



mineral resources
& energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED)

Name of Applicant: Corobrik (Pty) Ltd.
Physical Address: R50 Delmas Road, Rietvlei, 1753, South Africa
File Reference Number SAMRAD: DMRE Mining Right Reference No.: **GP 30/5/1/2/2/10093 MR**
DMRE Environmental Management Reference No.: **GP 30/5/1/2/3/2/1/ (10093) EM**
Project Reference Number: LEM-A0652-05-2023
Date: 25 August 2023



DOCUMENT REVIEW AND APPROVAL

Client	Corobrik (Pty) Ltd. ('Corobrik')
Report Type:	Draft Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) for the Mining Right Amendment Application in terms of Section 102 of (Mineral and Petroleum Resources Development Act 28 of 2002) MPRDA as amended on Remaining Extent of Portion 26 (A Portion of Portion 1) and Portion 27 (A Portion of Portion 26) on the farm Witkoppies No.393 JR situated in both City of Tshwane and City of Ekurhuleni Metropolitan, Gauteng Province. The project area is located approximately 10 km south-east of Pretoria town and 40 km Bronkhorstspuit town.
Project Name:	Corobrik Rietvlei Mine Mining Right Application Amendment in terms of Section 102 of MPRDA
Project Number:	LEM-A0652-05-2023

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TERMS AND ABBREVIATIONS

BAP	Biodiversity Action Plan
BAR	Basic Assessment Report
CTMM	City of Tshwane Metropolitan Municipality
CEMM	City of Ekurhuleni Metropolitan Municipality
DFFE	Department of Forestry and Fisheries and the Environment
DEA	Department of Environmental Affairs (National)
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPR	Environmental Management Programme as required by the Mineral and Petroleum Resources Development Act (28 of 2008)
EMPr	Environmental Management Program as required by the National Environmental Management Act (107 of 1998)
GNR	Government Notice Regulation
Ha	Hectare
I&AP	Interested and Affected Party
LEM	Licebo Environmental and Mining (Pty) Ltd
km	kilometer
m	meter (measurement for distance)
m ²	square meter (measurement for surface area)
m ³	cubic meter (measurement for volume)
MAP	Mean Annual Precipitation
mbgl	meters below ground level

MPRDA	Mineral and Petroleum Resources Development Act (No. 28 of 2002), as amended
NEMA	National Environmental Management Act (No. 107 of 1998), as amended
MDV	Magisterial District of Bronkhorstspruit
NWA	National Water Act (No. 36 of 1998), as amended
PPP	Public Participation Process
RE	Remaining Extent
SABS	African Bureau of Standards
SANBI	South African National Biodiversity Institute
SAHRA	South African Heritage Resources Agency
SANS	South African National Standards
WMA	Water Management Area

EXECUTIVE SUMMARY

Licebo Environmental and Mining (Pty) Ltd ((Hereafter referred as '**LEM**') has been appointed by Corobrik (Pty) Limited (Hereafter referred as '**Corobrik**') to undertake the amendment of the mining right in terms of the Section 102 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA). This process will be undertaken in accordance with Section 24 (G) read together with Section 24 (F) of National Environmental Management Act (Act 107 of 1998) (NEMA) as amended.

Activities to be undertaken as part of coal mining activities involve the mining of the coal, coal removal and stockpiling, construction of overburden dump and stockpiling, pollution control dams, and transportation of coal via tipper trucks. The Corobrik mining activities are undertaken on Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkoppies No.393 JR, situated at Magisterial District of Bronkhorstspuit in both City of Ekurhuleni and City of Tshwane Metropolitan Municipalities.

Corobrik obtained a mining right that only included the clay; however, coal was discovered during the process of mining clay, therefore it must be amended to include the coal as required in terms of the Mineral and Petroleum Resources Development Act, Act 28 of 2002 as amended. This process involves the compilation of the combined NEMA and NEMWA Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) and Water Use Licence Application (WULA) for the mining activities. This application process will be undertaken in terms of GNR 983 as amended - Listing Notice 1 in respect to listing activities: 9, 12, 21D, 24, 27, and 28; GNR 985 as amended - Listing Notice 3 for Listing activity 12; and NEMWA Listed activity 15 on Category B. To commence with mining activities Corobrik must obtain the following:

- Environmental Authorization in terms of the National Environmental Management Act, Act No 107 of 1998 (NEMA) as amended; and
- Water Use License (WUL) in terms of the National Water Act, Act 36 of 1998 as amended (Act 39 of 2008).

PROJECT APPLICANT

The details of the applicant for this project are indicated on the table below:

Name of Applicant:	Corobrik (Pty) Limited		
Registration Number (if any):	2007/021571/07		
Trading Name (if any):			
Responsible person:			
Name of Project:	Corobrick Mining Right Project		
Contact Person	Martin Hughes		
Physical Address:	R50 Delmas Road, Rietvlei, 1753		
Postal Address:	PO Box 333, Irene		
Postal Code	0062	Cellphone	083 459 8795
Telephone:	011 206 7000	Fax:	
E-mail:	martin.hughes@corobrik.co.za		

Brief description and location

Mine description and location	<p>Corobrik (Pty) Limited, the Rietvlei quarry and brick-making factory is situated on the R50 (Old Delmas) provincial road, approximately 20 km south-east of Pretoria town within both City of Tshwane and City of Ekurhuleni Metropolitan Municipalities in Bronkhorstspuit Magisterial Municipality, Gauteng Province, South Africa</p> <p>Corobrik's converted old order Mining Right which only included the clay that was approved in 2011, Corobrik is currently applying for an alignment and consolidation of the mining right for clay and amendment of the mining right to include coal as required in terms of section 102 of MPDRA and also in accordance to section 24G of NEMA to rectify the undertaking of listed activities without the required environmental authorisation</p> <p>Corobrik mining operation consists of opencast quarrying</p>
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	<p>involving load and haul operations using an excavator and trucks. Mining is outsourced to an external mining contractor. The raw materials are selectively extracted from benches from the quarries by excavator. The clays are loaded onto dump trucks and transported to a prepared stockpiling area at the Corobrik factory site where the materials are layered into ROM stockpiles in a controlled manner for later use in brick manufacturing. Three separate quarries are mined on the Rietvlei property, namely the Maize 1, Maize 2 and Cinnamon quarries. Shaley Sandstone, Creamy-grey, Chocolate Clay and Carbonaceous Clay are extracted from the Maize 1 and Maize 2 quarries while Yellow Shale is extracted from the Cinnamon Quarry.</p>
Mining Right Reference Number	GP 30/5/1/2/2/10093 MR
DMRE Environmental Management Reference Number	GP 30/5/1/2/2/2/1/ (10093EM)
Mining Right Issue Date and Validity	The mining right was converted on 29 April 2011.
Holder of the Mining Rights and Environmental Authorisations	Corobrik (Pty) Ltd: (Company Registration Number: 2007/021571/07)
Municipality and Magisterial District	City of Tshwane and City Ekurhuleni Metropolitan Municipality, Gauteng Province. Magisterial/Administrative District of Bronkhorstspuit

APPROACH AND METHODOLOGY FOR THE PUBLIC PARTICIPATION

The Environmental Impact Assessment (EIA) Regulations, 2014 (GNR 982 of 4 December 2014 as amended by GNR 326 of 7 April 2017) (EIA Regulations, 2014), as amended promulgated under the NEMA, and applicable PPP guidelines and regulations have been considered for this application process. The Public Participation Process (PPP) is central to the investigation of environmental and social impacts. Stakeholders who are affected by the project are given an opportunity to raise concerns

to ensure that local knowledge, needs, and values are understood and taken into consideration as part of the EA process.

BASELINE ENVIRONMENTAL DESCRIPTION

Geology

Five main geological formations dominate the study area. In the north-west at Tembisa and to the west of Clayville, areas of granite-gneiss are found. Dolomite dominates the northern area between Clayville in the west and Bapsfontein in the east and all along the eastern boundary of the study area towards Putfontein, Strubenvale as far south as Kwa-Thema and Dunnotar. Another extensive area of dolomite is found in the south- west of Ekurhuleni in the Katorus area. Quartzite dominates the north-south central area from the west of Clayville in the north through Kaalfontein, to the east of OR Tambo Airport and in a broad band from west to east from Germiston to Springs. It also occurs north of Bapsfontein. Surface shale is found in the west, south of Bapsfontein and in the east, south of OR Tambo International Airport towards Germiston. Amphibolite occurs in the area around Edenvale east of Kempton Park and OR Tambo International Airport. A small area of surface dolomite occurs in the extreme south between Duduza and Vosloorus.

Climate

The climate is classified as warm and temperate according to the Köppen-Geiger climate classification. Bapsfontein is situated in the southern hemisphere. Summer months are: December, January and February while winter months are June, July, and August. Bapsfontein's summer months are subjected to more rainfall than winter months

Soil and Land Capability

The major soil types in the project area include those of the orthic phase Hutton, Griffin, Clovelly, along with the hydromorphic forms, including the Glencoe, Avalon, Witbank, Wasbank, Longlands, Kroonstad, Rensburg and Katspruit.).

Topography

The study area forms part of the major watershed between the rivers that drain west towards the Atlantic Ocean and those that drain east towards the Indian Ocean. The area can generally be regarded as flat with few outstanding topographical features. The following topographical features occur:

- Plains with pans
- Undulating plains with pans
- Strongly undulating plains
- Superimposed river valley (Blesbok Spruit) on plains with pans

- Ridges

Air quality

South Africa have established the legislation that governs and monitor the level of ambient air quality as per province. In terms of Section 24 of the Constitution of Republic of South Africa, as well as the National Environmental Air Quality Act (AQA, 2004), government is enjoined to ensure that South Africans are breathing air that is not harmful to their health and wellbeing. Section 8 of the AQA provides for national monitoring and information management standards and stipulates that the Minister must, in the National Framework, establish national standards for municipalities and provinces to monitor ambient air quality, among other requirements, in order to report compliance with ambient air quality standards. In order to meet this requirement, ambient air quality needs to be monitored, and this is done through deploying ambient monitoring stations in order to measure the quality of the air.

Fauna

Macro- and micro-habitat scales are utilized by faunal species within a given area, with certain ecological and behavioural factors (such as food availability, niche habitat, and decreased predation risk) determining continuing occurrence. Due to the presence of crucial movement corridors, it is crucial to keep in mind that faunal habitats and their related functions within the research region must be examined within the landscape matrix rather than in isolation. Faunal diversity and assemblages have probably been damaged by anthropogenic land conversion, habitat degradation, and fragmentation brought on by past and present agricultural activities as well as mining practices.

Flora

The majority of the project area is covered by the Carletonville Dolomite Grassland which its distribution is limited to North-West (mainly) and Gauteng and marginally into the Free State Province. It is found in the region of Potchefstroom, Ventersdorp and Carletonville, extending westwards to the vicinity of Ottoshoop. It also occurs in the far east of Centurion and Bapsfontein in Gauteng Province (Mucina and Rutherford, 2006). Carletonville Dolomite Grassland falls within a summer-rainfall region. The mean annual precipitation (MAP) is 593mm. High summer temperatures occur with severe frost in the winter (Mucina and Rutherford, 2006). The geology of the Carletonville Dolomite Grassland is dominated by Malmani Subgroup (Transvaal Supergroup) supporting mostly shallow Mispah and Glenrosa soil forms typical of the Fa land type. Deeper red and yellow apedal soils occur sporadically, representing the Ab land type.

Wetland

No natural wetlands were found within the project area except artificial wetlands that presumably formed as a result of the rehabilitation activities onsite. The natural wetlands were however found to occur within the 500m buffer area of the project site. These wetlands consist of valley bottom and seep wetlands and cover an extent of 42.26 hectares. From the results of the PES assessment, valley bottom wetland was classified as Moderately Modified (PES C), and seep wetland as Largely Modified (PES D). The Wetland IS assessment classified 93% of the wetlands on site as being of High ecological importance and sensitivity, 5% of Moderate ecological importance and sensitivity and 2% being of Low/Marginal ecological importance and sensitivity (i.e., artificial wetland).

Surface water

The study area falls within quaternary catchment A21A of the Crocodile (West) and Marico Water Management Area. The Rietvlei River and a channelled valley bottom wetland were observed approximately 0.05 km from the boundary of the Rietvlei quarry while an unchanneled valley bottom wetland occurs adjacent to the Irrigation Dam at Strawberry Farm within the study area. Chemical and biological monitoring is currently being undertaken by Corobrik on a quarterly basis from the 3 quarries and an irrigation dam within Corobrik factory. However, no water quality and levels monitoring are undertaken on the Rietvlei River and Wetlands that are within the 100 m and 500 m buffer zones.

Groundwater

The project area is associated with the fractured and weathered Karoo Aquifer and Karst aquifer due to the underlying dolomitic environment. The weathered and fractured Karoo aquifer consists of various lithologies of the siltstone, shale, sandstone, and coal seams in places. The weathered zone of the Karoo sediments hosts the unconfined or semi-confined shallow weathered Karoo aquifers or hydro-stratigraphic zone. The weathered zone is typically around 2 m to 21 m thick and water levels within this aquifer are often shallow. Due to direct rainfall recharge and dynamic groundwater flow through the unconfined aquifer in weathered sediments, the water quality is generally good, but in the absence of an overlying confining layer also vulnerable to pollution. Karst aquifers are aquifers that are formed by the dissolution of carbonate sediments i.e. dolomites.

Review of the Draft BAR and EMPr

The Draft BAR and EMPr reports are made available for public review for a period of 30 days, from the **25th of August 2023 to 26th of September 2023**. The I&APs are given time to review the reports and

the receipt of the I&AP's comments, concerns and comments received will be incorporated into the Draft BAR and EMPr to be finalized and submitted to the DMRE, the Gauteng Region.

The Draft BAR and EMPr will be available for public review for a period of 30 days, from **25th of August 2023** to **26th of September 2023** by following the below information:

Location	Contact
Hard Copies	
Winnie Mandela Community Public Library – S Mahlangu Drive, Winnie Mandela	(011) 999 4924
Es'kia Mphahlele Community Library – 347 Madiba St, Pretoria Central, Pretoria, 0002	(012) 358 8957
Corobrik (Rietvlei Factory) – R50 Delmas Road, Rietvlei, 1753	(011) 206 7000
Rietvlei Nature Reserve - 14 Game Reserve Ave, Rietvallei 377-Jr, Pretoria, 0181	(012) 358 1812
Electronic Copies	
On www.licebo.com (Public Review Documents: https://licebo.co.za/projects/public-review-documents) and/or requested from Licebo's offices.	013 692 0212 / 083 257 8869 Ralph.repinga@licebo.co.za

After 30 days public participation process ends, the comments received from Interested and Affected Parties will be captured and addressed in the Consultation Report's Comments and Response Register (CRR) which will be attached as part of **Appendix 5** of the Draft BAR and EMPr. The Draft BAR and EMPr will be submitted to DMRE Gauteng Regional Office for decision making on the **12th of October 2023**.

Invitation to a Public Meeting

A Public Meeting will be held to discuss the content of the project area and to obtain further stakeholder comments.

Notification for a Public Meeting	
Venue:	Pretoria Sailing Club
Date:	08 September 2023
Time:	11H00

PART A: BASIC ASSESSMENT REPORT



1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

1.1. Details of the EAP

1.1.1. Qualifications of the EAP

LEM was appointed by the Applicant as the Environmental Assessment Practitioner (EAP) to compile this report. The contact details of the LEM consultant who compiled the report are as follows:

Name and Surname	Lindokuhle Nsibande
Qualification	Senior Environmental Scientist BSc. Geography and Hydrology (University of Zululand) BSc Honours Hydrology (University of Zululand)
Professional Affiliation	South African Council for Natural Scientific Professions (SACNASP)
Registration Number	121682 Cert. Sc. Nat
Professional Affiliation	Environmental Assessment Practitioners Association of South Africa (EAPASA)
Registration Number	Candidate

Name and Surname	Johny Mafego
Qualification	Environmental Scientist Advanced Diploma in Environmental Sciences (Tshwane University of Technology)
Professional Affiliation	South African Council for Natural Scientific Professions (SACNASP)
Registration Number	148669 Cert. Sc. Nat
Professional Affiliation	Environmental Assessment Practitioners Association of South Africa (EAPASA)
Registration Number	Registered EAP
Registration Number	2021/4147

Environmental Assessment Practitioner company	Licebo Environmental and Mining (Pty) Ltd.
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details	
Name of the Practitioner	Mandla Ralph Repinga
Postal Address	Postal Address: P.O. Box 20519, Del Judor Extension 4, Witbank, 1044
Tel No.:	013 692 0212 or 083 257 8869
Fax No.:	086 667 1169
E-mail address:	ralph.repinga@licebo.co.za

1.2. Expertise of the EAP

1.2.1. Summary of the EAP's past experience

Johny Mafego (Report Compiler) has been appointed as an Environmental Scientist and Environmental Assessment Practitioner (EAP) for Licebo Environmental and Mining (Pty) Limited. He has been an environmental scientist since 2019, with the following roles and responsibilities:

- Undertaking and compilation of Environmental Authorisations (BARs, EIRs and EMPs), Water Use License applications (WULAs), Waste Management Licenses and Atmospheric Emission Licenses and other relevant environmental authorisation documents;
- Development and implementation of Environmental Management Programs (action plans), standard operation procedure and work instructions for projects where required;
- Conducting environmental site inspection and compilation of the weekly and monthly Environmental Control Officer's monitoring compliance reports;
- Conduct environmental authorization, waste management and water use license audits;
- Conducting environmental inspection and awareness training;
- Advice clients on environmental issues relating to air, land and water contamination (surface and groundwater) waste, water, noise, blasting, heritage and archeologist impacts as part of the ECO and audits;
- Compilation and updating of Integrated Water and Waste Management Plans (IWWMP) and Environmental Management Programme Performance Assessments;
- Compilation of prospecting and mining rights application and associated environmental authorisation documentations;
- Development of waste, water, energy and land management plans;

Lindokuhle Nsibande (Report Compiler) has been appointed as a Senior Environmental Scientist and Environmental Assessment Practitioner (EAP) for Licebo Environmental and Mining (Pty) Limited. She has been an environmental scientist since 2018, with the following roles and responsibilities:

- Undertaking and compilation of Environmental Authorisations (BARs, EIRs and EMPs), Water Use License applications (WULAs), Waste Management Licenses and Atmospheric Emission Licences.
- Conducting environmental site inspection and compilation of the weekly and monthly Environmental Control Officer's monitoring compliance reports;
- Implementation of the environmental Management Strategy;
- Development and implementation of Environmental Management Programs (action plans), standard operation procedure and work instructions for projects where required,
- Compilation of Integrated Water and Waste Management Plan (IWWMP), Rehabilitation Strategy and Implementation Plan (RSIP) as required in terms of the National Water Act and issued Water Use Licenses;
- Compilation of HSEC risk assessment and incident investigation with MH&S Act for LEM projects.
- Conducting environmental inspection and awareness training;
- Development of waste, water, energy and land management plans.
- Advice clients on environmental issues relating to air, land and water contamination (surface and groundwater) waste, water, noise, blasting, heritage and archeologist impacts as part of the ECO and audits.
- Conduct environmental authorization, waste management and water use license audits.
- •Compilation of technical reports/scientific reports.

Ralph Repinga (Reviewer) has more than 25 years of experience in the field of Environmental Impact Assessment and management, with 12 of those years spent in the coal mining sector. He is a registered professional environmental scientist with a MSc (Environmental Sciences) degree and registered professional natural scientist with the South African Council for Natural Scientific Professions (SACNASP) (Registration number: 400097/02) and is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) as an Environmental Assessment Practitioner (EAP) (Registration number: 2020/2084 (EAP)).

He started his career as an Environmental Officer with the Mpumalanga Department of Environmental Affairs and Tourism. He also worked for Transvaal Sugar Ltd as a Safety, Health, Environmental and Quality Training Officer. In March 2001, he was appointed by Ingwe Collieries (now BHP Billiton Energy

Coal South Africa (BECSA)) started as an Environmental Officer to Environmental Manager (for 6 years) within its various operations. He is currently working as the Managing Director and environmental consultant for Licebo Environmental and Mining (Pty) Ltd (LEM) since March 2012. He has an extensive environmental management experience especially focusing mostly construction projects, water management and coal mining industry.

As part of LEM, he has been involved in several environmental projects which includes environmental auditing (auditing of environmental authorisations and approvals), compilation of EIAs, EMPs, WULs, Waste Management Licences, undertaking public participation, socio-economic assessments supervision of environmental projects and other environmental related projects.

1.2.2. Summary of the Projects Undertaken by the EAPs.

As part of LEM, the EAPs have been involved in a number of environmental projects which includes environmental auditing (auditing of environmental authorizations and approvals), compilation of EIAs, EMPRs, WULs, Waste Management Licenses, undertaking public participation, socio-economic assessments supervision of environmental projects and other environmental related projects. Refer to

Table 1 below for some of the recent projects that he has undertaken:

Table 1: List of some of the projects completed by the EAPs.

Company	Project	Reference Person
Undertaking and compilation of EIA, Water Use Licences, Waste Management Licence and EMPR in terms of MPRDA)		
Seriti Power (Pty) LimitedLtd (BECSA) Khutala Colliery	EIA, EMP and Water Use Licence applications for Khutala Colliery: Khutala Southern Access Extension on behalf of Jaco – K Consulting – Completed.	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)
Shanduka Coal – Middelkraal Colliery	Updating of an Integrated Water and Waste Management Plan for Middelkraal Colliery on behalf of Jaco – K Consulting – Completed	Jaco Kleynhans (Jaco – K Consulting) Sunil Mungaroo (Shanduka Coal)
Shanduka Coal – Lakeside Mine and Springboklaagte Mine	Undertaking and compilation of a Water Use Licence and Basic Assessment for a water pipeline on behalf of Jaco – K Consulting – Completed	Jaco Kleynhans (Jaco – K Consulting) Sunil Mungaroo (Shanduka Coal)
Seriti Power (Pty) LimitedLtd (BECSA) Khutala Colliery	Undertaking and compilation of EIA, EMP, Water Use and Waste Management Licence applications for Khutala Colliery: Khutala Opencast Mining Project on behalf of Jaco – K Consulting – Completed	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)
Seriti Power (Pty) Limited Wolvekrans Colliery	Undertaking and compilation of a Basic Assessment Report for the Relocation and Construction of Power Line at Wolvekrans Colliery – Completed	Collen Mabada
Seriti Power (Pty) Limited Wolvekrans Colliery	Undertaking and compilation of a Basic Assessment Report for Fuel Storage Facilities at Wolvekrans Colliery – Completed	Collen Mabada
Ikoti Coal (Pty) Ltd: KwaZanele Colliery	Conducting and compilation of the Integrated Water Use Licence Application (IWULA) – Completed	Zabilon Inama (Director)
Groenfontein Collieries (Pty) Ltd	EIA, EMP and Water Use Licence applications for Groenfontein Colliery – Completed.	Malose Ledwaba
Anglo American Inyosi Coal (Pty) Ltd (AAIC) Kriel Colliery	Revision and updating of Kriel Colliery Rehabilitation Strategy and Implementation Plan (RSIP) – Completed	Maphuti Boloka (Environmental Coordinator)
Universal Coal Development I (Pty) Ltd	Undertaking and compilation of Kangala Colliery EMP amendment to include the Middelbult Section – Completed	Minah Moabi (Chief Environmental Manager)
Amatala Mining Services cc	Nooyensfontein prospecting right environmental authorisation applications involving the Basic Assessment Report and Environmental Management Programmes – 2016 (Completed).	Jimmy Mjoli
Mahulong Projects cc	Schulspruit and Palmietfontein prospecting right environmental authorisation applications involving the	Peter Makgato

Company	Project	Reference Person
	Basic Assessment Report and Environmental Management Programmes – Completed	
Anglo American Inyosi Coal (Pty) Ltd (AAIC) Zibulo Colliery	Compilation of Zibulo Colliery Opencast Operations Environmental Impact Assessment, Water Use Licence Application and Integrated Water and Waste Management Plan (IWWMP) – 2017 (Completed).	Melchior Joseph (Environmental Coordinator)
Seriti Power (Pty) Limited Khutala Colliery	Undertaking and compilation of Khutala Colliery EIR and EMPr consolidation – 2017 (Completed).	Shudufhadzo Tshusa (Specialist Environment)
Seriti Power (Pty) Limited Khutala Colliery	Undertaking and compilation of Khutala Colliery EIR, EMPr and WULA for the proposed 5 Seam Mining Project – 2021/2022 (Completed).	Nosipho Mosito (Specialist Environment)
Universal Coal and Energy Holdings South Africa (Pty) Limited North Block Complex (Pty) Ltd	Undertaking and compilation of Glisa Siding Environmental Authorisation and WULA – 2021/2022: Completed.	Nokuthula Cebekhulu. (Environmental Manager)
Mpumalanga Department of Public Works, Roads, and Transport (MDPWRT)	Mpumalanga Department of Public Works, Roads, and Transport (MDPWRT) New Witbank (eMalahleni) Tertiary Hospital Project including the Scoping & Environmental Impact Report and Environmental Management Programmes, and Water Use License Application (WULA) – Completed.	Phumudzo Sinugo
Undertaking and compilation of mining permits, prospecting rights applications including public consultation and associated BAR and EMPs		
Amatala Mining Services cc	Undertaking and compilation of the prospecting right applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Jimmy Mjoli Peter Makgato
Amatala Mining Services cc	Compilation of the Nooitgedacht prospecting right applications involving the Basic Assessment Report and Environmental Management Programmes for Amatala Mining Services cc – Completed	Jimmy Mjoli Peter Makgato
Amatala Mining Services cc	Undertaking and compilation of the Kreiger Holm prospecting right application involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Jimmy Mjoli Peter Makgato
Sebenzani Trading 94	Kaallaagte prospecting right applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Jacob Mnisi (Director)
Sebenzani Trading 94	Kafferstad prospecting right applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Jacob Mnisi (Director)
Lizwelakhe Solutions (Pty) Ltd	Lizwelakhe Mining Permit and Environmental Authorisation application – Oct 2021 – May 2022	James Lukhele (Director)
Fairy Wing Trading 52 (Pty) Ltd	Fairy Wing Nooitgedacht Prospecting Right Applications including involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Sipho Msane (Director)
Bonizenzo Holdings (Pty) Ltd	Bonizenzo Rooderand 41 JP Prospecting Right with Bulk Sampling involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Peter Makgato (Director)

Company	Project	Reference Person
Bonizenzo Holdings (Pty) Ltd	Bonizenzo Rooderand_902 JP and 41 JP Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Peter Makgato (Director)
Lihlesandy (Pty) Ltd	Lihlesandy Prospecting Right Applications involving the Scoping & Environmental Impact Report and Environmental Management Plans – Completed.	Peter Makgato (Director)
Mebs Resources (Pty) Ltd	Mebs Vlakvlei Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed	Sipho Msane (Director)
Mebs Resources (Pty) Ltd	Mebs Nooigedacht_17 Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed	Sipho Msane (Director)
Zee Minerals (Pty) Ltd	Zee Minerals Wolgevonden Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Sipho Msane (Director)
Zee Minerals (Pty) Ltd	Zee Minerals Giglio Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Sipho Msane (Director)
MM4C Investments (Pty) Ltd	MM4C Holpan Prospecting Right Application with Bulk sampling and Environmental Management Plans – Completed.	Peter Makgato (Director)
MM4C Investments (Pty) Ltd	MM4C Heidelberg Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed	Peter Makgato (Director)
African Exploration Mining and Finance Corporation Soc (Pty) Ltd	AEMFC Prospecting Right Applications involving the Basic Assessment Report and Environmental Management Programmes – Completed.	Nobuhle Hughes
Lwabantu Mineral Resources (Pty) Ltd	Lwabantu Mining Permit and Environmental Authorisation application – Pending	Peter Makgato
Undertaking of public participation and socio-economic assessments		
Prime Resources	Public Participation Process for the KaNgwane Central Anthracite Mine – Completed.	Jonathan van de Wouw
Prime Resources	Public Participation Process for the KaNgwane South Anthracite Mine – Completed	Peter Theron
Seriti Power (Pty) LimitedLtd (BECSA) Pegasus Coal Mine	Conducting and compilation of specialist study: Public participation, community baseline survey and socio-economic assessment for Pegasus Coal Mine Opencast operation on behalf of Jaco – K Consulting – Completed.	Jaco Kleynhans (Jaco – K Consulting) Clinton Lee (BECSA)
Koornfontein Mines	Conducting and compilation of specialist study: Community baseline survey and socio-economic assessment for Vlaklaagte Opencast operation on behalf of Jaco – K Consulting – Completed.	Jaco Kleynhans (Jaco – K Consulting) Kubashni Mari (Koornfontein Mines)
Koornfontein Mines	Conducting and compilation of specialist study: Community baseline survey and socio-economic assessment for Vlaklaagte Opencast operation on behalf of Jaco – K Consulting – Completed.	Jaco Kleynhans (Jaco – K Consulting)

2. LOCATION OF THE OVERALL ACTIVITY

2.1. Description of the property to which the authorisations are being applied

The table below provides details on the properties that fall within the project Mining Right Area.

