




ESKOM HOLDINGS SOC LIMITED

Mookodi Integration Phase 2: Proposed Construction of the Mookodi - Ganyesa 132kV Power Line, proposed Ganyesa Substation, and Havelock LILO, North West Province

Draft Environmental Authorisation Amendment Motivation Report

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ESKOM HOLDINGS SOC LIMITED

MOOKODI INTEGRATION PHASE 2: PROPOSED CONSTRUCTION OF THE MOOKODI – GANYESA 132KV POWER LINE, PROPOSED GANYESA SUBSTATION, AND HAVELOCK LILO, NORTH WEST PROVINCE

DRAFT ENVIRONMENTAL AUTHORISATION AMENDMENT MOTIVATION REPORT

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GLOSSARY OF TERMS

ABBREVIATIONS

ARC-ISCW	Agricultural Research Council, Institute for Soil, Climate and Water
BA	Basic Assessment
C&RR	Comments and Responses Report
CSP	Concentrated Solar Power
CV	Curriculum Vitae
DEA	Department of Environmental Affairs
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
kV	Kilovolt
LILO	Loop-in / Loop-out
MTS	Main Transmission Substation
PPP	Public Participation Process
PV	Photo Voltaic
RWEC	Renosterberg Wind Energy Company
VIA	Visual Impact Assessment

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DRAFT ENVIRONMENTAL AUTHORISATION AMENDMENT MOTIVATION REPORT

1 INTRODUCTION

Eskom Holdings SOC Limited (hereafter referred to as “Eskom”) received Environmental Authorisation (EA) on the 2nd of February 2015 from the Department of Environmental Affairs (DEA) (DEA Ref No: 14/12/16/3/3/1/680) following a Basic Assessment (BA) process for the proposed 132kV power line from the Mookodi Main Transmission Substation (MTS) to the new proposed Ganyesa Substation, the new proposed 132kV/22kV Ganyesa Substation and a Loop-in, Loop-out (LILO) power line between the new proposed Mookodi-Ganyesa 132kV power line and Havelock Substation, North West Province (hereafter referred to as the “proposed development”). Thereafter, an application to amend the EA was applied for and subsequently granted by the DEA on the 13th of June 2017 (refer to **Appendix A**) for the relocation of the approved Ganyesa Substation to a new location within the originally approved corridor.

At this stage, two more amendments to the EA are required. These are as follows:

1. The authorised Ganyesa Substation co-ordinates location needs to be corrected. The details provided in the initial application for amendment of the EA received by the DEA on the 16th of May 2017 were incorrect and therefore need to be amended once more. This will accurately provide the exact location of the Ganyesa Substation within the approved power line corridor (Alternative 1).
2. Secondly, as a result of recent requests from landowners, the power line alignment needs to be diverted in three (3) sections outside of the EA approved power line corridor (Alternative 1) to follow the boundaries of the affected landowner’s properties. As such, amendment of the EA approved corridor is required.

Specifically, the entire amendment being applied for, will include the following:

- i. Correct co-ordinates for the Ganyesa Substation within the EA approved corridor;
- ii. Revised specialist reports (Surface Water & Geohydrology Revised Reports) where a change in potential impacts as a result of the proposed power line route deviations outside of the EA approved corridor has been identified;

- iii. Specialist addendum comment letters specifying where it has been identified that the potential impacts will not change as a result of the proposed power line route deviations outside of the EA approved corridor.

As such, Eskom have appointed SiVEST SA (Pty) Ltd to act as the independent Environmental Assessment Practitioner (EAP) to undertake the proposed amendment process. An application for an amendment of the EA was submitted to the DEA on the 28th of June 2017 for the amendments proposed above. The DEA confirmed having received the second application for amendment of the EA in an acknowledgement of receipt letter (dated 7th of July 2017). In this letter, it was noted that the application for amendment of the EA falls within the ambit of amendments to be applied for in terms of Part 2 of Chapter 5 of the EIA Regulations (2014) (refer to **Appendix B**).

In accordance with Regulation 32 (1) of the EIA Regulations 2014, the EA amendment motivation report to be compiled will include:

- (a) A report, reflecting –
 - i. an assessment of all impacts related to the proposed change;
 - ii. advantages and disadvantages associated with the proposed change; and
 - iii. measures to ensure avoidance, management and mitigation of impacts associated with such proposed change; and
 - iv. any changes required to the EMPr;
 which report –
 - i. (aa) had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and
 - ii. (bb) reflects incorporation of comments received, including any comments of the competent authority.

As such, all the above legislated requirements will be met and are included the Final Amendment Motivation Report for consideration by the DEA.

The details of how the requirements in terms of Regulation 32 (1) (a) of the EIA Regulations 2014 have been addressed are provided in **Table 1**.

Table 1. Requirements in terms of Regulation 32 (1) (a) of EIA Regulations 2014

Requirements in terms of Regulation 32(1)(a) of the EIA Regulations 2014	Notes / Comments
32(1)(a) Within 90 days of receipt of the application submit a report to the DEA reflecting -	The second application for amendment of an EA was received by the DEA on the 28 th of June 2017 and subsequently acknowledged on the 7 th of July 2017. The Final Amendment Motivation Report will be submitted to the DEA following the 30 day public

	review and comment period (26 th of July 2017 to 25 th of August 2017) on the 30 th August 2017. This falls within the prescribed timeframe (refer to Appendix B).
i. An assessment of all impacts of the proposed change;	Refer to Section 4.
ii. Advantages and disadvantages associated with the proposed change;	Refer to Section 3.
iii. Measures to ensure avoidance, management and mitigation of impacts associated with the proposed change.	Refer to Section 5.
iv. Any changes to the EMPr.	Refer to Section 5 and Appendix C .
(i) which report has been subjected to a public participation process, which had been agreed to be the DEA, and which was appropriate to bring the proposed change to the attention of potential and registered I&APs, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the DEA.	A 30 day comment period is being undertaken in line with the requirements of the legislation. As such, the Draft Amendment Motivation Report will be made available for public comment from Monday the 26 th of July 2017 to 25 th of August 2017. All potential and registered I&APs as well as organs of state were notified of the availability of the report for comment. Refer to Appendix D .
(ii) which report reflects the incorporation of comments received, including comments of the DEA.	Correspondence received from the DEA on the previous amendments have been included accordingly within this report (Appendix B). All further comments received on this Amendment Report will be captured and responded to in the Comments and Responses Report (C&RR) and the Final Amendment Motivation Report which will be updated as required. Refer to Appendix D .

This report will be made available for public comment for a period of 30 days in terms of the standard requirements by the competent authority (DEA) in line with legislation (refer to **Appendix B**). The comment period will be from **26th of July 2017 to 25th of August 2017** (end of business day).

1.1 Reason for the EA Amendment

As mentioned above, two specific amendments to the EA are required. Firstly, the authorised Ganyesa Substation co-ordinates location needs to be corrected. The details provided in the initial application for amendment of the EA received by the DEA on the 16th of May 2017 were incorrect and therefore need to be amended once more. This will accurately provide the exact location of the Ganyesa Substation within the approved power line corridor (Alternative 1).

Secondly, as a result of recent requests from landowners, the originally EA approved power line alignment needs to be diverted in three (3) sections outside of the EA approved power line corridor (Alternative 1) to follow the boundaries of the affected landowner's properties. As such, amendment of the EA approved corridor is required.

1.2 Expertise of Environmental Assessment Practitioner

SiVEST has considerable experience in the undertaking of EIAs. Staff and specialists who have worked on this project and contributed to the compilation of this report are detailed in **Table 2** below.

Table 2. Project Team

Name and Organisation	Role
Shaun Taylor – SiVEST	Environmental Assessment Practitioner
Simon Todd – Simon Todd Consulting	Biodiversity
Shaun Taylor – SiVEST	Surface Water
Garry Patterson – Agricultural Research Council (ARC)-Institute for Soil, Climate and Water (ISCW)	Agricultural Potential
Johnny Van Schalkwyk – Independent	Heritage
Andrea Gibb – SiVEST	Visual
Kim Moonsamy – Royal Haskoning DHV	Social
Cecilia Canahai – JG Afrika	Geotechnical
Robert Schapers – JG Afrika	Geohydrology
Kerry Schwartz – SiVEST	GIS and Mapping

As per the requirements of the EIA Regulations (2014), the details and level of expertise of the persons who prepared the Environmental Authorisation Amendment Report are provided in **Table 3** below.

Table 3. Expertise of the EAP

Environmental Project Manager	SiVEST (Pty) Ltd – Shaun Taylor
Contact Details	shaunt@sivest.co.za
Qualifications	BA – Geography & Environmental Studies BSc (Hons) – Geography & Environmental Science M.Sc. – Aquatic Health
Expertise to carry out the EMPr	Shaun Taylor is an Environmental Scientist with 8 years' experience across various sectors. Shaun works primarily in the environmental and water (wetlands) field. From an environmental management perspective, Shaun has completed a number of environmental impact assessments, basic assessments,

strategic environmental assessments, environmental management plans/programmes, exemption applications, amendment applications and conducted environmental auditing. Within the water field, Shaun has undertaken water use licensing (WUL) and WUL compliance monitoring for various developments. In terms of specialist work, Shaun has completed numerous wetland and riparian assessments for renewable energy projects, linear projects as well as site specific projects. Shaun has also undertaken several wetland rehabilitation plans for developments.

Experience in Environmental Impact Assessments / Basic Assessments and Environmental Management Programmes (EMPrs) include the following:

- EIA and BA for the proposed Mookodi I and II Integration Projects respectively near Vryburg, North West Province (2013 – 2015);
- EIA and EMPr for the proposed Noupoort Wind Farm, Northern Cape Province (2011/2012);
- EIA and EMPr for the proposed Loeriesfontein Wind Farm and PV Plant, Northern Cape Province (2011/2012);
- EIA and EMPr for the proposed 150 MW Renosterberg Wind Energy Company (RVEC) Wind Farm and 75 MW Solar Photovoltaic (PV) Plant, Northern Cape Province. The EIA includes the scoping process and detailed environmental impact assessment. The project includes detailed specialist studies such as social, visual, noise, heritage and biophysical as well as a full public participation process. RVEC, 2012 – 2016.
- BA and EMPr for the proposed Frankfort Strengthening Project: 88kV Power Line from Heilbron (via Frankfort) to Villiers, Free State Province (2013);
- BA and EMPr for the proposed Wilger 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- BA and EMPr for the proposed Limestone 1 – 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- BA and EMPr for the proposed Limestone 2 – 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- BA and EMPr for the proposed Tweespruit to Welroux Power Line and Substations, Free State Province (2014/2015);
- BA and EMPr for the proposed Renosterberg Wind Farm and PV Plant near De Aar, Northern Cape Province (2012).
- BA and EMPr for the proposed Loeriesfontein 70MW Photovoltaic and 132kV Power Line, Northern Cape Province (2015/2016);
- BA and EMPr for the proposed Rooipunt CSP 132kV Power Line and Associated Infrastructure, Northern Cape Province (2016);
- BA and EMPr for the proposed Rooipunt CSP Water Pipeline and Associated Infrastructure, Northern Cape Province (2016);

	<ul style="list-style-type: none"> ▪ BA and EMPr for the proposed Kalkaar CSP 132kV Power Line and Associated Infrastructure, Northern Cape Province (2016).
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Please refer to **Appendix G** for CV's of each team member. Declarations of Independence and the EAP Affirmation are included in **Appendix H**.

