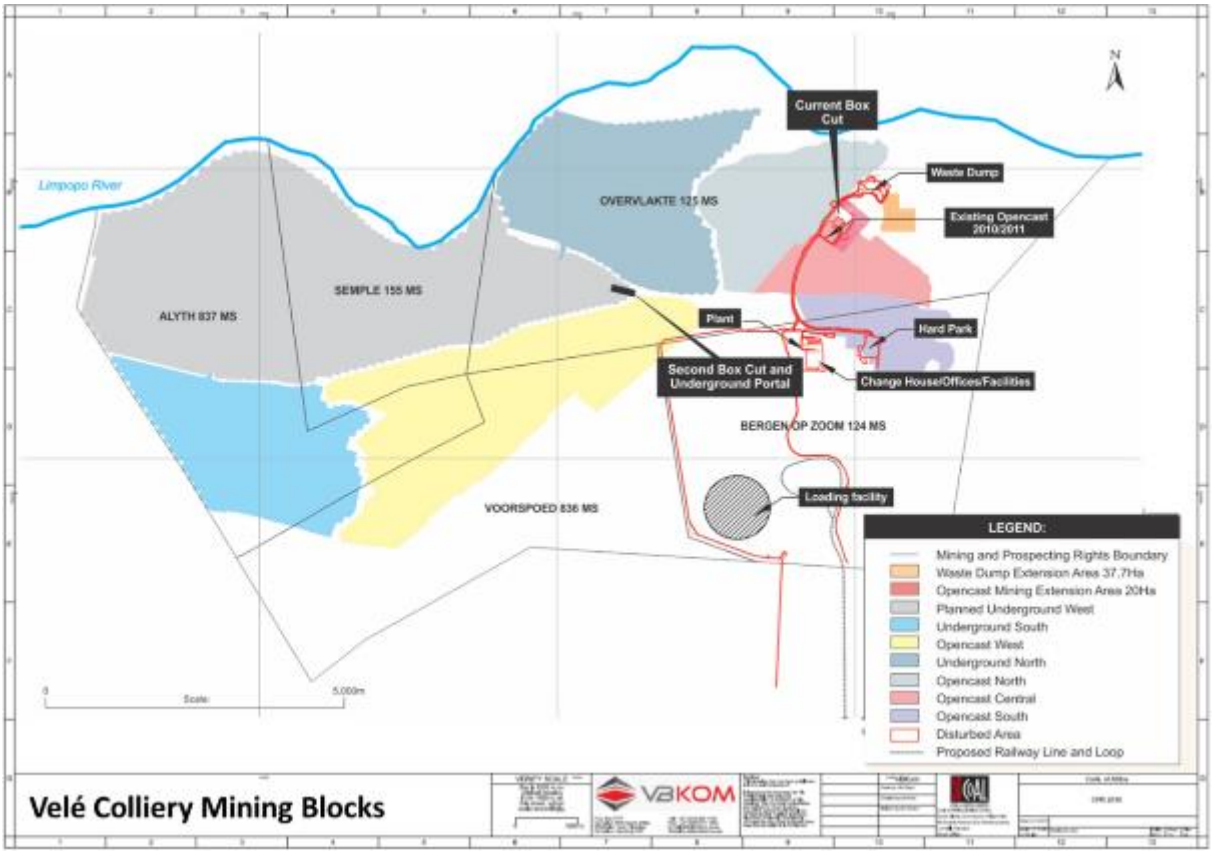


Figure 8.4.1: Vele infrastructure and lease boundaries (Venmyn, 2012)

8.4.1.1 Water

Water to Vele Colliery is provided by pumping from the Limpopo River and abstraction in from the eight boreholes in the Limpopo aquifer is sufficient for the current operations and below the IWUL approved 6.7Ml per day.

The Company submitted the succesful application in August 2014 to amend and renew Vele' previous IWUL.. The Vele Colliery IWUL was awarded on 13 January 2016 (which is valid to 2036). During the second half of 2015, the Company commenced a process to obtain approval relating to non-perennial stream diversion. This decision is anticipated in H2 2016.The Company delayed the plant modification construction pending the ammendment of the IWUL as well as an assessment of forecast global coal prices.

Figure 8.4.2 Clean water reservoir and dust suppressant storage

8.4.1.2 Electricity

Two diesel generators supply electrical power for the existing plant. There is a 132kV power line south of the property, there is approved feasibility, and budget quotes from ESKOM in place for the connection. Vele Colliery applied for a 10 MVA connection to the Pontdrift substation via a 22kV overhead line to the mine consumer substation. The overhead line construction has been partially completed and finalisation of servitudes along the remainder of the route is in progress.

Figure 8.4.3: 22kV substation, transformer and switchgear installation (Left Hand Side) and existing main diesel generator house (RHS)

The 22kV line to connect at Pontdrift substation has been built 78% of the way (18km of 23km) with the substation and transformers on site already installed with bunt walls and fences as shown in Figure 8.4.3. The power line is also erected up to the contractor's camp. The poles and cabling required to complete the line is on site at Vele Colliery. The existing ESKOM servitude will be used to construct the last portion of the line. Only a connection fee (paid to ESKOM) is still outstanding, and will only be done once the PMP is commissioned.

The Vele Colliery Project Phase 2 & 3 will consist of opencast and underground mining operations, associated workshops and stores. Other facilities required only at the start of these Phases on the mine site will include the following:

- Ventilation shafts
- Additional Topsoil and overburden stockpiles
- Rapid load-out terminal with the proposed railway loop.
- Additional haul roads and service roads

8.5 Market Studies and Contracts

8.5.1 Thermal Coal

8.5.1.1 Global Demand

According the World Energy Outlook for 2015 (published by the International Energy Association) growth in coal supply will be driven primarily by India. Figure 8.5.1 indicates the demand by world economies for the next 25 years.

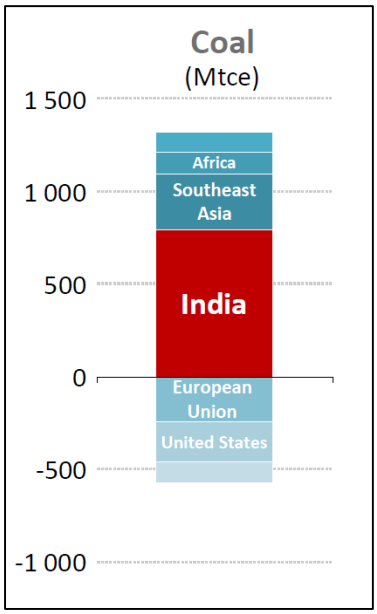


Figure 8.5.1: Demand for coal as an energy source for different world regions for the next 25 year (World Energy Outlook, 2015(www.iea.org))

The energy outlook also indicates that there will be a growth in renewable energy source over the next 25 years but coal will still play an important role with growth potential. Figure 8.5.2 indicates the 2014 sources of energy generation with an estimated growth or shrinkage of each source up to 2040.

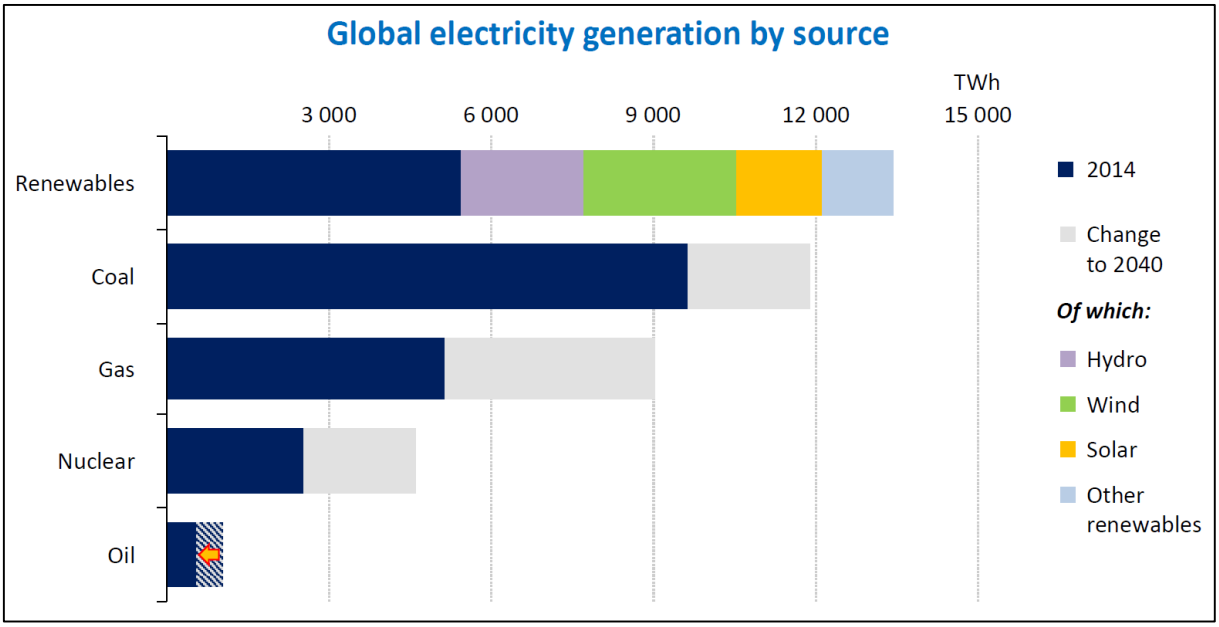


Figure 8.5.2: Expected growth or decline of electricity generation sources from 2014 to 2040 (World Energy Outlook, 2015 (www.iea.org))

Vele Colliery will be producing a 5500kcal (NAR) thermal product that can easily be placed in the Indian market through the Matola Coal terminal in Maputo, Mozambique.

8.5.2 Domestic Demand

The South African domestic market is dominated by ESKOM, a State owned Company, which is currently the sole electricy generation consumer of coal. The current energy road map for South Africa indicates that there will be a move to renewable energy sources, nuclear power and gas. This said coal-burning power stations would still supply the base load capacity of 45 000MW in the near future. Figure 8.5.3 provides the electricity generation graph per source for the next 35 years.

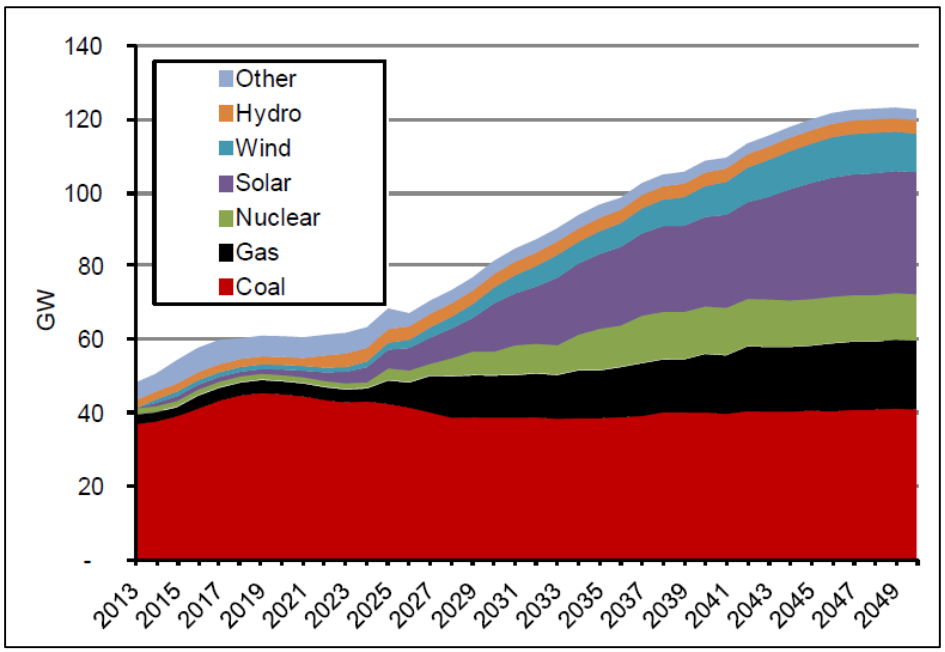


Figure 8.5.3: Proposed sources for electricity generation in South Africa. The base load of 45 000MW is still made up of coal

Figure 8.5.4 provides the coal requirement for the next 35 years to sustain the base load. From the graph it can be seen that the new Madupi and Kusile power stations only replaces capacity of power stations that will be decommissioned over time. Most of the power stations indicated in the graph is located in the Witbank Coalfield in Mpumalanga were the coal resource are being depleted. The scenarios, as illustrated, indicates additional source of thermal coal will have to be acquired by ESKOM to sustain their electricity generation capacity.

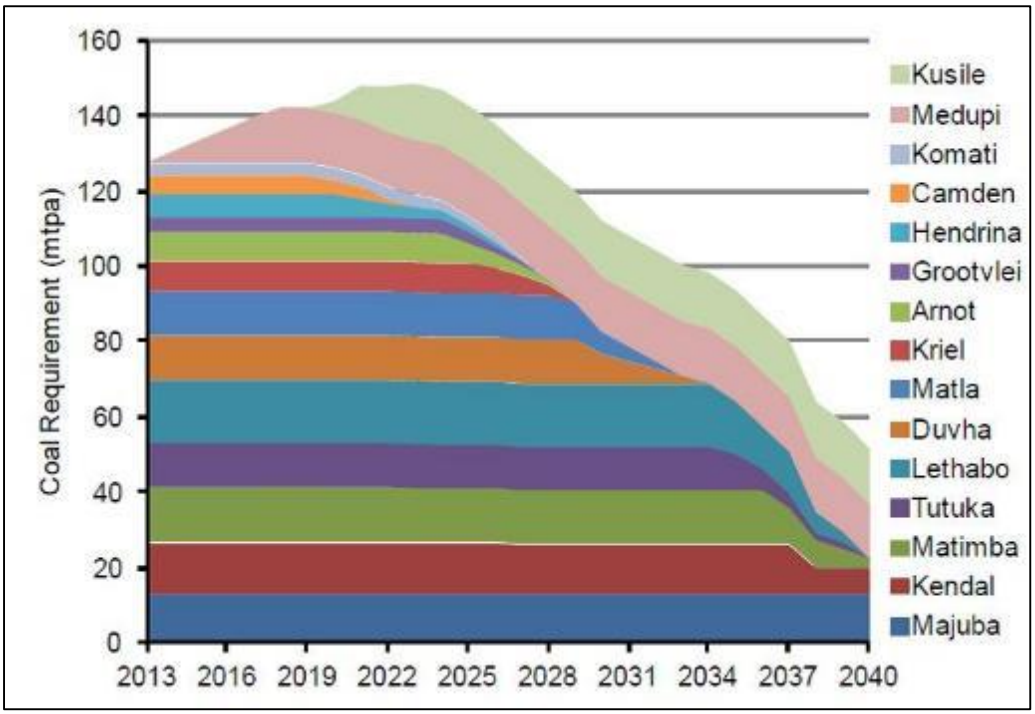


Figure 8.5.4: Coal requirement to ensure electricity generation at Eskom's power stations

Vele Colliery has submitted samples to ESKOM for combustion test work to determine the application of the Vele coal to power stations for electricity generation. The conclusion of the study is summarised as follows:

- The Vele Colliery coal reacts similarly to Seam 5 coal (Witbank Coalfield) and the upper benches of the Waterberg Coalfields
- Is categorised by low inherent moisture, high CV's, good combustion, low abrasion index, low slagging propensity and relatively low SO_2 emissions

8.5.3 Coking Coal

Metalreal (2010) forecasted that the economies that have been traditionally large consumers of coking coal (Japan, the European Union (EU) and Korea) including will continue to be so and is expected to grow, as will India and China's imports.

Steel production in China year-on-year percentage growth was negative in 2010 but other producers made up the shortfall of the Chinese production (Worldsteel, 2011). The subdued market conditions is expected to change according to analysts with price increases indicated by various financial institutions in beyond 2015.

Material was sent to Arcellor Mittal's New Castle plant to test for viability of the Vele Colliery SSCC in South African blast furnaces. A memorandum of undertaking with Arcellor Mittal was signed, although no take off agreement was signed.

8.5.4 Exchange rates

An average forecasted ZAR/US$ exchange rate and long term view was used in the financial model based on September 2015 forecasts by Morgan Stanley, RBC, Macquarie, Merrills, UBS and Citi.

Table 8.5.1 Mean forecasted exchange rate from reputable financial institutions

ZAR /US$ Exchange:	2016	2017	2018	2019	LT
Consensus	**13.59**	**13.52**	**13.43**	**13.42**	**13.82**

8.5.5 Future prices

International coal price forecasts indicate that various financial institutions (Bloomberg, Investec, UBS, Morgan Stanley, Goldman Sachs, Merrills, RBC, Macquarie and Credit Suisse) in September 2015 forecast different coal prices have a strong relationship with each other and price increases.

Table 8.5.2 Coke, Coal and Carbon forecasts mean values from reputable sources

Consensus	Currrency:	2016	2017	2018	2019	LT	Growth Geometric µ	Growth Arithmetic µ
Hard coking coal	US$/tonne	92	99	110	120	132	4.6%	5.1%
Semi soft coking	US$/tonne	69	75	81	86	91	3.2%	3.4%
Low Volatile PCI	US$/tonne	73	80	89	96	100	4.4%	4.8%
Thermal coal	US$/tonne	60	62	66	71	73	2.4%	2.5%

8.6 Legal and permitting

8.6.1 Mineral and Petroleum Resources Development Act, 28 of 2008 (MPRDA)

Vele Colliery was granted its New Order Mining Right (NOMR) on 19 March 2010, on the following farms:

- Overvlakte 125 MS (Portions 3, 4, 5, 6, 13 and Remaining Extent)
- Bergen Op Zoom 124 MS
- Semple 145 MS
- Voorspoed 836 MS

Vele Colliery is in possession of an approved Environmental Management Programme (EMPr) in terms of Section 39 of the MPRDA.

8.6.2 National Environmental Management Act, 109 of 1998 (NEMA)

In July and October 2011, Vele Colliery was granted Section 24G Environmental Authorisations, in terms of the NEMA.

In 2014 the company applied for an amendment to the Environmental Authorisation, which was approved as granted on 16 January 2015, and subsequently appealed. On 19 November 2015, the Minister dismissed the appeal lodged against the Vele Colliery's amended Environmental Authorisation.

8.6.3 National Water Act, 36 of 1998 (NWA)

In terms of the NWA, On 13 Jan 2015 the water use licence was renewed (for a further 20 years) and amended.

Furthermore, the IWUL has been amended in line with the requirements for the Plant Modification Project (PMP) at the Colliery. During H2 2015, the Company commenced a process to obtain approval relating to a non-perennial stream diversion. This decision is anticipated in H2 2016. Once this regulatory approval in respect of the Colliery has been received, the final decision to proceed with the PMP will be placed before the

board, which will include an assessment of forecast global coal prices.

8.6.4 National Environmental Management Waste Act, 59 of 2008 (NEMWA)

The DEA has confirmed that no NEMWA authorisations are required for Vele Colliery.

All licences and permits are in place at Vele Colliery, and the colliery continues to meet all its regulatory obligations while during operations and under the current care and maintenance scenario, while the upgrade to the plant via the PMP is being planned.

8.7 Environmental Management

Notwithstanding that Vele Colliery was placed on Care & Maintenance in October 2015, the colliery continues to meet all its regulatory obligations as it would under operational status. As such, continuous assessments, inspections and monitoring and site visits continue as required. (Refer to Table 8.7.1).