Table 2: Location of activity

Farm Name:	Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkoppies no 393 JR
Application Area (Ha):	211.3154 Ha.
Magisterial District:	Corobrik Rietvlei is situated in the Magisterial District of Bronkhorstspuit.
Distance and direction from nearest town	Corobrik Rietvlei is within Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkoppies no 393 JR, situated in the Magisterial District of Bronkhorstspuit in both City of Tshwane and Ekurhuleni Metropolitan Municipalities, Gauteng Province. Corobrik Rietvlei Mine is situated along the R50 (Old Delmas) Provincial Road, between Pretoria and Bapsfontein, approximately 12km to the north west of Bapsfontein and on the southern part of the City of Tshwane Municipality and Rietvlei Nature Reserve, Gauteng Province.
21-digit Surveyor General Code for each farm portion	Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkiopies 393 JR T0JR00000000039300026 T0JR00000000039300027

2.2. Locality Map

(Show nearest town, scale not smaller than 1: 250 000 as **Appendix 2**)

Locality map	Corobrik Rietvlei Mine is situated along the R50 (Old Delmas) Provincial Road, between Pretoria and Bapsfontein, approximately 12km to the north west of Bapsfontein and on the southern part of the City of Tshwane Municipality and Rietvlei Nature Reserve, Gauteng Province, South Africa. Refer to Figure 1 for the Regional Plan and Figure 2 to Figure 3 for the project's locality maps. The mine shares common boundaries with:
---------------------	--

- | | |
|--|---|
| | <ul style="list-style-type: none">• Rietvlei Nature Reserve to the north;• The Witkoppiespruit to the west;• The R50, provincial road, to the east; and• The Nova Brick Surface Mine situated adjacent to the Corobrik Rietvlei Surface Mine to the east of the R50 provincial road. |
|--|---|

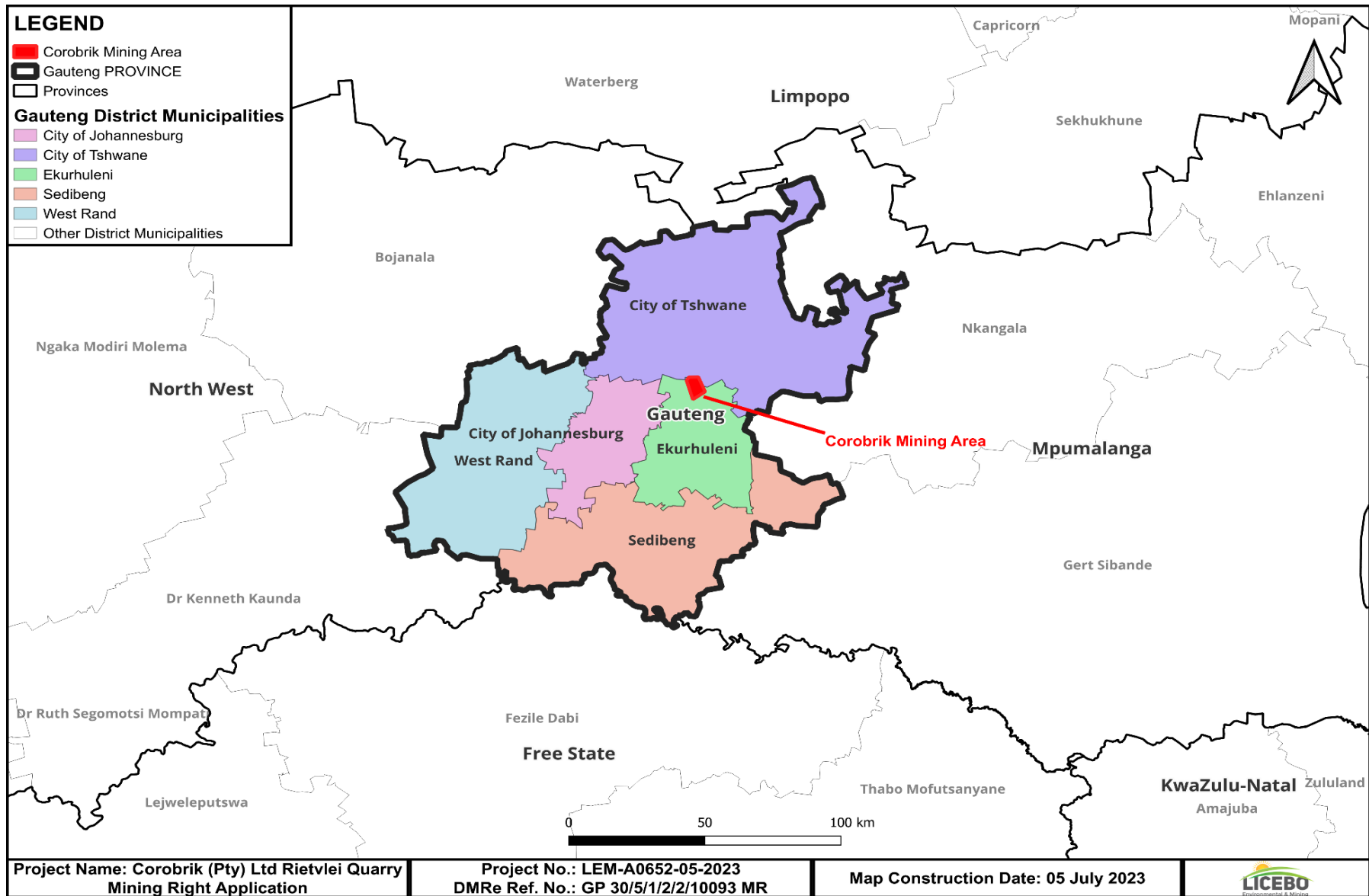


Figure 1: Regional map of the project area.

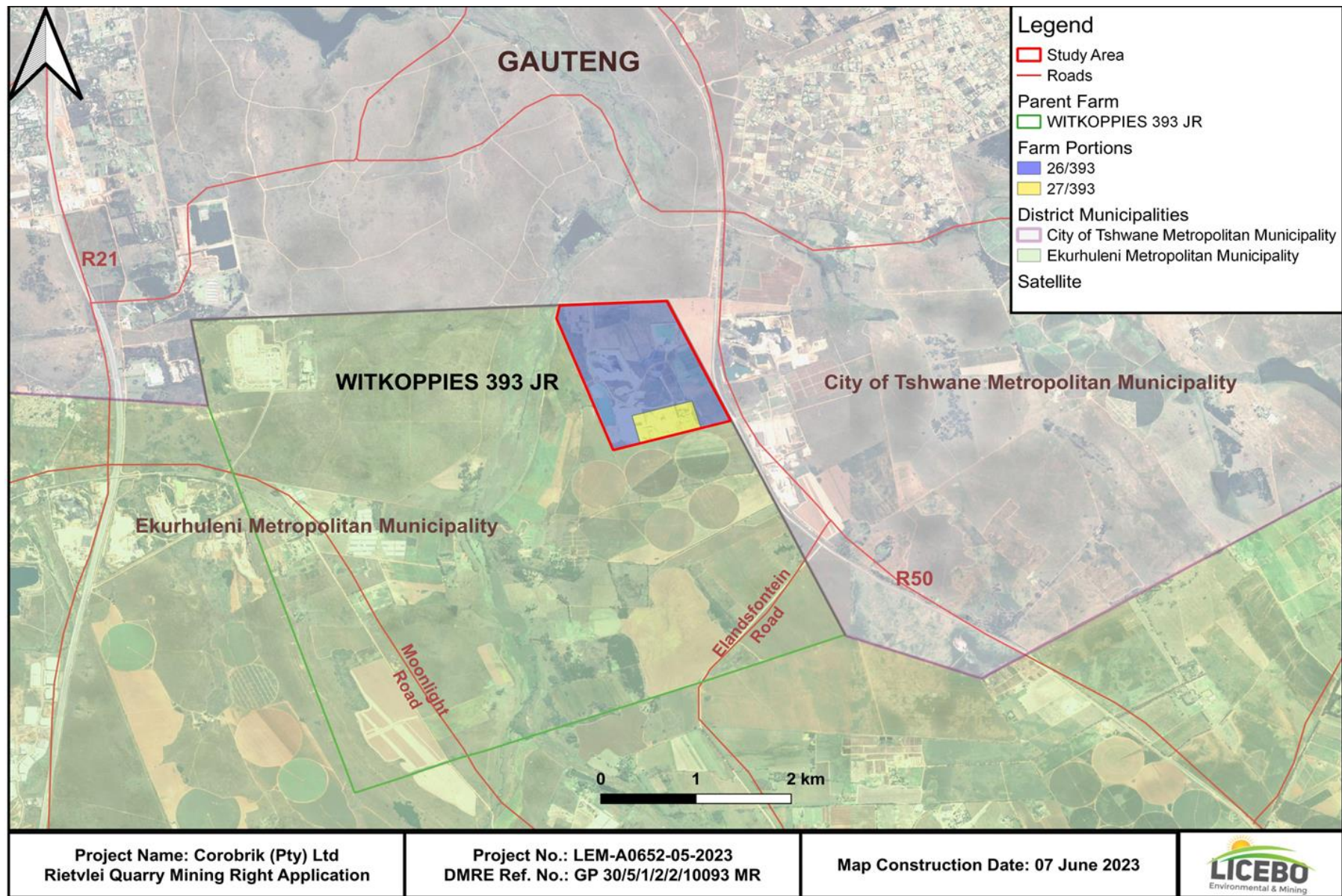


Figure 2: Locality map of the project area.



Figure 3: Land tenure of the project area.



Figure 4: Infrastructure of the project area.

Table 3: Landowners and surface rights ownership

Farm	Farm Portion	Surface Rights Owner	Title Deed	Registration Date	SG Code
Witkoppies 393 JR	26	Corobrik (Pty) Ltd	T7094/2009	2009/02/10	T0JR00000000039300026
	27	Corobrik (Pty) Ltd	T7094/2009	2009/02/10	T0JR00000000039300027

Table 4: Adjacent surface right owners

Farm	Farm Portion	Surface Rights Owner	Title Deed	Registration Date
Rietvallei 377 JR	2	City of Tshwane Metropolitan	T10366/1929	1929/08/30
	4	City of Tshwane Metropolitan	T10366/1929	1929/08/30
Grootfontein 394 JR	2	City of Tshwane Metropolitan	T1185/1929	1929/10/01
	RE	P P & M C Trust	T60649/1996	1996/07/10
Witkoppies 393 JR	76	Chieftain Real Estate inc in Ireland	T141724/2005	2005/11/02
	34	City of Tshwane Metropolitan	T84860/2003	2003/05/19

3. DESCRIPTION OF THE SCOPE OF THE OVERALL ACTIVITY

The provisional layout plan is illustrated in **Figure 2**. The project activities as well as the aerial extents of the activities are provided in **Table 5**. The table also provides an indication of those activities listed in terms of the EIA Regulations, 2014 and the List of Waste Management Activities listed in terms of the NEWM: WA, refer to **Table 5** below.

3.1. Listed and specific activities

With reference to the section 102 mining right amendment activities, the following listed activities in terms of NEMA EIA Regulation 2014 Government Notice (GN R) 982 as amended have been triggered. The listed activities triggered are mainly associated with the coal mining activities including stockpiling and related infrastructure.

Table 5: Listed and specific activities applied as part of this project.

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc E.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
The developments of – (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) Infrastructure or structures with a physical footprint of 100 square metres or more; Where such development occurs – within a watercourse; or Where such development occurs – (c) If no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse. Activities associated with the Pollution Control Dam, Canals and Pit areas including associated infrastructure in proximity to watercourses.	Approximately 5500 m ²	Activity Number 12	GNR 983, as amended – Listing Notice 1.	Not applicable
Any activity including the operation of that activity which requires an amendment or variation to a right or permit in terms of section 102 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity contained in this Listing Notice or in Listing Notice 3 of 2014, required for such amendment. Activities associated with the section 102 amendment of the Mining Right to include coal	Approximately 33 ha within the current Mining Right area.	Activity Number 21D	GNR 983, as amended – Listing Notice 1.	GNR 633 on 24 July 2015. Category B: Activity 11: The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc E.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
mining.				require a mining right, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
The development of a road– (ii) with a reserve wider than 13.5 metres, or where no reserve exists where the road is wider than 8 metres. Activities associated with the development, construction and operation of the mine haul and service roads within the mining right area.	Approximately 16 390 m ²	Activity Number 24 (Existing Activity as part of the current Mining Right Activities)	GNR 983, as amended – Listing Notice 1.	Not Applicable
The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Approximately 33 ha within the current Mining Right area.	Activity 27	GNR 983, as amended – Listing Notice 1.	Not applicable

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc E.g. for mining , - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)
Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, industrial or institutional purposes. Activities relating to the mining activities of both clay and coal which will fall which the institutional development within City of Tshwane Metropolitan and Ekurhuleni areas.	Approximately 211 Ha	Activity Number 28	GNR 983, as amended – Listing Notice 1.	Not applicable
The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. f- Gauteng Province (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (ii) Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plan. Activities relating to the total extent of the mining right area in relation to the critical biodiversity areas as per the Gauteng CBA.	Approximately 211 ha	Activity Number 12 (i) and (ii)	GNR 985, as amended – Listing Notice 3.	Not Applicable

Environmental authorisation for the above-mentioned listed activities will be applied for through the undertaking of a Basic Assessment (BA) Process as stipulated in Chapter 4, Regulation 19 of NEMA EIA Regulation 2014 as amended.

3.2. Project activities and phase description

This section provides a preliminary description of activities that are part of the Corobrik Rietvlei Mining Area. Each activity can be linked to the mining processes, waste management and any other associated activities. These activities act as driving forces that exert pressure on the natural environment, ultimately resulting in impacts on the biophysical, social and cultural environments.

Corobrik is undertaking an opencast clay mining activity and thus applying for the rectification to apply for the environmental authorisation in support of the to include coal in terms of Section 102 Mining Right Amendment application as required in terms of MPRDA. The mining activities relating to coal and associated infrastructure have been undertaken as part of the coal mining activities, such as Pollution Control Dam (PCD), coal ROM stockpile and storm water management clean. Activities that will be undertaken as part of the Rietvlei mining area are listed in **Table 6** below:

Table 6: Existing and planned activities of Corobrik Rietvlei mining area.

Activity No.:	Proposed activities to take place
Construction Phase	
Activity 1	Construction phase completed as part of the existing undertaken mining activities.
Operational Phase	
Activity 2	Recruitment, procurement and employment
Activity 3	Operation of Corobrik mining activities
Activity 4	Drilling and soft-blast of hard overburden.
Activity 5	Extraction of coal, loading and stockpiling
Activity 6	Operation of the RoM Stockpile and associated water management infrastructure.
Activity 7	Transportation of coal
Activity 8	Dirty water management
Activity 9	Waste and sewage generation and disposal
Rehabilitation, Decommissioning and Closure Phases	
Activity 10	Retrenchment of mine employees and staff.
Activity 11	Demolition of infrastructure
Activity 12	Final rehabilitation
Post-Closure	

Activity No.:	Proposed activities to take place
Activity 13	Aftercare and Maintenance

4. DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

(Description methodology of technology to be employed, and for a linear activity, a description of the route of the activity)

Background Information for the project areas

Licebo Environmental and Mining (Pty) Ltd ((Hereafter referred as 'LEM') has been appointed by Corobrik (Pty) Limited (Hereafter referred as 'Corobrik') to undertake the Environmental Authorisation amendment process in terms of Section 102 of MPRDA and in terms of Section 24G of NEMA to rectify the undertaking of listed activities without the required Environmental Authorisation in respect to coal mining activities on the Corobrik Mining Right that was issued under Department of Mineral Resources and Energy Reference No.: **GP 30/5/1/2/2/10093 MR.**

The Corobrik mining activities are undertaken on Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkoppies No.393 JR, situated at Magisterial District of Bronkhorstspuit in both City of Ekurhuleni and City of Tshwane Metropolitan Municipalities. Corobrik obtained a mining right that only included the clay; however, coal was discovered during the process of mining clay, therefore an amendment of the existing Corobrik mining right must be undertaken to include the coal as required in terms of the Section 102 of Mineral and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA) as amended. This process involves the compilation of the combined NEMA and NEMWA Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) and Waste Management Licence Application (WMLA) for the mining activities. This application process will be undertaken in terms of GNR 983 as amended – Listing Notice 1 in respect to listing activities: 12, 21D, 24, 27, and 28; GNR 985 as amended - Listing Notice 3 for Listing activity 12; and NEMWA Listed activity 15 on Category B. To commence with mining activities Corobrik must obtain the following:

- Environmental Authorization in terms of the National Environmental Management Act, Act No 107 of 1998 (NEMA) as amended; and
- Waste Management License in terms of the National Environmental Management Waste Act, Act No 59 of 2008 (NEM WA) as amended.

4.1. Mining area

The mining right area at Corobrik covers extent of 211.3154 Ha, refer to **Figure 2, Figure 4** and Figure 4 showing the farm portions to be impacted by mining activities.

4.2. Supporting mining activities and associated infrastructure

The project area is situated on the cultivated field, since this is not a new development there is existing infrastructure which is utilised during the clay mining activities. Since this is a rectification, the existing infrastructure includes:

- Maize Quarries or Mining Pits.
- Coal ROM stockpile.
- Clay Product Stockpiles.
- Softs and Overburden Dumps.
- Topsoil Stockpiles.
- Access and haul roads.
- Hard Park Areas
- Water Management infrastructure (PCD).
- Overburden dump.

4.3. Mining operational plan

Corobrik is the holder of a valid mining right for clay and shale over the entire mining right area. Corobrik is also the registered landowner of the property. As part of Corobrik's mining activities on site and historical drilling conducted on site, Corobrik confirmed the existence of coal ore bodies on the property. As the mineral is confirmed and economically viable to mine and is of strategic importance to the economy of South Africa Corobrik took the decision to apply for the consent of the Minister to include the coal into its existing mining right.

The existing clay and shale sit directly on top of the coal reserve and is financially sound to remove this resource instead of sterilising the reserve by rehabilitating the area with high value coal reserves still contained in the property. The removal of the coal ore body will also help to prevent potential latent impact. By removing the high value coal ore body, it also reduces the potential future impact of groundwater pollution and further environmental liabilities. The estimated life of the coal is approximately 5 years.

4.4. Roads, railway lines, powerlines

The R50 Delmas Road is to the east of the project area. Eskom Transmission Electricity Powerlines servitude have been identified and runs to the north of the mining project area. No railways have been identified within and in proximity of the study area.

4.5. Housing, recreation and other employee facilities

No housing or recreational facilities are located within the mining site. The Rietvlei Nature Reserve

5. POLICY AND LEGISLATIVE CONTEXT

Table 7: Applicable policies, guidelines, and legal requirements for this project

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>				How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
EIA Process and Listed Activities	Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MRPDA)	Section 2 of NEMA	Sets out the principles of environmental management	Section 2 principles are to be considered during the environmental impact assessment process	Whole document
		Chapter 5 of NEMA	Integrated environmental management, provides information on environmental management tools that promote the implementation of principles set out in Section 2 of NEMA	Environmental management tools are to be considered during the EIA process for the project.	Whole document

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>		How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>		Reference where applied
Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
	Government Notice Regulation (GNR) 982 as amended by GNR 326 of 2017.	Chapter 2: Timeframes Chapter 3: General requirements for applications Chapter 4: Application for environmental authorisation Part 1 and 2) Chapter 6: Public participation process Chapter 7: General matters	Basic Assessment must be undertaken in accordance to Regulation 983.	Whole document
	GNR 983 as amended by GNR 327 of 2017 (Listing Notice 1).	Lists activities requiring a basic environmental assessment	Environmental authorisation must be obtained prior to commencement with listed activities	Whole document and section 3.1.
	GNR 985 as amended by GNR 324 of 2017 (Listing Notice 3).	Lists activities for specific identified geographical areas.	Environmental authorisation must be obtained prior to commencement with listed activities	Whole document and section 3.1

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>		How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>		Reference where applied	
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
		Guideline 4 and Guideline Series 7	Public Participation in support of the EIA regulations Public Participation Guideline	The public participation process to be followed.	Section 8 and Appendix 4 Public Participation Report
		Guideline 5	Assessment of Alternatives and Impacts	The EIA process to be followed	Section 8
Mining	Minerals and Petroleum Resources Development Act, Act 28 of 2002 as amended	GNR 527	Pollution Control and Waste Management Regulation	The following impacts are included in the BAR: Mining activities associated impacts; Surface and groundwater impacts; Socio-economic impacts; Waste management; and Soil.	Section 8 and the EMPr

-Applicable legislation and guidelines used to compile the report (A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)				How does this development comply with and respond to the legislation and policy context (E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
Biodiversity	National Environmental Management: Biodiversity Act, Act 10 of 2004 as amended	Regulation 151 Publication of critically endangered, vulnerable and protected species	No person may carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit.	A mining right might be required prior to removal of endangered, vulnerable and protected species that might be identified and impacted within the study area.	Section 18 and the EMPr.
	National Environmental Management: Protected Areas Act, Act 57 of 2003 as amended	Applicability to the whole Act.	In respect to the declaration of protected areas and management thereof.	Presence of protected and privately owned nature and conservations reserves / areas.	Section 18 and the EMPr.
	National Forests Act, Act 84 of 1998	Notice 835 List of Protected tree species under the Act	No person may carry out a restricted activity on any protected tree except if there is a licence granted by the minister.	A licence might be obtained prior to removing any protected trees on site.	Section 9.1.5, 18 and the EMPr.

-Applicable legislation and guidelines used to compile the report (A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)				How does this development comply with and respond to the legislation and policy context (E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
	Northern Cape Nature Conservation Act, 2009 Act 9 of 2009 as amended	NEMBA various applicable sections	Any person may carry out a restricted activity involving a specimen of an exempted species without a permit or license mentioned in section 24(1)	A permit will be required for the removal of protected plants that may be cleared as a result of the extension project.	Section 18 and the EMPr.
Waste Management	National Environmental Management: Waste Act, Act 59 of 2008 as amended	NEMWA various applicable sections	Waste management as part part of the project's construction and operation.	Management of waste that will be generated as part of this project to prevent environmental pollution and littering.	Section 18 and the EMPr.
Water Use	National Water Act, 36 of 1998	NWA various applicable sections	Water management as part part of the project's construction and operation.	Water management as part of this project to prevent the contamination and pollution of water resources.	Section 9.1.7 to 9.1.8

-Applicable legislation and guidelines used to compile the report (A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)				How does this development comply with and respond to the legislation and policy context (E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
Protection of water resources	National Water Act, 36 of 1998 GN 704	All applicable regulation forming part of GN 704	Regulations on use of water for mining and related activities aimed at the protection of water resources	Application for the exemption from the requirements of the identified activities.	Section 9.1.7 to 9.1.8
Heritage Resources	National Heritage Resources Act , Act 11 of 1999	Section 38	Any person who intends to undertake a linear development exceeding 300m and undertaking a development exceeding 5 000m ² must inform the responsible heritage resources authority.	South African Heritage Resources Agency (SAHRA) has to be notified of the development	Section 9.1.9

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>				How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
		Section 3 and other applicable sections of NHRA Act 11 of 1999 as amended.	Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.	If any heritage resources of significance are exposed during the project in the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped, and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. If any heritage resources, including graves or human remains, are encountered these must be reported to South African Heritage Resources Agency immediately.	EMPr.

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>				How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
Veld Fires	National Veld and Forest Act 101 of 1998	Chapter 4 Section 12	Places a duty on owners to prepare and maintain firebreaks. The procedure in this regard and the role of adjoining owners and the fire protection association are dealt with.	A firebreak must be maintained around the mine perimeter fence.	Refer to the EMPr
Land Use Management	Conservation of Agricultural Resources Act 1983 (Act No 43 of 1983)	Regulation 280 of 2001	Requires the landowner to manage agricultural resources i.e. the removal of invasive species, protection of soils against water and wind erosion and the management of water resources.	An alien invasive species plan must be developed for the mine and a land use and soil management plan must be developed.	Section 9.1.4 and the EMPr

-Applicable legislation and guidelines used to compile the report <i>(A description of the policy and legislative context within which the development is including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</i>				How does this development comply with and respond to the legislation and policy context <i>(E.g., In terms of the National Water Act a Water Use Licence has/has not been applied for)</i>	Reference where applied
	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication	
	City of Thswane Metropolitan Municipality Spatial Planning and Land Use Management By-Law Gauteng Province (Notice 1783 of 2017)	Chapter II Development Management: Section 5: Rezoning of Land	The rezoning of land may be made applicable to a land unit or part thereof, and zoning of land need not follow the boundaries of land as registered in terms of the Deeds Registries Act.	Any other application for temporary use submitted in accordance with the By-laws of the Municipality.	

6. NEED AND DESIRABILITY OF THE ACTIVITY

The Broad-Based Socio-Economic Empowerment Charter for the South African Mining industry, hereafter referred to as “the Mining charter”, is a government instrument designed to effect sustainable growth and meaningful transformation of the mining industry. The Mining Charter seeks to achieve the following objectives:

- To promote equitable access to the nation’s mineral resources to all the people of South Africa.
- To expand opportunities substantially and meaningfully for Historically Disadvantaged South Africans (HDSA) to enter the mining and metals industry and to benefit from the exploitation of the nation’s mineral resources.
- To utilise and expand the existing skills base for the empowerment of HDSA and to serve the community.
- To promote beneficiation of South Africa’s mineral commodities; and
- Promote sustainable development and growth of the mining industry.

If the mining right application is approved, the mining activities will be undertaken. The coal and clay minerals will be mined within the project area in a safe manner and will improve the economy. This will also result in sale of coal mineral to both domestic and international markets, and thus contribute to poverty reduction, poverty relief and poverty alleviation as measures for both economic and humanitarian measures intended to permanently lift people out of poverty and furthermore contribute to the country’s economic development benefits. In terms of 2(1)(f) of Appendix 2 of GNR. 982 of the 2014 EIA Regulations, as amended, this section discusses the need and desirability of the project. The format contained in the Guideline on Need and Desirability (DEA&DP, 2009) has been used in (see **Table 8**).

Table 8: Need and Desirability for the Corobrik Mining Activity

Item No.	Need and Desirability Requirement	Response
Need (Timing of the project)		
1.	Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e., is the project in line with the projects and programmes	<p>The SDF for the City of Tshwane and Ekurhuleni Metropolitan municipality acknowledges that mining contributes to the economics of the municipality.</p> <p>The 2020/21 IDP City of Tshwane and Ekurhuleni metropolitan municipality has identified mining as</p>

Item No.	Need and Desirability Requirement	Response
	identified as priorities within the IDP).	one of the economic sectors.
2.	Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?	Refer to response for item 1 above.
3.	<p>Does the community/area need the activity and the associated land use concerned (is it a societal priority)?</p> <p>This refers to the strategic as well as local level (e.g., development is a national priority, but within a specific local context it could be inappropriate)</p>	It should be indicated that the City of Ekurhuleni and City of Tshwane has already considered and identified mining as part of the SDF and IDP.
4.	Are the necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	<p>As part of the mining activities, water will be used on a large scale.</p> <p>Existing water resources will be utilized to source water.</p> <p>All services required for the development of the mining right, are explained in Section 3.2</p>
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services)?	<p>The project aims to improve the socio-economic aspect in both City of Tshwane and Ekurhuleni Metropolitan Municipalities and surroundings.</p> <p>See the response in item no. 1 above in terms of the reference.</p> <p>No additional municipal infrastructure that will need to be constructed as part of this mining activity</p>
6.	Is this project part of a national programme to address an issue of national concern or importance?	Yes, the mining right activities forms part of the DMRE Mining Strategy to develop mineral resources and energy sector that promotes

Item No.	Need and Desirability Requirement	Response
		economic growth and development, social equity, and environmental sustainability.
Project Desirability		
7.	Is the development the best practicable environmental option (BPEO) for this land/site?	<p>The project area is situated within agricultural area. Some portion of the property is covered by natural land which is uncultivated although, in northern side of the property there is a high voltage power lines passing through to R50 road with irrigation area on the eastern side of the property.</p> <p>The mining activities will be undertaken in the both City of Tshwane and City of Ekurhuleni Metropolitan Municipalities, in Gauteng Province. The activities will be undertaken within the various farm portion as indicated on Table 2 which are prime agricultural land and residential area. The activities will be undertaken within the various farm portions as mentioned which are prime agricultural land and few residential areas close to the farms.</p> <p>An Environmental Authorization process as per this application has been undertaken to ensure that the related potential environmental impacts are identified, assessed, and quantified in order to implement the best practicable environmental options associated with the mining activities. Refer to the environmental impacts and related EMPr.</p>
8.	Would the approval of this application compromise the integrity of the existing approved municipal IDP and SDF as	It is not anticipated that the project will contradict or be in conflict with the municipals IDPs and SDFs (refer to response provided above to item

Item No.	Need and Desirability Requirement	Response
	agreed to by the relevant authorities?	no. 1).
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g., as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	<p>According to Mucina and Rutherford (2006), the study area is situated between the Carletonville Dolomite Grassland, Rand Highveld Grassland. The majority of the project area is covered by the It is found in the region of Potchefstroom, Ventersdorp and Carletonville, extending westwards to the vicinity of Ottoshoop. It also occurs in the far east of Centurion and Bapsfontein in Gauteng Province.</p> <p>The study area forms part of the Crocodile (West) and Marico Water Management Area. The Rietvlei river flows about 0.05 km from the north western boundary of the study area while the Hennops river flows approximately 1.2 km north eastern boundary of the study area.</p> <p>Based on a systematic biodiversity strategy, the Bioregional Plan based on Critical Biodiversity Areas designed and described in Gauteng C-Plan v3.3 (GDARD, 2013), a systematic biodiversity plan developed by the Gauteng Department (GDARD) identifies a network of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the province.</p>
10.	Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the project land use on this site within its broader context).	Refer to response on item 7 above.
11.	How will the activity or the land use	Refer to a discussion of the status quo of the

Item No.	Need and Desirability Requirement	Response
	associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	built, natural and socio-economic environment, and potential impacts in Section 4.5.
12.	How will the mining project impact as part of the projects contained in as part of the potential environmental impacts on people's health and wellbeing (e.g., in terms of noise, odours, visual character and sense of place, etc.)?	See compilation of the identified environmental impacts associated with the project contained in Section 11.1
13.	Will the project activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	If the mining right application is approved and the mining activities are undertaken, this will mean that the minerals/commodities that the authorization was approved for will be mined for the period of 30 years. This will also result in sale of minerals to both domestic and international markets, and thus contribute to poverty reduction, poverty relief and poverty alleviation as measures for both economic and humanitarian measures intended to permanently lift people out of poverty and furthermore contribute to the country's economic development benefits.

6.1. Economic Consideration

The mining activities will result in sale of minerals to both domestic and international markets, and thus contribute to poverty reduction, poverty relief and poverty alleviation as measures for both economic and humanitarian measures intended to permanently lift people out of poverty and furthermore contribute to the country's economic development benefits. Jobs and business opportunities will then be created as part of the development, construction, and operation of the mine on areas.

6.2. Social Consideration

The mining activity will have several advantages for the local community. The mining activity will provide an income generation for the area, as well as a cash injection into the country's economy. The continuation of the existing current local labour workforce at Corobrik will ensure that it maintains the reduced unemployment rate in the area, as well as allow for the uplifting of the project construction employees.

The Social and Labour Plan (SLP) will be implemented to ensure that workforce and local community are empowered. In addition to the aforesaid, the socio-economic benefits, the mining project will result will result in employment opportunities and skills development in the area mostly during the construction phase.

It is also anticipated that the project might result in noise from mining activities and although minimal, there is also a potential for the following socio-economic impacts:

- Influx of migrate job seekers, increase crime as a result of job seekers not finding employment and resulting in undertaking of criminal activities; and
- Influx of hawkers seeking for business opportunities and increase in traffic.

These health and safety risks will be addressed as part of the recommended mitigation measures as per the specialist's recommendations.

6.3. Environmental Consideration

The project aims to manage the environmental conditions through the following processes which have been discussed below:

- Implementation of the mitigation measures as detailed on the EMPr.
- Managing of storm water within the mining right areas; and
- Avoid and/or minimise the impacts on nature conservation areas.

6.4. Health and Safety Consideration

The mining activities will be undertaken adjacent to agricultural land with predominately vegetables farming, this has a potential impact on health and safety during the mining activities.

7. DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE SITE.

NB!!- this section is not about the impacts assessment itself; it is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives of the initially site layout as a result.

