environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	~~YES~~	**NO**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Environmental Assurance (Pty) Ltd. (hereafter referred to as ENVASS) has been appointed by Canyon Resources (Pty) Ltd. (hereafter referred to as Canyon) to undertake the Environmental Authorisation Process in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) [as amended] and the Environmental Impact Assessment Regulations (2010) [as amended].

The proposed construction of the Argent Siding, including associated infrastructure constitutes various listed activities in terms of the NEMA EIA Regulations (2010) and therefore legally requires environmental authorisation from the relevant competent environmental authority, the Mpumalanga: Department of Economic Development, Environment and Tourism (MDEDET). The Argent Siding will also require an Integrated Water Use License Application (IWULA) in terms of Section 21 of the National Water Act, 1998 (Act 36 of 1998) (NWA) [as amended]. All documentation for the IWULA will be completed and submitted by Canyon. The Public Participation Process (PPP) required for the IWULA has been undertaken by ENVASS with the PPP of the IWULA running concurrently with the NEMA BA process.

Canyon is proposing to construct a coal siding at the Argent Station as well as associated infrastructure of approximately 6 hectares on Portion 3 of the Farm Boschpoort 211 IR, situated 17km north east of Delmas in the Mpumalanga Province. The development falls within the municipal boundaries of the Nkangala District and Victor Kanye Local Municipalities. The proposed siding will be located parallel and north of the existing Transnet Freight Railway Line.

The site will serve as a transfer station for final coal product, therefore no mining activities will be undertaken on site. Canyon engages in mining and trading coal in South Africa and currently has two active coal mines. The mines are located in Delmas (Phalanndwa Colliery) and Middelburg (Hakhano Colliery). The Phalanndwa Colliery will be using the Argent Siding for the transportation of mined coal. Coal from the Phalanndwa Colliery produces RB1 quality coal with a minimum of 22% as received (total moisture) volatiles for export as well as coal for local power plant consumption, adding up to a total monthly coal production of 120 000 ton.

The volume of stocked coal at the siding will never exceed 100 000 m^3 and therefore does not require an Air Quality License in terms of the National Environmental Management: Air Quality Act (Act. No 39 of 2004) and the National Dust Control Regulations, 2013 (GN 827).

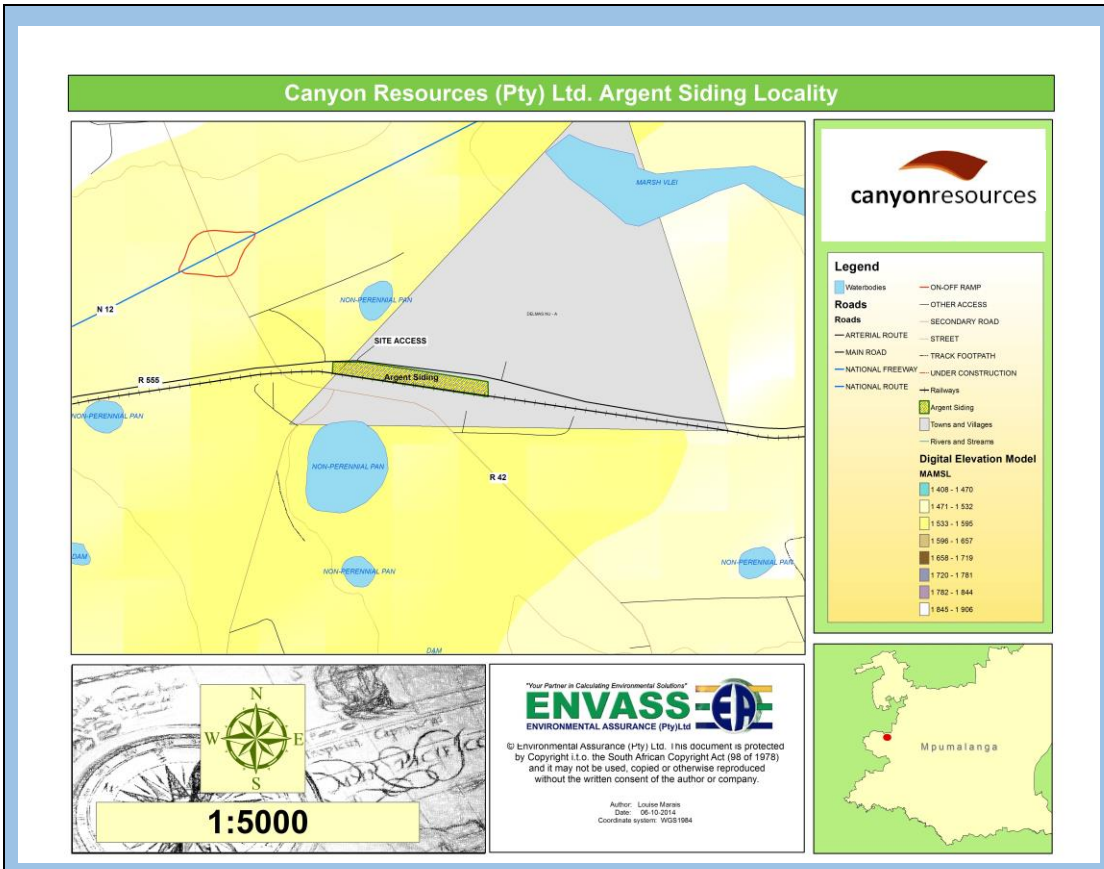


Figure 1: Locality Plan

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R.544 Item 53: The expansion of railway lines, stations or shunting yards where there will be an increased development footprint – excluding: *i. Railway lines, shunting yards and railway stations in industrial complexes or zones;* *ii. Underground railway lines in mines; and* *iii. Additional railway lines within the reserve of an existing railway line.*	The expansion of a railway line parallel to the existing Transnet Freight Railway Line. In addition, a coal siding will be developed at the Argent Station for the storage and handling of coal before it is transported to the end user by rail.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
This site is the preferred site for the Argent Siding. It is located on Portion 3 of the Farm Boschpoort 211 IR (refer to figure 1 for the locality map). The site runs parallel and north to the Transnet Freight Rail and will serve as a transfer station for final coal product from the Phalanndwa Colliery to the end user. **This alternative is therefore the preferred alternative assessed in this BAR.**	26° 03' 50" S	28° 49' 15" E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
This property alternative is located on a different Portion of Portion 3 on the Farm Boschpoort 211 IR. It runs parallel and south of the Transnet	26° 03' 53" S	28° 48' 43" E

Freight Rail, but is located within 200 meters of a wetland. This causes an environmental constraint and renders Alternative 1 the preferred site.  **Figure 2: Alternative 2 for the proposed Argent Siding**		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
No further site alternatives were identified or assessed.		

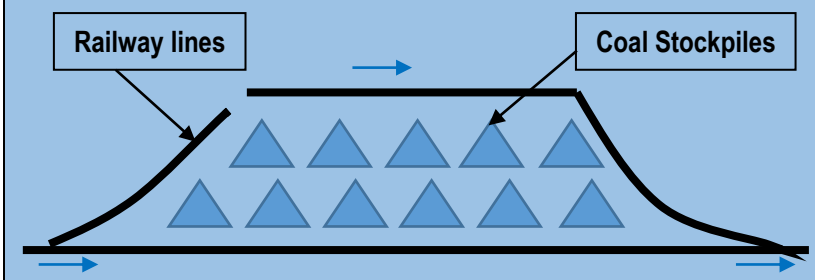
In the case of linear activities:

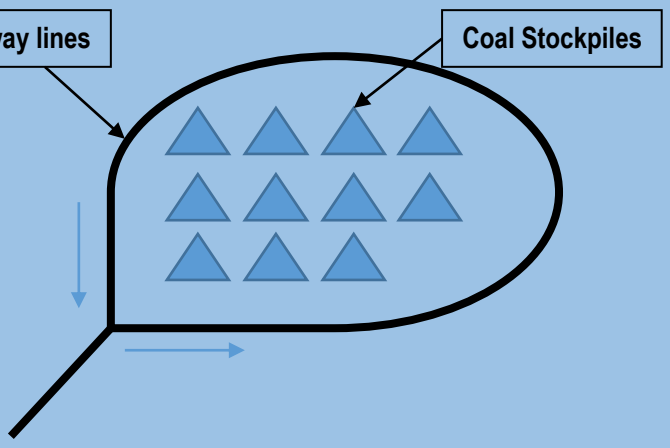
Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	26° 03' 52"	28° 49' 29"
• Middle/Additional point of the activity	26° 03' 50"	28° 49' 15"
• End point of the activity	26° 03' 48"	28° 48' 59"
Alternative S2 (if any)		
• Starting point of the activity	26° 03' 53"	28° 49' 17"
• Middle/Additional point of the activity	26° 03' 53"	28° 48' 43"
• End point of the activity	26° 03' 55"	28° 48' 08"
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The linear siding will consist of a loading- and run around rail line parallel to the existing network. This alternative results in a reduced footprint, thereby minimising possible environmental impacts. The loading of coal is more time-effective as there are no conveyor belts as coal is loaded by means of front end loaders.  **Figure 3: A simplified diagram of a linear coal siding** **Due to the reduced footprint and time efficiency, this alternative is the preferred alternative assessed in this BAR.**	26° 03' 50"	28° 49' 15"

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
A balloon siding will result in a rail loop to the north of the coal stockpile. The balloon siding will utilise conveyors for the loading of coal onto the empty waggons from storage. This alternative causes a large area to accommodate the conveyors and an increased rail line for the siding, leading to a bigger footprint and greater environmental impacts. Loading of coal onto waggons from storage be will more timely as coal has to be transported to the waggons by conveyor belt.  **Figure 4: A simplified diagram of a balloon coal siding**	26° 03' 50"	28° 49' 15"
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
No further lay-out alternatives were identified or assessed.		

c) Technology alternatives

Alternative 1 (preferred alternative)
N/A
Alternative 2
Alternative 3
No further technology alternatives were identified or assessed.

