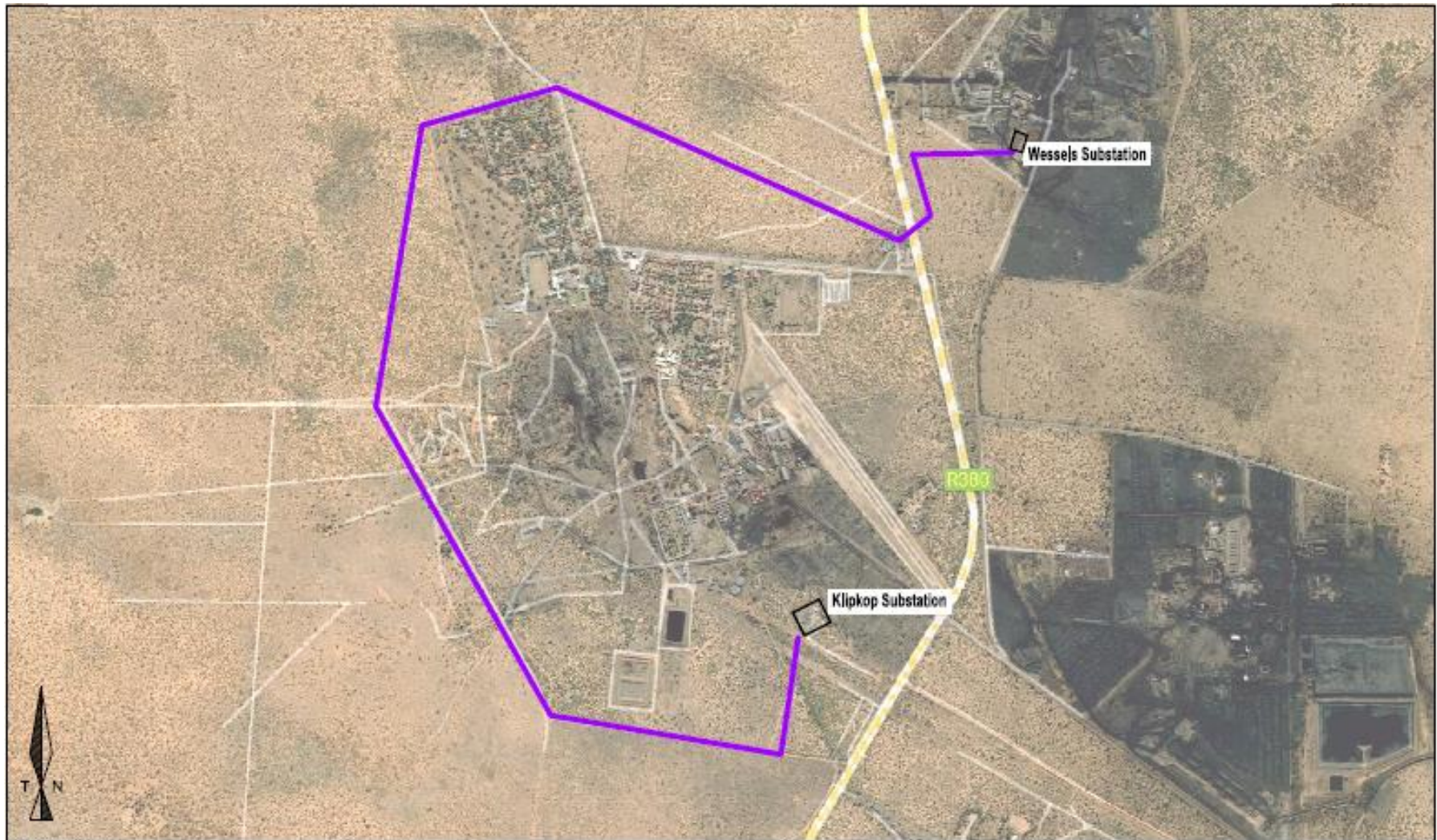


APPENDIX A

Maps



TYPE OF PLAN:		GOOGLE EARTH LOCALITY PLAN		— Proposed 132kV Powerline	
Marguerite Cronje Environmental Assessment Practitioner PO Box 29729 Danhof 8524 BLOEMFONTEIN 9010 Tel: 082 732 0547 Email: margueritecronje@gmail.com		PROJECT:		Proposed 132kV Powerline between KLIPKOP and WESSELS SUBSTATIONS (approximately 9km in length), around the BLACK ROCK MINE near HOTAZEL, NORTHERN CAPE	
		PROJECT BY:		South32 Wessels Mine	
		DATE:		07/11/2022	
		SCALE:		1 : 25 000	
		DRG :		HOTAZEL POWERLINE - 2020.FL0047 - LHM	

APPENDIX B

Photographs



Photo 1: View of the Klipkop substation from where the proposed powerline will start.



Photo 2: Powerline route between the Klipkop substation and southern section.



Photo 3: View of southern section of power route (view towards the east).



Photo 4: Proposed powerline route's north eastern section, adjacent to the Black Rock mine residential area.