7.1. Details of all alternatives considered.

One of the objectives of an environmental authorization process is to investigate alternatives to the project. The Integrated Environmental Management procedure stipulates that the environmental investigation needs to consider feasible alternatives for any development. Therefore, several possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. To ensure that the development enables sustainable development, feasible alternatives must be explored.

It should be indicated that this is a rectification application in terms of 24 (G) read together with Section 24 (F) of the NEMA. Although alternatives have been considered and assessed, the mining operations were undertaken within the mining right area. Thus, this application has been undertaken in order to remedy the current mining activities which have been undertaken unlawfully without the approved environmental authorization.

The identification, description, evaluation, and comparison of alternatives are important for ensuring a sound environmental process. Alternatives should be considered as a norm within the Environmental Process. The alternatives considered for the development includes associated infrastructure location alternatives, method alternatives, technology alternatives, and the No-go option. The preferred alternatives will be assessed against the status quo in the draft BAR, in terms of environmental, social and technical feasibility.

The Corobrik Rietvlei Mine

The project activity is located on the Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the farm Witkoppies No.393 JR. The Basic Assessment is aimed at identifying and screening alternatives to ensure that they are reasonable and feasible. It must be indicated that the location for this project is based on the mineral resource.

The following section provides an overview of the alternatives identified; these include:

- Associated infrastructure and layout alternatives;
- Mining method alternatives;

- Coal handling and processing alternatives
- No-go option.

7.1.1. Associated infrastructure location and layout alternative.

As mentioned before the project area is predominately occurring with current mining areas and cultivated land. Corobrik has considered the following geological information when deciding to mining within the selected farming portion. Corobrik is the holder of a valid mining right for clay and shale over the entire mining right area.

Corobrik is also the registered landowner of the property. As part of Corobrik's mining activities on site and historical drilling conducted on site, Corobrik confirmed the existence of coal ore bodies on the property. As the mineral is confirmed and economically viable to mine and is of strategic importance to the economy of South Africa Corobrik took the decision to apply for the consent of the Minister to include the coal into its existing mining right.

The existing clay and shale sit directly on top of the coal reserve and is financially sound to remove this resource instead of sterilising the reserve by rehabilitating the area with high value coal reserves still contained within the property. The removal of the coal ore body will also help to prevent potential latent impact that might result in potential spontaneous combustion of this coal if left within the pit. By removing the high value coal ore body, it also reduces the potential future impact of groundwater pollution and further environmental liabilities as a result of further deteriorating water qualities.

7.1.2. Mining Method Alternatives

Mineral reserves are to be mined using opencast mining method. The choice of mining method is largely determined by the geology of the mineral that are mined by Corobrik. As mentioned above, the existing clay and shale sit directly on top of the coal reserve and is financially sound to remove this resource instead of sterilising the reserve by rehabilitating the area with high value coal reserves still contained within the properties. An array of surface mining techniques exists; however, technical and economic feasibility studies are required to determine which process is best. These studies are based on the regional geologic conditions, including characteristics of the project area; coal reserve; thickness; structure; quality; and depth and strength.

7.1.3. No-go alternative (Option of not implementing the activity)

The Impact Assessment Phase requires that all development alternatives be included into the investigation process. The No-Go alternative will entail leaving the site in its present state and the

mining activities will not take place. This will mean that the potential mineral resource(s) within the study area remains not extracted and these coal reserves will thus be sterilised and not mined within the properties.

- No knowledge if the accepted commodities are present within the project area and that the opportunity of mining the coal will be of economic value or not.
- Future socio-economic opportunities if the project were to be approved to undertake the mining activities and thus create potential value to create socio-economic benefits including jobs and business opportunities including the mining and transportation thereof.

8. DETAILS OF THE PUBLIC PARTICIPATION PROCESS TO BE FOLLOWED

8.1. Public Participation Methodology

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant I&AP's are consulted, involved and their opinions are considered, and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. Basic Assessment Report (BAR) has been prepared in accordance with Chapter 4 of the GNR 982 as amended. The BA is made available for a period of 30 day-public review. Registered I&APs were informed of the availability of the BAR and EMPr for review.

8.2. Identification of I&AP'S

An initial I&APs list was compiled using Windeed searches to determine the contact details of the registered landowners of the project affected land parcels, and by consultations with the local farmers union and the local municipalities, as well as the distribution of notification documentation in person on site and/or via emails. The I&AP database was compiled containing the following categories of stakeholders:

- Host Communities;
- Landowners;
- Adjacent Landowners and occupiers;
- Traditional Authority;
- Land Claimants;
- Lawful Land Occupier;
- Department of Land Affairs;
- Local and District Municipality;
- Agricultural Sector;
- Organised Businesses;
- Residential Estates;
- Other organisations, clubs, communities, and unions; and
- Various NGO's.
- The relevant Government Departments, agencies and institutions responsible for various aspects of the environment and for infrastructure which may be affected by the project; and

- Any other person (including adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the operation.

8.3. List of authorities identified and notified

- Department of Mineral Resources and Energy (DMRE).
- Department of Agriculture, Land Reform and Rural Development (DALRRD) National.
- Department of Agriculture and Rural Development (DARD).
- Department of Cooperative Governance and Traditional Affairs.
- Department of Forestry, Fisheries and the Environment.
- Department of Water and Sanitation (DWS).
- Department of Economic Development.
- South African National Biodiversity Institute (SANBI).
- The South African Heritage Resources Agency (SAHRA).
- Provincial Heritage Resources Authority Gauteng.
- Department of Public Works, Roads, and Transport.
- Rietvlei Nature Reserve.
- Rand Water.
- Ekurhuleni Water Care Company (ERWAT)
- Agriculture Research Council.
- Water Research Commission
- City of Ekurhuleni Metropolitan Municipality.
- City of Tshwane Metropolitan Municipality.
- Gauteng Tourism Authority.
- Land Claims Commissions (National and Provincial).
- Tribal Authorities.
- Country Estates.
- Ward councillors.
- Landowners and occupiers.
- Adjacent landowners.
- Non-Governmental Organisations and etc

8.3.1. Details of Public Participation Process Followed

Newspaper adverts (English and Afrikaans) was posted on the Star Newspaper Advertiser on the **24th of August 2023**. Several site notices were also posted at different locations as indicated in **8.3.2**

Distribution by email of Background Information documents (BIDs) in English to the relevant government departments, local municipalities', non-governmental organisations and other identified Interested and Affected Parties was conducted.

The public participation activities that will be undertaken by LEM for the project are outlined in **Table 9** below.

Table 9: Public Participation and Consultation Information

Activity	Date
Stakeholder Database	Continuous update of new registered I&APs, since May 2023.
Notification letters to the government departments (Department of Mineral Resources, DARDLEA, DWS)	24th of August 2023
Publication of newspaper adverts	25th of August 2023
Placement of project's site notices	24th of August 2023
BID distributed to landowners, adjacent landowners, non-governmental organisations and other Interested and Affected Parties	24th of August 2023
Publication of the Draft BAR and EMPr	25th of August 2023 to 26th of September 2023
Submission of the final BAR and EMPr	12 th of October 2023

The Draft Basic Assessment Report will be distributed to all registered stakeholders via email and LEM website and a hard copy of the BAR and EMPr will be placed Winnie Mandela Community Public Library, Es'kia Mphahlele Community Library, Rietvlei Nature Reserve and Corobrik (Rietvlei Factory). All Interested and Affected Parties will be notified via e-mails and SMS's on the availability of the draft BAR and EMPr. The final BAR and EMPr will be submitted to the DMRE Gauteng Region Office on or before the **12th of October 2023** for a final decision making

8.3.2. Content of Advertisements and Notices

Please refer to **Appendix 5** for site notices that were placed at various locations in the vicinity of the project area, refer to Table 10 overleaf for exact location of site notice and **Figure 5**: English Newspaper Advert (25 August 2023) published Newspaper Adverts as part of this application.

8.3.3. Placement of Notices

Site notices were placed on various locations around the study area,

Figure 5: English Newspaper Advert (25 August 2023)

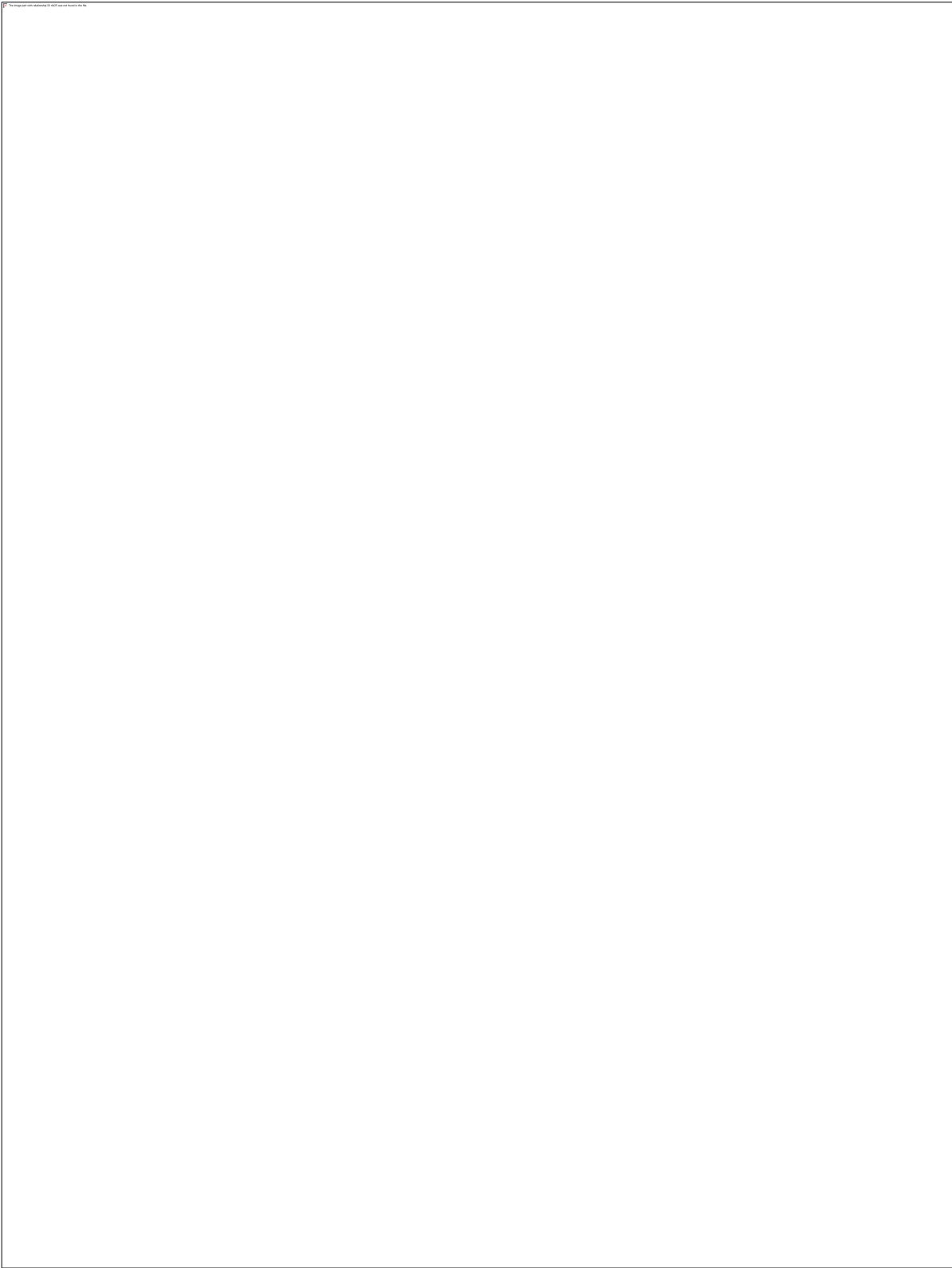
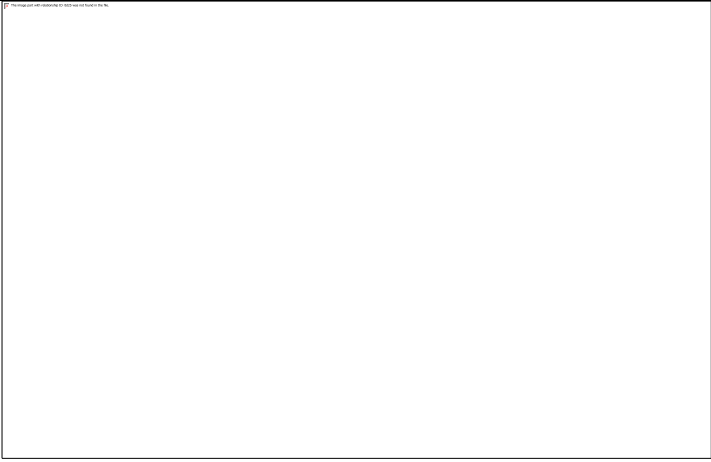
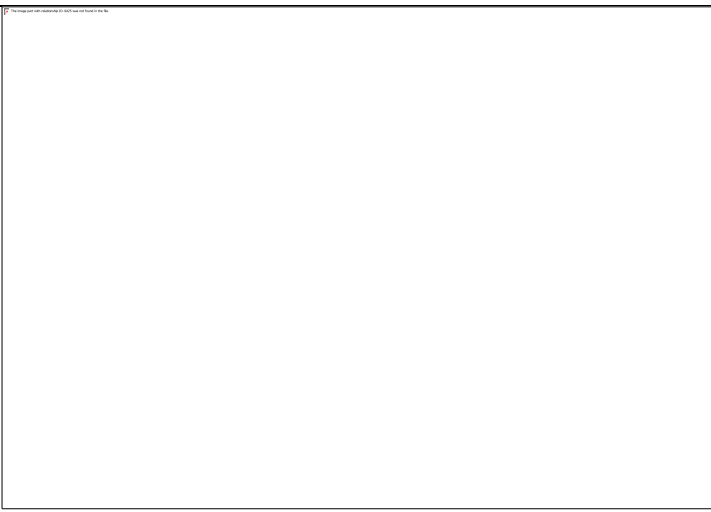



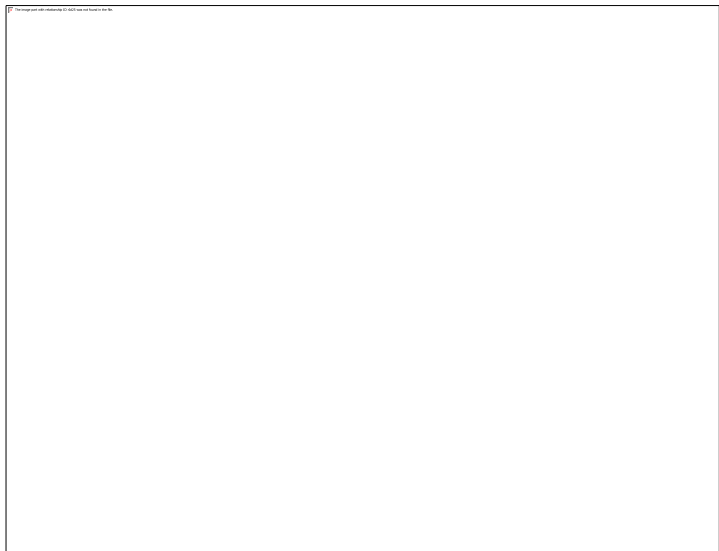
Table 10: Location of Site Notices (25 August 2023)

<p>Tembisa – Hospital View (POC office) 25,99316°S 28,24206°E</p>	
<p>City of Ekurhuleni Metropolitan-Community Center (Winnie Mandela) 25,98033°S 28,22330°E</p>	
<p>Rietvlei Heights Country Estate 25,88153°S 28,25871°E</p>	

Rietvlei View Country Estate

25,89174°S

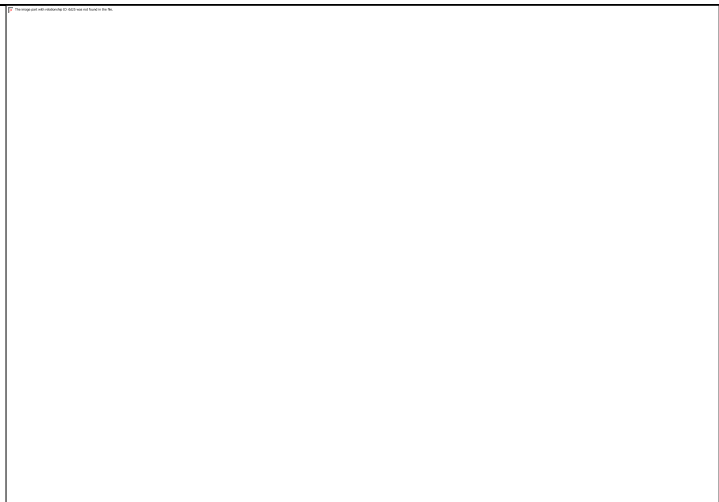
28,32663°E



Corobrik Rietvlei Factory

25,92630°S

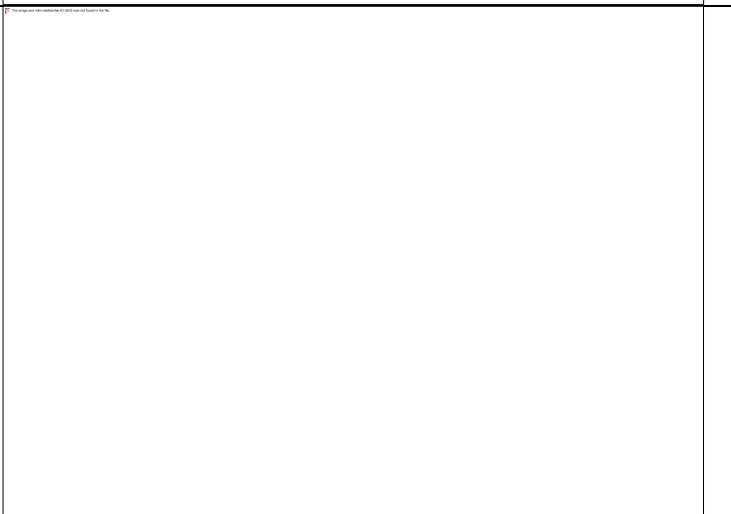
28,32094°E



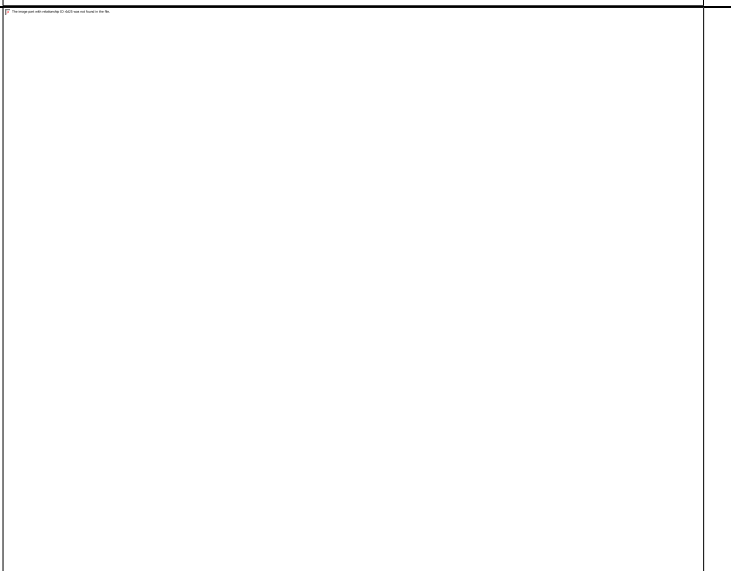
Rietvlei Nature Reserve



Bapsfontein Garage



Pretoria National Library of
SouthAfrica



Eksia Mphahlele Public Library

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8.4. Summary of Issues Raised by Interested and Affected Parties

(Complete the table summarising comments and issues raised, and reaction to those responses)

Table 11: Comments and Response from I&APs

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Landowners						
Corobrik (Pty) Ltd	Remaining Extent of Portion 26 (A Portion of Portion 1) and 27 (A Portion of Portion 26) of the farm Witkoppies 393 JR.	Till Date	Corobrik as the surface rights landowner of the property is intending to undertake the amendment of the mining right in terms of the Section 102 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA). This process will be undertaken in accordance to Section 24G of National Environmental Management Act (Act 107 of 1998) (NEMA) since Corobrik had undertaken listed activities without the required Environmental Authorisation in respect to coal mining activities which was undertaken on Remaining Extent Portion 26 (A Portion of Portion 1) and Portion 27 (A Portion of Portion 26) of the farm Witkoppies 393 JR. Corobrik has appointed Licebo Environmental and Mining (Pty) Ltd as an independent Environmental Assessment Practitioner (EAP) to undertake the environmental authorisation	Corobrik to internally review the public documents as part of their external communications and document review procedure.	LEM to submit the draft Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) for review before issuing the report for the public.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			process in terms of National Environmental Management Act (Act 107 of 1998).			
Dorourke Chieftain		11 August 2023	A telephonic communication was made with Ms Dorourke with regards to the contact details of adjacent farm landowners near the Corobrik Rietvlei Factory. E-mail will be sent with regards to the telephonic conversation.	No	No feedback has been received yet.	
		24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Dorourke Chieftain.	No	No feedback has been received yet.	
Municipality						
Executive Mayor: City of Ekurhuleni Metropolitan Municipality – Mr Sivuyile Ngodwana	City of Ekurhuleni Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Sivuyile Ngodwana.	No	No feedback has been received yet.	
City Manager: City of Ekurhuleni Metropolitan Municipality – Dr Imogen Mashazi	City of Ekurhuleni Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Dr Imogen Mashazi.	No	No feedback has been received yet.	
Head of Communication: City of Ekurhuleni Metropolitan Municipality – Mr Phakamile	City of Ekurhuleni Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Phakamile Mbengashe.	No	No feedback has been received yet.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Mbengashe						
Environmental Resource and Waste Management Department Divisional head for Compliance – Thabang Mokoena	City of Ekurhuleni Metropolitan Municipality	17 August 2023	A telephonic communication was made with Mr. Thabang Mokoena in relation to the coal mining project. E-mail was sent sent to Mr. Thabang Mokoena with the Background Information Document for the overview of the project.	No	No feedback has been received yet.	
Executive Mayor: City of Tshwane Metropolitan Municipality – Cllr Cilliers Brink	City of Tshwane Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Cllr Cilliers Brink.	No	No feedback has been received yet.	
Municipal Manager: City of Tshwane Metropolitan Municipality – Mr Johann Mettler	City of Tshwane Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr. Johann Mettler	No	No feedback has been received yet.	
Head of Communications: City of Tshwane Metropolitan Municipality – Mr. Hilgard Matthews	City of Tshwane Metropolitan Municipality	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr. Hilgard Matthews.	No	No feedback has been received yet.	
Traditional leaders						
Acting Head of Department: Department of Cooperative, Governance and	Cooperative, Governance and Traditional Affairs	24 August 2023	E-mail notification with the BID and notification letter was sent to ltumeleng Mokate	No	No feedback has been received yet. Follow up was made on August/ September 2023.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Traditional Affairs – Itumeleng Mokate	(COGTA)					
Director-General: Department of Cooperative, Governance and Traditional Affairs -Mr Joseph Mashwahle Diphofa	Cooperative, Governance and Traditional Affairs (COGTA)	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr. Joseph Mashwahle Diphofa.	No	No feedback has been received yet. Follow up was made on August/ September 2023.	
Head of Department of Cooperative, Governance and Traditional Affairs – Luphi Ngcayisa	Cooperative, Governance and Traditional Affairs (COGTA)	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr. Lupi Ngcayisa.	No	No feedback has been received yet. Follow up will be made on August/ September 2023 before the close of the public review period.	
The Macingwane Royal House Representative - Londie Motsoane	The Macingwane Royal House	18 August 2023	A telephonic communication with Mr. Londie Motsoane in relation to the project and LEM requested a meeting with the Macingwane Royal House on the 24 th of August 2023.	Request for a meeting	LEM requested a meeting with the Macingwane Royal House. Minutes and feedback from the meeting will be incorporated as part of the final BAR and EMPr.	
Local Community						
Ward 91 Councillor – Henning Viljoen	City of Tshwane Metropolitan Municipality	17 August 2023	A telephonic communication was made with Mr. Henning Viljoen in relation to the Corobrik Rietvleyn mining project and LEM requested a meeting to consult with him on the 24 th of August 2023. E-mail was sent to Mr Henning Viljoen with the Background	No	Request for a meeting. Minutes and feedback from the meeting will be incorporated as part of the final BAR and EMPr.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			Information Document for the overview of the project.			
		24 August 2023	A telephonic communication was made with Mr. Henning Viljoen in relation to the arranged meeting on the 24 th of August 2023 to postpone the meeting to be on the 29 th of August 2023. E-mail was sent to Mr Henning Viljoen to confirm the reschedule of the meeting.			
			E-mail notification with the BID and notification letter sent to Mr. Henning Viljoen.	No	No feedback has been received yet.	
Ward 89 Councillor – Mr Tshoarelo Pudi	City of Ekurhuleni Metropolitan Municipality	17 August 2023	A telephonic communication was made with Mr Tshoarelo Pudi in relations to the Corobrik Rietvlei mining project LEM requested a meeting to consult with him on the 23 rd of August 2023. E-mail was sent regards the telephonic conversation with the BID.	No	No feedback has been received yet.	
		24 August 2023	E-mail notification with the BID and notification letter was sent to Mr. Tshoarelo Pudi.	No	No feedback has been received yet.	
The Macingwane Royal House Representative - Londie Motsoane	The Macingwane Royal House	18 August 2023	A telephonic communication with Mr. Londie Motsoane in relation to the project and LEM requested a meeting with the Macingwane Royal House on the 24 th of August	Request for a meeting	LEM requested a meeting with the Macingwane Royal House. Minutes and feedback from the meeting will be incorporated as part of the final BAR and EMPr.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			2023.			
Organs of State (Responsible for Infrastructure that may be affected Roads Department, Eskom, Telkom, DWS, etc)						
Directorate: Mineral Regulation – Mr. Nicholas Chavalala	Department of Mineral Resources and Energy (DMRE)	24 May 2023	<p>A meeting was held on the 24th May 2023 at Department of Mineral Resources and Energy (DMRE), Gauteng Region between DMRE case officer, Mr Nicholas Chabalala and LEM Representatives on behalf Corobrik Mine.</p> <p>The environmental authorisation application form was lodged on the 07th of June 2023 and acknowledged by the DMRE on the 17th of June 2023 under DMRE Ref No.: GP 30/5/1/2/2/10093 MR. Upon the review of the acknowledgement letter, it was noted that some of the farm portions that form part of the submitted Regulation 2(2) plan were not included on the letter.</p> <p>A financial audit report was submitted to DMRE on the 15th of June 2023.</p> <p>E-mail will be sent to Corobrik (Pty) Ltd with the acknowledgement letter confirming and requesting the Corobrik (Pty) Ltd to consult with the landowners,</p>	Refer to the attached DMRE correspondence letters on Annexure 2 and 4 (e-mail communications).	Corobrik appointed LEM as the independent Environmental Assessment Practitioner to assist with the Section 24G environmental authorisation application process as requested by the DMRE. This process is undertaken as part of complying with the intent letter to issue a compliance notice to Corobrik by the DMRE.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			land occupiers' adjacent communities and any interested and affected parties in relation of the mining right project.			
		07 July 2023	Dear Mr Martin Hughes REQUEST FOR REMOVAL OF COAL STOCKPILE IN RESPECT OF THE REMAINING EXTENT OF PORTION 26 (A PORTION OF PORTION 1) AND PORTION 27 (A PORTION OF PORTION 26) OF THE FARM WITKOPPIES 393 JR, IN THE MAGISTERIAL DISTRICT OF PRETORIA, GAUTENG REGION BACKGROUND On the 08 th of March 2023, this office issued a verbal instruction for your operation to immediately cease with the unauthorised mining of Coal. Subsequently, a notice of intent was hand delivered on the 17 th of March 2023, further giving instruction to make representation to the Regional Manager on the 03 rd of April 2023. A remedial action plan was received on the 11 th of April 2023 and supporting documentation was submitted on the 24 th of May 2023 — in which the Department responded on the 30 th of May			

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			<p>2023, further indicating environmental related issues to be addressed such as review of financial provision to include mining of Coal as high-risk class (Class A).</p> <p>On the 26th of April 2023 Corobrick sent a correspondence and pictures alleging burning/igniting of Coal in several places of the stockpile and further requesting to dispose such stockpile before it causes significant risk on the surface and groundwater pollution. Further inspection by Mineral Laws Administration and Mine Economics was conducted on the 04th of May 2023 as per my instruction to verify the allegation and other related matters. The inspection identified other areas of concern such as non-submission of monthly returns and non-payment of royalties to SARS. As such, an order in terms of section 93(1)(b)(i) was issued on the 05th of May 2023. Corobrick was directed among other things to make the provision for the following Mine to appoint Independent Environmental Assessment Practitioner (EAP). An</p>			

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			<p>external audit report in terms of Section 24 P (3) must be submitted to the Department, taking into consideration the coal mining. Mine to apply or provide confirmation of Section 102 application to include Coal. The mine to apply for an Environmental Authorization. The mine to provide Resources and reserves statement for both Clay and Coal signed by a qualified person. Payment of all outstanding Royalties for all operations country wide not just Gauteng. Mine to conduct independent assessment/ revised Financial Provision including Coal. Provide and submit an up-to-date and fully funded financial provision. CONCLUSION The run of mine coal stockpile has areas that are showing signs of natural combustion. This has a potential to cause significant risk on the surface and groundwater pollution. With all the areas highlighted above being addressed and serious consideration on the possible negative environmental impact such stockpile may cause. Corobrick is hereby directed to STRICTLY remove current Coal</p>			

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			stockpile and to ensure that NO new/ fresh mining of Coal is undertaken. Corobrick is further directed to keep an accurate recording of Coal tonnages removed. Further, provide weekly report (every Monday of the preceding week) to the Department on the amount of Coal, the value of such Coal and list of customers. Such weekly reports will form basis of random and unannounced inspections by relevant officials. Should Corobrick fail to comply with the above requirements and/or provide inaccurate information. Department will without hesitation issue/confirm final compliance directive/order. Should you require any further information/clarity, you are welcome to kindly contact me			
		17 July 2023	ACKNOWLEDGEMENT OF AN APPLICATION SUBMITTED IN SUPPORT OF THE APPLICATION LODGED IN TERMS OF SECTION 24G OF THE NATIONAL Environmental Management Act, 1998 (Act 107		Noted, we will proceed with the process following and undertaking the BAR and EMPr for the triggered rectification environmental listed activities, Section 24G.	Refer to Annexure 2

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			<p>Of 1998) (NEMA) As Amended, In Respect Of Portion 26 (Portion Of Portion 1) And Portion 27 (Portion Of Portion 26) Of The Farm Witkopies 393 Jr; Situated In The Magisterial District Of Pretoria: Corobrik (Pty) Ltd.</p> <p>Your application submitted on 07 July 2023 refers.</p> <p>This Department hereby acknowledges the above-mentioned application. After careful evaluation of your application, it was found that your application includes new activities. Therefore, the Department will only consider the activities which relate to Section 24G only, and the new listed activities must be applied for separately.</p> <p>You are required in terms of Section 24G of the NEMA to submit a Basic Assessment Report (BAR) which has been subjected to Public Participation Process (PPP) including organs of State which admister any law relating to the environment. You are further required to conduct the following specialist studies,</p>		<p>Once finalised and approved, we will need to align and consolidate the Environmental Authorization and BAR together with the EMPr to include all other activities.</p>	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			amongst others but not limited to Wetlands Specialist Study and Geohydrological Specialist Study. You are requested to submit, to this Department, Three (3) copies of an BAR on or before on or before 16 October 2023, failing which the Department will utilize the information that is currently available to finalize the application.			
		24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Nicholas Chavalala.	Refer to the attached DMRE correspondence letters on Annexure 2 and 4 (e-mail communications).	Corobrik appointed LEM as the independent Environmental Assessment Practitioner to assist with the Section 24G environmental authorisation application process as requested by the DMRE. This process is undertaken as part of complying with the intent letter to issue a compliance notice to Corobrik by the DMRE. Nicholas indicated that the DMRE will await the submission of the final BAR and EMPr to the Department as part the acknowledgement letter.	
Regional Land Claims Commissioner – Mr Harry Maphutha.	Department of Agriculture, Land Reform and Rural Development	24 August 2023	E-mail with consultation documents including the BID, notification letter and the request to confirm any land claims within the affected farm portions was sent to Ms Nomfundo Ntloko	No	No feedback has been received yet.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
	(DALRRD)		Gobodo, Chief Director of Land Claims Commissioner, Gauteng Province.			
Chief Director of Land Claims– Ms Nomfundo Ntloko-Gobodo.	Department of Agriculture, Land Reform and Rural Development (DALRRD)	24 August 2023	E-mail with consultation documents including the BID, notification letter and the request to confirm any land claims within the affected farm portions was sent to Ms Nomfundo Ntloko Gobodo, Chief Director of Land Claims Commissioner, Gauteng Province.	No	No feedback has been received yet.	
Head of Department – Matilda Gasela	Department of Agriculture and Rural Development (DARD)	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Matilda Gasela.	No	No feedback has been received yet.	
Deputy Director General – Dora Modise	Department of Agriculture and Rural Development (DARD)	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Dora Modisa.	No	No feedback has been received yet.	
Head of Department – Blake Mosley-Lefatsola	Department of Economic Development	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Mosley-Lefasola.	No	No feedback has been received yet.	
Deputy Director General – Mr Mpho Nawe	Department of Economic Development	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Nawa.	No	No feedback has been received yet.	
Chief Director – Jeff Sehume	Department of Economic Development	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Sehume.	No	No feedback has been received yet.	
Director of	South African	24 August	E-mail notification with the BID	No	No feedback has been received	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Communication – Ms Nontsikelelo Mpulo	National Biodiversity Institute	2023	and notification letter was sent to Ms Mpulo.		yet.	
Director General: – Ms Nomfundo Tshabalala	Department of Forestry, Fisheries and Environment (DEFF)	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Tshabalala.	No	No feedback has been received yet.	
Chief Directorate: Integrated Environmental Authorisations – Mr Sabelo Malaza	Department of Forestry, Fisheries and Environment (DEFF)	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Malaza.	No	No feedback has been received yet.	
The Acting Manager: Communications and Marketing - Mr Yazeed Sadien	South African Heritage Resource Agency	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Sadien	No	No feedback has been received yet.	
The spokesperson Department of Water and Sanitation -Mr Wiseman Mavasa	Department of Water and Sanitation (DWS)	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Mavasa	No	No feedback has been received yet.	
Non- Government Organisations (NGO's).						
Chief Executive Officer – Ms Yolanda Ruiters	Gauteng Tourism Authority	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Yolanda Ruiters.	No	No feedback has been received yet.	
Communication officer – Ms Maphata	Provincial Heritage Resource	24 August 2023	E-mail notification with the BID and notification letter was sent to Ms Maphata Ramphele.	No	No feedback has been received yet.	