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternatives for stockpiling design have been identified.

Alternative 1 (preferred alternative)
Longitudinal stockpile design can be easily adapted for future expansion to increase storage capacity. Pile lengths can be easily extended and are only limited by the site size. This is the best option for a railway siding as the rail cars are more accessible, therefore loading will be time and cost effective.

Another advantage of a longitudinal stockpile is that it has a lower potential of spontaneous combustion and / or self-heating.

One of the aims of this impact assessment is to find ways to minimise the impact on the socio-economic environment, should the activity be approved, this impact will have the least impact on the cost of the activity and therefore is the preferred option as described above.

Figure 5: An example of a longitudinal stockpile

Alternative 2

The alternative design for stockpiles that have been considered is a circular pile layout. Though there are many advantages associated with circular pile layouts e.g. shorter conveyor belt lines and higher storage volume, the site has an ideal layout for longitudinal stockpiles.

A drawback of a circular stockpile system is that expansion of the yard is difficult, whereas a longitudinal stockyard can be altered to increased storage capacity as the pile lengths can be extended easily and are only limited by the site size.

Therefore although it is a feasible alternative, it is not as efficient and cost-effective for the site-specific conditions at this point in time.

Figure 6: An example of circular stockpiles

Alternative 3
No other design alternatives have been found to be feasible.

e) No-go alternative

Socio-economic:
The Phalanndwa mine currently has a total monthly ROM coal production of 120 000 tons. Should the Argent Siding not be developed, the mine will not be able to stockpile and transport coal to the Richards Bay Coal Terminal (RBCT) for export and the end user for use. The implementation of the activity will impact positively on the availability of coal for electricity generation. Should the activity not be approved, the positive spin-offs of increased availability of the electricity i.e. the socio-economic upliftment of communities, which is motivated in Section A, Item 10, in this report, will not be achieved.

Employment opportunities and economic upliftment to local and surrounding communities will not be created if the proposed development is not approved.

Archaeology:
The Phase 1 Archaeological Impact Assessment has identified 21 heritage sites of significance. Should the Argent Siding not be developed, these heritage sites may not be conserved and/or recorded as the site is open to the public and has no barricading. This could lead to the destruction of identified sites without the member of public realising the cultural significance.

Traffic:
Should the proposed development be rejected, there will be increased regional and national heavy vehicle traffic that will negatively impact the condition of roads and lead to an increase in the number of accidents. The proposed development will decrease traffic on roads leading to a decrease in the number of road accidents.

The potential additional negative impacts on ecology, dust fallout levels, water quality etc., resulting

from the proposed activity, will be low (-) after mitigation. Mitigation measures are included in the EMP (refer to Appendix G) and will be implemented.

There are currently no foreseeable significant environmental or health impacts that will outweigh the economic benefits of the proposed development.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	Approximately 50 000 m^2
Alternative A2 (if any)	Approximately 50 000 m^2
Alternative A3 (if any)	m^2

and / or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	Length of the rail will be confirmed in the FBAR
Alternative A2 (if any)	m
Alternative A3 (if any)	m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)	m^2
Alternative A2 (if any)	m^2
Alternative A3 (if any)	m^2

4. SITE ACCESS

Does ready access to the site exist?	**YES**	~~NO~~
If NO, what is the distance over which a new access road will be built	N/A	

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

Describe the type of access road planned:

Existing access to the site is located in the north western corner as well as the south eastern corner of the site. Access to both ends of the site is from the R555 Provincial Road, lying north of the site. Access to the site will be controlled by security personnel and all trucks entering and exiting the site will be monitored and managed as per the EMP (refer to Appendix G).

Figure 7: Access to the proposed Argent Siding

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal

minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A detailed illustration of the activity will be provided in the FBAR. The conceptual layout has been

added as Appendix C.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**	~~NO~~	Please explain
The zoning of the property is 'transport'. Should any alternative land use zoning be required, it will be applied for by the Applicant.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES**	~~NO~~	Please explain
The proposed activity is in line with economic development objectives for Mpumalanga Province (Provincial Growth and Development Strategy (PGDS), 2004 – 2014). Some of the key development priority areas in Mpumalanga include: • Economic development; • Development infrastructure; and • Social development. The PGDS has also identified some challenges and opportunities in the Province: • Poverty; • The low growth rate of the mining sector; • Infrastructure backlogs (insufficient road and rail infrastructure); and • Service delivery backlogs. A major contributor to the deterioration of the paved road network in Mpumalanga is the dramatic increase in coal haulage by road. The long term strategic approach by the MDEDET to the coal haulage challenge undertaken is to: • Define a Coal Network Grid; • Introduce and step up a dedicated freight vehicle overload control enforcement capacity; and • Increase investment in rail infrastructure to minimise the impact of coal freight on the road. According to the Mpumalanga Economic Growth & Development Path (October 2011) document, the restoration of rail reliability and the communication of progress on the rail seamless service agreements needs to be promoted in order to promote the movement of rail friendly cargo currently on road back to rail in an orderly manner.			

(b) Urban edge / Edge of Built environment for the area	~~YES~~	~~NO~~	Please explain
The site is zoned for transportation use and the existing railroad infrastructure and accessibility makes the site ideal for the proposed development. It is uncertain whether the site occurs within the urban edge or not and if an urban edge exists for the specific area. The area does however occur within close proximity of a formal settlement (Emdeni), a store (Argent Supermarket), a car retail shop (Omar's Motordealers), a mosque, a truck stop and filling station (Truckers Diesel), a lawyer's office (Zehir Omar Attorneys) and a hatchery (Tru-chicks).			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**	~~NO~~	Please explain
The approval of this application will be in line with the IDP and the SDF (IDP – 2013-2014 financial year and Final draft 2014-2015 financial year) of the Victor Khanye Local Municipality (VKLM) as the proposed activity will contribute to economic development and service delivery in the local municipality, which were identified as some of the main priorities of the local municipality. VKLM reflects the third largest population growth in the Mpumalanga Province, indicative of the migration of labour attracted to the area as a result of potential for economic growth and the resultant job opportunities. There has been an overall gain of 0.7 % in the employment rate to 28.9 % (Census 2011). This is a high figure when economic activity in the area is considered, but is impacted by the migration influx of job seekers and the growth of Community Services and Mining as an employer. Mining now contributes 12.7 % of the total employment rate in the VKLM. The railway section running parallel with the R555 provincial road stretches from Mozambique via Komatipoort and onwards into the west. It connects the Municipality to adjacent and regional markets, and the SDF motivates that this strength be actively promoted. The activity is in line with the municipality's Strategic Goals i.e. "Goal 1: Improved provision of basic services to the residents of VKLM" and "Goal 7: Increase economic activity and job creation" (Extracted from the Final IDP of 2014-2015 financial year). The IDP also states the following: "VKLM's location on the edge of Gauteng is an advantage in terms of transport of agricultural and mining products to processing facilities and markets." Therefore, the activity will not compromise the integrity of the existing approved and credible municipal IDP and SDF.			
(d) Approved Structure Plan of the Municipality	~~YES~~	~~NO~~	Please explain
No approved Structure Plan exists for the Victor Khanye Local Municipality.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	**YES**	~~NO~~	Please explain
Environmental Management Framework for the Olifants and Letaba Rivers Catchment Areas: The study area is located within the Quaternary catchment B20E, falling within the Olifants River Catchment Area and therefore within the boundaries of the Environmental Management Framework for the Olifants and Letaba Rivers Catchment Areas. The only significant issue mentioned by the EMF that is relevant to the proposed activity is the following: The EMF identifies the area in which the study area occurs, as the "Highveld Priority Area" in terms of air quality. The Highveld Priority Air Quality Management Plan was developed by the Department of Environmental Affairs. The proposed activity will increase air pollution, but should the mitigation measures as prescribed in the EMP not be implemented, the proposed activity will be in line with the Air Quality Management Plan.			
(f) Any other Plans (e.g. Guide Plan)	**YES**	~~NO~~	Please explain
The Highveld Priority Air Quality Management Plan (AQMP): The study area is located within the Highveld Priority Area (HPA). The AQMP was developed by the Department of Environmental Affairs. The primary motivation of the priority area AQMP is to achieve and maintain compliance with the ambient air quality standards across the HPA, using the Constitutional principle of progressive realisation of air quality improvements. The AQMP for the HPA provides the framework for implementing departments and industry to include AQM in business planning to ensure effective implementation and monitoring. The proposed Argent Siding will be implementing Gravimetric Dust Monitoring Programme will be implemented on the site as stipulated in section 4 of GN 827 (National Dust Control Regulations, 2013), in terms of section 53(o), read with section 32 of the National Environmental: Air Quality Act (Act No. 39 of 2004) in order to mitigate air quality impacts on the Emdeni Village and any other nearby residential dwellings. For operations of the Argent Siding, the $PM_{2.5}$ and PM_{10} impacts at the Emdeni Village and other nearby residential dwellings shall be within the National Ambient Air Quality Standards (NAAQS) and predicted dustfall at all sensitive receptors within the dustfall regulations of 600 mg/m^2/day (acceptable for residential areas).			