The following continuous studies, assessments, inspections and monitoring meetings are currently conducted/undertaken by specialists/appointed teams and reported to the relevant licencing and permitting authorities, where required:

Table 8.7.1: Continuous studies currently conducted

Monitoring/Assessment/ Inspection/Meeting	Conducted by	Notes/Comments	Frequency
Surface Water Tests	Sampling conducted by CoAL – in house Analysis conducted by independent lab	14 sites, full chemical analysis	Monthly
Ground Water Tests	GPT – Geo-Pollution Technology	Monitoring boreholes around mine, as well as Limpopo river	Quarterly
Geochemistry database and groundwater model review	GPT	Review and update of the geochemical model and geochemistry database	Five-yearly
Ecotoxicology and Bio-monitoring	SAS – Specialist Aquatic Solutions	Trace elements analysed as well	Bi-annual
Geotechnical	SAXUM Mining & Trading	Highwall & failure risk analysis	Bi-Annual
Dust	Sampling conducted by CoAL – in house Analysis conducted by SGS	Sensors around site	Monthly
PM_{10} Monitoring	Rayten Engineering	Air quality	Monthly
Heritage Monitoring	Vhufa Hashu	Heritage resources	Monthly
EMP Performance Assessment	ENVASS	Assess compliance to the EMPr	Annually
Closure Cost Assessment	ENVASS	Financial Closure Cost Liability	Annually
External IWUL Audit	ENVASS	Assess compliance to the IWUL	Two-yearly
Legal Compliance Audit	L. Uys Consultants	Assess compliance to applicable legislation	Annually
Departments of Water & Sanitation	DWS team	Site Visit, Inspection	Quarterly
DEA – Environmental Authorisation continual monitoring	Independent Environmental Control Officer – Ecko Green	Site inspection, compliance monitoring in respect of the EA, EMPr and IWUL	Daily, Quarterly Reports submitted to the DEA
Water Monitoring Committee	Depts. DWS, DAFF, Municipality, Save Mapungubwe Coalition (WWF, Birdlife SA, Wilddog action team, et al), Municipalities, Farming Community Rep and other Interested and Affected Parties (I&APS)	Monitoring Committee to assess compliance to the IWUL and water-related requirements of the EMPr	Quarterly
Environment Monitoring Committee (EMC)	Depts. DEA, DWS, DAFF, Local Municipalities, South African Heritage Resources Agency (SAHRA), Limpopo Heritage Resources Agency (LIHRA) Save Mapungubwe Coalition, Farming Community Rep and other IAP's	Monitoring Committee to assess compliance to the conditions of the Environmental Authorisation and EMPr	Quarterly
Heritage and Biodiversity Subcommittee	Depts. DEA, DAFF, Local Municipalities, SAHRA, LIHRA, Save Mapungubwe Coalition, Farming Community Rep and other IAP's	Monitoring Committee (subcommittee to the EMC) to assess compliance to the conditions of the Environmental Authorisation and EMPr as these relate to biodiversity and heritage resources	Quarterly
Environmental Management System (EMS) Audits	L. Uys Consultants	Auditing the Colliery's EMS to assess compliance to the requirements of the ISO 14001 EMS	Quarterly

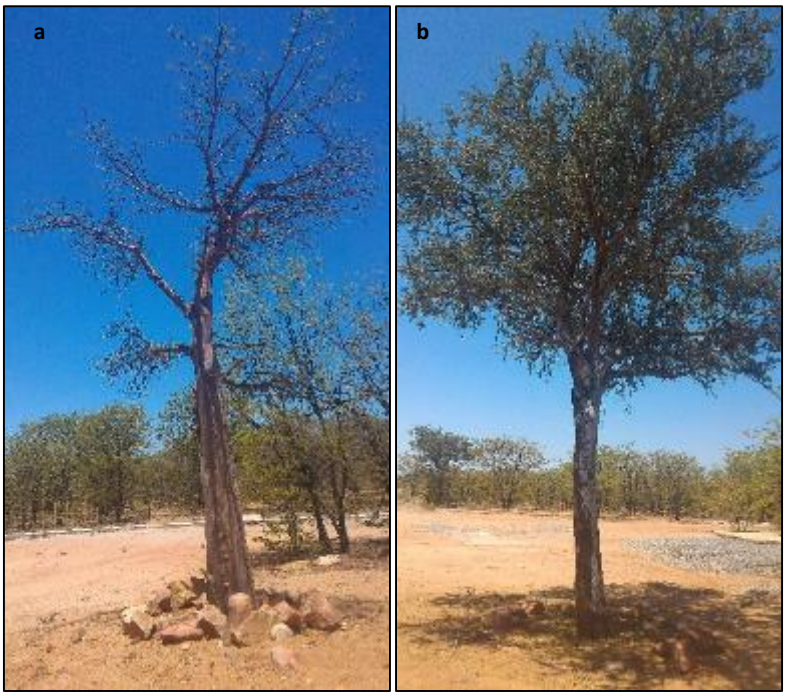


Figure 8.7.1: (a) Successful Boaboab and (b) Shepard's bush tree replanted

Successful Shepard's bush and Baobab relocations were done in front of the contractor's main office buildings based on environmental studies and recommendations.

Data from the initial studies conducted during 2008/2009 by various specialists contracted by CoAL, as part of the Environmental Impact Assessment (EIA) and Environmental Management Programme (EMP) for the mine, have been utilised in finalising the mine designs. The EIA and risk studies conducted as part of the the EIA and EMP process include:

- Air Quality (Bohlweki Environmental SSI, 2009).
- Groundwater [WSM Leshika Consulting (Pty) Ltd, 2009].
- Surface Water [WSM Leshika Consulting (Pty) Ltd, 2009].
- Noise (JongensKeet Associates, 2009).
- Biodiversity (Dubel, 2009).
- Soils (Red Earth, 2009).
- Visual/Aesthetic Aspects [Metro GIS (Pty) Ltd].
- Heritage and Cultural Resources (R&R Cultural Resources, 2009).
- Socio-Economic Conditions (Naledi Development, 2009).

8.7.1 Rehabilitation Plan

A comprehensive Rehabilitation Plan has been developed for the Vele Colliery. Annually, the Company conducts a complete review and update of the Rehabilitation Strategy and Implementation Plan (RSIP), which is submitted to the Department of Water and Sanitation (DWS)

The RSIP for the colliery include the following implementation plans for successful and sustainable rehabilitation:

- Vegetation will be left intact in areas not earmarked for immediate excavation for as long as possible to assist in prevention of soil erosion and mitigation of noise and particle pollution.
- The above-ground vegetation layer will be stripped (cut down) prior to topsoil stripping and stockpiled. This organic material will be mulched and used with the topsoil as compost in the restoration and rehabilitation program.
- All available topsoil will be stripped and utilised for rehabilitation. Direct placement will be implemented as far as possible, limiting the stockpiling of topsoil.
    - Rehabilitation (levelling & topsoiling) will be initiated within 5 strips of the active pit.
    - Restoration of the vegetative layers will take place immediately thereafter using the mulch, harvested seeds and plants from the indigenous plant nursery. Ongoing research will be conducted to improve on the sustainable restoration of the natural veldt.

- Soil analysis to provide corrective fertilisation regimes will be an ongoing procedure to facilitate vigorous plant growth.
- Until the herbaceous (shorter period) and woody (longer period) vegetation layer is established, artificial watering of reclaimed areas will be applied.
- Erosion control measures will be implemented where necessary.
- The final profile will be free-draining. Ponding will be prevented as far as practically possible.
- The end land use will reflect the initial land capability as far as possible. As a minimum, the end land use should be grazing (topsoil depth = 0.25m).
- All rehabilitation programmes will be properly monitored and documented for future referencing on the impacts, restoration and rehabilitation programs within semi-arid areas.

The implementation of the rehabilitation plan is coordinated by a team of professionals including environmental, engineering and geology department, and is supervised by the on-site Environmental Officer. Furthermore, external specialist skills are employed as required.

Additional mitigation measures for rehabilitation, according to the EMPr include:

- The entire designated infrastructure and mining areas will be fenced off to keep animals out of the area and to prevent theft / poaching.
- Management agreement will be initiated with adjacent landowners to create animal corridors.
- A comprehensive environmental monitoring programme will be implemented prior to commencement of site activities.
- Environmental educational and awareness programmes will be developed and implemented as part of the employee and contractor induction programme. Similar programmes will be initiated within surrounding communities.

8.7.2 Environmental Monitoring Committees

The Water Monitoring Committee (WMC) and Environmental Monitoring Committee (EMC) was established as oversight mechanisms in terms of Vele Colliery's IWUL and EA respectively. The WMC and EMC has the mandate to monitor Vele's compliance in respect of its IWUL, EA and EMPr respectively The Vele Colliery (CoAL and all affiliates) continue to participate in both committees which meets on a quarterly basis with annual visits to the Vele Colliery as well.

In addition to these committees, Vele Colliery has established a Heritage and Biodiversity Subcommittee, reporting into the EMC and mandated to monitor compliance to biodiversity and heritage resources management and preservation.

The membership of the WMC and EMC includes a combination of the following, as required by the IWUL and EA:

- Department of Environmental Affairs
- Department of Water and Sanitation (National and Regional)
- Department of Agriculture, Forestry and Fisheries
- Department of Mineral Resources
- Limpopo Department of Economic Development, Environment and Tourism (LEDET)
- Musina Local Municipality
- Vhembe District Municipality
- Capricorn District Municipality
- Blouberg Local Municipality
- South African National Parks (SANParks)
- South African Heritage Resources Agency (SAHRA)
- Limpopo Heritage Resources Agency (LIHRA)
- Mapungubwe National Park and World Heritage Site
- Weipi Farmers' Association
- Save Mapungubwe Coalition
- Coal of Africa Limited (CoAL) and Limpopo Coal Company

8.7.3 Biodiversity Offset Agreement

The inscription of Mapungubwe World Heritage Site (WHS) on the World Heritage List in March 2003 recognised the importance of the rich culture history of the Mapungubwe Cultural Landscape (MCL). However, the area in which the WHS is situation is also geologically rich in mineral resources such as coal and diamonds, which for a developing nation like South Africa, stimulates and enables economic growth, poverty alleviation and social upliftment. There was a recognition of the need to balance the extraordinary potential of the mining development to drive socio-economic change, and the potential impact of mining practices on the Outstanding Universal Value (OUV) on the Mapungubwe WHS.

In September 2011, CoAL signed a Memorandum of Agreement (MoA) with the Department of Environmental Affairs (DEA) and South African National Parks (SANParks), which commits the parties to maintain the integrity of the Mapungubwe WHS and Cultural Landscape, ensuring that the potential negative impacts of development are avoided, minimised or remedied in pursuit of sustainable development .

In 2012, the DEA and CoAL commissioned a Heritage Impact Assessment on behalf of the United Nations Educations, Social and Cultural Organisation (UNESCO) to determine the impact of the mining activities at Vele Colliery on the Mapungubwe Cultural Landscape. The results of the HIA concluded that the impacts of mining on the Mapungubwe Cultural Landscape (MCL) were minimal. These results were presented to UNESCO's 38th session in Russia, and were unanimously accepted.

In October 2014, CoAL signed a Biodiversity Offset Agreement, the first of its kind in South Africa, with the DEA and SANParks, which strive to ensure the integrity of the World Heritage Site, by ensuring sustainable development practices and operation of Vele Colliery, so that it benefits the receiving environment, the local economy and resident communities.

The BOA commits the Company to pay R55million to SANParks over a period of 25 years for different biodiversity and heritage programmes. This agreement includes the establishment of a Project Steering Committee (PSC) comprising representatives from CoAL, DEA and SANParks to oversee the implementation of the agreement, with SANParks as the implementing agency. The PSC is fully functional and meets on a quarterly basis.

The first project is the restoration and rehabilitation of heritage resources. CoAL has also adopted a heritage project in the form of the Mapungubwe Archaeological and Artefact Storage facility, which will ensure the protection of heritage resources.

To address the consolidation and incorporation of privately owned properties included in the revised Mapungubwe buffer zone, the parties to the BOA have commenced engagements with the landowners to devise a mutually beneficial arrangement

Other biodiversity-offset programmes could include, but is not limited to:

- Restoration of degraded riparian wetlands
- Funding support for the Limpopo Valley Herb Project
- Co-funding / improvement of the conservation contribution of land and/or land use activities within the Transfrontier Conservation Areas (TFCA)
- Establishment of a herbarium at Mapungubwe
- Support of other conservation initiatives, e.g. Ground Hornbill Research and Conservation Project

8.8 Risk Assessment

8.8.1 Groundwater Pollution and Acid Mine Drainage

Vele Colliery Quarterly Groundwater Report – October 2015: "The potential contaminant sources related to the operations at the Vele Colliery include inflows through the coal horizon, discard dumps, coal stockpiling, and pollution control dams. However, due to secondary containment the evaporation dams are considered sanitary and unlikely sources of pollution. The overburden dump is also considered an unlikely source of pollution due to low leaching and acid generation potential."

The report on the hydrogeological study, including numeric groundwater modelling and assessment of the acid generation potential by contaminated water from the opencast pit, stockpiles, slurry dams and PCDs was conducted in 2009, and concluded that while acid generation potential was "possible" it was negligible and mitigation measures, implemented and planned, further reduced the potential for Acid Mine Drainage (AMD). The potential of acid generation on hard dumps and current waste dumps was deemed unlikely.

This position was verified and supported during the review and revision of the geochemistry database and groundwater model conducted by Geo Pollution Technology (Hydrogeological Report for Specialist Groundwater Studies – Vele Colliery - January 2015).

8.8.2 Plant Modification Project

The highest environmental risks identified in a previous CPR is the impact of mining on the Mapungubwe WHS, the long term impacts of ground water quality as well as surface water.

Mitigation and management systems have been put in place to address potential risks identified in the previous CPR conducted in in 2011. The Heritage Impact Assessment and submission to UNESCO regarding Mapungubwe deemed the influence of mining on the WHS to be minimal.

Concerning groundwater pollution, the colliery continues to conduct quarterly groundwater monitoring. Furthermore, a review and revision of the geochemical database groundwater model was undertaken in 2014, the results of which indicated a significant unlikelihood of AMD from the Vele Colliery operations.

Regarding surface water, monthly monitoring is conducted, the results of which indicate no threat from Vele Colliery to the Limpopo River and surface water streams. To date, no surface water pollution has occurred.

8.8.3 Risk to be investigated

The following risks are recommended to be further investigated:

- The potential impacts of a successful land claim that was only deemed not quantifiable by the IMR report.
- The influence of holder of other prospecting and mineral rights for other minerals over the same mining area.
- Potential influence of major weather events; drainage channels around the pit and free-draining rollover rehabilitation will be required to minimise the influence of extreme climatic events as was experienced during the abnormal flooding event of 2012
- Risks associated with permits/rights
  - The renewal of the Prospecting Right previously held by Silkwood Trading 14. The prospecting right remains valid until a decision to grant or refuse has been taken by DMR. The application process is still in progress and therefore the prospecting right remains valid
- Risks associated with the land claims and prospecting permits on some of the farms of the Vele Colliery.

8.9 Taxation

Vele is subject to:

- South Africa Taxation laws and all Tax returns are currently up to date. Company tax in South Africa is 28% after all capital expenditure is recovered in the year it is incurred.
- South Africa VAT registered – due to the fact that the company has not made any Vatable supplies in 2 years SARS might suspend the VAT number until commercial production.
- South Africa's Mineral Royalty Tax Acts are applicable – all returns are up to date. A formula supplied by the MPRDA (2002) is applied and used in all DCF calculations.

There is no private royalties' payable for Vele Colliery, only State Royalties.

8.10 Social and community impact

8.10.1 Public Participation

The Public Participation Process has been designed in terms of the NEMA Public Participation Guideline and the extent of the Environmental Authorisation Amendment required. Public participation is a process and vehicle to provide sufficient and accessible information to registered Interested and Affected Parties (IAPs) in an objective manner to assist them to identify issues of concern, to identify alternatives, to suggest opportunities to reduce potentially negative or enhance potentially positive impacts, and to verify that issues and/or inputs have been captured and addressed during the assessment process. This chapter of the report provides an overview of the tasks undertaken for the public participation process prior and post the release of the Draft Amendment Report.

CoAL has developed and implemented a comprehensive Stakeholder Engagement Process that is pursuant of inclusive and transparent engagement at all levels.

8.10.1.1 Interested and Affected Party Database

This database was established to ensure a comprehensive stakeholder and IAP database for stakeholder engagement. IAPs were contacted to confirm their wish to remain a registered IAP and additional stakeholders were added throughout the process when they requested to be registered. A total of 785 I&AP's are registered on the IAP database and include parties from the following categories:

- National, Provincial and Local Government
- Business and Commerce
- Environmental NGOs and Consultancy companies
- Research Organisations
- Education Institutions
- Community Based Organisation and Structures
- Regional and Neighbouring Landowners

- Tourism Organisations and Operators
- Media

An IAP database was developed throughout the Public Participation for the New Order Mining Right Application, Integrated Water Use License Process as well as the Environmental Authorisation process and additional stakeholders were added throughout the process when they requested to be registered. The original EIA Process followed a rigorous Public Participation Process and established an Environmental Monitoring Committee (EMC) with local stakeholders. The EMC has been engaged regarding the amendment to the EA.

8.10.2 Social & Labour Plant (SLP)

A socio-economic specialist has identified a number of mitigation measures, which include:

- Participation in regional structures
- Maximise local employment
- Provision of infrastructure and housing for construction workforce on site to alleviate the short term impact on Musina
- Support in the maintenance of the R572 road into Musina
- Implement programmes identified and included in the Social and Labour Plan (SLP)

Facilitation with existing housing developments for external workforce is also part of the mitigation, which plans to:

- Maximize employment of local people
- Skill programmes to equip workforce (Mining-related and portable)
- Investigate and finalize alternative transport methods
- Construction policy and procedures – control access, conduct and identification
- HIV/AIDS and health related awareness programmes
- Potential workforce skills & SMME database
- Make available bursary opportunities to build skill capital in the region
- Design and implement economic development programmes
- Minimize surface areas through planning of infrastructure lay-out and mine method alternatives
- Communication channel with direct adjacent land owners and key stakeholders to address impacts and grievances
- A transparent recruitment drive aimed at locals, including existing SMMEs and notably HDSAs
- A recruitment drive aimed at legitimate foreigners with scarce skills

Costs for the implementation of the socio-economic mitigation measures have been allowed for in the Social and Labour Plan (SLP) of the mine.

The farmers whose farms (surface rights) were bought by CoAL have rental agreements with CoAL, which include the making of Lucerne bales and delivery to CoAL's game farms on other properties.

The first project is the restoration and rehabilitation of heritage resources and was scheduled for completion at the end of September 2015.

8.11 Mine closure

an initial mine closure plan must be prepared with every environmental management programme lodged for approval with an application for a mining right. In terms of the now repealed provision of the MPRDA, a final closure plan had to be developed and application for a closure certificate had to be made within 180 days from cessation of operations. In terms of the recently promulgated regulations, a final closure plan will to be prepared for each application for a mining right and will have to be updated annually and financial provision will have to be made and adjusted accordingly. Existing mine companies will have to prepare such a plan (which will need to comply with the new requirements) and will have to review its existing financial provision accordingly within three months after the end of the financial year within which the new regulations were promulgated.

Currently, rehabilitation and other work done on site to minimise closure cost include:

- The backfilling of carbonaceous discard material into the pit up to the pre mining level of carbonaceous material.
- The rehabilitation of the boxcut ramp area and ex-pit waste dump.
- Rollover mining in the opencast, thus not requiring the movement of waste to external waste dump or increasing the waste dump footprint.
- Minimising the North Pit of the Plant Modification Project boxcut volumes and rampup period, to accommodate the volumes on the existing waste dumps footprint and capacity.
- The skyline of the area has not been influenced by mining, and will not require additional costs to reshape.

Capital expenditure planned for the PMP include plant upgrades, electricity lines, sewage facilities, bulk storage facilities, perennial stream diversion and PCD which, because it was not constructed at the time of the Financial Liability assessment, was not included in the assessment. Underground surface infrastructure, which is expected to be constructed in the next phases (including ventilation shafts, stone dust and stores), was also not included in the assessment.

Recommendations from the Financial Liability assessment is to draft an interim closure plan, containing short, medium and long-term closure measures and targets against which the quantified closure components can be managed, ultimately creating a progressive closure liability control locus.

8.11.1 Mine residue management

Three options were evaluated for the management of the mine residue (discard and slurry) during the drafting of the EMP. Two surface facilities were looked at, namely surface discard dumps, slurry facilities, and a co-disposal facility catering for both. The third option that was evaluated is in-pit disposal of mine residue during rehabilitation of the opencast pits.

From a groundwater perspective, the in-pit disposal was deemed the option that would cause the least impact owing to the fact that the residue could be placed at the bottom of the pit, allowing the residue to be covered with water. This would reduce the potential for oxidation and the formation of acid-mine drainage.

In-pit disposal would also facilitate a free-draining final profile (from a visual and end land use perspective the preferred option). Surface residue facilities were seen to also have a large visual impact and long-term maintenance issues.

8.11.2 Closure or End-Use Objectives

- To rehabilitate disturbed areas to sustainable end land use, as close as possible to the original conditions
- To promote the rapid re-establishment of natural vegetation and restoration of site ecology
- To implement a sustainable long-term water management plan to deal with potential decant

8.11.3 Financial Liability Assessment 2015:

The Plant Modification Project aims to restart opencast activities refurbishing the plant to accommodate two (2) types of coal products.

Other expansions are dependent on pending authorisations and the economic status of South Africa, as wells as the current demand. This condition is also used as a qualification for the report. The underground mining sections are scheduled to take place 16 years after the commencement of the opencast activities. No other profound expansions and/or operations are scheduled to take place in the near future.

The pit has not yet developed to the extent where the stream diversion is necessary. No cost associated with the rehabilitation of the stream diversion has been included in the 2015 Financial Liability Assessment. The stream diversion plan has been finalised, but the stream diversion infrastructure is still to be constructed as per the amended IWUL, expected in H2 2016.

The new overhead power line from Pontdrift substation to the mine is in the process of being constructed and will impose an additional closure liability on CoAL. However, since it has not yet been handed over it is not considered CoAL's responsibility and is therefore not included in the closure cost liability for March 2015.

The assessment does not provide detailed closure objectives, but presents accurate and process orientated costing escalations. This report should in the future, further to the mentioned recommendations be supported by an interim closure plan, containing short, medium and long term closure measures and targets against which the quantified closure components can be managed, ultimately creating a progressive closure liability control locus.

The closure costs reflect the costs for unscheduled closure situations, based on known and itemised components within the current context of the mining operations and its interactions.

- An allocation of 12% was made for preliminary and general costs, as well as a 10% provision for contingencies. (Provisions were made in accordance with the DMR guideline). The total unscheduled closure cost is calculated at R 50 525 566.40 (DMR applied rates, including VAT).
- Thereby, the closure costs adequately reflect the costs for unscheduled closure situations, based on known and itemised components within the current context of the mining operations and its interactions.
- An allocation of 12% was made for preliminary and general costs, as well as a 10% provision for contingencies.
- Both of these provisions were made in accordance with the DMR guideline.
- The total unscheduled closure cost is calculated at R 50 525 566.40 (DMR applied rates, including VAT).

8.12 Capital and operating costs

8.12.1 Capital

The capital expenditure documented in this report is for the Plant Modification Project and only at completing the project development and initiating production as indicated in the Capital Cost Estimate in Table 8.12.1. Underground and other infrastructure is only anticipated after opencast activities concluded, estimated at 30 years after production from the PMP starts.