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Ramphele	Authority Gauteng					
Manager of Pretoria Sailing Club Rietvlei - Francis Girdlestone.	Pretoria Sailing Club Rietvlei	10 August 2023	A telephonic communication was made by LEM with Mr Francis Girdlestone in relation to arrangements for a venue to host the public participation meeting on the 8 th of September 2023. An E-mail notification with the BID and Newspaper advert was sent to Mr Francis Girdlestone.	Yes	LEM received an acknowledgement to the email sent from Mr Francis Girdlestone.	
		14 August 2023	LEM had a pre-consultation with Mr Francis Girdlestone with regards to the Corobrik Rietvlei Mining Right Amendment application			
			Comment Francis Girdlestone (FG) mentioned that he is concerned about the water quality of the Rietvlei Nature Reserve. He further mentioned that the water quality in the Rietvlei Nature Reserve is regularly checked.			
Response EAP noted his concern and indicated that LEM is currently applying for the Mining Right process in terms of section 24 (G) of the NEMA for the unlawful commencement or continuation of activities identified in terms of the EIA regulations as amended in support of the section 102 Mining right amendment application to include coal as required in terms of the MPDRA, hence full study assessments were undertaken within the study area. The impact assessment studies have been undertaken						

Interested and Affected Parties List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.	Representing	Date Comments Received	Comment / Questions	Issues Raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
					which includes the hydrological and hydrogeological Impact Assessment as part of the project.	
Manager of Pretoria Sailing Club Rietvlei - Francis Girdlestone.	Pretoria Sailing Club Rietvlei	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Francis Girdlestone.	No	No feedback has been received yet.	
Representative of Rietvlei Nature Reserve – Martin Ntsoane	Rietvlei Nature Reserve	24 August 2023	E-mail notification with the BID and notification letter was sent to Rietvlei Nature Reserve.	No	No feedback has been received yet.	
Chairperson of the Board: Ernest Khosa	South African Civil Aviation Authority	24 August 2023	E-mail notification with the BID and notification letter was sent to Mr Ernest Khosa		No feedback has been received yet.	
Other parties						
No other parties were identified			No other parties were identified		No other parties were identified	

9. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

9.1. Baseline Environment

This section presents an overview of the project area. This information was obtained mostly by use of google map, published studies within jurisdiction of both City of Tshwane and Ekurhuleni Metropolitan Municipalities District Municipality inclusive of the full Specialist studies (Aquatic & Wetland Assessment; Soil, land use, Land Capability and Utilisation (agricultural) Impact Assessment; Heritage and Archaeological Impact Assessment; Palaeontology Impact Assessment; Desktop terrestrial Biodiversity Impact Assessment and Desktop Surface Water and Geohydrology Impact Assessment) and its surroundings.

9.1.1. Geology

Baseline Groundwater Report (13 November 2017), the underlying geology ranges from recent quaternary sediments to older Vaalian aged rocks. The largest part of the Corobrik property is underlain by dolomite and chert of the Malmani Formation, of the Chuniespoort Group, which belongs to the Transvaal Supergroup. Shale outcrops of the Eccca Group, Karoo Supergroup can be seen in the vicinity of the quarry site within the dolomite/chert outcrops. The Malmani formations are bounded on the eastern and western parts by outcrops of the Pretoria Group quartzite, shale, lava and mudstone. Dwyka Tillite is mapped within the Pretoria Group rocks on the eastern and western areas. Vaalian age diabase, which intrudes the Pretoria Group and striking almost NW-SE were also mapped in the greater study area. Quaternary sediments were mapped along the Hennops River. The raw materials mined for brick manufacturing at Corobrik Rietvlei Factory consist of siltstone, mudstone and shale of the Vryheid Formation, Eccca Group, Karoo Supergroup. These sedimentary Karoo rocks occupy a depression eroded out of the older, Malmani dolomite of the Chuniespoort Group Figure 6. The Karoo-aged rocks have been subjected to folding and flexing so that the various brick making raw materials may outcrop.

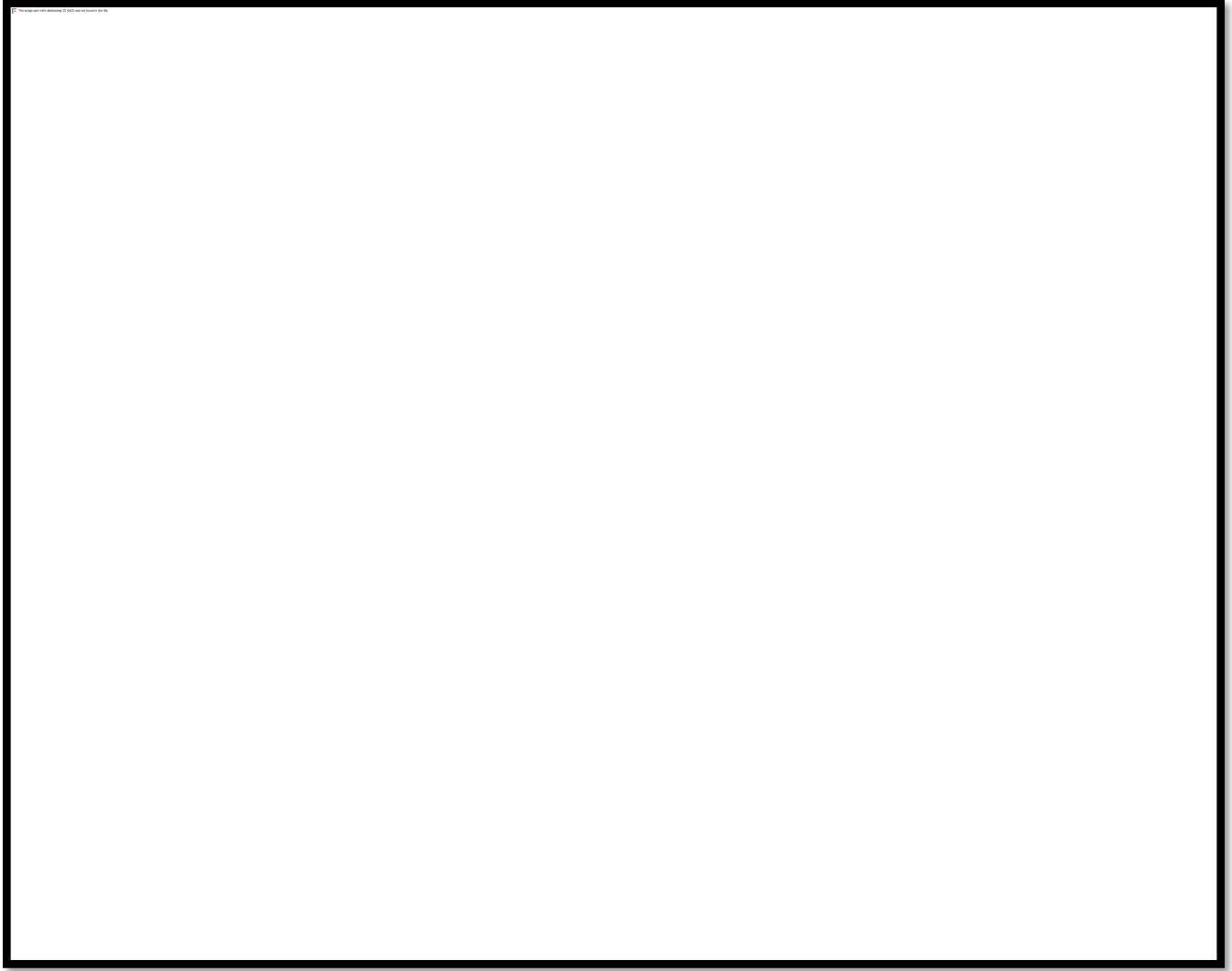


Figure 6: Geology map (M Holland, June 2009)

9.1.2. Climate

The climate is classified as warm and temperate according to the Köppen-Geiger climate classification. Bapsfontein is situated in the southern hemisphere. Summer months are: December, January and February while winter months are June, July, and August. Bapsfontein's summer months are subjected to more rainfall than winter months **Figure 7**. The average annual rainfall is approximately 764 mm. The amount of precipitation plummets in July to about 4 mm. December receives the greatest amount of precipitation i.e., about 140 mm.

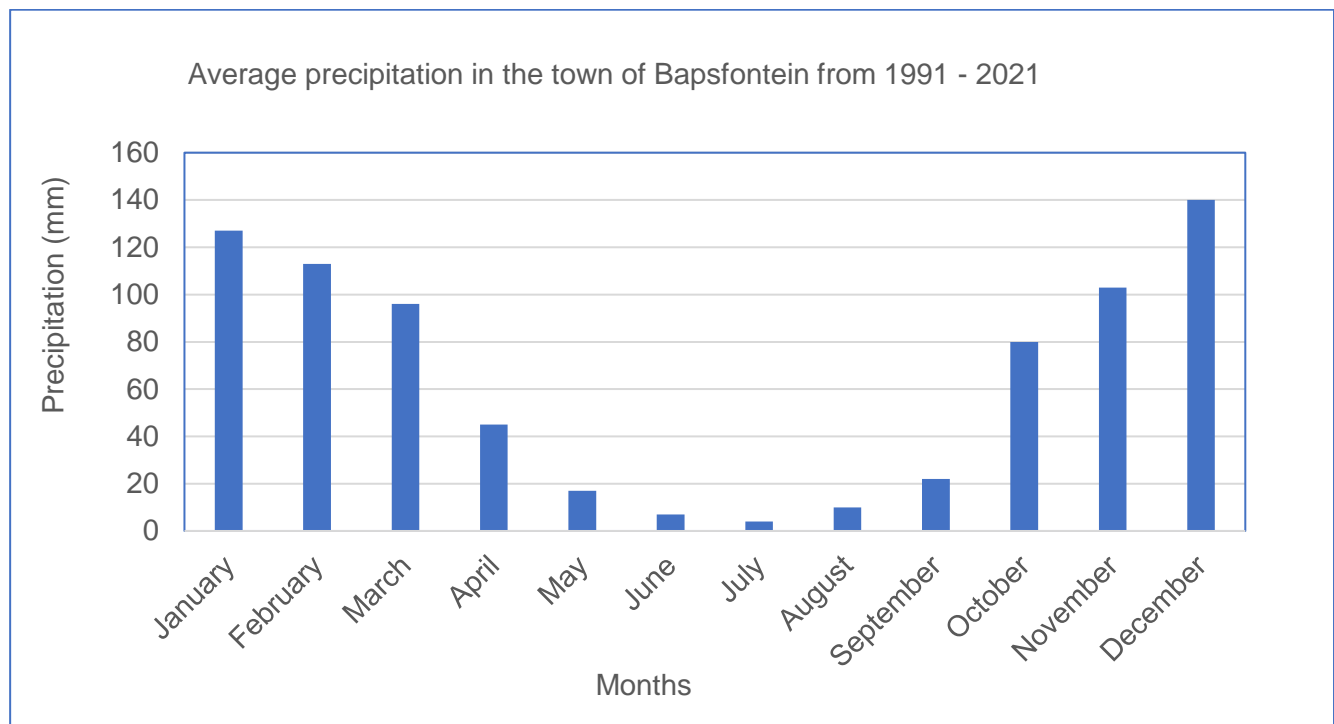


Figure 7: Average precipitation/rainfall in Bapsfontein from 1999 to 2021 (www.climate-data.org).

The average annual temperature is around 16.3 °C in this climatic zone, with January being the hottest month of the year at 20.0 °C. The lowest average temperature occurs in June, when temperatures of around 10 °C can be reached. The region is characterised by hot summers and mild to cold, dry winters, with the average maximum daytime temperature in January around 26 °C, dropping to an average maximum of around 16 °C in June.

9.1.3. Topography

The study area forms part of the major watershed comprised of rivers that drain west towards the Atlantic Ocean and those that drain east towards the Indian Ocean (Environomics, 2007). The topography for the mine lease area is generally flat as shown in **Figure 8** with gentle surface slopes towards a surface drainage arterial, the Witkoppiespruit which feeds the Rietvlei Dam located within the Rietvlei Nature Reserve to the northwest. The following topographical features occur:

- Plains with pans
- Undulating plains with pans
- Strongly undulating plains
- Superimposed river valley on plains with pans
- Ridges

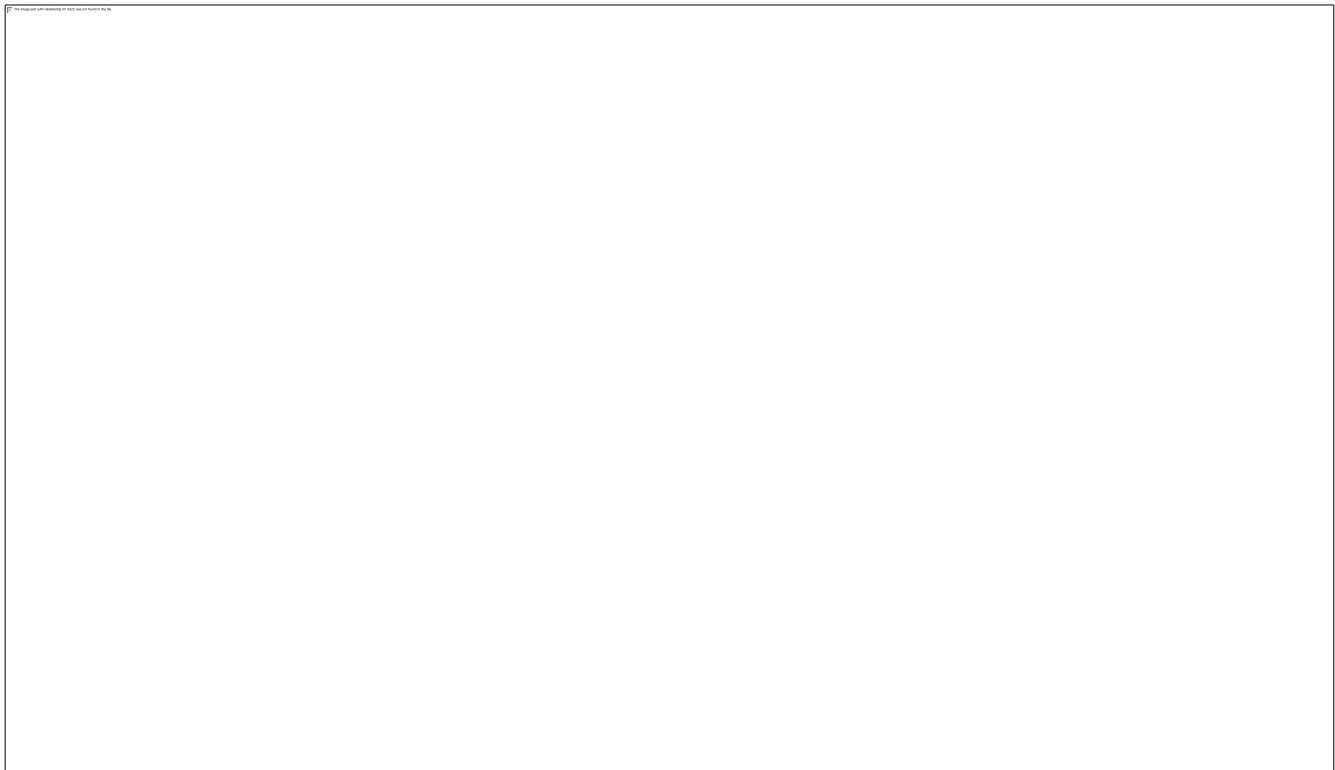


Figure 8: Topography of the mining study area.

9.1.4. Soil, Land Capability, cover and uses

9.1.4.1. Soil

According to the Soils 2001 layer the project area is situated within an area where soils are classified as One or more of vertic, melanic, red structured diagnostic horizons, undifferentiated, Red yellow apedal, freely drained soils, red, high base status, >300 mm deep (no dunes) and Plinthic catena: eutrophic; red soils widespread, upland duplex and margalitic soils rare see. Soil depth is considered to range between 450 mm-750 mm, which considered capable in supporting most deep-rooted cultivated crops. Corobrik' s study area falls within freely drained structureless soil **Figure 9** and have favorable physical properties, but have restricted soil depth, excessive drainage, and high erodibility potential as well as a low natural fertility status.

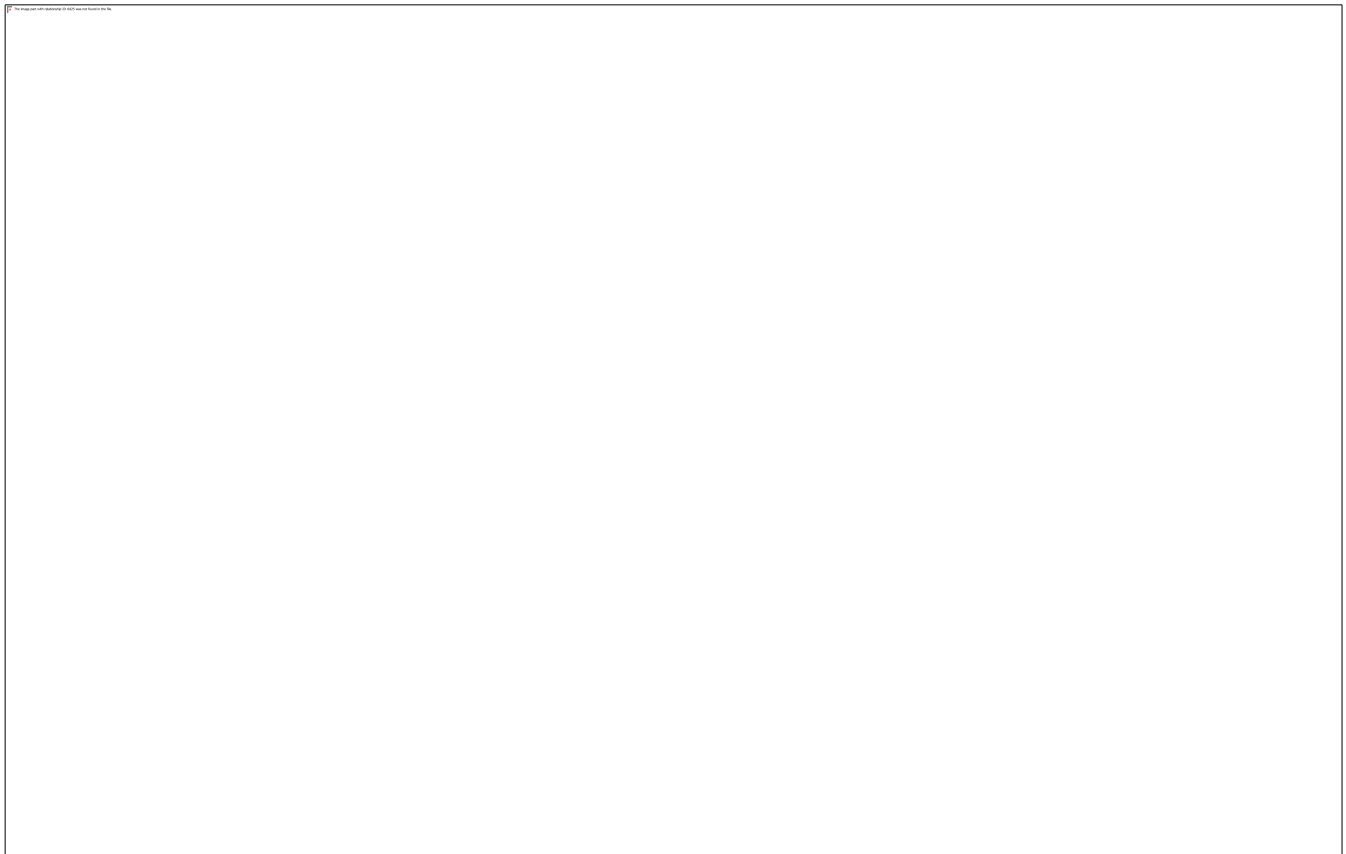


Figure 9: Soil classes of the study area.

9.1.4.2. Land Use

The project area is currently classified under farming area for cultivation of crop farming. Some portion of the property is covered by natural land, which is uncultivated, the area is also characterized by a high voltage powerline passing through R50 road and with irrigation field on the eastern side of the property and factory building with stockpiles on the feeding side of the factory.

The project area is dominated by Acrisols and Lixisols with argic horizon, characterized by of low activity clays in an argic subsurface horizon and by a low base saturation level, Acrisols correlate with Red-yellow argic horizon, with Lixisols having a thin, brown, ochric surface horizon over a brown or reddish-brown argic B-horizon that often lacks clear evidence of clay illuviation other than a sharp increase in clay content over a short vertical distance see Figure 10 below for the land covers and uses of the project area.



Figure 10: Land cover and uses within and around the study area.

9.1.4.3. Land Capability

Agricultural land capability in South Africa is generally restricted by climatic conditions, mainly water availability. However, even within similar climatic zones, different soil types typically have different land use capabilities attributed to their inherent characteristics. The project area is generally considered to have a High potential arable land capability (Class III) these soils (Rhodic Acrisols) are classified as prime agricultural land that is well suitable for annual cultivated crop with low erosion hazard and the other half of the study area is considered to have moderate potential arable capability, Moderate to severe limitations due to the soil (Rhodic Lixisols), slope, temperature, or rainfall, see land capability map shown below in **Figure 11**.



Figure 11: Land Capability Map

9.1.4.4. Laboratory Analysis (Chemical Characteristics of soil)

Six Soil Samples were tested at the lab taken at different points within the study area as shown below in figure 14. All sampled soils were sent to the NviroTek Laboratories, which is an independent and accredited testing laboratory group with South African National Accreditation System (SANAS) with strong geographical presence in the Southern African region, with analytical focus areas include

chemistry, microbiology, hygiene monitoring, chromatography and biological analysis with more than 12 years of respected reputation.

The samples were prioritized for selected analyses of specific contaminants of potential concern (CPCs) according to the conceptual source-pathway-receptor linkages. The chemical analyses included the following selected constituents and contaminants of potential concern (CPCs):

- pH.
- Electrical conductivity (EC).
- Alkalinity.
- Anions; and
- Inorganic heavy metals and metalloids.

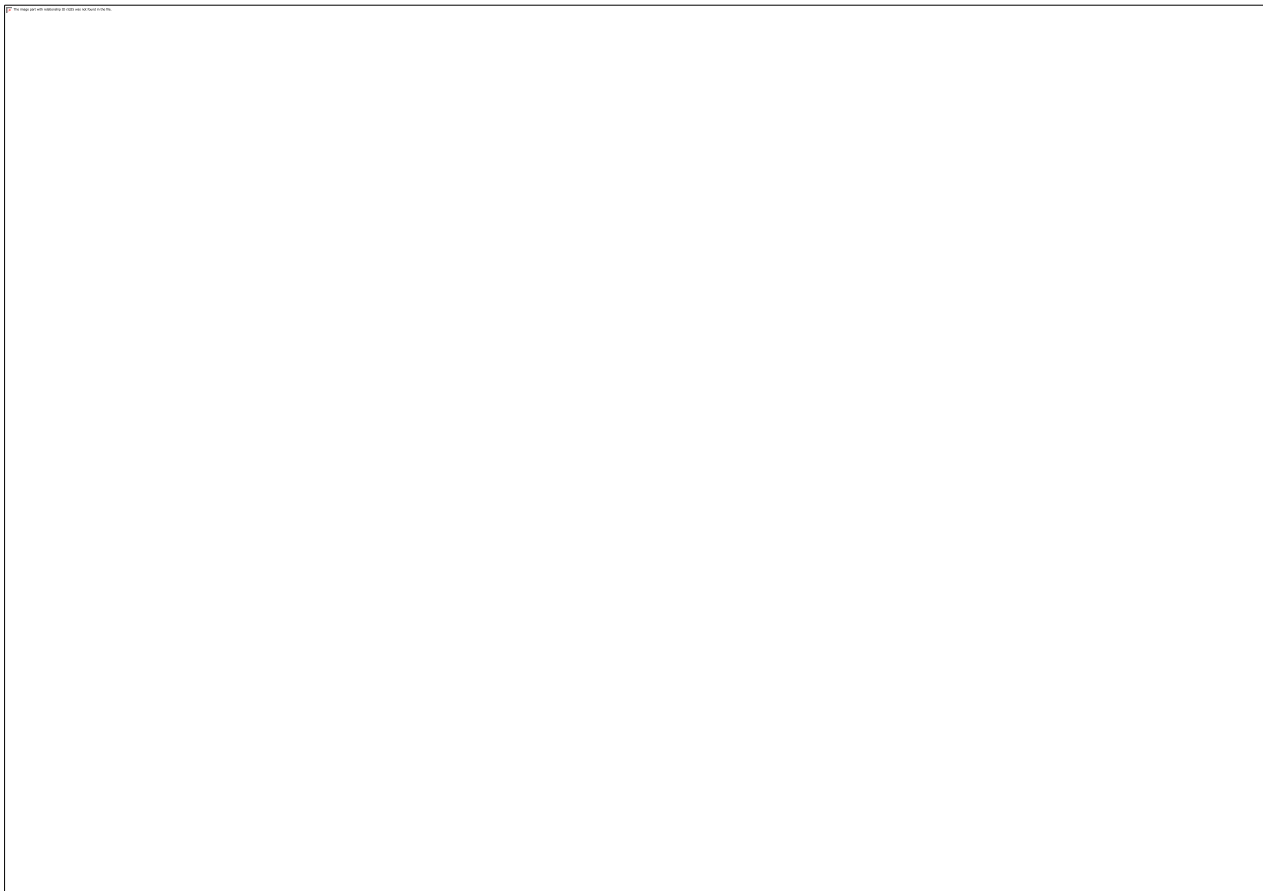


Figure 12: Sampling Locality

Although soil functionality cannot be directly measured, physio-chemical parameters such as pH and EC are sensitive to disturbance and responsive to management. These parameters can be used as indicators of the response of the soil and ecosystem to current (and/or former) management practices. six soil samples collected Portion 26 (a portion of portion 1) and Portion 27 (a portion of portion 26) of the farm Witkoppies No 393 JR situated at Magisterial District of Bronkhorstspruit in both Ekurhuleni

and City of Tshwane Metropolitan Municipalities (Corobrik Rietvlei factory Site) and the following were recorded: one soil sample representing topsoil and subsoil combined at each sampling point. Soil samples were sealed in soil sampling plastic bags and sent to NviroTek Laboratory, Hartbeespoort for analyses. Samples taken to determine baseline soil fertility were analyzed for electrical conductivity (EC), pH (KCl and H₂O), phosphorus (Bray1), exchangeable cations (calcium, magnesium, potassium, and sodium), organic carbon (Walkley- Black) and texture classes (relative fractions of sand, silt and clay).

