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Applicant: Tholie Logistics (Pty) Ltd

**DEVELOPMENT OF THE PROPOSED
COMMISSIEKRAAL COAL MINE INCLUDING
SUPPORT SERVICES AND ASSOCIATED
INFRASTRUCTURE**

SCOPING REPORT

Submitted with due regard to

**consultation with communities and interested and
affected parties**

as required in terms of Regulation 49 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), and in accordance with the standard directive for the compilation thereof as published on the official website of the Department of Mineral Resources

and

as required in terms of Regulation 28 of the National Environmental Management Act (Act 107 of 1998).

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DEVELOPMENT OF THE PROPOSED COMMISSIEKRAAL COAL MINE INCLUDING SUPPORT SERVICES AND ASSOCIATED INFRASTRUCTURE

EXECUTIVE SUMMARY

Introduction

Tholie Logistics (Pty) Ltd (Tholie Logistics), a junior South African coal exploration and mining company, is proposing to establish a new underground coal mine and related surface infrastructure to support a mining operation on the farm Commissiekraal 90HT.

SLR Consulting (Africa) (Pty) Ltd (SLR) is the independent firm of consultants that has been appointed by Tholie Logistics to undertake the environmental assessment and related processes.

Location

The project site is located approximately 28 km north of Utrecht in the eMadlangeni Local Municipality and the Amajuba District Municipality, KwaZulu-Natal.

Proposed Development

Based on the exploration work conducted on the farm Commissiekraal 90 HT, Tholie Logistics found a feasible ore body that is worth developing. Tholie Logistics will produce Eskom and export quality coal to suit market demand. The anticipated market prices in the medium and long-term are considered to be favourable for project development. The project is anticipated to create approximately 200 operational jobs, having a positive impact on both indirect businesses and employment.

At this stage in project planning, surface infrastructure will be located around the mine access area in the north-eastern part of the project site. In broad terms the project includes underground mining accessed via a boxcut, on-site crushing and screening, temporary stockpiling of coal ore, and transport off-site by truck to customers directly or via a regional railway siding. Various support infrastructure and services will be required for the project.

Construction commencement is subject to regulatory approval, economic considerations and funding. Construction could commence in 2016 and take six months to complete. The life of mine on current planning is scheduled for 10 years. Further exploration, development and optimisation for the mine and for ore processing is being investigated and therefore a mining right of 20 years has been applied for. The scoping report and EIA and EMP report covers the 10 year life of mine period.

Information that provides perspective on the scale of the project is presented in the table below. It should however be noted that this information may be refined further during the EIA phase.

Group	Specific	Details
Mining	Target mineral	Coal within the Lower Gus Seam – average thickness of 2.6m
	Mineable area	2,000 ha
	Depth of minerals	Average depth of 72.5m below surface
	Rate	Approximately 480,000 tons per annum
	Extent of area for infrastructure	±20ha
	Product	Coal
Mine residues	Waste rock	Minimal waste rock is expected – to be used in the construction of the platform at the boxcut area.
Resource use	Water demand	Approximately 12,500 m ³ per month
	Power demand	5.5 MVA
Employment	Staff: construction	Approximately 160
	Staff: operational	Approximately 200
	Operating times	24 hours a day, 7 days a week

Approach and methodology

The environmental assessment process must be conducted in terms of both the Mineral and Petroleum Resources Development Act, 28 of 2002 and the National Environmental Management Act (NEMA), 107 of 1998. Both laws apply because the project is a mine and it incorporates a number of listed/identified activities in terms of the NEMA. Aspects of the project will also require a water use license in terms of the National Water Act (NWA), 36 of 1998. Other approvals/licenses identified at this stage include an application for rezoning from agriculture to mining/industrial use. It is expected that any additional approvals/permits needed for the project will be identified during the course of the EIA.

The scoping process was conducted in accordance with the requirements of the legal framework outlined above. The main purpose of the scoping report is to set out project-related environmental issues; to identify and outline what investigations need to be conducted; and to detail how these investigations will be performed. The terms of reference generated for the EIA phase will enable the meaningful assessment of all relevant environmental and social issues.

Alternatives being considered

At this stage in project planning, surface infrastructure will be located around the mine access area in the north-eastern part of the project site. This site was selected by the technical project team taking into consideration the practical requirements for developing a mine access on seam and the initial findings of the biodiversity and hydrology studies. The ore body will be mined using underground mining methods. Although opencast reserves do exist within the project site, the applicant has chosen to focus on the underground coal reserves only to minimise disturbance on surface. At this stage in the project planning, no process plant is foreseen to be built on site. Further exploration, development and optimisation for the

mine and for ore processing may inform the need for a wash plant with support facilities however it is expected by the applicant that this would be located off-site.

Alternatives are outlined below.

- land uses for the site – alternatives include grazing, cultivation, conservation, forestry and mining-related activities
- underground mining methods – alternatives include a Continuous Miner method or conventional Drill and Blast method
- mining power supply – sourced from on-site generators until an Eskom supply is installed
- domestic power supply – alternatives include solar panels and/or solar water geysers
- water supply – alternatives include recycling and re-using dirty runoff water from the site, municipal water (Utrecht), natural springs in the area and/or boreholes
- the “no-project” option – a comparison between the options of proceeding with the project with that of not proceeding with the project.

Environmental setting

The project area falls within the Utrecht Coalfield. The project site hosts the complete succession of coal seams but of these only the Gus Seam is of economic interest.

The project site is located in a region that is rich in heritage and biodiversity and is seen as a key water production area for downstream water users. The climate of the project area is moderate with cold winters and summer rainfall. The natural setting adds to a strong sense of place and a high to moderate scenic quality. The main land uses include agriculture, primarily livestock grazing with minor dryland crops, forestry, conservation and tourism. Residential areas exist in the form of private farmsteads and tenant/farm worker homesteads. Community structures including schools occur in the area. There is a network of gravel farm roads providing access to the project area. Some of these roads will be used by the project. As can be expected in a rural area, traffic and ambient noise volumes are low. Ambient air quality is expected to be good.

The project area is characterised by impoverished rural settlements with very little economic activity, low education levels and low skills base. Municipal service delivery is a challenge particularly in the rural areas where there is lack of and inadequate provision of essential services like piped water, refuse removal and sanitation. The area generally has good agriculture soil and climate and has enjoyed a positive agricultural sector; however this has declined in the past recent years.

Stakeholder engagement process

As part of the EIA process, the public consultation process to date has included focussed biodiversity and water-related discussions with key stakeholders, landowner notification meetings/correspondence, social scans of the project area including distribution of information, placement of notification in two local

newspapers, placement of site notices in conspicuous locations, direct consultation through telephonic discussions and two public scoping meetings. The meetings were well attended and provided valuable input into the process and potential impacts requiring detailed investigation. In addition to the meetings, written comments were received from IAPs.

Key issues identified by IAPs during the process

All comments received during the scoping process have been incorporated into the scoping report. Key issues raised pertain to EIA procedural issues, technical project-specific issues, soil related issues, biodiversity related issues, water related issues, air quality issues and socio-economic issues including transport, land uses, social, employment.

Potential impacts

Potential impacts that were identified during the scoping process are listed below.

Component	Potential impact	Specialist study planned
Heritage	Loss of or damage to heritage and/or paleontological resources	Heritage and paleontological studies
Socio-economic	Impact on existing agricultural and residential uses	Land use study
	Impact on future conservation land uses	
	Disturbance of roads by project-related traffic	Traffic impact assessment study
	Positive and negative socio-economic impacts	Socio-economic study
	Loss and sterilisation of mineral resources	No specialist studies – qualitative assessment provided by SLR
Biophysical	Hazardous excavations and infrastructure	
	Negative visual impacts	
Generation of methane gas	Specialist input will be sought	
Loss of soil and change in land capability through sterilisation, erosion and contamination	Soil and land capability study	
Loss of biodiversity and impact on ecosystem functionality	Biodiversity study	
Alteration of surface drainage patterns	Surface water study	
Contamination of surface water		
Reducing groundwater levels and availability	Groundwater study with input from geochemical study	
Contamination of groundwater		
Emissions causing air pollution and associated nuisance and health impacts	Air quality study	
Increase in disturbing noise levels	Noise study	

In addition to the above, a closure cost estimate will be calculated for the project in line with the DMR's requirements.

Conclusions

The EIA process is currently in the scoping phase. The project has the potential to impact on the cultural, socio-economic and biophysical environment both on site and in the surrounding area. Input received during the public scoping meetings will allow for the meaningful assessment of all relevant environmental and social issues. Potential impacts will be investigated by various studies to be conducted by appropriately qualified specialists. Stakeholder engagement will continue throughout the EIA process.

DEVELOPMENT OF THE PROPOSED COMMISSIEKRAAL COAL MINE INCLUDING SUPPORT SERVICES AND ASSOCIATED INFRASTRUCTURE

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DEVELOPMENT OF THE PROPOSED COMMISSIEKRAAL COAL MINE INCLUDING SUPPORT SERVICES AND ASSOCIATED INFRASTRUCTURE

INTRODUCTION

INTRODUCTION TO THE PROJECT

Tholie Logistics (Pty) Ltd (Tholie Logistics), a junior South African coal exploration and mining company, holds the prospecting right (No. KZN 30/5/1/1/2/155PR) for coal over the farm Commissiekraal 90HT, in addition to other farms (Donkerhoek, Klipplaat, Strydfontein, Libanon, Holbank, Brakfontein/Mooiplaats, Arrarat, Lusthof, Vredehof) south of the Mpumalanga / KwaZulu-Natal border.

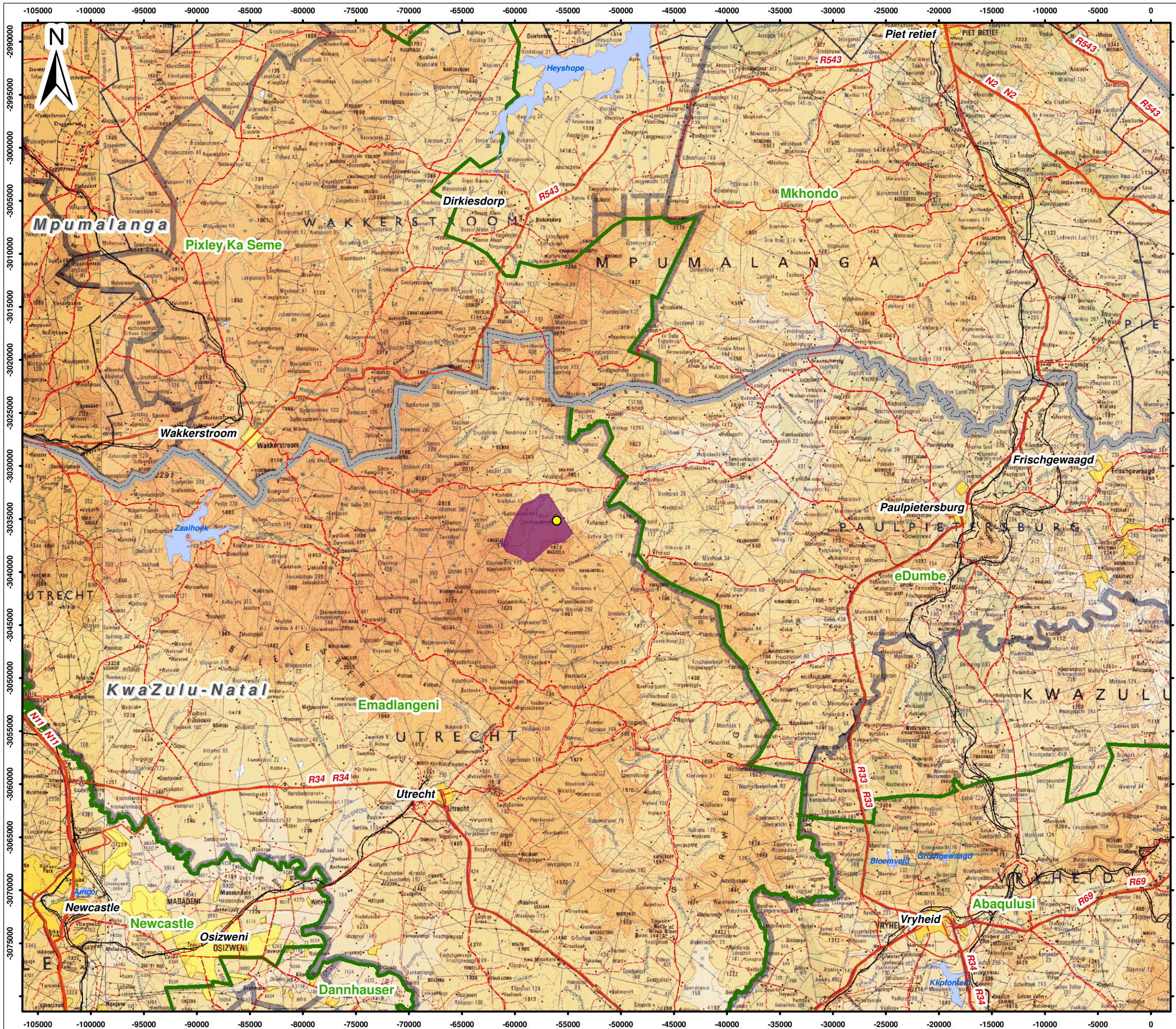
Tholie Logistics is proposing to establish a new underground coal mine and related surface infrastructure to support a mining operation on the farm Commissiekraal 90HT. The Commissiekraal farm covers an area of approximately 2,461 ha and is the subject of this scoping report. The farm is located approximately 28 km north of Utrecht in the eMadlangeni Local Municipality and the Amajuba District Municipality, KwaZulu-Natal (Figure 1).

At this stage in project planning, surface infrastructure will be located around the mine access area in the north-eastern part of the project site (Figure 2). In broad terms the project includes underground mining accessed via a boxcut, on-site crushing and screening, temporary stockpiling of coal ore, and transport off-site by truck to customers directly or via a regional railway siding. Various support infrastructure and services will be required for the project. The total footprint of the surface infrastructure is estimated at this stage to be approximately 20 hectares (ha).

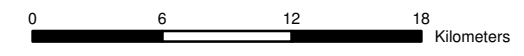
The environmental assessment process must be conducted in terms of both the Mineral and Petroleum Resources Development Act, 28 of 2002 and the National Environmental Management Act (NEMA), 107 of 1998. Both laws apply because the project is a mine and it incorporates a number of listed/identified activities in terms of the NEMA. Aspects of the project will also require a water use license in terms of the National Water Act (NWA), 36 of 1998.

The environmental assessment process comprises three phases: an application phase, scoping phase and environmental impact assessment (EIA) phase. This report describes the scoping phase for the project.

The main purpose of this scoping report is to set out project-related environmental issues; to identify and outline what investigations need to be conducted; and to detail how these investigations will be performed. The terms of reference generated for the EIA phase will enable the meaningful assessment of all relevant environmental and social issues.



- Legend**
- Project Area
 - Conceptual Surface Infrastructure Position
 - Local Municipalities
 - Provinces
 - Dams
 - Railway
 - National Roads
 - Main Provincial Roads
 - Secondary Provincial Roads

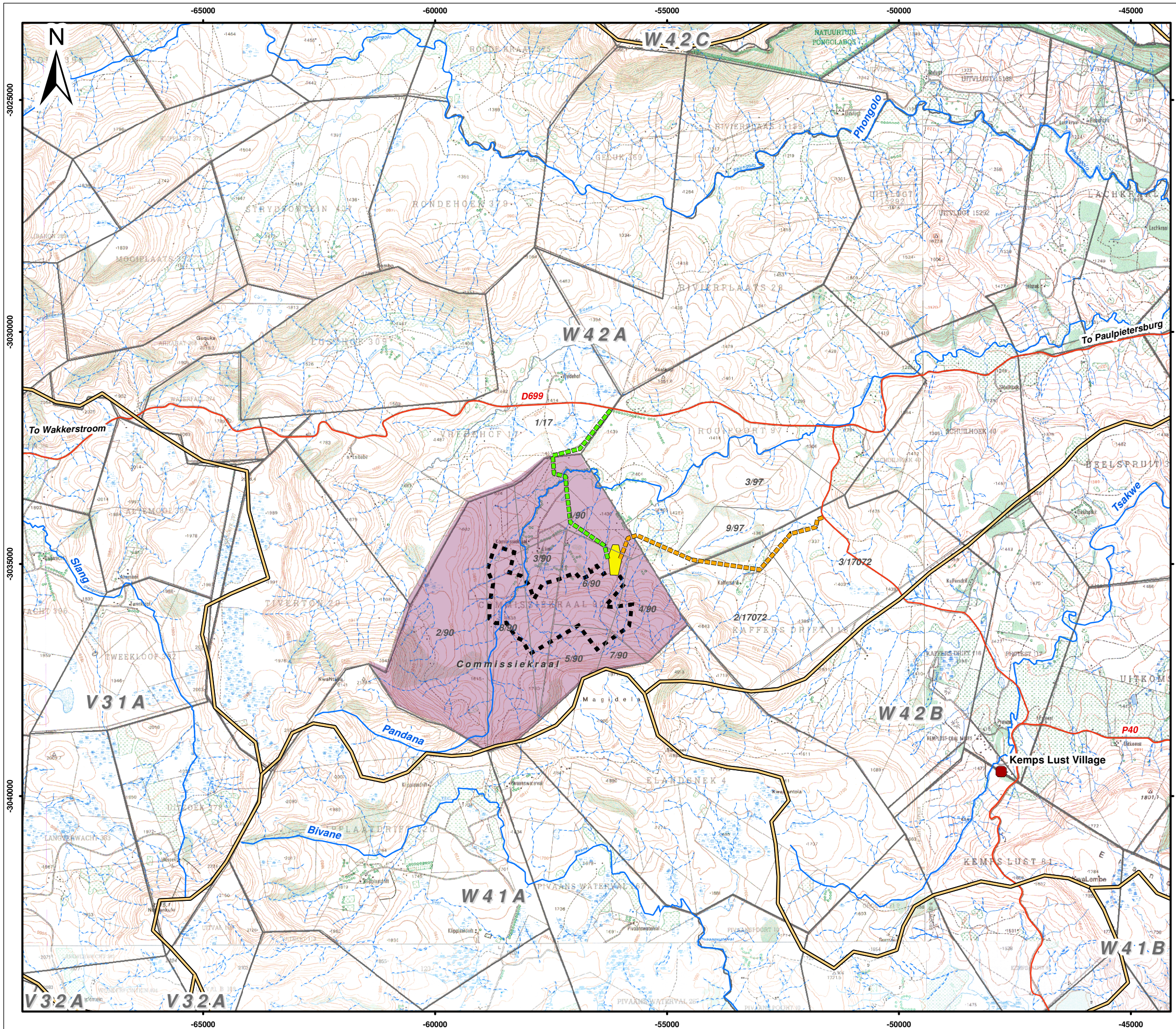


1 : 350 000 @ A3
 Projection: Transverse Mercator
 Datum: Hartbeeshoek, LO31

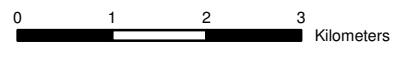
THOLIE LOGISTICS
 Commissiekraal Coal Project

Figure 1
 Regional Setting of the Project Area

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- Legend**
- Project Area
 - Conceptual Surface Infrastructure Position
 - Road Access Alternative A
 - Road Access Alternative B
 - Planned 10 year Mining Area
 - Quaternary Catchments
 - Rivers - Perennial
 - Rivers - Non-Perennial
 - Railway
 - Public Gravel Roads
 - Farm Boundaries



1 : 80 000 @ A3
 Projection: Transverse Mercator
 Datum: Hartbeeshoek, LO31

THOLIE LOGISTICS
 Commissiekraal Coal Project

Figure 2
Local Setting of Project Area

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DETAILS OF THE APPLICANT

Details of the applicant are provided in the table below.