The capital estimate for the plant is an agglomeration of construction with foreign exchange component, owners cost, professional fees, contingencies and escalation. All construction costs (commissioning and other activities) are included with subsequent related costs treated as operational costs.

With an established opencast, with ramps and blasting blocks available, mining costs and the additional pre stripping to enable a 2.7Mtpa mining rate from part of the operating expenditures.

Table 8.12.1 Capital Cost Estimate

Financing requirement = Plant Modification Project	ZAR (Millions)
Plant Infrastructure Area and contingency	150.0
Plant Contingency	14.0
Mine Development(Sewage R1.2m and Bulk Fuel R3m)	4.2
Power Generation	15.4
Powerline Servitude	3.0
Perennial stream Diversion and PCD	7.5
Contingencies on Mine infrastructure	0.0
Project Link	0.0
Total:	**R 194.1**

The capital costs are estimated in ZAR, and will be funded by loans or shareholder funding. For the DCF calculation, the value was amortised. A total of R194.1M is budgeted for.

8.12.2 Operating Costs

Operating costs for Vele Colliery is based on outsourcing to specialists in mining and processing operations, but to maintain a small management team to assist with direct operations as shown in the Estimated Operating costs in Table 8.12.2.

Mining, Processing and Engineering costs are based on established contractor quotations received by CoAL in 2014, for operations of the different sectors. This includes specific requirements including wirehole logging, electronic blasting, transporting discard from the plant, dust suppressant, electricity, spares, fixed costs (to contractor), consumables and site establishment. Electricity costs assumes the successful connection to the ESKOM grid.

Distribution costs include Trucking to siding, FEL (Front End Loader) costs to load the train trucks, rail costs, agent fees and port charges. The product investigated was selling a SSCC product to a local (South African client) where transport is provided to the siding at Musina, and Thermal export coal (FOB at Maputo harbour).

Overheads include SLP (Social & Labour plan costs), safety and Environmental costs (full time employees overseeing contractor as well as specialist reports), HR and head office cost, fixed overheads and additional construction charges to lodge the workers while building the plant.

Table 8.12.2 Estimated RoM Operating Costs:

R/t	2017	2018	2019	2020	2021	2022	2023
Mining Cost	R 155	R 160	R 194	R 160	R 166	R 189	R 230
Processing Cost	R 76	R 17	R 19	R 20	R 21	R 23	R 24
Engineering Cost	R 6	R 9	R 10	R 11	R 12	R 13	R 14
Distribution Cost	R 28	R 144	R 170	R 179	R 187	R 199	R 209
Overheads (Fixed)	R 93	R 10	R 18	R 23	R 21	R 27	R 24
Total Operating Costs	R 357	R 339	R 412	R 393	R 407	R 450	R 501

The Average operating cost, not discounted or inflated, is R361/RoM tonne over the Plant modification project. This includes distribution (rail & trucking) costs, production of two product streams and all other costs.

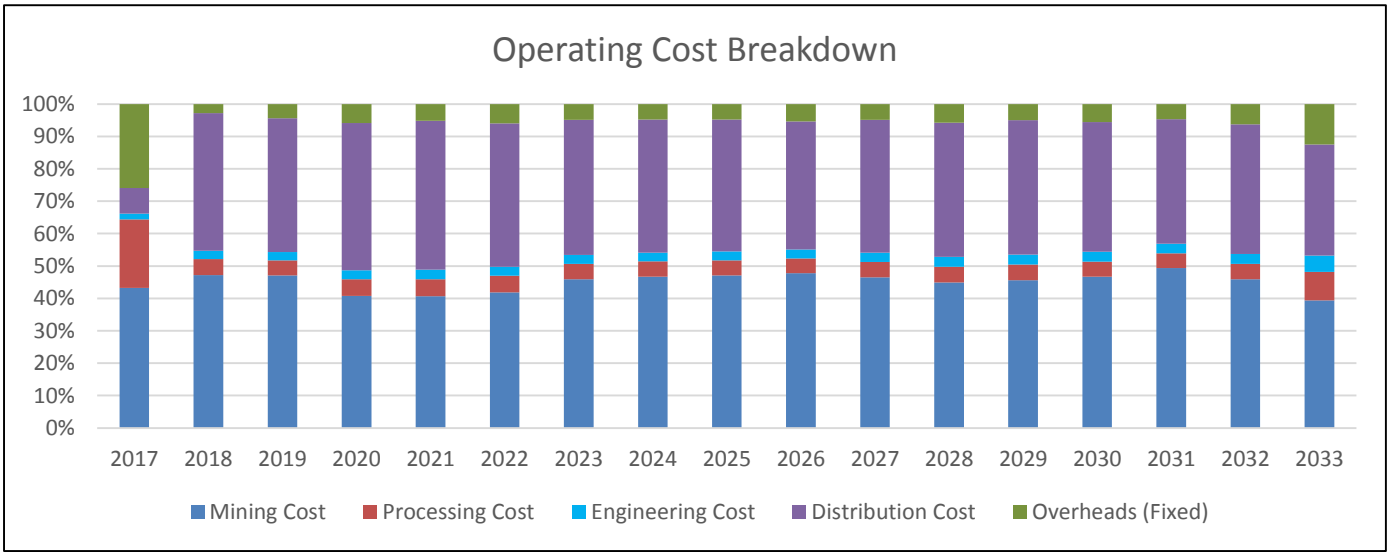


Figure 8.12.1 The percentage split of operational costs

The operating cost in year 1 (2017) of the Plant Modification project is mainly additional pre-stripping of waste, plant establishment and the building of plant and in-pit stockpiles. Varying mining cost percentage is due to fluctuations in strip ratio due to geology and the establishment of the North Pit.

8.13 Economic criteria

Exchange rates and prices used in forecasts are summarised in Table 8.5.1 and Table 8.5.2 as part of market studies. United States of America (USA) inflation forecasts are based on four-year historic averages supplied by Statista.

South African inflation was calculated on indexes for the specific escalation bucket, with historic values from Statistics South Africa. A factor was applied to relevant costs based on Mining PPI (6% p.a.), CPI (6% p.a.) and Labour inflation rate (CPI +2.5%) as well as a diesel cost (3% p.a. – Investec oil price growth forecast) and electricity (CPI + 3%).

The values used for South African CPI are conservative, viewed based on current SA Reserve bank target of between 3% and 6%.

Coal of Africa Limited provided the financial model used to calculate the viability of the Vele reserve. To understand the variability within the cost model the following inputs, represented in Table 8.13.1, from the financial model were adjusted to align the financial model with the 2017 start date of the PMP.

Table 8.13.1 - Financial Model Adjusted Input Parameters

	Unit	Original Model Fixed Input	Distribution	@Risk	Min	Most Likely	Max
Selling Price							
Middlings Product Calorific Value	MJ/Kg GAD	23.5	Trigen	23.50	18	23.5	24
API4 (Export Coal, RBCT)	US$/t	61.81	Trigen	61.81	59	61.81	65
HCC (Hard Coking Coal)	US$/t	99.57	Trigen	99.57	90	99.57	110
SSCC (Semi Soft Coking Coal) % of HCC	%	25%	Trigen	0.25	0.2	0.25	0.3
Currency							
Dollar Start out	ZAR/US$	13.52	Trigen	13.52	13	13.52	13.6
Nominal increase in Price - Dollar Terms	% pa	2.50%	Trigen	0.025	0.02	0.025	0.04
Economic Parameters							
CPI (Consumer Price Index)	% pa	6.00%	Trigen	0.06	0.05	0.06	0.065
PPI (Production Price Index)	% pa	6.00%	Trigen	0.06	0.05	0.06	0.065
Labour inflation rate	% pa	9.00%	Trigen	0.09	0.05	0.09	0.1
Consumables							
Diesel Inflation	% pa	3.00%	Trigen	0.03	0.02	0.03	0.06
Electricity Cost	% pa	12.50%	Trigen	0.125	0.1	0.125	0.2
Yields							
SSCC Yield	%/t	10.70%	Trigen	0.107	0.08	0.107	0.15
Average Eskom Yield	%/t	33.00%	Trigen	0.33	0.25	0.33	0.4

All variability distributions were based on a trigen distribution, as described in Figure 8.13.1 below. A trigen distribution uses 3 main input metrics, a Min, Mean and Max which is estimated. An addition two metrics describes sizes of the distribution's "overflow past the Min and Max, above and below. Within all of the above input distribution estimations a fixed value of 10% was used.

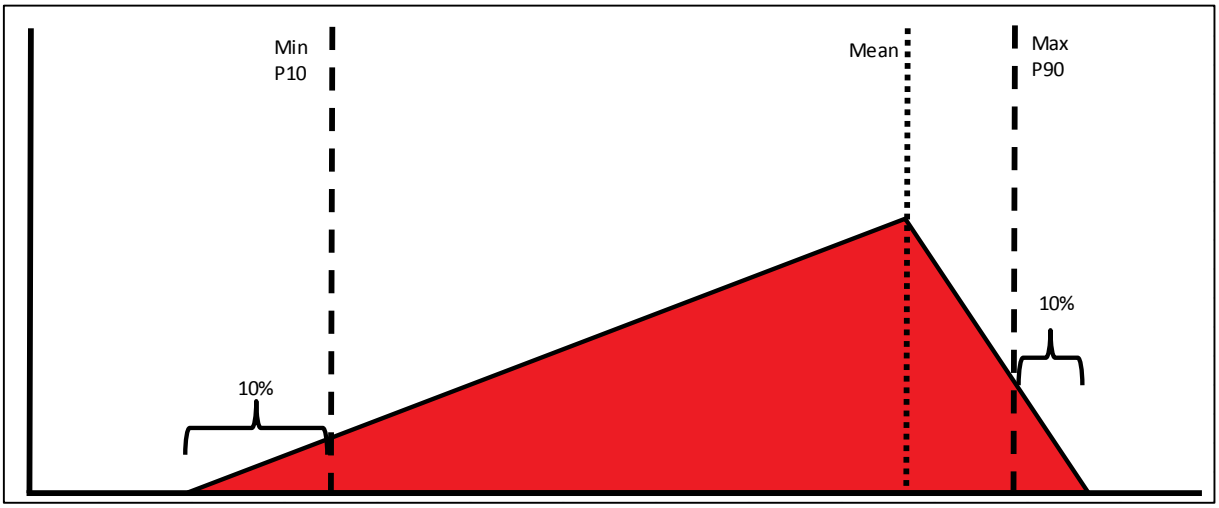


Figure 8.13.1 - Trigen Distribution

A Monte Carlo simulation, using 10,000 iterations, was used to determine the probability of achieving a positive NPV. Figure 8.13.2 indicates Vele's NPV Probability Distribution in ZAR Billions, from the year 2017 onwards. Projected 2017 prices (see Table 8.5.2 Coke, Coal and Carbon forecasts mean values from reputable sources) were used a base case.

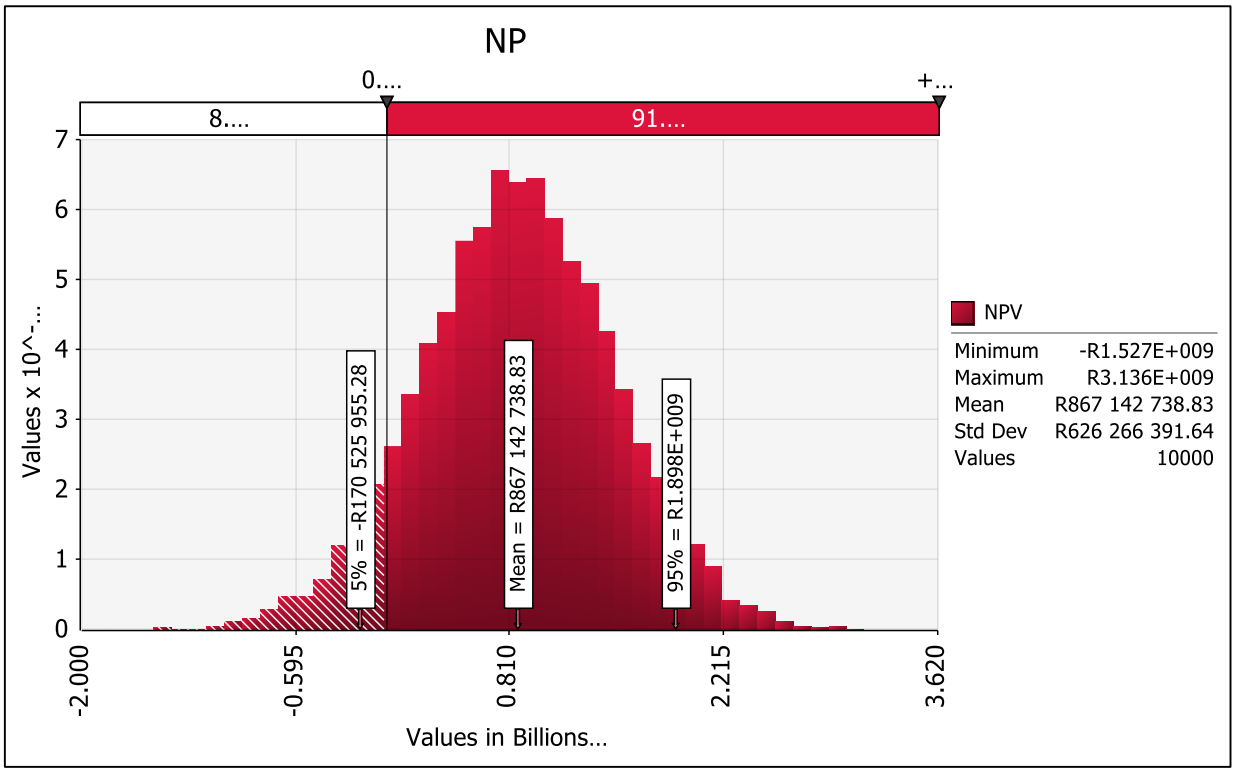


Figure 8.13.2 - Financial Model NPV Probability Distribution (2017 Onwards)

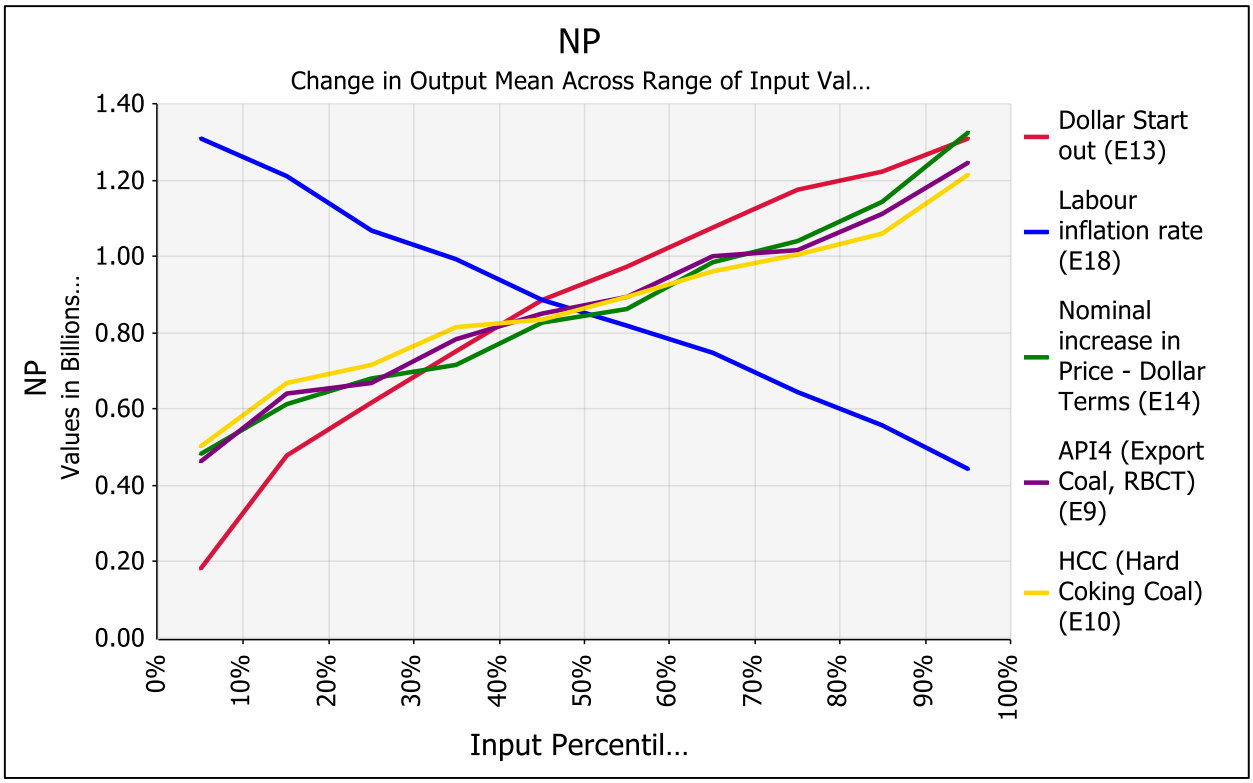


Figure 8.13.3- NPV Spider Diagram, Sensitivity

Figure 8.13.3 indicates the sensitivity of the most sensitive input parameters namely:

- Selling cost of coal
- Labour inflation rate
- South African Inflation
- Rand / US Dollar exchange rate

The following breakdown of the Discounted Cash Flow (DCF) was taken from the cost model to illustrate the mean NPV calculated for 2017 onwards. The difference between the Mean in Table 8.14.1 and the NPV calculated in the Monte Carlo Simulation can be attributed to the variance ranges used on the input sheet of the simulation.

8.14 Financial analysis

From the financial analysis, as discussed in the economic criteria, it is evident that the financial model's NPV can be predicted to be positive with a certainty of 91.7 %.

The DCF indicates an NPV for the Vele Colliery of **ZAR889.3M** over a 16-year period

Table 8.14.1 - Vele Discounted Cash Flow

NET PRESENT VALUE CALCULATION: VELE R'000	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue	-	38 298	1 081 423	1 235 891	1 380 647	1 465 172	1 554 859	1 650 023	1 750 998
Cash Costs	-	(194 037)	(985 455)	(1 108 380)	(1 070 198)	(1 120 546)	(1 237 920)	(1 395 451)	(1 507 865)
EBITDA	**-**	**(155 739)**	**95 968**	**127 512**	**310 449**	**344 626**	**316 939**	**254 572**	**243 133**
Movement in Working Capital	-	12 857	(19 176)	(651)	(12 829)	(537)	4 753	7 824	3 875
Capital Expenditure	-	(194 085)	(2 458)	(2 641)	(2 826)	(3 025)	(3 238)	(3 468)	(3 714)
Tax (including Royalties)	-	(131)	(3 758)	(4 281)	(6 604)	(69 593)	(70 009)	(62 006)	(59 485)
Free Cash Flow (annually)	**-**	**(337 097)**	**70 575**	**119 939**	**288 191**	**271 471**	**248 445**	**196 922**	**183 809**
NPV Discount Rate	**10.00%**								
Net Present Value	**889 305.34**								

2025	2026	2027	2028	2029	2030	2031	2032	2033	TOTAL
1 858 139	1 971 821	2 092 443	2 220 429	2 356 227	2 500 314	2 653 195	2 815 406	1 288 942	29 914 227
(1 617 129)	(1 772 110)	(1 814 746)	(1 909 384)	(2 030 049)	(2 243 178)	(2 487 312)	(2 550 274)	(1 398 074)	(26 442 106)
241 010	**199 711**	**277 697**	**311 045**	**326 178**	**257 136**	**165 883**	**265 132**	**(109 132)**	**3 472 121**
3 362	6 854	(2 660)	1 320	3 150	10 424	12 631	(2 619)	4 701	33 278
(3 978)	(4 263)	(4 569)	(4 897)	(5 251)	(5 631)	(6 040)	(6 480)	(6 487)	(263 049)
(57 807)	(51 567)	(73 347)	(75 016)	(78 953)	(72 150)	(60 306)	(62 499)	(14 672)	(822 183)
182 587	**150 735**	**197 122**	**232 452**	**245 124**	**189 780**	**112 168**	**193 534**	**(125 590)**	**2 420 167**

9 Coal Reserve Estimate

9.1 Estimation and modelling techniques

Conversion of the MTIS (Mineable Tonnes In-Situ) resource to reserve was based on SANS10324:2004 guidelines for the evaluation of coal resources and coal reserves.