The soil pH is determined in the supernatant liquid of an aqueous suspension of soil after having allowed the sand fraction to settle out of the suspension. Soil pH influences plant growth in the following manner:

- Through the direct effect of the hydrogen ion concentration on nutrient uptake; the mobilization of toxic ions such as aluminum which restrict plant growth; and
- Indirect impacts that include the effect on trace nutrient availability.

The chemical soil analyses indicate that the pH of the surrounding soils ranges ($4.26 < \text{pH} > 4.9$) and based on the low pH these soils are considered to be acidic and thus affected by Agricultural activities or previous land use. However, based on the Soil and Terrain database (SOTER) the natural pH of these soils ranges from 5.5 to 6.4 and they are considered to be slightly acidic. The acidity of these soils is likely attributed to the historical land use activities occurring within the surrounding areas. Low pH soils are said to have low agricultural value, this is due to a release of aluminum that can stunt a plant's growth and alter nutrient intake. Some plants may also suffer with manganese and iron toxicity that causes yellow spots and leads to browning and leaf death.

Deficiency of a micronutrient can be just as yield limiting as the deficiency of a macronutrient. From the analysis of selected essential macronutrients such as Ca, Mg, K, Na, and P; most of the sampled soils showed significant low and accepted concentrations of these macronutrients. Excessive nature of these nutrients are available in excess, this will result in poor growth and development of plants. The results indicate a deficiency in phosphorus, these results in a delayed maturity on plants, however the deficiency is likely to occur on lower pH soils. This imbalance tends to induce dispersion, which results in poor soil structure, which is susceptible to erosion during intense rainfall.

While there are no formally derived guideline values for essential macronutrients (Ca, Mg, Na, K, and P) in soil, these elements are typically regulated by pH and their availability for plant uptake is generally enhanced under favorable pH conditions in the range of 5.5 – 7.0 in order to avoid plant nutrient deficiencies.

9.1.5. Terrestrial Ecology

9.1.5.1. Flora

According to the Vegetation Map of South Africa, Lesotho and Swaziland (Mucina and Rutherford, 2006), the Corobrik study area falls within the Grassland Biome, Mesic and Dry Highveld Grassland Bioregion. The dominant vegetation type found on site is Rand Highveld Grassland and Carletonville Dolomite Grassland as indicated in **Figure 13** below. This vegetation type is listed as endangered and is hardly protected.

Rand Highveld Grassland (39% of the study area). Almost half has been transformed mostly by cultivation, plantations, urbanisation or dam-building. Cultivation may also have had an impact on an additional portion of the surface area of the unit where old lands are currently classified as grasslands in land-cover classifications and poor land management has led to degradation of significant portions of the remainder of this unit. Scattered aliens (most prominently *Acacia mearnsii*) occur in about 7% of this unit. Only about 7% has been subjected to moderate to high erosion levels. Rand Highveld Grassland is listed as Vulnerable in the National List of Ecosystems that are Threatened and in Need of Protection (GN1002 of 2011).

Carletonville Dolomite Grassland (61% of the study area). Small extent conserved in statutory (Sterkfontein Caves—part of the Cradle of Humankind World Heritage Site, Oog Van Malmanie, Abe Bailey, Boskop Dam, Schoonspruit, Krugersdorp, Olifantsvlei, Groenkloof) and in at least six private conservation areas. Almost a quarter has already been transformed for cultivation, by urban sprawl or by mining activity as well as the building of the Boskop and Klerkskraal Dams. Carletonville Dolomite Grassland is listed as Least Concern in the National List of Ecosystems that are Threatened and in Need of Protection (GN1002 of 2011).



Figure 13: Vegetation types associated with the mining area.

The natural vegetation of the study area as well as part of the surrounding areas (except Rietvlei Nature Reserve) has been impacted by clay and coal mining activities, extensive agricultural activities (i.e., cultivation) as well as impacts associated with houses and linear infrastructure (e.g., roads and powerlines). All of these activities have resulted in the extensive transformation of the natural habitats within the study area in particular. The vegetation types of the study are categorized as poorly protected within Vulnerable and Least Concern grassland bioregions. The wetland drains into the Rietvlei River, which eventually drains into the Hennops River. The Gauteng Conservation Plan Version 3.3 classifies large parts of the study area as having no natural habitat remaining (i.e., heavily or moderately modified).

The wetlands around the study site fall within the Mesic Highveld Grassland Group 4 wetland vegetation type and the wetland vegetation type of the area is considered to be of Least Concern (LC) (Mbona, et al., (2015). The 2018 National Wetland Map (Van Deventer et al., 2018) compiled as part of the 2018 National Biodiversity Assessment (2018 NBA) determined the Ecosystem Threat Status (ETS) and Ecosystem Protection Level (EPL) for all wetland ecosystem types in South Africa.

9.1.5.2. Fauna

Macro- and micro-habitat scales are utilized by faunal species within a given area, with certain ecological and behavioural factors (such as food availability, niche habitat, and decreased predation risk) determining continuing occurrence. Due to the presence of crucial movement corridors, it is crucial to keep in mind that faunal habitats and their related functions within the research region must be examined within the landscape matrix rather than in isolation. Faunal diversity and assemblages have probably been damaged by anthropogenic land conversion, habitat degradation, and fragmentation brought on by past and present agricultural activities as well as mining practices.

According to the DFFE online National Web-based Environmental Screening report, the animal species theme for the project area has high sensitivity with the high probability of occurrence of the following faunal species: *Aves-Tyto capensis* (**LC**), *Aves-Circus ranivorus* (**LC**), *Aves-Eupodotis senegalensis* (**LC**), *Insecta-Aloeides dentatis dentatis* (**LC**), *Mammalia-Chrysospalax villosus* (**VU**), *Mammalia-Crocidura maquassiensis* (**LC**), *Mammalia-Hydrictris maculicollis* (**NT**), *Mammalia-Ourebia ourebi* (**VU**), *Invertebrate-Clonia uvarovi* (**VU**). Previously recorded animal data surveys indicated that there could be other animal species associated with the project area that may not be flagged by the environmental screening tool.

9.1.6. Wetland

9.1.6.1. Associated Water Resources

In 2023 an updated assessment was undertaken by WCS Scientific with a specific focus on wetlands within the Corobrik study area and 500m buffer area. Based on this recent assessment a number of wetlands were identified within the 500m buffer of the Corobrik Study Area as indicated in **Figure 15** below. The delineated wetlands within the focus project area (Corobrik study area and 500m buffer) as indicated in **Figure 15** cover approximately 42.3ha **Table 12**. This extent covers the valley bottom wetland on the western boundary of the study area within the Rietvlei Nature Reserve that forms a tributary to the Hennops River, the hillslope seepage wetland connected to the valley bottom wetland and an artificial wetland within the project area around the irrigation dam **Figure 14**



Figure 14: Photographs showing an artificial wetland area adjacent to the irrigation dam, dominated by *Typha Capensis* and *Phragmites Australis*.

As is clear from the map below, mining activities (clay and coal) have already taken place on site, with the footprints of a number of these activities outside the natural wetland area and an artificial wetland has been formed as a result of these activities onsite. As a result, the wetlands on site are not directly impacted by mining and mining-related activities. The valley bottom wetland draining along the western boundary of the study area forms part of the Rietvlei River a tributary to the Hennops Wilge River. The Rietvlei River originates as far as Bredell Agricultural Holdings in Kempton Park. The upper catchment of the wetland is mostly rural with a variety of agricultural holdings and plots, some brick mining

activities and urban developments. Several small farm dams occur along the Rietvlei River and associated wetlands upstream of the study site. The valley bottom wetland is generally dominated by *Typha capensis* and *Phragmites australis*. A small seepage wetland was identified and delineated along the side slopes of the valley bottom wetland on the western boundary of the site dominated by *Imperata cylindrical* grasslands.

Table 12: Summary of the different watercourse types and extents recorded within the

Watercourse	Area (ha)	% of watercourse (within the regulated area)
Seep	2.14	5%
Valley bottom	39.37	93%
Artifical Wetland	0.75	2%
	42.26	100%

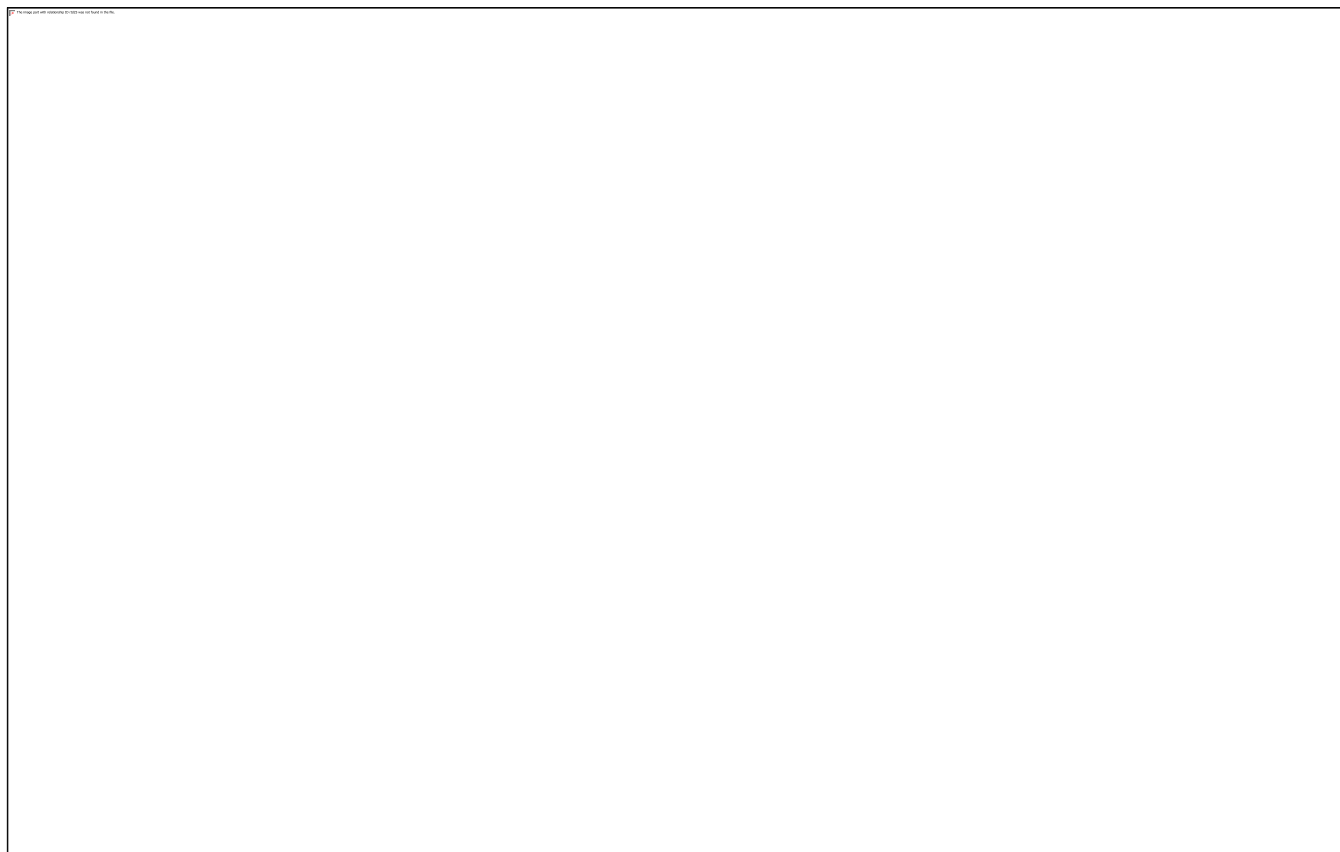


Figure 15: Map of the delineated wetlands and watercourses within the project area

9.1.6.2. Wetland Present Ecological State (PES) Assessment

A tool for assessing the PES of wetlands was first developed in 1999 (DWAF, 1999a). More recently WET-Health was developed (Macfarlane, Kotze, Ellery, Walters, Koopman, Goodman, and Goge, 2007), and recently updated (Macfarlane, Ollis and Kotze, 2020). WET-Health uses indicators based on

hydrology, geomorphology, water quality and vegetation for assessing the PES of wetland systems, with these indicators inferred from land cover within a wetland, its 200m buffer, and its catchment. A Level 1B assessment was undertaken for each natural wetland HGM unit identified and classified.

The wetlands within the 500m buffer area lie within the Rietvlei Nature Reserve and there have been several past activities that have impacted these wetlands. Impacts occurring within the wetlands (within wetland impacts) and affecting the main valley bottom in particular include infilling (road crossings), drains, Rand water pipeline crossings, old culverts and breached berms, flow impoundments (dams), and patches of alien, invasive vegetation. The wetland appears to have already undergone rehabilitation to address certain impacts, as evidenced by several instream structures that have been built within the wetland. This work was done by Working for Wetlands inside the Rietvlei Nature Reserve. These structures are primarily used to stabilize erosion and rewet the wetland area. The seep wetland is impacted by cultivation along its edges which extends into wet areas, infilling in the form of road crossings, and old rubble dumping. Because of the small size of this wetland, the impacting activities generally cover a large proportion of the wetland area and affect more of the system.

These land uses have had an impact on the current extent and condition of the natural wetlands. The catchments of these wetlands are dominated by agricultural (cultivation, grazing) activities, and the headwaters are largely converted to dense urban development and associated infrastructures, mining, and alien, invasive vegetation. The assessment of the ecological integrity of the wetlands considers impact or land use within the wetlands, within a 200m buffer of the wetlands, and within the larger catchments of the wetlands. Applying this approach, the PES assessment determined the valley bottom wetland to be moderately modified (PES C) and the seep wetland to be largely modified (PES D) **Table 13, Table 14** and **Figure 16**. The artificial wetland was not assessed, as the WET-Health tool is specifically designed for the assessment of natural wetland systems.

Table 13: Results of the PES assessment for the valley bottom wetland (VB).

PES Assessment	Hydrology	Geomorphology	Water Quality	Vegetation
Impact Score	3.2	1.7	1.4	4.7
PES Score (%)	68%	83%	86%	53%
Ecological Category	C	B	B	D
Combined Impact Score	2.8			
Combined PES Score (%)	72%			
Combined Ecological Category	C			
Hectare Equivalents	28.2 Ha			

Table 14: Results of the PES assessment for the seep wetlands (H1)

PES Assessment	Hydrology	Geomorphology	Water Quality	Vegetation
Impact Score	5.5	3.4	0.9	7.0
PES Score (%)	45%	66%	91%	30%
Ecological Category	D	C	A	E
Combined Impact Score	4.3			
Combined PES Score (%)	57%			
Combined Ecological Category	D			

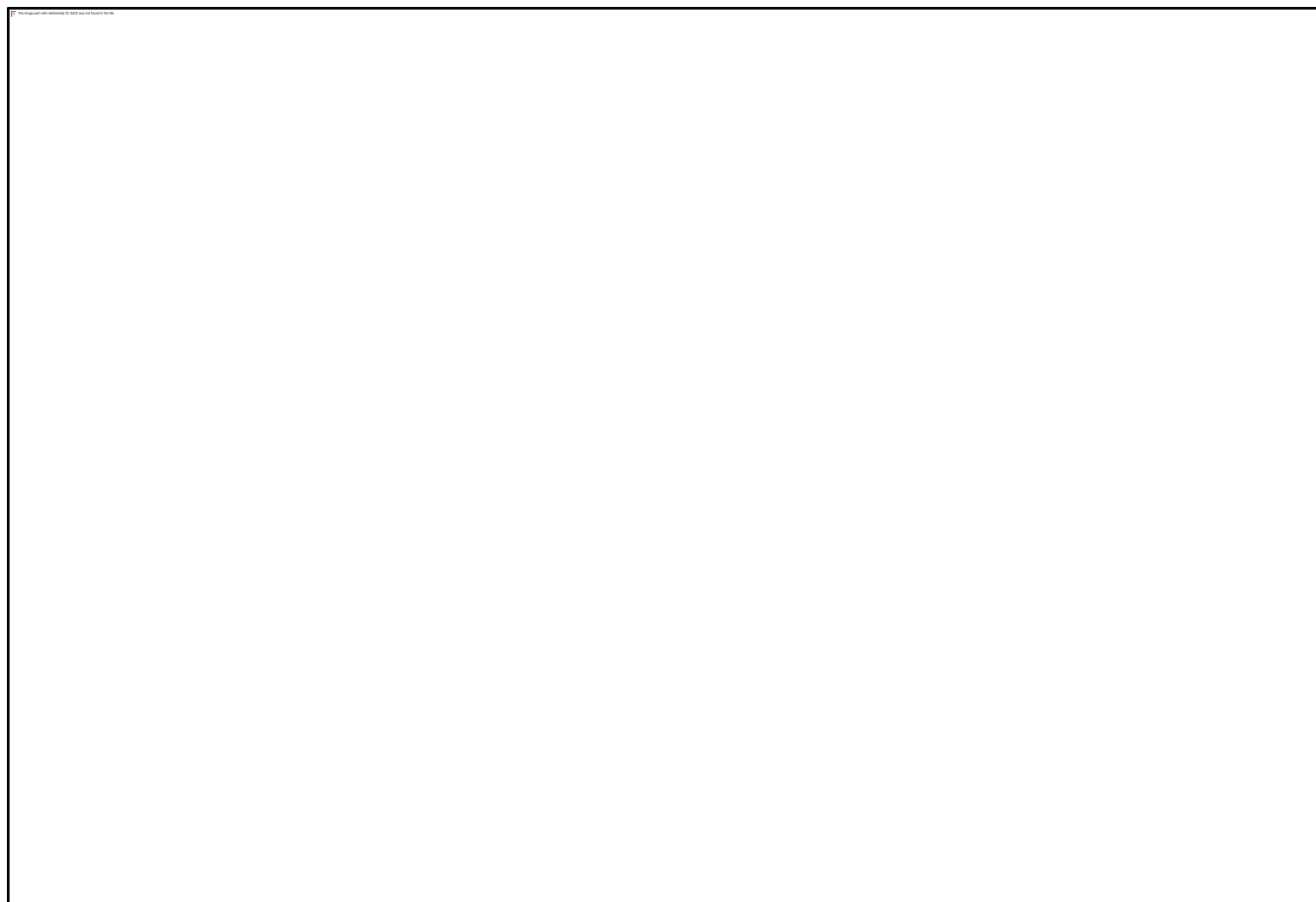


Figure 16: Map illustrating the results of the PES assessment for the wetlands on site.

9.1.6.2.1. Importance and Sensitivity (IS)

With the exception of the valley bottom wetland, all of the wetlands on the project area are considered to be of Low ecological importance and sensitivity (EIS category D). The importance score of the seep wetland is moderate, to some degree it does provide a measure of biodiversity support within the landscape, including potential breeding habitat for various species, including avifaunal species. The seep wetland on site represents less than 5 % of the wetlands within the project area, see the assessment result on Table 15 and Figure 17. The catchment area of the seep wetland has been transformed by agricultural and mining activities. Less than 1% of the seep area is within CBA and ESA especially the area adjacent to valley bottom wetland and the majority of the wetland is within cultivated fields. The valley bottom wetland, however, is considered to be of High importance and sensitivity (IS category B), mostly due to its role in water quality enhancement, sediment trapping, and biodiversity support and it is also a FEPA Wetland, within both CBA and critically endangered wetland ecosystem type.

Table 15: Results of the IS assessment of the wetlands.

HGM Unit ID	HGM Type	Ecological Importance and Sensitivity	Hydro-Functional Importance	Direct Human Benefits	Overall, EIS Score	EIS Category
VB1	Valley-bottom	2.2	2.0	0.7	2.2	High
HS1	Seep	1.8	0.9	0.0	1.8	Moderate
AT1	Artificial Wetland	1.0	0.9	0.0	1.0	Low/Marginal

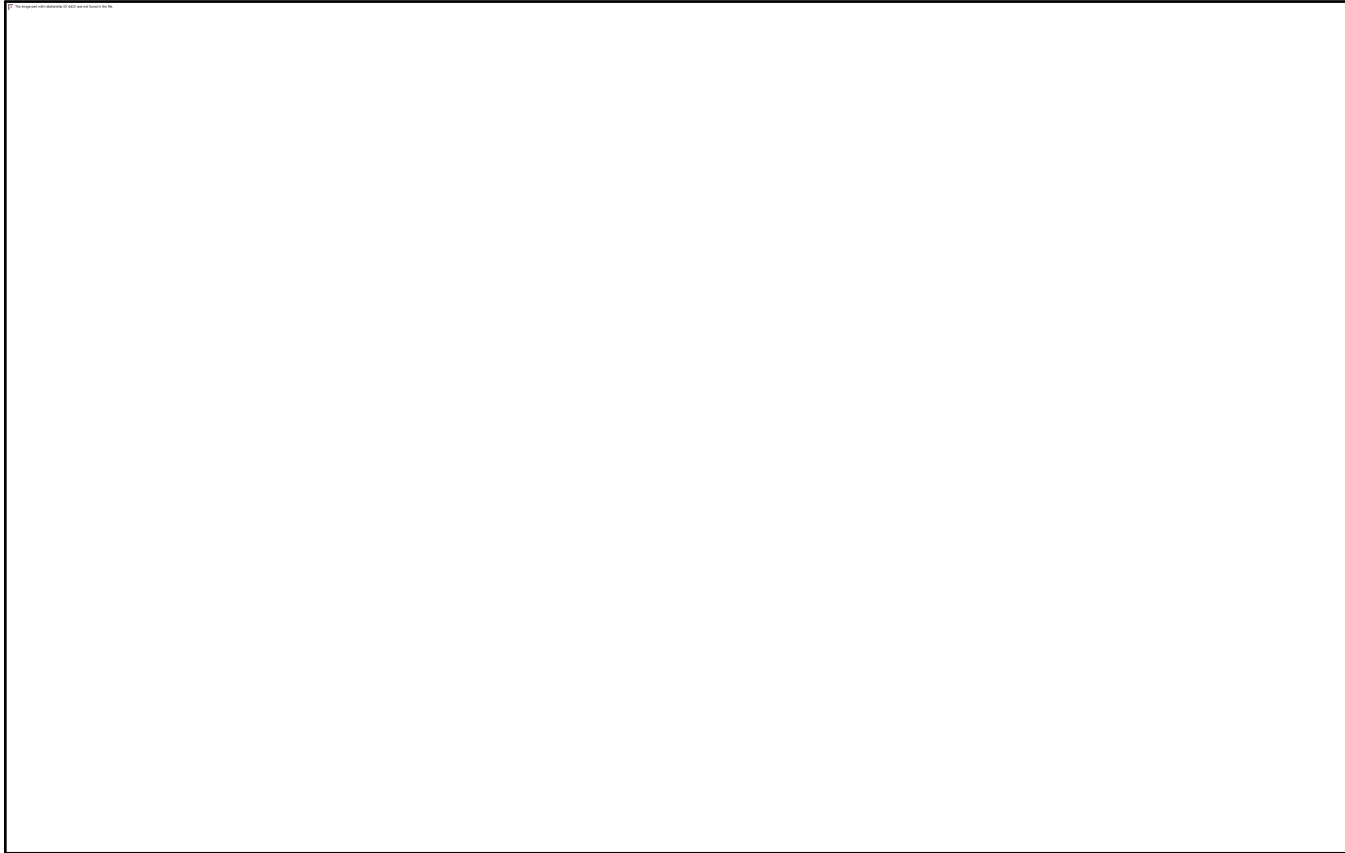


Figure 17: Map illustrating the results of the EIS assessment for the wetlands on site.

9.1.7. Surface water

The project area forms part of the Crocodile (West) and Marico Water Management Area in quaternary catchment A21A see **Figure 18 and Figure 18** below. The Crocodile (West) and Marico Water Management Area is defined by the following Catchments: Crocodile River, Marico River, South African portion of Ngotwane River and the Upper Molopo River (DWAF, 2004).



Figure 18: Hydrological setting of the study area.

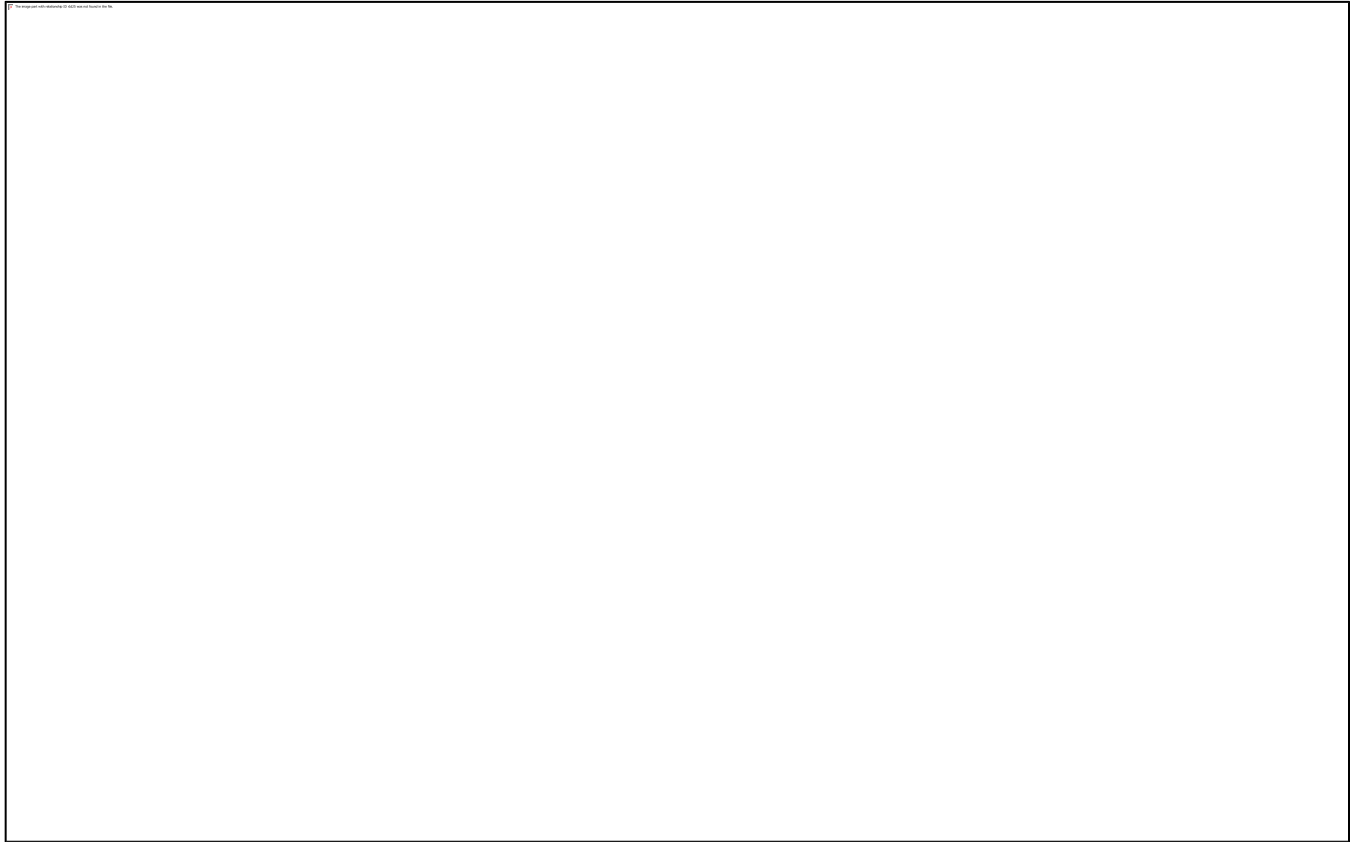


Figure 19: Map showing the project area in relation to the quaternary catchments.

9.1.7.1. Rivers

The Rietvlei River flows about 0.05 km from the north western boundary of the study area while the Hennops River flow approximately 1.2 km on the north eastern boundary of the study area **Figure 20** and **Figure 21**. The Rietvlei River rises from the smallholding areas of Kempton Park and flows northwards past the OR Tambo International Airport to Rietvlei Dam. The Rietvlei Dam contributes a high percentage of the water supplied by the Tshwane Metropolitan Municipality. The primary water supply to this river originates from agricultural run-off and industrial areas. The river is also fed by a tributary i.e., Grootvlei River, which originates in the Bapsfontein area. Sewage works situated at Kempton Park is responsible for serious pollution. However, various wetlands between the sewage works and the dam filter out most of the pollution (Environomics, 2007).



Figure 20: Rivers and Wetlands in around and within the study area.

9.1.8. Groundwater

The project area is associated with the fractured and weathered Karoo Aquifer and Karst aquifer due to the underlying dolomitic environment. The weathered and fractured Karoo aquifer consists of various lithologies of the siltstone, shale, sandstone, and coal seams in places. The weathered zone of the Karoo sediments hosts the unconfined or semi-confined shallow weathered Karoo aquifers or hydro-stratigraphic zone. The weathered zone is typically around 2 m to 21 m thick and water levels within this aquifer are often shallow. Due to direct rainfall recharge and dynamic groundwater flow through the unconfined aquifer in weathered sediments, the water quality is generally good, but in the absence of an overlying confining layer also vulnerable to pollution. Karst aquifers are aquifers that are formed by the dissolution of carbonate sediments i.e. dolomites. These aquifers conduct water through a network of interconnect fissures, fractures and conduits emplaced in a relatively low-permeability rock matrix. Most of the groundwater flow and transport occurs through the network of openings, while most of the groundwater storage occurs in the matrix. As a result, most karst aquifers are highly heterogeneous and anisotropic, however highly vulnerable to contamination.