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Tholie Logistics (Pty) Ltd (Tholie Logistics) was originally formed by Mrs Tholie Cibane to apply for and develop coal prospecting rights in northern KwaZulu-Natal. Tholie Logistics entered into a strategic partnership agreement whereby financial and technical partners in the form of the Bright Group and some other individuals were introduced to the company during the years 2008 to 2010. During 2012 some additional assets were introduced to append a neighbouring prospecting right, thereby consolidating the prospecting area. In the same year, Tholie Logistics underwent a series of organisational changes in order to set the company up for the optimal management, administration and funding, and to prepare them for a planned mining right application (MRA) over its project area, once the prospecting had advanced sufficiently. Tholie Logistics is now a sole operating entity.

STRUCTURE OF THIS REPORT

This document has been prepared in accordance with the Department of Mineral Resources (DMR) Scoping Report template format, and was informed by the guidelines posted on the official DMR website. This is in accordance with the requirements of the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002). In addition, this report complies with the requirements of the National Environmental Management Act (NEMA) (Act 107 of 1998).

Given that both the mining right application in terms of the MPRDA and environmental authorisation application in terms of NEMA were submitted prior to 08 December 2014, both applications will be processed in line with the legal framework provided in Table 8.1 below.

TABLE 8.1: LEGAL FRAMEWORK

Reference in scoping report	Mining Regulation 49 of Regulation 527 of 23 April 2004	NEMA Regulation 28 of Regulation 543 of 18 June 2010
Section 1	-	Details of the environmental practitioner who prepared the report, including relevant expertise to carry out scoping procedures.
Section 1	-	Identify all legislation and guidelines that have been considered in preparing the scoping report.
Section 1	Describe the methodology applied to conduct scoping.	-

Reference in scoping report	Mining Regulation 49 of Regulation 527 of 23 April 2004	NEMA Regulation 28 of Regulation 543 of 18 June 2010
Sections 1.11 and 5	Describe the process of engagement of identified interested and affected parties (IAPs), including their views and concerns.	Details of the public participation process conducted in terms of Regulation 28(a), including: notification of IAPs, proof of notification, IAP register/database, summary of issues raised by IAPs.
Section 2	Describe the existing status of the environment prior to the mining operation.	Description of the environment that may be affected by the activities.
Section 3.1	Describe the most appropriate procedure to plan and develop the proposed operation.	A description of the proposed activities, a description of the property on which the activity is to be undertaken, and the location of the activity on the property.
Section 4	Identify and describe reasonable land use or development alternatives to the proposed operation. Describe the consequences of not proceeding.	A description of any feasible and reasonable alternatives that have been identified.
Section 3	Identify and describe the anticipated environmental, social and cultural impacts, including cumulative effects where applicable.	A description of the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activities. A description of environmental issues and potential impacts, including cumulative impacts.
Section 6.4	Describe the nature and extent of further investigations required in the environmental impact assessment report.	Information on the methodology that will be adopted in assessing the potential impacts that have been identified. A plan of study for EIA, including: tasks to be undertaken, specialist reports and processes, consultation of authorities, method of assessing environmental issues and alternatives, the option of not proceeding, proposed public participation process, other information required by the authorities.

1 METHODOLOGY APPLIED TO SCOPING

The objectives of the scoping phase are to understand the project, identify and describe potential environmental and social impacts, and to set out any related terms of reference for further investigations that will enable the meaningful assessment of all relevant environmental and social issues. The terms of reference for further investigations are included in Section 6.4.

LEGAL FRAMEWORK AND PROCESS

Legal framework

Prior to the commencement of the project, environmental authorisation is required from key government departments. These include:

- Environmental authorisation from the Kwa-Zulu Natal Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) in terms of the National Environmental Management Act, 107 of 1998 (NEMA). The project is being undertaken in terms of the 2010 EIA regulations. The project incorporates several listed environmental activities (refer to Section 3.2).
- An environmental decision from the Department of Mineral Resources (DMR) in terms of the Mineral and Petroleum Resources Development Act (MPRDA), 28 of 2002 in the form of an approved environmental impact assessment (EIA) and environmental management programme (EMP) report.
- A water use licence or a general authorisation from the Department of Water and Sanitation (DWS) in terms of the National Water Act (NWA), 36 of 1998. Water uses could include taking water from a resource, storing water, impeding or diverting the flow of water in a watercourse, engaging in a stream flow reduction activity, altering the bed, banks, course or characteristics of a watercourse, discharging waste or water containing waste into a water resource, discharging of waste, removing/ discharging/ disposing of waste found underground. This application and supporting documentation will be compiled at the end of the EIA process once the relevant project detail is available.

Other approvals identified at this stage include an application for rezoning from agriculture to mining/industrial use.

Although there is no plan to dispose of waste on site the application in terms of the National Environmental Management: Waste Act (NEM:WA), 59 of 2008, will be determined during the environmental assessment process.

It is expected that any additional approvals/permits needed for the project will be identified during the course of the environmental assessment process. A detailed list will be provided in the EIA and EMP report.

Scoping process

The scoping process was conducted in accordance with the requirements of the legal framework outlined above. The main sources of information for the preparation of the scoping report included:

- documentation prepared by Tholie Logistics and its technical project team – this included the project's mine works programme and social and labour plan
- consultation with the technical project team
- key legislative and regulatory requirements
- site visits by SLR and the team of specialists
- desktop baseline reports and/or literature reviews completed by environmental specialists
- initial consultation with interested and/or affected parties (IAPs) and
- initial consultation with regulatory authorities.

Please refer to the reference list included in Section 8 for further detail.

Stages of the environmental process being followed and corresponding activities up to and including scoping are outlined in Table 1.1. Details on the EIA and EMP phase are included in Section 6.7 of the scoping report.

TABLE 1.1: ENVIRONMENTAL PROCESS BEING FOLLOWED UP TO AND INCLUDING SCOPING

Objectives	Corresponding activities
Pre-application phase (May 2013 and August 2014)	
<ul style="list-style-type: none"> • Gather information relevant to the project site to inform any application processes 	<ul style="list-style-type: none"> • Initial social scan of the project area conducted by SLR (May 2013) • Focussed biodiversity workshop (12 August 2014)
Project initiation and application phase (November 2014 to January 2015)	
<ul style="list-style-type: none"> • Notify the decision making authority of the project. • Initiate the environmental impact assessment process. 	<ul style="list-style-type: none"> • Mining right application submitted by Tholie Logistics to DMR on 18 November 2014. Application accepted on 29 January 2015 • NEMA application for listed activities submitted to DEDTEA on 18 November 2014. Application accepted on 5 December 2014
Scoping phase (March – June 2015)	
<ul style="list-style-type: none"> • Identify interested and/or affected parties (IAPs) and involve them in the scoping process through information sharing. • Identify potential environmental issues associated with the proposed project. • Consider alternatives. • Identify any fatal flaws. • Determine the terms of reference for the EIA. 	<ul style="list-style-type: none"> • Notify IAPs of the project and environmental assessment process (social scans, distribution of BIDs, newspaper advertisements, telephone calls and site notices) • Submission of initial scoping report to DMR (to meet timeframes outlined in the mining right acceptance letter) (11 March 2015) • Public scoping meetings with stakeholder groups (26 March 2015) • Distribute scoping report to IAPs and other regulatory authorities for review (10 April 2015) (40 day review period) • At the same time submit a copy of the scoping report to DEDTEA • Record comments (in writing) (April to May 2015) • Forward scoping report including IAP review comments to DEDTEA for review (mid May 2015) • Forward IAP comments to the DMR • At the same time notify IAPs of the availability of the final scoping report

Scoping team

SLR Consulting (Africa) (Pty) Ltd (SLR) is the independent firm of consultants that has been appointed by Tholie Logistics to undertake the environmental assessment and related processes. Alex Pheiffer is the Project Manager, with a Master's Degree in Environmental Management, over twelve years of relevant experience and is registered as a Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Environmental Science). Brandon Stobart is the Project Reviewer. He has over 17 years of relevant experience and is certified as an Environmental Assessment Practitioner (EAP) with the Interim Certification Board of Environmental Assessment Practitioners of South Africa (EAPSA). The environmental scoping team is outlined in Table 1.2. Technical and specialised input was sourced from the client team and team of specialist consultants.

Neither Alex, Brandon nor SLR has any interest in the project other than fair payment for consulting services rendered as part of the environmental assessment process.

TABLE 1.2: SCOPING PROJECT TEAM

Team	Name	Designation	Tasks and roles	Company
EIA process	Alex Pheiffer	Project manager	Management of the assessment process, stakeholder engagement and report compilation.	SLR Consulting (Africa) (Pty) Ltd
	William Berry	Project administrators		
	Natasha Daly			
	Ntsako Baloyi			
	Brandon Stobart	Project reviewer	Report and process review	
Specialists	Marine Pienaar	Soil and land use specialist	Soil, land use and land capability desktop study	TerraAfrica
	Stephen van Staden and Emile van der Westhuizen	Ecological specialists	Terrestrial and aquatic ecological baseline assessment	Scientific Aquatic Services
	Luke Wiles	Hydrologist	Surface water baseline assessment	Highlands Hydro
	Martin Holland	Groundwater specialist	Groundwater baseline assessment	Dellta-H
	Darren Lafon-Anthony	Noise specialist	Noise baseline assessment	SLR
	Tom Green	Traffic specialist	Traffic baseline assessment	SLR
	Dr Julius Pistorius	Heritage specialist	Heritage study	Dr Julius Pistorius
Client technical team	Heye Daun	Project Manager	Technical input	Bright Resources
	Eugene de Villiers	Mine specialist	Mine works programme and technical input	ECMA
	Mosidi Mphahlele	Social and labour plan specialist	Social and labour plan	Mphahlele Wessels and Associates

1.1 RELEVANT COMMUNITIES

The communities, as defined in the DMR Guideline, closest to the project are listed below.

- permanent farm homesteads, the closest of which are on Portion 6, 1 and 4 of Commissiekraal 90HT – located within a 1km radius of the mine infrastructure area (at this stage in project planning some homesteads are within the infrastructure footprint)

- land tenants and farm workers on Portions 2, 3, 5, 7 and 8 of the farm Commissiekraal 90HT - approximately 2km from the mine infrastructure area
- land tenants and farm workers on immediately surrounding farms – between 2km and 5km from the mine infrastructure area
- Wakkerstroom– approximately 28km north west of the project site
- Utrecht town – approximately 28km south south west of the project site.

1.2 COMMUNITY LAND OWNERSHIP

No community landownership exists within the project area. Surface rights of the project area are currently held by private individuals or companies as detailed in Section 1.6.

1.3 DEPARTMENT OF LAND AFFAIRS INTEREST

The Department of Rural Development and Land Reform (DRDLR) (previously the Department of Land Affairs) has been identified as an interested and affected party (IAP). Proof of consultation is attached in Appendix B.

1.4 LAND CLAIMS

SLR has consulted the DRDLR regarding the status of land claims on Portion 1 - 8 of the farm Commissiekraal 90 HT. In this regard, a response from the DRDLR was received on 16 May 2013. According to the letter, there are claims for restitution in terms of the provisions of the Restitution of Land Rights Act, 22 of 1994 (as amended) lodged in respect of Portions 1 to 8 of the farm Commissiekraal 90 HT. The DRDLR noted that these properties fall under the Magidela Community Claim. Recent communication, dated 17 March 2015, from the Department indicates that the claim has been withdrawn by the Acting Regional Land Claims Commissioner: KwaZulu-Natal in terms of the Court Order dated 8 February 2011. Please see Appendix B for proof of consultation.

1.5 RELEVANT TRADITIONAL AUTHORITY

No traditional authority has been identified, however the community of Commissiekraal is noted by the local community to fall under two chieftaincies. The initial social scan in 2013 identified the Chieftaincy of two Amakhosi, namely Inkosi Nzima and Inkosi Mabasa. The two Amakhosi do not reside on the farm Commissiekraal 90 HT but own land in the greater area under the Ingwenyama Trust. Inkosi Mabasa is based to the south-east and Inkosi Nzima to the north-west of the farm. During the more recent social scan (in March 2015), these two chieftaincies were re-confirmed although other chieftaincies from neighbouring areas identified themselves as interested parties. It is understood that there is sensitivity within the community related to this issue.

1.6 LIST OF LANDOWNERS

Surface rights on the farm Commissiekraal and along proposed access routes are held by private individuals and companies (Table 1.3). Contact details are included in Appendix C.

TABLE 1.3: RELEVANT PROPERTIES AND SURFACE OWNERS

Property description	Title deed number	Surface owner	Note in relation to project infrastructure
Commissiekraal 90 HT			
Portion 1	T8381/1995	Clement Lens	Alternative access route B, surface infrastructure
Portion 2	T32028/1988	Van Vos Lens Prop Developers CC	Underground mining
Portion 3 & 8	T18429/1981	Nicolaas Lens (deceased) C/o Christine Meyer	Underground mining
Portion 4	T8381/1995	Clement Lens	Underground mining
Portions 5 & 7	T19209/1981	Clement Lens	Underground mining
Portion 6	T19209/1981	Clement Lens	Alternative access route B, alternative access route A, surface infrastructure, underground mining
Vredehof 17HT			
Portion 1	T13546/1978	Nortje Cecilia Johanna Myra (Beneficiaries: Memory Dawn Joss, Elvira Marcelle Slotow, Roy Bredenkamp, Melodie Anne Delaportas, EJ van Rooyen, N Westenberg, AJ Wessels, JW Wessels, MJ Wessels)	Alternative access route B
Rooipoort 97HT			
Portion 3	T28407/2012	Michelle Landman	Alternative access route A
Portion 9	T9269/1996	Nicolaas Lens (deceased) C/o Christine Meyer	Alternative access route A
Farm 17072HT			
Portion 2	T3145/1961	Snijders Lorraine Albre	Alternative access route A
Portion 3	T3145/1961		Alternative access route A

1.7 LIST OF LAWFUL OCCUPIERS

The landowners (listed in Section 1.6) are the lawful occupiers of the land. It should be noted that there are several land tenant settlements on the farm Commissiekraal 90 HT. Social scan results and community workers' records indicate approximately 26 households on the farm Commissiekraal 90 HT with an estimated population of around 197 people (MWA, April 2013).

1.8 OTHER PARTIES THAT MAY BE DIRECTLY AFFECTED

Other parties that may be directly affected include the landowners on the adjacent and non-adjacent properties (as listed in the table below) and the associated land tenants and farm workers.