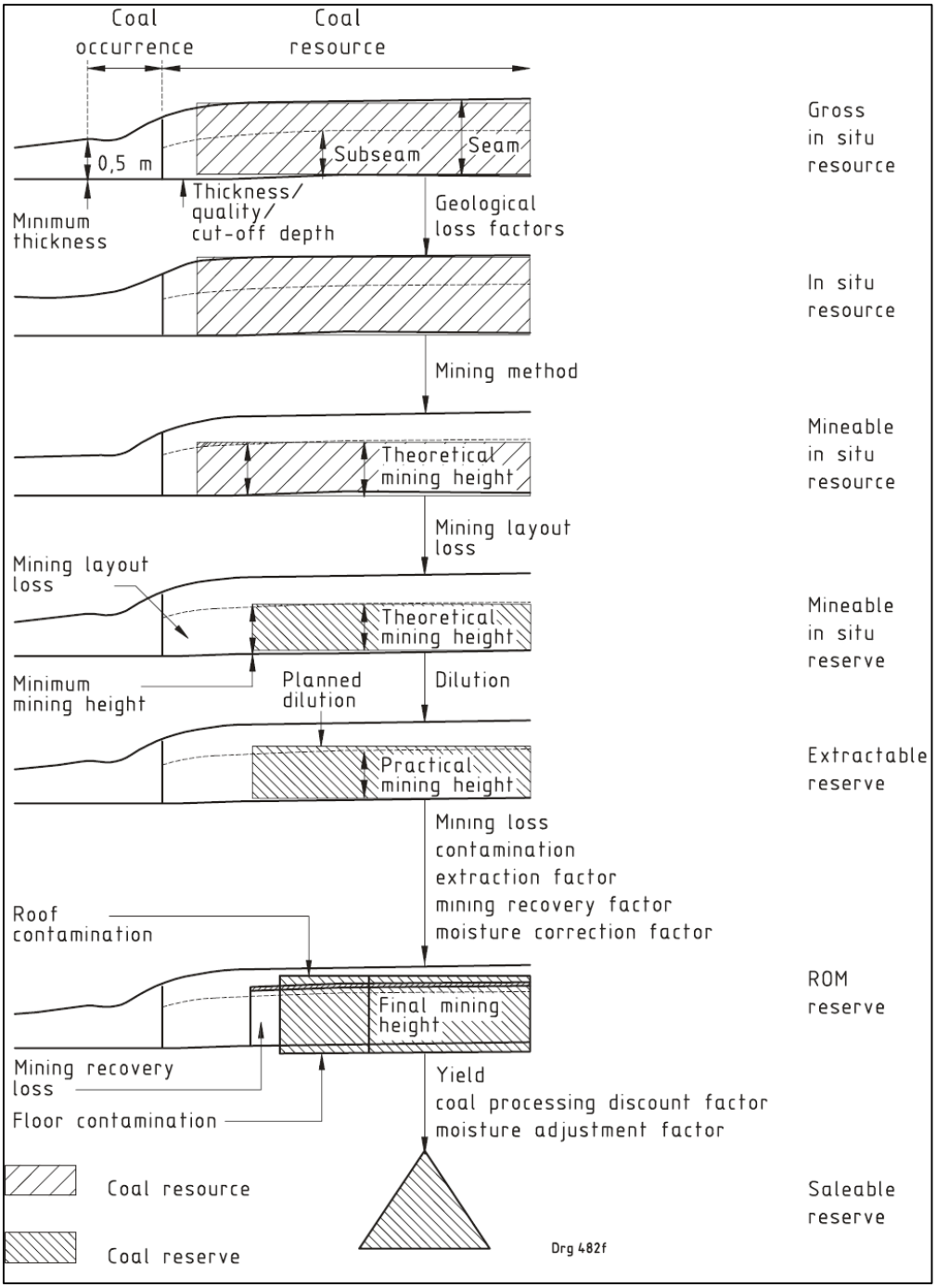


Figure 9.1.1 Diagram that illustrates the sequential calculation of coal resources and coal reserves from gross in situ tonnes (as modelled) to saleable tonnes by the application of key cut-off criteria and discount factors associated with modifying factors (SOURCE: SANS 10320:2004)

The steps used in Figure 9.1.1 for the incremental calculation of coal reserves was applied to the MTIS Resource, as constrained by mining widths and seams per the resource declaration for Mineable tonnes in situ Resource.

The resource was depleted with mining that occurred up to 31 October 2013, and weathered coal was excluded from the mining layout.

9.2 Coal Reserve classification criteria

The basis of classification of reserves and confidence categories are based on the guidelines as provided in the Australian guidelines for estimation and classification of coal resources.

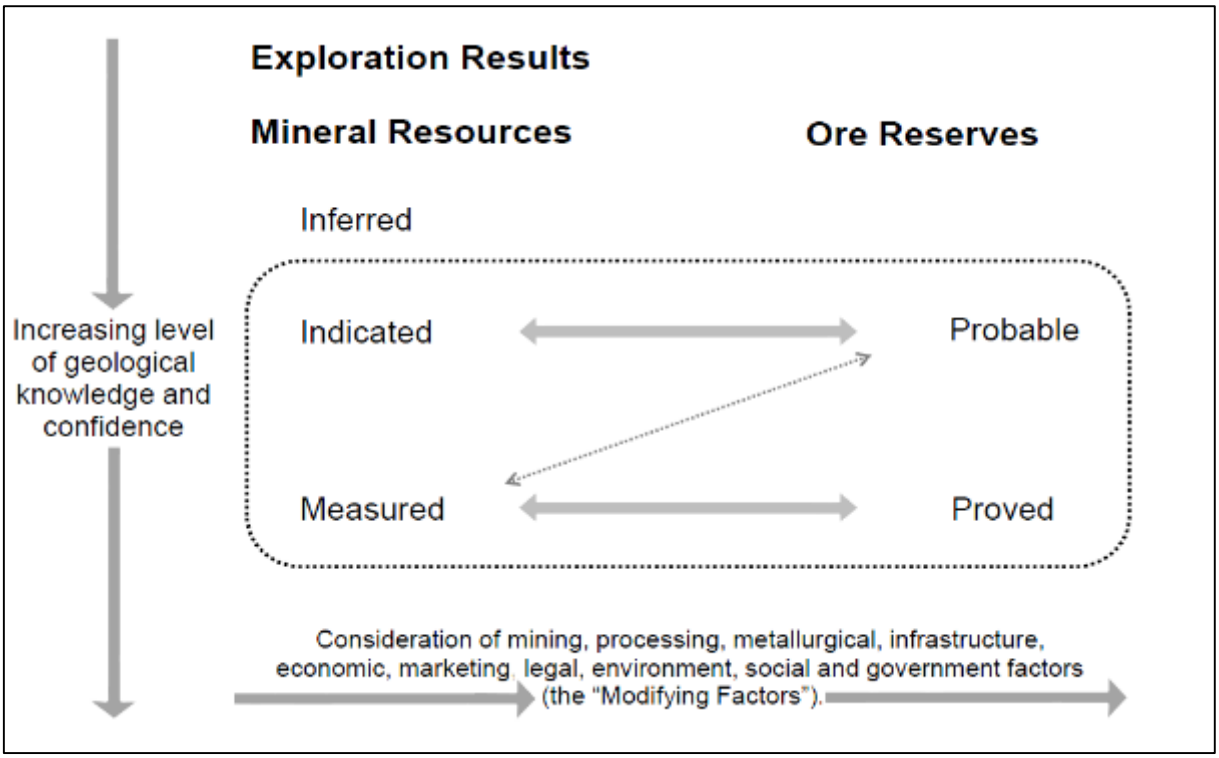


Figure 9.2.1 Resource to Reserve category conversion as per JORC

General relationship between Exploration Results, Coal Resources and Ore Reserves as shown in Figure 9.2.1 with the word mineral and ore exchanged with coal.

The mining methods proposed as well as the recovery rates are clearly understood and quantified. The confidence from the resource classification was used to classify the RoM reserves and saleable tonnes by factoring of predicted and practical yields. This classification was based on sound economic future view on demand, prices and exchange rates as well as costs from well-established contractors in a financial model.

9.3 Coal Reserve statement

The updated Coal Reserve Statement is reported in two statements. The first reserve statement MTIS reserve based on the minimum seam thickness of 1.4m and the maximum seam thickness of 4.5m (theoretical mining height) for the underground resources.

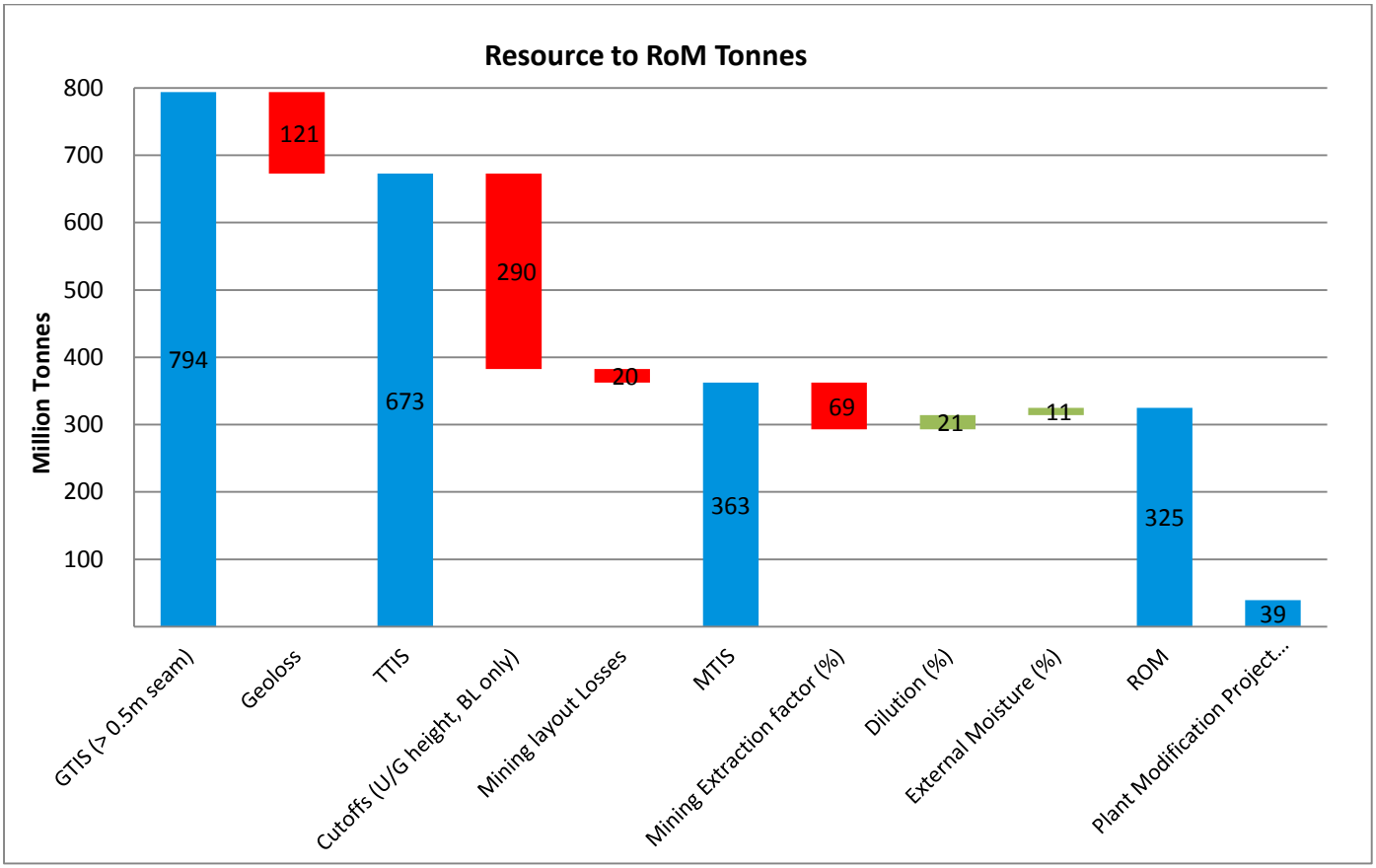


Figure 9.3.1 Graphical representation of RoM tonnes conversion from GTIS tonnes

Table 9.3.1 Reserve tonnes for Vele Colliery

Mining Block	OC \ UG	Reserve Category	Mineable Insitu Reserve MTIS (Mt) (ad)	Mining Extraction factor (%)	Dilution (%)	External Moisture (%)	RoM Tonnage (Mt)	Net Attributable to CoAL Rom Tannage (Mt)	Primary Product Stream Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	Secondary Product Stream Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)	Combined Yield (%)
OC central	OC	Proven	23.806	95%	8%	3.5%	25.280		10.7%	2.705	33.0%	8.342	43.7%
Total Proved OC			**23.806**	**95%**	**8%**	**3.5%**	**25.280**	**25.280**	**10.7%**	**2.705**	**33.0%**	**8.342**	**43.7%**
OC North	OC	Probable	67.895	95%	8%	3.5%	72.099		10.7%	7.715	33.0%	23.793	43.7%
OC South	OC		25.062	95%	8%	3.5%	26.614		10.7%	2.848	33.0%	8.783	43.7%
OC west	OC		76.870	95%	8%	3.5%	81.629		10.7%	8.734	33.0%	26.938	43.7%
Total Probable OC			**169.828**	**95%**	**8%**	**3.5%**	**180.342**	**180.342**	**10.7%**	**19.297**	**33.0%**	**59.513**	**43.7%**
Total Opencast			**193.634**	**95%**	**8%**	**3.5%**	**205.622**	**205.662**	**10.7%**	**22.002**	**33.0%**	**67.855**	**43.7%**
UG North	UG	Probable	38.335	60%	5%	3.5%	24.996		10.7%	2.675	33.0%	8.249	43.7%
UG South	UG		30.317	60%	5%	3.5%	19.768		10.7%	2.115	33.0%	6.524	43.7%
UG West	UG		62.891	60%	5%	3.5%	41.008		10.7%	4.388	33.0%	13.533	43.7%
Total Probable Underground			**131.544**	**60%**	**5%**	**3.5%**	**85.773**	**85.773**	**10.7%**	**9.178**	**33.0%**	**28.305**	**43.7%**
Grand Total Vele project			**325.178**	**80.8%**	**7.1%**	**3.5%**	**291.395**	**291.395**	**10.7%**	**31.179**	**33.0%**	**96.160**	**43.7%**

Table 9.3.2 Primary product, yield - 1.4m Minimum mining height and 4.5m max mining height (U/G mining of Bottom Lower coal seam only)

					Primary Product, Air dried qualities						
Mining Block	OC \ UG	Reserve Category	RoM Tonnage (Mt)	Primary Product Stream Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulp (%)	Inherent Moist (%)
OC Central	OC	Proved	25.280	10.7%	2.70	30.19	10.00	34.99	53.07	1.10	1.94
Total Proved OC			**25.280**	**10.7%**	**25.280**	**30.19**	**10.00**	**34.99**	**53.07**	**1.10**	**1.94**
OC North	OC	Probable	72.099	10.7%	7.71	30.87	10.00	35.45	52.71	1.08	1.84
OC South	OC		26.614	10.7%	2.85	30.38	10.00	33.65	54.43	1.00	1.92
OC West	OC		81.629	10.7%	8.73	30.88	10.00	35.33	52.91	1.17	1.76
Total Probable OC			**180.342**	**10.7%**	**180.342**	**30.80**	**10.00**	**35.13**	**53.05**	**1.11**	**1.82**
Total Opencast			**205.622**	**10.7%**	**205.622**	**30.73**	**10.00**	**35.11**	**53.06**	**1.11**	**1.83**
UG North	UG	Probable	24.996	10.7%	2.67	30.89	10.00	33.71	54.52	0.96	1.77
UG South	UG		19.768	10.7%	2.12	30.24	10.00	35.82	52.40	1.25	1.78
UG West	UG		41.008	10.7%	4.39	30.76	10.00	35.99	52.33	1.17	1.68
Total Probable Underground			**85.773**	**10.7%**	**85.773**	**30.68**	**10.00**	**35.29**	**52.98**	**1.13**	**1.73**
Grand Total Vele project			**291.395**	**10.7%**	**291.395**	**30.71**	**10.00**	**35.16**	**53.04**	**1.11**	**1.80**

Table 9.3.3 Secondary product, yield - 1.4m Minimum mining height and 4.5m max mining height (U/G mining of Bottom Lower coal seam only)

					Secondary Product, Air dried qualities						
Mining Block	OC \ UG	Reserve Category	RoM Tonnage (Mt)	Secondary Product Stream Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)	CV (MJ\kg)	Ash %	Vol (%)	Fixed Carbon (%)	Total Sulphur (%)	Inherent Moist (%)
OC Central	OC	Proved	25.280	33.0%	8.34	25.32	23.7	31.6	43.00	1.10	1.70
Total Proved OC			**25.280**	**33.0%**	**25.280**	**25.32**	**23.7**	**31.6**	**43.00**	**1.10**	**1.70**
OC North	OC	Probable	72.099	33.0%	23.79	25.32	23.7	31.6	43.00	1.10	1.70
OC South	OC		26.614	33.0%	8.78	25.32	23.7	31.6	43.00	1.10	1.70
OC West	OC		81.629	33.0%	26.94	25.32	23.7	31.6	43.00	1.10	1.70
Total Probable OC			**180.342**	**33.0%**	**180.342**	**25.32**	**23.7**	**31.6**	**43.00**	**1.10**	**1.70**
Total Opencast			**205.622**	**33.0%**	**205.622**	**25.32**	**23.7**	**31.6**	**43.00**	**1.10**	**1.70**
UG North	UG	Probable	24.996	33.0%	8.25	25.32	23.7	31.6	43.00	1.10	1.70
UG South	UG		19.768	33.0%	6.52	25.32	23.7	31.6	43.00	1.10	1.70
UG West	UG		41.008	33.0%	13.53	25.32	23.7	31.6	43.00	1.10	1.70
Total Probable Underground			**85.773**	**33.0%**	**85.773**	**25.32**	**23.7**	**31.6**	**43.00**	**1.10**	**1.70**
Grand Total Vele project			**291.395**	**33.0%**	**291.395**	**25.32**	**23.7**	**31.6**	**43.00**	**1.10**	**1.70**

9.4 Coal Reserve reconciliation

The decrease in reserves and saleable tonnes are presented in Table 9.4.1 to Table 9.4.3 with variance from 2012 to 2015 tonnes indicated in red.

Table 9.4.1 Vele Reserves - Venmyn 2012

Mining Block	OC \ UG	Reserve Category	Mineable Insitu Reserve (Mt)	RoM Tonnage (Mt)	Primary Product Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	Secondary Product Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)
OC central	OC	Proven	24.199	25.697	18.5%	4.743	38.3%	9.842
Total Proved OC			**24.199**	**25.697**	**18.5%**	**4.743**	**38.3%**	**9.842**
OC North	OC	Probable	67.895	72.099	18.3%	13.167	43.8%	31.584
OC South	OC		25.062	26.614	18.4%	4.908	44.0%	11.705
OC west	OC		76.870	81.629	17.8%	14.555	45.7%	37.281
Total Probable OC			**169.828**	**180.342**	**18.1%**	**32.630**	**44.7%**	**80.570**
Total Opencast			**194.027**	**206.039**	**18.1%**	**37.372**	**43.9%**	**90.412**
UG North	UG	Probable	38.335	24.996	18.9%	4.714	40.8%	10.208
UG South	UG		30.317	19.768	17.8%	3.524	39.4%	7.794
UG West	UG		62.891	41.008	17.0%	6.980	46.8%	19.179
Total Probable Underground			**131.544**	**85.773**	**17.7%**	**15.218**	**43.3%**	**37.181**
Grand Total Vele project			**325.570**	**291.812**	**18.0%**	**52.590**	**43.7%**	**127.593**

Table 9.4.2 Vele Reserves - CoAL 30 June 2015

Mining Block	OC \ UG	Reserve Category	Mineable Insitu Reserve MTIS (Mt) (ad)	RoM Tonnage (Mt)	Primary Product Stream Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	Secondary Product Stream Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)
OC central	OC	Proven	23.806	25.280	10.7%	2.705	33.0%	8.342
Total Proved OC			**23.806**	**25.280**	**10.7%**	**2.705**	**33.0%**	**8.342**
OC North	OC	Probable	67.895	72.099	10.7%	7.715	33.0%	23.793
OC South	OC		25.062	26.614	10.7%	2.848	33.0%	8.783
OC west	OC		76.870	81.629	10.7%	8.734	33.0%	26.938
Total Probable OC			**169.828**	**180.342**	**10.7%**	**19.297**	**33.0%**	**59.513**
Total Opencast			**193.634**	**205.622**	**10.7%**	**22.002**	**33.0%**	**67.855**
UG North	UG	Probable	38.335	24.996	10.7%	2.675	33.0%	8.249
UG South	UG		30.317	19.768	10.7%	2.115	33.0%	6.524
UG West	UG		62.891	41.008	10.7%	4.388	33.0%	13.533
Total Probable Underground			**131.544**	**85.773**	**10.7%**	**9.178**	**33.0%**	**28.305**
Grand Total Vele project			**325.178**	**291.395**	**10.7%**	**31.179**	**33.0%**	**96.160**

Table 9.4.3 Reconciliation in Reserve Tonnes:

Mining Block	OC \ UG	Reserve Category	Mineable Insitu Reserve MTIS (Mt) (ad)	RoM Tonnage (Mt)	Primary Product Stream Practical Yield (%)	Primary Product Saleable Tonnes (Mt)	Secondary Product Stream Practical Yield (%)	Secondary Product Saleable Tonnes (Mt)
OC central	OC	Proven	-0.393	-0.417	-8%	-2.038	-5%	-1.500
Total Proved OC			**-0.393**	**-0.417**	**-8%**	**-2.038**	**-5%**	**-1.500**
OC North	OC	Probable	0.000	0.000	-8%	-5.452	-11%	-7.791
OC South	OC		0.000	0.000	-8%	-2.060	-11%	-2.922
OC west	OC		0.000	0.000	-7%	-5.821	-13%	-10.344
Total Probable OC			**0.000**	**0.000**	**-7%**	**-13.333**	**-12%**	**-21.057**
Total Opencast			**-0.393**	**-0.417**	**-7%**	**-15.371**	**-11%**	**-22.557**
UG North	UG	Probable	0.000	0.000	-8%	-2.040	-8%	-1.959
UG South	UG		0.000	0.000	-7%	-1.409	-6%	-1.270
UG West	UG		0.000	0.000	-6%	-2.592	-14%	-5.646
Total Probable Underground			**0.000**	**0.000**	**-7%**	**-6.040**	**-10%**	**-8.876**
Grand Total Vele project			**-0.393**	**-0.417**	**-7%**	**-21.411**	**-11%**	**-31.433**

The reduction In RoM tonnes is due to mining depletion in the central opencast mine. Reduction in effective yield is due to the product specification change and the planned plant setup that will change.

