

Draft Final Scoping Report - Amendment of the Environmental Management Programme (EMP) for Vlakfontein Coal Mine to include the Proposed Vlakfontein Coal Mine Phase 2.

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Report Prepared by

 **srk** consulting

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Executive Summary

1. Description of the property

The African Exploration Mining and Finance Corporation LTD (AEMFC) is a state-owned mining company, operating its first open cast mine, Vlakfontein Mine, north west of the town of Ogies in the Mpumalanga Province on the Farm Vlakfontein 569JR. The N12 highway (Johannesburg to Emalahleni) traverses the southern portion of the site. (See Figure 2-1). Vlakfontein Mine is located approximately 110 km east of Johannesburg.

Vlakfontein Mine is currently mining coal by means of open cast mining methods on the block known as Central Block. It is currently investigating the feasibility of expanding Vlakfontein Mine's mining activities within the existing mining boundaries to the area known as the Northern block.

The Phase 1 (Central Block) operation was approved in terms of existing EMP authorisation number MP30/5/1/2/3/2/1(436) MR. The EMP for the Phase 1 authorisation was compiled by SRK Consulting in 2009/2010. The Phase 2 expansion area (North Block) was excluded as a result of the need for further specialist input into the more sensitive wetlands in the area. This need will be addressed in the EIA for the Phase 2 amendment. The North Mining Block is located on portion 3 of Vlakfontein 569JR, (See Figure 9 2).

2. Details of the EAP / who is conducting the EIA/EMP?

SRK Consulting has been appointed by the AEMFC as an independent consultant to conduct the Environmental Authorisation; EMPR amendment process as well as undertaking the public involvement component.

3. Description of the Proposed Development

The activities applied for include the expansion of the opencast mine for the extraction of coal on Vlakfontein Phase 2. The Vlakfontein Mine Phase 2 Mining project will be within the existing mining lease areas on the section known as North Mining Block. Vlakfontein Mine Phase 1 operation will still be operational until approximately 2016; therefore existing infrastructure from the phase 1 operation will be utilised. Coal will be removed from the Northern pit and trucked to the existing screen and crushing plant area. After extraction the coal will be received at the existing washing plant, washed and then stockpiled adjacent to the existing coal washing plant. Coal will be loaded from the coal stockpile at the coal washing plant onto train trucks and transported via the R545 road to Kendal Power Station and also potentially Kusile Power Station.

The Vlakfontein Mine Phase 2 Mining project will include the following activities:

- Mining of coal through opencast mining method;
 - Construction of the Northern opencast mining pit with a footprint area of approximately 100 ha;
 - Truck-and-shovel mining method and
 - Associated topsoil and overburden stockpiles will be constructed.
- The construction of water management structures associated with the implementation of the proposed stream diversion and water management measures, such as
 - Construction of canals, channels, bridges, weirs and bulk storm water outlet;
 - Construction of a new pollution control dam at the central block.

- Infrastructure associated with maintaining the proposed activities and mitigating identified environmental impacts, as necessary.
 - Access roads to and from the Phase 2 mining operation;
- Existing mine infrastructure such as the Screen and Crushing plant will be used during the operation of the proposed expansion.

4. Description of the affected environment

Vlakfontein Mine's mining activities

The information for the baseline environment was gathered from the Vlakfontein Mine Phase 1 Environmental Management Plan, 2010, therefore before mining on Vlakfontein started.

AEMFC owns the mineral rights to coal in the 4 seam and the upper and lower 2 seams, within the existing and approved mining boundaries, on Portions 3, 10, 20, 21, 23 and 24 of Vlakfontein 569JR. The baseline data, below, is discussed for all of the portions. The Vlakfontein Phase 2 project will however only be on the northern part of Vlakfontein 569JR Portion 3.