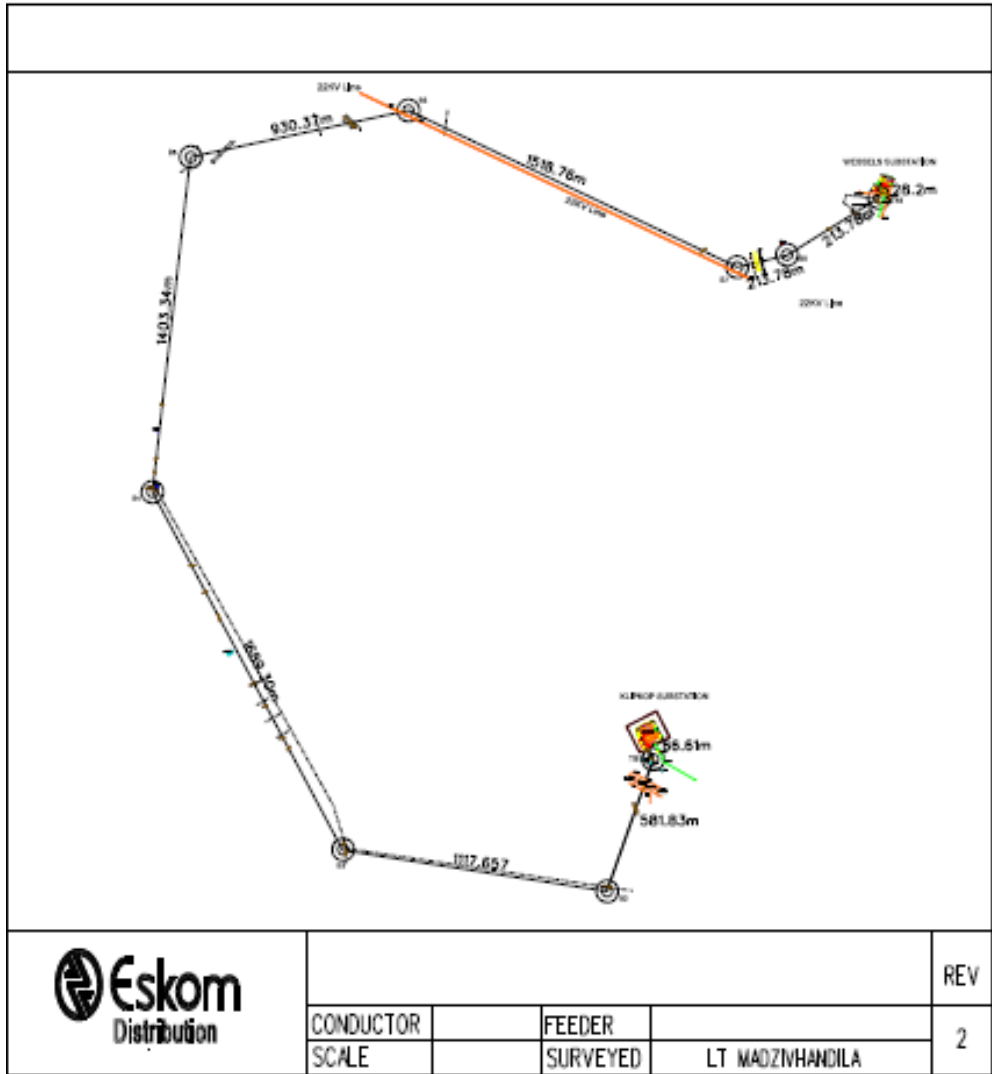
Photo E: View of powerline route between the R380 road and the Black Rock mine residential area. Current electrical infrastructure visible (view towards the west).



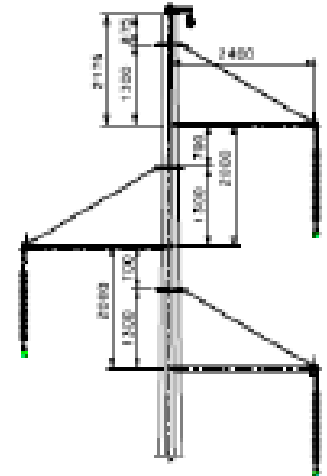
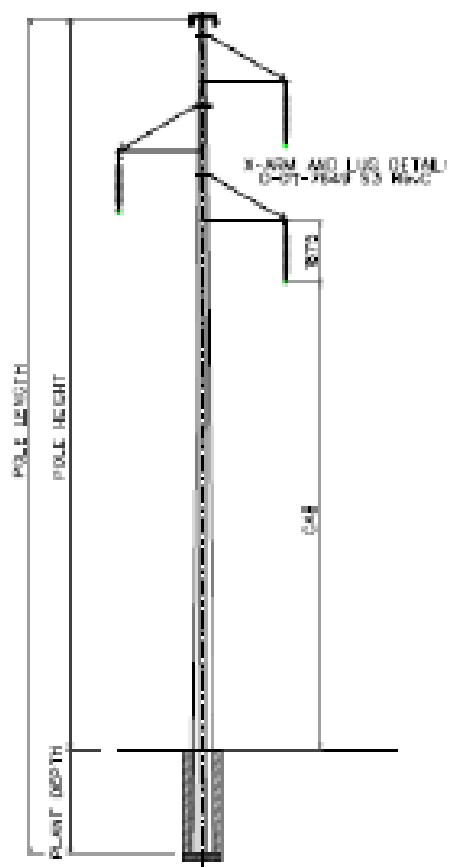
Photo F: View of where proposed powerline will cross the R380 road.

APPENDIX C

Facility illustration(s)



	LATITUDE	LONGITUDE
BEND 1	27°8'14.3625"	22°50'4.6186"
BEND 2	27°8'32.0161"	22°50'33.6381"
BEND 3	27°8'26.4294"	22°49'53.6060"
BEND 4	27°7'38.3563"	22°49'25.1313"
BEND 5	27°7'37.5794"	22°49'26.5499"
BEND 6	27°6'52.6380"	22°49'30.6891"
BEND 7	27°6'46.8359"	22°50'1.2759"
BEND 8	27°7'8.1223"	22°50'51.1279"
BEND 9	27°7'6.0149"	22°51'1.0532"
BEND 10	27°7'1.3834"	22°50'59.8990"
BEND 11	27°6'58.2681"	22°51'15.0284"



POLE TOP GEOMETRY

Design information	
Design Wind span	300m
Design Weight span	450m
Conductor (3)	Term
Diam.	27.0mm
Shield wire (2)	OPGW
Diam.	11.2mm
Design Code	SANS 10200
Steel	S355J8
ESKOM Spec	34-1683

POLE DETAILS (m)			
LENGTH	HEIGHT	PLANT	C&H
32.0	18.7	3.8	11.15
34.0	20.1	3.0	12.26
36.0	22.1	3.2	14.75

SUPPLIED WITH:
 - ALL BOLTS, NUTS AND WASHERS
 - ALL LUGS
 - ALL WIRE BRACKET (D-DT-7649)
 - PERCH TO 430-80-8
 - AND PERCH D-DT-7347

C	STRUCTURE DETAILS REVISED FOR TERM CONDUCTOR	RAJ	MR		04/05/2002	NEW/REV 100%
I	DRWN ENHLDN (DANED)	J. MURPHY	DRWING ENHLDN (DANED)		04/05/2002	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

	DISTRIBUTION TECHNOLOGY 132KV SUSPENSION X-ARM GENERAL ARRANGEMENT FOR SINGLE STEEL POLE STRUCTURE		
	BY: A. BOODE		
	DWG: 28/04/2002		
	CHKD: D. DANFIELD		
	DWG: 04/05/2002		
DRWN: S. LE BOUR	D-DT-7649		
DATE: 04/05/2002	SET	SHEET	REVISION
	4	1	C

APPENDIX D

Specialist Reports

Refer to links / separate attachments for:

- Biodiversity and Ecological Assessment
- Heritage Impact Assessment

APPENDIX E

Public Participation



The top and outstanding achievers among this year's Gr. 12 learners who are students at the Kimberley Art Centre, are from the left Nusrat Ajludin (Kimberley Girls' High School – KGHS), Ané van Niekerk (Adamantia High School, top achiever), Germaine Philander (KGHS) and Lehlogonolo Mashitsho (Northern Cape High School). PHOTOS: HELENA BARNARD



Tshegafatso Loff, a learner of the Kimberley Girls High School, in front of some of her artwork.