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**	~~NO~~	Please explain
The VKLM has structured strategies in the municipal IDP document to assure priorities within the municipality is achieved. These Strategic Objectives and Programmes are categorised as Key Performance Areas (KPA). Infrastructure and Basic Service Delivery was identified as KPA 1 with one strategic objective of increasing access to electricity to all households. The current IDP of the VKLM states that local authorities have a legal mandate to promote social and economic upliftment in areas of their jurisdiction as outlined in section 152 of the Constitution of South Africa. The Municipality aims to continue to create an environment conducive with attracting and retention of investment. The KPA 6: Local Economic Development was therefore underpinned with the following goal: "Goal 7: Increased economic activity and job creation".			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**	~~NO~~	Please explain
The increased provision of coal to local as well as national power stations will increase the availability of electricity needed by local, regional as well as national communities.			

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	~~YES~~	**NO**	Please explain

Water, electricity and sewage:

The proposed development site previously functioned as a train station (Argent Station) with service infrastructure: water, electricity and sewage in place. As the station has not been in use for a number of years, some of the services might require updates.

Stormwater infrastructure:

Stormwater infrastructure will need to be established to manage all surface runoff generated on site. An Integrated Water Use Licence Application will be submitted to the Department of Water and Sanitation. The following listed activities were applied for to be in compliance with the National Water Act, 1998 (Act 36 of 1998) [as amended]:

SECTION 21 WATER USES	
(a)	Taking water from a water resource
(c)	Impeding or diverting the flow of water in a watercourse
(g)	Disposing of waste in a manner which may detrimentally impact on a water resource
(i)	Altering the bed, banks, course or characteristics of a watercourse

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	~~YES~~	**NO**	Please explain

The proposed activity is not formally part of the municipalities' infrastructure planning to improve basic service delivery by increasing access to electricity by all households, however the transported coal will contribute to the availability of electricity locally, nationally and internationally.

7. Is this project part of a national programme to address an issue of national concern or importance?	~~YES~~	**NO**	Please explain

The proposed activity is not formally part of a national programme to address the increasing demand of energy, however it will certainly contribute to the availability of energy all over South Africa and abroad.

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**	~~NO~~	Please explain
Infrastructure: The location is ideal as most of the infrastructure (railway line, water, sewage, electricity, access roads, etc) is already in place and the study area is surrounded by mining and agricultural activities. Ecology (Refer to the Biodiversity Scan by Galago Environmental, 2014): The site does not have suitable habitat for any threatened vegetation species as the site is previously disturbed and mostly consist of alien vegetation species interspersed with some grasses. The proposed development will not affect the regional conservation status of any Red Data Mammals and was rated as having a low ecological sensitivity. It was also concluded by the specialist that the development is highly unlikely to have a negative impact on Red Data avifaunal species due to a lack of suitable breeding, roosting or foraging habitat. No objections could be raised by the herpetofaunal specialist, who classified the habitat quality as poor.			
9. Is the development the best practicable environmental option for this land/site?	**YES**	~~NO~~	Please explain
Most of the infrastructure (railway line, water, sewage, electricity, access roads, etc.) is already developed, and therefore the only added impact will be linear expansion of the railway line and the increased amount of air pollution, however as mentioned above, this can be mitigated to acceptable levels.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	~~NO~~	Please explain
The environmental and health impacts can be mitigated to acceptable levels and is mostly of low significance after mitigation. The proposed activity will benefit the local, regional and national communities as well as economic development.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	~~YES~~	**NO**	Please explain
N/A			
12. Will any person's rights be negatively affected by the proposed activity/ies?	~~YES~~	**NO**	Please explain
With proper mitigation of the impacts arising from the proposed activity, no person's rights will be negatively affected.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	**NO**	Please explain
N/A			

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES**	~~NO~~	Please explain
There are currently 18 Strategic Integrated Projects taken up in the National Infrastructure Plan of which three relates to Energy (National Government, 2012): 1. SIP 9: Electricity generation to support socio-economic development; and 2. SIP 10: Electricity transmission and distribution for all. Although the proposed activity is not formally part of the SIPS of the National Government, it will contribute to two objectives as described above.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The benefit to society in general will be the improvement on the availability of electricity, uplifting poor communities and an increase in economic development. General safety of communities will be improved as the number of trucks on national and provincial roads will be decreased. The benefits to society in general will also be applicable to the local communities.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
The preferred alternative for the transportation of coal over large distances is railway transport as it facilitates long distance transport of bulky goods which are not easily transported through highway truck transport. It is a quick and more regular form of transport as it helps the transportation of goods with speed and certainty at lower operational rated. Rail transport also encourages the mobility of labour, thereby providing a good scope of employment. Railway is the safest mode of transport as the possibility of accidents and breakdown are minimum as compared to other modes of transport. The carrying capacity of railways is extremely large and can be easily increased by adding more wagons. Although there are advantages to highway truck transport e.g. increased versatility and lower initiation cost, the disadvantages outweighs the advantages. Highway truck transport has the highest unit energy consumption requirements, net operating costs and the greatest external damage to highways. In addition, this mode of transport has adverse environmental impacts such as coal particle release during coal loading or unloading, coal dust entrainment during transport and coal escaping from uncovered trucks. The coal dust tends to wash off roadways during rainstorms, causing aesthetic unsightliness and contamination of runoff waters. The air pollutant emissions from diesel fuel combustion add to the emissions mentioned above.			
17. How does the project fit into the National Development Plan for 2030?			Please explain
The proposed activity will contribute to improved electricity provision. Although it does not fit in formally with the objectives of the National Development Plan for 2030, it does contribute to the objectives related to energy as extracted from a summary of the plan below: *"Produce sufficient energy to support industry at competitive prices, ensuring access for poor households while reducing carbon emissions per unit of power by about one third."* *"Public infrastructure investment at 10 percent of gross domestic product (GDP), financed through tariffs, public-private partnerships, taxes and loans and focused on transport, energy and water."*			

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act No. 107 of 1998) [as amended]	The Applicant intends to expand the existing railway line in order to transport coal from stockpiles on to train carts for delivery to local, regional, national and international markets, constituting listed activity 53 of Government Notice 544.	**Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET)**	**1998**
NEMA EIA Regulations (GN 543, 544, 546) [as amended]	This Basic Assessment Report and Environmental Management Programme meets the requirements as stipulated in Section 22 and Section 33 of the NEMA EIA Regulations.		**2010 / 2012**
The National Environmental Management Act: Waste Act (Act No. of 59 of 2008) [as amended]	This act regulates waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. It also provides for institutional arrangements and planning matters; national norms and standards for regulating the management of waste; and specific waste management measures. It provides for the	**The National Department of Environmental Affairs (DEA)**	**2008**
Waste Classification and Management Regulations, 2013 (GN 634 – 635)		**MDEDET**	**2013**

	licencing and control of waste management activities, the remediation of contaminated land a national waste information system. It also deals with the issue of compliance and enforcement. The proposed activity will result in an increased amount of waste being produced and therefore need to adhere to this act in implementing the mitigation measures listed in this report and the EMP for the activity to ensure that the objectives of the act are met.		
National Environmental Management: Air Quality Act (Act No. 39 of 2004) **National Dust Control Regulations, 2013 (GN 827)**	The Air Quality Act provides for the management and protection of the country's air quality, the prevention of air pollution and ecological degradation and securing an ecologically sustainable development while promoting justifiable economic and social development. The proposed activity will result in an increased amount of air pollution and therefore need to adhere to this act in implementing the mitigation measures listed in this report and the EMP for the activity to ensure that the objectives of the act are met.	**MDEDET** **Nkangala District Municipality**	**2004** **2013**
National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004) [as amended] (NEMBA) **Alien and Invasive Species List, 2014 in terms of**	The Biodiversity act provides for the management and protection of the country's biodiversity within the framework established by NEMA. Among other objectives, it provides for the protection of species and	**MDEDET** **DEA**	**2004** **2014**