In 2012 a 12% Ash primary product with Middlings was targeted, the Plant Modification Project splits the plant feed directly after the destining module into two streams: a 10% Ash SSCC and a 30% Ash Export Thermal product.

10 Mineral Asset Valuation

The evaluation of the Vele Colliery is done in accordance to the VALMIN Code (2005), which provides a standardised approach to evaluation of mineral assets.

The evaluation consist of two parts. The first part is a market-approached evaluation of the RoM tonnes outside the current Proven Coal Reserves of the Vele Colliery. The additional RoM is evaluated against sales of project and operations with similar resources and activities. The second part is the evaluation of the Proven Coal Reserves and this is accomplished through the calculation of the discounted cash flow (DCF) for the current financial model. The terminal value of the deposit will be the addition of the fair value according to the market approached with the DCF value.

10.1 Market Approach

To determine the fair attributable value of the additional RoM (outside current financial model) the value is determined by comparing it with recent sales and acquisitions in the market. For the evaluation three transactions were used to determine lower and upper ZAR ranges per resource ton.

In 2014 there has been three major transactions namely:

- The acquisition of New Clydesdale Colliery (NCC) from Exarro Resources to Universal Coal (Underground Mine)
  - Year of acquisition: 2014
  - Estimated RoM: 70 Million Tonnes
  - Acquisition Price: 170 ZARm
  - Acquisition Unit Value: 2.43 ZAR/t
- The sale of Benga, managed byRio Tinto to International Coal Ventures Limited (ICVL)
  - Year of acquisition: 2014
  - Estimated RoM: 1,900 Million Tonnes
  - Acquisition Price: $ 50 Million (US dollar) @ Average 2014 exchange rate: ZAR 11.286
  - Acquisition Unit Value: 0.297 ZAR/t

The acquisition of Benga is heavily deflated as major impairments due to production losses and the high cost of transport to local harbours made the project not profitable. The value is presented to indicate the extreme lower limit ZAR/t value

- The acquisition of Total Coal South Africa (TCSA) by Exxaro Resources
  - Year of acquisition: 2014
  - Estimated RoM: 474 Million Tonnes (Minable tonnes in situ) (1,498 Million GTIS resources)
  - Acquisition Price: $ 472 Million (US dollar) @ Average 2014 exchange rate: ZAR 11.286
  - Acquisition Unit Value: 11.24ZAR/t

With the acquisition of the TCSA asset one of the main drivers is the Richards Bay Coal Terminal allocation that TCSA has access too. The price provides the extreme upper limit for the ZAR/t value. Even though the sale of Benga and the acquisition of TCSA are extremes, the midpoint of the two transaction does provide an acceptable value for resources per ton.

For the determination of the lower and upper ZAR/t values for the market approach evaluation, the following adjustments were made to the transactions of 2014:

- An additional 1.50ZAR/t was added to the NCC underground mine's resource per ton value
- Two of the acquisitions a primary thermal coal mines in the Witbank Coalfields in Mpumalanga. Vele Colliery also produces a semi-soft coking coal that adds to the lower limit and upper limit values.

Table 10.1 provides a summary of the evaluation parameters by mining method and resource category.

Table 10.1.1 Market approach evaluation of the Vele Colliery's additional RoM

Project	O/C or U/G	Reserve Category	"Excess" RoM Tonnage (t)	Lower Unit Value (ZAR/t)	Upper Unit Value (ZAR/t)	Min Project Value (ZARm)	Max Project Value (ZARm)	Mean Project Value (ZARm)
Vele	O/C	Probable	133 939 947.00	3.5	5	468.79	669.70	569.24
	U/G	Probable	85 772 992.00	2.5	3.75	214.43	321.65	268.04
Vele Total:			**219 712 939.00**			**683.22**	**991.35**	**837.29**

The market approach evaluation of the additional RoM tonnes provides an attributable fair value of ZAR 837.3M.

10.2 Discounted Cash Flow

The information represented in the CPR provides verification of all financial inputs in to the financial model. The financial model is based on the PMP mining operation and the DCF provides an attributable value of ZAR 889.3M (based on the nett present value (NPV)) and the calculation is presented in Table 10.2.

Table 10.2: Discounted Cash Flow for the Vele Colliery

NET PRESENT VALUE CALCULATION: VELE R'000	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue	-	38 298	1 081 423	1 235 891	1 380 647	1 465 172	1 554 859	1 650 023	1 750 998
Cash Costs	-	(194 037)	(985 455)	(1 108 380)	(1 070 198)	(1 120 546)	(1 237 920)	(1 395 451)	(1 507 865)
EBITDA	**-**	**(155 739)**	**95 968**	**127 512**	**310 449**	**344 626**	**316 939**	**254 572**	**243 133**
Movement in Working Capital	-	12 857	(19 176)	(651)	(12 829)	(537)	4 753	7 824	3 875
Capital Expenditure	-	(194 085)	(2 458)	(2 641)	(2 826)	(3 025)	(3 238)	(3 468)	(3 714)
Tax (including Royalties)	-	(131)	(3 758)	(4 281)	(6 604)	(69 593)	(70 009)	(62 006)	(59 485)
Free Cash Flow (annually)	**-**	**(337 097)**	**70 575**	**119 939**	**288 191**	**271 471**	**248 445**	**196 922**	**183 809**
NPV Discount Rate	**10.00%**								
Net Present Value	**889 305.34**								

2025	2026	2027	2028	2029	2030	2031	2032	2033	TOTAL
1 858 139	1 971 821	2 092 443	2 220 429	2 356 227	2 500 314	2 653 195	2 815 406	1 288 942	29 914 227
(1 617 129)	(1 772 110)	(1 814 746)	(1 909 384)	(2 030 049)	(2 243 178)	(2 487 312)	(2 550 274)	(1 398 074)	(26 442 106)
241 010	**199 711**	**277 697**	**311 045**	**326 178**	**257 136**	**165 883**	**265 132**	**(109 132)**	**3 472 121**
3 362	6 854	(2 660)	1 320	3 150	10 424	12 631	(2 619)	4 701	33 278
(3 978)	(4 263)	(4 569)	(4 897)	(5 251)	(5 631)	(6 040)	(6 480)	(6 487)	(263 049)
(57 807)	(51 567)	(73 347)	(75 016)	(78 953)	(72 150)	(60 306)	(62 499)	(14 672)	(822 183)
182 587	**150 735**	**197 122**	**232 452**	**245 124**	**189 780**	**112 168**	**193 534**	**(125 590)**	**2 420 167**

10.3 Total Asset Value

In considering the result of both methods, the terminal value for the Vele Colliery is **ZAR 1,726.6m**. In the opinion of VBKom this value is a fair value for the asset considering the current market demand and export coal prices.

11 Interpretation and Conclusions

The data used in the geological modelling and Coal Resource estimation was done in accordance too the JORC Code (2012). All data used are of a sufficient quality to assist in a Coal Resource estimation with a high level of confidence.

Mineral tenure is secured through a mining right over most of the Vele Colliery area. All other regulatory requirement for the commencement of mining activities are in place.

All the resource included in the resources falls within the reasonable prospect for eventual economic extraction. This is based on the technical studies completed to convert the Coal Resources into Coal Reserves.

It is the opinion of VBKom that the Coal Resource Estimate and Statement is a reasonable representation of the coal deposit.

Since mine has been out onto care and maintenance the plant design and product mix was further investigated. A plant modification project was started to re-configure the current plant at the mine to produce a 10% ash semi-soft coking coal and a 5500kcal (NAR) thermal coal product. This is because the fine fraction, which got lost to the slimes, contained most of the vitrinite rich coals.

The business case for the PMP is a 16-year opencast design and schedule, which makes out a part of the Central – and Northern Pit. The remainder of the additional RoM will be extracted through opencast and underground methods.

Although the current business case only includes the PMP sufficient studies, which corresponds to pre-feasibility and feasibility study levels, have been conducted on the additional RoM. It is the opinion of VBKom that these studies are sufficient in nature to convert the Coal Resource to Coal Reserves.

The economical criteria and financial modelling of the Vele Colliery indicates a that the project will be NPV positive with a relative high confidence level. The DCF indicates a NPV for the project of ZAR 889.3M over the 16-year period.

An evaluation of the Vele Colliery was based on the DCF and a market approach for the “additional” RoM. The two methods provide the terminal value for the project.

The market approach provides an attributable value of ZAR 837.3M for the “additional“ RoM and the DCF value is ZAR 889.3M. The terminal value for the project is ZAR 1,726.6M, which is considered a fair value by VBKom

12 Recommendations

Additional work recommended too increasing the confidence in the Coal Resource and Coal Reserve estimate is:

- To have a reconciliation process in place when the new plant is commissioned to verify estimated tonnages and qualities
- Ongoing LDD campaigns to determine the yield for the PMP plant setup to reduce risk in yield variation
- Re-evaluate underground mine design criteria and layout as the mine progresses closed to the completion of the opencast areas.

13 References

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Independent Competent Report on the Coal of Africa Limited Assets, 2010 – Mineral Corporation

Competent Persons Report on the Assets of Coal of Africa Limited, 2012 – Venmyn Rand

Independent Evaluation of the Coal of Africa Limited Assets, 2013 – Venmyn Rand

MRM Rounge Mining Soulution's report on the mine design for the Vele Colliery

Front End Feed Report on the Plant Modification Project for Vele Colliery – Sedgman

Environmental Management Programme for the Vele Colliery

Integrated Management Report – Coal of Africa Limited

14 Appendices

APPENDIX 1: JORC CODE, 2012 EDITION – TABLE 1 REPORT TEMPLATE

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	› Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. › Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. › Aspects of the determination of mineralisation that are Material to the Public Report. › In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	› All samples from the deposit was taken through diamond core drilling. › All cored boreholes and open holes were has downhole geophysical data. All sondes and equipment used for downhole geophysics was calibrated at regular intervals. › All samples were taken across the coal seam and the sample sizes depended on the ply thickness › To ensure that sampling bias was minimised the whole core was sampled as per SANS 10320:2004
Drilling techniques	› Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	› The project was evaluated through diamond core drill holes (slim and large diameter) as well as percussion drill holes. Details of the drilling is presented in the report
Drill sample recovery	› Method of recording and assessing core and chip sample recoveries and results assessed. › Measures taken to maximise sample recovery and ensure representative nature of the samples. › Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	› Sample recovery through diamond drilling has to more than 95% for coal intersections. This is closely monitored by field geologist. If the recovery is not obtained then a re-drill of the drill hole is required. › As the whole core is sampled the bias associated with sampling is minimised
Logging	› Whether core and chip samples have been geologically and geotechnically	› The core is logged in detail according to specified procedures drafted by MSA

Criteria	JORC Code explanation	Commentary
	logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. › Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. › The total length and percentage of the relevant intersections logged.	and adopted by CoAL. The logging is of sufficient detail to support Coal Resource Estimation, mining studies and processing studies. › The logging is quantitative and qualitative and the core has been photographed since CoAL has been involved in the project
Sub-sampling techniques and sample preparation	› If core, whether cut or sawn and whether quarter, half or all core taken. › If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. › For all sample types, the nature, quality and appropriateness of the sample preparation technique. › Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. › Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. › Whether sample sizes are appropriate to the grain size of the material being sampled.	› All the core that intersected coal seams were sampled › All sample preparation techniques are done in accordance to internationally accepted standards › Whole core is sampled and samplers have to ensure that all material, especially fines, are collected with the core sample › The sample sizes are adequate for the grain sizes of the material being sampled
Quality of assay data and laboratory tests	› The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. › For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. › Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	› All laboratories used are accredited with SANAS and all assay techniques are done in accordance to internationally accepted standards › Internal laboratory control measures are in place. Duplicate samples are analysed and if the difference between two duplicates are outside of acceptable ranges. Analyses will be redone and instruments calibrated. › A reference sample is entered with each bath on each shift to verify analyses
Verification of sampling and assaying	› The verification of significant intersections by either independent or alternative company personnel. › The use of twinned holes. › Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. › Discuss any adjustment to assay data.	› Result can be verified against wire-line logs. The dataset has been audited on two occasions by independent third parties › No twin drill holes have been used because with seam correlation typical analysis for each seam intersection can be assessed › All data is stored on a Sable™ database with a back-up stored at Coal head offices › No adjustments to assay values have been made
Location of data	› Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral	› All drill holes have been surveyed after they were completed from a fixed point base station by registered surveyors. The method employed is adequate

Criteria	JORC Code explanation	Commentary
points	Resource estimation. › Specification of the grid system used. › Quality and adequacy of topographic control.	for Coal Resource Estimations › The survey system is WGS Hartebeeshoek 84 LO29 › The topography has been created through a LIDAR survey with a high spatial accuracy
Data spacing and distribution	› Data spacing for reporting of Exploration Results. › Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. › Whether sample compositing has been applied.	› Data points are spaced between 200m and 500m › Correlation cross drilling indicates that the spacing between data points are sufficient knowledge regarding structural and quality continuity to be used in Coal Resource and Coal Reserve estimations with a low level of risk › If more than one sample was taken across a composite coal seam the samples were composited in to one sample representing the coal seam thickness
Orientation of data in relation to geological structure	› Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. › If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	› The coal seams have a very low dip angle of 2 degrees. Therefore horizontal drilling achieves a unbiased sample intersection › The drilling orientation is parallel to faults and dolerite dykes. These structures are normally identified through geophysical surveys and not exploration and resource drilling
Sample security	› The measures taken to ensure sample security.	› Samples were locked up on site and transported by CoAL personnel to assaying laboratories
Audits or reviews	› The results of any audits or reviews of sampling techniques and data.	› Previous reviews by the Mineral Corporation and Venmyn Rand did not uncover any issues with the methodologies applied.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	› Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. › The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	› Refer to section for Details on Tenure › Currently there is no impediments of which VBKom is aware that is a risk to the security of tenure for the Vele Colliery
Exploration done by other parties	› Acknowledgment and appraisal of exploration by other parties.	› Previous exploration activities completed by Southern Sphere is adjudicated as of sufficient quality to include in to the Coal Resource estimation
Geology	› Deposit type, geological setting and style of mineralisation.	› The deposit type and the controls on the deposit is very well understood
Drill hole Information	› A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: › easting and northing of the drill hole collar › elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar › dip and azimuth of the hole › down hole length and interception depth › hole length. › If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	› Refer to appendix 3 for the full details regarding the drill holes included in the geological modelling and Coal Resource estimation › The drill holes excluded from the model and estimation will not have a material effect on the model and estimation
Data aggregation methods	› In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. › Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. › The assumptions used for any reporting of metal equivalent values should be	› Data is aggregated on tonnes › No other data manipulation is conducted › All sample lengths were controlled by seam thickness and aggregation occurred based on length and mass › No other economic mineral occurs with the coal deposit so no equivalent grades were reported

Criteria	JORC Code explanation	Commentary
	clearly stated.	
Relationship between mineralisation widths and intercept lengths	› These relationships are particularly important in the reporting of Exploration Results. › If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. › If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	› The relationship with the seam geometry is well understood. The seams dips at 2 degrees and it can be accepted for the purpose of modelling that the drill hole intercept the seams at 90 degrees.
Diagrams	› Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	› Appropriate maps and diagrams are presented that included drill hole collar positions
Balanced reporting	› Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	› The report is comprehensive with regards to reporting seam thicknesses and qualities
Other substantive exploration data	› Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	› All material and meaning full data is reported on in the report
Further work	› The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). › Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	› The area is constrained to the north by and international border between South Africa and Zimbabwe. The deposit out crops to the south and east. A national park border to the west.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	› Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. › Data validation procedures used.	› Hand written data was captured into electronic format by CoAL personnel. Random checks were done to ensure data was correctly captured. The process has also been submitted for auditing by independent third parties › Data was validated by CoAL's Chief geologist.
Site visits	› Comment on any site visits undertaken by the Competent Person and the outcome of those visits. › If no site visits have been undertaken indicate why this is the case.	› The site was visited by Mr B.W. Botha on 26 November 2015 to validate the asset mentioned in the report
Geological interpretation	› Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. › Nature of the data used and of any assumptions made. › The effect, if any, of alternative interpretations on Mineral Resource estimation. › The use of geology in guiding and controlling Mineral Resource estimation. › The factors affecting continuity both of grade and geology.	› There is a high confidence in the geological model as stratified coal deposits are very well understood deposits. › Only data gathered from drill holes (diamond and percussion) was used to construct the geological model › No other geological interpretation is feasible for the deposit type and there will have no bearing on the Mineral Resource Estimation. › The Coal Resource estimation is controlled by the geology i.e. constrained within
Dimensions	› The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	› The dimensions of the deposit is documented and illustrated with the aid of diagrams in the text
Estimation and modelling techniques	› The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. › The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. › The assumptions made regarding recovery of by-products. › Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). › In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	› The Coal Resource estimation is done by the gridding algorithm that is part of the MINEX^{tm}, which is a well-established method for estimation in the coal industry. No domaining was done for the quality estimate, but was applied with the seam thickness estimation based on faults and dykes › The Mineral Resource estimate was previously done by the Mineral Corporation and Venmyn Rand and was reviewed by VBKom. The mine extracted 144kt of coal and this was considered in the estimation of the Coal Resources. › There is no by-products present in the coal deposit › Sulphur and phosphorous was analysed for and is estimated within the geological model. Sulphur is reported in the Coal Resource Statement, but phosphorous is excluded due to the low concentrations present. › The model is based on a grid and not blocks

Criteria	JORC Code explanation	Commentary
	› Any assumptions behind modelling of selective mining units. › Any assumptions about correlation between variables. › Description of how the geological interpretation was used to control the resource estimates. › Discussion of basis for using or not using grade cutting or capping. › The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	› All units i.e. seams are modelled based on drill hole seam intersections and down-hole geophysical survey › There is a correlation between ash and CV in the deposit and is used as verification of estimated results › All estimations were constrained within the defined coal seams › Coal is defined as material below 60% ash content. This is the only form of capping applied › The data is validated through cross sections and various coal quality plots
Moisture	› Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	› Tonnages are reported as air dried inclusive of the inherent moisture
Cut-off parameters	› The basis of the adopted cut-off grade(s) or quality parameters applied.	› Volatile less than 18 (dried ash free) was excluded to ensure no devolatilised coal was included in the geological model
Mining factors or assumptions	› Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	› The project has been commissioned, but is now under care and maintenance. Studies have been done to convert the Coal Resources to Coal Reserves and the conclusion was that most of the resource is economically extractable
Metallurgical factors or assumptions	› The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	› The project has been commissioned, but is now under care and maintenance. Studies have been done to convert the Coal Resources to Coal Reserves and the conclusion was that most of the resource is beneficiatable to a saleable product either in the domestic market or international market
Environmental factors or assumptions	› Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the	› The area under the current mining Right has an approved Environmental Management Programme based on an Environmental Impact Assessment

Criteria	JORC Code explanation	Commentary
	status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	› Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. › The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. › Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	› The bulk density was calculated on every sample submitted to the laboratory. There is an internationally accepted standard to determine the bulk density of coal › The Bulk density method is based on the Archimedes process that accounts for voids › The density is estimated in the geological model with the same parameters as for the qualities and structural information
Classification	› The basis for the classification of the Mineral Resources into varying confidence categories. › Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). › Whether the result appropriately reflects the Competent Person's view of the deposit.	› The classification is based on the distance between data point as determined by the correlation cross that was drilled. Additional information considered was confidence in collar position, topographic surface, quality of assays › The result of the classification appropriately reflects the Competent Person's view of the deposit
Audits or reviews	› The results of any audits or reviews of Mineral Resource estimates.	› The process of Coal Resource Estimation has been audited by Mineral Corporation (completed 2010) and Venmyn Rand (completed in 2012). Both these audits did not found any material issues with the estimations, estimation methodology and classification of the Coal Resources
Discussion of relative accuracy/ confidence	› Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. › The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	› The is a high confidence in the Coal Resource estimate as the appropriate methods were applied to define and determine the Coal Resources, The criteria used to classify the Coal Resources into different confidence categories is also deemed appropriate by the Competent Person › The estimate refers to global estimates › The current production data is insufficient to comment on the accuracy of the quality model, but indicates there is a high confidence in the structural interpretation › There is currently not sufficient production data to compare with estimated values.