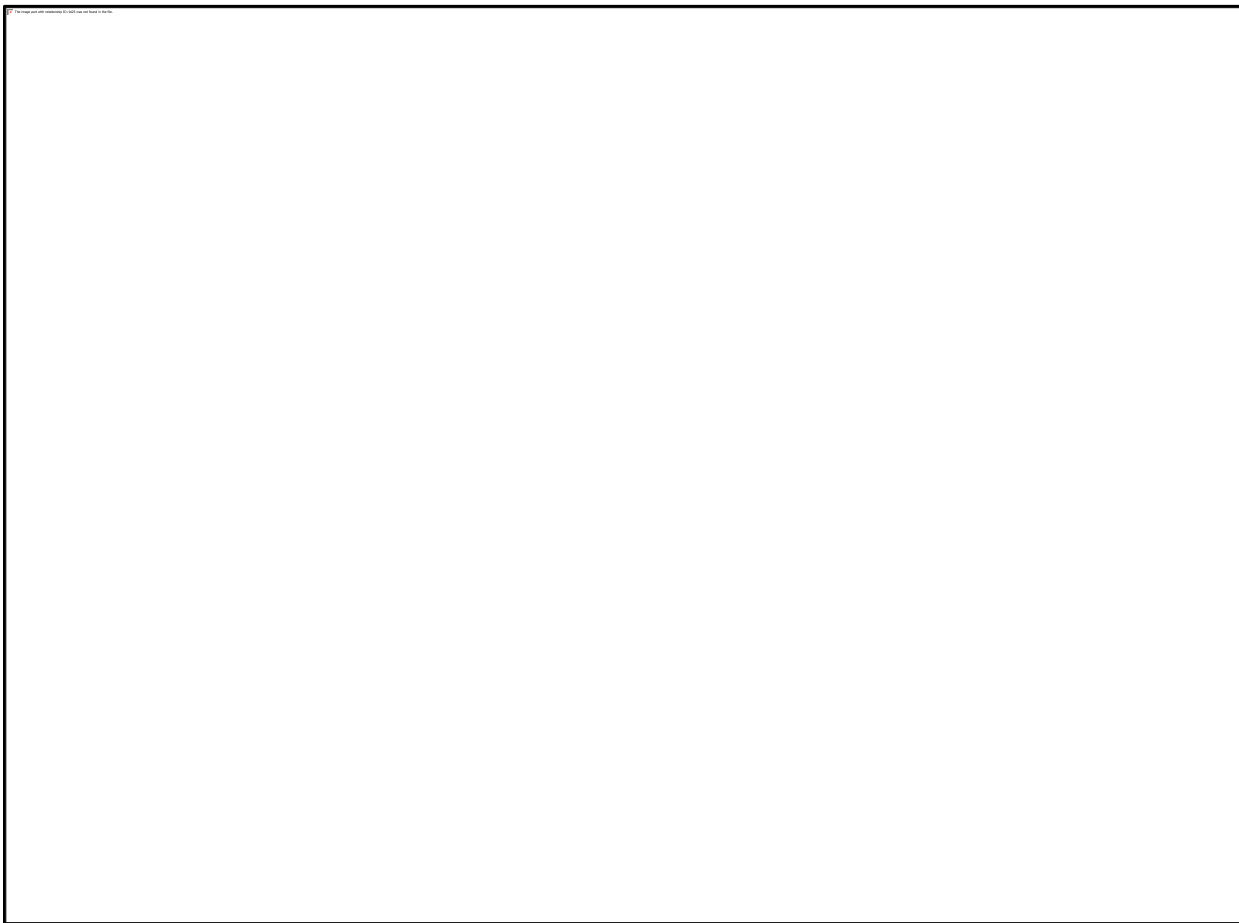


Figure 21: Hydrological map of the project area

9.1.8.1. Hydrogeology of the area

According to Barnard (2000) various aquifer types are found in the project area i.e., fractured aquifers, karst aquifers, and weathered and fractured aquifers:

- Karst aquifers: The Malmani dolomite aquifers are irregular shaped, with solution cavities and fractures, often associated with faults or dykes.
- Weathered, intergranular and fractured aquifers: The Ecca Group, Karoo Supergroup formations present aquifers that have a combination of loose unconsolidated/ weathered material overlaying hard rock formations, in which fractures, fissures or joints potentially hold water. The Karoo strata are susceptible to preferential weathering. These weathered zones form minor aquifers with low borehole yields.
- Fractured aquifers: The Ecca formations yield hard rock aquifers where water is stored and moves through fractures.

A study by GPT (2018) stated that the upper, weathered hydrogeological unit is typically found between 5 and 12 m below surface. The study found that groundwater movement in the upper, weathered hydrogeological unit is controlled by the less permeable shale. GPT stated that the matrix of the Ecca geology is often well-cemented, thus lowering groundwater potential in the matrix. They concluded that most water strikes are associated with secondary geological features such as faults, fractured zones and intrusive contact zones. The Dwyka tillite is hydro-geologically insignificant due to its low yielding nature and low hydraulic conductivity (less than 0.005 m/day), as well as limited recharge potential. GPT did find that high groundwater yields were encountered at the contact zone between the fractured Karoo unit and competent Dwyka tillite. The dolomitic formations are found below the tillite.

The dolomitic aquifer is considered the most significant in the project area. The following is a summary of the main geological units, aquifers in the area:

9.1.8.1.1. Vryheid Formations

This unit comprises of sandstone, shale and coal seams and is associated with the Ecca Group, Karoo Supergroup. The sedimentary rocks are widely intruded by diabase sills and dykes, although sill features have not been mapped in the Corobrik Rietvlei Factory area. According to Vegter et al (1968) different aquifer types can be associated with in the Ecca formations:

- Weathered and fractured shale and sandstone;
- Fractured and jointed sandstone and shale adjacent to the diabase dykes;
- Weathered and fractured diabase dykes;
- Basins of deep weathering in the sandstone, shale and diabase sills;
- Weathered and fractured upper contact zone associated with the sills; and

- Weathered and fractured lower contact zone associated with the sills.
- The coal seams also yield minor water strikes.

The Eccca Group of the Karoo Supergroup presents aquifers that have a combination of loose unconsolidated/ weathered material overlaying hard rock shale and sandstone, in which fractures, fissures or joints potentially hold water. The Karoo strata are susceptible to preferential weathering. These weathered zones form minor aquifers with low borehole yields. The groundwater yield of the Vryheid Formation is generally below 2 L/s. According to a study by AGES (2006) localised perched aquifers occur on the weathered and solid bedrock contact zones. The perched aquifer typically forms on low permeable clays and hardpan ferricrete. Groundwater quality, distant from pollution sources (e.g., mining) is good, with an average pH of 7.5 and an EC of 57 mS/m.

9.1.8.1.2. Dwyka Group

The Dwyka Group comprises glacial deposits (tillite). The permeability of the tillite is generally regarded as very low. The deeper Eccca, Dwyka and Black Reef quartzite result in hard rock aquifers where water is stored in and moves through fractures. These aquifers are typically low yielding with most water strikes yielding less than 2 L/s. The Dwyka tillite is generally not a well-developed aquifer. Higher groundwater yields are however often present along the contact zone between fractured Karoo aquifers and the Dwyka tillite.

9.1.8.2. Site Investigations 2023

The site-specific assessments were focused on two tasks:

- Install three new groundwater monitoring boreholes at Corobrik Rietvlei Factory and define the aquifer systems penetrated by the three boreholes; and
- Conduct a hydro-census on the neighboring properties to help define groundwater use and to determine the groundwater level elevations in the project area. This helps to define groundwater flow directions in the project area.

Site-specific groundwater investigations included:

9.1.8.2.1. Hydrocensus

A hydro-census was conducted across the Corobrik Rietvlei Factory study area during May 2023. The survey included the Corobrik Rietvlei Factory property, plus neighboring properties, and concentrated on identifying existing boreholes to enhance the knowledge of the groundwater systems, current groundwater use and current groundwater levels throughout the area.

Corobrik Rietvlei Factory is bounded by the Rietvlei Nature Reserve in the north and further west, Nova Bricks in the east and agricultural properties in the south and southwest. The eastern portion of the site is used for farming and is under irrigation.

9.1.8.3. Groundwater Management Measures

Groundwater management measures should be implemented to minimize impacts on the groundwater resource, but also infrastructure. Most of these form part of good house-keeping measures. The following objectives and targets are proposed for groundwater management in the area:

- Implement a water management plan aimed at reducing and/or eliminating adverse impacts on sensitive receptors in the area, as well as infrastructure.
- Implement monitoring procedures to measure the effectiveness of groundwater management and impacts on private boreholes and the Rietvlei Nature Reserve and surface water resources.
- Groundwater level and water quality monitoring at:
 - Corobrik BH;
 - Cor BH1;
 - Cor BH2;
 - Cor BH3;
 - A2N0145;
 - Rietvlei spruit up;
 - Rietvlei spruit Marais Dam; and
 - Rietvlei spruit down, are critical to assess the impact of the Corobrik mining and manufacturing activities on the groundwater and surface water environments
- Analyze the information obtained from all monitoring sites to establish groundwater level and water quality trends. Should the trends indicate adverse impacts on groundwater levels and/or water quality, implement suitable measures within the shortest possible time to remediate and/or eliminate such impacts.
- Record groundwater levels, abstraction volumes and pumping timeframes.
- Ensure that drawdown is limited and does not exceed to capacity of the borehole.
- Ensure that sufficient information is available on all private boreholes around the Corobrik Rietvlei Factory (1 km radius) to quantify groundwater status.
- Ensure sufficient budget to implement and maintain the water monitoring programme.
- Develop effective surface runoff management plans to ensure that all dirty runoff is kept away from all production boreholes or sensitive surface water systems, and no ponding occurs on site.

- Review the groundwater flow and level data for all monitoring sites on a monthly basis to ensure effective and safe use of the resource.
- Use the monitoring data to define seasonal groundwater level and water quality trends for the area.
- Ensure that clean and dirty water is separated, and that dirty water is contained on site, but also kept away from sensitive receptors. Prevent dirty water runoff from leaving the area.

9.1.9. Heritage

A Pelser Archaeological Consulting (APAC) was appointed by Licebo Environmental and Mining (Pty) Ltd, on behalf of the Applicant (Corobrik (Pty) Ltd), to conduct a Phase 1 Heritage Impact Assessment for their Rietvlei Quarry Mining Rights Application. The project area is situated in the City of Tshwane and Ekurhuleni Metropolitan Municipalities, in the Province of Gauteng. Remaining Extent of Portion 26 (a Portion of Portion 1) and Portion 27 (a Portion of Portion 26) of the original farm Witkoppies 393 JR forms part of the study and application area.

Background research indicates that there are several cultural heritages (archaeological & historical) sites and features in the larger geographical area within which the study area falls, but no known ones in the study area and specific farm portions. None were identified during the field-based survey in the area. The geology of the area is mostly clay-rich soils that can be seen inside and outside the quarries. The surrounding farms suggest that the topsoil contain minerals that support agricultural development. The study area is in the Moderate Eastern Plateau climatic region which consists mostly of grasslands. The vegetation in the area is long grass with sparse amounts of thickets, characteristic of the grasslands of South Africa. The topography of the region is reasonably flat except for the quarries and the soil heaps that have been created during the mining processes. On the North-western corner a gradual decline can be noted towards the “Sesmyspruit” river that is located in the Rietvlei Nature Reserve.

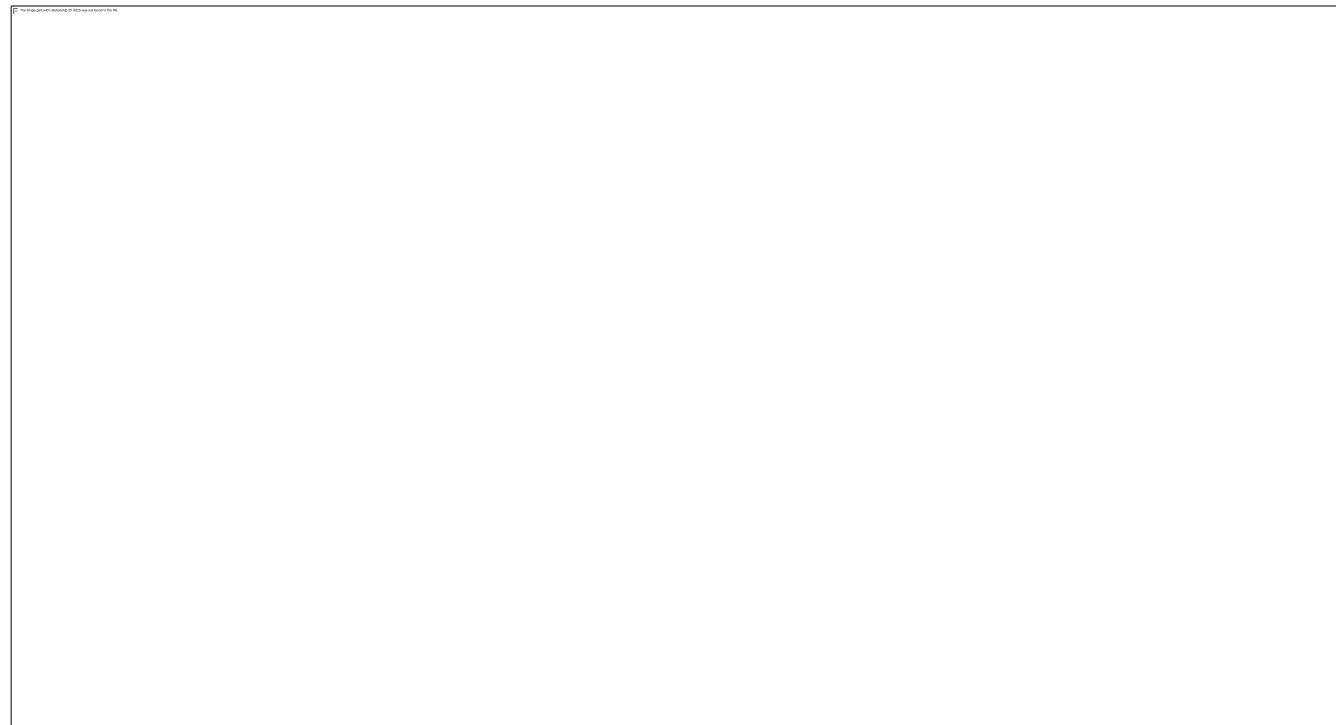


Figure 22: General location of the study & application area indicated by the red polygon (Google Earth 2023).

9.1.9.1. Results of the Field Assessment

A large part of the study and application area has been extensively disturbed by roads, various quarries, ESKOM Powerline Pylons and several structures buildings associated with the Corobrik activities here. Recent historical agricultural activities (ploughing and crop growing) have also had an impact on large portions of the area. Dense vegetation (grass cover) also limited visibility on the ground.

No cultural heritage (archaeological and/or historical) sites, features or material were identified in the study & application area during the field assessment. If any did exist here in the past, recent activities and developments would have severely disturbed or destroyed any as a result. Aerial images (Google Earth) of the farm portions (dating from 2004 to more recently) that make up the application area clearly shows the impacts of the various developments and activities on the area.

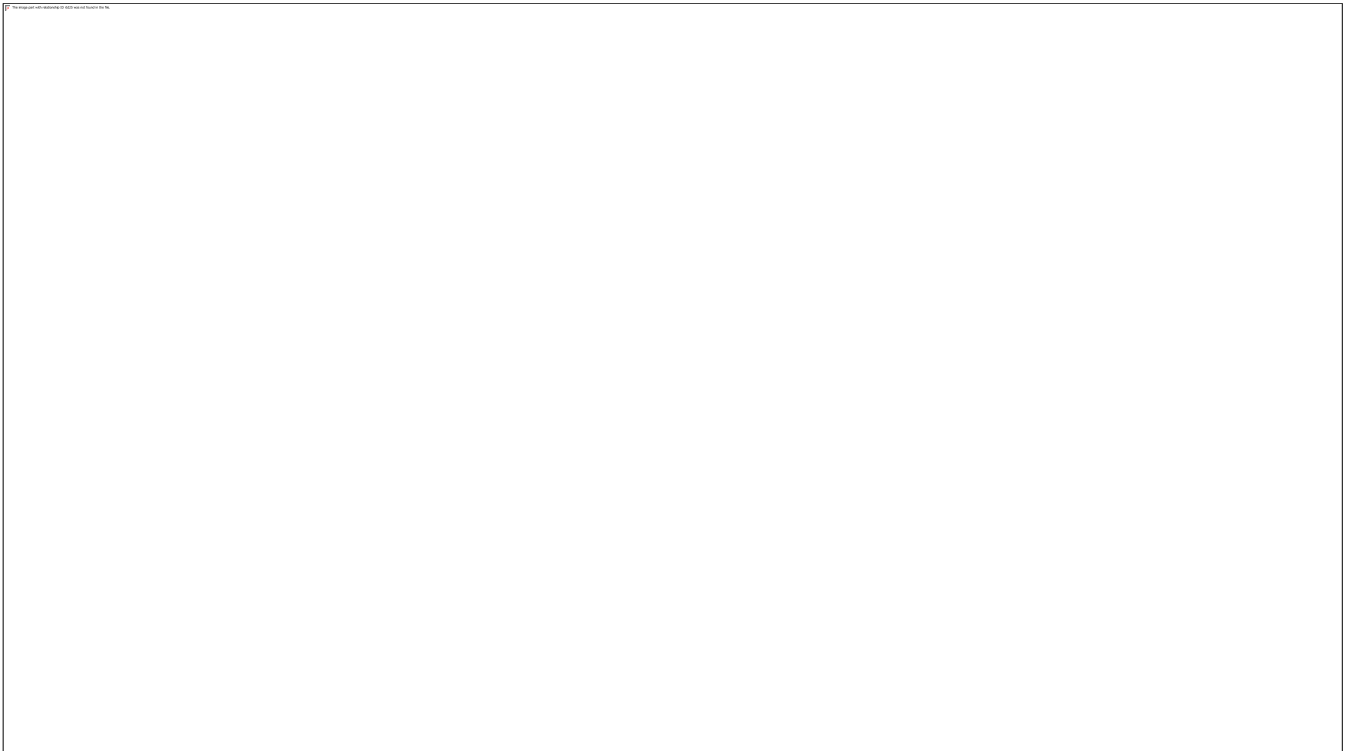


Figure 23: A view of one of the quarry areas (courtesy H. Visser 2023).

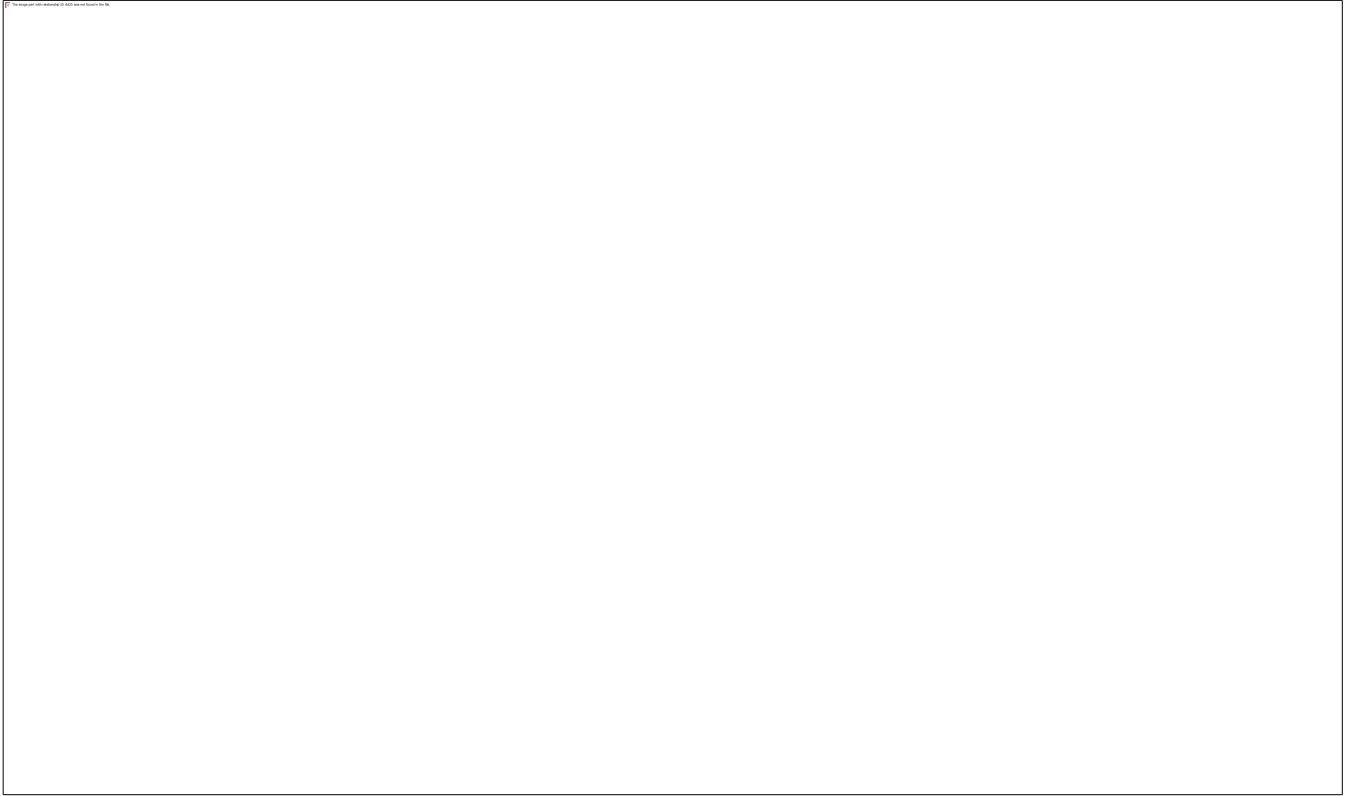


Figure 24: A general view of part of the area showing the typical landscape, vegetation & the Eskom Powerlines and pylons (courtesy H. Visser 2023).

9.1.10. Paleontology

The study site is underlain by rocks of the Vaalian aged Malmani Subgroup, Chuniespoort Group of the Transvaal Supergroup and predominantly deeply weathered shale of the Eccca Group, Karoo Supergroup. The Malmani Subgroup is a prominent stromatolitic dolomite and this group of rocks underlies the shale and sandstone of the Eccca Group in the study area. The Permian aged Eccca Group consists of interbedded coarse-grained sandstone and thick shale sequences. The shale sequences are very rich in plant remains – hence the discovery of coal at Farm Witkoppies No. 393 JR. The field survey done on 14th of August 2023 confirmed the presence of significant plant fossil and the studies undertaken confirm that the project area is underlain by the very highly sensitive rocks of the Eccca Group (see **Figure 25**) and deep excavation (>1,5m) can expose significant fossils. See **Appendix 14** for a detailed Paleontological Impact Assessment Report.

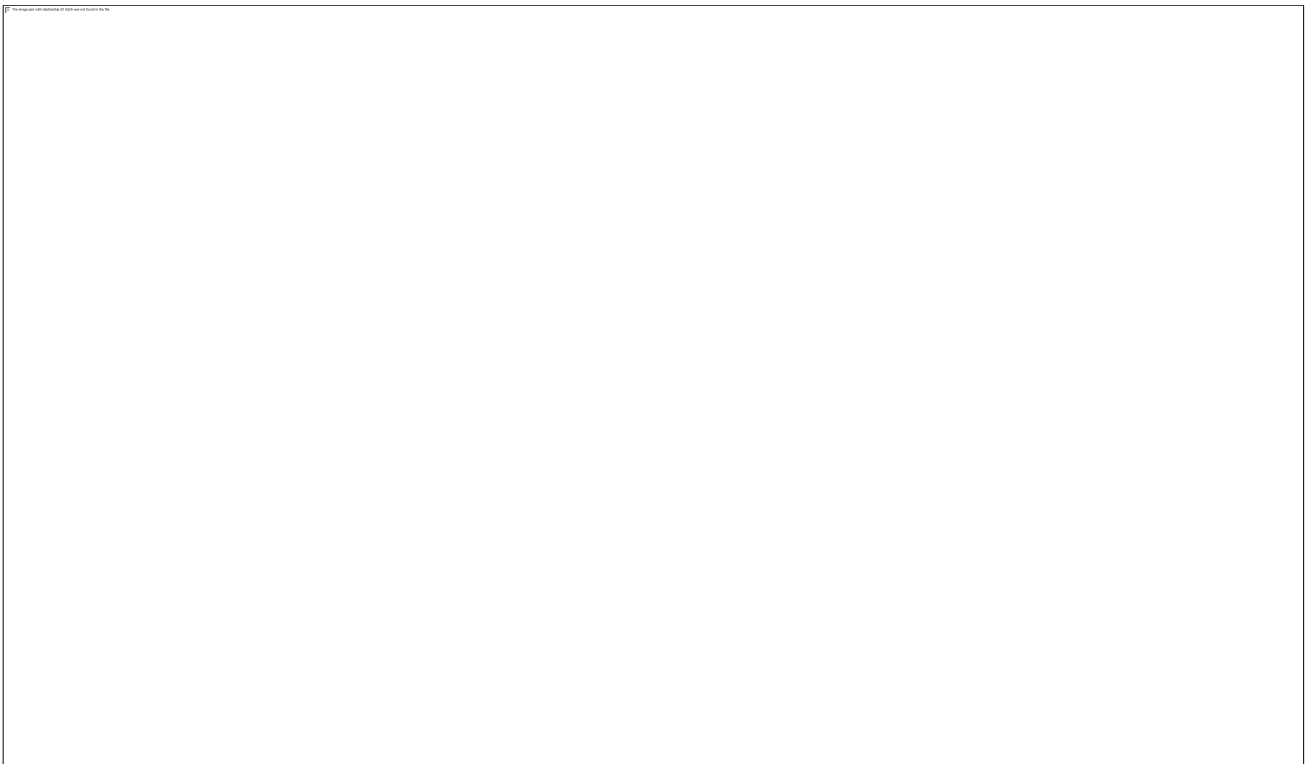


Figure 25: Google Earth image showing the Palaeontological sensitivity is high to very high over the study area.

9.1.11. Air Quality

During the construction, operational and decommissioning phases there will be an increase in the omission of dust within the project area and in the vicinity of Rietvlei, therefore dust suppression must be regularly undertaken on access roads and exposed ground in a manner that effectively keeps the dust suppressed. Surface where construction activities are taking place should be wetted/dust suppression. Workers on the site should be issued with dust masks during dry and windy conditions.

9.1.12. Noise

During the construction, operational and decommissioning phases of Corobrik mining activity there will be increase in noise pollution within the project site. The following possible sources of noise could potentially generate noise pollution during Construction stages of this project: Movement of mining vehicles and equipment and possible drilling on the pit.

9.1.13. Socio-economic impacts

9.1.13.1. Economic activity

The City of Tshwane is the fourth biggest municipality in South Africa and second biggest in Gauteng in terms of gross value added by region with gross value add of R313 billion. In 2017, City of Tshwane contributed 28.4 percent to the provincial economy. Moreover, Tshwane accounted for 10.0 percent of the Country's economy compared to 15.7 percent for the City of Johannesburg. The City of Ekurhuleni (CoE) is regarded a major economic and social role-player in South Africa by means of its strong industrial characteristics as well its contribution to the national economy, and the size and extent of the population that is contained within its administrative boundary. CoE contributes 19.57% to the Gauteng Gross Domestic Product (GDP) which is an increasing in the share of the Gauteng from 19.57% in 2008 and contributed 6.85% to the GDP of South Africa.

The City of Tshwane Metropolitan Municipality ranked second relative to all the regional economies that contribute to the total Gauteng Province GDP. This ranking, in terms of size compared to other regions, for City of Tshwane has remained the same since 2007. In terms of its share, it was at 28.4% in 2017 - significantly larger than what it was in 2007 (26.3%). For the period 2007 to 2017, the average annual growth rate of City of Tshwane (2.8%) was the highest relative to its peers in terms of growth in constant 2010 prices. CoE achieved an annual economic growth rate of 1.09% which is close to the Gauteng one of 1.12%, and higher than South Africa whose growth rate was 0.79%. In 2018 the CoE ranked third relative to other regional economies to Gauteng Provincial GDP. This ranking remained the same since 2008 with its share in 2018 compared to 2008. CoE is projected to grow at an average

annual rate of 1.75% from 2018 to 2023. Gauteng and South Africa are projected to grow at 1.72% and 1.60% respectively as displayed below in (see **Figure 26**).



Figure 26: Gross Domestic Product (GDP) – City of Tshwane and the rest of Gauteng, 2017.

9870 services sector was the largest within CoE accounting for 22.7% of the city's GVA, followed by manufacturing at 20.8%, the finance sector at 20.3% and the agriculture sector at 0.42% of the total GVA. For the period 2008 to 2018, the finance sector had the highest annual growth rate in Ekurhuleni at 2.95% followed by the construction sector at 2.83%, the electricity sector -0.42%, while the mining sector had the lowest average annual growth of -0.56%. Overall growth existed for all the industries in 2018 with an annual growth rate of 0.92%.



Figure 27: Gross Value Added (GVA) – City of Ekurhuleni, 2018.

9.1.13.2. Employment

9.1.13.2.1. Formal and Informal Employment

Formal sector employment is measured from the formal business side, and the informal employment is measured from the household side where formal businesses have not been established. The number of formally employed people in City of Ekurhuleni counted 1.05 million in 2018, which is about 85.72% of total employment, while the number of people employed in the informal sector counted 176 000 or 14.28% of the total employment. Informal employment in Ekurhuleni increased from 135 000 in 2008 to an estimated 176 000 in 2018. The number of people formally employed in City of Tshwane Metropolitan Municipality was 1.06 million in 2017, which was about 86.43% of total employment. The number of people employed in the informal sector was 166 000 or 13.57% of total employment. Informal employment in City of Tshwane increased from 144 000 in 2007 to an estimated 166 000 in 2017 see **Figure 28** below.



Figure 28: Formal and Informal Employment - City of Ekurhuleni, 2018.

The mining industry, due to well-regulated mining safety policies, and the strict registration of a mine, has little or no informal employment. The Electricity sector is also well regulated, making it difficult to get information on informal employment. Domestic Workers and employment in the agriculture sector is typically counted under a separate heading. In 2018 the Trade sector recorded the highest number of informally employed, with a total of 67 400 employees or 38.43% or 40.59% respectively CoE and City of Tshwane of the total informal employment. This can be expected as the barriers to enter the Trade sector in terms of capital and skills required is less than with most of the other sectors. The Manufacturing sector has the lowest informal employment with 13000 and only contributes 7.39% to total informal employment.

9.1.13.2.2. Unemployment

According to definition extracted from Thirteenth International Conference of Labour Statisticians (Geneva, 1982): The "unemployed" comprise all persons above a specified age who, during the reference period. In 2017, there were a total of 386 000 people unemployed in City of Tshwane, which is an increase of 150 000 from 236 000 in 2007. The total number of unemployed people in City of Tshwane constitutes 18.64% of the total number of unemployed people in Gauteng. The City of Tshwane experienced an average annual increase of 5.06% in the number of unemployed people, which is better than that of Gauteng, which had an average annual increase in unemployment of 5.64% see () below.