NEMBA, 2014 (GNR 599)	ecosystems in need of protection and sustainable use of indigenous biological resources. Also, to combat and control weeds as well as the elimination of invader plant species. During the operational and construction phases of the proposed activity, the prevention of alien invasive species spreading into the surrounding areas as well as the eradication thereof should be a priority. Mitigation measures in this report and the EMP with regards to fauna and flora, should be implemented in order to adhere to this act.		
National Heritage Act (Act No. 25 of 1999)	The Heritage Act provides protection of existing indigenous heritage resources that is present on and around the property. Mitigation measures in this report, the EMP and the Phase 1 Archaeological Impact Assessment (Appendix D) with regards to Heritage Resources should be implemented in order to adhere to this act	**SAHRA**	**1999**
Mpumalanga Nature Conservation Act (Act No. 10 of 1998)	Section 80(1) of the Act regulates the declaration of invader plants and weeds. Mitigation measures in this report and the EMP with regards to flora, should be implemented in order to adhere to this act.	**MDEDET**	**1998**
National Veld and Forest Fire Act (Act No. 101 of 1998)	The National Veld and Forest Fire Act prescribes actions to prevent veld and forest fires. Mitigation measures in this	**DEA** **Department of Agriculture, Forestry and Fisheries (DAFF)**	**1998**

	report and the EMP with regards to preventing fires, should be implemented at all times during the operational and construction activities, in order to prevent veld fires.		
National Water Act (Act No. 36 of 1998) [as amended] (NWA)	The purpose of the act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account several factors. The factors specifically applicable to the proposed activity are listed below: - Promoting the efficient, sustainable and beneficial use of water in the public interest; - Facilitating social and economic development; - Protecting aquatic and associated ecosystems and their biological diversity; and - Reducing and preventing pollution and degradation of water resources. A water use licence application was submitted for the following Section 21 listed water uses: (a) Taking water from a water resource; (c) Impeding or diverting the flow of water in a watercourse; (g) disposing of waste in a manner which may detrimentally impact on a water resource; and (i) altering the bed,	**The National Department of Water and Sanitation (DWS)**	**1998**

	banks, course or characteristics of a watercourse (Refer to Appendix J for proof of payment for the application).		
Animals Protection Act (Act No. 71 of 1962)	The act consolidates and amends the laws relating to the prevention of cruelty to animals. It is possible that the proposed activity could have an effect on the surrounding biodiversity including fauna and adherence to this act is therefore crucial. Mitigation measures in this report and the EMP with regard to fauna, should be implemented in order to adhere to this act.	**DAFF**	**1962**
Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA)	The aim of the OHSA is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety as well as to provide for matters connected therewith. Mitigation measures in this report and the EMP with regards to health and safety, should be implemented in order to adhere to this act.	**MDEDET** **Department of Health**	**1993**
Hazardous Substances Act (Act No. 15 of 1973) [as amended]	Provides for the proper handling and storage of hazardous materials and chemicals. Mitigation	**MDEDET**	**1973**

Hazardous Chemical Substances Regulations, 1995 (GNR 1179)	measures in this report and the EMP with regards to hazardous substances, should be implemented in order to adhere to this act		**1995**
Promotion of Access to Information Act (Act No. 2 of 2000)	The purpose of the Promotion of Access to Information Act is to give effect to the constitutional right of access to any information held by the state, as well as information held by another person that is required for the exercise or protection of any right. The motivation for giving effect of the right to access to information is to foster a culture of transparency and accountability both in public and private bodies and to promote a society in which the people of South Africa have effective access to information to enable them to more fully exercise and protect all their rights. Stakeholders and Interested and Affected Parties affected by the proposed development, therefore have a right to access all documentation required by the competent authority to make an informed decision. The affected persons also have the right to comment and object on decisions that affects them.	**The National Department of Justice and Constitutional Development**	**2000**
Provincial and local bylaws, policies and frameworks	Refer to Section A, Item 10 of this report.		

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**	~~NO~~
If YES, what estimated quantity will be produced per month?	Approximately 20 m^3	

How will the construction solid waste be disposed of (describe)?

The following philosophy will be implemented during the construction phase of the Argent Siding:

- Minimise generation of waste material;
- Increase efficiency of the use of raw material;
- Reuse, reduce and recycle material where feasible;
- Treat/dispose and handling of waste in such a manner that surrounding environment is minimally impacted upon;
- Promote awareness of and adhere to proper waste management procedures;
- Managing waste as close to the source as practicable;
- Take cognizance of our duty of care to the environment; and
- Take responsibility for causing pollution by internalising the cost of decontamination and rehabilitation (polluter pays principle).

The management of waste during the construction phase will be in accordance with the requirement and provisions of the following:

- National Environmental Management: Waste Act (Act No. 59 of 2008) [as amended];
- Waste Classification and Management Regulations, 2013 (GNR: 634 – 635);
- National Water Act (Act No. 36 of 1998) [as amended];
- Hazardous Chemical Substances Act (Act No. 15 of 1973) [as amended];
- Hazardous Chemical Substances Regulations, 1995 (GNR 1179);
- National Environmental Management: Air Quality Act (Act No. 39 of 2004) [as amended];
- National Dust Control Regulations, 2013 (GNR: 827);
- Occupational Health and Safety Act (Act 85 of 1993);
- SANS 10228; and
- SANS 10234.

Solid waste (construction waste and builders rubble) will be collected by independent contractors and disposed of at the registered licensed municipal landfill site with proof of safe disposal. Furthermore, the Contractor will reuse selected excavated material provided the material meets the required specification.

Where will the construction solid waste be disposed of (describe)?

Solid waste shall be collected by independent contractors and disposed of at the registered licensed municipal landfill site with proof of safe disposal.

Will the activity produce solid waste during its operational phase?	YES	NO
If YES, what estimated quantity will be produced per month?	Approximately 5 m^3	

How will the solid waste be disposed of (describe)?

The siding will produce the following waste types:

- Organic Waste;
- Glass;
- Cans;
- Plastic;
- Paper; and
- Hazardous Waste including: scrap metal, material, soil contaminated by hydrocarbon fuel and used oil, etc.

The following philosophy will be implemented during the construction phase of the Argent Siding:

- Minimise generation of waste material;
- Increase efficiency of the use of raw material;
- Reuse, reduce and recycle material where feasible;
- Treat/dispose and handling of waste in such a manner that surrounding environment is minimally impacted upon;
- Promote awareness of and adhere to proper waste management procedures;
- Managing waste as close to the source as practicable;
- Take cognizance of our duty of care to the environment; and
- Take responsibility for causing pollution by internalising the cost of decontamination and rehabilitation (polluter pays principle).

The management of waste during the construction phase will be in accordance with the requirement and provisions of the following:

- National Environmental Management: Waste Act (Act No. 59 of 2008) [as amended];
- Waste Classification and Management Regulations, 2013 (GNR: 634 – 635);
- National Water Act (Act No. 36 of 1998) [as amended];
- Hazardous Chemical Substances Act (Act No. 15 of 1973) [as amended];
- Hazardous Chemical Substances Regulations, 1995 (GNR 1179);
- National Environmental Management: Air Quality Act (Act No. 39 of 2004) [as amended];
- National Dust Control Regulations, 2013 (GNR: 827);
- Occupational Health and Safety Act (Act 85 of 1993);
- SANS 10228; and
- SANS 10234.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

The closest registered waste disposal site.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	~~YES~~	**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	~~YES~~	**NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?	~~YES~~	**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	~~YES~~	**NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

During the construction phase, waste water will be used as dust suppressant of building material stockpiles and construction roads. During the operational phase, waste water will be collected and stored in the pollution control dams. The waste water will be used for dust suppression along the haul roads.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?	**YES**	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**NO**

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

Existing sources of emissions surrounding the development site:

Current sources of SO_2, NO_x, CO_2, CH_4, N_2O, NH_3, H_2S, SO_2, PM_{10} and $PM_{2.5}$ occurring in the region include veld burning, vehicle exhaust emissions, household fuel burning, surface and underground mining and power stations and fugitive dust from agricultural activities (silos, chicken farms, etc.).

Sources of atmospheric emissions at the Argent Coal Siding include:

1. **Wind erosion**

Potential emissions arise from the mechanical disturbance of granular material from open areas and storage construction material/ coal stockpiles.

2. **Fugitive dust emissions from materials handling operations**

Materials handling operations associated with the activities at the Argent Siding include the transfer of coal by means of tipping, loading and off-loading. Fine particulates are most readily disaggregated and released to the atmosphere during the material transfer process, as a result of exposure to strong winds.

3. **Dust from roads**

Dust will be emitted from all gravel access and haul roads.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	~~YES~~	**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	**YES**	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If NO, describe the noise in terms of type and level:

General operations of the coal transfer operations will generate noise and these noise levels should increase if the proposed activity is approved. The increased noise levels will be generated by transportation trucks accessing the siding. The level of noise will be minimised by implementing applicable noise mitigation measures as mentioned in the EMP. The Occupational Health and Safety Act and regulations need to be implemented to avoid noise related impacts on workers at the transfer station itself.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box (es):

Municipal	~~Water board~~	Groundwater	~~River, stream, dam or lake~~	Other (the only usage of water associated with the proposed activity will be dust suppression and the water thereof will be sourced from the Pollution control dams on site.)	~~The activity will not use water~~

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	Approximately 84 000 litres	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	**YES**	~~NO~~

If YES, please provide proof that the application has been submitted to the Department of Water Affairs. **.**

Proof of submission of the Integrated Water Use License (IWULA) to the Department of Water and Sanitation (DWS) will be provided in the FBAR.