Criteria	JORC Code explanation	Commentary
	› These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Coal Resource estimate for conversion to Ore Reserves	› Description of the Coal Resource estimate used as a basis for the conversion to an Ore Reserve. › Clear statement as to whether the Coal Resources are reported additional to, or inclusive of, the Ore Reserves.	› Coal Resource Statement are MTIS resource. › Coal Resources are reported inclusive of Coal Reserves
Site visits	› Comment on any site visits undertaken by the Competent Person and the outcome of those visits. › If no site visits have been undertaken indicate why this is the case.	› Mr's BW Botha and B Steyn undertook a site visit on 26 November 2015. › Assets of the Vele Colliery were verified
Study status	› The type and level of study undertaken to enable Coal Resources to be converted to Ore Reserves. › The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Coal Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	› Vele Colliery has completed various studies on the mining and processing plant of sufficient levels (comparable with pre-feasibility studies) to justify the conversion from Coal Resources to Coal Reserves.
Cut-off parameters	› The basis of the cut-off grade(s) or quality parameters applied.	› Most of the cut-off grades were applied to the Coal Resource in the calculation MTIS resources. The only other mining cut-off applied is that the Bottom Lower Seam has to be more than 60m underground to be extracted. This is required to extract the Coal Reserves safely.
Mining factors or assumptions	› The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Coal Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). › The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. › The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. › The major assumptions made and Coal Resource model used for pit and stope optimisation (if appropriate). › The mining dilution factors used.	› For the PMP design localised optimisation was achieved through mine lay-out and scheduling of the col to the plant. › The additional RoM was based on opencastable reserves and underground designs based on the Salamon formula. › The mining methods chosen is well known and applicable to this type of deposit › Geotechnical studies was used to define the opencast pit geometry. The open pit is also regularly inspected to ensure compliance to the design criteria › The Salamon formula was used for the underground design › An additional 5% geological loss was applied › Mining recovery of 92% applied › Minimum seam thickness for the opencast is 0.5m and 1.4m for the

Criteria	JORC Code explanation	Commentary
	›› The mining recovery factors used. ›› Any minimum mining widths used. ›› The manner in which Inferred Coal Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. ›› The infrastructure requirements of the selected mining methods.	underground sections ›› Inferred Resource are not present in the PMP on which the business case is build. Inferred Resources occur only much later in the LoM, and can be addressed with infill drilling ›› All infrastructure for the PMP is already been built when the mine was in operation ›› Grade control drilling will 50m x 100m and has been planned for in the mining schedule
Metallurgical factors or assumptions	›› The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. ›› Whether the metallurgical process is well-tested technology or novel in nature. ›› The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. ›› Any assumptions or allowances made for deleterious elements. ›› The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. ›› For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	›› The current process plant and the proposed modification to the plant is well known technology in the coal mining industry ›› A total of 39 LDD holes have been drilled over the Central – and Northern Pit to provide a high confidence in the yield for the PMP mining operation ›› There are no deleterious elements occurring within the coal deposit with significant amount to warrant allowances for such elements ›› The metallurgical test work is based on drop shatter and wet tumble test. The yield distribution per sixe fraction was used to optimise the product mix and the coal preparation plant. The samples tested is representative for the PMP project. ›› The Coal Reserves are based saleable product
Environmental	›› The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	›› Huge amount of environmental studies have been undertaken on the Vele Colliery. ›› All requirement of the Department of Environmental Affairs have been met and the mine has an approved EMP as well as an updated IWUL [January 2016].
Infrastructure	›› The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	›› Most of the required infrastructure has already been constructed on site. The power lines from Pontdrift is 78% completed with some servitudes still pending. ›› All labour will be sourced from local communities and towns and no accommodation will be provided ›› Infrastructure for the underground sections will only be constructed when the mine moves into these areas
Costs	›› The derivation of, or assumptions made, regarding projected capital costs in the study.	›› Capital cost are based on tendered quotations ›› The mine and process plant will be operated by contractors who provided

Criteria	JORC Code explanation	Commentary
	❯ The methodology used to estimate operating costs. ❯ Allowances made for the content of deleterious elements. ❯ The source of exchange rates used in the study. ❯ Derivation of transportation charges. ❯ The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. ❯ The allowances made for royalties payable, both Government and private.	tendered quotations ❯ There is no deleterious elements present in significant concentrations to be considered ❯ Exchange rates is based on the financial forecast of varies financial institutions. The South African government requires the payment of a royalty in accordance to the Mineral Resource and Petroleum Development Royalty Act. Provisions for the royalties have been made based on estimated profit per year
Revenue factors	❯ The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. ❯ The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	❯ Product prices is based on the long term estimations of various financial institutions ❯ All revenue factors were considered and forms part of the Monte Carlo simulation and the financial model
Market assessment	❯ The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. ❯ A customer and competitor analysis along with the identification of likely market windows for the product. ❯ Price and volume forecasts and the basis for these forecasts. ❯ For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	❯ Market assessment shows thermal coal requirements will increase in India and South Africa. India will show the most growth in the international thermal coal market. Eskom, the sole electricity provider in South Africa, will also require more coal reserves as the reserves in the Mpumalanga Province is almost depleted. ❯ For coking coal there is a demand locally with Accertol Mital has tested the SSCC with positive results
Economic	❯ The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. ❯ NPV ranges and sensitivity to variations in the significant assumptions and inputs.	❯ Monti Carlo analyses has been done with 10 000 integrations. The results of the Monte Carlo simulation proves the project robust with more than 71.5% of the integrations with a positive NPV. ❯ All major drivers were identified and used for the simulation
Social	❯ The status of agreements with key stakeholders and matters leading to social licence to operate.	❯ CoAL has endeavoured to include the local communities in the Vele project. Vele has an approved Social and Labour Plan under the MRPDA, which is geared to assist the local communities around the mine.
Other	❯ To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: ❯ Any identified material naturally occurring risks. ❯ The status of material legal agreements and marketing arrangements.	❯ Vele Colliery was an operating mine and most of the risk to the operation has been addressed ❯ Significant risk that still remain is the renewal of the Prospecting Right, the PMP project implementation timeline, and the application for the relocation

Criteria	JORC Code explanation	Commentary
	› The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	of a water coarse
Classification	› The basis for the classification of the Ore Reserves into varying confidence categories. › Whether the result appropriately reflects the Competent Person's view of the deposit. › The proportion of Probable Ore Reserves that have been derived from Measured Coal Resources (if any).	› The Coal Reserve are classified in to different classes based on the level of confidence in the studies done. For the PMP, which has a detailed mine design and mine schedule, the Coal Reserves are classified as Proven. For the rest of the reserves the confidence in the studies are less and these reserves are classified as Probable Reserves
Audits or reviews	› The results of any audits or reviews of Ore Reserve estimates.	› The Coal Reserves were audit by Venmyn Rand in 2012. They found no major issues in the Coal Reserve Statement
Discussion of relative accuracy/ confidence	› Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. › The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. › Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. › It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	› Based on the information presented and the results of previous audits a high level of confidence can be placed on the Coal Reserve estimation › The reserves are based on global estimates › There is not sufficient production data available to verify the Coal Reserve estimation with actual production data

APPENDIX 2: COUNTRY PROFILE

Republic of South Africa

South Africa gained independence from Britain on 31st May 1910 and was declared a republic in 1961. From 1948 until 1990, the South African political and legal system was based upon apartheid, a philosophy of separate racial development, underwritten and enforced by white minority governments. After an extended period of international political pressure and economic sanctions against South Africa's policies, the South African government agreed to negotiate a new democratic constitution. In April 1994, the African National Congress (ANC) became the first democratically elected ruling party. The new constitutional Bill of Rights provides extensive guarantees, including equality before the law and a prohibition against discrimination; the right to life, privacy, property, freedom and security of the person, a prohibition against forced labour; and the freedom of speech.

Economy

South Africa is considered to have the most advanced economy on the African continent and it also provides the gateway to Sub-Saharan Africa. It is classified as a middle-income emerging market with well-developed financial, legal and judicial systems and modern infrastructure.

South Africa's gross domestic product is estimated at US$527.4bn for 2005 with an annual real growth rate of 4.5 per cent. South Africa's inflation rate has decreased over the last ten years and is estimated at 4.6 per cent for 2005. South Africa's exports amounted to US$50.9bn for 2005.

Minerals Industry

South Africa has a mature minerals industry developed from gold and diamond discoveries in the late 1800's. The country is the world's largest producer of platinum, gold, chrome and vanadium and ranks highly in the production of coal, diamonds, iron ore and other base metals. The country's minerals industry has primarily been developed by large mining houses over the last century. South Africa hosts a number of large ore bodies, such as the Bushveld Igneous Complex and Witwatersrand Basin, as well as extensive coal fields. In terms of the Mineral and Petroleum Resources Development Act 280 of 2002 ("MPRDA") are owned by the State. Currently, the greatest risks pertaining to the mining industry in South Africa are the uncertainties arising from the new legislation. These uncertainties relate to security of tenure i.e. the issuing of new order rights and the conversion of old order rights, as well as meeting the Black Economic Empowerment ("BEE") requirements.

Mining Title

The mining industry in South Africa has traditionally been controlled by the "big six" mining houses: Anglo American - De Beers, Gencor - Billiton, Goldfields, JCI, Anglovaal and Rand Mines, which dominated gold, platinum, chrome, coal and base metal production in South Africa. With a new democratic constitution and rising costs from ageing mines came sweeping changes in the industry.

Historical Perspective - Legislative Development

Since about 1860, mining regulation in South Africa has continuously evolved to keep pace with changing technological, economic, and socio-political needs to grow and sustain the country's world-class mining industry.

Enactment of the Minerals Act, No. 50 of 1991 (Minerals Act) marked the consolidation of a substantial legislative modernisation that began in the 1960s. After the first democratic elections in 1994, all government policies and legislation were subject to fundamental review. A White Paper (governmental discussion document) on minerals and mining policy was published in October 1998. Mine health and safety was given first priority with enactment of The Mine Health and Safety Act, 1996 (Act No 29 of 1996). The Parliament of South Africa passed The Mineral and Petroleum Resources Development Act, 2002 (MPRDA) in August 2002, which was subsequently promulgated by the State President (Government Gazette, 1 May 2004). The MPRDA accordingly took effect from 1 May 2004 onward.

Mineral and Petroleum Resources Development Act, 2002

The MPRDA sets out the mechanics for converting mineral rights previously held under the Minerals Act to mineral rights recognised under the MPRDA. Accordingly, in addition to describing the new legislation, the following sections also refer to relevant background and provisions of the Minerals Act.

From Private Ownership to State Custodianship

Unique features of the Minerals Act were that it allowed mineral rights to be held privately and that these rights were severable from rights to particular minerals and surface rights in a particular property. Over the years, the South African system of mineral rights had consequently developed into a dual system in which some mineral rights were owned by the State and some by private holders (mostly farmers). This was on the basis that, in the South African context, mineral rights are a common-law concept as opposed to the situation in most other countries where mineral rights are granted by the State in terms of mineral legislation.

This concept of state custodianship of mineral rights (now embodied in the MPRDA) has now replaced the common law principles previously embodied in the Minerals Act. Enactment of the MPRDA now places South Africa in line with global mineral ownership principles.

MPRDA - Mechanics

The two-stage system under the Minerals Act, that required consent from the mineral owner and subsequent application to the state for a prospecting or mining authorisation, has now been replaced under the MPRDA by providing for the Minister to grant prospecting and mining rights directly.

Prospecting and mining rights are limited real rights in respect of the minerals and the land concerned, which entitle the holder not only to prospect or mine but to carry out all other activities incidental to prospecting or mining. These rights can also generally be traded with the consent of the Minister.

A prospecting right may be granted for up to five years and may be renewed once for a period not exceeding three years. Mining rights are granted for a maximum of 30 years but are renewable for an indefinite number of further periods, each of which may not exceed 30 years. Security in the transition between prospecting and mining is enhanced in that the MPRDA stipulates that the holder of a prospecting right has the exclusive right to apply for and be granted a mining right.

Unlike the Minerals Act, in terms of which all applications for the same mineral on the same land have to be treated as competing applications, the new MPRDA provides that applications received on different dates will be dealt with in order of receipt. Only those received on the same day will consequently become competing applications. Another important improvement over the Minerals Act is the provision for the disclosure of prospecting information once prospecting has been completed. This requirement should significantly reduce exploration costs in previously explored areas.

The MPRDA has allowed a significant number of international junior mining and exploration companies to become active in the country for the first time.

Transitional Arrangements

The objects of Schedule II of the MPRDA are to:-

- ensure that security of tenure is protected in respect of prospecting and mining operations being undertaken;
- give the holder of an old-order right an opportunity to comply with the new MPRDA; and
- promote equitable access to the nation's mineral resources;

In order to ensure a smooth transition, all applications for Prospecting Rights, mining authorisations, consent to prospect or mine, and all environmental management programmes which had been lodged in terms of the Minerals Act, but not finalised or approved before 1 May 2004 (the date on which the new MPRDA took effect), are regarded as having been lodged in terms of the MPRDA.

Schedule II of the MPRDA places rights previously recognised under the Minerals Act into four main categories.

The following definitions stated in Schedule II of the MPRDA are important:-

- '"old order prospecting right" – means any prospecting lease, permission, consent, permit or licence, and the rights attached thereto, listed in Table 1 to this Schedule in force immediately before the date on which this Act took effect (1 May 2004) and in respect of which prospecting is being conducted;
- "old order right" – means an old order mining right, old order prospecting right or unused old order right, as the case may be;
- "unused old order right" – means any right, entitlement, permit or license listed in Table 3 to this Schedule in respect of which no prospecting or mining was conducted before this Act took effect;

Any old-order prospecting right, as substantiated by a valid Prospecting Right issued in terms of the Minerals Act, continued to be in force until 1 May 2006, subject to the terms and conditions under which it was granted, provided that the holder lodged the right for conversion within the preceding two-year period together with certain prescribed information. A specific requirement for conversion was that prospecting operations must have been conducted on the property prior to conversion and certified that the intention to continue prospecting existed.

Similarly, any old-order mining right, as substantiated by a valid mining authorisation issued in terms of the Minerals Act, continued to be in force for a period of five years until 1 May 2009 (the effective date of MPRDA), subject to the terms and conditions under which it was granted, provided that the holder lodges the right for conversion within a five-year period together with certain prescribed information. Of special importance are the requirements that mining operations must have been conducted on the property, the intention to continue mining, as well as submission of a prescribed social and labour plan. The applicant for conversion must also provide an undertaking that, with details of the manner in which, he or she will give effect to the objects of the MPRDA pertaining to empowerment of HDSA and economic growth and development.

Unused old-order rights, i.e. rights in respect of which no prospecting or mining was being conducted immediately before 1 May 2004, continued to be in force for up to one year until 1 May 2005. Within this period of one year, the holder of such an unused old-order right had the exclusive right to apply for a prospecting or mining right in terms of the MPRDA.

Environmental management programmes approved in terms of the Minerals Act will remain in force under the MPRDA.

Empowerment Charter and Scorecard

Recognising South Africa's unique history and in pursuance of the objects of the MPRDA, Section 100 requires the Minister to develop a broad-based Socio-Economic Empowerment Charter that will set the framework, targets and timetable for effecting the entry of HDSA into the mining industry. Since it is a specific requirement of the MPRDA that the granting of a mining right will expand opportunities for HDSA, this important Charter was released in October 2002, well in advance of the coming into operation of the MPRDA.

Targets, timeframes and commitments are discussed in respect of each of the following facets of empowerment:-

- Human resource development.
- Employment equity (target: 40% participation in management by HDSA in 5 years).
- Non-discrimination against foreign migrant labour.
- Mine community and rural development.
- Housing and living conditions.
- Procurement.
- Ownership and joint ventures (target: 26% ownership by HDSA in 10 years).
- Beneficiation.

A scorecard has been developed to measure the performance of each mining company in respect of each of these facets. In practice, this will be used to judge applications for mining rights as well as applications for converting old-order mining licenses into new-order mining rights.

Environmental Management

The MPRDA's requirements for environmental management during prospecting and mining operations are largely similar to those contained in the Minerals Act. However, now they have been aligned with the principles and objectives of the National Environmental Management Act, 1998 (Act No 107 of 1998), which is the principal Act governing all environmental matters in South Africa.

Applicants for a mining right are required to conduct an environmental impact assessment and submit an environmental management programme, while applicants for a prospecting right, mining permit or reconnaissance permission have to submit an environmental management plan. Prospecting and mining rights only become effective on the date that the corresponding environmental management plan or programme has been approved.

In view of long delays, that have often been experienced during the processing of environmental management programmes in terms of the Minerals Act, new time limits for consultation and approval, stipulated by the MPRDA, are to be welcomed. Other government departments now have 60 days in which to comment on environmental management plans or programmes and approval must be done within 120 days from lodgement of the plan or programme.

Requirements for making financial provision for the remediation of environmental damage, as well as for the issuing of a closure certificate, are now included in the MPRDA as opposed to the situation under the Minerals Act where they were dealt with in terms of regulations issued under the Minerals Act. New features include the requirement that financial provision must be in place before approval of the environmental management plan or programme and the fact that application for a closure certificate now becomes compulsory upon lapsing of the right or cessation of activities.

The Mineral and Petroleum Royalty Bill

The logical conclusion of the South African Government's programme to reform the existing minerals and mining laws is that the State, now the custodian of those minerals, will impose a royalty. This will bring the South African dispensation in line with most of the other major mining jurisdictions in the world, e.g. Canada, Australia, USA. The Government intends to provide for imposition of royalties in the Mineral and Petroleum Royalty Bill.

The revised bill defines the base of the royalty as "the aggregate of amounts received by or accrued to the extractor" minus beneficiation cost and transport charges between seller and buyer of the concentrate. The off-mine charges are therefore been deductible from the royalty base. The implementation date of the Royalty Bill was 1 May 2009, but this has been deferred to 2010.

Electronic copies of the MPRDA and other regulations can be found at the DMR's website:

www.dmr.gov.za.

APPENDIX 3: DRILL HOLES USED IN GEOLOGICAL MODEL:

Drill Hole Name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip	Type
AL120001	63522.06	-2451882.07	486.95	128.65	0	-90	CZA
AL837001	62906.88	-2454307.21	510.11	51.28	0	-90	CZA
AL837002	61800.69	-2455003.72	522.40	57.47	0	-90	CZA
AL837003	61457.40	-2455649.81	530.51	72.35	0	-90	CZA
AL837004	59544.55	-2456400.29	526.99	123.23	0	-90	CZA
AL837005	59558.97	-2455665.57	520.20	84.25	0	-90	CZA
AL837007	60374.35	-2454705.73	513.29	87.29	0	-90	CZA
AL837008	59673.56	-2454983.19	512.86	67.47	0	-90	CZA
AL837009	58872.08	-2455255.98	513.09	102.16	0	-90	CZA
AL837010	58779.09	-2454599.78	506.96	108.25	0	-90	CZA
AL837011	58344.51	-2454348.12	504.11	111.28	0	-90	CZA
AL837012	59201.05	-2453872.80	502.24	94.75	0	-90	CZA
AL837013	60293.18	-2454064.81	506.97	69.25	0	-90	CZA
AL837014	60608.74	-2452806.30	495.62	111.34	0	-90	CZA
AL837015	59539.08	-2453460.45	499.73	105.18	0	-90	CZA
AL837016	59660.34	-2452892.91	495.37	120.99	0	-90	CZA
BS10SL18	69387.65	-2449571.93	485.66	50.88	0	-90	SBL
BS10SM07	61863.72	-2453387.89	503.76	87.35	0	-90	CBS
BS11SL18	69387.65	-2449571.93	485.66	50.70	0	-90	SBL
BS12SL32	68950.45	-2449999.13	481.22	43.25	0	-90	SBL
BS12SM07	61864.06	-2453393.86	503.93	87.35	0	-90	CBS
BS13SL32	68950.45	-2449999.13	481.22	49.96	0	-90	SBL
BS13SM07	61869.13	-2453372.84	503.56	87.35	0	-90	CBS
BS14SL32	68950.45	-2449998.93	481.22	48.69	0	-90	SBL
BS14SM07	61869.72	-2453383.52	503.79	87.35	0	-90	CBS
BS15SL32	68950.45	-2449999.13	481.22	49.70	0	-90	BLB
BS15SM07	61874.18	-2453383.48	503.77	87.35	0	-90	CBS
BS16SL32	68950.45	-2449999.13	481.22	49.70	0	-90	SBL
BS17SL32	68950.45	-2449999.13	481.22	50.20	0	-90	BLB
BS18SL32	68950.45	-2449999.13	481.22	50.47	0	-90	BLB
BS19SL32	68950.45	-2449999.13	481.22	48.57	0	-90	BLB
BS1OV13	66026.25	-2451984.91	511.20	78.09	0	-90	CBS
BS1OV24	68844.02	-2450754.26	491.86	77.75	0	-90	CBS
BS1SM07	61870.63	-2453378.73	503.51	87.35	0	-90	CBS
BS20SL32	68950.45	-2449999.13	481.22	47.80	0	-90	SBL
BS21SL32	68950.45	-2449999.13	481.22	49.10	0	-90	BLB
BS22SL32	68950.45	-2449999.13	481.22	52.30	0	-90	SBL
BS25SL32	68950.45	-2449999.13	481.22	49.42	0	-90	BLB
BS28SL32	68950.45	-2449999.13	481.22	49.70	0	-90	SBL
BS2OV13	66028.46	-2451980.55	511.26	78.09	0	-90	CBS
BS2OV24	68843.60	-2450747.90	491.84	77.75	0	-90	CBS
BS2SM07	61858.21	-2453381.03	503.73	87.35	0	-90	CBS
BS31SL31	69683.55	-2450340.22	495.80	58.90	0	-90	BLB
BS32SL31	69683.55	-2450340.22	495.80	58.60	0	-90	SBL
BS33SL31	69683.55	-2450340.22	495.80	58.10	0	-90	SBL
BS34SL31	69683.55	-2450340.22	495.80	57.48	0	-90	SBL