Exhibit venerates artistry

HELENA BARNARD

With themes such as "New beginnings", "Scars in society" and "Danger and security", Gr. 12 students at the Kimberley Art Centre (KAC) portrayed their view on the world at the annual Matric Art Exhibition at the William Humphreys Art Gallery.

At the opening on 11 October, Anthea Abrahams, deputy director of the Northern Cape Department of Education, thanked Anelle Liebenberg of the KAC for her energetic spirit at the centre. She said art was a platform for children to learn to trust their ideas and themselves, and to explore what is possible.

Liebenberg said each work needed to be discovered differently, and each held a hidden message.



Jika Undiphesihle, a learner of the Northern Cape High School.



Work by Nusrat Ajludin, a learner of the Kimberley Girls' High School.

ENVIRONMENTAL IMPACT ASSESSMENT: PUBLIC PARTICIPATION PROCESS

OMGEWINGSIMPAKEVALUERINGSPROSES: OPENBARE DEELNAMEPROSES

Notice is given in terms of Section 41(2)(c) of Regulations No. 326 published in Government Notice No. 40772 of 7 April 2017 of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) with the intent to carry out the following activity in respect of which an Environmental Authorisation in terms of NEMA is required:

Project: Proposed construction of a 132kV powerline between Klipkop Substation and Wessels Substation (approximately 9km in length), around the Black Rock Mine near Hotazel, Northern Cape.

Projek: Voorgestelde konstruksie van 'n 132kV kraglyn tussen Klipkop Substasie en Wessels Substasie (ongeveer 9km in lengte), om die Black Rock Myn naby Hotazel, Noordkaap.

Should you require additional information, have comments on the project or would like to register as an interested party, please contact us by 21 November 2022.

Indien u enige navrae, kommentaar wil lewer of as 'n belangstellende party wil registreer, kontak ons asb teen 21 November 2022.


Marguerite Cronje
environmental consultant

tel: 082 702 0547 • email: margueritecronje@gmail.com / P.O. Box 29729, Danhof, Bloemfontein, 9310



Cleantha Koetsee FOTO: VERSKAF

Wêreld wink vir jong model

HELENA BARNARD

Cleantha Koetsee (13) van Upington, 'n leerling aan die Hoërskool Duineveld, het tydens die onlangse skoolvakansie aan die Suid-Afrikaanse Kampioenskap vir Uitvoerende Kunste (Sacopa) se byeenkoms in Rustenburg deelgeneem.

Dié student aan die Dawrette Heyns Model-akademie het in die model-afdeling meegeding.

Cleantha het die hoogste individuele punt in dié afdeling behaal en is met die Grand Champion-eerbewys beloon. Sy het ook 'n goue eerbewys in die fotogeniese afdeling ontvang; silwer in loopplank; informeel; brons in swemdrag; en brons in skoonheidswedstryd; formeel.

Sacopa, wat vanjaar sy 25ste bestaansjaar vier, bied normaalweg sy byeenkomste in Rustenburg aan. Op so 'n geleentheid word die span vir Suid-Afrika gekies om aan die Wêreldkampioenskap vir Uitvoerende Kunste in Los Angeles in Amerika deel te neem. Cleantha is in dié span ingesluit.

Projek help met tassies vir gr. 1's

Braaf die Boerboel is 'n splinternuwe held en gaan binnekort met skouermantel en al help om na kinders se welstand en toekoms om te sien.

René Roux, Helpende Hand se adjunk-uitvoerende hoof van kommunikasie, sê die Braaf-projek word saam met die organisasie se Tassieprojek aangebied wat jaarliks help dat talle hulpbehoewende gr.1's met ten volle toegeruste skooltassies hul skoolloopbaan kan begin.

Die hoofdoel van die Braaf-projek is om kinders te leer dat dit nie net belangrik is om braaf te wees nie, maar noodsaaklik.

"Ons wil hulle leer dat dit braaf is om soms bang en versigtig te wees, maar meeste van alles dat dit braaf is om iemand anders te help wat nie so bevoorreg soos jy is nie. "Jy is braaf as jy help, jy is braaf as jy gee. Dit is ons almal se plig om gesindheid van welwillendheid by ons kinders te kweek," sê Roux.

Die Tassieprojek is een van Helpende Hand se vlagskipprojekte, en dit sit sedert 2007 tassies, toegerus met hoëgehalte-skrifbehoefes, in hulpbehoewende graad-eentjies se hand. Die algehele koste van 'n tassie is R350. Vir meer inligting of om betrokke te raak, besoek tassie.co.za.

BOERBOEL



Braaf die Boerboel FOTO: VERSKAF

On-site Notice Photos



Photo A: Close-up of notice placed along the powerline route, where it would be visible to the public.



Photo B: Notice placed at the Black Rock mine entrance, around which the powerline is proposed.



Photo C: Notice placed along the R380 road where the powerline route crosses the road.



Photo D: View of notice placed along the R380 road towards the Wessels substation.

Comments received on draft BAR.

The draft BAR is currently being circulated for comment.