TABLE 1.4: LANDOWNERS ADJACENT TO THE PROJECT AREA

Property description	Title deed number	Surface owner
Elandsnek 17063 HT	TBC *	Portion 0: To be confirmed (TBC) *
	T57873/2004	Portion 1: Kwantaba Boerdery Bk
	T33767/2014	Hiestermann Beleggings BK
	T40166/2008	Portion 3: Madola Trust-Trustees
	T40166/2008	Portion 4: Madola Trust-Trustees
Pivaans Waterval 267 HT	T33400/2010	Portion 0: Hiestermann Beleggings CC
	T8380/1995	Portion 1: Wynand David Van Vos Lens
	T1743/2003	Portion 2: Wild Rush Trading 36 PTY LTD
	TBC *	Portion 3: TBC *
	T33400/2010	Portion 4: Hiestermann Beleggings CC
	T33400/2010	Portion 5: Hiestermann Beleggings CC
	T33400/2010	Portion 6: Hiestermann Beleggings CC
Klipplaatdrift 120 HT	TBC *	Portion 0: TBC *
	T7163/1991	Portion 1: Haakdoornbult Landgoed CC
	T8380/1995	Portion 2: Wynand David Van Vos Lens
	T816/2003	Portion 3: Alderson Flitton Motors Brits
	T816/2003	Portion 4: Alderson Flitton Motors Brits
	T4435/1979	Portion 5: Wynand David Van Vos Lens
	T4435/1979	Portion 6: Wynand David Van Vos Lens
(Vredehof 17 HT) Vredehof 299 HU	TBC *	Portion 0: TBC *
	T14334/2014	Imfolozi Timbers Proprietary Limited
	TBC *	Portion 2: TBC *
	TBC *	Portion 3: TBC *
	T1738/1925	Portion 4: Willem Pieter Duminy
Tiverton 20 HT	T3145/1961	Portion 0: Albre Lorraine Snijders
Roopoot 97 HT	TBC *	Portion 0: TBC *
	T52056/2004	Portion 1: Mary Magdalena Martha Lens
	T14570/1997	Johannes Abraham Landman and Aletta Catharina Johanna Mahne
	T28407/2012	Portion 3: Michelle Landman
	T39439/2005	Portion 4: Johannes Abraham Landman
	T39439/2005	Portion 5: Johannes Abraham Landman
	T9140/1973	Portion 6: Johannes Abraham Landman
	T23183/2010	Portion 7: C H S H S Inv CC
	T9140/1973	Portion 8: Johannes Abraham Landman
	T9269/1996	Portion 9: Nicolaas Lens
Farm 17072 HT	T43526/2003	Portion 10: Stephanus Abraham Daniel Landman
	TBC *	Portion 0: TBC *
	T46284/2000	Portion 1: Mondi Limited
	T3145/1961	Portion 2: Albre Lorraine Snijders
	T3145/1961	Portion 3: Albre Lorraine Snijders
	T19918/1997	Portion 4: Hugo Le Roux Joubert

Notes: * The details of these properties were not available on Deed Search. Further detail will be provided in the EIA and EMP report.

1.9 RELEVANT LOCAL MUNICIPALITIES

Amajuba District Municipality and eMadlangeni Local Municipality (Utrecht)

1.10 OTHER STAKEHOLDERS

The relevant government departments, agencies and institutions responsible for the various aspects of the environment, land and infrastructure that may be affected by the project are listed below:

- Regulatory authorities:
 - Department of Mineral Resources (DMR)
 - Department of Economic Development, Tourism and Environmental Affairs (DEDTEA)
 - Department of Water and Sanitation (DWS)
 - Amafa / Heritage KwaZulu Natal
 - Department of Rural Development and Land Reform (DRDLR)
 - Regional Land Claims Commission: KwaZulu - Natal
 - Department of Fisheries and Forestry (DAFF)
 - Ezemvelo KZN Wildlife
 - Mpumalanga Parks Board
 - Department of Transport
- Local authorities:
 - Amajuba District Municipality
 - eMadlangeni Local Municipality (Utrecht)
 - Ward councillor
- Non-governmental organisations (NGO)
- Parastatals:
 - Eskom
 - Mondi.

1.11 NOTIFICATION OF LANDOWNERS, LAWFUL OCCUPIERS AND IAPS

Proof that the landowners, lawful occupiers and IAPs were notified of the project is provided in Appendix B. The description of the public participation process (including the notification of the various IAPs) is provided in Section 5.

2 DESCRIPTION OF THE EXISTING STATUS OF THE ENVIRONMENT

This section has been compiled using desktop and baseline studies completed by various specialists, information from the relevant site visits conducted by SLR personnel and input obtained from IAPs during the public scoping meetings. This baseline information is aimed at giving the reader perspective on the existing status of the cultural, socio-economic and biophysical environment. Detailed information will be provided in the EIA and EMP report.

2.1 AGREEMENT ON EXISTING STATUS OF ENVIRONMENT

IAPs were provided with initial information on the existing status of the environment through review of the project's background information document and at the public scoping meetings (Section 5). IAP issues and concerns raised to date are included in Appendix D. IAPs will have the opportunity to provide further input through review of this scoping report.

2.2 EXISTING STATUS OF THE CULTURAL ENVIRONMENT

The existing status of the cultural environment that may be affected by the project is described as part of the heritage environment below.

2.3 EXISTING STATUS OF THE HERITAGE ENVIRONMENT

This section describes the existing status of the heritage and cultural environment that may be affected by the project. Cultural resource is a broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations. The various natural and cultural assets or resources collectively form the heritage. Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The project site is located in a region that has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. These pre-historical and historical remains form a record of the heritage of most groups living in South Africa today (Pistorius, 2013).

The KwaZulu-Natal region further to the south is part of a cultural landscape which is also known as the 'Land of Remembrance' – a piece of land which includes much of Zululand and the districts of Utrecht

and Vryheid which used to be part of the Zuid-Afrikaansche Republiek (ZAR) until the Anglo Boer War of 1899-1990 (Pistorius, 2013).

A Phase I Heritage Impact Assessment conducted for the project in 2013 (Pistorius, 2013) identified the following resources in the project area:

- Historical remains which consist of homesteads and cattle enclosures which were utilized by local indigenous people as well as remains which can be associated with the first colonials
- Informal graveyards and graves associated with currently occupied homesteads and isolated graveyards and graves which probably existed in conjunction with homestead complexes which have been abandoned and/or disintegrated.

These resources are protected by the National Heritage Resources Act (No 25 of 1999) and may not be affected (demolished, altered, renovated, removed) without approval.

No information is available at this stage on the paleontological resources. This will be provided in the EIA and EMP report.

2.4 EXISTING STATUS OF THE CURRENT LAND USES AND SOCIO-ECONOMIC ENVIRONMENT

Projects of this nature have the potential to influence current land uses both on the site (through land development) and in the surrounding areas (through direct or secondary positive and/or negative impacts). In addition, mining projects have the potential to influence various aspects of the socio-economic profile of a community. As a baseline, this section provides a brief description of the existing land tenure, land uses on site, and the current socio-economic status of the region.

2.4.1 LAND TENURE

Details on surface rights within and immediately surrounding the project site are outlined in Section 1.

2.4.2 MINERAL/PROSPECTING RIGHTS

Tholie Logistics previously held the prospecting right (No. KZN 30/5/1/1/2/155PR) for coal over the farm Commissiekraal 90HT, in addition to other farms (Donkerhoek, Klipplaat, Strydfontein, Libanon, Holbank, Brakfontein/Mooiplaats, Arrarat, Lusthof, Vredehof) south of the Mpumalanga / KwaZulu-Natal border.

Tholie Logistics submitted a mining right application at the end of 2014 for the farm Commissiekraal 90HT. The mining right application was accepted by the DMR on 29 January 2015.

No other prospecting and/or mining rights are known to occur in the immediate vicinity of the project site.

2.4.3 LAND USE WITHIN THE PROJECT AREA (ON THE COMMISSIEKRAAL FARM)

The main land use is agriculture, primarily livestock grazing with minor dryland crops and residential (private farmstead and communal tenant/farm worker homesteads) areas. Remnants of forestry/small scale plantation occur within the central region of the project area. The local homesteads have small crop fields in close proximity and also engage in cattle and small-scale livestock farming.

2.4.4 SURROUNDING LAND USES

Surrounding land uses are similar to those occurring on site with the addition of conservation in the form of conservancies and protected areas, recreational/tourism facilities/areas associated with nearby towns and game farms, and community activities including schools. Further afield there are other mining operations at various stages of operation. These are discussed further below

Recreational/tourism/conservation

Recreational facilities associated with the towns of Utrecht, Wakkerstroom and Paulpietersburg include public recreational centres, bird watching activities as well as golf and trout fishing clubs. Various tourism resources in the area include the Balele Conservancy, the Wakkerstroom Wetlands and the Battlefields historical area.

Schools

Several schools occur within the greater area and along possible transport routes:

- Luthilunye Primary School, north of the project site, near to the Commissiekraal farm access intersection with the D699
- Kwamagidela Secondary School, located west of the D699/P40 intersection
- Protes Primary School, located east of the D699/P40 intersection
- Ndabambi Primary School, located north west of the R33 / P40 Intersection.

There are children pedestrian movements associated with trips to these schools, from residential areas which are remote and spread throughout the area. There is no pedestrian provision on any of the roads within the study area, and observations by the traffic specialist show that pedestrians often walk in the road.

Mining operations

Mining operations within a 30km radius of the project site include:

- the decommissioned Welgedacht Colliery (Utrecht and Umgala Sections), now known as Kangra Coal Properties Ltd
- Geluk Mine (Mashala Resources)
- the closed Kemp's Lust Mine (Xstrata Plc).

2.4.5 TRANSPORT SYSTEMS

There is a network of gravel farm roads providing access to the project area (Figure 1 and Figure 2). The Commissiekraal farm is currently accessed via a gravel track of varying width (no greater than 4 m wide) off the D699 district road. The farm access track/D699 intersection is laid out for the purposes of agricultural vehicles and other associated traffic. The D699 is a gravel road of varying width but is generally between 6 and 7m wide and provides a link west towards Wakkerstroom, south towards Utrecht and east towards Paulpietersburg.

As can be expected in a rural area, traffic volumes in close proximity to the project site are low. Further afield, towards towns such as Paulpietersburg, traffic volumes are notably higher.

2.4.6 SOCIO-ECONOMIC PROFILE

The regional setting of the project area is illustrated in Figure 1. The project area is located within the Amajuba District Municipality and eMadlangeni Local Municipality of Kwa-Zulu Natal Province. Further detail sourced from the project's social and labour plan is provided below.

Provincial level – Kwa-Zulu Province

According to Census 2011 data, KwaZulu-Natal is home to about 19.8% of South Africa's population. In 2011 KwaZulu-Natal, with an area size of 94,360km², was home to 2.5 million households and 10.2 million people making it the country's second most populous province. One third (33.5%) of the provinces total population however lives in the EtheKwini Metropolitan Municipality (Durban).

Local municipal level – eMadlangeni Local Municipality

Table 2.1 provides an indication of the population demographics of the eMadlangeni municipality. eMadlangeni has an exceptionally low population density at 9 people per km². The majority of the study area's population reside in rural areas since much of the municipal areas are rural in nature. In eMadlangeni the main urban settlement and administration centre is Utrecht with scattered settlements throughout the municipal area.

TABLE 2.1: POPULATION DEMOGRAPHICS OF EMADLANGENI MUNICIPALITY

Category	Specifics
Municipal land size	3 539 km ²
Administrative Centre	Utrecht
Population	34 442
Households	6 252
Density	9.7/km ²
Wards	4
Gender	
Male	50.8%
Female	49.2%

Category	Specifics
Racial makeup	
Black African	92.7%
Coloured	1.3%
Indian/Asian	0.1%
White	5.7%
Languages	
Zulu	84.4%
Afrikaans	5.9%
English	1.6%
Other	8.1%

The population of the municipal area is relatively young with approximately 47% of eMadlangeni's inhabitants under the age of 20. The municipality is faced with low skills levels. Only 16.4% achieved grade 12 (i.e. matric). In terms of employment, around 62% of the labour force is considered employed. Those that are economically active represent 27.1% of the total population of eMadlangeni.

According to Census 2011, approximately 12% of the households had no income. Around 35% earned less than R90 per day. Only 2.5% of households received more than R25 000 per month. It may well be that the majority of the households are dependent on social grants from the government.

Housing within the municipality is a mixture of brick housing and traditional structures and sanitation and refuse removal continues to be major challenges as a significant number of people do not have access to toilet facilities.

The health facilities consist of one district hospital (Niemeyer Memorial Hospital), one provincial clinic (Niemeyer Memorial Gateway Clinic) and three mobile clinics, all based in Utrecht. As with the rest of the province, there is a high prevalence of HIV/AIDS however there is a reported notable decline in new infection rates.

In summary

The project area is characterised by large impoverished rural settlements with very little economic activity, low education levels and low skills base. Municipal service delivery is a challenge particularly in the rural areas where there is lack of and inadequate provision of essential services like piped water, refuse removal and sanitation.

The area generally has good agriculture soil and climate and has enjoyed a positive agricultural sector; however this has declined in the past recent years. Any interventions that seek to alleviate poverty should consider reviving the agriculture sector and most importantly, the promotion and development of the small-scale farmers while maintaining the support for commercial farming. As with other disadvantaged areas in the country, education and skills development should be prioritised for more

sustainable poverty eradication. The key priority needs as identified by the municipality include water, sanitation and LED/job creation.

2.5 EXISTING STATUS OF RELEVANT INFRASTRUCTURE

This section describes the existing status of any infrastructure that may be affected by the project.

There is a network of gravel roads providing access to the project area. Some of these roads will be used by the project for transport of materials, product and workers. Upgrading of the roads may be required to cater for project related traffic. This will be confirmed during the course of the EIA.

On the farm Commissiekraal, there is a private farmstead comprising of various buildings, tenant/farm worker homesteads with associated kraals and structures, graveyards/graves, power delivery infrastructure, man-made dams and exploration boreholes. Depending on the final position and layout of project-related infrastructure some of this infrastructure may be affected by the project.

2.6 EXISTING STATUS OF THE BIOPHYSICAL ENVIRONMENT

This section describes the existing status of the biophysical environment that may be affected by the project.

2.6.1 GEOLOGY

Information was sourced from the Mine Works Programme (ECMA, November 2014) and the Commissiekraal Conceptual Mining Study Report (ECMA, September 2014).

The geology of a particular area will determine the following factors:

- the type of soils present since the soils will be derived from the parent rock material (discussed in Section 2.6.4)
- the presence and quality of groundwater and the movement of the groundwater in the rock strata (discussed in Section 2.6.7)
- the presence of paleontological resources in the rock strata (discussed in Section 2.3)
- the potential for acid generation.

Regional geology

The project area falls within the Utrecht Coalfield which lies in north-western KwaZulu Natal, south of the Highveld and Ermelo Coalfields and east of the Kliprivier Coalfield. The Utrecht Coalfield covers an area of approximately 6 000 km² extending from just north-east of Newcastle to Wakkerstroom in the north-west and Paulpietersburg in the north-east. The Utrecht Coalfield was cut-off from the Vryheid Coalfield by erosion and from the Klipriver Coalfield by a high density dolerite intrusion. The coalfield was

developed following the retreat of the Dwyka glaciers which deposited diamictite that filled the Karoo Basin with sediments ascribed to deposition in shallow marine and fluviodeltaic environmental settings. These sediments, which constitute the Vryheid Formation, contain several economically exploitable coal seams developed within a primarily arenaceous sequence of grit, sandstone, siltstone and shale. Numerous coal seams are developed in this area, namely the Eland, Fritz, Alfred, Rider, Upper Gus, Lower Gus, Dundas and Coking Seams. The Gus Seams are the most significant of these seams.

Local geology

The Commissiekraal project area hosts the complete succession of coal seams but of these only the Gus Seam is of economic interest. The coal seams within the project area may be defined as a multiple seam type. The Lower Gus Seam is on average 2.6 m thick and, despite its depth from surface is of economic interest because of its overall good coal qualities. The coal of the Lower Gus Seam is banded in nature, but a low Ash (%) content prevails in the lower part of the seam, where bright bands dominate over dull coal. The dry ash-free volatile matter content ('DAFVOL') shows that not only bituminous (DAFVOL > 24%), but also devolatilised (DAFVOL between 16.5% and 24%) and potentially anthracitic coal (DAFVOL < 16.5%) exist in the project area. The low relative density and Ash (%) contents in the low DAFVOL areas indicate that the coal has not been burnt.

Over the project area the Lower Gus Seam is consistently overlain by a carbonaceous sandstone that ranges in thickness from 0.1 m to 5.6 m, and which forms the intra-seam parting that separates the Lower Gus Seam from the Upper Gus Seam. The inter-seam parting thickness ranges from more than 3 m in the south to being nearly absent in the north, where the Upper Gus and Lower Gus form one seam. The Upper Gus Seam has an average thickness of 0.6 m and consists of mostly dull, but also mixed banded coal, and is inferior in quality compared to the Lower Gus Seam. The classification into bituminous, devolatilised and anthracitic coal applies to the Upper Gus Seam in the same way as it does to the Lower Gus Seam.

Dolerite sills and dykes are abundant and are known to cause substantial displacements in strata. The main intrusive body in the project area is the Zuinguin Dolerite. Evidence of an east-west striking fault was found on the northern extremity of the project area.

2.6.2 TOPOGRAPHY

Information in this section was sourced from 1:50 000 topographical maps and site visits conducted by the environmental team.

The topography of a particular area will determine the following factors:

- the flow of surface water, and in many cases, also groundwater
- the depth of soils and the potential for soil erosion, for example, in the case of steep slopes

- the type of land use, for example flat plains are more conducive to crop farming
- the aesthetic appearance of the area
- topography can also influence climatic factors such as wind speeds and direction, for example, wind will be channelled in between mountains and along valleys.

Changes in the topography caused by the mining activities could alter the topography of the site through the establishment of both temporary and permanent infrastructure and therefore alter the above-mentioned aspects of the environment.

The project area is comprised of undulating mountains and flatter grasslands which slope gently towards the Pandana River. The northern part of the farm is relatively flat and low-lying compared to the surrounding western, southern and eastern parts of the farm which are mountainous and therefore on a higher elevation than the northern flat stretch of land. The Pandana River flows in a northerly direction through the centre of the Commissiekraal farm where it turns east towards the confluence with the Pongola River (refer to Figure 2). The confluence with the Pongola River is approximately 17km downstream from the project site. The lowest point in the project area which is in the Pandana River channel is at 1436 mamsl.

2.6.3 CLIMATE

Information in this section was sourced from the baseline hydrology report (Highlands Hydrology, May 2013) and specialist desktop soils, land capability and land use study conducted by Terra Africa (Terra Africa, July 2013). More detailed and updated information will be provided in the EIA with input from specialist studies.

Climate can influence the potential for environmental impacts and related mine design. Specific issues are listed below:

- rainfall could influence erosion, evaporation, vegetation growth, rehabilitation planning, dust suppression, and surface water management planning
- temperature could influence air dispersion through impacts on atmospheric stability and mixing layers, vegetation growth, and evaporation which could influence rehabilitation planning
- wind could influence erosion, the dispersion of potential atmospheric pollutants, and rehabilitation planning.