SECTION 21 WATER USES	
(a)	Taking water from a water resource
(c)	Impeding or diverting the flow of water in a watercourse
(g)	Disposing of waste in a manner which may detrimentally impact on a water resource
(i)	Altering the bed, banks, course or characteristics of a watercourse

14. ENERGY EFFICIENCY

Describe the design measures, if any that have been taken to ensure that the activity is energy efficient:

The activity will not use any additional electricity, however the siding itself will take energy efficiency into account by the use of energy efficient devices e.g. energy saving light bulbs for lighting including spotlights.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

No alternative energy sources have been considered as the infrastructure is already in place and operational.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): ☐

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES** ~~NO~~

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Mpumalanga
District Municipality	Nkangala District Municipality
Local Municipality	Victor Khanye Local Municipality
Ward Number(s)	Ward 4
Farm name and number	Boschpoort 211IR
Portion number	Portion 3
SG Code	T0IR00000000021100003

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Transport

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? ~~YES~~ **NO**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

~~2.1 Ridgeline~~		~~2.4 Closed valley~~		~~2.7 Undulating plain / low hills~~	
~~2.2 Plateau~~		~~2.5 Open valley~~		~~2.8 Dune~~	
~~2.3 Side slope of hill/mountain~~		**2.6 Plain**	x	~~2.9 Seafront~~	

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Dolomite, sinkhole or doline areas	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Seasonally wet soils (often close to water bodies	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Dispersive soils (soils that dissolve in water)	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Soils with high clay content (clay fraction more than 40%)	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
Any other unstable soil or geological feature	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO
An area sensitive to erosion	~~YES~~	**NO**	~~YES~~	**NO**	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

Reference is made to the Geohydrological study conducted by WSM Leshika (December 2014)

attached in Appendix D of this report.

Regional site information:

Climate:
The study area is located in the summer rainfall region of Southern Africa with 85 % of rainfall between October and March. The average annual rainfall is approximately 745 mm/a.

Topography and Drainage:
The general area consists of undulating hills, low hills and pan depressions. The Argent Siding lies on a slope to the east sloping towards the Wilgerivier, with a slope of approximately 0.01. Drainage is towards the North into the Loskop dam. Numerous pans in the vicinity of the study area and a wetland to the north east are internal sinks in the drainage network.

Soils and Vegetation:
Soils consist of moderate to deep clayey looms and vegetation can be classified as Grassveld under the Acocks veld types.

Geology:
The study is underlain by sandstones, shales and coal of the Vryheid Formation (Pv) of the Ecca Group, which dip to the north east. These overly older Intrusives of the Dwarsrivier Suite (Md), which outcrop 1100 m to the north of Argent and consist of pyroxenites, gabbro and anorthosite (figure 3-1). To the NE, the Vryheid Formation overlies lavas of the Loskop Formation (Vlo) and Rhyolites of the Selons River Formation (Vse), which outcrop 4 km away.

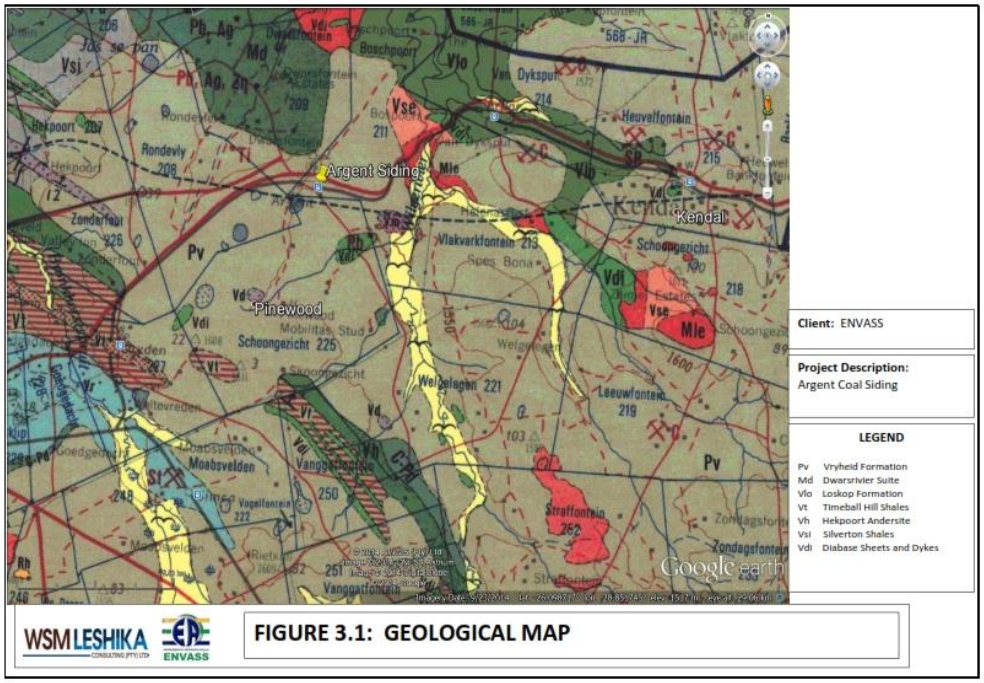


Figure 8: Argent Siding Geology Map

Hydrogeology:

The study area is located within the Olifants Water Management Area (WMA). Groundwater yields are low and 85% of boreholes yield less than 2 l/s. Springs are common at the contact between sandstone and impermeable shale, giving rise to the numerous pans. Water levels are generally shallow and between 5-25 mbgl.

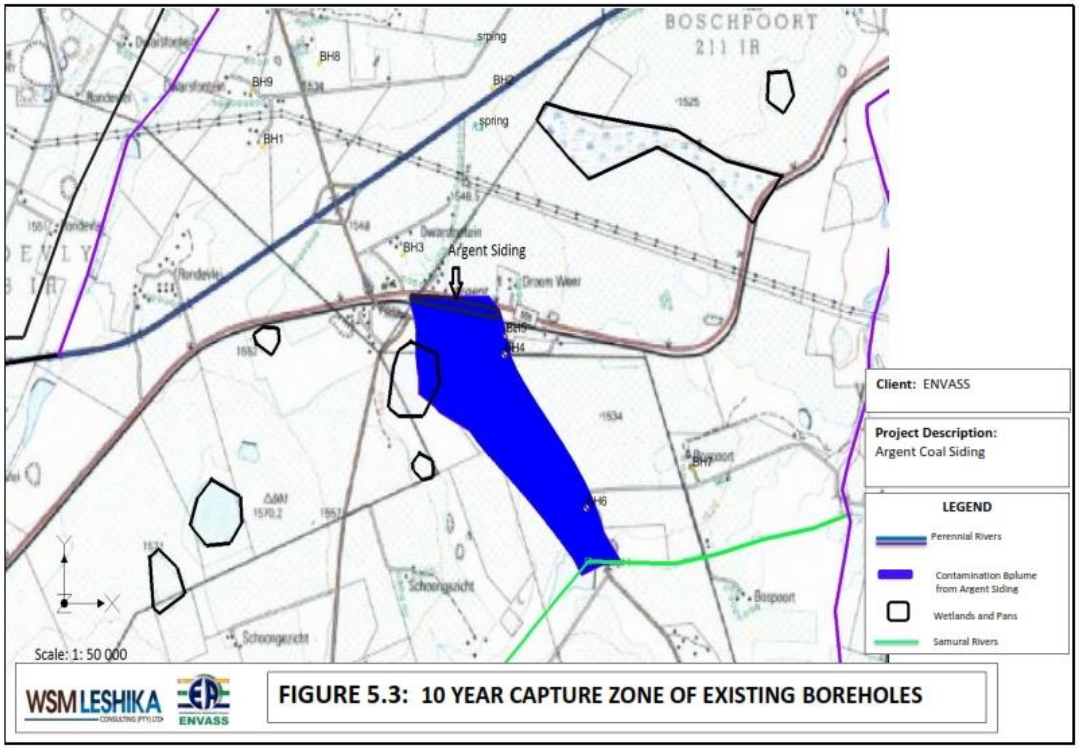


Figure 9: Locations of surface water bodies and boreholes

Findings of the study:

- From the analysis of various boreholes on and around the site, the groundwater quality of water is ideal (Water Affairs Domestic Class 0), except for one borehole in the vicinity of the fertilizer production.
- Based on forward modelling used to determine the contamination plume from the siding, local groundwater flow from the Argent Siding is orientated towards the south east and will potentially discharge into the pan south of the siding and into a tributary of the Wilgerivier.
- Three boreholes are also within the downstream potential contamination zone.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

~~Natural veld - good condition~~[E]	~~Natural veld with scattered aliens~~[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	~~Gardens~~

~~Sport field~~	~~Cultivated land~~	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

The study area falls within the Grassland Biome (Acocks, 1953) with the Eastern Highveld Grass (GM12) vegetation type dominating. The Eastern Highveld Grassland is very suitable for crop production, with natural vegetation used largely for the grazing of sheep and cattle. This type of vegetation has a very poor conservation status. Some types of Temperate Freshwater Wetlands in this area is considered and listed as a vulnerable ecosystem (GN no.34809 of 2011). The ecosystem on site has been severely disturbed. No aquatic ecosystem is present on site, nor any sensitive fauna or flora or habitats.

Reference is made to the Biodiversity scan undertaken by Galago Environmental (November 2014) attached in Appendix D of this report.