APPENDIX F

Impact Assessment

IMPACT ASSESSMENT

132kV POWERLINE

FROM KLIPKOP SUBSTATION TO WESSELS SUBSTATION

1. METHODOLOGY

Impact assessment must take into account the nature, scale and duration of effects on the environment and whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages from planning, through construction and operation to the decommissioning phase (if applicable). Where necessary, the proposal for mitigation or optimisation of an impact is noted. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

A rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each issue, the following criteria is used:

Nature	A brief description of the environmental aspect being impacted upon by a particular action or activity is presented.
Extent (Scale)	Considering the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. Site Within the construction site Local Within a radius of 2 km of the construction site Regional Between 2 and 30 km from the site National The whole of South Africa
Duration	Indicates what the lifetime of the impact will be. Short-term The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase Medium-term The impact will last for the period of the construction phase, where after it will be entirely negated Long-term The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter Permanent The only class of impact which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient

Intensity	<p>Describes whether an impact is destructive or benign.</p> <p>Low Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.</p> <p>Medium Effected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way.</p> <p>High Natural, cultural and social functions and processes are altered to extent that they temporarily cease.</p> <p>Very high Natural, cultural and social functions and processes are altered to extent that they permanently cease.</p>
Probability	<p>Describes the likelihood of an impact actually occurring.</p> <p>Improbable Likelihood of the impact materializing is very low.</p> <p>Possible The impact may occur.</p> <p>Highly probable Most likely that the impact will occur.</p> <p>Definite Impact will certainly occur.</p>
Significance	<p>Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.</p> <p>Low impact No permanent impact of significance. Mitigatory measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.</p> <p>Medium impact Mitigation is possible with additional design and construction inputs.</p> <p>High impact The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.</p> <p>Very high impact The design of the site may be affected. Intensive remediation as needed during construction and/or operational phases. Any activity which results in a “very high impact” (negative) is likely to be a fatal flaw.</p>
Status	<p>Denotes the perceived effect of the impact on the affected area.</p> <p>Positive (+) Beneficial impact</p> <p>Negative (-) Deleterious or adverse impact</p> <p>Neutral Impact is neither beneficial nor adverse.</p> <p>It is important to note that the status of an impact is assigned based on the <i>status quo</i> – i.e. should the project not proceed. Therefore, not all negative impacts are equally significant.</p>

2. VEGETATION DESTRUCTION

The natural vegetation type of the area is Kathu Bushveld (SVk 12), which is not currently considered to be of high conservation concern and is listed as being of Least Concern (LC).

According to the Northern Cape Critical Biodiversity Areas Plan (2016), the proposed powerline route falls within an Other Natural Area (ONA), which indicates that the area is considered to still consist of natural vegetation though it is not essential in meeting conservation targets and has an overall low conservation value.

The vegetation along the powerline route is clearly still largely natural, in a fairly good condition and with a significant species diversity, but given the limited footprint of the proposed powerline, it is unlikely to cause extensive disturbance of the environment.

Several protected plant species occur along the powerline route. Protected tree species include: *Boscia albitrunca*, *Vachellia erioloba* and *Vachellia haematoxylon*. Where these tree species will be affected and will require removal, the necessary permits will need to be obtained.

There are also two protected geophyte plant species (plants with an underground storage organ), namely: *Raphionacme velutina* and *Harpagophytum procumbens* observed along the powerline route. Given the limited footprint of the powerline it is unlikely that they will be affected by construction, especially given the subterranean nature, they will only be affected by excavations which will be limited to pylons. However, should any specimens be affected, permits should be obtained to transplant to adjacent areas.

Refer to the Biodiversity and Ecological Assessment in Appendix D for more detail.

Assessment: Vegetation Destruction						
Nature	Vegetation along the powerline route may be destroyed through excavations and construction activities.					
	Extent	Duration	Intensity	Probability	Significance	Status
Without Mitigation	Local	Long-term	Medium	Highly probable	Medium	Negative
With Mitigation	Site	Medium-term	Low	Possible	Low	Neutral

Mitigation Recommendations

Planning phase

- A suitably qualified ecologist or botanist should undertake a walkthrough survey of the powerline route prior to construction to identify, count and mark all protected plants that will be affected by construction.
- Necessary permits need to be obtained for the tree species (*Boscia albitrunca*, *Vachellia erioloba* and *Vachellia haematoxylon*) that require removal.
- Permits also need to be obtained should there be any protected geophytic plants species (*Raphionacme velutina* and *Harpagophytum procumbens*) that need to be transplanted to an adjacent area where they will remain unaffected.
- Care should be taken with regard to the geophytic species as they are deciduous and will be difficult to see in winter.

Construction phase

- The footprint of disturbance and clearance of vegetation must always be kept to a minimum.

Post Construction phase

- After construction, the powerline route and especially at pylon construction sites must be rehabilitated. This includes the removal of all construction materials. Excavated rock must not be left in heaps and must be removed or distributed evenly over the terrain to represent a natural environment. Compacted areas must be ripped. Construction roads not being utilized afterwards must be rehabilitated.
- Despite the absence of watercourses or wetlands, the construction of the powerline should still implement adequate erosion monitoring and control.
- Adequate monitoring of weed and invasive species establishment and their continued eradication must be maintained. Where category 1 and 2 weeds occur, they require removal by the property owner according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and the National Environmental Management: Biodiversity Act, No. 10 of 2004.

3. IMPACT ON TERRESTRIAL ANIMALS

Tracks and signs of mammals were abundant along the powerline route and are likely coupled to the largely natural habitat in the surrounding areas. It is however highly likely the adjacent mining operations will affect the natural mammal population to some degree, especially in terms of the occurrence of reclusive and threatened mammal species. The area is also utilised for domestic livestock and the farmers will undoubtedly hunt small carnivores such as Black Backed Jackal (*Canis mesomelas*). The mammal population is therefore anticipated to be modified to some degree. In addition, mammal species which are rare and endangered are often habitat specific, sensitive to habitat change and avoids areas in close proximity to human activities. Given the proximity of mining operations it is therefore considered unlikely that such species would occur on the site. Extensive natural areas do still occur in the surroundings and should provide adequate habitat and the mammal population will still be largely natural here.

The following observations of mammals were recorded:

- Soil mounds of the Common Mole-rat (*Cryptomys hottentotus*)
- Scat and quills of Porcupines (*Hystrix africaeaustralis*)
- Dung heaps and tracks of small antelope, possibly Steenbok (*Raphicerus campestris*) or Duiker (*Sylvicapra grimmia*)
- Droppings of Kudu (*Tragelaphus strepsiceros*)

The impact that the proposed powerline will have is mainly concerned with the loss of habitat. Transformation of the natural vegetation on the site will result in a decrease in the population size as available habitat decreases. However, the survey has indicated that due to the proximity of mining operations, the mammal population will already be somewhat modified here. Large natural areas also occur around the site and any mammals on the site are likely to vacate the site into these adjacent areas should development take place. Furthermore, the footprint of the development will not be extensive and should therefore limit the impact on mammals. The impact would also be mostly temporary as long as adequate rehabilitation is undertaken. Similar powerline projects have indicated that adequate rehabilitation allows the affected area to return to a close to natural condition which would therefore re-instate the habitat for fauna and minimise the impact on the faunal population.