2 PROPOSED AMENDMENTS

The two amendments to the EA that are required in this amendment application and motivation report for the following are to be undertaken:

1. The authorised Ganyesa Substation co-ordinates location needs to be corrected. The details provided in the initial application for amendment of the EA received by the DEA on the 16th of May 2017 were incorrect and therefore need to be amended once more. This will accurately provide the exact location of the Ganyesa Substation within the approved power line corridor (Alternative 1).
2. Secondly, as a result of recent requests from landowners, the power line alignment needs to be diverted in three (3) sections outside of the EA approved power line corridor (Alternative 1) to follow the boundaries of the affected landowner's properties. As such, amendment of the EA approved corridor is required.

Further details for each amendment as specified above are provided in the sub-sections below.

2.1 Ganyesa Substation Correct Co-ordinates

As stated above, the most recently approved EA co-ordinates for the Ganyesa Substation are incorrect and need to be amended. The incorrect co-ordinates in the recently approved EA are shown in **Table 4** below:

Table 4. Incorrect Ganyesa Substation Centre Point Co-ordinates

Substation Alternative 2 (Preferred)	Latitude	Longitude
Centre point of activity	29° 26.698' S	13° 44.030' E

The above incorrect co-ordinates need to be amended as shown in **Table 5** below. A map showing the location of the correct position of the Ganyesa Substation is shown in **Figure 1** below.

Table 5. Correct Ganyesa Substation Centre Point Co-ordinates

Substation Alternative 2 (Preferred)	Latitude	Longitude
Centre point of activity	26° 29.528' S	24° 13.733' E

2.2 Power Line Deviations Outside of the EA Approved Corridor

As stated above, as a result of recent landowner requests during negotiations between Eskom and the affected landowners, the the power line alignment needs to be diverted in three (3) sections outside of the EA approved power line corridor (Alternative 1) to follow the boundaries of the affected landowner's properties (**Figure 2**). The request is an outcome of the affected landowner's preference. The deviations will avoid disrupting the affected landowner's daily farming activities and operations. The proposed deviations will therefore route along the perimeter of the affected landowner's properties and not directly through land where farming activities takes place. Should the power line not be able to deviate outside of the EA approved corridor, the affected landowner's properties will be fragmented by a servitude for the proposed power line, rendering land sub-optimal for farming activities.

3 ASSESSMENT OF ENVIRONMENTAL IMPACTS

Each of the specialists' which conducted the original BA phase detailed studies of the project, were consulted to obtain comment and / or where necessary, revised reports on the potential impact of the proposed amendments (Refer to **Appendix E** for full details). The findings of the comments and revised studies in relation to the original studies are included in **Table 6** below.



Figure 1: Proposed New Ganyesa Substation Locality Map

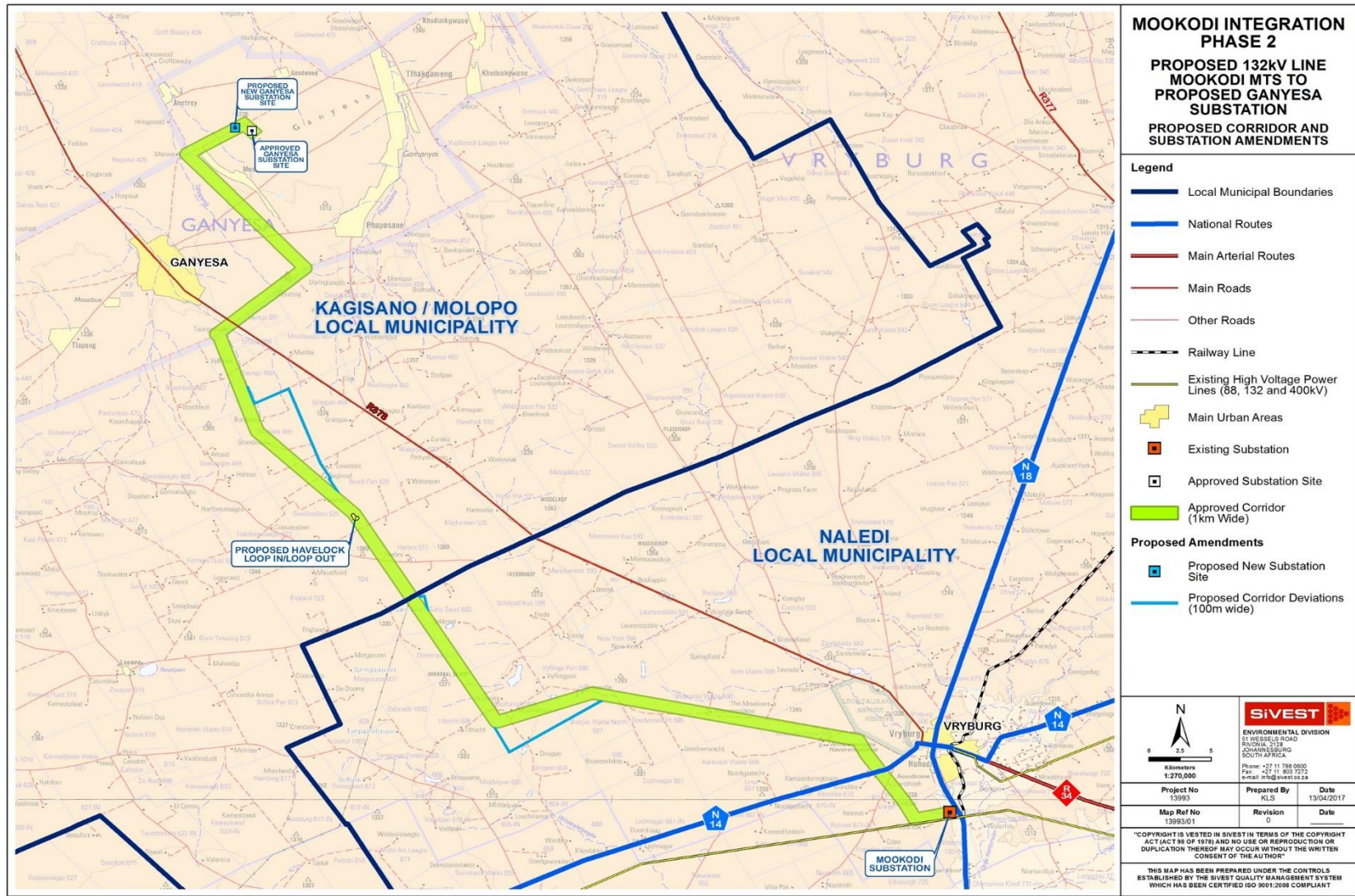


Figure 2: Proposed Power Line Deviations Map

EsKOM Holdings SOC limited

Draft Amendment Motivation Report: Mookodi-Ganyesa

Revision No. 1

26th July 2017

prepared by: SiVEST Environmental Division

Table 6. Proposed Environmental Impacts


Environmental Aspect	Summary of findings
Biophysical Environment	
Biodiversity	<p><u>Substation Location</u></p> <p>SiVEST requested a statement from Simon Todd Consulting, as the original ecological specialist on the Mookodi Ganyesa Power Line and Substation, with regards to the new substation location and the impact of the new proposed substation location in comparison with the original authorised substation location.</p> <p>Simon Todd reviewed the new location of the substation and potentially affected features in the vicinity. Particular attention was paid to the presence of features of concern in the area and the potential of the new proposed substation site to generate greater impact than the original previously assessed option. After reviewing the new proposed substation site and comparing this to the original authorized substation site, the following conclusions were reached with regards to the changes to the new proposed substation location:</p> <ul style="list-style-type: none"> ▪ The habitat at the new substation location is not significantly different from the original substation location. ▪ As such, the proposed location would not significantly increase the impact of the substation compared to the original assessed site. ▪ As the ecological impacts associated with the new proposed location are similar to the original site, the significance of assessed impacts for the original approved site and the proposed site are similar and as such, the impacts as assessed in the ecological study are equally applicable to the new substation location. ▪ The mitigation and avoidance measures as detailed in the ecological study are equally applicable and sufficient with regards to the new location and no additional or new mitigation measures are recommended. <p>The Ganyesa Substation co-ordinates can therefore be amended with no change in identified impacts.</p>

Environmental Aspect	Summary of findings
	<p><u>Power Line Deviations</u></p> <p>SiVEST requested a statement from Simon Todd Consulting, as the original ecological specialist on the Mookodi Ganyesa Power Line, with regards to the power line deviations and the impact of the new sections in comparison with the original preferred route.</p> <p>Simon Todd reviewed the deviated sections of the power line, which amount to approximately 26.5km of power line outside of the original corridor. Particular attention was paid to the presence of features of concern along the new deviations and the potential of the deviations to generate greater impact than the original previously assessed sections. After reviewing the deviations and comparing them to the original sections of the biodiversity report (titled: The proposed Mookodi Ganyesa Phase 2 132kV power lines and Ganyesa Substation near Vryburg, North West Province: Fauna and Flora Specialist Basic Assessment report dated August 2014), the following conclusions were reached with regards to the changes to the Mookodi Ganyesa Power Line:</p> <ul style="list-style-type: none"> ▪ The deviated sections of the line are not significantly different from the original corridor sections in terms of the presence of features and habitats of conservation concern. ▪ As such, the proposed deviations would not significantly increase the impact of the power line compared to the original assessed route. ▪ The ecological impacts associated with the deviations are similar to the original corridor sections, the significance of assessed impacts for the original approved corridor and the new deviations are similar and as such, the impacts as assessed in the ecological study are equally applicable to the line with the deviated sections included. ▪ The mitigation and avoidance measures as detailed in the ecological study are equally applicable and sufficient with regards to the deviated sections and no additional or new mitigation measures are recommended.
Surface Water	<u>Substation Location</u>

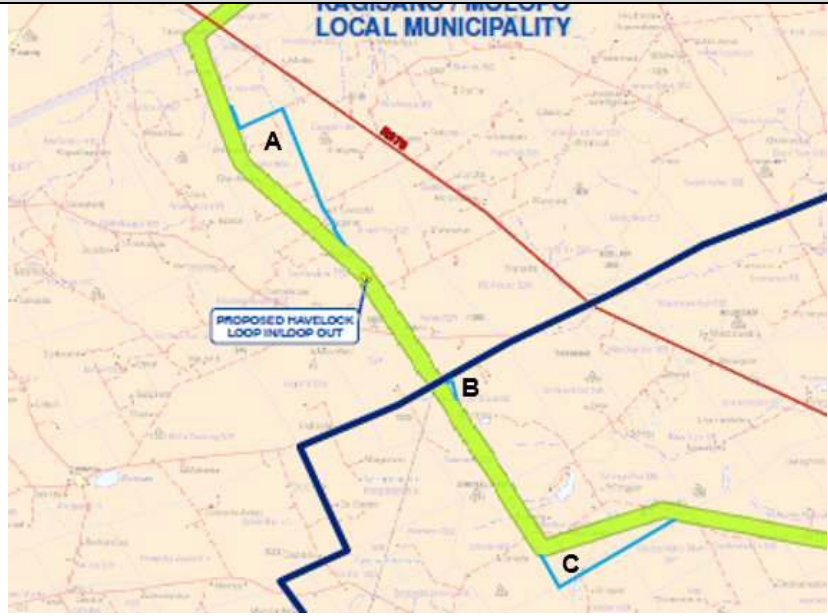
Environmental Aspect	Summary of findings
	<p>In February 2014 and later in August 2014, Shaun Taylor and Alistair Fyfe, respectively of SiVEST South Africa (Pty) Ltd undertook Surface Water Assessments for the proposed Mookodi Integration Phase 2 Project: 132kV Power Line and Ganyesa Substation near Vryburg, North West Province.</p> <p>SiVEST reviewed the possible surface water implications of the proposed new substation location change and confirm the following:</p> <ul style="list-style-type: none"> ▪ The proposed new substation locations falls within the previously assessed 500m buffer applied to the original Mookodi-Ganyesa Power line; ▪ There are no surface water resources directly within the new proposed Substation location, nor are there any surface water resources within a 500m radius of the new proposed Substation location; ▪ The assessment revealed that there will be no impact on surface water resources resulting from the proposed new Substation location during construction and operation phase, since no surface water resources are directly or within a 500m radius of the new proposed Substation location. ▪ As such, the new proposed Ganyesa Substation location would not result in any material changes to those noted in the previously compiled Surface Water Assessments and would remain unchanged as “no impact”. <p>The EA approved Ganyesa Substation co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>SiVEST has reviewed the possible surface water implications of the proposed power line deviations outside of the EA approved corridor. The potential impact ratings in the most recent updated surface water report are shown in the table below. Where potential impacts increased, the significance impact ratings are highlighted in orange. Where the potential impacts have decreased, the significance impact ratings are highlighted in green).</p>