Flora:
The study site comprised very disturbed mixed alien and indigenous vegetation. The study site is not suitable habitat for species that are considered threatened or not threatened.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	**YES**	~~NO~~	~~UNSURE~~
Non-Perennial River	~~YES~~	**NO**	~~UNSURE~~
Permanent Wetland	**YES**	~~NO~~	~~UNSURE~~
Seasonal Wetland	~~YES~~	**NO**	~~UNSURE~~
Artificial Wetland	~~YES~~	**NO**	~~UNSURE~~
Estuarine / Lagoonal wetland	~~YES~~	**NO**	~~UNSURE~~

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Reference is made to the Geohydrological study conducted by WSM Leshika (December 2014) attached in Appendix D of this report.

Perennial River:
The stream located approximately 3.7 km east of the proposed development site is the Wilgerrivier and approximately 11.2 km west of the site is the Koffiespruit (Please refer to Figure 10).

Permanent Wetland:
Within the 500 m radius, south of the proposed development site is a seepage wetland feeding into a depression wetland (Auquatic ecosystem verification, Galago Environmental: November 2014). Groundwater flow from the Argent Siding is orientated towards the south east and discharges into the pan south of the Argent Siding and into a tributary of the Wilgerrivier. Three existing boreholes are also within the downstream potential contamination zone. These receiving water bodies are at risk from any contamination emanating from the Argent Siding.

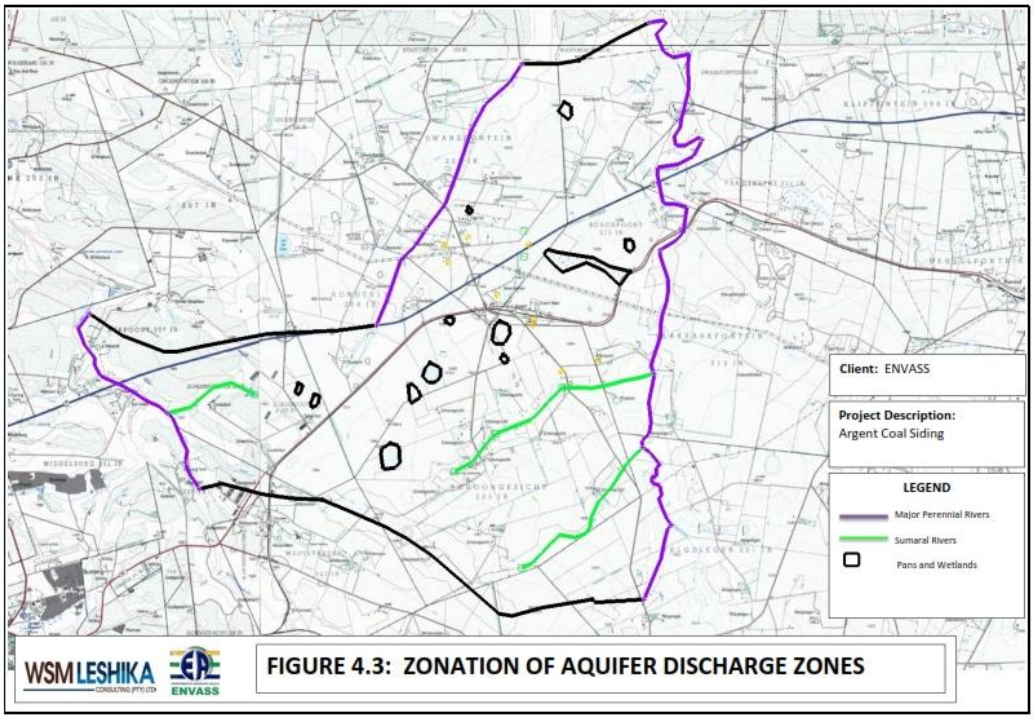


Figure 10: Locations of water bodies on and adjacent to the Argent Siding

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	~~Dam or reservoir~~	~~Polo fields~~
Low density residential	~~Hospital/medical centre~~	Filling station [H]

~~Medium density residential~~	~~School~~	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
Informal residential[A]	Church	Agriculture
~~Retail commercial & warehousing~~	~~Old age home~~	River, stream or wetland
~~Light industrial~~	~~Sewage treatment plant~~[A]	~~Nature conservation area~~
~~Medium industrial~~ [AN]	Train station or shunting yard [N]	~~Mountain, koppie or ridge~~
~~Heavy industrial~~ [AN]	Railway line [N]	~~Museum~~
~~Power station~~	~~Major road (4 lanes or more)~~ [N]	Historical building
~~Office/consulting room~~	~~Airport~~ [N]	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	Graveyard
~~Spoil heap or slimes dam~~[A]	~~Sport facilities~~	~~Archaeological site~~
~~Quarry, sand or borrow pit~~	~~Golf course~~	Other land uses (describe)

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity?

The railway line may be impacted on positively as infrastructure will be improved and maintained by the Applicant to ensure optimum transport and operations on site.

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "[H]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Economic:
Truckers Diesel is located approximately 200 m from the proposed development site. When operational, trucks will be hauling coal from the Phalanndwa Colliery to the Argent Siding for transport to the end user. The filling station will be positively impacted as there will be an increase in the number of trucks passing Truckers Diesel needing to fill their tanks.

Surrounding land-uses:
Canyon Resources is proposing to construct a coal siding and associated infrastructure at the existing Argent Station. The proposed siding will be located on Portion 3 of the Farm Boschpoort 211 IR, which is 5,6671 hectares in extent. Canyon Resources leases the area from Transnet SOC Limited and is 5.6671 hectares in extent.

Figure 11: Surrounding land uses

Does the proposed site (including any alternative sites) fall within any of the following:

National Freshwater Ecosystem Priority Area (NFEPA)	~~YES~~	**NO**
Critical Biodiversity Area (as per provincial conservation plan)	~~YES~~	**NO**
Core area of a protected area?	~~YES~~	**NO**
Buffer area of a protected area?	~~YES~~	**NO**
Planned expansion area of an existing protected area?	~~YES~~	**NO**
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	**NO**
Buffer area of the SKA?	~~YES~~	**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	**YES**	~~NO~~
	~~Uncertain~~	

Reference is made to the Phase 1 Archaeological Impact Assessment undertaken by Coetzee (November 2014) attached in Appendix D of this report.

The specialist assessment located a number of relevant heritage structures on the development site (refer to Table 1 and Figure 11 below).

Table 1: Heritage sites and specialist recommendations

Site / Survey Point Name	Type and Coordinates (Longitude; Latitude)	Recommendations by specialist
AR 01	Graveyard (28.817111; -26.063676)	Should be fenced off and a conservation buffer of 15 m placed around. If need to relocate arise, it should be done by a qualified graves relocation unit to a premises earmarked by the VKLM. Access should be allowed to fenced off graveyard. All processes must be performed in accordance with the involvement of the relatives of the deceased.
AR 02	Foundation (28.820065; -26.064156)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 03	Main Station (28.820664; -26.064096)	Should be left intact and the steel palisade perimeter protection used as a conservation buffer. Building to be inspected on a regular basis by ECO for damage by photographic evidence. If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photographs.
AR 04	Foundation (28.821157; -26.064309)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 05	Other (28.821267; -26.064247)	Function unknown and it was recommended that the site be recorded by a professional archaeologist via photographic record and site plan prior to destruction.
AR 06	Foundation (28.822704; -26.064479)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 07	Foundation (28.5822683; -26.064258)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 08	Foundation (28.821128; -26.063998)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 09	Other (28.820654; -26.06392)	It was recommended that the site be recorded by a professional archaeologist via photographic record and site plan prior to destruction. A qualified archaeologist should also be on site during destruction to monitor damage of any potential heritage resources.
AR 10	Building (28.818146; -26.0632442)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 11	Foundation (28.818824; -26.063363)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 12	Foundation (28.818995; -26.063394)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 13	Foundation (28.821332; -26.063796)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 14	Foundation (28.821337; -26.063672)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 15	Foundation (28.822497; -26.063974)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 16	Foundation (28.822545; -26.063834)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 17	Foundation (28.822775; -26.064017)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 18	Foundation (28.822866; -26.063866)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 19	Foundation (28.823223; -26.064043)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.

AR 20	Building (28.82331; -26.063988)	If needed to demolish, a destruction permit must be obtained from SAHRA and the site recorded by a qualified archaeologist through site drawings and photograph.
AR 21	Graveyard (28.82402; -26.067494)	Not located on the proposed development, therefore no mitigation is advised.