BS35SL31	69683.55	-2450340.22	495.80	57.70	0	-90	BLB
BS36SL31	69683.55	-2450340.22	495.80	56.40	0	-90	SBL
BS37SL31	69683.55	-2450340.22	495.80	57.20	0	-90	BLB
BS38SL31	69683.55	-2450340.22	495.80	56.90	0	-90	SBL
BS39SL31	69683.55	-2450340.22	495.80	56.90	0	-90	SBL
BS3OV13	66030.06	-2451977.39	511.19	78.09	0	-90	CBS
BS3OV24	68839.60	-2450744.15	491.91	77.75	0	-90	CBS
BS3SM07	61869.89	-2453365.06	503.52	87.35	0	-90	CBS
BS40SL31	69683.55	-2450340.22	495.80	56.75	0	-90	BLB
BS41SL31	69683.55	-2450340.22	495.80	58.00	0	-90	SBL
BS42SL31	69683.55	-2450340.22	495.80	57.70	0	-90	BLB
BS43SL31	69683.55	-2450340.22	495.80	57.60	0	-90	SBL
BS44SL31	69683.55	-2450340.22	495.80	57.52	0	-90	SBL
BS45SL31	69683.55	-2450340.22	495.80	57.10	0	-90	SBL
BS4OV13	66033.44	-2451975.03	511.07	78.09	0	-90	CBS
BS4OV24	68857.93	-2450746.96	491.92	77.75	0	-90	CBS
BS4SL18	69387.65	-2449571.93	485.66	50.70	0	-90	SBL
BS5OV13	66028.69	-2451988.62	511.27	78.09	0	-90	CBS
BS5OV24	68834.04	-2450751.54	492.03	77.75	0	-90	CBS
BS5SL18	69387.65	-2449571.93	485.66	50.60	0	-90	SBL
BS5SM07	61873.89	-2453369.51	503.50	87.35	0	-90	CBS
BS6OV13	66033.70	-2451988.30	511.32	78.09	0	-90	CBS
BS6OV24	68828.97	-2450752.28	492.22	77.75	0	-90	CBS
BS6SL18	69387.65	-2449571.93	485.66	51.15	0	-90	SBL
BS6SM07	61864.38	-2453375.73	503.75	87.35	0	-90	CBS
BS7OV13	66034.51	-2451983.73	511.23	78.09	0	-90	CBS
BS7OV24	68826.53	-2450755.11	492.16	77.75	0	-90	CBS
BS7SL18	69387.65	-2449571.93	485.66	50.70	0	-90	SBL
BS7SM07	61874.76	-2453391.22	503.74	87.35	0	-90	CBS
BS8OV13	66039.43	-2451980.00	511.11	78.09	0	-90	CBS
BS8OV24	68823.77	-2450759.28	492.36	77.75	0	-90	CBS
BS8SL18	69387.65	-2449571.93	485.66	50.10	0	-90	SBL
BS8SM07	61865.81	-2453381.70	503.91	87.35	0	-90	CBS
BS9SL18	69387.65	-2449571.93	485.66	50.70	0	-90	SBL
BS9SM07	61858.76	-2453387.81	503.92	87.35	0	-90	CBS
BZ124001	69340.84	-2453209.88	523.05	15.34	0	-90	CZA
BZ124002	68685.31	-2452985.27	518.80	27.89	0	-90	CZA
BZ124003	66960.18	-2453046.89	523.63	50.29	0	-90	CZA
BZ124004	70563.71	-2452598.61	526.24	71.40	0	-90	CZA
BZ124005	68916.44	-2452781.60	515.77	134.76	0	-90	CZA
BZ124006	68897.29	-2452679.08	513.63	123.28	0	-90	CZA
BZ124007	68980.43	-2453005.37	519.91	118.36	0	-90	CZA
BZ124008	69729.02	-2453341.22	520.92	86.08	0	-90	CZA
BZ124009	69479.08	-2452851.33	515.42	103.98	0	-90	CZA
BZ124010	70921.05	-2452613.72	534.78	69.03	0	-90	CZA
BZ124011	70581.67	-2452943.65	518.44	64.59	0	-90	CZA
BZ124012	69969.08	-2452950.06	514.71	78.34	0	-90	CZA
BZ124013	71077.85	-2453011.71	521.17	47.67	0	-90	CZA
BZ124014	71410.16	-2452693.66	541.68	65.55	0	-90	CZA

BZ124015	68408.36	-2452923.52	516.87	29.60	0	-90	CZA
BZ124016	68300.14	-2452781.61	514.18	119.00	0	-90	CZA
CP09BS02	69581.74	-2451199.03	479.05	23.07	0	-90	MA
CP10BS01	69877.42	-2450921.26	493.75	28.87	0	-90	MA
CP10BS02	69751.71	-2451080.14	490.90	26.22	0	-90	MA
CP10BS03	69647.60	-2451222.15	492.25	32.33	0	-90	MA
CP10BS04	69566.59	-2451277.76	491.63	35.26	0	-90	MA
CP11BS01	69589.02	-2451347.61	493.34	31.50	0	-90	CZBS
CP11BS02	69593.27	-2451347.37	493.24	33.50	0	-90	CZBS
CP12BS01	69895.85	-2451077.08	502.29	34.40	0	-90	CZBS
CP17BS01	69620.23	-2451759.99	508.32	55.88	0	-90	CZBS
CP17BS02	69625.08	-2451762.57	508.17	55.45	0	-90	CZBS
CP17BS03	69624.37	-2451753.22	508.15	65.14	0	-90	CZBS
CP17BS04	69625.99	-2451757.12	507.88	65.21	0	-90	CZBS
MB001	69559.58	-2451105.22	474.61	17.67	0	-90	MA
MB002	69544.21	-2451097.41	475.26	16.37	0	-90	MA
MB003	69517.21	-2451131.24	475.63	17.88	0	-90	MA
MB004	69500.44	-2451156.24	475.70	21.11	0	-90	MA
MB006	69523.76	-2451176.89	477.40	27.35	0	-90	MA
MB008	69543.94	-2451153.36	475.22	22.41	0	-90	MA
MB009	69572.83	-2451126.72	474.77	20.77	0	-90	MA
MB010	69537.73	-2451128.29	475.60	16.50	0	-90	MA
MB011	69591.94	-2451108.90	474.64	19.27	0	-90	
MB012	69584.80	-2451085.75	473.28	17.16	0	-90	MA
MB013	69679.72	-2451049.36	480.51	27.32	0	-90	MA
MB013A	69690.23	-2451035.53	480.73	27.31	0	-90	MA
MB014	69708.59	-2451062.92	480.77	19.41	0	-90	MA
MB015	69697.93	-2451075.46	480.67	26.60	0	-90	MA
MB016	69663.03	-2451078.05	479.95	27.24	0	-90	MA
MB017	69676.77	-2451100.47	479.49	27.65	0	-90	MA
MB018	69644.72	-2451095.46	479.18	27.24	0	-90	MA
MB019	69659.28	-2451121.64	478.88	27.57	0	-90	MA
MB020	69617.08	-2451117.49	478.31	26.99	0	-90	MA
MB021	69641.98	-2451141.86	478.88	27.25	0	-90	MA
MB022	69593.64	-2451138.71	480.11	27.70	0	-90	MA
MB023	69570.02	-2451164.41	479.39	27.24	0	-90	MA
MB025	69559.88	-2451179.05	481.08	27.24	0	-90	MA
MB027	69544.94	-2451210.41	485.83	26.07	0	-90	MA
MB028	69566.69	-2451219.63	485.16	26.39	0	-90	MA
MB029	69557.46	-2451228.49	486.83	26.27	0	-90	MA
MB030	69732.83	-2451048.99	490.76	25.78	0	-90	MA
MB031	69739.00	-2451041.06	490.46	26.29	0	-90	MA
MB032	69743.82	-2451035.49	490.70	27.68	0	-90	MA
MB033	69751.67	-2451025.93	491.18	26.84	0	-90	MA
MB034	69761.50	-2451014.49	491.94	27.35	0	-90	MA
MB035	69711.78	-2451026.59	489.69	26.99	0	-90	MA
MB036	69725.47	-2451010.07	489.78	27.68	0	-90	MA
MB037	69732.05	-2451002.31	490.07	25.96	0	-90	MA
MB038	69696.31	-2451014.99	488.75	25.04	0	-90	MA

MB039	69704.22	-2451004.95	488.70	27.24	0	-90	MA
MB041	69717.40	-2450989.74	489.81	14.54	0	-90	MA
MB042	69683.42	-2450999.43	488.95	26.70	0	-90	MA
MB043	69696.69	-2450984.23	489.40	27.78	0	-90	MA
MB044	69702.39	-2450977.75	489.48	26.90	0	-90	MA
MB045	69659.77	-2450980.79	488.81	24.73	0	-90	MA
MB046	69664.87	-2450974.14	488.92	26.25	0	-90	MA
MB047	69672.85	-2450964.29	488.98	24.54	0	-90	MA
MB048	69679.14	-2450957.08	489.07	23.94	0	-90	MA
MB049	69685.38	-2450949.69	489.36	27.78	0	-90	MA
MB050	69693.73	-2450939.81	490.08	14.23	0	-90	MA
MB051	69777.42	-2450995.50	492.65	20.55	0	-90	MA
MB052	69666.51	-2451209.19	492.92	17.02	0	-90	MA
MB053	69658.68	-2451218.93	492.57	27.49	0	-90	MA
MB054	69658.42	-2451228.90	492.37	20.17	0	-90	MA
MB055	69885.68	-2450948.92	494.35	23.84	0	-90	MA
MB056	69633.16	-2451248.95	492.58	25.45	0	-90	MA
MB057	69861.49	-2450977.49	493.72	26.36	0	-90	MA
MB058	69617.39	-2451268.22	493.11	25.15	0	-90	MA
MB059	69609.39	-2451277.76	492.77	26.85	0	-90	MA
MB060	69600.61	-2451288.34	492.32	27.48	0	-90	MA
MB061	69592.45	-2451297.45	491.89	27.46	0	-90	MA
MB062	69584.44	-2451307.37	491.92	20.91	0	-90	MA
MB063	69576.24	-2451316.91	491.76	27.15	0	-90	MA
MB064	69569.86	-2451327.19	491.67	16.96	0	-90	MA
MB065	69559.64	-2451336.99	491.57	17.74	0	-90	MA
MB066	69835.95	-2451008.27	493.31	18.19	0	-90	MA
MB067	69805.30	-2451044.66	492.96	21.20	0	-90	MA
MB068	69750.95	-2451109.58	491.92	19.46	0	-90	MA
MB069	69726.37	-2450906.75	490.23	27.50	0	-90	MA
MB070	69737.36	-2450892.89	489.80	26.10	0	-90	MA
MB071	69744.91	-2450883.94	489.80	24.40	0	-90	MA
MB072	69761.59	-2450937.47	490.66	25.77	0	-90	MA
MB073	69773.62	-2450923.31	489.50	25.15	0	-90	MA
MB074	69781.15	-2450914.40	489.02	27.50	0	-90	MA
MB075	69796.20	-2450968.07	489.43	26.60	0	-90	MA
MB076	69808.58	-2450953.81	489.86	27.10	0	-90	MA
MB077	69816.31	-2450944.69	490.56	26.90	0	-90	MA
MB078	69737.63	-2451094.23	491.13	27.48	0	-90	MA
MB079	69749.84	-2451079.53	490.98	27.51	0	-90	MA
MB080	69762.25	-2451064.64	491.18	27.26	0	-90	MA
MB081	69774.77	-2451049.80	491.36	27.17	0	-90	MA
MB082	69769.81	-2451045.20	490.87	10.61	0	-90	MA
MB083	69787.62	-2451057.20	492.23	24.04	0	-90	MA
MB084	69771.39	-2451076.02	491.53	27.43	0	-90	MA
MB085	69762.16	-2451086.28	491.55	27.60	0	-90	MA
MB086	69747.68	-2451094.27	491.08	27.42	0	-90	MA
MB087	69697.03	-2450961.27	467.18	9.46	0	-90	MA
MB088	69688.43	-2450971.73	466.55	7.54	0	-90	MA

MB089	69682.31	-2450979.94	465.63	6.81	0	-90	MA
MB090	69819.10	-2450808.56	491.66	26.59	0	-90	MA
MB091	69893.00	-2450756.94	492.52	27.42	0	-90	MA
MB092	69871.76	-2450779.21	493.48	27.51	0	-90	MA
MB093	69851.37	-2450803.11	492.33	21.92	0	-90	MA
MB094	69832.71	-2450823.15	491.07	21.92	0	-90	MA
MB096	69899.14	-2450785.33	493.12	25.38	0	-90	MA
MB097	69887.14	-2450802.69	493.22	26.96	0	-90	MA
MB098	69874.19	-2450816.80	492.64	25.24	0	-90	MA
MB099	69837.21	-2450789.48	492.48	26.69	0	-90	MA
MB100	69856.58	-2450774.66	493.00	27.57	0	-90	MA
MB101	69868.68	-2450763.19	492.92	26.47	0	-90	MA
MB102	69877.24	-2450753.53	492.62	26.47	0	-90	MA
MB103	69885.81	-2450833.17	492.35	27.05	0	-90	MA
MB104	69866.36	-2450855.24	492.67	24.50	0	-90	MA
MB105	69890.45	-2450862.16	493.93	27.73	0	-90	MA
MB106	69579.74	-2451254.19	492.14	27.62	0	-90	MA
MB107	69601.07	-2451236.44	491.95	22.44	0	-90	MA
MB108	69629.81	-2451209.22	491.96	25.23	0	-90	MA
MB109	69644.54	-2451191.38	492.68	27.00	0	-90	MA
MB110	69671.46	-2451160.45	493.09	26.79	0	-90	MA
MB111	69710.19	-2451114.92	490.82	24.78	0	-90	MA
MB112	69722.94	-2451099.75	490.92	27.18	0	-90	MA
MB113	69742.43	-2451115.85	492.10	27.08	0	-90	MA
MB114	69730.84	-2451129.81	492.58	27.08	0	-90	MA
MB115	69716.82	-2451146.20	493.58	26.88	0	-90	MA
MB116	69704.17	-2451161.63	493.82	27.35	0	-90	MA
MB117	69690.89	-2451176.05	493.57	25.17	0	-90	MA
MB118	69678.49	-2451190.28	493.18	25.17	0	-90	MA
MB119	69665.27	-2451205.79	492.98	27.02	0	-90	MA
MB120	69564.57	-2451253.10	490.26	23.90	0	-90	MA
MB121	69583.52	-2451268.90	489.96	26.30	0	-90	MA
MB122	69549.13	-2451271.46	490.02	25.70	0	-90	MA
MB123	69529.35	-2451295.05	490.69	26.10	0	-90	MA
MB124	69546.17	-2451309.24	491.17	26.60	0	-90	MA
MB125	69514.60	-2451312.92	491.60	23.60	0	-90	MA
MB126	69564.80	-2451287.20	491.40	25.50	0	-90	MA
MB127	69744.37	-2451194.48	493.21	27.09	0	-90	MA
MB128	69765.20	-2451169.43	492.48	27.43	0	-90	MA
MB129	69784.41	-2451146.33	492.76	25.98	0	-90	MA
MB130	69800.50	-2451127.31	492.94	21.22	0	-90	MA
MB131	69816.22	-2451108.19	493.12	27.65	0	-90	MA
MB132	69834.00	-2451087.14	493.52	24.93	0	-90	MA
MB133	69853.63	-2451064.29	494.27	27.07	0	-90	MA
MB134	69867.95	-2451046.79	495.08	27.45	0	-90	MA
MB135	69886.57	-2451003.56	494.70	27.41	0	-90	MA
MB136	69908.92	-2450976.28	494.02	24.90	0	-90	MA
MB137	69612.48	-2451320.74	492.13	26.34	0	-90	MA
MB138	69636.63	-2451294.23	489.86	27.37	0	-90	MA

MB139	69660.06	-2451267.88	489.78	27.59	0	-90	MA
MB140	69686.77	-2451237.74	490.24	27.49	0	-90	MA
MB141	69707.53	-2451214.67	490.57	27.33	0	-90	MA
NPS1A	69255.81	-2450459.99	491.48	66.84	0	-90	CZBS
NPS1B	69261.25	-2450460.51	491.58	55.50	0	-90	CZBS
OV125001	64260.50	-2451695.69	494.42	108.20	0	-90	CZA
OV125002	64226.19	-2453414.88	510.54	74.72	0	-90	CZA
OV125003	64266.58	-2452307.19	498.22	89.75	0	-90	CZA
OV125004	63842.57	-2451270.77	487.73	89.71	0	-90	CZA
OV125005	63552.95	-2452768.66	493.57	83.75	0	-90	CZA
OV125006	64989.55	-2452110.40	502.53	80.40	0	-90	CZA
OV125007	65261.01	-2451569.86	501.09	86.75	0	-90	CZA
OV125008	66129.24	-2453079.26	524.08	48.15	0	-90	CZA
OV125009	65204.26	-2453238.31	513.87	56.65	0	-90	CZA
OV125010	65901.87	-2451506.10	504.51	172.69	0	-90	CZA
OV125011	67887.05	-2452112.88	510.34	145.13	0	-90	CZA
OV125012	67764.70	-2451256.37	501.97	106.42	0	-90	CZA
OV125013	66032.31	-2451983.23	510.79	78.09	0	-90	CZA
OV125014	65892.37	-2450526.72	493.97	123.24	0	-90	CZA
OV125015	65877.48	-2449481.13	485.80	163.64	0	-90	CZA
OV125016	66892.71	-2452485.36	516.62	66.33	0	-90	CZA
OV125017	66883.74	-2451540.69	507.10	158.00	0	-90	CZA
OV125018	66900.46	-2450741.74	498.31	130.27	0	-90	CZA
OV125019	66867.51	-2449479.67	487.53	136.05	0	-90	CZA
OV125020	67648.30	-2450501.59	493.23	93.14	0	-90	CZA
OV125021	67903.73	-2449492.97	483.03	130.18	0	-90	CZA
OV125022	68893.47	-2452484.20	509.95	105.60	0	-90	CZA
OV125023	68941.02	-2451537.33	497.65	65.52	0	-90	CZA
OV125024	68840.05	-2450753.60	491.63	77.75	0	-90	CZA
OV125025	68798.40	-2449493.18	478.99	69.10	0	-90	CZA
OV125026	69897.67	-2452502.60	509.18	84.65	0	-90	CZA
OV125027	69888.43	-2451480.53	503.93	50.72	0	-90	CZA
OV125028	69886.19	-2450446.55	499.65	81.60	0	-90	CZA
OV125029	69916.68	-2449515.97	488.54	65.55	0	-90	CZA
OV125031	70895.00	-2451445.00	495.21	29.16	0	-90	CZA
OV125032	70894.01	-2450450.60	486.39	14.78	0	-90	CZA
OV125033	71024.31	-2449588.80	476.56	23.70	0	-90	CZA
OV125034	64956.91	-2450291.61	487.18	156.77	0	-90	CZA
OV125035	68620.00	-2450083.99	486.83	69.28	0	-90	CZA
OV125036	67996.00	-2452793.99	515.58	119.75	0	-90	CZA
OV125037	64564.88	-2451046.84	491.67	112.24	0	-90	CZA
OV125038	68002.00	-2448597.00	481.07	91.18	0	-90	BLB
OV125039	63042.87	-2453360.23	501.84	65.78	0	-90	CZA
OV125040	66950.48	-2448779.29	484.10	106.23	0	-90	CZA
OV125041	62889.34	-2451615.29	486.45	107.55	0	-90	CZA
OV125042	65817.66	-2448918.52	483.21	82.28	0	-90	CZA
OV125043	64914.03	-2449420.23	484.36	119.80	0	-90	CZA
OV125044	62536.91	-2452566.28	493.35	98.65	0	-90	CZA
OV125045	68513.59	-2452725.59	514.93	139.27	0	-90	CZA

OV125046	71176.33	-2452299.12	537.38	69.74	0	-90	CZA
OV125047	66105.13	-2451859.21	509.36	28.81	0	-90	CZA
OV125048	66305.26	-2451867.04	510.02	163.78	0	-90	CZA
OV125049	66636.37	-2451966.93	511.58	160.50	0	-90	CZA
OV125051	66405.58	-2452106.16	512.68	73.56	0	-90	CZA
OV125052	66648.50	-2452319.73	515.84	61.56	0	-90	CZA
OV125053	66259.53	-2451970.04	511.13	83.52	0	-90	CZA
OV125054	66659.88	-2452179.60	513.67	71.50	0	-90	CZA
OV125055	66390.74	-2452291.49	514.35	69.40	0	-90	CZA
OV125056	66102.65	-2452175.47	512.73	72.46	0	-90	CZA
OV125060	66689.85	-2452076.99	513.22	139.60	0	-90	CZA
OV125063	66800.60	-2452288.60	515.46	66.22	0	-90	CZA
OV125064	66676.95	-2452799.05	521.11	61.56	0	-90	CZA
OV125065	66427.09	-2451028.28	501.47	127.32	0	-90	CZA
OV125066	67318.82	-2450995.14	500.01	129.06	0	-90	CZA
OV125067	67500.39	-2451747.59	506.26	155.55	0	-90	CZA
OV125068	67548.34	-2452741.32	516.42	46.05	0	-90	CZA
OV125069	65718.76	-2449938.00	489.50	127.61	0	-90	CZA
OV125070	66393.34	-2449990.57	492.52	128.60	0	-90	CZA
OV125071	65593.82	-2449096.62	482.73	101.55	0	-90	CZA
OV125072	66455.49	-2449193.88	485.57	114.63	0	-90	CZA
OV125073	69596.01	-2450821.95	492.90	91.61	0	-90	CZA
OV125074	70523.83	-2450796.45	492.22	63.89	0	-90	CZA
OV125075	70435.06	-2450747.12	502.25	25.61	0	-90	CZA
OV125076	70341.26	-2450707.17	510.94	29.26	0	-90	CZA
OV125077	70182.57	-2450813.94	530.03	53.06	0	-90	CZA
OV125078	70224.03	-2450758.99	532.08	54.03	0	-90	CZA
OV125079	70070.65	-2450631.02	530.08	56.06	0	-90	CZA
OV125080	70006.47	-2450706.99	528.89	56.16	0	-90	CZA
OV125081	69718.09	-2450929.93	502.83	57.29	0	-90	CZA
OV125082	69791.74	-2450901.41	510.26	60.02	0	-90	CZA
OV125083	70045.11	-2450938.97	512.18	38.21	0	-90	CZA
OV125084	69957.70	-2450905.85	514.83	54.25	0	-90	CZA
OV125085	70063.90	-2451031.20	518.55	44.21	0	-90	CZA
OV125086	69863.17	-2450913.02	512.52	60.08	0	-90	CZA
OV125087	69960.76	-2451229.27	520.24	65.01	0	-90	CZA
OV125088	69870.85	-2451126.99	506.12	46.99	0	-90	CZA
OV125089	69440.19	-2451346.99	502.94	56.11	0	-90	CZA
OV125090	67558.85	-2450052.78	489.53	92.86	0	-90	CZA
OV125091	67433.53	-2449080.45	484.39	103.67	0	-90	CZA
OV125092	66550.00	-2448650.00	485.29	100.30	0	-90	CZA
OV125093	67291.99	-2448273.13	482.77	93.25	0	-90	CZA
OV125094	68515.95	-2451865.31	502.98	99.88	0	-90	CZA
OV125095	68387.28	-2451061.74	497.74	90.15	0	-90	CZA
OV125096	68151.81	-2449857.68	485.70	75.00	0	-90	CZA
OV125097	67994.14	-2449021.90	481.31	23.33	0	-90	CZA
OV125098	68477.49	-2449303.91	479.48	63.21	0	-90	CZA
OV125099	70554.78	-2449968.21	492.89	22.17	0	-90	CZA
OV125100	70072.82	-2450157.69	503.43	77.11	0	-90	CZA