(Taken from the Biodiversity and Ecological Assessment in Appendix D).

Assessment: Impact on fauna						
Nature	Transformation of vegetation on site thus decreasing available habitat for fauna.					
	Extent	Duration	Intensity	Probability	Significance	Status
Without Mitigation	Local	Long term	Medium	Highly probable	Medium	Negative
With Mitigation	Site	Short term	Low	Improbable	Low	Neutral

Mitigation Recommendations

Planning phase

- None

Construction phase

- Hunting, capturing or trapping of mammals should be prevented by making this a punishable offence.
- Open excavations may act as pitfall traps to mammals, reptiles and amphibians and trenches should be daily monitored for trapped animals which should be removed promptly.
- In the event of poisonous snakes or other dangerous animals encountered on the site, an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area.

Post Construction phase

- After construction has ceased, all construction materials should be removed from the area.

4. IMPACT ON AVIFAUNA (BIRDS)

As the proposed development consists of an overhead powerline, there is a risk to birds. The Screening Report identifies *Sagittarius serpentarius* (Secretary Bird) and *Aquila rapax* (Tawny Eagle) as sensitive features for the area. An Avifaunal Specialist Assessment was not undertaken, but from the approved EIA for the Klipkop – Lehating powerline, bird flappers were recommended for sections of overhead powerlines that cross any drainage lines or rivers, as well as any prominent rocky ridge areas. The proposed powerline route from Klipkop substation to Wessels substation does not have any watercourses or rocky ridges present and because the route is located along the perimeter of the Black Rock Mine, it is not expected to have a major impact on the migration and navigation of birds. The powerline has also been designed to be “bird-friendly” as per Eskom’s standards to avoid possible electrocutions as far as possible.

Assessment: Impact on avifauna						
Nature	Risk of electrocutions and impact on bird navigation and migration.					
	Extent	Duration	Intensity	Probability	Significance	Status
Without Mitigation	Local	Long term	High	Highly probable	High	Negative
With Mitigation	Site	Short term	Low	Improbable	Low	Neutral

Mitigation Recommendations

Planning phase

- The powerline’s design must be “bird-friendly” as per Eskom’s standards.

Construction phase

- Hunting, capturing or trapping of birds should be prevented by making this a punishable offence.

Post Construction phase

- None

5. IMPACT ON HERITAGE RESOURCES

The proposed footprint is exclusively underlain by well-developed, wind-blown sands covering low relief terrain. No fossils were observed within the aeolian overburden as anticipated, since it is generally not expected to be fossiliferous in the absence of karst topography, pans, springs or well-developed alluvial deposits in this case. The investigation also confirms results from a previous study when the section was inspected as part of the proposed Lehating 132kV line in 2015, showing that the development will not impact in situ Stone Age archaeological remains, of rock art (engravings), graves, stonewalled structures or historically significant buildings older than 60 years. The proposed footprint is considered to be of low archaeological significance and assigned a rating of Generally Protected C. As far as the heritage component is concerned, the proposed development may proceed, provided that all excavation activities are restricted to within the boundaries of the linear footprint.

(Refer to the Heritage Impact Assessment in Appendix D for more detail).

Assessment: Heritage Resources						
Nature	Possible negative impacts like the destruction of chance find heritage resources due to excavation.					
	Extent	Duration	Intensity	Probability	Significance	Status
Without Mitigation	Site	Permanent	Medium	Possible	Medium	Negative
With Mitigation	Site	Medium term	Low	Improbable	Low	Neutral / Positive

Mitigation Recommendations

Planning phase

- None

Construction phase

- All excavation activities must be restricted within the boundaries of the linear development footprint.
- Should any historical or archaeological artefacts be unearthed, the ECO and Archaeologist must be notified.

Post Construction phase

- None

6. HAZARDOUS / CHEMICAL SUBSTANCE MANAGEMENT

Use of hazardous substances or chemicals during construction may pose a risk to the environment. The EMP in Appendix G contains mitigation measures to ensure the pollution risk is minimised.

Assessment: Hazardous / chemical substance management						
Nature	Possible pollution of the environment due to use of hazardous or chemical substances.					
	Extent	Duration	Intensity	Probability	Significance	Status
Without Mitigation	Site	Long-term	High	Possible	High	Negative
With Mitigation	Site	Medium term	Low	Improbable	Low	Neutral

Mitigation Recommendations

Planning phase

- None

Construction phase

- All necessary Eskom guidelines and standards with regard to waste disposal, oil management and spill procedures should be adhered to.
- Hazardous and chemical substances must be stored appropriately within the Contractor's camp.
- Unless specifically authorized, fuel for construction vehicles shall not be stored on site.
- All chemicals used during construction should be stored in proper storerooms or protected areas to prevent pollution.
- Vehicles should be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere.
- Possible contamination of storm water entering surrounding drainage systems by chemicals must be prevented at all times.

- Where applicable, the contractors must ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary.
- All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. should be reported to the Project Manager and ECO.
- Spill containment and treatment is the responsibility of the contractor and must be cleaned to the satisfaction of the ECO.
- Concrete mixing should be confined to an impervious and contained area.

Post Construction phase

- After construction has ceased all construction materials should be removed from the area.
- Excess waste concrete should be disposed of at a licensed landfill site.

7. NOISE IMPACT

Construction activities are also expected to cause noise. Noise during the construction phase will however be temporary. No noise will be generated during the operational phase. An assessment table is not included, but mitigation measures for the construction phase are listed below.

Mitigation Recommendations

Construction phase

- Working hours must conform to local by-laws. Any deviation from this should be done in consultation with the local authorities.
- Contractors will not be allowed to use sound amplification equipment on site, unless in emergency situations.
- All equipment must be regularly and systematically checked, maintained and repaired (especially exhaust systems) as poorly maintained vehicles can generate disturbing and unnecessary noise.
- Construction workers must be made aware of not creating unnecessary noise such as hooting and shouting.
- Any complaints received regarding noise levels must be reported to the ECO.