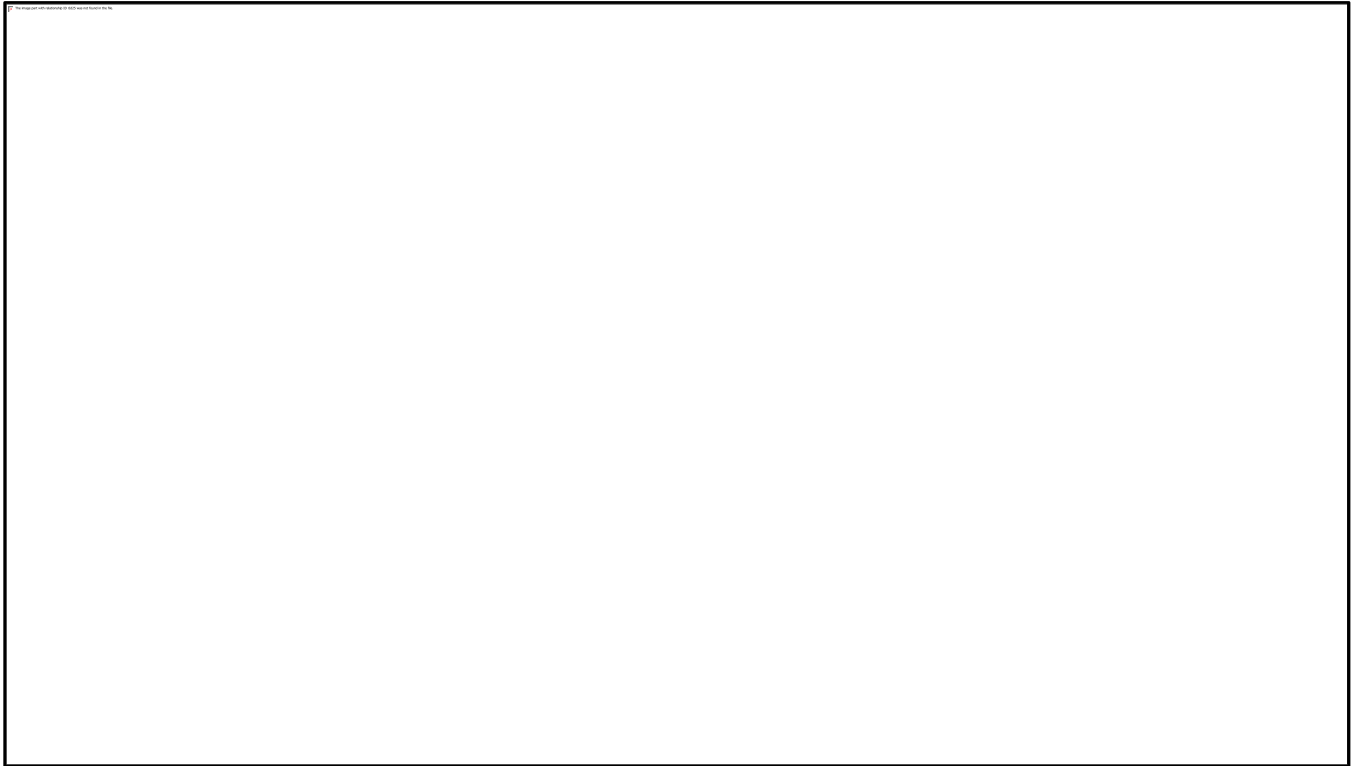


Figure 29: Unemployment rate of City of Tshwane, 2007, 2012 and 2017

Unemployment remains a significant challenge, with Ekurhuleni's rate of joblessness exceeding the provincial average by more than 1%, at 30.1%. The municipality has consistently had higher unemployment rates than the provincial and national levels over the time span. The quarterly labour force participation rate for Ekurhuleni has remained above provincial and national levels for the period 2015 - 2019 maintaining rates above 70%. In 2018 CoE recorded the largest number of employments, were the finance sector with 297 000 employed people or 24.1% of total employment in the metropolitan municipality. The trade sector with 268 000 (21.8%) employs the second highest number of people relative to the rest of the sectors. The electricity sector with 7 100 (0.6%) is the sector that employs the least number of people in CoE, followed by the mining sector with 7 500 (0.6%) people employed.

9.1.13.3. Population

The City of Tshwane Metropolitan Municipality with an estimated 3.31 million population, housed 5.8% and 24.1% of South Africa's and Gauteng's total population in 2017 respectively. Between 2007 and 2017, the population growth rate in the City of Tshwane averaged 2.92% per annum, which is close to double the growth rate of South Africa as a whole (1.56%). Gauteng's average annual growth rate came in just under at 2.57% over the same period. The City's population has grown exponentially from

an estimated 2 481 752 in 2001 to 3 379 104 in 2016. The current population represents over 6% of the total population of South Africa (Stats SA: 2017). The growth rate has been declining from 2,8% in 2011 to the current 2,1%. It is projected that the population of the City of Ekurhuleni will grow at a slower rate at less than 2% resulting in an expected over 4 million residents by 2030 and 8,8million residents by 2050. An important feature of growth in the Ekurhuleni population is the net migration into the City of Ekurhuleni, with City of Tshwane and Johannesburg, are the largest recipients of in-migration in the country.

9.1.13.3.1. Age and gender profile

The 2011 population pyramid of Ekurhuleni as embedded in the outline of that of South Africa. The pyramid shows that the population composition of Ekurhuleni is typical of that of the rest of South Africa. Firstly, the city is undergoing a demographic transition at the base of the pyramid, driven largely by declining fertility – observable for the whole of South Africa in general and secondly by the effect of in-migration of typically the 25- to– 64-year-olds in search of economic opportunities See Figure 30 below.

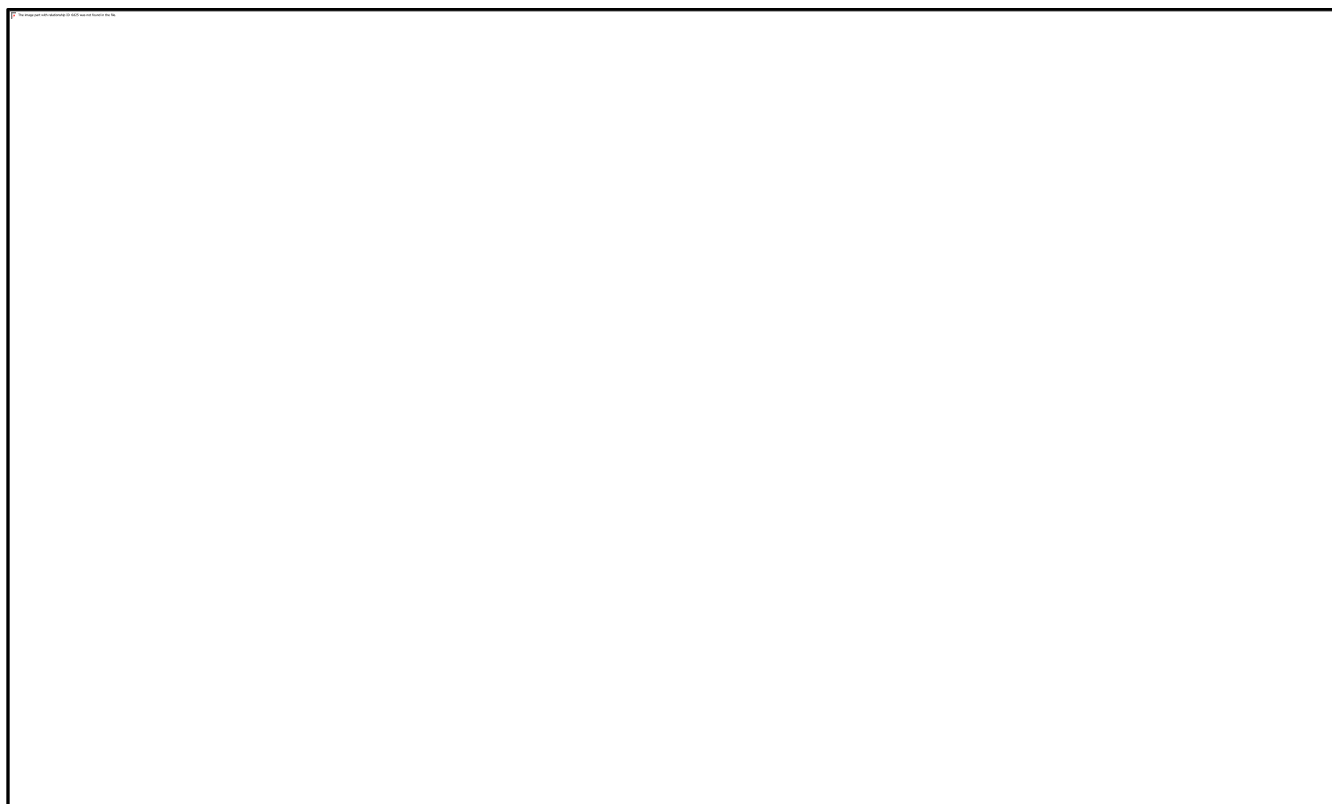


Figure 30: Population structure of Ekurhuleni 2011 vs National

The City of Tshwane age distribution of the population is the largest share of population within the young working age (25-44 years) age category, with 1.21 million or 36.5% of the total population. The age category with the second largest population share is the (0-14 years) age category, with 24.5%;

then followed by the older working age population (i.e., 45-64 years age category), with 592 000 people. The age category with the lowest number of people is the elderly population (i.e., 65 years and older age category), with only 207 000 people see **Figure 31** below.

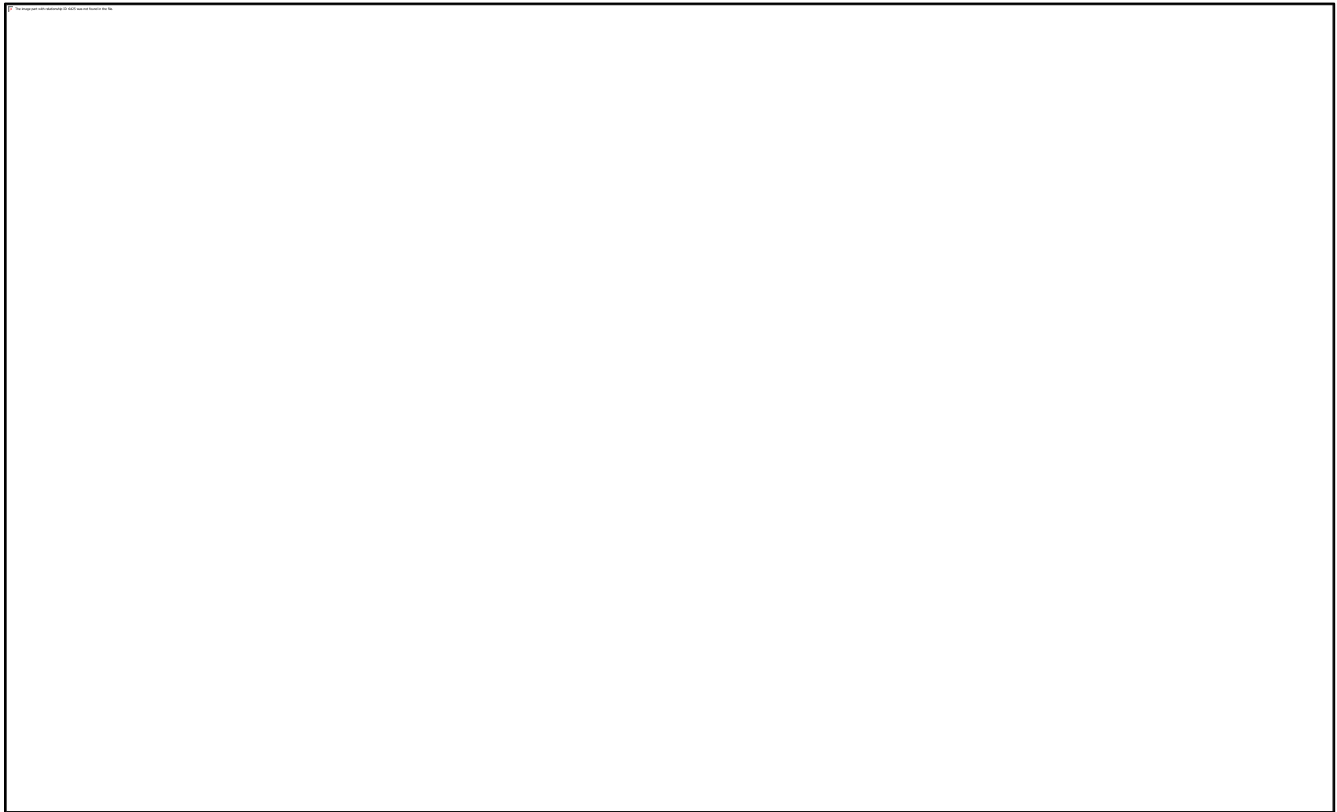


Figure 31: Population structure of the City of Tshwane, 2007 vs 2017

9.1.13.4. Health Services

Ekurhuleni Health District provides a wide range of PHC services at ninety-five (95) Primary Health Care Facilities [including the Ethafeni Midwife Obstetric Unit] and fourteen (14) Mobile Clinics. Of the ninety-four (94) health facilities, 81 (85%) are managed by the CoE and 13 (15%) by the Gauteng Department of Health (GDoH). The provision of the PHC Service Package is determined by the norm and classification of facilities; namely, Community Health Centre, Community Day Centre, Clinic, Satellite Clinic and Mobile Clinic that also determines the operational times.

The leading cause of death for children below the age of 4 years are communicable diseases. For children between the ages 5 and 14 the leading cause of death are injuries. 60% of males between the ages 15-24 die because of injuries whereas most females in that age category die because of HIV/Aids and TB related diseases. This is also the case for females between the ages of 25 and 49 years. This is

also the leading cause of death for males between 25 and 49 years. Males (69%) and Females (75%) above the age of 50 die because of non-Communicable diseases.

10. DESCRIPTION OF SPECIFIC ENVIRONMENTAL FEATURE AND INFRASTRUCTURE ON SITE

10.1. Environmental AND CURRENT LAND USE MAP

Land use within 5 km radius around the study area varies from cultivation, forest plantation, mine and quarries to urban/built-up industrial. The project area lies in the degraded land use category which is surrounded by cultivated temporary commercial dry land. The land use / land cover which cover the largest part of the 5km zone fall in the degraded, cultivated, mines, urban built up and natural land cover.

11. IMPACT AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF THE IMPACT, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

11.1. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential impacts and risks

Impact Ranking Criteria to be used

The criteria used for assessing the assessing the significance of the impacts are given in **Table 16**.

The impact assessment method considers the current environment, the details of the project and the findings of the specialist studies. Cognizance has been given to both positive and negative impacts that may result from the development. The significance of the impact is dependent on the consequence and the probability that the impact will occur.

$$\text{Impact significance} = (\text{consequence} \times \text{probability})$$

Where:

$$\text{Consequence} = (\text{severity} + \text{extent})/2$$

and

$$\text{Severity} = [\text{intensity} + \text{frequency} + \text{duration}]/3$$

Each criterion is given a score from 1 to 5 based on the definitions given in **Table 16** although the criteria used for the assessment of impacts attempts to quantify the significance, it is important to note that the assessment is generally a qualitative process and therefore the application of this criteria is open to interpretation. The process adopted will therefore include the application of scientific measurements and professional judgement to determine the significance of environmental impacts associated with the project. The assessment thus largely relies on experience of the environmental assessment practitioner (EAP) and the information from the specialists' studies for the EIA.

Where the consequence of an event is not known or cannot be determined, the "precautionary principle" will be adhered to and the worst-case scenario assumed. Where possible, mitigation

measures to reduce the significance of negative impacts and enhance positive impacts will be recommended. The detailed actions, which are required to ensure that mitigation is successful, will be provided in the Environmental Management Programme report, which will form part of the EIR Phase.

Consideration will be given to the phase of the project during which the impact occurs. The phase of the development during which the impact will occur, will be noted to assist with the scheduling and implementation of management measures.

Table 16: Criteria for assessing the impact significance

SEVERITY CRITERIA

INTENSITY = MAGNITUDE OF IMPACT	RATING
Insignificant: impact is of a very low magnitude	1
Low: impact is of low magnitude	2
Medium: impact is of medium magnitude	3
High: impact is of high magnitude	4
Very high: impact is of highest order possible	5

FREQUENCY = HOW OFTEN THE IMPACT OCCURS	RATING
Seldom: impact occurs once or twice	1
Occasional: impact occurs every now and then	2
Regular: impact is intermittent but does not occur often	3
Often: impact is intermittent but occurs often	4
Continuous: the impact occurs all the time	5

DURATION = HOW LONG THE IMPACT LASTS	RATING
Very short-term: impact lasts for a very short time (less than a month)	1
Short-term: impact lasts for a short time (months but less than a year)	2
Medium-term: impact lasts for the for more than a year but less than the life of operation.	3
Long-term: impact occurs over the operational life of the extension.	4
Residual: impact is permanent (remains after mine closure)	5

EXTENT

EXTENT = SPATIAL SCOPE OF IMPACT/ FOOTPRINT AREA / NUMBER OF RECEPTORS	RATING
Limited: impact affects the mining area	1
Small: impact extends to the neighbouring farmers	2
Medium: impact extends to surrounding farmers beyond the immediate neighbours	3
Large: impact affects the area covered by the municipal area	4
Very Large: The impact affects an area larger than the municipal area	5

PROBABILITY

PROBABILITY = LIKELIHOOD THAT THE IMPACT WILL OCCUR	RATING
Highly unlikely: the impact is highly unlikely to occur	0.2
Unlikely: the impact is unlikely to occur	0.4
Possible: the impact could possibly occur	0.6
Probable: the impact will probably occur	0.8
Definite: the impact will occur	1

IMPACT SIGNIFICANCE

NEGATIVE IMPACTS

≤1	Very low	Impact is negligible. No mitigation required.
>1≤2	Low	Impact is of a low order. Mitigation could be considered to reduce impacts. But does not affect environmental acceptability.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts. Mitigation should be implemented to reduce impacts.
>3≤4	High	Impact is substantial. Mitigation is required to lower impacts to acceptable levels.
>4≤5	Very High	Impact is of the highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential Fatal Flaw.

POSITIVE IMPACTS

≤1	Very low	Impact is negligible.
>1≤2	Low	Impact is of a low order.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts.
>3≤4	High	Impact is substantial.
>4≤5	Very High	Impact is of the highest order possible.

Table 17: Significance rating associated with the potential impacts from the mining activities

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
Mining activities						
Construction Phase						
1	Construction phase not applicable since the mine is already in operational phase.					
Operational Phase						
2	Recruitment, procurement and employment	Socio-economic	Socio-economic impact	Operational phase	To ensure that recruitment strategies for the mine prioritizes the sourcing of local labour and share in gender equality. Empower the workforce to develop skills that will equip them to obtain employment in other sectors of the economy. Contribute to the sustainable development of a community (not dependent on the mine) surrounding the area of operation.	<ul style="list-style-type: none"> Implement Social and Labour Plan in order to implement LED initiative to manage the needs of the local communities. Relationships with local government through LED programmes should be developed. Stakeholder database should be established to identify partners and develop collaborative networks.
3	Operation of Corobrik coal and clay mining activities	Air quality	Dust generation from the movement of vehicles.	Operational, decommissioning and closure phase.	To prevent the dust generated by the moving machineries and equipment.	<ul style="list-style-type: none"> A dust suppressant must be applied to gravel or dirt roads.
		Soil	Disturbance of soil as a result of excavation activities.	Operational phase, decommissioning and closure phase.	To limit soil disturbance within footprint area only.	<ul style="list-style-type: none"> Topsoil removal must be limited within the mining footprint area only. Topsoil and subsoil (predominately clay which is the bricklaying raw material) must be stockpiled separately.
		Noise	Noise pollution from the	Operational, decommissioning	To prevent the noise emanating from the transport vehicles from impacting on the	<ul style="list-style-type: none"> Mining-related machine and vehicles must be serviced on a

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
			vehicles as the results of poor vehicular maintenance and lack of service.	and closure phases.	sensitive receptors.	<p>regular basis to ensure noise suppression mechanisms are effective e.g., installing exhaust mufflers.</p> <ul style="list-style-type: none"> Noisy machinery to be used during daylight hours preferably. Grievance mechanism to record complaints should be kept on site and investigated. Noise monitoring to take place.
		Surface water	Contamination of surface water.	Operation phase.	Prevent hydrocarbons spillages from the vehicular movement	<ul style="list-style-type: none"> All potential hydrocarbon spillages and leaks to be cleaned up immediately and the soils remediated; Ensure that all machinery and equipment are in a good working order.
		Biodiversity & Aquatic environment	Disturbance of vegetation	Operational, decommissioning and closure phase	Restrict removal and disturbance of vegetation to those areas essential for the mining.	<ul style="list-style-type: none"> Make use of existing roads and/or areas and roads designated for the mining operations.
			Excessive dust generation.	Operational, decommissioning and closure phase.	Limit the negative effects of excessive dust and erosion.	<ul style="list-style-type: none"> Remove loose earth from the roadsides. Periodic spraying of roads with water.
		Traffic and safety on access roads to traffic increase.	Traffic congestion.	Operational, decommissioning and closure phase.	Create safe environment for pedestrians, animals and motorists.	<ul style="list-style-type: none"> Speed limits must be implemented on site as well as safety controls. Investigate the requirement of safety intersections at the R50

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						intersection must be undertaken.
4	Topsoil and overburden removal and stockpiling	Air quality	Dust generation from the movement of vehicles.	Operational, decommissioning and closure phase.	Limit dust generation by dust suppression.	<ul style="list-style-type: none"> Dust suppression must be undertaken on all dirty roads to prevent the generation of dust.
		Noise	Increased ambient noise levels from vehicular movement.	Operational, decommissioning and closure phase.	Limit excessive noise generation from vehicular movement.	<ul style="list-style-type: none"> Vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g., installed exhaust mufflers. All vehicles and machinery must be in a good working order.
		Vegetation	Disturbance of vegetation on the mining area	Operational phase.	Ensure that the disturbance of vegetation is limited to the mining area.	<ul style="list-style-type: none"> Vegetation and topsoil removal to be restricted to the footprint areas.
		Soil	Soil disturbance due to the excavation activities.	Operational phase.	To ensure that the excavation activities are limited only to footprint area.	<ul style="list-style-type: none"> Vehicles and machinery to be serviced in a hard park area or at off-site locations. Trenches and excavations shall be closed as soon as possible after services have been laid on them. To prevent them from posing hazards to staff, traffic, and animals as well as to prevent wind and soil erosion. Soil materials stripped should be stored at the designated stockpile area.

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
5	Extraction of coal, loading and stockpiling	Air quality	Dust generation from the drilling activities.	Operational phase.	Limit dust generation by dust suppression.	<ul style="list-style-type: none"> Dust suppression must be undertaken on all dirty roads to prevent the generation of dust.
		Surface Water	Reduction in catchment yield and water qualities.	Operational phase.	<p>To protect existing users of surface water from impacts on water quality.</p> <p>To maximize the clean surface water run-off.</p>	<ul style="list-style-type: none"> Areas of disturbance must be in line with the mine plan provided to minimize the loss of catchment area. Clean and dirty water separation must be undertaken, and clean water areas must be maximized. Reuse of input/dirty water needs to be maximized.
		Noise impacts from mining equipment		Operational phase.	To prevent the noise emanating from the construction machinery from impacting on the sensitive receptors.	<ul style="list-style-type: none"> As per mitigation for activity 4 above.
		Biodiversity & Aquatic environment	Contamination and disturbance of aquatic habitats.	Operational, decommissioning and closure phase.	Limit areas suitable for alien invasive recruitment.	<ul style="list-style-type: none"> Removal of vegetation during construction of infrastructure will be minimized to reduce the risk of open areas occurring.
				Operational, decommissioning and closure phase.	Limit the erosion potential of the site. Preserve the flora, including areas not directly affected by project activities. Ensure rehabilitation plans are initiated during construction.	<ul style="list-style-type: none"> Make use of permeable materials for pavements and walk-ways. Introduce a storm water management programme. Restrict removal and disturbance of vegetation to those areas essential for the mining activities. Community awareness should be implemented as part of the

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						<ul style="list-style-type: none"> stakeholder engagement procedure to create awareness of biodiversity and preservation of natural habitats
				Construction and operational phase.	Limit the reduction in catchment size.	<ul style="list-style-type: none"> The planned reduction in catchment size will be managed to ensure that there will not be a dramatic reduction in catchment size.
		Visual	Aesthetic appearance to other communities.	Construction phase.	Reduce the visual impact of permanent infrastructure.	<ul style="list-style-type: none"> To reduce the visual impact of permanent structures, colours for roofing, walls etc. should be of a matt finish to reduce reflection. The colour chosen should be one that softens the visual impact, colours that are suited to the natural tones in the area, such as pastel browns and greens. Avoid up lighting of structures but rather direct the light downwards and focused on the object to be illuminated.
6.	Operation of ROM and Associated Water Management infrastructure	Soil	Soil erosion	Operational, decommissioning and closure phase.	Prevent soil loss through erosion. Preserve topsoil for future rehabilitation.	<ul style="list-style-type: none"> Ensure all vehicles stay within the designated areas. Ensure storm water control measures are put in place to control surface run off over exposed areas. Remove and stockpile topsoil from roads, stockpile and dam areas

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						prior to mining.
		Surface Water	Increased siltation of surface water bodies.	Operational, decommissioning and closure phase.	Prevention of siltation of surface water bodies.	<ul style="list-style-type: none"> The areas excavated should have berms that in order to separate dirty and clean water systems, and as an erosion control measure. Where possible, the topsoil stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams as well as surface water resources. Monitoring of surface water resource during mining must be implemented and maintained as per the monitoring programme.
		Air Quality	Increased dust generation.	Operational, decommissioning and closure phase	Reduction of dust fallout levels and particulate matter.	<ul style="list-style-type: none"> The removal of vegetation will be minimized during stripping to reduce the effects of dust pollution as a result of exposed soil. Dust suppression must take place. Dust monitoring must be undertaken in accordance with the monitoring programme. Topsoil stockpiles for more than two days should be kept moist and topsoil stockpiles for more than a year should be planted and water to sustain biological components as well as prevent dust emissions.

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						<ul style="list-style-type: none"> Cover all road trucks hauling coal outside of the mine with tarpaulin covers.
		Noise	Noise generation emanating from the construction machinery.	Operational, decommissioning and closure phase.	To prevent the noise emanating from the construction machinery from impacting on the sensitive receptors.	<ul style="list-style-type: none"> A noise barrier in the form of a berm should be constructed on the boundaries of the mining area (as per current mine plan) so that it is situated between the main noise source and sensitive noise receptor. The berm will help with the attenuation of noise produced by the mining activities. Mining-related machine and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g., installing exhaust mufflers. Switching off equipment when not in use.
		Biodiversity & aquatic environment.	Degradation and destruction of natural environment.	Operational, decommissioning and closure phase.	Limit degradation and destruction of natural environment to designated project areas.	<ul style="list-style-type: none"> Keep the footprint of the disturbed area to the minimum and designated areas only. Where possible, vegetate stockpiles to limit erosion. Berms created below the stockpiles to trap particles and runoff from the stockpile. Community awareness should be

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						implemented as part of the stakeholder engagement procedure to create awareness on biodiversity and preservation of natural habitats.
				Operational, decommissioning and closure phase.	Restrict the growth of alien invasive plants.	<ul style="list-style-type: none"> Removal of vegetation during stripping and dump operation will be minimized to reduce the risk of open areas occurring.
				Operational phases.	Limit erosion of exposed areas and stockpiles as well as sediment load reporting to wetlands.	<ul style="list-style-type: none"> Keep the footprint of the disturbed area to the minimum and designated areas only. Where possible, vegetate stockpiles to limit erosion. Berms created below the stockpiles to trap particles and runoff from the stockpiles.
				Operational, decommissioning and closure phase	Limit reduction in the re-charge of aquifers.	<ul style="list-style-type: none"> Removal of vegetation during stripping and dump operation will be minimized to reduce the risk of the aquifers being drained and not properly recharged.
		Visual	Visual impact caused by site clearing and topsoil removal.	Operational phases.	Reduce the visual impact caused by site clearing and topsoil removal.	<ul style="list-style-type: none"> Ensure site to be cleared is restricted to the mine plan. Topsoil stockpiles will need to be vegetated as soon as possible, to reduce the risk of erosion and decrease their visual disturbance.

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
7.	Transportation of coal.	Soil	Soil erosion.	Operational, decommissioning and closure phase.	Prevent soil loss through erosion. Preserve topsoil for future rehabilitation.	<ul style="list-style-type: none"> • Ensure all vehicles stay within the designated areas. • Ensure storm water control measures are put in place to control surface run off over exposed areas. • Topsoil and subsoil (predominately clay which is the bricklaying raw material) must be stockpiled separately.
		Surface Water	Increased siltation of surface water bodies.	Operational, decommissioning and closure phase.	Prevention of siltation of surface water bodies.	<ul style="list-style-type: none"> • The areas excavated should have berms that are vegetated in order to separate dirty and clean water systems, and as an erosion control measure. • The stockpiles must be vegetated to prevent erosion and subsequent siltation of clean and dirty water streams as well as surface water resources. • Monitoring of surface water resource during construction must be implemented as per the monitoring programme. • Construction of infrastructure located close to local streams should take place in the dry season, when possible.
		Air Quality	Increased dust	Operational,	Reduction of dust fallout levels and	<ul style="list-style-type: none"> • The removal of vegetation will be

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
			generation	decommissioning and closure phase.	particulate matter.	<p>minimized during stripping to reduce the effects of dust pollution as a result of exposed soil.</p> <ul style="list-style-type: none"> • Dust suppression must take place. • Dust monitoring must be undertaken in accordance with the monitoring programme. • Cover all road tipper trucks hauling coal outside of the mine with tarpaulin covers.
		Biodiversity & aquatic environment.	Degradation and destruction of natural environment.	Operational, decommissioning and closure phase.	Limit degradation and destruction of natural environment to designated project areas.	<ul style="list-style-type: none"> • Keep the footprint of the disturbed area to the minimum and designated areas only. • Where possible, vegetate stockpiles to limit erosion. • Berms created below the stockpiles to trap particles and runoff from the stockpile. • Community awareness should be implemented as part of the stakeholder engagement procedure to create awareness on biodiversity and preservation of natural habitats.
		Visual.	Visual impact caused by site clearing and topsoil removal.	Operational phases.	Reduce the visual impact caused by site clearing and topsoil removal.	<ul style="list-style-type: none"> • Ensure site to be cleared is restricted to the mine plan. Topsoil stockpiles will need to be vegetated as soon as possible, to reduce the risk of erosion and decrease their

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						visual disturbance.
8.	Dirty water management	Soil.	Loss of soil structure from compacting of soil	Operational phase.	Prevent loss of soil structure from compacting of soil. Preserve soil fertility for later use.	<ul style="list-style-type: none"> Remove and stockpile topsoil from roads, building platforms and infrastructure areas prior to mining and stockpile as per the rehabilitation guidelines.
		Surface Water	Contamination of surface water	Operational phase	To protect existing users of surface water from impacts on water quality. To maximize the clean surface water run-off.	<ul style="list-style-type: none"> Areas of disturbance must be in line with the mine plan provided to minimize the loss of catchment area. Clean and dirty water separation must be undertaken, and clean water areas must be maximized. Reuse of input/dirty water needs to be maximized.
		Biodiversity & Aquatic environment	Disturbance of areas for alien invasive species.	Operational and decommissioning phases.	Limit areas suitable for alien invasive recruitment	<ul style="list-style-type: none"> Removal of vegetation as part of mining will be minimised to reduce the risk of open areas occurring.
				Operational and decommissioning phases.	<p>Limit the erosion potential of the site. Preserve the flora, including areas not directly affected by project activities.</p> <p>Ensure rehabilitation plans are initiated during construction</p>	<ul style="list-style-type: none"> Make use of permeable materials for pavements and walk-ways. Introduce a storm water management programme. Restrict removal and disturbance of vegetation to those areas essential for the mining operations. Community awareness should be implemented as part of the stakeholder engagement procedure

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						to create awareness on biodiversity and preservation of natural habitats
				Operational phase.	Limit the reduction in catchment size	<ul style="list-style-type: none"> The planned reduction in catchment size will be managed to ensure that there will not be a dramatic reduction in catchment size.
9.	Waste, sewage generation and disposal.	Air quality.	The movement and placing of soil will contribute to dust levels. Exposed soil will also contribute to dust levels.	Operational phase.	soft drilling will be conducted. Limit dust generation emanating from drilling activity.	<ul style="list-style-type: none"> Apply control techniques for fugitive dust sources which generally involve watering, chemical stabilization, and the reduction of surface wind speed through the use of windbreaks and source enclosures such as berms on the property boundaries with sensitive receptors.
		Noise.	Excessive noise emanating from mining activities.	Operational phase.	Limit noise due to mining operations.	<ul style="list-style-type: none"> Implement noise monitoring plan.
		Soil.	Compaction of soil, erosion of exposed areas and decrease in	Operational phases.	Prevent soil loss through erosion. Preserve topsoil for future rehabilitation.	<ul style="list-style-type: none"> Rip compacted areas and revegetate, rehabilitate mine out areas. Use waste bricks from the factory

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
			available land for agricultural practices. Natural soil horizons are destroyed.			as part of pit backfilling.
		Topography.	The natural state of the land will be altered. This alteration of the land will have further impacts on surface water flow dynamics as the natural drainage pattern is disrupted.	Operational and decommissioning phases.	To reinstate the mined-out areas into agreed final land-use.	<ul style="list-style-type: none"> • Conduct rehabilitation activities within mining disturbed areas.
		Visual.	Overburden stockpiles and discard dumps are expected to be approximately 30m in height, and will contribute the most severe visual	Operational phase.	Limit the overburden stockpile to a height of approximately 30m.	<ul style="list-style-type: none"> • Stockpile topsoil, subsoil and overburden material separately. • Implement stockpile management plan. • Continue to undertake rehabilitation activities within the mining areas after removal of the mineral reserves.