Environmental Aspect	Summary of findings					
	CONSTRUCTION PHASE	Last Water Assessment (dated 27 th August 2014) Impact Ratings	Recent Surface Water Assessment (dated May 2017) Impact Ratings			
		Pre-mitigation Rating	Post-mitigation Rating	Pre-mitigation Rating	Post-mitigation Rating	
	Vehicle and Machinery Degradation	- 39 (medium negative)	- 20 (low negative)	- 45 (medium negative)	- 26 (low negative)	
	Human Degradation of Wetland Flora and Fauna	- 24 (low negative)	- 14 (low negative)	- 22 (low negative)	- 14 (low negative)	
	Increased Run-off and Sedimentation	- 45 (medium negative)	- 22 (low negative)	- 48 (medium negative)	- 22 (low negative)	
	Stringing Power Lines	- 22 (low negative)	- 8 (low negative)	- 24 (low negative)	- 9 (low negative)	
	Excavation Impacts	- 36 (medium negative)	- 9 (low negative)	- 42 (medium negative)	- 11 (low negative)	
	OPERATION PHASE					
	Vehicle Damage	- 45 (medium negative)	- 24 (low negative)	- 51 (high negative)	- 28 (low negative)	
	Service Roads	- 51 (high negative)	- 30 (medium negative)	- 54 (high negative)	- 32 (medium negative)	


Environmental Aspect	Summary of findings				
	Power Line Collision and Electrocutation Impacts to Wetland Avi-fauna	- 26 (low negative)	- 11 (low negative)	- 30 (medium negative)	- 14 (low negative)
Agricultural Potential and Soils	<p><u>Substation Location</u></p> <p>ARC-ISCW were requested by SiVEST to provide information on soils and agricultural potential for the proposed Mookodi-Ganyesas transmission line, near Vryburg in North West Province, including a location for the proposed new Ganyesa Substation. A report was supplied in 2014 (ARC Report No. GW/A/2014/39).</p>				

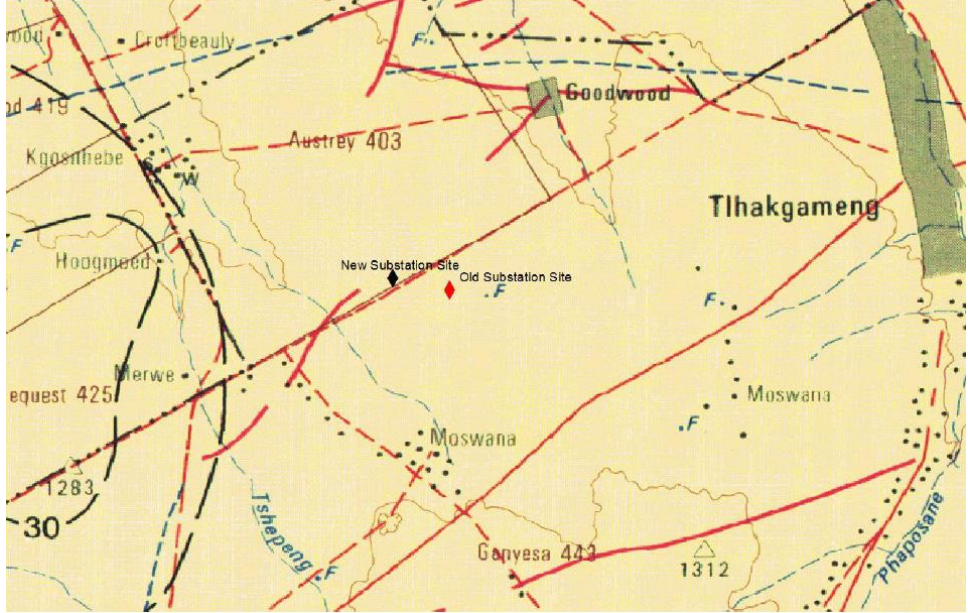
Environmental Aspect	Summary of findings
	<p>The main conclusion from the report was that, due to a combination of low annual rainfall, hot summer temperatures and sandy soils that will have poor water-holding properties, the prevailing agricultural potential in the area is low. In addition, due to the small footprint of the substation (approximately 1 ha), the impact on the loss of agricultural land is generally not significant. The exception would be in the case of intensive agricultural production, especially under permanent irrigation.</p> <p>A site was originally approved for the Ganyesa Substation. Subsequently however, Eskom proposed in the first EA amendment application that the substation location be moved approximately 1.2 km to the west as shown in the image below. This was approved.</p> 

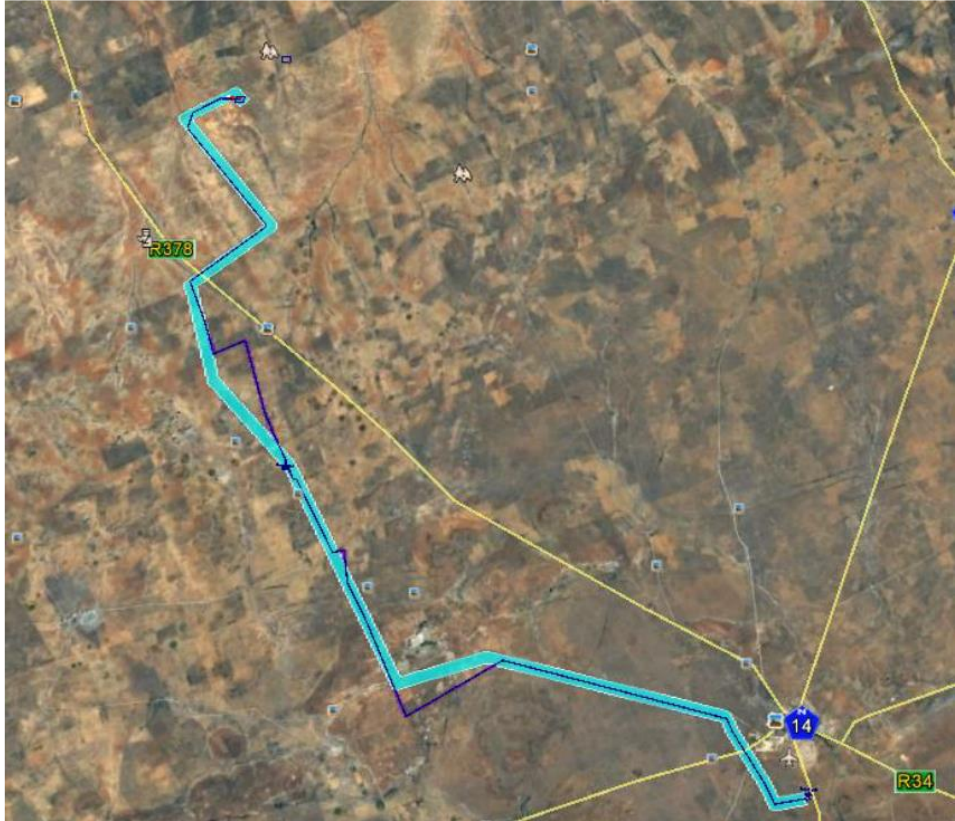
Environmental Aspect	Summary of findings
	<p>At the scale of the soil information available in the original report, namely 1:250 000, both the original and new location for the Ganyesa Substation fell within the same broad soil pattern (land type mapping unit), so the soils occurring will in all probability not differ significantly. In the image above, it can be seen that the new substation location falls outside any area of local cultivation in an area under natural bush vegetation, so there will be no impact on any agricultural practices. The closest area of high value cultivation (centre pivot irrigation) occurs approximately 13 km to the south-east.</p> <p>Conclusively, the proposed Ganyesa Substation location will have little or no effect on the overall impact of the project. The statements made in the original soils report, and their incorporation into any other submitted documents, are still fully valid. The Ganyesa Substation co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>A route was approved for the distribution line. However, due to negotiations with landowners, Eskom have proposed three deviations outside of the EA approved corridor. These are marked A, B and C in the map below.</p>

Environmental Aspect	Summary of findings
	 <p data-bbox="676 906 1898 1136">At the scale of the soil information available for the original report, namely 1:250 000, all of the three power line deviations fall within the same broad soil pattern (land type mapping unit) as the original route, so the soils occurring will not differ. It was however noted that in the zone between Deviations A and B, there a number of centre pivot irrigation fields (presumably fed by underground water sources), but neither the approved route nor any of the proposed power line deviations affect any of these sensitive areas.</p> <p data-bbox="676 1182 1898 1295">Conclusively, the three proposed power line deviations were assessed to have little or no effect on the overall impact of the route. The statements made in the original soils report, and their incorporation into any other submitted documents, are still fully valid.</p>
Geotechnical	<u>Substation Location</u>

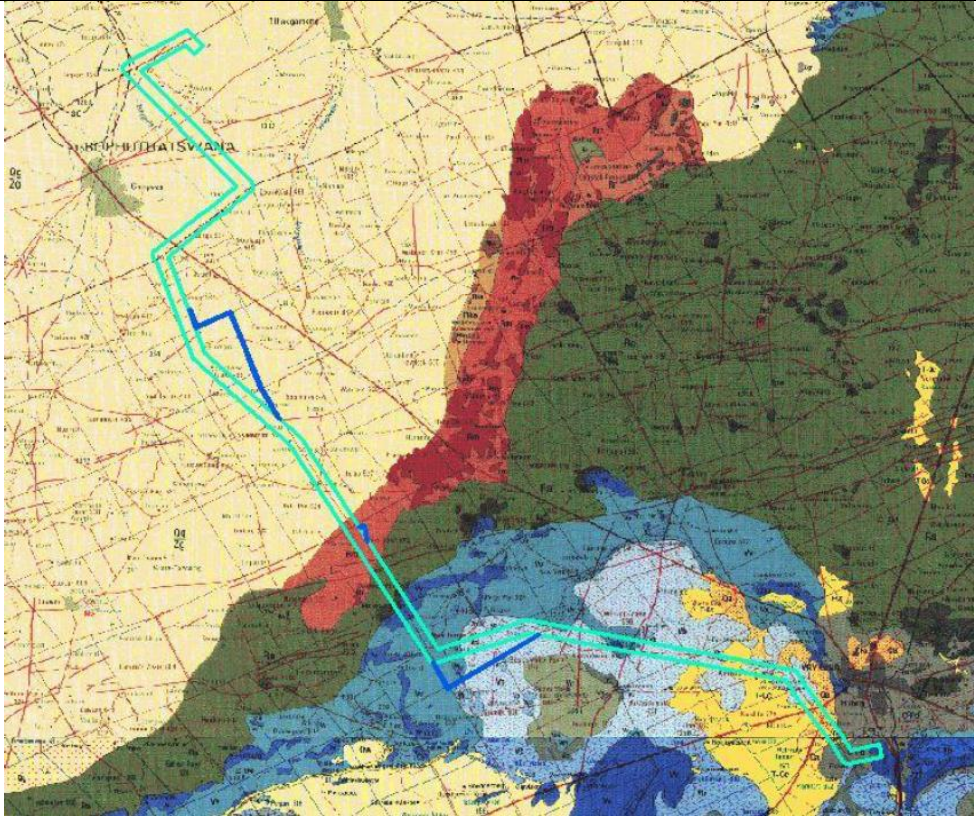
Environmental Aspect	Summary of findings
	<p>JG Afrika (Pty) Ltd previously known as Jeffares and Green undertook the geotechnical assessments desktop study for the proposed Ganyesa Substation, near Vryburg, in the North West Province in 2014, as part of the environmental approval process.</p> <p>The EA was issued by the DEA for this project in February 2015. However, as a result of subsequent negotiations with landowners, Eskom needed to move the authorised substation location to a new location that falls within the assessed corridor (see image below). JG Afrika were requested to assess if new or increased impacts, other than those identified during the initial geotechnical study were likely to arise due to the change in the substation location.</p> <p>The image below shows the location of the approved substation in red, and the proposed new location in white that was submitted and approved as part of the first EA amendment application.</p>