APPENDIX G

Environmental Management Programme (EMPr)



Ref:

Draft Environmental Management Programme (EMPr)

Proposed 132kV powerline from the Klipkop substation to the Wessels substation near Hotazel, Northern Cape



tel: 082 702 0547
email: margueritecronje@gmail.com

January 2023

1. INTRODUCTION

1.1 Project description

South 32 Wessels Mine proposes to construct a 132kV powerline from the Klipkop substation to Wessels substation (approximately 9km), around the Black Rock Mine, near Hotazel, Northern Cape.

The proposed 132kV powerline will consist of a double circuit chickadee powerline.



Figure 1: Locality plan of the 132kV powerline around the Black Rock Mine, near Hotazel.

Also refer to the coordinates of the route and design of the powerline in Appendix C of the Basic Assessment Report (BAR). When a detailed design is available, it should be included as an Annexure to this EMPr.

1.2 Applicant

Hotazel Manganese Mines (Pty) Ltd
t/a South 32 Wessels Mine
P.O. Box 1
Hotazel
8490

General Manager: Mr Thulani Mabunda
Tel: 053 7422000

Project Manager: Mr Tshepo Mogoru
Tel: 053 7422000
Email: thepo.mogoru@south32.net

Environmental Representative: Mr Wonder Sigwebela
Tel: 053 7422020
Email: wonder.sigwebela@south32.net

1.3 Engineers

Bigen Africa Services (Pty) Ltd
P.O. Box 29
The Innovation Hub
PRETORIA
0087

Project Manager: Me. Thandi Mathibela
Tel: 012 8428700
Email: thandi.mathibela@bigengroup.com

1.4 Objectives of the EMPr

The EMPr aims to fulfill the requirements as specified in Appendix 4 of Regulations No. R. 982 (4 December 2014), as amended, in terms of the National Environmental Management Act (Act 107 of 1998), with the following objectives:

- To identify, predict and evaluate actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and

options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management;

- To identify and employ the modes of environmental management best suited to ensuring that the activity is pursued in accordance with best environmental management practices;
- To be able to respond to unforeseen events;
- To provide feedback on compliance.

1.5 Implementation of the EMPr

- i) The Applicant's Project Manager / Engineers will be responsible for the implementing and supervision of the EMPr and will have overall responsibility for ensuring that the provisions of the EMP are implemented. The Project Manager will be assisted in this task by the Environmental Control Officer (ECO).
- ii) The Conditions of the Environmental Authorisation and recommendations of the EMPr should be included in tenders and construction / operational contracts, where necessary.
- iii) All contractors should be supplied with a copy of the EMPr and it should be ensured that construction and operational staff adhere to the mitigation measures.

1.6 Role of the ECO

An ECO should be appointed prior to the commencement of construction activities. The ECO will have the following responsibilities:

- Attendance of site meetings if deemed necessary by the ECO or Project Manager;

- Advising the Project Manager and contractors on environmental issues within the defined work areas;
- Assisting in finding environmentally acceptable solutions to development and construction problems;
- Inspecting the site at a frequency determined by the stage of the project to establish compliance with environmental provisions;
- Reviewing the site logbook with regard to records of site activities that may pertain to the environment;
- Recommending corrective action to the Project Manager where construction activities are not in compliance with the EMPr;
- Keeping diligent records of communication with the Project Manager;
- Liaise with the Ecological and Heritage Consultants, if and when necessary;
- Run induction courses on environmental awareness for contractors' staff and supervisors;
- Provide assistance on environmental issues;
- The ECO shall keep record of construction activities, problems identified and transgressions noted;
- Liaise with registered interested and affect parties during especially the construction phase of the project.

1.7 Environmental Awareness Plan

During site establishment and before construction activities commence, the ECO will inform all contractors of the following:

- Point out the areas that are not to be impacted on and that require protection, if applicable;
- Explain the possible impacts as identified in the EIA;
- Inform construction staff of the conditions of the Environmental Authorisation and recommendations of the EMPr;
- Explain risks and emergency procedures;
- Impose an understanding of pollution and degradation of the environment that may result from the construction work;
- Advise on the importance of containing the footprint of the construction site; and

- Advise on the aims of rehabilitation, post construction.

The above should also be communicated to any new employees that join the team during the construction period.

2. PREPARATION OF THE EMPr

2.1 Person(s) who prepared the EMPr

Marguerite Cronje
P.O. Box 29729
Danhof
BLOEMFONTEIN
9310
Tel: 082 7020547
E-mail: margueritecronje@gmail.com

2.2 Expertise of the person(s) who prepared the EMPr

Education:

- B.Sc. (Zoology), University of the Free State, South Africa, 2002
- B.Sc. Honnours (Zoology), University of the Free State, South Africa, 2003
- M.Sc. Diploma (Equine Science), University of Edinburgh, Scotland, UK, 2005
- Masters in Environmental Management, University of the Free State, South Africa, 2008

Experience:

- 15 years of environmental management experience through conducting Environmental Impact Assessments, compiling Environmental Management Plans and monitoring construction phases of various types of projects.

EAPASA Registration Number: 2020/682

3. IMPACT MANAGEMENT ACTIONS & MITIGATION MEASURES

3.1 Planning / pre-construction phase

3.1.1 Protection of Avifauna (birds)

The design of the powerline must be “bird-friendly” to minimize the risk of bird electrocutions and any necessary measures should be implemented to ensure migration and navigation is not impacted on as per Eskom’s protocols and standards.

3.1.2 Licenses & Permits

A suitably qualified ecologist or botanist should undertake a walkthrough survey of the powerline route prior to construction to identify, count and mark all protected plants that will be affected by construction.

Necessary permits need to be obtained for the tree species (*Boscia albitrunca*, *Vachellia erioloba* and *Vachellia haematoxylon*) that require removal.

Permits also need to be obtained should there be any protected geophytic plants species (*Raphionacme velutina* and *Harpagophytum procumbens*) that need to be transplanted to an adjacent area where they will remain unaffected.

Care should be taken with regard to the geophytic species as they are deciduous and will be difficult to see in winter.

3.1.3 Site documentation

A copy of the EMPr and Environmental Authorisation should be available on site.

The Contractor should also familiarize himself with Eskom’s standard procedures and guidelines for waste disposal, oil management and spill procedures.

3.1.4 Establishment of Access Roads

Existing access roads will be utilized to gain access to the site. The footprint of the powerline route will be defined and impact on surrounding areas should be kept to a minimum.

3.1.5 Location of Contractor's Camp

The Project Manager and ECO must recommend and approve the location of any Contractor's camp, which is the demarcated area where the Contractor will establish offices, workshops and storage facilities, prior to its establishment.