2.6.3.1 Regional climate

The project area falls within the Moist Highland Sourveld climatic zone as defined by the South African Weather Bureau.

2.6.3.2 Rainfall and evaporation

Initial data collection indicates that the most appropriate rainfall station, selected for its available data, is the South African Weather Station (SAWS) 0407745 W (Elim). This station is located in the north eastern part of the farm Commissiekraal and has a minimum data record of 10 years. Rainfall is typically in the form of thunderstorms during the summer months of October to March (Table 2.2). Rainfall distribution in the greater area shows that the rainfall varies significantly due to topography. It was indicated during the public scoping meetings that the rainfall presented in this report is underestimated. A review of available data for the project area will be included in the EIA and EMP report.

Evaporation data was sourced from DWA station V3E005 (Zaaihoek), located approximately 28km to the west of the project site at the Zaaihoek Dam (Figure 1). This station provides a record length of 25 years for the period 1988 to 2013. From the available data, it is clear to see that evaporation exceeds annual rainfall (Table 2.2).

TABLE 2.2: MONTHLY RAINFALL AND EVAPORATION DATA

Month	Average annual rainfall (mm)	S Pan evaporation (mm)
Station	Elim	Zaaihoek
January	210	163
February	142	143
March	109	135
April	78	108
May	28	96
June	5	82
July	6	89
August	23	118
September	54	158
October	103	160
November	141	165
December	190	174
Annual	1089	1592

2.6.3.3 Temperature

The highest average maximum temperatures recorded are in the months of December and January at 24.0 and 24.3 °C respectively. The lowest average minimum temperatures in June and July were below freezing point (-1.3°C and -0.5°C respectively). Frost in the area is classified as severe and on average 5 days of heavy frost may occur in the winter months.

2.6.3.4 Wind

In general, the wind tends to blow in a south-easterly direction between November and April, and in a north-westerly direction between May and October.

2.6.4 SOIL AND LAND CAPABILITY

The information in this section was sourced from the specialist desktop soils, land capability and land use study conducted by Terra Africa (Terra Africa, July 2013).

Soil is an important natural resource and provides ecosystem services that are critical for life, such as water filtering; providing growth medium for plants, which in turn provide food for plant-eating animals and providing habitat for a wide variety of life forms. Soil determines the type of land use the area is suitable for, for example, soil with low nutrients may not be able to support crop farming. Soil resources are vulnerable to pollution, erosion and compaction, which could be caused by project-related activities. A brief description of the soil types and land capability in the project area is provided below.

Soil types and land capability within the project site

The land type survey of the region indicates that the project area falls within two land types, namely Ac100 and Ac103.

The largest portion of the project area falls within land type Ac100 which is a combination of rocky soil types such as Mispah and Glenrosa soil forms that are not deeper than 400 mm as well as red and yellow well-drained apedal soils that are between 800 and 1200 mm deep. The clay content of the topsoil ranges between 6 and 35% and increases significantly in the subsoil to between 35 and 65%.

The north eastern section of the project area falls within land type Ac103. This land type is dominated by a combination of red and yellow apedal to moderately structured soil profiles. Soil development is evident in some landscape positions where clay accumulation has led to the B1-horizons of the Oakleaf soil form. Other soil forms that can also occur in this area are that of the Griffin, Avalon and Pinedene forms. The literature research shows that wetland areas may be present as this land type includes streambeds as well as soil of the Katspruit form that is associated with wetlands.

Agricultural potential

Based on desktop studies, the project area is expected to have high, medium and low agricultural potential, depending on the position on site (and the soil forms that occur there).

Dryland crop production is possible in areas where soil conditions permit (well-drained profiles deep enough for cultivation). These crops include maize, groundnut, potatoes, soybean, oats and dry beans. Irrigated crop production is dependent on both the availability of irrigation water as well as suitable soil conditions. The area has the potential for production of lucerne, tomatoes (summer only) and cabbage (winter) and wheat under irrigation. The area also has potential for livestock farming, perennial dryland pastures and timber.

Land capability

It is anticipated the project area will have a combination of arable, grazing, wilderness and possibly wetland land capability.

2.6.5 BIODIVERSITY

The information in this section was sourced from the specialist baseline biodiversity study conducted by Scientific Aquatic Services CC (SAS, May 2013).

The establishment of project infrastructure as well as project-related activities have the potential to result in a loss of habitat through the destruction/disturbance of vegetation and/or contamination of soil and/or water resources, thereby reducing the occurrence of fauna and flora on site and in the surrounding areas. The baseline information on biodiversity in the project area will be used to identify sensitive areas, to guide the project planning in order to avoid sensitive areas where possible, to determine how best to conserve the fauna and flora in the area and allow for proper rehabilitation of the site once mining ceases. A brief description of fauna and flora in the project area is provided below.

2.6.5.1 Flora (Natural plant life)

The project area falls within the Grassland Biome (Rutherford & Westfall, 1994) which is situated within the Mesic Highveld Grassland Bioregion (Mucina & Rutherford, 2006). It is also noted that when the project area is superimposed on the vegetation types of the surrounding area it can be seen that it falls within the Wakkerstroom Montane Grassland, Paulpietersburg Moist Grassland and the Northern Afrotropical Forest Vegetation Types. A short summary of each vegetation type is provided below.

- Wakkerstroom Montane Grassland

The Wakkerstroom Montane Grassland vegetation type comprises predominantly short montane grasslands on the plateaus and the relatively flat areas, with short forest and *Leucosidea* thickets occurring along steep, mainly east facing slopes and drainage areas. *L. sericea* is the dominant woody pioneer species that invades areas as a result of grazing mismanagement (Mucina and Rutherford, 2006).

- Paulpietersburg Moist Grassland

The Paulpietersburg Moist Grassland vegetation type is mainly undulating with moderate steep slopes but valley basins are wide and flat and mountainous areas occur mostly along the northern and eastern boundary. Characterised by tall closed grassland rich in forbs and dominated by *Tristachya leucothrix*, *Themeda triandra* and *Hyparrhenia hirta*. Evergreen woody vegetation is characteristic on rocky outcrops.

- Northern Afrotropical Forest

Forests of afro-montane origin occur with some still showing clear afro-montane character. Found as small patches in kloofs and on sub-ridge scarps at high altitudes (1500-1900m). Canopy dominated usually by *Podocarpus latifolius*, *Olinia emarginata*, *Halleria lucida*, *Scolopia mundii* and rarely also

by *Widdringtonia nodiflora*, in drier faces also by *Pittosporum viridiflorum*, *Celtis africana*, *Mimusops zeyheri*, *Nuxia congesta* and *Combretum erythrophyllum*. *Xymalos monospora* sometimes dominates patches of species poor mist belt forest of northern KwaZulu-Natal.

Various floral species which are protected under the KwaZulu-Natal Nature Conservation Management Amendment Act, 1999, Act No 5 of 1999 were identified in the project area, namely: *Eucomis autumnalis*, *Gladiolus* sp. such as *Gladiolus dalenii*, *Gladiolus crassifolius* and *Gladiolus ecklonii*, *Habenaria filicornis*, *Eulophia* sp, *Cyathea dregei*, *Satyrium longicauda*, *S. cristatum*, *Corycium nigrescens*, *Disa versicolor*, *D. brevicornis*, *Scilla nervosa* and *Watsonia confusa*. Some of these species (such as *Ilex mitis*, *Cyathea dregei* and *Podocarpus henkelii* and *P. falcatus*) are limited to wetland areas and Fromontane forest in ravines. Other species, such as the various species of *Gladiolus*, *Saturium*, *Disa* and *Habenaria*, are scattered throughout the grassland areas. *Ilex mitis*, *Podocarpus henkelii* and *P. falcatus* are also protected under the National Forest Act (1998).

A substantial portion of the project area is classed as Biodiversity priority 1 as per the Ezemvelo KZN Wildlife's provincial conservation plan. The project area is also located in the phase 3 focal area for the South African Biodiversity Institutes (SANBI) upper Pongola biodiversity stewardship initiative. WWF-SA is the implementing agency for SANBI (WWF-SA, 2012).

There is a very high probability that more protected species may be present within the project area, especially in the Fromontane forests and grasslands at higher altitudes that have not been disturbed by livestock.

Large portions of the project area are covered by primary grasslands, particularly in the higher altitude zones. Areas where agricultural activities have taken place are considered to be in a secondary state of succession, however the protected species mentioned above are still present in these areas and protected avifaunal species (see Section 2.6.5.2) were also seen in these areas. Therefore, even though the grasslands have been transformed, they still provide habitat for important and protected species.

Black wattle (*Acacia mearnsii*) has invaded large portions of the project area, particularly along the rivers and streams in the lower altitudes (i.e. from 1 600 mamsl downwards).

2.6.5.2 Fauna (Natural animal life)

A number of protected bird species were identified or are expected to occur within the project area and surrounds. These include:

- Grey Crowned Cranes (*Balearica regulorum*) and Blue Cranes (*Anthropoides paradiseus*): these species were identified on site and are considered Vulnerable as the population trend is decreasing due to threats such as habitat loss and illegal removal of birds and eggs. The wetland habitat found in the project area is highly suitable for breeding and foraging for these species

- Secretary bird (*Sagittarius serpentarius*) and Southern Bald Ibis (*Geronticus calvus*): these species were identified on site and are classified as Vulnerable as recent evidence suggest the population is experiencing a rapid decline due to habitat degradation, disturbance, hunting and capture for trade. Both the grasslands and wetlands found in the project area are suitable habitat for these species
- African Grass Owls (*Tyto capensis*) and White-winged Flufftails (*Sarothrura ayresi*): these species are likely to occur in the surrounding area and may occur on site. The White-winged Flufftail species is classified as Critically Endangered as the population is thought to be very small and is believed to be undergoing a rapid continuing decline in extent, area and habitat quality owing to the high rate of loss and degradation of habitat.

Protected mammal species such as Serval (*Felis serval*) and other small mammals are highly likely to occur within the project area and surrounds.

The afro-montane forest areas and wetlands provide important migratory corridors for faunal species.

2.6.5.3 Aquatic ecosystems

Various wetlands, drainage lines and streams are located throughout the project area. The perennial Pandana River runs through the centre of the project area from the south to the north (refer to Figure 2). The Pandana River is classified as a Class A (unmodified, natural) river in terms of the South African River Health Program.

The condition of the wetlands on site ranges from pristine to moderately modified. The National Freshwater Ecosystem Priority Area (NFEPA) database maps three of the wetlands encountered within the project area (refer to Figure 2). The largest of which is located in the western section of the project area. Furthermore, this wetland is a Rank 2 wetland, i.e. the majority of its area is within a sub-quaternary catchment that has sightings or breeding areas for threatened Wattled Cranes (*Bugeranus carunculatus*), Grey Crowned Cranes (*Balearica regulorum*) and Blue Cranes (*Anthropoides paradiseus*), or it was identified by experts at the regional review workshops as containing wetlands of exceptional biodiversity importance.

The western border of the project area falls within a Fish Fresh Water Ecosystem Priority Area (FishFEPA). River FEPAs achieve biodiversity targets for river ecosystems and threatened fish species, and were identified in rivers that are currently in a good condition. Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources. The remainder of the project area falls within a Fish Support Area, which is regarded as important in terms of a fish sanctuary for threatened fish species. The occurrence of protected *Chiloglanis* fish species in the streams is highly possible.

Vegetation found in the wetlands on site includes grasses that are used by the Marsh Sylph (*Metisilla meninx*) butterfly for breeding habitat. Although none have been observed on site to date, there is a possibility of occurrence due to the availability of suitable habitat. The Marsh Sylph is protected under the KwaZulu-Natal Nature Conservation Management Amendment Act, 1999, Act No. 5 of 1999.

In terms of ecological and socio-cultural service provision and functioning, the wetlands are considered to have intermediate to high levels of service provision and functioning. Important eco-services provided by wetlands include food attenuation, sediment trapping and toxicant and nutrient assimilation.

2.6.5.4 Sensitivity analysis

In terms of flora, fauna and wetland/aquatic ecology, the project area is considered by the specialist to be very sensitive in nature.

2.6.6 HYDROLOGY (SURFACE WATER)

The information in this section was sourced from the baseline surface water investigation conducted by Highlands Hydrology (May 2013), as well as specialist reconnaissance groundwater investigations conducted by Delta H (May 2013).

Surface water resources include drainage lines and paths of preferential flow of stormwater runoff. Project-related activities have the potential to alter the drainage of surface water through the establishment of both temporary and permanent infrastructure and/or result in the contamination of the surface water resources through seepage and/or spillage of potentially polluting materials and non-mineralised waste (general and hazardous). Key to understanding the hydrology of the site is the climatic conditions of the site (discussed in Section 2.6.3). As a baseline, this section provides a brief description of surface water resources in the project area in order to facilitate an understanding of the hydrological catchments that could be affected by the project and the status of surface water resources in the project area.

2.6.6.1 Drainage and water resources

The site is located immediately east of the regional water divide between the Thukela River catchment and the Usutu-, Pongola and Mhlatuze River catchment, in quaternary catchment W42A. Surface water flows in a northerly direction from the site, draining towards the perennial Pandana River which bisects the project area. There is a network of non-perennial streams originating at the site due to the fairly steep topography of the area (refer to Figure 2).

2.6.6.2 Surface water quality

No water sampling within the project area has been conducted at this stage. Input received from IAPs to date indicates that water in the project area is of good quality. Baseline sampling will be conducted for the EIA phase and the results will be reported in the EIA and EMP report.

2.6.6.3 Surface water users

It has been identified by IAPs that the project area and surrounds are seen as a key water production area for downstream surface water users. It was further identified that springs are used for human consumption with only a few boreholes located in the area. Surface water downstream of the project area may be used for domestic purposes and agriculture including livestock watering however this has not been confirmed to date.

2.6.6.4 Wetlands

In terms of the information recorded from the environmental team's site visits, wetlands have been noted within the project area (refer to Section 2.6.5.3 and Figure 2). Wetlands are generally considered to be environmentally sensitive areas as they typically provide a diverse array of habitats and therefore tend to have high species diversity. Furthermore, wetlands provide important ecological services such as improving water quality, control of soil erosion and flood attenuation.

2.6.7 GROUNDWATER

Information in this section was sourced from the groundwater baseline study conducted by Delta H (May, 2013).

Groundwater is a valuable resource and is defined as water which is located beneath the ground surface in rock pore spaces and in the fractures of lithologic formations. Understanding the geology of the area provides a basis from which to understand the occurrence of groundwater resources (Section 2.6.1). As a baseline, this section provides a brief description of the pre-mining groundwater conditions to facilitate an understanding of the potential for dewatering cones of depression and pollution plumes to occur as a result of project-related activities.

2.6.7.1 Presence of groundwater

The following aquifer systems underlie the project area:

- Shallow perched aquifer (< 10 mbgl): There is a near surface weathered zone that is comprised of transported colluvium and in-situ weathered sediments which is underlain by consolidated sedimentary rocks (sandstone, shale and coal).
- Weathered and fractured Karoo aquifer (10 mbgl to 100 mbgl): There is an unconfined or semi-confined upper weathered zone, where the primary water intersections are found in the weathered and fresh bedrock interface. A deeper semi-confined to confined fractured aquifer exists in which

fracture flow dominates. All groundwater movement therefore occurs along secondary structures, such as fractures and joints in the sediments.

In terms of surface-groundwater interaction both shallow perched and deeper weathered/fractured aquifers may contribute to surface water bodies (baseflow). Groundwater perched on low permeability material in the weathered zone or in colluvium may be a source of water to hillside seeps and springs. Springs appear to be associated with the dolerite sill that is present at higher altitudes in the project area. The springs are considered to be fed by water bodies perched on the dolerite (sills). However, groundwater on horizontal and semi-horizontal contacts between different rock types may also be a source for springs. Many of these springs are seasonal and reduced flows are expected in the dry season. This mimicry of groundwater flows and levels to terrain entails that regional groundwater discharge areas would primarily be located in valley bottoms.

2.6.7.2 Groundwater quality

Groundwater from boreholes has not been sampled at this stage. The hydrocensus that will be undertaken during the EIA phase will provide information on groundwater quality and quantity in the wider project area. As part of the hydrocensus, groundwater samples will be analysed and compared to the relevant guidelines. The results of the analysis will be included in the EIA and EMP report.

2.6.7.3 Groundwater use

The hydrocensus that will be undertaken during the EIA phase will provide information on groundwater use in the wider project area.

2.6.8 AIR QUALITY

Identification of existing sources of emissions in the region and the characterisation of existing ambient pollution concentrations is fundamental to the assessment of cumulative air impacts. A change in ambient air quality can result in a range of impacts, which in turn, may cause a disturbance to nearby receptors. Potential receptors in the area include private farmsteads, rural homesteads and the natural environment.

Ambient air pollutant concentrations within the Utrecht region occur not only due to local sources but also as a result of emissions from various remote sources. The most significant of these sources located within the Utrecht, Wakkerstroom and Paulpietersburg region include:

- fugitive dust emissions from coal mining and processing operations
- vehicle tailpipe emissions-significant primary pollutants emitted by motor vehicles include CO₂, CO, hydrocarbons (HCs), NO_x, SO₂, particulate matter and lead
- vehicle entrained dust from paved and unpaved roads
- household fuel combustion by means of coal and wood

- biomass and veld burning
- various miscellaneous fugitive dust sources, including: agricultural and forestry activities, and wind erosion of open areas.

2.6.9 NOISE

Information in this section was sourced from the noise baseline study compiled by SLR (July, 2013).