Environmental Aspect	Summary of findings
	 <p data-bbox="680 943 1894 1092">After consulting the geological map 2624 Vryheid, it was evident that the geological formation is the same at both locations and hence similar impacts are expected from a geotechnical perspective. Quaternary deposits, comprising Aeolian sands of the Gordonia Formation; Kalahari Group are expected at both locations and will overlie basement granites (see image below).</p>

Environmental Aspect	Summary of findings
	 <p>It is therefore the opinion of JG Afrika that no increased or additional geotechnical impacts are to be expected with regards to the relocation of the substation, based on this desktop study. The co-ordinates can therefore be amended with no change in identified impacts.</p> <p>It was however strongly recommended that further detailed geotechnical investigations are undertaken prior to construction at the chosen substation site location in order to confirm the findings of this study. This is expected to be undertaken once final design has been completed and approved.</p> <p><u>Power Line Deviations</u></p> <p>As a result of subsequent negotiations with landowners, Eskom need to deviate three sections of the authorised power line route outside of the EA approved corridor. JG Afrika were requested to assess if</p>


Environmental Aspect	Summary of findings
	<p data-bbox="680 256 1894 326">new or increased impacts, other than those identified during the initial geotechnical study are likely to arise due to the change in the power line route.</p> <p data-bbox="680 375 1894 444">The first image below shows the location of the approved power line in blue, and the proposed deviations in purple.</p> 

Environmental Aspect	Summary of findings
	<p>After consulting the geological maps 2624 Vryheid and 2724 Christiana it was evident that the same geological formations are intersected at the three power line deviations and hence, similar impacts are expected from a geotechnical perspective. Quaternary deposits, comprising aeolian sands of the Gordonia Formation; Kalahari Group are expected at the northern-most deviation; quartz porphyry, feldspar porphyry and rhyolite of the Allanridge Formation, Ventersdorp Group, are expected at the middle section deviation and oolitic & stromatolitic dolomite with interbedded shale of the Vryburg Formation, Griqualand West Sequence are expected to be encountered at the southern-most deviation (see image below).</p>

Environmental Aspect	Summary of findings
	 <p data-bbox="680 1114 1898 1182">It is therefore the opinion of JG Afrika that no increased or additional geotechnical impacts are to be expected with regards to the three power line deviations proposed, based on this desktop study.</p> <p data-bbox="680 1230 1898 1341">It was however strongly recommended that further detailed geotechnical investigations are undertaken along the entire power line route prior to construction in order to confirm the findings of this study. This is expected to be undertaken once final design has been completed and approved.</p>

Environmental Aspect	Summary of findings
Geohydrology	<p>The site is underlain by varying geological rock types including tillite, quartzites, limestones, basalts and rhyolites. Geological structures within the project area includes contacts, faults, inferred faults, lineaments and dykes. These features are areas of heightened groundwater potential. The geohydrology of the area comprises hard rock fractured, karst and intergranular and fractured aquifer types. A desktop assessment of data from the NGA on existing boreholes in the project area indicated the presence of 91 (No.) boreholes within 1km of the proposed route. A risk and impact analysis of the power line routes are carried out to determine the risk and probable impacts on the groundwater environment. The issues considered during the impact assessment include excavation conditions, drainage crossings, impact on groundwater quality and quantity, ground instability, erosion probability, and the dumping of soils and construction material. Areas along the power line route were flagged with these criteria and a cumulative impact on the power line sections was determined based on the relative number of times the impacts were encountered.</p> <p>In summary, the buffered areas relating to geological structures, geology, existing boreholes, rivers and large scale abstraction, scored a negative with low to very low impact. All remaining areas are considered no risk / no impact areas.</p> <p>The impacts were also considered in terms of nature, scale and duration. Probability of impact of the proposed power line and substation on the geohydrological environment is generally low and can be managed with good environmental consideration and enforced by the EMP. The scale of the impacts is considered to be site specific and duration predominantly during the construction phase.</p> <p><u>Substation Location</u></p> <p>The substation site was assessed at a desktop level reviewing geology, geohydrology and soil cover. A 500m radius of the substation was previously classified as no impact or very low impact based on geology, with low impact areas classified for 200m buffers from geological structures, contacts and existing boreholes.</p>

Environmental Aspect	Summary of findings
	<p>The new substation site is still located within the previous 500m corridor area and will remain at a low to medium negative impact level. The co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>The power line corridor was assessed at a desktop level reviewing geology, geohydrology and soil cover. A 500m corridor of the power line was previously classified as no impact or very low impact based on geology, with low impact areas classified for 200m buffers from geological structures, contacts and existing boreholes.</p> <p>The new power line route alignment deviates from the previous alignment out of the 500m corridor previously assessed and hence, some changes to the potential impacts are expected. Geological structures, contacts and existing boreholes along the new alignment will increase the inferred impact from no/very low impact to low impact as presented in the image below. In addition, river and stream crossings along the new alignment would need to be assessed and a 200m buffer implemented around these to classify them as low impact areas.</p>

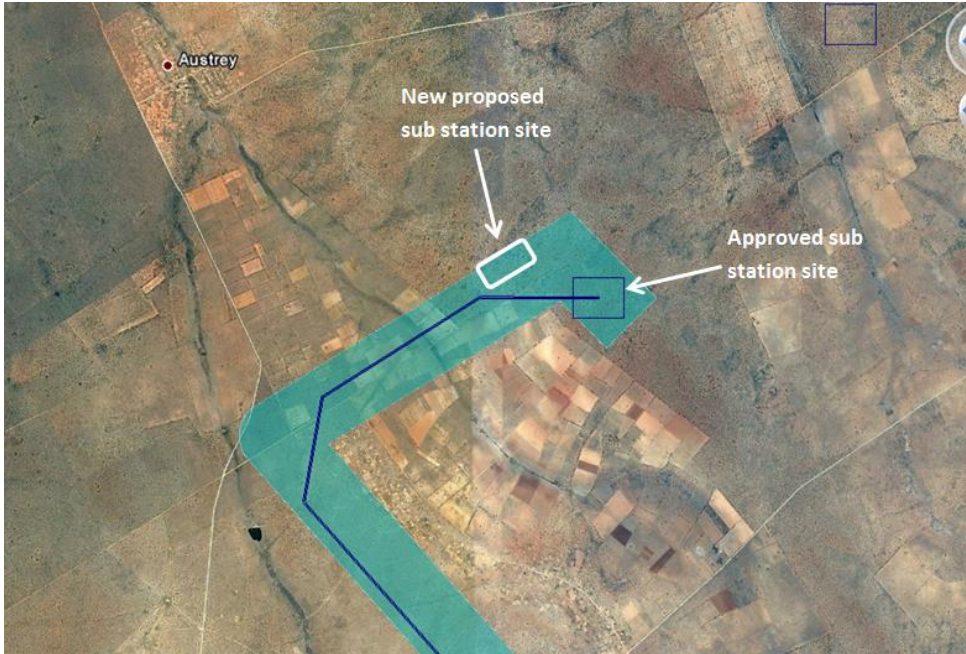
Environmental Aspect	Summary of findings
	
Social Environment	
Visual	<p><u>Substation Location</u></p> <p>In September 2014, Andrea Gibb of SiVEST SA (Pty) Ltd undertook a Visual Impact Assessment (VIA) for the proposed Mookodi Integration Phase 2: 132kV Power Line and Ganyesa Substation near Vryburg, North West Province. After correspondence with the client, it was established that the originally</p>

Environmental Aspect	Summary of findings
	<p>authorised substation location needed to be moved to a new proposed location closer to the road as submitted in the original EA amendment application.</p> <p>SiVEST reviewed the possible visual implications of the proposed new substation location change and confirmed the following:</p> <ul style="list-style-type: none"> ▪ The proposed new substation location falls within the 1km wide corridor that was previously assessed as part of the Mookodi-Ganyesa power line Basic Assessment (BA); ▪ There are no sensitive visual receptor locations close to the new proposed substation location and as such the new location of the substation will not change the impact on visually sensitive receptors; ▪ The assessment revealed that the significance of the visual impacts resulting from the proposed new substation location during construction and operation would remain low before and after the recommended mitigation measures are implemented. <p>As such, the proposed Ganyesa substation location would not result in any material changes to those noted in the previously compiled VIA report and the visual impact rating would remain unchanged. The substation co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>After correspondence with the client, and negotiations with landowners, it was established that three (3) deviations are required to the originally authorised power line corridor.</p> <p>SiVEST has reviewed the possible visual implications of the proposed three (3) power line deviations and can confirm the following:</p> <ul style="list-style-type: none"> ▪ The proposed power line deviations fall outside of the 1km wide corridor that was previously assessed as part of the Mookodi-Ganyesa Power line BA; ▪ The power line deviations now transverse farm boundaries;

Environmental Aspect	Summary of findings
	<ul style="list-style-type: none"> ▪ The proposed power line deviations are located in relatively close proximity to the previously assessed and authorised power line corridor; ▪ There are no sensitive visual receptor locations close to the new proposed power line deviations and as such, the deviations will not change the impact on visually sensitive receptors; ▪ The visual impact of the deviated power line route during construction and operation would remain low provided the originally recommended mitigation measures are implemented. <p>As such, the proposed power line deviations would not result in any material changes to those noted in the previously compiled VIA report and the visual impact rating would remain unchanged.</p>
Heritage	<p><u>Substation Location</u></p> <p>Johnny Van Schalkwyk reviewed the new proposed Ganyesa substation location in comparison to the originally authorised substation location as assessed in the Heritage Assessment undertaken for the proposed development. A review of the maps and .kml files submitted regarding the above matter were undertaken.</p> <p>During the original survey (Van Schalkwyk, J.A. 2014: Mookodi integration project – Phase 2: Heritage report, report number 2014/JvS/049 dated August 2014) the powerline corridor (500m) was surveyed, which also covered the originally authorised substation location as well as the new proposed location of the substation.</p> <p>Based on experience in the region (Van Schalkwyk 2012a, 2012b, 2016), it can be stated that this is also a region with a low occurrence of heritage sites and features.</p> <ul style="list-style-type: none"> ▪ Van Schalkwyk, J.A. 2012a. Heritage impact assessment for the proposed Ganyesa Wild Silk Project, Vryburg region, North West Province. Pretoria: Unpublished report 2012/JvS/020. ▪ Van Schalkwyk, J.A. 2012b. Basic heritage assessment for the proposed Mookodi 132kV Phase 2 power lines development, North West Province. Unpublished report 2012/JvS/049. ▪ Van Schalkwyk, J.A. 2014. Basic heritage assessment for the proposed Mookodi 132kV Phase 2 power lines development, North West Province. Pretoria: Unpublished report 2014/JvS/049.