Table ES1: Summary of the description of the affected environment

Environmental Component	Description
Air quality	An air quality specialist study was undertaken by Dr Lucian Burger of Airshed Planning Professionals, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries. Residential areas represent the primary sensitive receptors given the potential for dust impacts associated with the proposed project. Some of these residences have moved since 2010. The predominant wind field is from the west-north-west with frequent wind speeds of 5-10 m/s; Existing activities such as mining, power stations, agriculture and vehicles travelling on dust roads already contribute to the ambient dust levels and it was estimated that the current annual average background PM10 concentration is approximately 20 µg/m ³ with a maximum daily average of 40 µg/m ³ . It has also been estimated that current fallout levels range between slight (i.e. less than 250 mg/m ² /day and moderate (i.e. 250 to 500 mg/m ² /day).
Aquatic ecology	The invertebrates found in the pans and dam within the study area included those typically expected in seasonal water bodies on the Highveld. One of the pans has now been mined through, since 2010.
Archaeology and cultural heritage	An Archaeology and Cultural Heritage study was conducted by Dr Johnny van Schalkwyk, an independent heritage consultant, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries. No Stone Age or Iron Age sites, features or objects were identified in the study area. Three informal cemeteries ranging in size from 5 graves to as many as 100 graves. The houses on Portion 20 of Vlakfontein 569JR are considered to be of historic value as are the embankments of an old railway line on the western edge of Portion 10 Vlakfontein 569JR. The sites are all considered to be of Grade III significance i.e. worthy of conservation on a local level.
Blast and vibrations	A blast and vibrations impact specialist study was prepared by Tony Rorke , to investigate issues associated with vibrations, air blast and fly rock as a result of the blasting, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries. Structures of concern in the area (on site and immediately adjacent to the site) with regard to the impacts of blasting are private homes (van Heerden), farm buildings labour accommodation, an oil pumping station (Transnet), pipes (Transnet), roads (including the N12), overhead lines and the oil storage bunker. In addition people and animals associated with these structures are considered as sensitive receptors.
Climate	Average annual precipitation is 705 mm.

Environmental Component	Description
	<p>Mean daily temperature is 25 degrees Centigrade (January) and 17 degrees Centigrade (July). Predominant wind direction is from the west-north-west with frequent wind speeds of 5-10 m/s.</p>
Fauna	<p>A survey was conducted during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>Of the 164 mammal species recorded from Mpumalanga (according to Emery et al., 2002), 38 species could occur on the study site of which 16 species were confirmed during the survey undertaken in April 2009. Based on the predominance of wetland-associated habitat types, most of the expected taxa are likely to be partial towards wetland conditions.</p> <p>The study site provides potential habitat for three (3) "Near-threatened" and four (4) "Data Deficient" mammal species.</p> <p>Of the 51 species of amphibians occurring in Mpumalanga (Jacobson, 1989; Minter et al., 2004), 14 taxa could occur on the study site</p> <p>Of the 154 reptile species recorded by Jacobsen (1989) in Mpumalanga, 20 snake species, 8 lizard species and one chelonian species have geographic distribution ranges sympatric to the study site.</p> <p>According to the South African Bird Atlas Project (SABAP1) (Harrison et al., 1997), a total of 201 bird species was recorded for the quarter degree grid cell (QDGC) 2628BB that corresponds to that of the study site. However, the habitat types prevalent on the study site are more likely to sustain approximately 188 bird species of which approximately 77 were confirmed.</p> <p>The wetland systems are considered to be important from both a biodiversity as well as from an evolutionary perspective since they function as an interconnected system of "stepping stones" for faunal migration (mainly birds) and genetic cohesion among populations of the same species. The fauna are likely to have been affected by the Phase 1 mining activities.</p>
Geochemistry	<p>A geochemistry specialist study was undertaken by James Lake of SRK Consulting, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>Cores from borehole drilling in 2008 were made available to SRK for geochemistry testing however these cores were substantially weathered as they have stored outdoors with no protection from the elements. Based on the total sulfur results, the analyses indicate that acid is likely to be produced from the mudstone, siltstone and the FG sandstones. The neutralizing potential (NP) of these samples is relatively low, indicating little neutralising potential to buffer any acidity produced. The results indicate that some of the lithologies that are likely to be associated with the overburden stripped to access the coal have the potential to generate acidity. This would require control to be implemented to minimise the potential that this material is stockpiled prior to placement as backfill in the pit.</p>
Geology	<p>Drilling in the Project area intersected four coal seams and these are from bottom up; the No.2, No.3, No.4 and the No.5 seams. The two seams that are targeted for the Vlakfontein Coal Mine project are the No.2 and No.4 Seams.</p> <p>The No.2 Seam is well developed across the project site attaining thicknesses in excess of 4.5m. This seam has been further split into No.2 Lower and No.2 Upper seams due to the presence of an intra-seam mudstone and/or siltstone parting. This parting is less developed in the south however; it becomes somewhat significant in the northern parts of the property where it grades either into a single sandstone parting unit of up to 2m or a multiple parting layer of shale, siltstone and sandstone splitting the No.2 Upper Seam.</p> <p>The No.4 Seam is well developed in the south attaining thickness of up to 8 m but becomes erratic in the northern part of the property and is not developed in the most northern parts.</p>
Groundwater	<p>A groundwater specialist study was undertaken by Mr Ivann Milenkovic and Ms Diane Duthe of SRK Consulting, for the existing and approved mining boundaries, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009).</p> <p>The methodology included a Hydrocensus, sampling for organics, inorganics and total petroleum hydrocarbons, drilling and testing of boreholes to obtain aquifer parameters near the bunker, analytical modelling of radius of influence of cone of drawdown and inflow calculations.</p> <p>The project site is divided in two "hydrogeological catchments", one flowing towards the north-east and the other towards the south west. The area coinciding with Phase 1 of the project is at</p>