Noise generating activities associated with the project may cause an increase in ambient noise levels in and around the site. This may cause a disturbance to nearby receptors. Potential receptors in the area include private farmsteads, rural homesteads and the natural environment. As a baseline, this section provides a brief description of current conditions in the area from which to measure changes as a result of project-related noise.

The project area is located in a typically rural area characterised by farms and associated scattered tenant/farm worker homesteads with limited traffic. The ambient noise level was found to be particularly quiet due to the remoteness of the site from any other noise sources.

2.6.10 VISUAL ASPECTS

Project-related activities have the potential to alter the landscape character of the site and surrounding area through the establishment of both temporary and permanent infrastructure. As a baseline, this section provides an understanding of the pre-mining visual character of the project area against which to measure potential change as a result of project infrastructure and activities.

The project area lies in a mountainous area characterised by grasslands that are dominated by short bunch grasses, forest patches and perennial drainage lines. Forest patches occur mainly on the cooler and moister south facing slopes along the escarpment. Livestock, game farms, small scale agriculture, and associated farm settlements are typical of the region.

Central to the visual character of an area are the concepts of sense of place and scenic quality. Sense of place is informed by the spatial form and character of the natural landscape taken together with the cultural transformations and traditions associated with the historic use and habitation of the area which lend that area its uniqueness and distinctiveness. The scenic quality of the project site and surrounding area is linked to the type of landscapes that occur within an area. In this regard scenic quality can range from high to low as follows:

- High – these usually include natural features such as mountains, koppies and drainage systems
- Moderate – these usually include agricultural activities and smallholdings
- Low – these usually include man made features and structures including towns, roads, linear service infrastructure.

The natural setting associated with the project area and surroundings consists of steep topography and natural vegetation, as well as open views of grazing lands and associated activities. The result is a landscape with a fairly strong sense of place and a high to moderate scenic quality.

2.7 RELEVANT ADDITIONAL INFORMATION

None.

3 IDENTIFICATION AND DESCRIPTION OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

This section describes the project with respect to the construction, operations, decommissioning and closure phases and the potential impacts associated with these project phases.

3.1 PROJECT DESCRIPTION

This section provides a brief motivation for and a description of the project including a map showing the spatial locality of infrastructure, extraction area and any associated activities.

3.1.1 BRIEF PROJECT MOTIVATION (NEED AND DESIRABILITY)

Based on the exploration work conducted on the farm Commissiekraal 90 HT, Tholie Logistics found a feasible ore body that is worth developing. Tholie Logistics will produce Eskom and export quality coal to suit market demand. The anticipated market prices in the medium and long-term are considered to be favourable for project development. The project is anticipated to create approximately 200 operational jobs, having a positive impact on both indirect businesses and employment.

In terms of planning frameworks, the project is aligned with the following:

- Amajuba/Emadlangeni Integrated Development Plan (IDP) 2014/2015 – providing coal mining opportunities is one of the five project fields identified in the IDP
- Amajuba/Emadlangeni Draft Spatial Development Framework (SDF) 2012 – the SDF lists mining as one of the focus areas in their vision
- National Development Plan (NDP) – specifically identifies the need and importance of mining activities within South Africa.

3.1.2 PROJECT OVERVIEW

The main aim of the project is to establish an underground coal mine at the Commissiekraal project site. In broad terms the project includes underground mining accessed via a boxcut, on-site crushing and screening, temporary stockpiling of coal ore, and transport off-site by truck to customers directly or via a regional railway siding. A schematic process flow diagram is provided in Figure 3.1. Various support infrastructure and services will be required for the project.

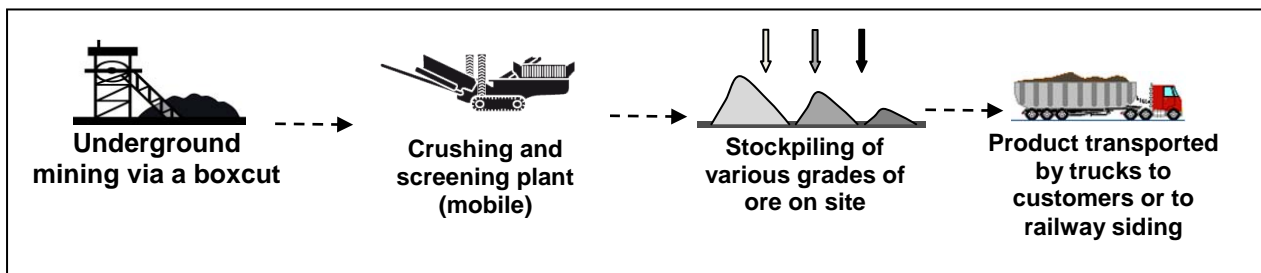


FIGURE 3.1: SCHEMATIC PROCESS FLOW DIAGRAM OF THE PROPOSED PROJECT

At this stage in project planning, surface infrastructure will be located around the mine access area in the north-eastern part of the project site (Figure 2). Alternatives being considered are outlined in Section 4 of the scoping report. These alternatives are mentioned below as part of the project description.

Construction commencement is subject to regulatory approval, economic considerations and funding. Construction is expected to commence in 2016 and take six months to complete. The life of mine on current planning is scheduled for 10 years. Further exploration, development and optimisation for the mine and for ore processing is being investigated and therefore a mining right of 20 years has been applied for. The scoping report and EIA and EMP report covers the 10 year life of mine period.

Information that provides perspective on the scale of the project is presented in Table 3.1. It should however be noted that this information may be refined further during the EIA phase.

TABLE 3.1: PROJECT DATA THAT PROVIDES PERSPECTIVE ON THE SCALE OF THE PROJECT

Group	Specific	Details
Mining	Target mineral	Coal within the Lower Gus Seam – average thickness of 2.6m
	Mineable area	2,000 ha
	Depth of minerals	Average depth of 72.5m below surface
	Rate	Approximately 480,000 tpa
	Extent of area for infrastructure	±20ha
	Product	Coal
Mine residues	Waste rock	Minimal waste rock is expected – to be used in the construction of the platform at the boxcut area.
Resource use	Water demand	Approximately 12,500 m ³ per month
	Power demand	5.5 MVA
Employment	Staff: construction	Approximately 160
	Staff: operational	Approximately 200
	Operating times	24 hours a day, 7 days a week
Revenue generation	Capital investment	Approximately R428 million
	Annual turnover	Approximately R300 million to R400 million

3.1.3 ON-GOING EXPLORATION

Mining exploration comprising the drilling of boreholes will most probably continue for the life of the operation to refine the position of the target ore body. The target mineral is coal. Any recovered material will be sent to a laboratory for analysis test work and the results will feed into the mine plan.

3.1.4 CONSTRUCTION PHASE

The construction phase will entail the establishment of infrastructure required for the operation of the mine. This section provides an overview of the expected facilities, activities and services needed during the construction phase.

3.1.4.1 Facilities

Temporary construction facilities will be established on site during the initial development of the mine. These facilities could include some or all of the following:

- contractor's laydown areas
- workshops, stores, washbays, fuel handling and storage area, offices, ablution facilities
- handling and storage area for construction materials (paints, solvents, oils, grease) and wastes
- water management infrastructure
- generators for temporary power supply
- temporary access roads
- drill rigs for geotechnical drilling
- explosive store
- portable air compressors for the establishment of the decline shaft

These facilities would either be removed at the end of the construction phase or incorporated into the layout of the operational mine.

3.1.4.2 Activities

The following significant activities are expected to take place during construction:

- Setting up contractor facilities
- Selective clearing of vegetation in areas designated for surface infrastructure in line with a biodiversity management plan to be developed for the site
- Stripping and stockpiling of soil in line with a soil conservation procedure to be developed for the site
- Clearing and grubbing (earth moving activities)
- Establishing access roads – temporary access roads will be used initially but the strategy is to construct the permanent access roads early for construction vehicles to access the sites
- Establishment of the operation platform
- Development of the boxcut and decline shaft from surface – this may require blasting
- Delivery of materials and general building/construction activities.

3.1.4.3 Workforce and housing

At this stage it is expected that the construction workforce will peak at 160 people. The construction contractors will be responsible for housing their workers off site and providing the required facilities and services for transporting workers to site. A temporary construction camp may be required for use during the construction phase.

3.1.4.4 Transport systems

There is a network of gravel farm roads providing access to the project area (Section 2.4.5). This network of roads will be used for transporting workers and materials during construction.

Temporary access will be gained via the existing farm access road initially but the strategy is to establish a permanent access road early during construction for construction vehicles to access the site. Upgrading of access roads and/or transport routes may be required.

Additional internal gravel roads will be established to link project related infrastructure.

3.1.4.5 Water supply and management

Water will be required during the construction phase. Water supply options being considered for the project are outlined in Section 4.5.1.5. These include: recycling of water, collection of rainfall and runoff on site, water from the municipality (Utrecht), natural springs in the area, boreholes drilled into aquifers to provide water, or a combination of the above.

3.1.4.6 Power supply

Power will be required during the construction phase. At this stage in project planning, it is assumed that an existing farm supply and/or on-site generators will be used during the construction phase.

3.1.4.7 Waste management

Waste generated during the construction phase will comprise non-mineralised waste and sewage. These are expected to be handled as outlined below.

- Non-mineralised wastes

The types of waste that could be generated during construction include: hazardous industrial waste (such as packaging for hazardous materials, used oil, lubricants), general industrial waste (such as scrap metal and building rubble), medical waste (such as swabs, bandages) from the staff medical station, and domestic waste (such as packaging, canteen waste and office waste). These wastes will be temporarily handled and stored on site before being removed for recycling by suppliers, reuse by scrap dealers or final disposal at permitted waste disposal facilities. Estimated volumes will be provided in the EIA and EMP report. A site specific waste management procedure will be developed for the project.

- Sewage

Portable facilities will be provided at the construction site. These facilities will be serviced on a regular basis by an approved contractor.

3.1.4.8 Construction phase timing

Construction commencement is subject to regulatory approval, economic considerations and funding. The anticipated duration is outlined below:

- Site establishment – within a couple of weeks
- All earthworks, boxcut development and preparation for civil infrastructure – within a six-month period.

Once the box-cut has been established, mining of the coal seam can commence.

3.1.5 OPERATIONAL PHASE

3.1.5.1 Surface infrastructure

Surface infrastructure will likely include:

- a boxcut access intended for personnel, material and ore
- ventilation fans
- crushing and screening plant
- run of mine (ROM) and product (coal) stockpile areas
- water management infrastructure
- support services and facilities
- offices and change houses
- internal service roads.

To optimise the operations, all surface infrastructure will likely be situated around the boxcut entrance to the underground workings. It is estimated that the project infrastructure will cover an area of approximately 20 ha. The estimated location of surface infrastructure is provided in Figure 2. This is will be refined during the EIA process and more detail on the surface infrastructure layout will be provided in the EIA and EMP report.

3.1.5.2 Mining

Due to the depth of the ore body in the section of the project area that forms the subject of this scoping report, underground mining will be used to access the ore body. The Gus seam and, in particular, the Lower Gus seam, is the target seam to be mined. In some areas where the parting between the seams is thin (<300mm), there may be an opportunity to mine both the Upper and Lower Gus seams together.

The resource will be accessed through a boxcut. The mining method selected to optimally exploit the Lower Gus resource is board pillar mining with continuous miners (i.e. pillar mining method), with partial or full pillar extraction (to be confirmed) on retreat and/or conventional drill and blast methods

(Section 4.5.1.2). In mechanised board and pillar mining, extraction is achieved by developing a series of roadways (boards) in the coal seam and connecting them by splits (cut-throughs) to form pillars. These pillars are left behind as part of primary roof support system. In partial pillar extraction, every alternative pillar is left behind to support the overburden or all the pillars are extracted to allow the roof to collapse in a controlled manner.

3.1.5.3 Crushing and screening and product stockpiling

No process plant is foreseen to be built on site at this stage and the current plan is to sell 100% of the mined coal directly to customers on a crush and screen raw quality basis. A mobile crush and screen plant will initially be used and may be replaced by a permanent fixture on a later basis. This crush and screen plant will either be diesel or electrical driven.

The basic crush and screen plant design will consist of the following components:

- main boxcut conveyor to run-of-mine (ROM) stockpile (part of the mining section)
- ROM coal stockpile
- ROM crushing and screening
- Stockpiling of final product.

3.1.5.4 Power supply

Approximately 5.5 MVA power will be required during the operational phase of the mine. At this stage in project planning, it is anticipated that power will be sourced from on-site generators temporarily until an Eskom supply is installed (Section 4.5.1.4). This scoping report makes provision for establishing on-site power distribution infrastructure. The installation and permitting of any new powerline routes to site will be Eskom's responsibility.

3.1.5.5 Water supply and management

During the operational phase, water will be required for the offices and change houses, as well as for the mining operation. It is estimated that approximately 150 000 m³ of water will be required on an annual basis. Water supply options being considered for the project are outlined in Section 4.5.1.5. These include: recycling of water, collection of rainfall and runoff on site, water from the municipality (Utrecht), natural springs in the area, boreholes drilled into aquifers to provide water, or a combination of the above.

Water management facilities for the control of storm water and for pollution prevention such as a water supply reservoir, pollution control dam(s) and clean and dirty storm water controls will be designed to meet the requirements of relevant legislation. Recycling dirty/process water will be a priority. Make up water requirements for both process and potable water will be confirmed during the next phase of the EIA process through the development of a site wide climatic water balance for the project.

3.1.5.6 Transport systems

Transport routes and access points used and established during the construction phase will be used for the operational phase. Supplies, waste, workers and product will require transport to and/or from site during operation. Estimated traffic volumes will be included in the EIA and EMP report. It is envisaged at this stage that coal will be transported by means of 34 tonne coal trucks directly to the buyers or to a regional railway siding.

3.1.5.7 Support services and facilities

Support services and facilities required for the project could include one or more of the following:

- detonator and explosives store
- workshops for servicing and maintaining equipment and vehicles
- stores (for supplies, lubricants, hazardous substances, etc)
- fuel storage and refuelling facilities
- change houses and ablution facilities
- on-site staff medical station
- offices, parking and security.

3.1.5.8 Workforce and housing

Approximately 200 jobs will be created during the operational phase. Tholie Logistics will recruit locally as far as possible. No on site housing facilities are planned for the operational phase.

3.1.5.9 Waste management

Waste generated during the operational phase will comprise waste rock (from the mining operations), non-mineralised waste and sewage. These are expected to be handled as outlined below.

- Waste rock

At this stage in project planning, no waste rock dumps are planned for the project. Any waste rock produced by the development of the boxcut is expected to be minimal and will be used to establish the boxcut platform.
- Non-mineralised wastes

The types of waste that could be generated by the project include: hazardous industrial waste (such as packaging for hazardous materials, used oil, lubricants), general industrial waste (such as scrap metal), medical waste (such as swabs, bandages) from the staff medical station, and domestic waste (such as packaging, canteen waste and office waste). These wastes will be temporarily handled and stored on site before being removed for recycling by suppliers, reuse by scrap dealers or final disposal at permitted waste disposal facilities. Estimated volumes will be provided in the EIA and EMP report. A site specific waste management procedure will be developed for the project. Some of the non-hazardous, non-recyclable waste material may be incinerated in a small manually operated incinerator.

- Sewage

Sewage during the operation phase will be treated on site in a package plant. The plant will have capacity for 200 people. Details on the treatment method will be included in the EIA and EMP report.

3.1.6 DECOMMISSIONING AND CLOSURE

At a conceptual level, decommissioning can be considered a reverse of the construction phase with the demolition and removal of the majority of surface infrastructure and activities very similar to those described with respect to the construction phase. The conceptual plan at this stage is to remove surface infrastructure and rehabilitate disturbed areas. The closure objective will be to return the land to pre-mining potential as discussed in Section 2.6.4.

3.2 RELEVANT NEMA LISTED ACTIVITIES

The NEMA application for the project was submitted in terms of the 2010 EIA Regulations. Since the submission of the application, the NEMA EIA regulations have been revised. In this regard, a review of the activities included in the application submitted to DEDTEA and the amended activities as per the 2014 EIA Listing Notices are outlined in the table below (Table 3.2).

3.3 CONFIRMATION OF IAP CONSULTATION AND AGREEMENT ON POTENTIAL IMPACTS

IAPs were provided with initial information on the potential impacts through review of the project's background information document (Section 5). IAP issues and concerns raised to date are included in Appendix D. IAPs will have the opportunity to provide further input at the planned scoping meetings and through review of this scoping report.

TABLE 3.2: NEMA LISTED ACTIVITIES RELEVANT TO THE PROJECT (2010 VS 2014 EIA LISTING NOTICES)

2010 EIA Regulations		2014 EIA Regulations		Applicability to the project
Activity Number	Activity description	Activity Number	Activity description	
Notice 544, 18 June 2010		Notice 983, 4 December 2014		
11	The construction of: (iii) bridges; (iv) dams; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more; where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	12	The development of: (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (x) buildings exceeding 100 square metres in size or (xi) infrastructure or structures covering with a physical footprint of 100 square metres or more; where such development occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.	Project infrastructure covering an area greater than 100m ² could be located within a watercourse or within 32m of a watercourse. This will be confirmed during the course of the EIA process.
12	The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010	13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 of Notice 545 of 2010	The project will require the establishment of water storage dams (most likely a pollution control dam, a service water dam and a potable water tank). The combined capacity of these facilities could exceed 50 000 cubic metres. This will be confirmed during the course of the EIA process.
18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from: (i) a watercourse.	19	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from: (i) a watercourse.	The project will require the establishment of culverts across perennial and non-perennial watercourses.
22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 metres or, (ii) where no reserve exists where the road is wider than 8 metres	24	The development of (ii) a road with a reserve wider than 13,5 metres or, where no reserve exists where the road is wider than 8 metres	The project will require the establishment of haul roads within the project area that will be 10m wide. The access roads to the project site will be approximately 8-9m wide.
28	The expansion of or changes to existing facilities for any process or activity where such expansion or changes will result in the need for a permit or licence in terms of national or provincial legislation governing the release of emissions or pollution.	34	The expansion or changes to existing facilities for any process or activity where such expansion or changes will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions or pollution	Existing dams at the project site may be utilised which will require a water use license.