Environmental Aspect	Summary of findings
	<ul style="list-style-type: none"> ▪ Van Schalkwyk, J.A. 2016. Cultural heritage impact assessment for the development of the proposed Meerkat Solar Power Plant on a portion of the farm Vyflings Pan 598 IN, Vryburg region, North West Province. Pretoria: Unpublished report 2016/JvS/007. <p>After review, it was confirmed with a high degree of confidence that the new location of the substation as submitted in the first amendment application would not have an impact on sites, features or objects of cultural heritage significance.</p> <p>However, considering the fact that archaeological sites in many cases occur below ground surface, it was stated that if during construction, archaeological site or graves are discovered, work must immediately be suspended and a heritage specialist must be consulted to assess the finds.</p> <p>The substation co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>Johnny Van Schalkwyk reviewed the three (3) proposed deviations in the Mookodi-Ganyesa power line in comparison to the authorised power line corridor. As requested, a review was undertaken on the maps and .kml files submitted regarding the above matter.</p> <p>During the original survey (Van Schalkwyk 2014: Mookodi integration project – Phase 2: Heritage report, report number 2014/JvS/049 dated August 2014) the power line corridor was surveyed. As is normal procedure, one always survey an area larger than the defined route, which would in effect cover the proposed deviations.</p> <p>Based on experience in the region (Van Schalkwyk 2012a, 2012b, 2016), it can be stated that this is also a region with a low occurrence of heritage sites and features.</p> <ul style="list-style-type: none"> ▪ Van Schalkwyk, J.A. 2012a. Heritage impact assessment for the proposed Ganyesa Wild Silk Project, Vryburg region, North West Province. Pretoria: Unpublished report 2012/JvS/020.

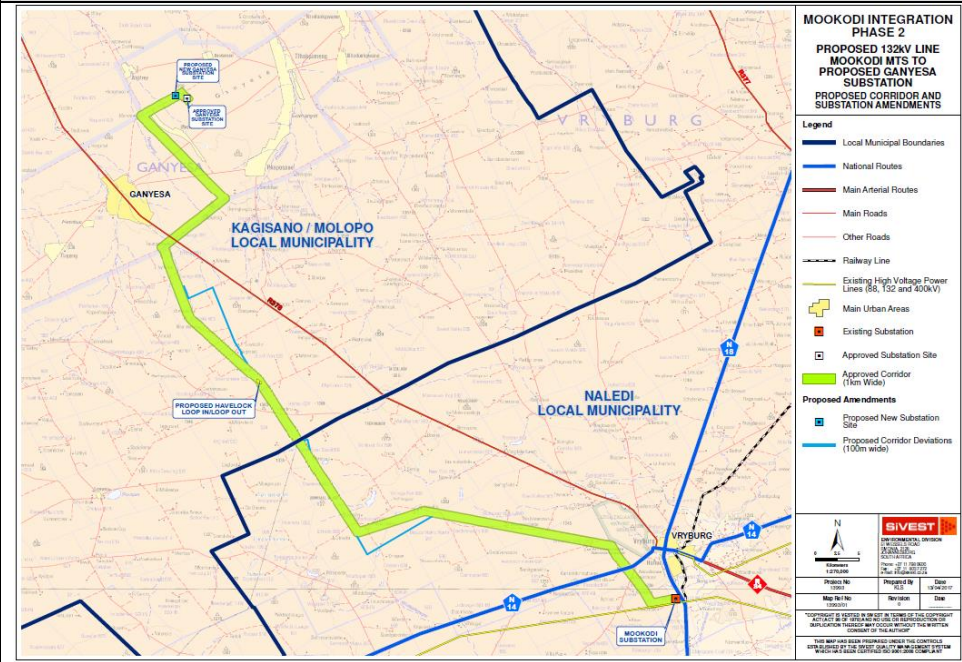
Environmental Aspect	Summary of findings
	<ul style="list-style-type: none"> ▪ Van Schalkwyk, J.A. 2012b. Basic heritage assessment for the proposed Mookodi 132kV Phase 2 power lines development, North West Province. Unpublished report 2012/JvS/049. ▪ Van Schalkwyk, J.A. 2014. Basic heritage assessment for the proposed Mookodi 132kV Phase 2 power lines development, North West Province. Pretoria: Unpublished report 2014/JvS/049. ▪ Van Schalkwyk, J.A. 2016. Cultural heritage impact assessment for the development of the proposed Meerkat Solar Power Plant on a portion of the farm Vyflings Pan 598IN, Vryburg region, North West Province. Pretoria: Unpublished report 2016/JvS/007. <p>After review, the new proposed power line deviations in comparison to the original authorised power line corridor, it was confirmed with a high degree of confidence that the new route alignments would not have an impact on sites, features or objects of cultural heritage significance.</p> <p>However, considering the fact that archaeological sites in many cases occur below ground surface, if, during construction, archaeological site or graves are discovered, work must immediately be suspended and a heritage specialist must be consulted to assess the finds.</p> <p>The proposed power line corridor can be amendment to include the three deviations with no change in identified impacts.</p>
Social	<p><u>Substation Location</u></p> <p>Royal HaskoningDHV was tasked to review the original social specialist assessment report title “Mookodi to Ganyesa Basic Social Assessment Report” dated August 2014 (report reference E02.DUR.000608) in light of the proposed amendments to the location of Ganyesa Substation. It was understood that the Environmental Authorisation for the original EIA application was approved by the DEA. However, it was proposed in the first EA amendment application that the location of the authorised substation be moved to a new location, which warranted a review of the social assessment to red-flag issues that may ensue.</p> <p>The addendum letter compiled by Royal HaskoningDHV served to provide a high level assessment of the proposed relocation of the Ganyesa Substation.</p>

Environmental Aspect	Summary of findings
	<p data-bbox="680 293 1528 321">The approximate proposed Ganyesa Substation site is illustrated below.</p>  <p data-bbox="680 992 1894 1260">It was assessed that the closest communities of Austrey and Goodwood remain over 4kms away from the substation, with no additional adverse effects. The new proposed location of the substation borders agricultural land but is not substantially further or nearer to the farmed land when compared to its original authorised placement. The earlier study cited that the locations of the proposed substation alternatives (of which there were 3 alternative locations) were on land belonging to the Tlou le Tau Tribal Authority. Since the proposed location of the new proposed substation location is potentially still within the Tribal Authority's jurisdiction, two actions would need to occur:</p> <ul data-bbox="730 1271 1829 1338" style="list-style-type: none"> <li data-bbox="730 1271 1205 1299">▪ Identify and confirm jurisdiction; and <li data-bbox="730 1310 1829 1338">▪ Pursue the necessary negotiation and agreement with the respective owners/ custodians.


Environmental Aspect	Summary of findings
	<p>It was stated that the project must allow for the legally required public engagement process to be followed. This was to include an information dissemination and sharing process with the respective owners / custodians, following which comments would be expressed.</p> <p>The review identified no additional critical social concerns with respect to the activity posed by the proposed new location of the Ganyesa substation. As the substation site is located within the previously assessed 500m area, the social impact will remain low and the mitigation measures recommended in the original social report are still applicable.</p> <p>The substation co-ordinates can therefore be amended with no change in identified impacts.</p> <p><u>Power Line Deviations</u></p> <p>Royal HaskoningDHV was tasked to review the social assessment report title “Mookodi to Ganyesa Basic Social Assessment Report” dated August 2014 (report reference E02.DUR.000608) in light of the proposed Mookodi-Ganyesa power line deviations outside of the EA approved corridor. It was understood that the Environmental Authorisation for the original EIA application had been approved by the DEA. The three (3) proposed deviations in the authorised power line corridor therefore warranted a review of the social assessment to red-flag potential issues that may ensue.</p> <p>The addendum letter compiled serves to provide a high level assessment of the proposed deviations of the Mookodi-Ganyesa power line corridor, as per the request from SiVEST.</p> <p>The authorised and new proposed route alignment and substation location are illustrated below.</p>

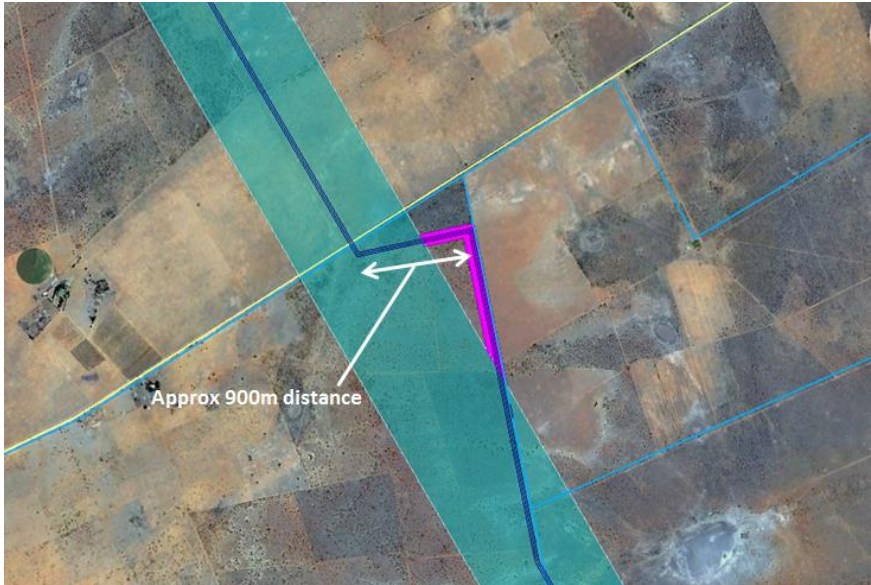
Environmental Aspect


Summary of findings



The first proposed deviation of the power line routing is illustrated below.

Environmental Aspect	Summary of findings
	 <p>The new proposed line is approximately 1km closer to an existing structure (from the authorised corridor). This deviation has brought the power line corridor within a 200 meter range of the existing structure.</p> <p>Since the proposed new deviated corridor has shifted closer to an existing structure, two actions need to occur:</p> <ul style="list-style-type: none"> ▪ Confirm the ownership and usage of the existing structure (unused, abandoned building, farm shed, cattle kraal, residential building, etc.); and ▪ Pursue the applicable information dissemination and sharing process with the respective owners/ residents and allow the legally required timeframe for comments to be expressed. <p>The project must be inclusively considerate of such feedback when finalising its plans.</p>

Environmental Aspect	Summary of findings
	<p data-bbox="680 256 1247 282">The second visible deviation is illustrated below.</p>  <p data-bbox="680 964 1898 1110">There are no red-flags raised with this deviation of approximately 900 meters to the furthest point. The project must allow for the legally required public engagement process to be followed. This may include an information dissemination and sharing process with the respective owners, following which comments will be expressed.</p> <p data-bbox="680 1159 1213 1185">The third visible deviation is illustrated below.</p>

Environmental Aspect	Summary of findings
	 <p data-bbox="695 722 930 743">Approx 2.8 km distance</p> <p data-bbox="680 971 1892 1195">There are no red-flags raised with this deviation of approximately 2.8 kms to the furthest point. The original authorised placement of the power line corridor and the new proposed deviated power line route, both transverse over farmed land and therefore the impacts remain the same. It could not be confirmed if the same (or additional farmers) are impacted. The project must allow for the legally required public engagement process to be followed. This may include an information dissemination and sharing process with the respective owners, following which comments will be expressed.</p> <p data-bbox="680 1247 1892 1352">This review found no additional critical social concerns with respect to the activity posed by the three (3) proposed power line deviations. It has been noted that the proposed deviations have been aligned to existing farm borders. This will be an advantage to the project in that it will not cause major disruption</p>

Environmental Aspect	Summary of findings
	<p>to current farming activities, and serves to manage health, safety, livelihood and site access risks to both the project and the land owner/s.</p> <p>Only following on from public sentiment of these deviations can it be gauged whether there will be tangible, realistic change in the social environment. The impacts as rendered in the original 2014 Report will however remain low and the mitigation measures recommended in the original social report are still applicable.</p>