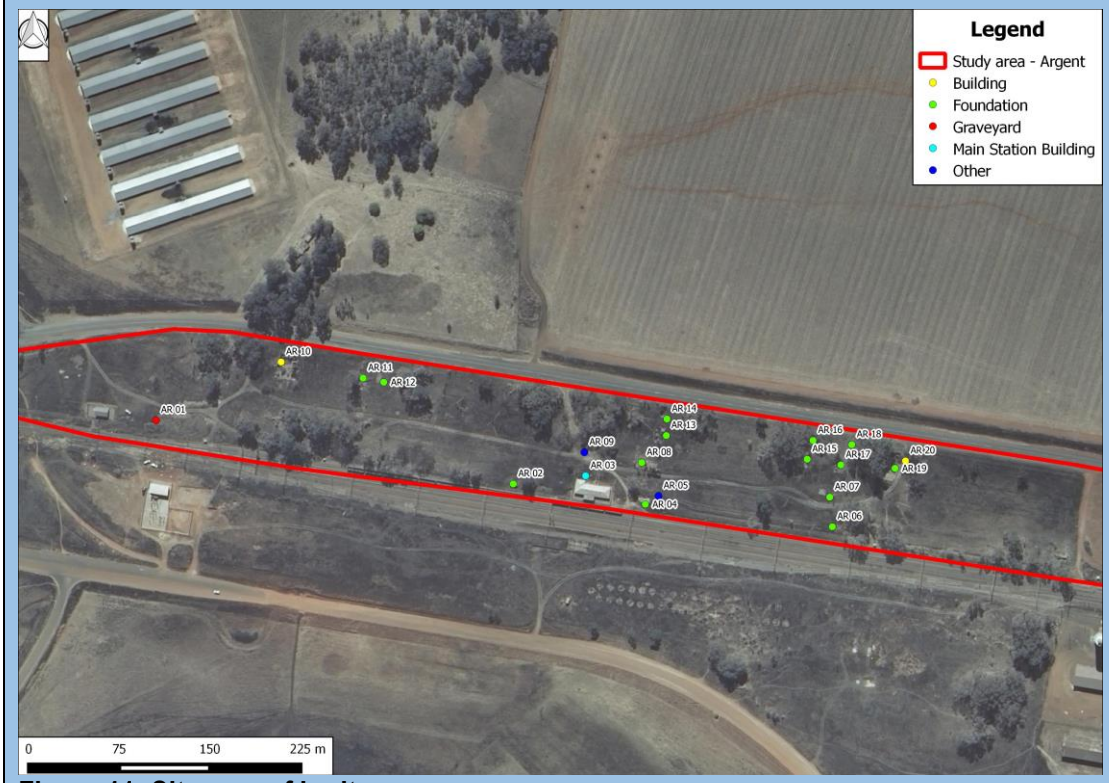


Figure 11: Site map of heritage resources

Additional findings:

- The possibility exists that culturally significant material and/or skeletal remains may be exposed during development and construction phases as archaeological artefacts generally occur below surface.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

N/A

Will any building or structure older than 60 years be affected in any way?	**YES**	~~NO~~
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	**YES**	~~NO~~

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

If needed, proof of permit application submitted to SAHRA will be included in the Final Basic Assessment Report when engineering drawings has been finalised.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The following was extracted directly from the Victor Khanye Local Municipality IDP 2014-2015.

Out of the 30 415 economically active people in the population in VKLM, 8 577 are unemployed. The employment rate in the VKLM has increased to 28.2% (2011) when compared to 2001. This figure is high when the economic activity is taken into consideration, but can be ascribed to the migration of workers from other areas. Youth unemployment remains a major challenge, contributing to 35,8% of unemployment in the local municipality. The limited number of the population with tertiary education might be the major causes of youth unemployment as they cannot be absorbed into the labour market.

Economic profile of local municipality:

The following was extracted directly from the Victor Khanye Local Municipality IDP 2014-2015.

Gross Domestic Product:
The VKLM Gross Domestic Product (GDP) is forecast to grow by 3.4% per annum over up to and including 2016, although this is lower that the District and Province projections. The forecast is very optimistic if we consider that the historic growth rate in the period 1996-2011 remained relatively low at 2.0% per annum.

Economic sectors performance:
Agriculture, transport, community services, finance and mining will be the main contributors to the VKLM economic growth in the period up to 2016. The municipality is a major maize producing area. Annual maize production is calculated at between 230 000 and 250 000 metric tons.7 Mining activities are concentrated on coal and silica. About 3 million metric tons of coal and 2 million metric tons of silica are mined annually in the municipal area.

With respect to Gross Value Added (GVA) - a measure in economic terms of the value of goods and services produced in an area, industry or sector of an economy - the VKLM's contribution to the Mpumalanga province is reflected at 2,0% in 2011 at an estimated value of 3,4 billion. The projection going forward is a GVA index of 1,7% reflecting a reduction in the value of economic growth which is contrary to the GDP index projections.

With respect to the GVA contribution to the overall Nkangala District's economic basket the municipalities input of 4,5% is relatively small compared to Emalahleni and Steve Tshwete, which contribute a collective 83,9% on a 54:46 ratio basis. The major economic "bread basket" for the

municipality with regards to value added goods are Mining and associated Transport with Manufacturing playing a significant role.

The regeneration of power stations, as well as the new Kusile power station in the Victor Khanye area, could serve as a catalyst to increased demand for coal reserves in the Nkangala area. The industrial potential of Delmas (agro-processing) should also be promoted to capitalise on its strategic location in relation to the major transport network.

"…In summary, the economic challenges facing the VKLM are similar in most respects to that facing the Mpumalanga Province. Attracting the correct balance of investment is needed to grow the local economy and address the majority of the ills currently faced in the municipality.…"

Level of education:

The following was extracted directly from the Steve Tshwete Local Municipality IDP 2014-2015

"…*The VKLM has an inherited problem namely that the low income levels per household in the community correlate to the low education levels in the area. Statistics show that 25% of the population above 15 years of age has had no schooling or did not complete primary school. Of this number 5,528 are basically illiterate and therefore future meaningful employment prospects are virtually impossible. A further 41% of the population did not complete the schooling curriculum and therefore did not reach the level of matric.…"*

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	**TO BE DETERMINED**	
What is the expected yearly income that will be generated by or as a result of the activity?	**TO BE DETERMINED**	
Will the activity contribute to service infrastructure?	**~~YES~~**	**NO**
Is the activity a public amenity?	**~~YES~~**	**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	**TO BE DETERMINED**	
What is the expected value of the employment opportunities during the development and construction phase?	**R TO BE DETERMINED**	
What percentage of this will accrue to previously disadvantaged individuals?	**TO BE DETERMINED**	
How many permanent new employment opportunities will be created during the operational phase of the activity?	**TO BE DETERMINED**	
What is the expected current value of the employment opportunities during the first 10 years?	**TO BE DETERMINED**	
What percentage of this will accrue to previously disadvantaged individuals?	**TO BE DETERMINED**	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the

identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
~~Critical Biodiversity Area (CBA)~~	~~Ecological Support Area (ESA)~~	~~Other Natural Area (ONA)~~	**No Natural Area Remaining (NNR)**	

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
~~Natural~~	0%	
~~Near Natural (includes areas with low to moderate level of alien invasive plants)~~	0%	
Degraded (includes areas heavily invaded by alien plants)	**20%**	Degraded vegetation dominated by alien invasive species.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	**80%**	Railway line, access roads, foundations, station building and other infrastructure associated with the operational activities.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the	Critical	Wetland (including rivers, depressions, channelled and	Estuary	Coastline
	Endangered			

Terrestrial Ecosystems		Aquatic Ecosystems						
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Vulnerable	unchanneled wetlands, flats, seeps pans, and artificial wetlands)						
	Least Threatened	~~YES~~	**NO**	~~UNSURE~~	~~YES~~	**NO**	~~YES~~	**NO**

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats) The study area falls within the Grassland Biome (Acocks, 1953) with the Eastern Highveld Grass (GM12) vegetation type dominating. The Eastern Highveld Grassland is very suitable for crop production, with natural vegetation used largely for the grazing of sheep and cattle. This type of vegetation has a very poor conservation status. Some types of Temperate Freshwater Wetlands in this area is considered and listed as a vulnerable ecosystem (GN no.34809 of 2011). The ecosystem on site has been severely disturbed. No aquatic ecosystem is present on site, nor any sensitive fauna or flora or habitats.

Reference is made to the Biodiversity scan undertaken by Galago Environmental (November 2014) attached in Appendix D of this report.

Flora:

The study site comprised very disturbed mixed alien and indigenous vegetation. The study site is not suitable habitat for species that are considered threatened or not threatened.

Mammals:

Only terrestrial major habitat was observed on site but has suffered a variety of economical modifications ranging from invasions to exotic plants and veld fires. These modifications, together with the small size of the site prevents any chance of species richness and population density. There is no refuge for rupiculous mammals due to the characteristics of the site. The road, railway lines, surrounding agricultural land and informal housing also acts as barriers to migration.

Avifauna:

Red Data avifaunal species are highly unlikely to use the habitat of the study site for foraging, roosting or breeding purposes.

Herpetofaunal:

Only terrestrial habitat is naturally present on the study site. Modifications such as invader plants, diggings, dumping, buildings, small site size and annual veld fires had a negative influence on species richness and population densities. The only possibility of encountering endangered species (giant bullfrogs) may occur in the extended study site. The habitat quality and connectivity of the site is poor.

Aquatic Ecosystem (320 m south of the site):

No aquatic ecosystems was found on site. The site does, however, form part of the catchment of the depression and seepage wetland to the south southwest of the site. Pollutants carried by water into the wetland and abstraction of large amounts of water from the catchment will lead to the degradation of the wetland.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

The Public Participation Process will be undertaken in accordance with the requirements of Regulation 54-57. Please refer to Annexure E for Comments and Responses.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2) (b) of GN R.543:

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

The Public Participation Process is undertaken in accordance with the requirements of Regulation 54-57. Please refer to Annexure E for Comments and Responses.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

No issues have been raised yet, all issues and concerns will be recorded in the Comments and Responses Report to be attached in ***Annexure E*** in the Final Basic Assessment Report.