2010 EIA Regulations		2014 EIA Regulations		Applicability to the project
Activity Number	Activity description	Activity Number	Activity description	
39	The expansion of (iii) bridges within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint.	48	The expansion of (iii) bridges where the bridge is expanded by 100 square metres or more in size where such expansion occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.	Access to the project site will be by means of surrounding existing farm gravel roads. Existing culverts/bridges may need to be expanded in order to cater for mine related traffic.
40	The expansion of (iii) buildings by more than 50 square metres; or (iv) infrastructure by more than 50 square metres where such expansion occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such expansion will occur behind the development setback line.	49	The expansion of (iii) buildings by more than 100 square metres; or (iv) infrastructure and structures where the physical footprint is expanded by 100 square metres or more where such expansion occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.	Existing gravel roads within the project area will need to be expanded which will require the expansion of any existing culverts/bridges.
41	The expansion of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, where the combined capacity will be increased by 50000 cubic metres or more	50	The expansion of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, where the combined capacity will be increased by 50000 cubic metres or more	Existing dams at the project site may be utilised and expended to cater for project requirements.
47	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre- (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres.	56	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre- (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres.	The project will require the upgrade and widening of existing farm gravel roads in order to gain access to the site.
Notice 545, 18 June 2010		Notice 984, 4 December 2014		
5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. R.544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.	6	The development of facilities or infrastructure for any process or activity which requires a permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent	The storage of run of mine and crushed ore (product) may require a water use license.
15	Physical alteration of undeveloped land to industrial (mining) use where the total area to be transformed is 20 hectares or more	15	The clearance of an area of 20 hectares or more of indigenous vegetation	The project footprint will cover an area greater than 20ha.

2010 EIA Regulations		2014 EIA Regulations		Applicability to the project
Activity Number	Activity description	Activity Number	Activity description	
19	The construction of a dam, where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.	16	The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.	The pollution control facilities at the project site could exceed a dam wall height of 5m.
-	-	17	Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource.	The project requires a mining right.
-	-	19	The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource.	On-going prospecting activities will be undertaken to inform the mining plan.
-	-	21	Any activity including the operation of that activity associated with the primary processing of a mineral resource including crushing and screening.	Crushing and screening is a component of the project.
Notice 546, 18 June 2010		Notice 985, 4 December 2014		
2	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres	2	The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres	<p>Pollution control dams located at the project site will exceed a capacity of 250 cubic metres. These facilities will intersect the following:</p> <ul style="list-style-type: none"> • Areas of moderate biodiversity importance in accordance to the Mining and Biodiversity Guidelines • Vulnerable ecosystems according to the National Threatened Ecosystems database

2010 EIA Regulations		2014 EIA Regulations		Applicability to the project
Activity Number	Activity description	Activity Number	Activity description	
4	The construction of a road wider than 4 metres with a reserve less than 13.5 metres	4	The development of a road wider than 4 metres with a reserve less than 13.5 metres	<p>The project will require the establishment of haul roads within the project area that will be 10m wide. The access road to the mine will be approximately 8-9m wide. The access road and/or haul roads will intersect the following:</p> <ul style="list-style-type: none"> • Critical Biodiversity Areas in accordance to the Kwa-Zulu Natal C-Plan • Areas of moderate and highest biodiversity importance in accordance to the Mining and Biodiversity Guidelines • Wetlands according to the National Freshwater Ecosystem Priority Areas • Vulnerable ecosystems according to the National Threatened Ecosystems database
10	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres	10	The development of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres	<p>A diesel storage facility will be required at the mine site. The diesel storage facility could be located within:</p> <ul style="list-style-type: none"> • Areas of moderate biodiversity importance in accordance to the Mining and Biodiversity Guidelines • Vulnerable ecosystems according to the National Threatened Ecosystems database
14	The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation	12	The clearance of an area of 300 square metres or more of indigenous vegetation	The project will require the disturbance of more than 300 square metres of indigenous vegetation

2010 EIA Regulations		2014 EIA Regulations		Applicability to the project
Activity Number	Activity description	Activity Number	Activity description	
16	The construction of: (iii) bridges with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres in size or more where such construction occurs within a watercourse or within 32 metres of a watercourse measured from the edge of a watercourse.	14	The development of: (iii) bridges exceeding 10 square metres in size; or (xii) infrastructure with a physical footprint of 10 square metres or more where such development occurs within a watercourse or within 32 metres of a watercourse measured from the edge of a watercourse	<p>Access to the project site will be by means of surrounding existing farm gravel roads. The access road and any bridges or culverts will intersect the following:</p> <ul style="list-style-type: none"> • Critical Biodiversity Areas in accordance to the Kwa-Zulu Natal C-Plan • Areas of highest biodiversity importance in accordance to the Mining and Biodiversity Guidelines • Wetlands according to the National Freshwater Ecosystem Priority Areas • Vulnerable ecosystems according to the National Threatened Ecosystems database
-	-	23	The expansion of (iii) bridges where the bridge is expanded by 10 square metres or more in size or (xii) infrastructure with a physical footprint of 10 square metres or more where such development occurs within a watercourse or within 32 metres of a watercourse measured from the edge of a watercourse	
19	The widening of a road by more than 4 metres or the lengthening of a road by more than 1 kilometre	-	-	Activity no longer exists and is no longer applicable.

3.4 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

Potential environmental, social or cultural impacts, including the cumulative impacts where applicable, that were identified during the scoping process are discussed under environmental component headings in this section. These discussions should be read with the project description (Section 3.1) and corresponding descriptions of the baseline environment in Section 2 of this scoping report.

For projects with sufficient information at the scoping stage, preliminary impact assessments are provided. In this scoping report a preliminary assessment is not possible. Before the assessment can be meaningfully conducted there is a need for additional information both from a number of specialist investigations and the project alternatives selection process. In addition, in some instances, the project alternatives selection process requires input from specialist investigations.

Against the above background, the potential impacts associated with all project phases (construction, operations, decommissioning and closure) have been conceptually identified and described and reference has been made to the studies/investigations that are required to provide the necessary additional information.

3.4.1 POTENTIAL HERITAGE ENVIRONMENT IMPACTS

A list and description of potential impacts identified on the archaeological, heritage and cultural environment is provided below.

Issue: Loss of or damage to heritage and/or paleontological resources

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
			Not applicable

Discussion

Heritage (and cultural) resources of medium to high significance have been identified in the project area and are likely to occur within the project footprint (discussed in Section 2.3). Developments that require earth moving and civil works can result in damage to and/or disturbance of both heritage and paleontological resources. The additional work required to address this issue is described in Sections 6.4.9 and 6.4.10 of the scoping report.

3.4.2 POTENTIAL SOCIO-ECONOMIC ENVIRONMENT IMPACTS

A list and description of potential impacts identified on the socio-economic conditions of any person on the property, and on any adjacent or non-adjacent properties who may be affected by the project, is provided below. This section also identifies and discusses positive and negative socio-economic impacts related to employment opportunities, community health, community proximity, etc.

Issue: Impact on existing agricultural and residential usesProject phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

The land use and capability of the project infrastructure footprint will be changed from agriculture to mining during all phases of the project. Current landowners and users may also be impacted through resettlement depending on the final layout and positioning of infrastructure. In addition, adjacent land uses could potentially be affected by the mining activities. At this stage it is anticipated that the infrastructure sites will be returned to an agricultural land use after mine closure. It is also envisaged that current land uses on the remaining areas within the mining right boundary could continue during the operational phase of the mine. The additional work required to address this issue is described in Section 6.4.11 of the scoping report.

Issue: Impact on future conservation land usesProject phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

Given the natural biodiversity of the area as well as the presence of recreation/tourism related land uses in nearby towns, several non-government organisations are working towards conserving large pieces of land surrounding the project site. Project planning and development of mitigation measures for the site should take this into consideration. The additional work required to address this issue is described in Section 6.4.11.1 of the scoping report.

Issue: Disturbance of roads by project-related trafficProject phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
			Not applicable

Discussion

The network of roads providing access to the project site is rural in nature and used by the public including vulnerable groups such as children walking to school. There will be an increase in traffic on local roads during the construction, operation and decommissioning phases of the project. The increase in traffic volumes would be as a result of transportation of workers, equipment, input materials and coal product. The increase in traffic entering and leaving the project area could place increased pressure on the existing road network depending on the number of trips required. It is anticipated that roads within and surrounding the project area may not be suitable for coal haulage in their current state and therefore

upgrades and/or improvements to both roads and intersections may be required. This will be confirmed in the EIA. In addition, project related traffic could pose a safety risk to existing road users. The additional work required to address this issue is described in Section 6.4.11.2 of this report.

Issue: Loss and sterilisation of mineral resources

Project phase/s in which impact could occur

Construction	Operational	Decommissioning	Closure

Discussion

By the nature of mining projects the geology is exploited for the target minerals therefore the impact on the geology will be high in all project phases. It is important, however, that no potential future resources be sterilised as it may become feasible to mine them in the future. The additional work required to assess this issue is described in Section 6.4.11.3 of the scoping report.

Issue: Positive and negative socio-economic impacts

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

The project could have positive and/or negative impacts on the following:

- employment for local communities
- the local and national economy
- social structures within communities
- basic housing and related services
- increase in crime
- spread of disease and related health impacts
- impact on land value of properties surrounding the project – this is currently perceived to be a negative impact.

The additional work required to address all of these issues is described in Section 6.4.11.4 of this report.

3.4.3 POTENTIAL IMPACTS ON EMPLOYMENT OPPORTUNITIES, COMMUNITY HEALTH, COMMUNITY PROXIMITY AND LINKS TO THE SOCIAL AND LABOUR PLAN

A list of potential impacts (positive and negative) on: employment opportunities, community health, community proximity and links to the Social and Labour Plan, is provided in Section 3.4.2 above.

3.4.4 POTENTIAL BIOPHYSICAL ENVIRONMENT IMPACTS

A description of potential impacts associated with the biophysical environment is provided below.

3.4.4.1 Topography

Issue: Hazardous excavations and infrastructure

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

Hazardous excavations and infrastructure include all structures into or off which third parties and animals can fall and be harmed. The construction and presence of project infrastructure has the potential to alter the site topography resulting in related issues such as hazardous excavations and infrastructure which pose a danger to humans and animals, alteration of drainage patterns (discussed further under Section 3.4.4.4) as well as visual impacts (discussed further under Section 3.4.4.8). At closure the decline boxcut, although sealed, will remain in perpetuity and will remain as a potential hazardous structure. The additional work required to address this issue is described in Section 6.4.1 of the scoping report.

3.4.4.2 Soil and land capability

Issue: Loss of soil and change in land capability through sterilisation, erosion and contamination

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
			Not applicable

Discussion

Topsoil is generally a resource of high value containing a gene bank of seeds of indigenous species. A loss of topsoil (through sterilisation, erosion or contamination) would generally result in a decrease in the rehabilitation and future land use potential or natural capability of any land that is disturbed as a result of the project. Topsoil and subsoil will be disturbed during the construction phase when the footprint areas for surface infrastructure will be stripped. The topsoil and subsoil will be stockpiled for use during rehabilitation upon closure of the mine. However, improper management of topsoil stockpiles during this phase and accidental spills could also result in a loss of topsoil through contamination, erosion and compaction. At decommissioning, the topsoil and subsoil will be used to rehabilitate the various sites after the infrastructure has been removed. However, the actual process of infrastructure removal during decommissioning could cause soil erosion and contamination. No residual impacts are expected in the closure phase if the rehabilitation is well managed and implemented correctly. The additional work required to address this issue is described in Section 6.4.2 of the scoping report.

3.4.4.3 Biodiversity

Issue: Loss of biodiversity and impact on ecosystem functionality

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

In the broadest sense, biodiversity provides value for ecosystem functionality, aesthetic, spiritual, cultural, and recreational reasons. The known ecosystem related value is listed as follows:

- Soil formation and fertility maintenance
- Primary production through photosynthesis, as the supportive foundation for life
- Provision of food and fuel
- Provision of shelter and building materials
- Regulation of water flows and water quality
- Regulation and purification of atmospheric gases
- Moderation of climate and weather
- Control of pests and diseases
- Maintenance of genetic resources (key for medicines, crop and livestock breeding).

Project-related infrastructure and activities have the potential to impact negatively on some or all of the above functionality throughout all phases of the project. Depending on the level of disturbance, it may take a number of years before the biodiversity regains its pre-mining status. The additional work required to address this issue is described in Section 6.4.3 of this report.

3.4.4.4 Hydrology (surface water)

Issue: Alteration of surface drainage patterns

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

There are a number of activities in all project phases that can alter drainage patterns by reducing the volume of run-off into the downstream catchments and/or altering the flow regime of water courses. The project site where surface infrastructure will be located is positioned within an area comprising a number of non-perennial streams that flow in a northerly direction from the site, draining towards the perennial Pandana River. The placement of infrastructure could result in changes to surface drainage patterns during the construction, operational and decommissioning phases. During closure it is expected that rehabilitation will restore drainage patterns. The additional work required to address this issue is described in Section 6.4.4 of the scoping report.

Issue: Contamination of surface waterProject phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

Projects of this nature will generally present a number of pollution sources that can have a negative impact on surface water quality during all project phases if unmanaged. Various potential pollution sources could result in contamination of these watercourses during the operational phase, such as seepage or runoff from coal stockpiles, workshop/wash bay runoff, spillages of fuel and lubricants, and particles from exposed soils in the form of suspended solids, and possible decant of acid mine drainage from underground flooded workings post closure. The additional work required to address this issue is described in Section 6.4.4 of this scoping report.

3.4.4.5 Groundwater**Issue: Reducing groundwater levels and availability**Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

Groundwater levels could be reduced in the project area by mine dewatering (to ensure safe mining conditions) and on-site groundwater abstraction (if this is a selected water supply option). Yields (and water levels) of boreholes and wells of groundwater users located in the zone of influence could be negatively impacted. Dewatering may also have a negative impact on discharge from seeps and springs, baseflow of river systems, and groundwater dependent wetland systems.

Dewatering and abstraction activities will stop when mining ceases and the groundwater table is expected to recover to its pre-mining level. It should however be noted that it may take a number of years after closure for the groundwater table to reach pre-mining levels. The additional work required to address this issue is included in Section 6.4.5 of this scoping report.

Issue: Contamination of groundwaterProject phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure

Discussion

Groundwater could become contaminated through the incorrect handling and storage of potentially polluting waste sources on the site. Possible sources of groundwater contamination during the operational phase include potential seepage from coal stockpiles, seepage from accidental spills and

leaks, and seepage from blasting residues and exposure of groundwater to exposed rock. Furthermore, groundwater contamination can occur as a result of acid mine drainage (AMD). AMD is often associated with coal mining operations due to the chemical and biological reaction that takes place when iron sulphide minerals present in the coal and host rocks are exposed to oxygen and water. This aspect needs to be investigated further in the EIA.

After closure, there is the potential for AMD to continue to impact on groundwater quality. The rebounding water level and the resulting influx into the mine workings is expected to fill the mine working with potentially contaminated groundwater which could migrate along the hydraulic gradient.

The additional work required to address this issue is included in Sections 6.4.5 and 6.4.12 of the scoping report.

3.4.4.6 Air quality

Issue: Emissions causing air pollution and associated nuisance and health impacts

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
			Not applicable

Discussion

There are various sources (particularly dust generating sources) that can pollute the air and cause resultant potential impacts (i.e. nuisance impacts and / or health) on human, animal and plant health. Vegetation and topsoil stripping and vehicle movement during the construction of the boxcut and associated infrastructure will generate dust and gaseous emissions. Potential emission sources during the operational phase include vehicle movements, blasting and handling of materials. During the decommissioning phase, rehabilitation activities will generate dust through vehicle movement and the replacement of topsoil over disturbed areas. The additional work required to address this issue is included in Section 6.4.6 of the scoping report.

3.4.4.7 Noise

Issue: Increase in disturbing noise levels

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
			Not applicable

Discussion

Site clearing activities, vehicle movements and blasting (if required) will increase the ambient noise levels in the immediate vicinity of the project site during the construction phase. Blasting (if required) and general mining activities will also increase ambient noise levels during the operational phase, as will rehabilitation activities due to vehicle movement during the decommissioning phase. The increase in

ambient noise levels could cause nuisance impacts (disturbance) to the sensitive receptors close the project activities. The additional work required to address this issue is described in Section 6.4.7 of the scoping report.

3.4.4.8 Visual aspects

Issue: Negative visual impacts

Construction	Operational	Decommissioning	Closure

Discussion

Mining projects have the ability to alter the visual character of an area through the establishment of surface infrastructure. The surface infrastructure relating to the project will however have a relatively small footprint. The construction, operation and decommissioning of the boxcut and associated surface infrastructure could have a negative visual impact on the visual landscape of the project site which has a fairly strong sense of place and a high to moderate scenic quality. The additional work required to address this issue is described in Section 6.4.8 of the scoping report.

3.4.4.9 Geological issues

Issue: Generation of methane gas

Project phase/s in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
Not applicable		Not applicable	Not applicable

Discussion

During the public scoping meetings an IAP raised a concern regarding the potential for methane gas to be generated by the project and potential impacts associated with this. The potential for methane gas generation depends on the type and nature of the ore body being mined. The additional work required to address this issue is described in Section 6.4.14 of the scoping report.

3.5 POTENTIAL CUMULATIVE IMPACTS

This section provides a description of potential cumulative impacts associated with the project and other identified land uses.