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
			disturbance to surrounding receptors.			
Rehabilitation, Decommissioning and closure phase						
10.	Retrenchment of mine employees and staff	Socio-economic	Refer to Section 8.1 of EMPr			
11.	Demolition of infrastructure	Soil, Surface Water, Biodiversity and Wetlands	Pollution of water, aquatic habitants and soil contamination.	Decommissioning and post closure phase.	Ensure that the area is not a source of pollution after closure of the mine.	<ul style="list-style-type: none"> • Soil will be required to cover the disturbed areas. • The quantities of soil required as well as the timing of the operation will depend on the design and operation of these facilities. • Surface water runoff controls will be engineered to prevent future soil erosion of the rehabilitated areas. Re-vegetation will assist in controlling erosion by wind and water. • Monitoring will be ongoing for 3 years to determine potential water contamination. After three years it will be assessed if further monitoring is required.
12.	Rehabilitation and closure	Air Quality	The movement and placing of soil will contribute to	Decommissioning and closure.	Limit dust generation emanating from drilling activity.	<ul style="list-style-type: none"> • Control level of fugitive dust through implementing dust suppression techniques. • Control level of ambient air

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
			dust levels. Exposed soil will also contribute to dust levels.			pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme
		Soil	Soils, land use and land capability	Decommissioning and closure	Prevent soil loss through erosion. Preserve topsoil for future rehabilitation.	Rehabilitate the disturbed areas that were impacted by the drilling
		Flora and fauna	Limit the erosion potential of the site. Preserve the flora, including areas not directly affected by project activities. Ensure rehabilitation plans are initiated during construction.	Decommissioning and closure	Prevent the loss of fauna and flora species and habitats.	<ul style="list-style-type: none"> • Vegetate the prepared area with government approved indigenous seed mix. • Ensure that annual rehabilitation vegetation audits are undertaken on the rehabilitated areas.
		Surface Water	Contamination of surface water.	Rehabilitation.	Prevent hydrocarbons spillages from the vehicular movement.	<ul style="list-style-type: none"> • Construct erosion control measures as part of the rehabilitation activities (berms and contour drains where possible). • Prevent stormwater runoff by conducting site rehabilitation work during dry season.

No	Activity	Potential Affected environment	Potential Impact	Project Phases	Possible Objectives	Possible Mitigation/Management measure
						<ul style="list-style-type: none"> Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible.

12. THE POSITIVE AND NEGATIVE IMPACTS THAT THE MINING ACTIVITY (IN TERMS OF THE INITIAL SITE LAYOUT) AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED.

The project area is located approximately 20 km south-east of Pretoria town and 40 km south-west of Bronkhorstspuit town, Gauteng Province, South Africa. It is anticipated that the project will have the potential to create employment opportunities for Pretoria, Bronkhorstspuit, Tembisa and surrounding communities preferably local communities.

13. CUMULATIVE IMPACTS

In accordance with Regulation 982 as amended of NEMA, cumulative impacts are defined as: “the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area”.

The importance of identifying and assessing cumulative impacts stems from the fact that the whole is more than the sum of its parts, implying that the total effect of multiple stressors or change processes acting simultaneously on a system may be greater than the sum of their effects when acting in isolation.

The aim of this section is to highlight the nature of the cumulative impacts that are expected to occur as a result of the combined effect of the project and other current or planned operations in the region.

14. MOTIVATE WHERE ALTERNATIVE SITES WERE CONSIDERED

The project area was selected based on the geological formation of the area and the likelihood of the various commodities; the alternatives considered were based on the technological method instead of the project area. Refer to section 7.

a) Preferred site alternative

Refer to Section 7.1; the site was selected based on mineral reserves that are believed to exist in the study area.

b) Preferred activity alternative

Refer to Section 7.1.

c) Preferred technology alternative

Refer to Section 7.1.

d) No-go alternative

Refer to Section 7.1.

15. FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISK THE ACTIVITY WILL IMPOSE ON THE SITE (IN RESPECT TO FINAL SITE LAYOUT) THROUGH THE LIFE SPAN OF THE ACTIVITY.

The site selection process was determined using suitability of the overall site looking at factors such as proximity to existing mining, proximity to mine infrastructure and environmental impacts that the site might experience.

15.1. Assessment of each identified potential significant impact and risk

Additional information with respect to the mitigation measures are addressed as part of the EMPr.

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
Delivery of equipment on site.	Increase levels of noise	Noise	Planning phase	Low	<ul style="list-style-type: none"> Control through noise reduction measures 	Very Low
	Increased levels of fugitive dust because of increased vehicle movement and transportation of material	Air Quality	Planning Phase	Low	<ul style="list-style-type: none"> Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme 	Very Low
	Accidental hydrocarbon spillages	Soil Quality	Planning Phase	Low	<ul style="list-style-type: none"> Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan. 	Very Low
Construction activities including site clearance, topsoil, subsoil and overburden material	Increased levels of fugitive dust as a result of increased vehicle movement, site clearing and transportation of material. Potentially affecting the nearby community. Increased levels of ambient	Air Quality	Construction	Low	<ul style="list-style-type: none"> Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and 	Very Low

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
removal	air pollutants, i.e., carbon monoxide (CO), nitrogen dioxide (NO ₂), sulphur dioxide (SO ₂), particulate matter (PM ₁₀).				implementing dust monitoring programme	
	Soil contamination from hydrocarbon spills Increased erosion	Soils	Construction	Low	<ul style="list-style-type: none"> Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible. Reduce erosion and compaction through: <ul style="list-style-type: none"> Vegetate and/or cover soil stockpiles. Install erosion berms, if required. Restrict vehicle movement to project related areas. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan. 	Very Low
	Increased in silt load in runoff and erosion	Surface Water	Construction	Low	<ul style="list-style-type: none"> Prevent through the implementation of proper erosion protection and storm water management measures. Minimise stormwater runoff through conducting site clearing and construction during dry season. Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible. 	Very Low
	Surface water contamination	Surface Water	Construction	Very high	<ul style="list-style-type: none"> Monitor and control surface water quality. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles 	Very Low

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
					and equipment used through regular maintenance and services of such machinery.	
	Loss of Mean Annual Runoff	Surface Water	Construction	Low	<ul style="list-style-type: none"> Prevent through the implementation of proper erosion protection and storm water management measures. Control flow regime through conducting site clearing and construction during dry season. 	Very Low
	Groundwater contamination	Groundwater	Construction	Very high	<ul style="list-style-type: none"> Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Sealing of impacted aquifers that will be intercepted when developing box cut 	Very Low
	Increased ambient noise levels	Noise	Construction	Low	<ul style="list-style-type: none"> Control through noise control measures and limiting pre-construction activities to daytime periods. 	Very Low
	Increased dust level	Visual	Construction	Low	<ul style="list-style-type: none"> Control level of nuisance dust through implementing dust suppression measures. Control through limiting pre-construction activities to daytime periods. 	Very Low
	Job creation	Socio-Economic	Construction	Very Low	<ul style="list-style-type: none"> No Mitigation 	Very Low
	Dust, noise, loss of soil and vegetation	Cumulative	Construction	Low	<ul style="list-style-type: none"> Control level of nuisance dust through implementing dust suppression measures. Control through limiting pre-construction activities to daytime periods. 	Very Low
Open-cast	Increased levels of nuisance	Air Quality	Operation	Low	<ul style="list-style-type: none"> Control through implementing restricted 	Very

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
operations including development of box-cut	dust		s		<p>speed limits when using access road.</p> <ul style="list-style-type: none"> Control through regular maintenance and service of vehicles used for maintenance. Control level of fugitive dust through implementing dust suppression techniques, if required. 	Low
	Soil contamination from accidental hydrocarbon spills	Soils and land use	Operations	Low	<ul style="list-style-type: none"> Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan. Limit through restricting vehicle movement to areas of need. 	Very Low
	Loss of habitat/fauna species	Flora and Fauna	Operations	Low	<ul style="list-style-type: none"> Prevent through waste management measures. Control through implementing the Spill Management Plan. Control through implementing Alien Plant Eradication Plan. Control level of fugitive dust through implementing dust suppression techniques, if required. Limit through restricting vehicle movement to areas of need. Prevent trapping or hunting of fauna through environmental awareness plan. 	Very Low
	Increased erosion potential	Surface water	Operations	Low	<ul style="list-style-type: none"> Prevent through the implementation of proper erosion protection and storm water management measures. Minimise area of disturbance to as small as practically possible. 	Very Low
	Surface water contamination	Surface water	Operations	Very high	<ul style="list-style-type: none"> Monitor and control surface water quality through updating and implementing the mine's water monitoring programme. Control spills through effectively cleaning 	Very Low

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
					<p>spills according to the Spill Management Plan.</p> <ul style="list-style-type: none"> Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. 	
	Increased ambient noise level	Noise	Operations	Low	<ul style="list-style-type: none"> Control through noise control measures and limiting maintenance activities to daytime periods. 	Very Low
	Alteration of natural landscape	Visual	Operations	Low	<ul style="list-style-type: none"> Control level of fugitive dust during maintenance activities through implementing dust suppression techniques, if required. Control through revegetation measurements and rehabilitation. Prevent littering through waste management control measures. Limit through landscaping and use of appropriate non-reflective infrastructure. 	Very Low
	Positive impact on livelihoods	Socio-Economic	Operations	Very Low	<ul style="list-style-type: none"> Enhance through: Retaining employees. Implementing skills development policy in line with Social and Labour Plan. Adhering to the mine's local labour recruitment and procurement policies. 	Very Low
	Noise, alteration of landscape	Cumulative	Operations	Low	<ul style="list-style-type: none"> Control level of fugitive dust through implementing dust suppression techniques. Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme as per the mine's requirements. 	Very Low
Rehabilitation of mined areas	Increased levels of fugitive dust as a result of increased vehicle movement, due to	Air Quality	Decommissioning and	Low	<ul style="list-style-type: none"> Control level of fugitive dust through implementing dust suppression techniques. 	Very Low

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
	shaft demolishing and rehabilitation activities associated with transportation of material. Increased levels of ambient air pollutants, i.e., carbon monoxide (CO), nitrogen dioxide (NO ₂), sulphur dioxide (SO ₂), particulate matter (PM ₁₀).		closure		<ul style="list-style-type: none"> Control level of ambient air pollutants through regular maintenance and services of all vehicles and equipment. Monitor and control through updating and implementing dust monitoring programme 	
	Waste generated as part of the demolishing activities: Littering or improper disposal of waste	Waste management impacting on soil and water	Decommissioning and closure	Low	<ul style="list-style-type: none"> Any waste contaminated with hazardous material including hydrocarbon must be disposed of as hazardous waste in a licensed hazardous waste landfill site. 	Very Low
	Replacement of topsoil and reinstating of the land capability Increased erosion	Soils, land and capability	Decommissioning and closure	Low	<ul style="list-style-type: none"> Rehabilitate the disturbed areas that were impacted by the drilling 	Very Low
	Soil contamination from hydrocarbon spills	Soil	Decommissioning and closure	Low	<ul style="list-style-type: none"> Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the mine's Spill Management Plan. Ensure the availability of drip trays and oil spill kits on site. 	Very Low
	Reinstating of vegetation and possible returning of fauna and habitats	Fauna and flora	Decommissioning and closure	Very high	<ul style="list-style-type: none"> Prepare the seedbed with application of fertilisers or kraal manure and lime. Vegetate the prepared area with government approved indigenous seed mix. Ensure that annual rehabilitation vegetation audits are undertaken on the rehabilitated areas. 	Very Low
	Increased in silt load in	Surface	Decommissioning and closure	Low	<ul style="list-style-type: none"> Construct erosion control measures as 	Very

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
	runoff and possible erosion	Water	Commissioning and closure		<p>part of the rehabilitation activities (berms and contour drains where possible)</p> <ul style="list-style-type: none"> Prevent stormwater runoff by conducting site rehabilitation work during dry season. Minimise area of disturbance and clearing by limiting the footprint area to as small as practically possible. 	Low
	Surface water contamination	Surface Water	Decommissioning and closure	Low	<ul style="list-style-type: none"> Continue to monitor and control surface water quality as per the mine's water monitoring programme until closure. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. 	Very Low
	Groundwater contamination	Groundwater	Decommissioning and closure	Low	<ul style="list-style-type: none"> Continue to monitor groundwater quantities and qualities as part of the groundwater monitoring programme for the mine until closure. Control spills through effectively cleaning spills according to the Spill Management Plan. Prevent spills through placement of adequate bunded storage for chemicals and hazardous material. Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Sealing of the shaft as detailed above. 	Very Low
	Increased ambient noise	Noise	Decommissioning	Low	<ul style="list-style-type: none"> Control through noise control measures 	Very

NAME OF ACTIVITY	IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE (If not mitigated)	MITIGATION TYPE	SIGNIFICANCE (If mitigated)
	levels		Commissioning and closure		and limiting activities to daytime periods.	Low
	Increased dust level	Visual	Decommissioning and closure	Low	<ul style="list-style-type: none"> Control level of nuisance dust through implementing dust suppression measures during rehabilitation activities. Control through limiting activities to daytime periods. 	Very Low
	Job creation and business opportunities	Socio-Economic	Decommissioning and closure	Very high	<ul style="list-style-type: none"> Enhance through adhering to the mine's recruitment of local labour and sourcing of local businesses as part of the recruitment and procurement policies. 	Medium
	Dust, noise, loss of soil and vegetation	Cumulative	Decommissioning and closure	Low	<ul style="list-style-type: none"> Control level of nuisance dust through implementing dust suppression measures. Control through limiting activities to daytime periods. 	Very Low

16. SUMMARY OF SPECIALIST STUDIES

List of Specialist Study Undertaken	Recommendations of Specialist Reports	Recommendations that have been included in this Report	Reference to applicable section of report where specialist recommendations have been included.
Soil Land use and land capability;	<p>The impacts as described, rated and mitigated in this report pose a moderate negative risk to soil.</p> <p>Topsoil removal must be limited within development footprint area only.</p> <p>Topsoil and subsoil must be stockpiled separately.</p>	<ul style="list-style-type: none"> Prevent accidental spills from vehicles and equipment used through regular maintenance and services of such machinery. Control spills through effectively cleaning spills according to the Spill Management Plan. Limit through restricting vehicle movement to areas of need. 	<p>Section 9.1.4</p> <p>Assessment of each identified potential significant impact and risk.</p>
Terrestrial Ecological Impact Assessment	<p>An impact statement is required as per the NEMA regulations with regards to the mining right.</p> <p>The impacts as described, rated and mitigated in this report pose a moderate negative risk to flora and fauna. The ecological sensitivity of the area is determined to be moderate sensitive. With firm adherence to all the mitigation measures prescribed in this report, the risks have been rated as low.</p> <p>It is the opinion of the specialist that the project be authorised provided that all mitigation measures are implemented, and the following conditions be included in the environmental authorisation for this project</p>	<ul style="list-style-type: none"> An Environmental Control Officer (ECO) must be appointed and be present for the duration the Corobrik mining activities. 	<p>Section 9.1.5.</p> <p>Assessment of each identified potential significant impact and risk.</p>
Wetland Impact Assessment	<p>An impact statement is required as per the NEMA regulations with regards to the mining right project</p>	<ul style="list-style-type: none"> Any water resource areas and 80m buffer zones must be avoided for the duration of the project and all the mining activities and 	<p>Section 9.1.6.</p> <p>Assessment of each identified potential</p>

List of Specialist Study Undertaken	Recommendations of Specialist Reports	Recommendations that have been included in this Report	Reference to applicable section of report where specialist recommendations have been included.
	<p>The impacts as described, rated and mitigated in this report pose a moderate negative risk to the wetland area. The ecological sensitivity of the area is determined to be moderate sensitive. With firm adherence to all the mitigation measures prescribed in this report, the risks have been rated as low.</p> <p>It is the opinion of the specialist that the project area be authorised provided that all mitigation measures are implemented, and the following conditions be included in the environmental authorisation for this project</p>	<p>No mining activities should be within the wetland areas and the 80m buffer zone; and</p> <ul style="list-style-type: none"> • A rehabilitation plan must be compiled and implemented for the for all phases of the project. The rehabilitation plan must make provision for the rehabilitation and/or remediation of wetland areas and include an action plan (emergencies) for environmental hazard. 	<p>significant impact and risk.</p>
<p>Hydrological Impact Assessment</p>	<p>An impact statement is required as per the NEMA regulations with regards to the mining right project</p> <p>The impacts as described, rated and mitigated in this report pose a moderate negative risk to the watercourses. With firm adherence to all the mitigation measures prescribed in this report, the risks have been rated as low.</p> <p>It is the opinion of the specialist that the project be authorised provided that all mitigation measures are implemented, and the following conditions be included in the environmental authorisation for this project.</p>	<ul style="list-style-type: none"> • Any water resource areas and 80m buffer zones must be avoided for the duration of the project and all the mining activities and No mining activities should be within the watercourse areas and the 80m buffer zone; and • A rehabilitation plan must be compiled and implemented for the for all phases of the project. The rehabilitation plan must make provision for the rehabilitation and/or remediation of watercourse areas and include an action plan (emergencies) for environmental hazard. 	<p>Section 9.1.7- 9.1.8</p>

List of Specialist Study Undertaken	Recommendations of Specialist Reports	Recommendations that have been included in this Report	Reference to applicable section of report where specialist recommendations have been included.
Paleontological Impact Assessment	Project-supporting infrastructures should be aligned along areas or corridors of existing disturbance, e.g., along existing roads.	<ul style="list-style-type: none"> If any animal remains or any significant resources is found on site the construction activities will be stopped and an palaeontologist must be called on site to conduct a proper survey and investigation. 	Section 9.1.10 Assessment of each identified potential significant impact and risk.
Heritage Impact Assessment	<p>There is a high likelihood that the following types of cultural heritage resources could be present in the Application areas:</p> <ul style="list-style-type: none"> Individual Stone Age tools and scatters of material in an open-air context Recent Historical farmsteads/homesteads and related infrastructure older than 60 years of age. The presence of informal farm Grave Yards/cemeteries is also possible, although the likelihood is fairly low based on the scrutiny of Google Earth images of the area. 	<ul style="list-style-type: none"> If any heritage resources, including graves or human remains, are encountered these must be reported to South African Heritage Resources Agency immediately. 	Section 9.1.9 Assessment of each identified potential significant impact and risk.

17. ENVIRONMENTAL IMPACT STATEMENT

17.1. Summary of the key findings of the Environmental Impact Assessment

There are various of land use activities within the Crocodile (West) and Marico Water Land use characteristics of the Marico catchment comprise rural economic activities consisting of subsistence dryland agriculture and cattle grazing with some commercial irrigation in the upper catchment and along the Marico River downstream of the Marico Bosveld Dam and Molatedi Dam.

There are no major towns in the catchment, but smaller settlements are scattered throughout (DWAF, 2004). Land use within 5 km radius around the study area varies from cultivation, forest plantation, mine and quarries to urban/built-up industrial. A small seepage wetland was identified and delineated along the side slopes of the valley bottom wetland on the western boundary of the site dominated by Imperata cylindrical grasslands.

The project are underlain by rocks of the Vaalian aged Malmani Subgroup, Chuniespoort Group of the Transvaal Supergroup and predominantly deeply weathered shale of the Eccca Group, Karoo Supergroup. The Malmani Subgroup is a prominent stromatolitic dolomite and this group of rocks underlies the shale and sandstone of the Eccca Group in the study area. The Permian aged Eccca Group consists of interbedded coarse-grained sandstone and thick shale sequences. The shale sequences are very rich in plant remains – hence the discovery of coal at Farm Witkoppies No. 393 JR.

No cultural heritage (archaeological and/or historical) sites, features or material were identified in the study & application area during the field assessment. If any did exist here in the past, recent activities and developments would have severely disturbed or destroyed any as a result. Aerial images (Google Earth) of the farm portions (dating from 2004 to more recently) that make up the application area clearly shows the impacts of the various developments and activities on the area.

17.2. Final Site Map

Provide a map at an appropriate scale which superimposes the project overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Please refer to **Appendix 2** for the final site layout map including sensitive areas in relation to the project infrastructure.

19. IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUT COMES FOR INCLUSION IN THE EMPR

This EMPr will be compiled to meet the following objectives

- Monitor the activities that may have a detrimental impact on the environment.
- Recommend mitigation measures that will need to be taken to mitigate or minimise impacts.
- Moreover, ensuring that the appointed onsite contractor maintains adequate control over the project environmental issues in order to: -
 - Minimize the extent of the impact during construction and operation of the mine and associated infrastructure.
 - Ensure appropriate restoration of areas affected by construction activities after construction has been completed, and
 - Prevent long-term environmental degradation.
- Ensure that the mitigation/rehabilitation measures and recommendation referred to in this report are implemented and to ensure the compliance with the provisions of the EMPr.

The closure objectives which will drive the closure criteria are:

- Adhere to all statutory and other legal requirements;
- Ensure safety & health of all stakeholders during closure and post closure and that communities using the site after closure are not exposed to unacceptable risks;
- Ensure that closure supports productive uses considering pre-mining conditions and agree with commitments to stakeholders;
- Physically and chemically stabilise remaining structures to minimise residual risks;
- Promote bio-diversity and biological sustainability to the maximum extent practicable;
- Utilize closure strategies that promote self-sustaining conditions with little or no need for on-going care and maintenance.

20. ASPECTS OF INCLUSION AS CONDITION OF AUTHORISATION

No Conditions have been identified for inclusion.

21. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The EAP is knowledgeable and experienced on the compilation of environmental impact assessment process, including mining activities and related infrastructural of the projects. In undertaking the investigation and compiling this report, the following has been assumed:

- The information provided by the client, Project Managers and previous undertaken specialists' studies are assumed to be correct, accurate and unbiased.
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the project area.

In addition, the following recommendations can also be included as conditions of authorisation:

- Terrestrial ecological assessment (flora & fauna)
- Development footprint
 - It is recommended that the drilling activity and associated infrastructure be situated outside of any drainage features.
 - The footprint of the drilling area must be minimised, and all disturbed areas must be rehabilitated after construction.
 - The boundaries of the development footprint areas are to be clearly defined and it should be ensured that all activities remain within defined footprint areas.
- Surface water and groundwater
 - The project footprint must fall outside of the 1:100-year flood line of the riparian features or 100m from the edge of the feature.
 - Access into adjacent drainage lines, particularly by vehicles, is to be strictly controlled.
 - All vehicles should remain on designated roads with no indiscriminate driving through adjacent drainage features.
 - Run-off from dirty water areas entering drainage lines must be prevented and clear separation of clean and dirty water in the vicinity of the project area must take place.
 - Oil must be prevented from entering the clean water system.
 - Ensure that seepage from dirty water systems is prevented as far as possible.
 - It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage.

- Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil.
- All adjacent drainage lines must be monitored for erosion and incision.
- Fires
 - Informal fires should be prohibited during all development phases.
- Dust Control
 - It must be ensured that all roads and construction areas are regularly sprayed with water in order to curb dust generation. This is particularly necessary during the dry season when increased levels of dust generation can be expected. These areas should not be over-sprayed causing water run-off and subsequent sediment loss into waterways and drainage lines in the vicinity of the study area.
- Fauna species
 - It is recommended that a speed limit of at least 20km/h is implemented on internal dirt roads running through the subject property in order to minimise risk to fauna from vehicles. Where necessary, speed humps may be constructed to help slow vehicles and help mitigate collision with faunal species.
 - Education and awareness campaigns on faunal species and their habitat are recommended to help increase awareness, respect and responsibility towards the environment for all staff and contractors.
 - No trapping or hunting of fauna is to take place and access control into sensitive areas must be implemented to ensure that no illegal trapping or poaching takes place.
- Noise Impact Assessment
 - Construction activities to take place during daytime periods only (sunrise to sunset).

22. REASONED OPINION AS TO WHETHER THE ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

22.1. Reasons why the activity should be authorized or not.

LEM will undertake the Basic Assessment (BA) and EMPr for the Corobrik mining right accordance with the requirements of the NEMA and MPRDA. This will include the undertaking of the public participation process which has sought to identify stakeholders, provide these parties with an adequate opportunity to participate in the project process and guide technical investigations that have taken place as part of the impact assessment phase of this study.

An EMPr has been developed as part of Environmental Authorisation Process to ensure that these impacts will as far as practicable be mitigated. It is anticipated that it will be possible to mitigate the currently identified environmental impacts to acceptable levels and the implementation thereof will be monitored and audited to determine the effectiveness of the measures implemented.

22.2. Conditions that must be included in the authorisation

Regular monitoring of all the environmental management procedures and mitigation measures shall be carried out by the Company to ensure that the provisions of this EMPr are adhered to. An Environmental Control Officer will need to be appointed to monitor and report the compliance status against the Environmental Authorisation and the EMPr. No mining activities must be undertaken within declared protected areas and within 100m or 1:100-year flood line of the water resources.

23. PERIOD OF WHICH THE PERIOD OF ENVIRONMENTAL AUTHORISATION IS REQUIRED

The validity of the Environmental authorization in terms of this project should be for Mining Right period in line with the MPRDA and as granted by the DMRE.

24. FINANCIAL PROVISION

Refer to **Appendix 7** for the closure costs quantum.

24.1. Explain how the aforesaid amount was derived

The calculated closure provision was calculated based on the areas that will need to be cleared, dismantled, removed and/or disposed of as part of the decommissioning and closure final rehabilitation process. Below are some of the parameters that were considered when calculating this closure provision.

24.2. Determination of the Closure Cost Assessment

The liability for closure of the aspects associated with the mining right area has been determined using the approach advocated in the Department, the Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provisions Provided by a Mine (2005) and also in compliance to the Government Notice Regulation 1147 of 20 November 2015, regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations.

As required in terms of regulation 4 of GNR 1147, Corobrik as the applicant to hold the mining right must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of the mining operations, as contemplated in the MPDRA and to the satisfaction of the Minister responsible for mineral resources.

The approach to calculating the closure quantum as specified in the DMRE Guideline which was utilised in this assessment is as summarised as follows and is reported under **Appendix 7**:

Step 1: Determine the Mineral Mined

- In the first step the mineral mined has been identified in the tables provided in the DMRE guideline (Table B.12) as coal and clay

Step 2A: Determine Primary Risk Class

- The “Primary Risk Class” has been determined from Table B.12 of the DMRE Guideline as “A **(Medium Risk)**”.

Step 2B: Revision of Primary Risk Class

- The Primary Risk Class can be revised on the basis of saleable by-products if required. However, this is not applicable at the mining area.

Step 3: Determine Environmental Sensitivity

- The “Environmental Sensitivity” has been determined by reference to Table B.4 of the DMRE Guideline as “**High**”.

Step 4.4 determination of weighting factors:

- **Weighting Factor 1:** The nature of the terrain where the operation is located is **undulating**.
- **Weighting Factor 2:** The proximity of the operation to an urban centre. In this instance the mining area is considered **urban**.

24.3. Unit rates

The unscheduled closure cost estimates have been determined according to the DMRE Master rates as per the Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine (January 2005), Government Notice Regulation 1147 of 20 November 2015, regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations and escalated using the SA Statistics CPI values.

24.4. Closure Cost Assessment

The closure cost estimate for this report is included under **Appendix 7** with closure measures stated in **Appendix 16**. The subsections that follow are aligned to these spreadsheets.

The estimated unscheduled closure costs at the end of July 2023 amount to approximately **R14 779 177,55, 93** including VAT for the Corobrik Mining Right activities.

24.5. Confirm that this amount can be provided for from operating expenditure

Corobrik has confirmed that this amount will be provided as part of the annual financial provision that the mine conducts and submits to the Department.

25. SPECIFIC INFORMATION REQUIRED BY THE COMPETED AUTHORITY

25.1. Compliance with the provision of section 24(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (107 of 1998) the EIA must include the following: -

a. Impact on the socio-economic condition of any directly affected person.

From an economic perspective, this project is highly desirable, with significant benefits to the local area, region (Gauteng region), and the country. It is expected that the project will create jobs opportunities for the nearby community and will contribute to the economy of the country.

Direct and indirect contribution to the regional economy due to capital investment associated with the project. This project will ensure that the supply of minerals to local and international markets.

b. Impacts on any estate referred to in section 3(2) of the National Heritage Resource Act

None

i) Other matters required in terms of the section 24(4)(a) and (b) of the Act

Not applicable as alternatives have been considered in terms of this project.

26. UNDERTAKING

The EAP herein confirms

- a) The correctness of information provided in this report
- b) The inclusion of comments and inputs from stakeholders and I&APs
- c) The inputs and recommendation from specialist reports where relevant
- d) That the information provided by the EAP to the I&APs and any response by the EAP to the comments and input made by the I&APs are correctly reflected herein



Signature of the Environmental Assessment practitioner

LICEBO ENVIRONMENTAL AND MINING (PTY) LTD

Company Name

24 August 2023

Date

-END-