The above findings show that in terms of potential negative impacts, a number of the potential impacts will remain unchanged for the biodiversity (fauna & flora), soils and agriculture, heritage, visual, social and geotechnical studies undertaken. Overall, the majority of studies state that the potential negative impacts will be of low significance, or are likely to either remain unchanged or result in a reduced/decreased potential negative impact. This is with the exception of the surface water and geohydrological study where impacts were assessed to increase slightly for the various potential impacts identified. With this in mind, the following statements are relevant:

- **Surface Water:**
 - Increase in significance of post-mitigation potential impact for construction phase vehicle and machinery degradation from -20 (low negative) to -26 (low negative);
 - Increase in significance of pre-mitigation potential impact for construction phase increased run-off and sedimentation from -45 (medium negative) to – 48 (medium negative). No change in post-mitigation potential impact however.
 - Increase in significance of post-mitigation potential impact for construction phase stringing of power lines from -8 (low negative) to -9 (low negative);
 - Increase in significance of post-mitigation potential impact for construction phase excavation impacts from -9 (low negative) to -11 (low negative);
 - Increase in significance of post-mitigation potential impact for operation phase vehicle damage from -24 (low negative) to -28 (low negative);
 - Increase in significance of post-mitigation potential impact for operation phase service roads from -30 (medium negative) to -32 (medium negative);
 - Increase in significance of post-mitigation potential impact for operation phase power line collision and electrocution impacts to wetland avi-fauna from -11 (low negative) to -14 (low negative); and
 - Direct impact to Depression Wetland 34 due to the spanning width being too large to be crossed without direct impact.
- **Geohydrology:**
 - The buffered areas relating to geological structures, geology, existing boreholes, rivers and large scale abstraction, scored a negative with low to very low impact. All remaining areas are considered no risk / no impact areas.

Lastly, it must be noted however that despite indications that potential negative impacts are likely to result in a slightly increased potential negative impact, recommendations were made in terms of surface water and geohydrological revised reports which include for adequate mitigation measures that will minimise the potential impacts identified. These have been included in the updated EMPr (**Appendix C**) that will be submitted to the DEA for approval with this amendment motivation report.

4 MITIGATION MEASURES

Overall, many of the specialists' comments reflected that the overall potential impact would remain unchanged, including that no additional mitigation measures over and above those proposed in the original studies would need to be implemented. These include the following studies:

- Biodiversity;
- Soils and Agricultural Potential;
- Heritage;
- Visual;
- Social; and
- Geotechnical.

However, for the specialist studies (Surface Water and Geohydrology) that were revised due to a potential change in impact, additional mitigation measures were proposed. These are stipulated in the sub-sections below. The below mitigation measures have been incorporated into the updated EMP (Appendix C). Other than the below recommendations, no additional and/or new mitigation measures will need to be implemented for the proposed development.

4.1 Surface Water Mitigation Measures

4.1.1 Construction Phase

The following construction phase mitigation measures as identified for each type of impact where an increase in potential impacts was identified in terms of the proposed power line deviations are provided below:

- Vehicle and Machinery Degradation Impacts
 - The drainage lines and associated riparian corridors, wetlands and the associated buffer zones are to be designated as “highly sensitive” and any impact must be limited to the minimum possible extent where construction is to take place in a surface water resource.
 - Construction workers are only allowed in the servitude area of the proposed power lines and site location of the substation, and not into the surrounding surface water resource system. The required construction areas in the drainage lines and associated riparian corridors, wetlands and the associated buffer zones are to be clearly demarcated and no access beyond these areas is to be allowed.
 - A single access route or “Right of Way” (RoW) is to be established to the desired construction area in the wetland should this be required and the relevant environmental authorisation and water use licenses have been obtained. The width of the RoW must be limited to the width of the vehicles required to enter a surface water resource (no more than

a 3m width). An area around the location where the towers will be placed will be required in order for the towers to be erected. This too must be limited to the smallest possible area (no bigger than 20m²) to prevent unnecessary degradation.

- Ideally, vegetation should not be totally cleared across the entire RoW. Rather, only the vehicle tracks should be cleared. Remaining vegetation can be kept trimmed to below 20cm but not lower than 5cm in height. Trees may however require removal.
- Where required, bog mats or gravel running tracks should be used. This is likely to be required for Depression Wetland 34 and Unchannelled Valley Bottom Wetland 6 which are too wide to be spanned by the proposed power lines. No wetlands and or drainage lines are to be accessed during or directly after a rainfall event.
- The number and type of permissible vehicles or machinery into or near to the sensitive areas must be limited to the bare minimum. Preferably light vehicles are to be utilised where possible.
- Preventing Soil and Wetland Contamination - All vehicles and machinery are to be checked for oil, fuel or any other fluid leaks before entering the construction areas. All vehicles and machinery must be regularly serviced and maintained before being allowed to enter the construction RoW within the highly sensitive areas. No fuelling, re-fuelling, vehicle and machinery servicing or maintenance is to take place in the sensitive areas. The construction site is to contain sufficient safety measures throughout the construction process. These include, but are not limited to, oil spill kits to be available, fire extinguishers, fuel, oil or hazardous substances storage areas must be bunded to prevent oil or fuel contamination of the ground and/or nearby surface water resource or associated buffer zone.
- No hazardous materials are to be stored or brought into the sensitive areas. Should a designated storage area be required, the storage area must be placed at the furthest location from the sensitive areas. Appropriate safety measures as stipulated above must be implemented.
- Human Degradation to Wetland and Drainage Line Flora and Fauna
 - Construction workers are not allowed in the drainage lines and associated riparian corridors, wetlands and the associated buffer zones unless it is to environmentally authorised construction areas.
 - No animals are to be hunted, captured, trapped, removed, injured, killed or eaten by workers or any other project team members. Should any party be found guilty of such an offence, stringent penalties should be imposed. The appointed Environmental Control Officer (ECO) or suitably qualified individual may only remove animals where such animals (including snakes, scorpions, spiders etc.) are a threat to workers.
 - The ECO or suitably qualified appointed individual is to be contacted should removal of any fauna be required during the construction phase. Animals that cause a threat and need to be removed may not be killed. Any removed animals are to be relocated outside the RoW, within relative close proximity where they were found.
 - No vegetation is to be damaged or removed unnecessarily in the drainage lines and associated riparian corridors, wetlands and the associated buffer zones unless it is to be

- cleared as a result of being within the approved RoW areas or within the approved servitude of the finalised proposed power line route.
- Where sensitive drainage line, riparian corridor and wetland vegetation is identified in the areas that have been approved for construction, the necessary plant removal permits are to be obtained prior to any removal, relocation or destruction of such vegetation.
 - No “long drop” toilets are allowed in the construction camp or construction areas. Suitable temporary chemical sanitation facilities must be provided. Temporary chemical sanitation facilities must be placed no closer than 100m from any delineated surface water resource. Temporary chemical sanitation facilities must be placed over a bunded or a sealed surface area and adequately maintained to prevent leakage or spillage of sanitary chemicals.
- Increased Run-off, Erosion and Sedimentation Impacting on Wetlands and Drainage Lines and the Associated Riparian Corridors
- Authorised vegetation clearing in the wetlands and drainage lines where required must take place in a phased manner, only clearing areas that will be constructed on immediately. Vegetation clearing must not take place in areas where construction will only take place in the distant future. Vegetation must not be completely removed and must be undertaken according to standard Eskom vegetation clearance standards and policies. Vegetation clearance must be limited to the RoW only or servitude where applicable.
 - An appropriate storm water management plan formulated by a suitably qualified professional must accompany the proposed development to deal with increased run-off and potential sedimentation impacts for the construction phase of the proposed development. Adequate structures must be put in place (temporary or permanent where necessary) to handle run-off and sediment volumes. All impacted areas must be adequately sloped to prevent onset of erosion.
 - Vegetation rehabilitation in the drainage lines and associated riparian corridors, and wetlands where required will need to take place in the impacted areas following construction. The compacted soil and cleared vegetation areas in the RoW must be levelled, or appropriately sloped if on a hillslope and scarified to loosen the soil and allow seeds contained in the natural seed bank to re-establish. Preferably scarification is to take place before the spring and summer rainy season and not in the dry season. A medium term vegetation alien removal and rehabilitation monitoring programme is to be compiled and implemented to prevent alien vegetation colonisation.
- Stringing Power Lines Through Drainage Lines and Associated Riparian Corridors, and Wetlands
- Previous recommendations to restrict vehicle access to RoW areas must be upheld. For the stringing process specifically, stringing of the power lines must be undertaken by hand and a maximum of fifteen (15) workers are allowed to cross through surface water resources to limit trampling impacts. Once this has been undertaken, access must be strictly prohibited in the wetlands and drainage lines as well as the associated riparian corridors and buffer zones unless a RoW has been established. The ECO must be present on site to supervise the stringing process through the wetlands and watercourses to ensure that potential impacts are minimised and where required, adequate mitigation measures to address impacts are undertaken.

- Excavation Impacts on the Drainage Lines and Associated Riparian Corridors, Wetlands and the Associated Buffer Zones
 - Where any soils are to be removed from drainage lines and associated riparian corridors, wetlands and the associated buffer zones areas, these are to be stockpiled. Top soil must be stockpiled separately from the sub-soil types. All soil stockpiles from general construction activities in or within 100metres from the delineated surface water resource must be adequately banded by suitable materials. Banding materials can include a three brick layer boundary around the soil stockpile. Alternatively, wooden planks approximately 40-50cm high fixed with pegs can be used. This will prevent soil run-off and potential sedimentation pollution (environmental incident) impacts affecting the surface water resource.
 - As identified above, excavated surface water resource soils are to be used as infill in the locations where towers have been placed where appropriate. The order that the stockpiled soils are backfilled must be specific. The sub-soils are to be in-filled first and the top soil layer in-filled after on top of the sub-soils so as to reinstate the appropriate soil horizon order. It is recognised that infill of a different grade may be required to infill the excavations of the newly proposed towers in the surface water resource due to the potential degree of clay content and the instability associated thereof with the soils. This is permissible but only where absolutely necessary. All excess soils are to be removed from the construction areas upon completion construction. Areas that have been impact by the soil stockpiles must be rehabilitated in accordance with the mitigation measures specified above with regards to vegetation and bank stabilisation rehabilitation procedures.

4.1.2 Operation Phase

The following operation phase mitigation measures as identified for each type of impact where an increase in potential impacts was identified in terms of the proposed power line deviations are provided below:

- Vehicle Damage to Wetlands, Drainage Lines and Associated Riparian Corridors and Buffer Zones During Maintenance
 - It is crucial that existing roads are used so that damage is limited. Where new access roads are required in the wetlands, drainage lines and associated riparian corridors and buffer zones, these roads must be limited in extent (i.e. go directly to the desired tower) and will need to be maintained.
 - If dirt roads are required as the means of access, these will have to be regularly monitored and checked for erosion. Monitoring should be conducted on a weekly to monthly basis. Moreover, after short or long periods of heavy rainfall or after long periods of sustained rainfall the roads will need to be checked for erosion and the necessary rehabilitation measures will need to be employed.
 - Where erosion begins to take place, this must be dealt with immediately to prevent severe erosion damage to the wetland. Should large scale erosion occur, a rehabilitation plan will

be required. Input, reporting and recommendations from a suitably qualified wetland specialist must be obtained and implemented to address erosion impacts.