In choosing a site for the camp:

- Choose as level an area as possible;
- If possible, the camp must be located within the construction site area.

Extension or movement of the construction camp must be agreed to by the ECO.

If possible, the construction camp and site must only have one access route, which should be maintained in an adequate condition so as to minimise dust and erosion. Where possible, existing roads and tracks must be used.

3.1.6 Construction Employees

Construction workers should not be housed on site.

Designated eating areas are recommended, and clean water should be made available daily to workers on site.

3.1.7 Sanitary Facilities

An adequate number of self-contained chemical toilets must be established on site, which must be easily accessible to construction workers. The Contractors must supply toilet paper at all toilets and will be responsible for the maintenance and servicing.

Contractors must ensure that no spillage occurs when chemical toilets are cleaned, and that the contents are properly stored and removed off-site. A contingency plan for spills from toilets must be supplied by the Contractors and approved by the Project Manager / Implementing Agent and ECO.

Toilets must be placed outside areas susceptible to standing or flowing water, and siting must be done in consultation with the Project Manager and ECO.

3.1.8 Safety and Security

The contractors must comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site. Construction contracts must include safety and security measures for staff.

Fire extinguishers must be available, where required.

Unauthorised entry to construction areas should not be allowed.

3.2 Construction phase

Table 1 below indicates the impact management aspects and recommended actions to be taken during the construction phase.

Table 1: Construction Phase Mitigation

Item	Aspect	Mitigation Measure
1.	Excavations	<ul style="list-style-type: none">The planning of excavations will be undertaken in liaison with the ECO and cognisance must be given to minimise the potential for soil erosion, disturbance of indigenous vegetation, the pit-trapping of mammals, reptiles, amphibians, insects, etc.
2.	Discovery of artefacts	<ul style="list-style-type: none">If <i>in situ</i> fossil material is exposed, archaeological material is uncovered, or graves are found as a result of excavations, the ECO and the specialist should be notified asap.
3.	Soil, erosion & vegetation	<ul style="list-style-type: none">The footprint of disturbance and clearance of vegetation must be kept to a minimum.Measures to control erosion must always be applied.Weed control measures must be applied to eradicate noxious weeds.No fire wood may be collected in the veld.

4.	Fauna protection	<ul style="list-style-type: none"> • No hunting, capturing or trapping of animals is allowed. • Open excavations may act as pitfall traps to mammals, reptiles and amphibians and trenches should be daily monitored for trapped animals which should be removed promptly. • In the event of poisonous snakes or other dangerous animals encountered on the site, an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area.
5.	Noise control	<ul style="list-style-type: none"> • Construction activities should be limited to normal working hours. • Working hours must conform to local by-laws. Any deviation from this should be done in consultation with the local authorities. • Contractors will not be allowed to use sound amplification equipment on site, unless in emergency situations. • All equipment must be regularly and systematically checked, maintained and repaired (especially exhaust systems) as poorly maintained vehicles can generate disturbing and unnecessary noise. • Construction workers must be made aware of not creating unnecessary noise such as hooting and shouting. • Any complaints received regarding noise levels from neighbouring properties must be reported to the ECO.
6.	Waste management (all construction debris and domestic waste produced during the construction phase)	<ul style="list-style-type: none"> • The contractor will be responsible for the removal of construction waste. • Suitable containers should be placed on site to collect all solid waste. These should be emptied regularly. • No littering is permitted. During the construction period the site shall be maintained in a neat and tidy condition.

		<ul style="list-style-type: none"> • All solid waste produced during the construction phase should be disposed of at the nearest licensed landfill site. • No dumping, burning or burying of waste may take place on site. • Metals, bottles and plastics should be separated from waste and sent to a reputable recycling program in order to recycle and reuse materials, as far as possible.
7.	Handling & storage of materials	<ul style="list-style-type: none"> • Unless specifically authorized, fuel for construction vehicles shall not be stored on site. • Hazardous and chemical substances must be stored appropriately within the Contractor's camp in proper storerooms or protected areas to prevent pollution. • Vehicles should be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere. • No construction material shall be stockpiled on the surrounding vegetation. • Possible contamination of storm water entering surrounding drainage systems by chemicals must be prevented at all times. • Where applicable, the contractors must ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary. • All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. should be reported to the Project Manager and ECO. • Spill containment and treatment is the responsibility of the Contractor and must be cleaned to the satisfaction of the ECO.

8.	Concrete mixing	<ul style="list-style-type: none"> • Mixing should be confined to an impervious and contained area. • Excess waste concrete and cement bags should be disposed of at a licensed landfill site.
----	-----------------	--

3.3 Post construction rehabilitation

3.3.1 Site Clean-up

The Contractor must ensure that all structures, equipment, materials and facilities used for construction activities are removed upon completion of the project. The Contractor must clear and clean the construction site to the satisfaction of the Project Manager and ECO.

All waste, equipment, materials, etc. used during construction must be cleared from the site. Excavated rock may not be left in heaps and must be removed or distributed evenly over the terrain to represent a natural environment.

3.3.2 Disturbed and compacted areas

Areas that have been compacted due to construction activities should be ripped. Topsoil should be placed where it was removed during excavations as soon as possible.

All exotic, and especially invasive plant species must be eradicated.

Adequate monitoring of weed and invasive species establishment and their continued eradication must be maintained. Where category 1 and 2 weeds occur, they require removal by the property owner according to the Conservation of Agricultural Resources Act, No. 43 of 1983 and the National Environmental Management: Biodiversity Act, No. 10 of 2004.

3.4 Operational phase

Operational phase mitigation measures are not included in this EMPr.

Eskom will manage the operational phase of the powerline in terms of their in-house Environmental Management frameworks.

4. COMPLIANCE AND MONITORING

4.1 On-site Environmental Representative

Apart from the ECO, it is recommended that an Environmental Representative forms part of the Project Manager or Contractor's team and is available on site on a daily basis to perform visual checks of the site activities and acts as a liaison between contractors and the ECO.

4.2 Environmental Monitoring Reports / Audits

The ECO will compile monthly environmental monitoring reports which must be kept on site and made available for inspection to any relevant competent authority.

4.3 Non-conformance and Corrective Action

Issues of non-conformance noted by the ECO will be communicated to the Project Manager, who will be responsible for ensuring that the relevant parties are informed of the non-conformance and that appropriate corrective actions are taken where necessary.