Environmental Component	Description
	<p>the top of a catchment divide so there is a component of flow in a southerly direction towards a small spring and stream which was used by the Venter community as a potable domestic water supply. Portion 20 was however sold by the Venter family to the Vlakfontein Mine, and is currently being used as the site offices.</p> <p>It is estimated that approximately 80 000m³/year (220 m³/day) (CSIR) as recharge to the bunker is pumped out to maintain the water level close to the bottom of the bunker, and following an oil separation process it is disposed of into the Central Pan. The natural depth to groundwater level could therefore not be measured in boreholes but is assumed to be around 10mbgl shallowing towards the wetland.</p> <p>Sampling from the boreholes around the bunker, has shown that there has been some mobilisation of the oil from the bunker to at least 100m away.</p> <p>Estimated inflows into the South pit (Phase 1) would increase from 70 m³/day in the first year of mining, to 160 m³/day by year 6.</p> <p>A barrier pillar of 300 m between the bunker and the strip mine will be required to avoid reversing the hydraulic gradient.</p> <p>A barrier pillar of 300 m may also be needed for the Phase 2 operation.</p>
Land use	<p>Predominant land uses in the area include coal mining, cultivation and grazing.</p> <p>The local and regional road network surrounding and serving the project site include the N12 and R545.</p> <p>The Klipspruit and Oogiesfontein 'Beesting' Coal Mines are located approximately 10km to the south west of the project site and Klipspruit is visible from the site.</p> <p>The proposed Phase 2 operation area (Northern Block) of Portion 3 currently consists largely of agricultural fields, predominantly planted with maize. Cultivated areas account for almost 80% of the site area. The areas not under cultivation are wetlands or grazing land.</p> <p>The Southern part of the Portion 3 consists of the Current Vlakfontein Phase 1 mining operation. Portion 20 is owned by the Vlakfontein Mine, and is currently being used as the site offices.</p> <p>The western and central portions of Portion 3 and Portion 10 of Vlakfontein 569 JR have historically been mined using underground mining methods. The underground void was used in the 1980's for the strategic storage of heavy fuel oil. At present these mined out underground oil storage bunkers are managed by Oil Pollution Control South Africa (OPCSA) on behalf of the Strategic Fuel Fund (SFF).</p> <p>In the central and south western parts of the site are a Transnet substation (Portion 21 and 24 of Vlakfontein 569JR), pipelines and a pump station for the underground oil storage facility. There are also relatively small areas on site where sand mining activities appear to have taken place.</p>
Noise	<p>A noise specialist impact study was undertaken by Francois Malherbe of Francois Malherbe Acoustic Consulting cc, during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>The nearest noise sensitive areas to the proposed development are the Van den Heever farmstead to the north west, the village of Wilge north of the mining area, the Kendal Forest Holdings south of the N12 and the Twoline community south of the N12.</p> <p>The existing major noise sources in the environment of Vlakfontein are the existing Phase 1 mining operation, the road traffic on the N12, R545 (Ogies) and the R545 (Kendal – Balmoral), and local traffic and community noise in Wilge. The other existing mines in the area are considered to be sufficiently distant from the project site not to contribute to the ambient noise levels.</p> <p>The Pre-mining current ambient noise levels were modelled based on four noise monitoring points. Daytime and night-time ambient noise levels were within the SANS limits for rural areas with the exception of areas in close proximity to the N12 and R545 where daytime ambient noise levels exceeded the SANS limit for urban areas.</p> <p>This noise levels have changed as mining is taking place at the central block and therefore needs to be updated for the Vlakfontein Phase 2 EIA authorisation.</p>
Pre mining land capability	<p>The Phase 2 site (Northern Block) was noted to support arable and grazing land capabilities. The Phase 1 existing mine is located to the south of the proposed site.</p>
Regional socio-	<p>A socio-economic specialist study and impact assessment was prepared by Adel Malebana of</p>