All identified impacts in the preceding sections will be considered in a cumulative manner such that any impacts of known surrounding land uses and associated activities are taken into consideration. The baseline specialist studies will characterise the existing environment and will therefore take in account existing impacts of activities in the project area and surrounds.

4 PROJECT ALTERNATIVES

This section describes land use or development alternatives, alternative means of carrying out the operation, and the consequences of not proceeding with the proposed operation.

The main project alternatives to be considered include:

- alternative land use (Section 4.1)
- the “no-go” alternative (Section 4.4)
- project alternatives – infrastructure, underground mining methods, power supply, water supply (Section 4.5.1).

4.1 LAND USE ALTERNATIVES

In accordance with the current land use in the vicinity of the project, the project site could, as an alternative to the project, be used for grazing, cultivation or conservation. SLR is aware of initiatives by conservation groups and agencies to declare areas surrounding the project site for conservation and protection. During the public scoping meeting, it was indicated that the project site could also be used for forestry.

When considering the post rehabilitation land use alternatives, the only option considered to date is rehabilitation back to the current land use capability.

4.2 LAND DEVELOPMENTS WHICH MAY BE AFFECTED BY THE PROPOSED PROJECT

This section provides a list and description of land developments identified by the community or IAPs that are in progress and which may be affected by the project.

At this stage in the process, SLR is not aware of any land developments that may be affected by the project. During a focussed workshop with biodiversity stakeholders, SLR was made aware of initiatives by conservation groups and agencies to declare areas surrounding the project site for conservation and protection. No further information was provided during the public scoping meetings.

Where applicable the assessment will consider impacts on surrounding proposed conservation initiatives.

4.3 IAP PROPOSALS TO ADJUST PROJECT PLAN

This section provides an indication of proposals made in the consultation process to adjust the operational plans of the mine to accommodate the needs of the community, landowners and IAPs.

Comments received to date have indicated that there is a general opposition by landowners, farmers and conservation groups in the area to the project being developed. Two landowners along Alternative

Access Route A have objected to the access road crossing their property and therefore this access route will no longer be considered for the project.

4.4 THE “NO-GO” OPTION

The assessment of this option requires a comparison between the options of proceeding with the project with that of not proceeding with the project. The assessment of this option requires input from the investigations described in Section 6.4 so that the full extent of environmental, social and economic considerations can be taken into account.

4.5 PROJECT PLAN

4.5.1 AVOIDANCE OF POTENTIAL IMPACTS

The EIA process aims to provide input to the project infrastructure layout and plan in a manner which will prevent unnecessary impacts on the socio-economic, cultural and biophysical environment. Should impacts be unavoidable, the emphasis will be on impact minimisation and mitigation. The input provided by the relevant EIA specialists will be used to inform any required changes to the project plan during the EIA phase of the project. Further detail will be provided in the EIA and EMP report.

Project alternatives being considered by the project which could influence potential impacts on the environment are outlined below.

4.5.1.1 Mine access and infrastructure alternatives

At this stage in project planning, surface infrastructure will be located around the mine access area in the north-eastern part of the project site (Figure 2). The mine access site selected is in the middle of the north-eastern sub-outcrop area of the planned mineable resource. This mine access and infrastructure site was selected by the technical project team taking into consideration the practical requirements for developing a mine access on seam and the initial findings of the biodiversity and hydrology studies. As part of the EIA phase of the project, specialist studies will investigate the feasibility of the preferred infrastructure site.

4.5.1.2 Mining method

The ore body will be mined using underground mining methods. Although opencast reserves do exist within the project site, the applicant has chosen to focus on the underground coal reserves only to minimise disturbance on surface.

Two options being considered by the applicant are the Continuous Miner method and the conventional Drill and Blast method. Continuous Miners have a higher productivity than the conventional Drill and Blast method, however it requires more capital. The Continuous Miner method is also severely impacted

upon when mining into dolerite intrusions. Drill and Blast methods are more labour intensive and therefore operating costs are higher than Continuous Miner methods, but provide other advantages such as manoeuvrability in geologically difficult areas. Further detail will be provided in the EIA and EMP report.

4.5.1.3 Processing method

At this stage in the project planning, no process plant is foreseen to be built on site. Further exploration, development and optimisation for the mine and for ore processing may inform the need for a wash plant with support facilities however it is expected by the applicant that this would be located off-site if required, in future.

4.5.1.4 Power supply alternatives

With reference to Section 3.1.5.4, the mine will require a 5.5 MVA power supply. Power will be sourced from on-site generators temporarily until an Eskom supply is installed. No other feasible alternatives exist. Tholie Logistics will however consider alternative power sources for domestic power requirements such as solar panels and/or solar water geysers.

4.5.1.5 Water supply alternatives

With reference to Section 3.1.5.5, approximately 150 000m³ of water will be required on an annual basis. Apart from recycling and re-using dirty runoff water from the site, the various options being considered for water supply include:

- municipal water (Utrecht)
- natural springs in the area and/or
- boreholes to be drilled into aquifers to provide water.

The selection criteria are:

- the sustainability of both the resource and the supply
- impact on existing water users
- water saving and recovery
- water quality and
- economic considerations including affordability.

4.5.1.6 Access route alternatives

Access to the project site will be by means of existing gravel farm roads. Initial project planning considered two potential access routes (Figure 2). Given two objections received from landowners during the scoping process, Alternative Route A is no longer considered feasible and will not be considered further in this process.

4.5.2 PROJECT PLAN TO AVOID POTENTIAL IMPACTS

As indicated above, the overall aim is to develop the project infrastructure layout and plan in a manner which will prevent impacts to the socio-economic, cultural and biophysical environment. Should impacts be unavoidable, the emphasis will be on impact minimisation and mitigation. The input provided by the relevant EIA specialists will be used to inform any required changes to the project plan during the EIA phase of the project. Further detail will be provided in the EIA and EMP report.

5 DESCRIPTION OF THE PROCESS OF ENGAGEMENT OF IAPS, INCLUDING THEIR VIEWS AND CONCERNS

This section provides a record of the information provided to date to the community, landowners and IAPs. This section also provides an action plan for the remainder of the scoping phase public consultation process. A full record of the consultation process will be forwarded to the Department of Mineral Resources in line with the mining right acceptance letter (see Appendix A).

5.1 INFORMATION SHARING

Prior to the commencement of the environmental assessment process, informal consultation took place in the form of a social scan (conducted by SLR in 2013) to identify stakeholder groups in the project area and inform a stakeholder engagement strategy, and a focussed workshop with biodiversity stakeholders (facilitated by SLR in August 2014).

As part of the EIA process, the public consultation process to date has included landowner notification meetings/correspondence, a social scan of the project including distribution of information, placement of notification in two local newspapers, placement of site notices in conspicuous locations, direct consultation through telephonic discussions and two public scoping meetings. IAPs registered on the project database (discussed in Section 5.2) have received the following information:

- the background information document (BID)
- invitations to the scoping meetings
- the opportunity to provide input and raise issues and concerns via a social scan, written comments directed to SLR and at the public scoping meetings.

IAPs will have the opportunity to provide further input through the review of the scoping report.

More detail on the above is provided below.

5.1.1 BIODIVERSITY FOCUSED WORKSHOP

A biodiversity workshop was facilitated by SLR on 12 August 2014. SLR acknowledges that biodiversity in the project area is of importance to a number of stakeholders and therefore a pro-active approach was taken to engage with people who have intimate knowledge on biodiversity relevant to the project site and region. The aim of the workshop was to introduce the Commissiekraal project, provide key stakeholders an opportunity to share their plans/knowledge/information on the area that would be used to inform the project plan and any application processes, ensure that the key biodiversity-related issues and risks associated with the project are clearly understood by SLR and the applicant and agree on any information sharing / consultation requirements going forward. The workshop attendance register, minutes, and the meeting presentation is provided in Appendix B.

5.1.2 LETTERS, BIDS, SITE NOTICES AND NEWSPAPER ADVERTISEMENTS

The relevant landowners were informed of the project via email, hand delivered letters and/or scheduled meetings. Proof of these notifications, meeting minutes and attendance registers is provided in Appendix B.

A BID was compiled and distributed on the 5 to 9 March 2015 by post, e-mail and/or hand delivered to IAPs and authorities on the project's public involvement database. The purpose of the BID was to inform IAPs and authorities about the project, the environmental assessment process, possible environmental impacts, and means of providing input into the environmental assessment process. Attached to the BID was a registration and response form, which provided IAPs with an opportunity to submit their names, contact details and comments on the project. A copy of the BID is included in Appendix B.

Block newspaper advertisements were placed in English in the Vryheid Herald and The Recorder newspapers on 5 March 2015 and 6 March 2015, respectively. Site notices in English, Afrikaans and Zulu were placed at key conspicuous positions in and around the project area on 5 March 2015. Photographs of the site notices and copies of the site notices and newspaper advertisements are included in Appendix B.

A short message system (SMS) was used to notify IAPs on the project's public involvement database of the project and public scoping meetings. The SMS was sent out on 9 March 2015. Proof of notification is included in Appendix B.

5.1.3 SCOPING MEETINGS

Public scoping meetings have been held as per the table below.

TABLE 5.1: SCOPING PHASE PUBLIC MEETINGS

Invited stakeholder group	Date	Time	Venue	Language
All IAPs and authorities	Thursday 26 March 2015	09h00	Luthilunye Local School	English and Zulu
All IAPs and authorities	Thursday 26 March 2015	14h00	Kemps Lust Hall	English and Afrikaans

At these meetings a presentation was given providing information on the applicant's intention to develop the project and current high level planning. These meetings therefore focussed on:

- informing IAPs about the project
- providing a description of the key project elements
- informing IAPs about the stakeholder engagement process and how IAPs can have input into the process
- providing information about the baseline environment and obtaining IAP input

- providing information about the potential impacts of the project and obtaining IAP input
- providing an opportunity for IAPs to raise issues and concerns – these issues and concerns have been used to inform the Plan of Study for the EIA Phase.

In addition to the scoping meetings, a site visit was planned for regulatory authorities on 26 March 2015. The purpose of this site visit would have been for all authorities to obtain a general understanding of the physical environment at the project site. Unfortunately no authorities attended the site visit however a follow up site visit and meeting will be arranged, where required. A list of the authorities invited to the site visit and both public meetings is included in Appendix B.

5.1.4 REVIEW OF SCOPING REPORT

DMR review of the scoping report

Nine copies of the scoping report were submitted to the Department of Mineral Resources (DMR) on 11 March 2015 in line with the department's mining right acceptance letter.

Public and other regulatory authority review of the scoping report

The scoping report will be made available for public review for a 40 day period commencing on 10 April 2015. The report will be made available at the following venues, as agreed to at the public scoping meetings:

- Luthilunye Public School
- Kemps Lust
- Utrecht Public Library
- Tholie Logistics' offices, Cape Town
- SLR's Library in Fourways, Johannesburg.

As agreed to during the public scoping meetings, full reports will be made available in English. Summaries of the report will be provided in English, Afrikaans and Zulu and will be sent by post, e-mail and/or via the school to IAPs and authorities on the project's public involvement database. SMS will also be used to notify IAPs of the availability of the report for public review.

In addition, the report will be distributed to the following regulatory authorities for a 40-day review period at the same time as it's made available for public review:

- Department of Water and Sanitation
- Amafa / Heritage KwaZulu Natal
- Department of Rural Development and Land Reform
- Department of Fisheries and Forestry
- Ezemvelo KZN Wildlife
- Mpumalanga Parks Board

- Department of Transport
- Amajuba District Municipality
- eMadlangeni Municipality (Utrecht).

DEDTEA review of the scoping report

At the same time as the scoping report is made available for public review, a copy of the scoping report will be submitted to the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA) for their records in line with the requirements of R543 of NEMA.

Following the public review of the scoping report, all comments received will be included in the final scoping report and submitted to the DEDTEA for review. The final scoping report is expected to be finalised by mid May 2015.

All comments received will also (together with the final issues and concerns report) be forwarded to the DMR.

5.2 IAPS CONSULTED DURING SCOPING PHASE

This section discusses which of the identified communities, landowners or lawful occupiers and other IAPs were consulted during the scoping phase.

The stakeholder engagement process commenced with a stakeholder analysis that was aimed at identifying parties to be involved during the environmental assessment process and associated communication structures. This was done through a deeds search of the relevant properties within the project site and immediately adjacent portions of land; social scans (conducted by SLR in 2013 and March 2015) including site visits in the surrounding areas; the SLP specialist's research; at focussed stakeholder meetings; and networking and direct discussions with IAPs.

Key stakeholders identified for the project include:

- landowners and tenant/farm workers on and surrounding the project area
- non-government organisations and associations including water user associations and farmer and agricultural unions
- parastatals
- regulatory authorities (see Section 1.10)
- local authorities and ward councillors.

A full list of IAPs is provided in Appendix C. This list will be updated, where required, throughout the environmental assessment process.

5.3 IAP VIEWS ON EXISTING ENVIRONMENT

Any views, issues and concerns raised to date with regard to the existing cultural, socio-economic or biophysical environment have been captured in the issues and concerns report provided in Appendix D.

5.4 IAP VIEWS ON POTENTIAL IMPACTS

Any views, issues and concerns raised to date on how the existing cultural, socio-economic or biophysical environment could potentially be impacted upon by the project have been captured in the issues and concerns report provided in Appendix D.

5.5 OTHER IAP CONCERNS

Any views, issues and concerns raised to date have been captured into the issues and concerns report provided in Appendix D.

5.6 MEETING MINUTES AND RECORDS OF CONSULTATIONS

Meeting attendance registers, minutes, and meeting presentations for meetings undertaken to date is provided in Appendix B while the issues and concerns report is provided in Appendix D.

5.7 IAP OBJECTIONS

Comments received to date have indicated that there is a general opposition by landowners, farmers and conservation groups in the area to the project being developed. Two landowners along Alternative Access Route A have objected to the access road crossing their property and therefore this access route will no longer be considered for the project.

Views, issues, concerns and objections raised to date have been captured into the issues and concerns report provided in Appendix D.

6 FURTHER INVESTIGATIONS AND EIA PLAN OF STUDY

This section describes the nature and extent of further investigations (Section 6.4) required for the EIA, including any specialist studies that may be required, and sets out the proposed approach to the EIA and EMP phase.

6.1 EIA PHASE OBJECTIVES

The main objectives of the EIA phase are to:

- assess project alternatives
- assess the potential cultural, heritage, socio-economic and biophysical impacts of the project
- identify and describe procedures and measures that will mitigate potential negative impacts and enhance potential positive impacts
- undertake consultations with IAPs and provide them with an opportunity to review and comment on the outcomes of the environmental assessment process and acceptability of mitigation measures
- develop an environmental management programme and a conceptual closure/decommissioning plan
- provide measures for ongoing monitoring (including environmental audits) to ensure that the project plan and proposed mitigation measures are implemented as outlined in the detailed EIA and EMP report.

6.2 EIA PROJECT TEAM

The proposed EIA project team is similar to the team used for the scoping phase with the inclusion of additional specialists (Table 6.1).

TABLE 6.1: PROPOSED EIA TEAM

Team	Name	Designation	Tasks and roles	Company
EIA process	Alex Pheiffer	Project manager	Management of the assessment process, stakeholder engagement and report compilation.	SLR Consulting (Africa) (Pty) Ltd
	William Berry	Project administrators		
	Natasha Daly			
	Ntsako Baloyi			
	Brandon Stobart	Project reviewer	Report and process review	
Specialists	Marine Pienaar	Soil and land use specialist	Soil, land use and land capability desktop study	TerraAfrica
	Stephen van Staden and Emile van der Westhuizen	Ecological specialists	Terrestrial and aquatic ecological baseline assessment	Scientific Aquatic Services
	Luke Wiles	Hydrologist	Surface water baseline assessment	Highlands Hydro
	Martin Holland	Groundwater specialist	Groundwater baseline assessment	Dellta-H
	Darren Lafon-Anthony	Noise specialist	Noise baseline assessment	SLR
	Tom Green	Traffic specialist	Traffic baseline assessment	SLR
	Dr Julius Pistorius	Heritage specialist	Heritage study	Dr Julius Pistorius

Team	Name	Designation	Tasks and roles	Company
Specialists continued	Professor Bruce Rubidge	Paleontological specialist	Paleontological assessment	BPI for Paleontological Research
	Steve van Niekerk	Engineer	Closure cost estimate	SLR
	Jenny Ellerton and Terry Harch	Hydrologist	Geochemical analysis	SLR and Solution H+
	Hanlie Liebenberg-Enslin	Air quality specialist	Air quality assessment	Airshed
	Zama Khumalo	Social specialist	Social study	SLR
	Werner Neethling	Economist	Economic assessment	Mercury Financial consultants
Client technical team	Heye Daun	Project Manager	Technical input	Bright Resources
	Eugene de Villiers	Mine specialist	Mine works programme and technical input	ECMA
	Mosidi Mphahlele	Social and labour plan specialist	Social and labour plan	Mphahlele Wessels and Associates

6.3 EIA/EMP PHASE ACTIVITIES AND TIMING

An overview of the EIA/EMP phase and corresponding activities are outlined in Table 6.2.

TABLE 6.2: EIA/EMP ACTIVITIES AND TIMING

Objectives	Corresponding activities
<i>EIA and EMP phase (April 2015 to January 2016)</i>	
<ul style="list-style-type: none"> Further describe the affected environment. Assessment of potential environmental impacts. Design requirements and management and mitigation measures. Give monitoring recommendations. Receive feedback on application. 	<ul style="list-style-type: none"> Investigations by technical project team and SLR of issues identified during the scoping stage including investigations into alternatives as per the terms of reference outlined in sections 6.4, 6.5 and 6.6. Compilation of EIA and EMP report. Distribute EIA and EMP report to IAPs and other regulatory authorities for review (July 2015). Submit EIA and EMP report to DEDTEA for their records. Public feedback meetings with IAPs (August 2015). Record comments (August to September 2015). Forward EIA and EMP report including IAP comments to DEDTEA for review (September 2015). Forward IAP comments to DMR (September 2015). Circulate record of decisions to all registered IAPs.