Summary of main issues raised by I&APs	Summary of response from EAP
Refer to Comments and Responses report attached in Annexure E.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

List of authorities informed:

- Mpumalanga Department of Economic Development, Environment and Tourism
- Department of Water and Sanitation
- Department of Agriculture
- Department of Roads and Public Works
- Department of Energy
- Victor Kanye Local Municipality
- Nkangala District Municipality
- Mpumalanga Tourism and Parks Agency
- South African Heritage Resources Agency
- Transnet

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

1. **Planning and Design Phase**
2. **Construction Phase**
3. **Potential impacts associated with the Operational Phase, Construction Phase as well as the No-Go Alternative**

Refer to Appendix G1 and G2:

G1 – ENVASS Impact Rating Methodology
G2 – Impact Assessment (Preferred alternatives assessed - operational and construction phases as well as the No-Go Alternative).

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

NATURE OF IMPACT		DESCRIPTION OF IMPACT	STATUS	SIGNIFICANCE POST-MITIGATION
PREFERRED ALTERNATIVE A1 – PLANNING AND DESIGN PHASE				
PREFERRED ALTERNATIVE A1 - CONSTRUCTION PHASE				
GEOLOGY AND SOILS		Soil erosion through vegetation clearance.	**Negative**	**Very Low**
		Soil compaction by heavy duty vehicles.	**Negative**	**Very Low**
		Contamination of soils through: - Indiscriminate disposal of waste. - Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from vehicles and other chemicals from operational and maintenance activities e.g. paints.	**Negative**	**Very Low**
HYDROLOGY	**SURFACE WATER AND GROUNDWATER**	Impacts on the water quality and hydrology of the wetland adjacent to the site: • Stormwater and erosion impacts as a result of uncontrolled and polluted runoff due to a lack of: - Management of stormwater run-off quality; and - Management of stormwater run-off quantity. • Change in the hydraulic characteristics of the area and wetland through: - Pollution of surface and ground water through contaminated stormwater runoff from the site and sedimentation of natural water resources; - Disruption of natural surface and sub-surface flow; and Increased erosion and associated siltation on site.	**Negative**	**Low**
BIODIVERSITY	**FLORA AND FAUNA**	Potential loss of vegetation type, ecologically important species and species of conservation concern.	**Negative**	**Low**
		Loss of fauna, as a result of fauna having access to the operations and may be killed by people or	**Negative**	**Very Low**

	vehicles.		
	Impacts on flora and fauna associated with the wetland due to pollution (air/dust and/or water).	**Negative**	**Very Low**
VISUAL	Visibility from sensitive receptors / visual scarring of the landscape as a result of the construction activities.	**Negative**	**Low**
DUST / AIR QUALITY	Decrease in air quality associated with construction activities including: • Wind erosion; • Fugitive dust emissions from materials handling operations; and • Vehicle entrained dust from roads.	**Negative**	**Low**
NOISE	Noise impacts on surrounding environment associated with construction activities (heavy duty vehicles and equipment).	**Negative**	**Low**
TRAFFIC	Increased traffic due to construction.	**Negative**	**Low**
HEALTH AND SAFETY	Health and safety impacts for construction workers associated with construction activities.	**Negative**	**Very Low**
SOCIO - ECONOMIC	Increased employment opportunities during the construction phase.	**Positive**	**Medium**
ARCHAEOLOGICAL	Destruction of identified and unidentified heritage resources during construction.	**Negative**	**Low**
WASTE	Generation of additional waste / litter and building rubble / hazardous material during the construction phase.	**Negative**	**Low**
PREFERRED ALTERNATIVE A1 - OPERATIONAL PHASE			
GEOLOGY AND SOILS	Loss of topsoil and soil erosion through wind and storm water.	**Negative**	**Very Low**
	Soil compaction by heavy duty vehicles.	**Negative**	**Very Low**
	Contamination of soils through: - Indiscriminate disposal of waste. - Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from vehicles and other chemicals from operational and maintenance activities e.g. paints.	**Negative**	**Very Low**
HYDROLOGY / **SURFACE WATER AND GROUNDWATER**	Groundwater can be polluted if: - pollution control dams do not have sufficient capacity, are not properly lined or upgraded and maintained where necessary. - stockpile areas are not properly lined.	**Negative**	**Low**
	Impacts on the water quality and hydrology of the wetland adjacent to the site:	**Negative**	**Low**

		• Stormwater and erosion impacts as a result of uncontrolled and polluted runoff due to a lack of: - Management of stormwater run-off quality; and - Management of stormwater run-off quantity; • Change in the hydraulic characteristics of the area and wetland through: - Pollution of surface and groundwater through contaminated stormwater runoff from the site and sedimentation of natural water resources; - Disruption of natural surface and sub-surface flow; and - Increased erosion and associated siltation on site.		
		Change in groundwater balance due to an increased recharge through the coal if held in open storage, and reduced evapotranspiration due to vegetation removal.	**Negative**	**Very Low**
		Decant of leachate from the base of the coal stockpiles during rain events where rainfall exceeds infiltration capacity.	**Negative**	**Low**
		Impact on lower groundwater levels due to the change in recharge at or around the siding.	**Negative**	**Very Low**
		Increased salinity of aquifers downstream of siding due to leachate (sulphates and low pH water).	**Negative**	**Low**
		Decrease in water quality for existing users. Water currently of Class 0 would probably have elevated salts, especially sulphates. Three boreholes could be affected.	**Negative**	**Low**
		Migration of the water plume to surface water bodies.	**Negative**	**Very Low**
BIODIVERSITY	**FLORA AND FAUNA**	Potential for spreading of alien and invasive species and the impact on the site and the wetland adjacent to the site.	**Negative**	**Low**
		Loss of fauna, as a result of fauna having access to the operations and may be killed by people or vehicles.	**Negative**	**Very Low**
		Impacts on flora and fauna associated with the Wilgerrivier and associated wetland due to water pollution when stormwater is contaminated or pollution control dams overflow.	**Negative**	**Very Low**
VISUAL		Visibility from sensitive receptors / visual scarring of the landscape as a result of the additional stockpiles of coal.	**Negative**	**Low**
DUST / AIR QUALITY		Decrease in air quality associated with operational activities including: • Wind erosion; • Fugitive dust emissions from materials	**Negative**	**Medium**

	handling operations; and • Vehicle entrained dust from roads.		
NOISE	Noise impacts on surrounding environment associated with operational activities (heavy duty vehicles and equipment).	**Negative**	**Low**
TRAFFIC	Increased local traffic due to the supply of coal to the siding to be transported further by trains. Damage to roads due to increased traffic.	**Negative**	**Low**
	Decreased regional and/or national heavy vehicle traffic negatively impacting the condition of roads and an increase in the number of accidents. Coal transported over long distances by rail.	**Positive**	**Medium**
HEALTH AND SAFETY	Health and safety impacts associated with operational activities.	**Negative**	**Very Low**
	Accidental fire on site.	**Negative**	**Very Low**
SOCIO - ECONOMIC	Increased availability of electricity limiting load shedding and creating positive spin-offs e.g. social upliftment created.	**Positive**	**Medium**
	Creating employment opportunities to local and surrounding communities.	**Positive**	**Medium**
ARCHAEOLOGICAL	Conservation of identified heritage resources on the development site.	**Positive**	**Medium**
WASTE	Generation of additional waste / litter / hazardous material during the operational activities on site.	**Negative**	**Low**
PREFERRED ALTERNATIVE A1 - DECOMMISSIONING PHASE			
NO-GO ALTERNATIVE			
SOCIO-ECONOMIC	Should the activity not be approved, the positive spin-offs of increased availability of electricity i.e. the socio-economic upliftment of communities will not be realised as well as the economic development of the area.	**Negative**	**Medium**
	Creating employment opportunities to local and surrounding communities.	**Negative**	**Medium**
HERITAGE	Destruction of identified heritage resources on the development site.	**Negative**	**Medium**
TRAFFIC	Increased regional and/or national heavy vehicle traffic negatively impacting the condition of roads and an increase in the number of accidents. Coal transported over long distances by rail.	**Negative**	**Medium**

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**	~~NO~~

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

- That Alternative 1 (the preferred alternative) be authorised;
- That the environmental management programme be approved and implemented;
- That all mitigation measures in this report and in the environmental management programme be implemented;
- That an air quality monitoring programme as recommended by the specialist and specified in this report and the attached EMP be implemented and monitoring reports be made available for inspection; and
- That an independent environmental control officer be appointed to monitor the implementation of the EMP and report on it. The reports should be made available to the applicant in order to rectify any non-compliances and to the competent authorities on request.

Is an EMPr attached?	**YES**	~~NO~~

The EMP must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Louise Marais

NAME OF EAP

SIGNATURE OF EAP

2015/02/06

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

REFERENCES

http://www.justice.gov.za/paia/paia-faq.htm

Department: Water Affairs and Forestry, 2007. Best Practice Guideline A4: Pollution control dams

Victor Khanye Local Municipality Integrated Development Plan (IDP), 2014 – 2015 financial year (draft)

Mpumalanga Economic Growth & Development Path, 2011

Department of Environmental Affairs, Highveld Priority Area Air Quality Management Plan Executive Summary

National Planning Commission, National Development Plan 2030