Environmental issues will be addressed at regular site meetings between the ECO, Project Manager and Contractor. The ECO will present verbal reports of any environmental concerns or issues that have arisen, and corrective actions that have been taken. Outstanding corrective

actions will be discussed and agreed at these meetings. Issues relating to complaints or comments received from the public will also be discussed at these meetings.

Minutes of these meetings will be prepared / approved by the Project Manager and copied to all attendees before the next meeting. The frequency of the site meetings will be agreed by the ECO, Project Manager, the Contractors and other relevant parties prior to the commencement of the project.

Non compliance with regard to the protection and conservation of heritage resources will be dealt with in terms of Section 51 of the National Heritage Resources Act (Act 25 of 1999).

4.4 Internal Review

Internal review of the EMPr will take place on an on-going basis by the ECO. Based on observations during site inspections and issues raised at the site meetings, the ECO shall determine whether any procedures require modification in order to improve the efficiency of the EMPr. Any changes or adjustments to the EMPr shall be registered in the records of the ECO. Therefore, adjustment and update of the original EMP document is not required when these *ad hoc* changes are made. The ECO's records shall be available to the relevant authority, the Northern Environment and Nature Conservation (DENC), throughout the process and copies will be provided on request.

At the conclusion of the project, a final Environmental Monitoring Report for the construction phase will be compiled and submitted to the Project Manager. It will outline the implementation of the EMPr, especially the site clearing and rehabilitation undertaken by the Contractor before site handover.

APPENDIX H

Details of EAP and expertise



PERSONAL INFORMATION:

ID : 8103090071089

ADDRESS : P.O. Box 29729
Danhof
Bloemfontein
9310

MOBILE : 082 7020547

E-MAIL : margueritecronje@gmail.com

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

- International Association for Impact Assessment South Africa (IAIAsa) – Member No: 2826
- Environmental Assessment Practitioners of South Africa (EAPASA) – Registration No: 2020/682

KEY QUALIFICATIONS:

- Key competencies and experience include:
 - research in zoology & environmental management
 - environmental impact assessments
 - environmental management plans
 - environmental monitoring

EDUCATION:

- B. Sc. (Zoology), University of the Free State, South Africa, 2002
- B. Sc. Honours (Zoology), University of the Free State, South Africa, 2003
- M.Sc. Diploma (Equine Science), University of Edinburgh, Scotland, UK, 2005
- Masters in Environmental Management, University of the Free state, South Africa, 2008

COURSES:

- Environmental Impact Assessment Short Course - University of the Free State, South Africa, (2006)

CONFERENCES:

- 10 years of Environmental Impact Assessments in South Africa – Somerset West (2008)
- Free State Provincial Waste Summit – Bloemfontein (2010)
- IAIAsa Conference – Thaba Nchu (2013)
- IAIAsa Conference – Port Elizabeth (2016)
- IAIAsa Virtual Symposium (2020)
- IAIAsa Virtual Conference (2021)
- IAIA International Climate Change Symposium – Cape Town (2022)

EMPLOYMENT RECORD:

- November 2005 – March 2013: MDA, Environmental Assessment Practitioner
- April 2013 – to date: Self-employed Environmental Assessment Practitioner

LANGUAGES:

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Good	Good

EXPERIENCE RECORD:

- Environmental Assessment Practitioner: conducted numerous impact assessments and have compiled a number of Environmental Management Plans for quarries, roads and various developments since November 2005.
- Environmental Control Officer: monitored mainly road rehabilitation, pipeline construction and residential development projects.

PREVIOUS PROJECTS:

Basic Assessments

- Meqheleng cemetery, Ficksburg
- Townhouse development on Plot 8 Spitskop, Bloemfontein
- Various poultry facilities near Bloemfontein
- Roodewal hospitality development, Bloemfontein
- Townhouse development on Plots 4, 5 and 9 Shannon Valley, Bloemfontein

- Naval Hill reservoirs and pipeline
- Upgrading of the Vaal-Gamagara water pipeline
- Melkstroom residential development, Upington
- Soetdoring Nature Reserve chalet development
- New site for Mediclinic, Kimberley
- Installation of an incinerator at the Northern Cape Provincial Veterinary Laboratory in Kimberley
- Hospital development on Portion 1 of Erf 22011, Bloemfontein
- Hotel development on Erf 5206, Springbok
- Road development between Heritage Lifestyle Centre and Heuwelsig, Bloemfontein
- Bulk water pipeline between the Postdene reservoir and the Greenfields development, Postmasburg
- Hotazel 132kV Powerline (In process)

Full EIA's

- Paballelo residential development, Upington
- Residential development on the Farm Pielanshoek 944, Bethlehem
- Verkykerskop town development
- Commercial and retail development on Erf 26360 and Farm Bergendal 1706, Bloemfontein
- Greenfields residential development, Postmasburg
- Brandkop residential, retail and commercial development, Bloemfontein
- Heritage Lifestyle Centre on the Remainder of Erf 22011, Bloemfontein
- Mountain View residential development, Postmasburg

Waste Licence Applications & Integrated Water and Waste Management Plans

- Upgrading of the Sterkwater WWTW, Bloemfontein
- New North Eastern WWTW, Bloemfontein
- Augrabies waste transfer station
- Upgrading of the Hoopstad WWTW
- IWWMP for the Remhoogte and Holsloot Diamond Mines, Prieska
- Jagersfontein pit rehabilitation (Public Participation for IWWMP and Heritage Permit Application)

Borrow Pit Mining Permits and Closure Reports

- N1 road Springfontein – Trompsburg borrow pit closures
- N8 road Alexanderfontein – Petrusburg borrow pit permits

Environmental Monitoring

- R30 road Vet River – Beatrix Mine
- Orange River – Colesberg water pipeline
- N1 road Springfontein – Trompsburg
- N8 road Tweespruit – Ladybrand
- Bloemhof Water Abstraction Works
- Lerato Park, Kimberley

- Raceway Park RES 3A (apartment blocks), Bloemfontein
- Blaauwberg Cattle Feedlot, Jan Kempdorp (Environmental Monitoring and Rehabilitation Plan)
- Electrification of 1000 households – Greenfields, Postmasburg (In process)

APPENDIX I

Specialists' declaration of interest

Refer to the Declarations in the Specialist Reports

APPENDIX J

Additional Information