OV125101	70362.96	-2449865.41	506.78	81.55	0	-90	CZA
OV125102	70246.05	-2450200.03	483.54	26.01	0	-90	CZA
OV125103	70363.47	-2450010.63	503.57	73.36	0	-90	CZA
OV125104	69473.69	-2452063.31	502.04	74.11	0	-90	CZA
OV125105	70402.76	-2451898.03	528.07	77.26	0	-90	CZA
OV125106	69774.70	-2450653.95	497.86	79.71	0	-90	CZA
OV125107	69594.92	-2450571.69	491.59	83.21	0	-90	CZA
OV125108	69724.40	-2450741.68	497.66	54.00	0	-90	CZA
OV125109	69129.86	-2451240.12	495.06	82.22	0	-90	CZA
OV125110	69371.65	-2451085.80	492.52	68.85	0	-90	CZA
OV125111	69436.68	-2451209.54	502.06	64.75	0	-90	CZA
OV125112	69248.72	-2450662.30	488.52	61.90	0	-90	CZA
OV125113	68996.01	-2450318.87	483.78	76.25	0	-90	CZA
OV125114	69423.29	-2450122.50	496.56	74.89	0	-90	CZA
OV125115	69338.06	-2449718.68	491.65	66.05	0	-90	CZA
OV125116	69780.14	-2449795.85	499.44	70.85	0	-90	CZA
OV125117	70205.15	-2449443.29	479.20	34.95	0	-90	CZA
OV125118	70250.63	-2449726.25	506.43	69.27	0	-90	CZA
OV125119	69596.66	-2450761.30	493.50	104.68	0	-90	CZA
OV125120	69692.45	-2450332.91	495.70	65.90	0	-90	CZA
OV125121	69419.44	-2450123.32	496.22	57.37	0	-90	CZA
OV125122	70091.46	-2450140.29	502.88	63.86	0	-90	CZA
OV125124	69846.73	-2451231.95	517.14	64.55	0	-90	CZA
OV125125	69568.45	-2451405.41	500.82	52.48	0	-90	CZA
OV125126	69625.88	-2451754.81	508.18	64.03	0	-90	CZA
OV125127	70403.62	-2451898.86	527.34	56.56	0	-90	CZA
OV125128	69887.18	-2451478.72	504.09	51.07	0	-90	CZA
OV125129	70177.96	-2451698.72	526.50	62.77	0	-90	CZA
OV125130	70082.48	-2451968.29	524.09	62.54	0	-90	CZA
OV125131	70424.22	-2451507.04	531.34	53.23	0	-90	CZA
OV125132	70663.66	-2451675.62	536.53	53.87	0	-90	CZA
OV125133	70791.50	-2451834.58	538.72	53.41	0	-90	CZA
OV125134	71048.68	-2452100.78	540.05	56.83	0	-90	CZA
OV125135	69625.06	-2451501.36	502.12	67.86	0	-90	CZA
OV125136	70064.02	-2451239.85	523.45	61.16	0	-90	CZA
OV125137	70291.14	-2451500.12	527.60	56.59	0	-90	CZA
OV12513R	66040.00	-2451983.00	510.50	61.46	0	-90	CZA
OV125140	69953.19	-2449894.62	500.17	53.25	0	-90	CZA
OV125145	70677.00	-2452036.02	533.19	55.40	0	-90	CZA
OV125146	71021.65	-2451885.55	542.44	56.80	0	-90	CZA
OV125147	69503.04	-2449747.43	492.87	53.79	0	-90	CZA
OV125148	69750.65	-2449744.89	498.06	54.97	0	-90	CZA
OV125149	70002.87	-2449747.10	499.94	59.80	0	-90	CZA
OV12514R	65900.00	-2450484.99	493.92	117.59	0	-90	CZA
OV125150	70250.85	-2449747.08	505.28	62.76	0	-90	CZA
OV125151	70472.66	-2449774.98	509.34	53.85	0	-90	CZA
OV125152	69254.40	-2449998.01	491.31	54.67	0	-90	CZA
OV125153	69756.28	-2449995.57	502.62	56.80	0	-90	CZA
OV125154	70002.11	-2449995.98	501.31	59.76	0	-90	CZA

OV125155	69253.21	-2450250.81	489.44	62.56	0	-90	CZA
OV125156	69744.36	-2450244.58	496.98	59.80	0	-90	CZA
OV125157	69978.56	-2450252.00	502.29	59.72	0	-90	CZA
OV125158	69752.81	-2450497.62	494.06	65.80	0	-90	CZA
OV125159	69128.62	-2451283.55	494.22	65.74	0	-90	CZA
OV125160	69259.12	-2451325.92	493.79	45.14	0	-90	CZA
OV125161	69752.87	-2451370.19	507.99	53.66	0	-90	CZA
OV125162	69880.33	-2451372.84	511.61	52.77	0	-90	CZA
OV125163	70004.68	-2451369.59	517.31	58.97	0	-90	CZA
OV125164	69249.52	-2451498.90	495.27	53.78	0	-90	CZA
OV125165	69128.12	-2451619.49	497.09	65.70	0	-90	CZA
OV125166	69748.03	-2451624.49	503.38	50.74	0	-90	CZA
OV125167	69956.28	-2451604.24	506.00	44.78	0	-90	CZA
OV125168	69377.55	-2449874.33	493.30	60.00	0	-90	COH
OV125169	69627.27	-2449876.14	498.04	60.00	0	-90	COH
OV125170	69870.58	-2449872.69	500.87	60.00	0	-90	CZA
OV125171	70140.83	-2449877.14	501.20	60.00	0	-90	CZA
OV125172	69255.79	-2450119.77	491.24	60.00	0	-90	COH
OV125173	69258.34	-2450371.48	492.45	60.00	0	-90	COH
OV125174	69753.00	-2450371.66	494.94	60.00	0	-90	COH
OV12528R	69802.84	-2450122.07	494.33	77.65	0	-90	CZA
OV12530R	70988.00	-2452153.99	538.10	65.73	0	-90	CZA
OV12547R	66105.13	-2451859.21	509.36	84.30	0	-90	CZA
OV12550R	66176.11	-2452026.51	511.05	74.68	0	-90	CZA
OV125E01	69498.89	-2451499.56	501.69	79.00	0	-90	CZA
OV125E02	69562.33	-2451502.19	502.21	79.00	0	-90	CZA
OV125E04	69688.98	-2451501.95	500.93	67.00	0	-90	CZA
OV125E05	69750.07	-2451499.96	500.05	61.00	0	-90	CZA
OV125E06	69813.81	-2451500.06	501.53	61.00	0	-90	CZA
OV125E07	69880.17	-2451497.11	502.99	67.00	0	-90	CZA
OV125E08	69938.30	-2451500.27	505.70	53.00	0	-90	CZA
OV125E09	70000.13	-2451499.80	507.94	61.00	0	-90	CZA
OV125E12	70193.58	-2451502.57	522.49	60.00	0	-90	CZA
OV125E13	70249.53	-2451501.51	525.75	61.00	0	-90	CZA
OV125E14	70312.70	-2451500.20	527.73	60.00	0	-90	CZA
OV125E15	70375.01	-2451500.00	529.83	68.00	0	-90	CZA
OV125E16	70437.26	-2451499.55	531.81	55.00	0	-90	CZA
OV125E17	70500.01	-2451500.05	534.79	68.00	0	-90	CZA
OV125E18	70563.20	-2451499.39	536.41	55.00	0	-90	CZA
OV125N02	69500.02	-2450937.47	493.81	91.00	0	-90	CZA
OV125N03	69501.20	-2450875.28	493.25	96.00	0	-90	CZA
OV125N04	69500.65	-2450811.22	491.64	100.19	0	-90	CZA
OV125N05	69500.28	-2450749.70	491.37	90.00	0	-90	CZA
OV125N06	69499.74	-2450687.38	490.91	83.00	0	-90	CZA
OV125N07	69501.19	-2450626.91	490.42	66.00	0	-90	CZA
OV125N08	69500.66	-2450562.75	491.53	77.00	0	-90	CZA
OV125N09	69500.14	-2450500.07	491.80	79.00	0	-90	CZA
OV125N10	69500.16	-2450438.91	494.04	80.43	0	-90	CZA
OV125N11	69500.25	-2450374.68	495.63	70.00	0	-90	CZA

OV125N12	69499.34	-2450312.22	497.79	67.00	0	-90	CZA
OV125N13	69500.68	-2450251.86	498.00	60.00	0	-90	CZA
OV125N14	69502.27	-2450125.50	498.85	61.00	0	-90	CZA
OV125N15	69499.73	-2449998.89	496.38	60.00	0	-90	CZA
OV125S01	69499.67	-2451374.74	500.09	61.00	0	-90	CZA
OV125S02	69499.82	-2451437.23	496.98	61.00	0	-90	CZA
OV125S03	69500.35	-2451562.72	504.06	61.00	0	-90	CZA
OV125S04	69500.02	-2451623.70	506.15	61.00	0	-90	CZA
OV125S05	69499.97	-2451687.61	505.72	61.00	0	-90	CZA
OV125S06	69499.65	-2451749.94	505.15	67.00	0	-90	CZA
OV125S07	69500.15	-2451811.72	502.02	61.00	0	-90	CZA
OV125S08	69500.17	-2451874.24	500.58	60.00	0	-90	CZA
OV125S09	69500.05	-2452075.38	501.57	66.00	0	-90	CZA
OV125S10	69499.90	-2452137.28	503.98	70.00	0	-90	CZA
OV125S11	69500.14	-2452199.71	504.90	70.00	0	-90	CZA
OV125S12	69499.74	-2452250.24	505.44	85.00	0	-90	CZA
OV125W01	69499.62	-2451003.03	494.06	86.00	0	-90	CZA
OV125W02	69437.61	-2450999.56	493.90	96.16	0	-90	CZA
OV125W04	69312.16	-2450999.98	490.99	96.61	0	-90	CZA
OV125W05	69248.41	-2451000.82	491.13	90.60	0	-90	CZA
OV125W06	69187.27	-2450999.91	491.28	70.40	0	-90	CZA
OV125W07	69124.87	-2451000.46	491.32	59.70	0	-90	CZA
OV125W08	69062.56	-2450999.95	491.70	77.00	0	-90	CZA
OV125W09	68999.48	-2451000.46	492.98	74.54	0	-90	CZA
OV125W10	68937.35	-2450999.44	491.99	85.00	0	-90	CZA
OV125W11	68875.30	-2450999.91	493.47	85.00	0	-90	CZA
OV125W12	68812.43	-2450999.21	494.17	85.00	0	-90	CZA
OV125W13	68748.61	-2451000.67	495.05	81.00	0	-90	CZA
OV125W14	68686.86	-2450999.80	495.68	81.00	0	-90	CZA
OV125W15	68625.59	-2450999.90	496.17	86.00	0	-90	CZA
OV125W16	68561.65	-2451000.03	495.43	91.00	0	-90	CZA
OV125W17	68498.03	-2450999.95	496.53	97.00	0	-90	CZA
OV125W18	68249.56	-2450999.65	496.79	97.00	0	-90	CZA
OV157	69997.14	-2450244.47	502.53	49.83	0	-90	CZA
OV160	69253.08	-2451324.58	493.91	44.64	0	-90	CZA
OV24BS01	68834.83	-2450762.05	491.76	63.54	0	-90	CZBS
OV24BS02	68838.39	-2450751.14	491.70	64.10	0	-90	CZBS
OV24BS03	68830.67	-2450762.06	491.80	66.15	0	-90	CZBS
OV24BS04	68837.39	-2450755.52	491.70	64.25	0	-90	CZBS
OV24BS05	68838.30	-2450763.37	491.81	65.27	0	-90	CZBS
OV24BS06	68840.50	-2450758.84	491.84	65.18	0	-90	CZBS
OVOC1	69580.46	-2451097.47	491.39	42.00	0	-90	OBLH
OVOC10	69722.18	-2451100.49	493.24	55.00	0	-90	OBLH
OVOC4	69603.83	-2451014.78	491.27	42.00	0	-90	OBLH
OVOC5	69582.27	-2451038.68	490.53	42.00	0	-90	OBLH
OVOC6	69529.36	-2451024.11	489.15	55.00	0	-90	OBLH
OVOC7	69625.52	-2451026.63	495.79	53.00	0	-90	OBLH
OVOC8	69634.74	-2451108.00	491.27	21.00	0	-90	OBLH
OVOC9	69685.07	-2451132.39	494.14	55.00	0	-90	OBLH

SL18	69387.65	-2449571.93	485.66	53.00	0	-90	SSP
SL18BS1	69387.65	-2449571.93	485.66	53.58	0	-90	CZA
SL18BS2	69387.65	-2449571.93	485.66	51.12	0	-90	SBS
SL31	69683.55	-2450340.22	495.80	76.03	0	-90	SSP
SL31BS29	69683.55	-2450340.22	495.80	58.20	0	-90	BLB
SL31BS30	69683.55	-2450340.22	495.80	57.70	0	-90	SBS
SL32	68950.45	-2449999.13	481.22	69.84	0	-90	SSP
SL32BS23	68950.45	-2449999.13	481.22	52.00	0	-90	BLB
SL32BS24	68950.45	-2449999.13	481.22	50.50	0	-90	CZA
SL32BS26	68950.45	-2449999.13	481.22	49.80	0	-90	BLB
SL32BS27	68950.45	-2449999.13	481.22	49.66	0	-90	CZA
SL33	66013.06	-2452191.42	512.99	75.56	0	-90	SSP
SL34	68408.05	-2449715.53	482.30	57.79	0	-90	SSP
SL35	68009.95	-2448207.13	482.91	67.60	0	-90	SSP
SL36	65142.56	-2449280.13	483.73	151.97	0	-90	SSP
SL37	68752.05	-2451092.52	495.65	85.60	0	-90	SSP
SL38	68958.75	-2451889.42	500.42	73.55	0	-90	SSP
SL39	69843.45	-2452471.82	508.47	74.80	0	-90	SSP
SL40	64202.36	-2451558.92	492.83	71.71	0	-90	SSP
SL41	67965.45	-2452671.92	514.75	107.46	0	-90	SSP
SL42	64207.56	-2452034.82	493.68	73.07	0	-90	SSP
SL43	64938.36	-2453299.52	513.67	55.52	0	-90	SSP
SL44	66100.46	-2449382.03	485.69	166.21	0	-90	SSP
SL45	67795.45	-2451556.92	505.43	115.95	0	-90	BLB
SL46	65865.76	-2451122.22	500.13	144.07	0	-90	SSP
SL47	67589.75	-2450207.62	490.06	87.03	0	-90	SSP
SL48	67433.35	-2449370.33	485.58	103.27	0	-90	SSP
SL49	66992.65	-2452418.72	514.84	61.64	0	-90	SSP
SL50	70116.95	-2449425.13	480.23	55.11	0	-90	SSP
SL51	70266.65	-2449554.33	488.48	46.31	0	-90	SSP
SL52	70460.15	-2449486.33	487.11	39.29	0	-90	SSP
SL53	70218.55	-2449434.73	479.37	35.11	0	-90	SSP
SL54	70166.45	-2449424.53	479.96	51.09	0	-90	CZA
SL55	71056.14	-2452257.32	536.71	72.16	0	-90	SSP
SL56	70176.25	-2451695.82	526.50	68.68	0	-90	SSP
SL57	70195.35	-2449464.43	480.96	48.87	0	-90	SSP
SL58	70444.45	-2449907.93	506.71	56.45	0	-90	SSP
SL59	70491.85	-2449890.93	503.39	50.54	0	-90	BLB
SL60	62396.86	-2452809.52	495.79	89.77	0	-90	SSP
SL61	62469.36	-2453753.92	506.82	67.12	0	-90	SSP
SL62	70543.15	-2449890.13	497.22	41.41	0	-90	SSP
SL63	64937.96	-2452389.72	504.46	78.43	0	-90	SSP
SL64	70398.75	-2449921.93	506.30	61.47	0	-90	SSP
SL65	71303.54	-2452275.22	525.41	29.20	0	-90	SSP
SL66	71364.44	-2452238.82	517.76	22.63	0	-90	SSP
SL67	70268.75	-2450688.52	521.81	42.55	0	-90	SSP
SL68	70105.45	-2450208.82	503.70	55.05	0	-90	SSP
SL69	70106.75	-2450203.92	503.85	12.00	0	-90	SSP
SL70	70112.85	-2450186.22	504.17	61.76	0	-90	SSP

SL71	70380.00	-2450568.00	492.45	36.75	0	-90	BLB
SL72	65173.00	-2451778.60	502.42	62.65	0	-90	SSP
SL73	65293.50	-2451603.80	501.84	86.75	0	-90	SSP
SM119001	61739.57	-2451343.06	485.99	92.80	0	-90	BLB
SM119002	61521.66	-2452870.67	497.20	99.55	0	-90	CZA
SM119003	60808.92	-2453378.29	500.94	91.81	0	-90	CZA
SM119004	60859.37	-2454326.14	510.75	72.65	0	-90	CZA
SM119005	61076.59	-2450577.76	489.74	103.23	0	-90	CZA
SM119006	60617.79	-2450124.95	489.23	111.54	0	-90	CZA
SM119007	61867.78	-2453376.54	503.62	87.35	0	-90	CZA
SM119008	60644.73	-2451373.62	489.33	127.23	0	-90	CZA
SM119009	60584.69	-2452369.71	492.12	141.29	0	-90	CZA
SM119010	61965.91	-2453966.75	510.61	68.75	0	-90	CZA
SM119011	61804.03	-2452270.66	490.37	119.85	0	-90	CZA
VS121001	60879.67	-2455988.74	530.86	83.75	0	-90	CZA
VS121002	62006.90	-2456301.07	539.11	57.70	0	-90	CZA
VS121003	60022.01	-2456497.06	531.37	112.43	0	-90	CZA
VS121004	61115.23	-2457405.89	548.63	81.40	0	-90	CZA
VS121005	62545.81	-2455227.15	522.89	42.55	0	-90	CZA
VS121006	63566.71	-2453791.99	508.44	23.70	0	-90	CZA
VS121007	66422.04	-2453989.05	535.32	20.59	0	-90	CZA
VS121008	65348.49	-2454141.95	539.22	31.04	0	-90	CZA
VS121009	64034.22	-2455466.34	542.36	27.35	0	-90	CZA
VS121010	63788.99	-2454423.02	523.84	38.75	0	-90	CZA
VS121011	64100.62	-2455292.56	544.47	43.38	0	-90	CZA
VS121012	66174.81	-2453414.75	529.98	43.57	0	-90	CZA
VS836001	59953.96	-2457119.12	537.48	87.32	0	-90	CZA
VS836002	60626.49	-2457530.09	546.18	81.05	0	-90	CZA
VS836003	60850.83	-2456577.89	537.24	105.35	0	-90	BLB
VS836004	61745.07	-2457883.95	557.10	42.04	0	-90	CZA
VS836005	62217.14	-2455667.05	531.00	45.03	0	-90	CZA
VS836006	63354.63	-2455299.72	540.25	30.30	0	-90	CZA
VS836007	63239.24	-2454714.75	521.13	18.07	0	-90	CZA
VS836008	62884.91	-2453696.37	507.31	34.75	0	-90	CZA
VS836009	64274.38	-2453736.04	516.07	54.32	0	-90	CZA
VS836010	64880.95	-2453557.40	516.75	48.26	0	-90	CZA
VS836011	65680.76	-2453553.61	531.87	24.25	0	-90	CZA

Descriptions for “TYPE”

Acronym for “TYPE”	Description
SBL	Old drill holes with core data throughout
CBS	Old drill holes with core data from above coal throughout all seams mostly and percussion from surface to coal
BLB	Drill holes with core data
CZBS	Drill holes with core data (exploration cored holes)
CZI	One borehole does not have geology but seams are identified, the rest have data, inclined drill holes
COH	Open holes with wireline data
OBLH	Mine blast holes with wireline
SBS	Old drill holes with core data
SSP	Old drill holes with core data