6.4 SPECIALIST/FURTHER INVESTIGATIONS

The proposed terms of reference for further investigations required for the completion of the EIA study are discussed below. The results of these studies will be collated into a combined EIA and EMP report, with copies of the specialist reports, where relevant, attached as appendices to the EIA and EMP report.

6.4.1 TOPOGRAPHY

No specialist investigations are deemed necessary. The assessment relating to hazardous excavations and infrastructure and the associated impacts, as well as the detailed management measures will be provided in the EIA and EMP report by SLR and the technical project team.

6.4.2 SOIL AND LAND CAPABILITY

It is proposed that Terra Africa conduct a soil and land capability assessment. The assessment will have the following objectives:

- identify and map the soils and land capability in the project area
- collect soil samples for analysis in order to quantify the soil characteristics (chemical and physical properties)
- detail the soil and land capability aspects of the project site
- identify potential impacts on soil resources and associated land capabilities
- provide input, together with SLR and the technical project team, into the project alternatives and the soil conservation and rehabilitation mitigation measures going forward.

6.4.3 BIODIVERSITY

Scientific Aquatic Services (SAS) conducted baseline flora, fauna and aquatic surveys on the project site for a period of one year. The baseline surveys had the following objectives:

- to perform desktop and field investigations to identify and map terrestrial and aquatic habitats in the project area
- to identify any areas of conservation importance
- to identify and map wetland areas
- to rank each habitat type based on conservation importance and ecological sensitivity
- to assign species to each habitat through various trapping and sampling methods.

Building on from these baseline surveys, the specialist study will have the following objectives:

- to identify potential impacts on flora, fauna and aquatic ecosystem functionality on site as well as potential edging effects on surrounding areas
- to have input, together with SLR and the technical project team, into project alternatives and ecology management measures going forward.

6.4.4 HYDROLOGY (SURFACE WATER)

It is proposed that Highlands Hydrology conduct a detailed surface water study. This study will address both quantity and quality issues. The investigation will have the following objectives:

- to source and provide a description of climatic data to be used in hydrological calculations including rainfall, temperatures, evaporation and typical extreme weather conditions (this data will be sourced from nearby weather stations)
- to indicate the presence of water courses, streams, rivers and dams in the area
- to determine catchment boundaries
- to determine the mean annual runoff from the project site
- to identify hydrological flow regimes and provide input on the interaction between surface and groundwater
- to conduct a flood assessment and model the floodlines for both the 1:50 and 1:100 year return periods for the perennial Pandana River – for the remaining non-perennial streams on site, a 100 m buffer will be adopted
- to determine the drainage density of areas to be disturbed
- to develop a climatic water balance covering the average dry seasons, average wet seasons and average annual (covering the construction and operational phases)
- to assess the impacts on surface water and downstream users (for both flow volumes and water quality) as a result of the project
- to provide input into surface-water related water supply options
- to have input, together with SLR, other specialists and the technical project team, into project alternatives and management measures going forward including the conceptual design of storm water controls.

6.4.5 GROUNDWATER

It is proposed that a detailed investigation be conducted by Delta H to address dewatering and groundwater pollution aspects. The investigation will have the following objectives:

- to undertake a detailed review of existing available databases and perform a site description (desk study) on the geology and geohydrology of the project area
- to conduct a hydrocensus identifying groundwater (and surface water) users in and downstream of the project area through a hydrocensus covering a 5 km zone around the project site and providing baseline water depths and qualities (surface water and groundwater)
- to identify existing lawful water uses within the 5 km zone
- to compile geological, geohydrological and hydrochemical GIS maps of the aquifer system that indicates the groundwater (and water quality) in relation to the geology to model contaminant transport for the local aquifers
- position and drill boreholes to verify aquifer classification
- to model the impacts from mine dewatering on seeps, springs, baseflow and wetlands

- to model potential plume dispersion using input from the geochemical study
- to assess the impacts on groundwater users and the ecosystem functionality
- to have input, together with SLR, other specialists and Turquoise Moon, into project alternatives and the management measures going forward.

The groundwater study will also provide input into the chosen water supply option through:

- identification of possible on-site groundwater water supply sources
- determining the sustainable yield and modelling of the draw down cone
- assessing the cumulative on-site impacts on third party groundwater users and ecosystem functionality
- having input, together with SLR, and the technical project team, into project alternatives and the management measures going forward.

In addition, detailed discussions are required between SLR, the technical project team and the Department of Water and Sanitation.

6.4.6 AIR QUALITY

It is proposed that an air quality assessment be conducted by Airshed Planning Professionals. The investigation will have the following objectives:

- to qualify the ambient air quality baseline
- to quantify all proposed emission sources in an emissions inventory including transport of product off-site
- to determine the relevant meteorological conditions in and adjacent to the project area including wind speeds and direction
- to identify potential receptors both on the project site and along transport routes
- to model the spatial dispersion of key emissions to air both on the project site and along transport routes
- to compare these estimated impacts to relevant guideline standards which act as a guide for human health impacts
- to comment on potential impacts on flora and fauna
- to have input, together with SLR, other specialists and the technical project team, into project alternatives and the management measures going forward.

6.4.7 NOISE

It is proposed that a detailed specialist investigation be conducted by SLR. The investigation has the following objectives:

- to quantify the pre-development ambient noise climate
- to identify noise-sensitive receptors

- to model operational noise levels
- to estimate the impact of future project noise levels of sensitive receptors
- to compare these estimated impacts to relevant standards
- to have input, together with SLR, other specialists and the technical project team, into project alternatives and the management measures going forward.

6.4.8 VISUAL ASPECTS

No specialist investigations are required. A qualitative assessment on the visual impacts will be conducted by SLR with reference to the following:

- the visual resource and sense of place of the greater area
- sensitive receptors (i.e. surrounding land users)
- provide input, together with the technical project team into project alternatives and noise management measures going forward.

6.4.9 ARCHAEOLOGICAL, CULTURAL AND HERITAGE RESOURCES

In 2013, a Phase I Heritage Impact Assessment was conducted by Dr Julius Pistorius, an heritage specialist, covering the project area. It is proposed to use the findings of this study to inform the EIA. The study had the following objectives:

- to identify and map (through literature review and field work) all heritage resources in the proposed study area
- to assess the significance of the identified resources
- to assess the impact of the project on the heritage resources
- to have input, together with SLR and the technical project team into project alternatives and heritage resources management measures going forward.

6.4.10 PALEONTOLOGICAL RESOURCES

It is proposed that a desktop assessment of paleontological resources be undertaken by Professor Bruce Rubidge of BPI for Palaeontological Research. The study will include the following tasks:

The investigation will have the following objectives:

- to identify (through literature review) the potential for paleontological resources in the study area
- to assess the significance of the identified resources
- to assess the impact of the project on the resources
- to have input, together with SLR and the technical project team into project alternatives and management measures going forward.

6.4.11 SOCIO-ECONOMIC ISSUES

6.4.11.1 Land use

It is proposed that Terra Africa will conduct a land use assessment. The investigation has the following objectives:

- to identify and map existing and proposed land uses on and surrounding the project site – these are understood to be livestock grazing, dryland production, forestry, conservation and tourism
- to identify and assess the potential impacts on these land uses
- to have input, together with SLR and the technical project team, into project alternatives and management measures going forward.

6.4.11.2 Transport systems

It is proposed that SLR will conduct the specialist traffic impact assessment. The investigation has the following objectives:

- to identify the existing road network in the vicinity of the project
- to characterise the usage and capacity of the existing road network and assess current status of the road network and intersections
- to assess the impact on the existing road network (including capacity and safety) of the traffic associated with the project
- to have input, together with SLR and the technical project team, into project alternatives and traffic management measures going forward.

6.4.11.3 Sterilisation of mineral reserves

It is proposed that no further investigations are required. The assessment and detailed management measures will be provided in the EIA and EMP report by SLR.

6.4.11.4 Positive and negative socio-economic impacts

It is proposed that a socio-economic investigation be conducted by SLR (addressing social aspects) and Mercury Financial Consultants (addressing economic aspects). The investigation has the following objectives:

- to characterise the baseline socio-economic environment with respect to the immediate area and broader municipal areas through review of available reports and databases
- to identify and assess both positive and negative socio-economic impacts
- to have input into enhancing positive and minimising negative socio-economic impacts
- to have input on the issue of land values
- to have input, together with SLR and the technical project team into project alternatives and socio-economic management measures going forward.

Available studies completed during the prospecting operations will be used to understand the demographics of people residing within the project area and to provide input on the need for relocation, if required.

The economic assessment will be undertaken to meet the requirements of the DMR EIA and EMP report template. The investigation will include the following tasks:

- comparative land use assessment and
- costs and benefits analysis.

6.4.12 GEOCHEMICAL ANALYSIS

It is proposed that a geochemical analysis be undertaken by SLR and Solution H+ to inform the groundwater study. The study will have the following objectives:

- provide a preliminary characterisation of material that could be generated during the mining process and indicate possible leachate qualities
- collect appropriate samples from the project area for geochemical characterisation, taking into consideration the material type, spatial variation and compositional variation
- submit samples to a certified laboratory for analytical test work to identify the acid generating and neutralising potential as well as the potential for leaching of metals
- determine a source term for potential project pollution sources as input data for a groundwater numerical model.

6.4.13 CLOSURE COST ESTIMATE

A closure cost estimate will be calculated by SLR for the project in line with the DMR's requirements. The DMR guideline document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine as published by the Department of Minerals and Energy (DME), dated January 2005 will be used. Consideration will be given to any site-specific environmental conditions.

6.4.14 GEOLOGY

No specialist investigations are deemed necessary. The assessment relating to methane gas and the associated impacts, as well as the detailed management measures will be provided in the EIA and EMP report by SLR and the technical project team, with input from a geologist.

6.5 METHODOLOGY FOR THE ASSESSMENT OF ENVIRONMENTAL ISSUES

The proposed method for the assessment of environmental issues is set out in Table 6.3 below. This assessment methodology enables the assessment of environmental issues including: cumulative impacts, the severity of impacts (including the nature of impacts and the degree to which impacts may

cause irreplaceable loss of resources), the extent of the impacts, the duration and reversibility of impacts, the probability of the impact occurring, and the degree to which the impacts can be mitigated.

TABLE 6.3 CRITERIA FOR ASSESSING IMPACTS

Note: Part A provides the definition for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D.

PART A: DEFINITION AND CRITERIA*		
Definition of SIGNIFICANCE	Significance = consequence x probability	
Definition of CONSEQUENCE	Consequence is a function of severity, spatial extent and duration	
Criteria for ranking of the SEVERITY of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE

SEVERITY = L

DURATION		H	Medium	Medium	Medium
	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium

SEVERITY = M

DURATION		H	Medium	High	High
	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium

SEVERITY = H

DURATION		H	High	High	High
	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High
			L	M	H
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
			SPATIAL SCALE		

PART C: DETERMINING SIGNIFICANCE					
PROBABILITY (of exposure to impacts)	Definite/ Continuous	H	Medium	Medium	High
	Possible/ frequent	M	Medium	Medium	High
	Unlikely/ seldom	L	Low	Low	Medium
			L	M	H
CONSEQUENCE					
PART D: INTERPRETATION OF SIGNIFICANCE					
Significance	Decision guideline				
High	It would influence the decision regardless of any possible mitigation.				
Medium	It should have an influence on the decision unless it is mitigated.				
Low	It will not have an influence on the decision.				

*H = high, M= medium and L= low and + denotes a positive impact.

6.6 METHODOLOGY FOR THE ASSESSMENT OF PROJECT ALTERNATIVES

6.6.1 ASSESSMENT OF THE “NO-GO OPTION”

The assessment of the implications of the “No-Go option” will require a high level comparison between the existing situation without the project and the possible future situation with the project, as assessed in the EIA and EMP report. This comparison will include both positive and negative impacts.

6.6.2 ASSESSMENT OF PROJECT ALTERNATIVES

The realistic alternatives have been discussed in Section 4 of the scoping report. The proposed methodology for the assessment of these alternatives is a relative comparison that also applies the assessment method described above to each of the listed assessment criteria, where possible.

6.7 STAKEHOLDER ENGAGEMENT DURING THE EIA PHASE

The relevant authorities and public will be engaged during the EIA phase as described below.

6.7.1 AUTHORITY ENGAGEMENT

Proposed consultation meetings for the EIA phase include:

- A site visit and meeting with the DEDTEA, DWS and DMR (if requested)
- A general authorities meeting at the end of the EIA phase to present the main findings of the EIA prior to submission of the EIA and EMP report (if requested).

6.7.2 PUBLIC ENGAGEMENT

The proposed public involvement process can be separated into focussed and general involvement. Each of these is described below:

6.7.2.1 Focussed involvement

As part of the various investigations that form part of the EIA tasks focussed meetings with certain IAPs will be held, as required. These meetings will be arranged and facilitated by SLR and/or appointed specialists.

6.7.2.2 General involvement

As with the scoping report, full copies of the EIA and EMP report will be distributed to the agreed venues and summaries will be distributed to registered IAPs. Full copies of the report will also be provided electronically on request.

During the review period, two public feedback meetings will be arranged as requested, using the same venues used for the public scoping meetings. The purpose of this meeting will be as follows:

- To provide IAPs with an opportunity to discuss the outcomes of the EIA and EMP report
- To provide IAPs with a chance to submit comments on the EIA and EMP report.

All comments received from IAPs in the review period will be forwarded to the DMR and included with the final report that is submitted to DEDTEA.

Once the DMR and DEDTEA have issued their respective records of decisions, the IAPs will be notified by fax, e-mail, sms and/or post in accordance with the instructions from the relevant department.

7 SUMMARY AND CONCLUSIONS

The EIA process is currently in the scoping phase.

The way forward for the remainder of the scoping phase is as follows:

- distribute the scoping report and a summary thereof for review by the IAPs and other regulatory authorities
- submit a copy of the scoping report that was distributed for public review to DEDTEA for their records
- review of the scoping report and summary by IAPs and other regulatory authorities for a 40-day review period
- receive comments from IAPs and other regulatory authorities
- following the IAP review process, five copies of the final scoping report (with comments) will be forwarded by SLR to DEDTEA in line with NEMA. It is then expected that the scoping report will be distributed internally by DEDTEA for review and comment
- submit IAP comments, the updated issues and concerns report and an updated copy of the scoping report to DMR (if required)
- receive comments from DEDTEA and DMR and address in EIA phase.

The project has the potential to impact on the cultural, socio-economic and biophysical environment both on site and in the surrounding area. Input received during the public scoping meetings will allow for the meaningful assessment of all relevant environmental and social issues. Potential impacts will be investigated by various studies to be conducted by appropriately qualified specialists. Stakeholder engagement will continue throughout the EIA process.

Alex Pheiffer
Project Manager

Brandon Stobart
Reviewer

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B: IDENTIFICATION OF THE REPORT

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises the results of consultation as contemplated in Section 16 (4) (b) or 27 (5) (b) of the Act as the case may be	
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Signature	

APPENDIX A: CORRESPONDENCE WITH DMR AND DEDTEA

- NEMA application
- DMR acceptance letter
- DEDTEA acceptance letter

APPENDIX B: DOCUMENTATION AND PROOF OF THE CONSULTATION PROCESS

- Biodiversity workshop – minutes, attendance register and meeting presentation
- Proof of landowner notification including meeting minutes
- Background Information Document (in English, Afrikaans and Zulu)
- Newspaper advertisements
- Site notices and photographs of placement
- SMS notification
- Record of social scan
- Public scoping meeting invites
- Correspondence from IAPs and regulatory authorities

APPENDIX C: INTERESTED AND AFFECTED PARTY DATABASE

APPENDIX D: ISSUES AND CONCERNS REPORT



RECORD OF REPORT DISTRIBUTION

Project Number:	710.02038.00001
Title:	Development of the proposed Commissiekraal Coal Mine including support services and associated infrastructure
Report Number:	2
Proponent:	Tholie Logistics (Pty) Ltd

Name	Entity	Copy No.	Date issued	Issuer
P Moodley	Department of Economic Development, Tourism & Environmental Affairs	1	10 April 2015	Alex Pheiffer
Zama Hadebe	Department of Water & Sanitation	2	10 April 2015	
Jeffery Maivha	Department of Agriculture, Forestry and Fisheries	3	10 April 2015	
Roy Ryan	Department of Transport	4	10 April 2015	
Lynn Boucher	Department of Rural Development and Land Reform	5	10 April 2015	
Dinesree Thambo	Ezemvelo KZN Wildlife	6	10 April 2015	
Lwazi Bhengo	Amafa/ Heritage	7	10 April 2015	
Frans Krige	Mpumalanga Tourism and Parks Agency	8	10 April 2015	
Linda Africa	Amajuba District Municipality	9	10 April 2015	
M Gugu	eMadlangeni Local Municipality	10	10 April 2015	
Public review	Utrecht Library C/o Sizakele Magubane (Reference librarian)	11	10 April 2015	
Public review	Luthilunye Combined School (plus 250 Zulu summary documents) C/o Mr Thulani (School principal)	12	10 April 2015	
Public review	Kemplust (plus 100 Afrikaans summary documents) C/o Eugene de Witt (Caretaker)	13	10 April 2015	
Heye Daun	Tholie Logistics C/o Bright Resources	14	10 April 2015	
Carol Kenyon	SLR Fourways Library	15	10 April 2015	
Following public review				
P Moodley	Department of Economic Development, Tourism & Environmental Affairs	1-5	May 2015	
S Njapha	Department of Mineral Resources	6	May 2015	

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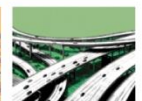
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