- Service Roads through Wetlands, Drainage Lines and Associated Riparian Corridors, and Buffer Zones
 - New service roads must not be planned through surface water resources, unless it is to the permitted tower locations for maintenance purposes. In this instance, access roads may only be permissible to the tower locations and not entirely through the drainage lines and associated riparian corridors, wetlands and the associated buffer zones. Road or culvert bridges will therefore not be required for towers either side of a surface water resource. Alternative routes must be planned and established that circumvent surface water resources completely as far as possible. Existing roads are to be used as far as possible.
- Power Line Collision and Electrocution Impacts to Wetland Avi-fauna
 - During the construction phase, it is critical that the stretches of power lines that have been authorised and permitted to course through or near to the wetlands, drainage lines and associated riparian corridors and buffer zones are fitted with flight deviators or bird anti-collision devices (whichever is more appropriate) to prevent impacts to avi-fauna. The fitment of the anti-collision devices or flight deviators must take place on the ground before stringing the power lines to the towers in order to prevent the use of machinery or vehicles in the activity.

4.1.3 *Decommissioning and Closure Phase*

The following decommissioning and closure phase mitigation measures as identified for each type of impact are provided below:

- None.

4.1.4 *Cumulative Impacts*

The following cumulative impacts mitigation measures as identified for each type of impact are provided below:

- None.

4.2 Geohydrology Mitigation Measures

4.2.1 Construction Phase

The following construction phase mitigation measures as identified for each type of impact where an increase in potential impacts was identified in terms of the proposed power line deviations are provided below:

- Excavation
 - Enforcement and implementation of the Environmental Management Programme (EMPr).
- Drainage Crossing
 - Enforcement and implementation of the Environmental Management Programme (EMPr).
- Impact in Groundwater Quality
 - Enforcement and implementation of the Environmental Management Programme (EMPr).
- Impact on Groundwater Quantity
 - Enforcement and implementation of the Environmental Management Programme (EMPr).
- Impact of Dumping
 - Enforcement and implementation of the Environmental Management Programme (EMPr).
- Impact of Ground Instability
 - Enforcement and implementation of the Environmental Management Programme (EMPr).

4.2.2 Operation Phase

The following operation phase mitigation measures as identified for each type of impact where an increase in potential impacts was identified in terms of the proposed power line deviations are provided below:

- None.

4.2.3 Decommissioning and Closure Phase

The following decommissioning and closure phase mitigation measures as identified for each type of impact are provided below:

- None.

4.2.4 Cumulative Impacts

The following cumulative impacts mitigation measures as identified for each type of impact are provided below:

- None.

5 NEED AND DESIRABILITY FOR THE PROPOSED AMENDMENT

As indicated in the Final Basic Assessment Report (FBAR) dated 6th November 2014 and subsequently submitted the same day to the DEA. Eskom are responsible for the provision of reliable and affordable power to consumers in South Africa. Eskom therefore have proposed the project in order to improve the reliability of the network and create capacity for new customers in the greater Vryburg area. This project is the second phase of the Mookodi Integration project, which is being proposed to integrate the new Mookodi Main Transmission Substation (MTS) south of Vryburg, into the network. The network in the area is currently unstable, therefore the proposed development will help regulate and strengthen the network, should the Department of Environmental Affairs (DEA) grant the amended EA. In addition, there is mining potential in the area north of Vryburg and the proposed project would help supply electricity to these areas.

Following Environmental Authorisation of the project, and the proposed amendments being sought, the subsequent advantages and disadvantages are discussed in the sub-sections below.

5.1 Advantages of the Proposed Amendments

5.1.1 *Advantages of Substation Co-ordinates Correction*

The correction of the substation co-ordinates will bring about the following advantages / benefits:

- The correction of the co-ordinates of the Ganyesa Substation will be an advantage to the project in that it will align with the placement interests of the affected landowner;
- The correction of the co-ordinates of the Ganyesa Substation will not cause major disruption to current farming activities, and serves to manage health, safety, livelihood and site access risks to both the project and the land owner/s;
- The proposed amendment will have a positive impact with regards to the project as a whole, as the project will be allowed to commence. As such, the positive impacts on the economy and of employment creation will be able to be realized.

5.1.2 *Advantages of Approval of the Three Power Line Deviations Outside of the EA Approved Corridor*

The approval of the three power line deviations outside of the EA approved corridor are anticipated to bring about the following advantages / benefits:

- The proposed deviations have been aligned to existing farm borders. This will be an advantage to the project in that it will not cause major disruption to current farming activities and will positively affect the rights and interests of the directly affected landowners;
- The proposed deviations will serve to manage health, safety, livelihood and site access risks to both the project and the land owner/s;
- The proposed amendment will have a positive impact with regards to the project as a whole, as the project will be allowed to commence. As such, the positive impacts on the economy and of employment creation will be able to be realised;
- Potential decrease in severity of impacts with regards to human degradation of wetland flora and fauna as per the specialist surface water assessment that was revised; and
- Stimulation of local economy due to additional materials being required for construction of the deviated sections of the power line.

5.2 Disadvantages of the Proposed Amendments

5.2.1 Disadvantages of Substation Co-ordinates Correction

Based on the findings of the specialist addendum letters and / or revised reports, no disadvantages were identified that could result from the correction of the substation co-ordinates. All the specialists have confirmed that the findings in their original reports hold true and that no change or increase in the potential impacts are anticipated with regards to the relocation of the environmentally approved Ganyesa substation. Hence, the correction of the co-ordinates of the new location of the Ganyesa Substation will not have any disadvantages.

5.2.2 Disadvantages of Approval of the Three Power Line Deviations Outside of the EA Approved Corridor

Specialists were also consulted to ascertain if there would be any change or new impacts associated with the three (3) deviated power line corridors outside of the EA approved corridor to those identified in the original Basic Assessment process. No new or change in impacts were determined for the following specialist studies:

- Soils and Agricultural Potential Study;
- Biodiversity (Flora and Fauna) Study;
- Geotechnical Assessment Study;
- Heritage Study;
- Social Study; and
- Visual Study.

However, it was determined that there would be a change in some of the potential impacts identified for the following two specialist aspects:

- Geohydrology Study; and
- Surface Water (wetlands) Study.

Increase in potential impacts as identified for the revised surface water assessment are as follows:

- Increase in significance of post-mitigation potential impact for construction phase vehicle and machinery degradation from -20 (low negative) to -26 (low negative);
- Increase in significance of pre-mitigation potential impact for construction phase increased run-off and sedimentation from -45 (medium negative) to -48 (medium negative). No change in post-mitigation potential impact however;
- Increase in significance of post-mitigation potential impact for construction phase stringing of power lines from -8 (low negative) to -9 (low negative);
- Increase in significance of post-mitigation potential impact for construction phase excavation impacts from -9 (low negative) to -11 (low negative);
- Increase in significance of post-mitigation potential impact for operation phase vehicle damage from -24 (low negative) to -28 (low negative);
- Increase in significance of post-mitigation potential impact for operation phase service roads from -30 (medium negative) to -32 (medium negative);
- Increase in significance of post-mitigation potential impact for operation phase power line collision and electrocution impacts to wetland avi-fauna from -11 (low negative) to -14 (low negative).

Increase in potential impacts as identified for the revised geohydrological assessment are as follows:

- Increase in significance of impact rating for excavation from -7 (low negative) to -10 (low negative);
- Increase in significance of impact rating for drainage crossing from -10 (low negative) to -11 (low negative);
- Decrease in significance of impact rating for impact in groundwater quality from -39 (medium negative) to -30 (medium negative);
- Increase in significance of impact rating for impact on groundwater quantity from -11 (low negative) to -22 (low negative);
- Increase in significance of impact rating for dumping (soil and construction material) from -18 (low negative) to -22 (low negative);
- Decrease in significance of impact rating for impact in ground instability from -16 (low negative) to -6 (low negative).

From the above, it is shown that the increase in identified impacts is minimal. It can therefore be argued that in terms of the change in terms of the significance of potential impacts identified, these are relatively minimal and in some instances negligible.

In summary of the above, the approval of the deviations of the proposed power line in three sections outside of the EA approved corridor may have the following potential negative impacts:

- Increase in the physical footprint of the proposed development; and

- Direct impact to Depression Wetland 34 due to the spanning width being too large to be crossed without direct impact.

With the revision of the surface water and geohydrological specialist reports, additional mitigation measures have been proposed that were not previously included in the original reports in an effort to mitigate the potential impacts to acceptable levels. With implementation of the additional mitigation measures, the additional impact anticipated can be satisfactorily mitigated.

Overall however, it can be argued that the advantages outweigh the disadvantages of the proposed two amendments. This is mainly due to addressing the social and disruption (cost) as well as future development limitation implications to the directly affected landowners. The affected landowners will therefore be able to more efficiently and more effectively manage their properties should the above amendments be granted. Additionally, with the implementation of mitigation measures, the potential negative impacts can be reduced to acceptable levels.

6 PUBLIC PARTICIPATION

The public participation process (PPP) is the cornerstone of any environmental authorisation process. The principles of any PPP include provision of sufficient and transparent information on an on-going basis to stakeholders to allow them to comment, and ensuring the participation of previously disadvantaged people, women and the youth.

The public participation process is primarily based on two factors; firstly, ongoing interaction with the environmental specialists and the technical teams in order to achieve integration of technical assessment and public participation throughout. Secondly, to obtain the bulk of the issues to be addressed early on in the process, with the latter half of the process designed to provide environmental and technical evaluation of these issues. These findings are presented to stakeholders for verification that their issues have been captured and for further comment.

Input into the public participation process by members of the public and stakeholders can be given at various stages of an environmental authorisation process. There are however set periods in which comments are required from Interested and / or Affected Parties (I&APs) for this amendment process in order to ensure that these are captured in time for the submission of the final amendment motivation report. The comment periods were implemented according to National Environmental Management Act (Act No. 107 of 1998) (NEMA) and EIA Regulations (2017) as required. The comment periods during amendment process are as follows:

- Comment period for the Draft Motivation Report: 4 Calendar weeks (30 days).

The EIA regulations emphasise the importance of public participation. In terms of the EIA regulations, registered interested and/or affected parties –

- may participate in the application process;
- may comment on any written communication submitted to the competent authority by the applicant or environmental consultant;
- must comment within the timeframes as stipulated;
- must send a copy of any comments to the applicant or Environmental Assessment Practitioner (EAP) if the comments were submitted directly to the competent authority; and
- must disclose any direct business, financial, personal or other interests that the person has in the application being granted or refused.

Further, in terms of the EIA regulations, the EAP:

- manages the application process;
- must be independent;
- must undertake the work objectively – even if this results in views and findings that are not favourable to the applicant;
- must disclose material information that may influence the decision; and
- must conduct a public participation process.

The following actions will / have been undertaken taken upon receiving comments/queries/issues:

- The contact details provided are entered into the project database for use in future notifications.
- Confirmation of receipt of comments.
- Addressed comments in the Comments and Response Report (CRR).

6.1 Objectives of Public Participation

An understanding of what the public participation is, and what it is not, needs to be explored and must be clarified.

- Public Participation is:
 - A communication mechanism to inform I&APs regarding a proposed development.
 - A communication mechanism to record comments and/or concerns raised during the amendment process by I&APs regarding a proposed project.
- What Public Participation is not:
 - A marketing exercise.
 - A process to address grievances but rather to record comments raised.
 - One-on-one consultation with each I&AP during the amendment process (not relevant to possibly affected landowners identified).

The primary aims of the PPP are:

- To inform interested and affected parties (I&APs) and key stakeholders of the proposed development.
- To initiate meaningful and timeous participation of I&APs.
- To identify issues and concerns of key stakeholders and I&APs with regards to the proposed development
- To promote transparency and an understanding of the proposed development and its potential environmental impacts.
- To provide information used for decision-making.
- To provide a structure for liaison and communication with I&APs and key stakeholders.
- To assist in identifying potential environmental impacts associated with the proposed development.
- To ensure inclusivity (the views, needs, interests and values of I&APs must be considered in the decision-making process).
- To focus on issues relevant to the project and issues considered important by I&APs and key stakeholders.
- To provide responses to I&AP queries.
- To encourage co-regulation, shared responsibility and a sense of ownership.

6.2 Overview of the Public Participation Process to Date

The PPP for the EA amendment process for the proposed development will be initiated on the 26th of July 2017. Members of the public who wished to be registered on the database as an I&AP were able to do so via telephone, fax, email, mail or SiVEST's website (www.sivest.co.za).

On-going consultation with key stakeholders and identified I&APs will ensure that I&APs are kept informed regarding the EA amendment process. Networking with I&APs will effectively continue throughout the process until the Final Motivation Report is submitted to the DEA. Where required, stakeholders and I&APs were engaged on an individual basis.

6.3 Consultation and Public Involvement

Through the consultation process, issues for inclusion within the Amendment Application were and will be identified and confirmed. Telephonic discussions and one-on-one consultation will be undertaken where relevant. Special attention will be paid to the consultation with possibly affected landowners and communities within the study area to try and address their main concerns (if any).

6.4 Stakeholders and I&APs

In order to identify possible I&APs, use was made of:

- Email, sms, fax and post notifications to all I&APs on the project database (Proofs included in **Appendix D1**).
- Referrals.

A full database list of registered I&APs was compiled and is included in **Appendix D2**.

6.5 Announcing the Opportunity to Participate

The opportunity for stakeholders to participate in the EA amendment process have been undertaken as follows:

- EA amendment notifications of the amendment application submission to DEA via email, sms, post and fax were distributed on the 26th of June 2017); and
- Notification and distribution of Invite Letters (via email, fax, post and sms) of the EA amendment process and comment period distributed on the 26th of July 2017;
- Distribution of the Amendment Motivation Report to the public for review for a period of 30 days from **26th of July 2017 to 25th of August 2017**.

Table 7: Venues where the Draft Amendment Motivation Report will be made publically available

VENUE	STREET ADDRESS	HOURS	CONTACT NO
Vryburg Public Library	63 Stella Street VRYBURG	Monday to Friday: 09h30 – 17h30	053 928 2270

6.6 Notification of the Potential Interested and Affected Parties

Communication with I&APs has and will be conducted by means of telephone, faxes, sms and email in order to distribute and obtain the necessary information to compile this report.

Advertisements (English and Afrikaans) will be placed in the following newspapers (**Appendix D1**):

- Die Stellalander (Wednesday the 26th of July 2017)

Accordingly, site notices were placed near the study area.

Where stakeholders responded (see **Appendix D3** for correspondence) to advertisements, they were registered on the project database and sent letters of invitation to participate.

All comments received for the duration of the EA amendment process (including comments on the Amendment Motivation Report) are included in the Comments and Response Report (C&RR) – **Appendix D4**.

6.7 Proof of Notification

All proof of notification to I&APs are included in **Appendix D**. More specifically, the types of proofs will be as follows:

- Site notice text (**Appendix D1**);
- Photographs of site notices (**Appendix D1**);
- Proof of advertisements in the newspapers (**Appendix D1**); and
- Correspondence to and from registered I&APs and key stakeholders (**Appendix D3**).

6.8 Comments and Response Report

Issues, comments and concerns raised during the public participation process have and will continue to be captured in the Comments and Response Report (CRR) – **Appendix D4** as and when they are received. The CRR provides a summary of the issues raised, as well as responses which were provided to I&APs. This information will be used to feed into the evaluation of social impacts. A separate section to the C&RR will be added to the Draft Motivation Report to reflect the comments received specifically during the review and comment period from I&APs.

6.9 Public Comments on Draft Environmental Authorisation Amendment Motivation Report

The Draft Environmental Authorisation Amendment Motivation Report will be made available for public review prior to the final submission of the reports to DEA. The report will be available for public review and comment for a period of 30 calendar days. The comment period will be from **Wednesday 26th of July 2017 to Friday the 25th of August 2017**. Written notice will be given to all registered I&APs as well as all key stakeholders on the database that the Draft Motivation Report was available for public review.

Electronic copies (CD) of the report will also be made available and will be distributed on written request. The Draft Amendment Motivation Report will be made available at the following venues shown in **Table 8** below.

Table 8: Venue where the Draft Amendment Motivation Report will be made publically available

VENUE	STREET ADDRESS	HOURS	CONTACT NO
Vryburg Public Library	63 Stella Street VRYBURG	Monday to Friday: 09h30 – 17h30	053 928 2270

7 CONCLUSION AND RECOMMENDATIONS

The aforementioned and associated specialist comments and revised reports provide an assessment of the potential impacts, advantages and disadvantages associated with the proposed amendments in terms of the correction of the Ganyesa Substation co-ordinates and the three power deviations from the EA approved corridor for the proposed 132kV power line from the Mookodi Main Transmission Substation (MTS) to the new proposed Ganyesa Substation, the new proposed 132kV/22kV Ganyesa Substation and a Loop-in, Loop-out (LILo) power line between the new proposed Mookodi-Ganyesa 132kV power line and Havelock Substation, North West Province. The findings conclude that in terms of potential negative impacts, a number of the potential impacts will remain unchanged for the biodiversity (fauna & flora), soils and agriculture, heritage, visual, social and geotechnical studies undertaken. In general, the majority of studies state that the potential negative impacts will be of low significance, or are likely to either remain unchanged or result in a reduced/decreased potential negative impact. This is with the exception of the surface water and geohydrological study where impacts were assessed to increase slightly for the various potential impacts identified.

With this in mind, the following statements are relevant:

- Surface Water:
 - Increase in significance of post-mitigation potential impact for construction phase vehicle and machinery degradation from -20 (low negative) to -26 (low negative);
 - Increase in significance of pre-mitigation potential impact for construction phase increased run-off and sedimentation from -45 (medium negative) to – 48 (medium negative). No change in post-mitigation potential impact however.
 - Increase in significance of post-mitigation potential impact for construction phase stringing of power lines from -8 (low negative) to -9 (low negative);
 - Increase in significance of post-mitigation potential impact for construction phase excavation impacts from -9 (low negative) to -11 (low negative);
 - Increase in significance of post-mitigation potential impact for operation phase vehicle damage from -24 (low negative) to -28 (low negative);
 - Increase in significance of post-mitigation potential impact for operation phase service roads from -30 (medium negative) to -32 (medium negative);
 - Increase in significance of post-mitigation potential impact for operation phase power line collision and electrocution impacts to wetland avi-fauna from -11 (low negative) to -14 (low negative); and

- Direct impact to Depression Wetland 34 due to the spanning width being too large to be crossed without direct impact.
- Geohydrology:
 - 'Increase in significance of impact rating for excavation from -7 (low negative) to -10 (low negative);
 - Increase in significance of impact rating for drainage crossing from -10 (low negative) to -11 (low negative);
 - Decrease in significance of impact rating for impact in groundwater quality from -39 (medium negative) to -30 (medium negative);
 - Increase in significance of impact rating for impact on groundwater quantity from -11 (low negative) to -22 (low negative);
 - Increase in significance of impact rating for dumping (soil and construction material) from -18 (low negative) to -22 (low negative);
 - Decrease in significance of impact rating for impact in ground instability from -16 (low negative) to -6 (low negative); and
 - Probability of impact of the proposed power line and substation on the geohydrological environment is generally low and can be managed with good environmental consideration and enforced by the EMP.

Lastly, it must be noted however that despite indications that potential negative impacts are likely to result in a reduced/decreased potential negative impact, mitigation measures and recommendations were made in terms of surface water and geohydrology in the revised studies which have been included in the updated EMPr within this Amended Motivation Report to be submitted to the DEA for approval.

Having received feedback from the various specialists, the advantages and disadvantages were explored providing an indication of the potential benefits and drawbacks of the proposed amendments. From the assessment, the advantages outweigh the disadvantages mainly due the increase in identified impacts from a surface water and geohydrological perspective is minimal. It can therefore be argued that in terms of the change in terms of the significance of potential impacts identified, these are relatively minimal and in some instances negligible. Moreover, with the revision of the surface water and geohydrological specialist reports, and with the implementation of the additional mitigation measures, the additional impact anticipated can be satisfactorily mitigated. Finally, it can also be argued that the advantages outweigh the disadvantages of the proposed two amendments mainly due to addressing the social and disruption (cost) as well as future development limitation implications to the directly affected landowners. The affected landowners will therefore be able to more efficiently and more effectively manage their properties should the above amendments be granted.

A public participation process will be undertaken to obtain any comments received by I&APs on the proposed amendments for the proposed development. The public review and comment period will be undertaken from the 26th of July 2017 to the 25th of August 2017 over a 30 day period. Any comments raised and responses addressing any comments and concerns will be integrated into the Final Amendment Motivation Report to address any comments or concerns raised.

8 ENVIRONMENTAL IMPACT STATEMENT

SiVEST as the EAP is therefore of the opinion that:

- The additional impact anticipated in the revised surface water and geohydrological studies can be satisfactorily mitigated.
- Other than the additional mitigation measures stipulated by the surface water and geohydrological specialist in the revised studies that have also been incorporated into the final EMP, no additional and/or new mitigation measures need to be implemented for the Project.
- The EA should be amended proposed herein for the correct Ganyesa Substation co-ordinates as well as the three (3) deviated sections of the proposed power line corridor outside of the originally EA approved corridor (Alternative 1).

It is trusted that this Amendment Motivation Report provides the reviewing authority with adequate information to make an informed decision regarding the proposed project.

9 REFERENCES

Mucina, L. & Rutherford, M.C. 2006. (eds.) The Vegetation of South Africa. Lesotho & Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.



Appendix A

ENVIRONMENTAL AUTHORISATIONS



Appendix B
AUTHORITY CONSULTATION



Appendix C

**UPDATED ENVIRONMENTAL MANAGEMENT
PROGRAMME**



Appendix D

PUBLIC PARTICIPATION



Appendix D1

**PROOF OF WRITTEN NOTIFICATION
(TO BE INCLUDED IN FINAL AMENDMENT REPORT)**



Appendix D2

I&AP DATABASE



Appendix D3

CORRESPONDENCE



Appendix D3A

**FROM AUTHORITIES
(TO BE INCLUDED IN FINAL AMENDMENT REPORT)**



Appendix D3B

FROM I&APs

(TO BE INCLUDED IN FINAL AMENDMENT REPORT)



Appendix D3C

**TO AUTHORITIES
(TO BE INCLUDED IN FINAL AMENDMENT REPORT)**



Appendix D3D

TO I&APs

(TO BE INCLUDED IN FINAL AMENDMENT REPORT)



Appendix D4

**COMMENTS AND RESPONSES REPORT
(TO BE INCLUDED IN FINAL AMENDMENT REPORT)**



Appendix E

SPECIALIST COMMENTS AND REVISED REPORTS



Appendix E1

BIODIVERSITY COMMENT



Appendix E2

**SURFACE WATER REVISED REPORT AND
COMMENTS**



Appendix E3

SOILS AND AGRICULTURAL POTENTIAL COMMENTS



Appendix E4

HERITAGE COMMENTS



Appendix E5

VISUAL COMMENTS



Appendix E6

SOCIAL COMMENTS



Appendix E7

GEOTECHNICAL COMMENTS



Appendix E8

**GEOHYDROLOGY REVISED REPORT AND
COMMENTS**



Appendix F

**MAPS OF GANYESA SUBSTATION LOCATION AND
THE THREE POWER LINE DEVIATIONS OUTSIDE OF
THE EA APPROVED CORRIDOR**



Appendix G
PROJECT TEAM CVs



Appendix H

**EAP DECLARATION OF INTEREST AND
AFFIRMATION FORMS**



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