Environmental Component	Description
economic structure	<p>Itekeng Development Consulting during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>The project area falls within the Mpumalanga Province of South Africa and in the Emalahleni Local Municipality and Nkangala District Municipality.</p> <p>There are high unemployment levels in the Province and in the District and local Municipalities. Of the total population of the Province 51% were not of a working age (between 20 and 64). Dependencies in the Municipal areas are slightly lower, ranging from 41-49%. 49% of the working population of the Province was unemployed at the time of the Census. Unemployment is lower than the Provincial average in the Municipalities concerned with a range of 38-46%.</p> <p>Key employers in the area are surrounding mines, agriculture, power stations and social services. Education levels in the area are relatively limited with only 40% having secondary education. Key issues that were identified for all of the affected Municipal areas in their integrated development plans are: health care and provision of health services, education, water and sanitation, the provision of electricity supply, land reform and administration and economic development and job creation.</p> <p>Landowners on and near the affected properties who are likely to be affected (directly or indirectly) by the proposed mining development are:</p> <ul style="list-style-type: none"> • Van den Heever property– Portion 29 of Vlakfontein 569JR (immediately adjacent and downstream), • The Venter property - Portion 23 of Klipfontein 568 JR (immediately adjacent) • Truter property – Portion 1 of Vlakfontein 569 JR and Portion 11 of Bankfontein 216 IR (immediately adjacent) and • The Residential extension, Wilge Village ± 1.6 km to the North. <p>In addition several settlements/communities with tenure rights to the land are also found in the area. These are:</p> <ul style="list-style-type: none"> • A settlement found on Klipfontein 569JR (19 households) • Two-line community (17 households) • Community south of the Two-line Community (7 households) • There are land claims on the Vlakfontein 569JR farm
Sensitive landscapes	<p>The sensitive landscapes in the project area are listed as follows:</p> <p>Hillslope seepage wetland, the unchannelled valley bottom and the three pans identified in the wetland study and the associated fauna and flora. One pan was already affected by the Vlakfontein Phase 1 operation. The proposed Vlakfontein Phase 2 operation will affect another pan.</p> <p>Land homesteads and informal settlements associated with the properties of Mr van den Heever, and Wilge Village.</p>
Soils	<p>Eleven soil forms were identified during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries. This includes Katspruit; Hutton; Acardia; Mispah; Glenrosa; Swartlands; Avalon; Kroonstad; Estcourt; Shortlands; Valsrivier.</p> <p>Avalons and Wesleights are typically associated with hillslope seepage areas on site. The Avalons and Wesleights that are found in the study area are not unique to either the Mpumalanga Province or to South Africa. The Katspruit soils that are on site are those that are often associated with pans and water bodies in the province.</p> <p>Results of soil fertility testing indicate that the soils pH irrespective of soil type, depth or whether the soil is a topsoil or subsoil are generally in the circumneutral range with pH ranging from 6.2 to 7.3. These pH levels are generally within the range which is considered ideal for plant growth.</p>
Surface water	<p>The study was done during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>The study area is located within the Olifants River Catchment (Primary Catchment B) and more specifically along the watershed between the quaternary catchments B20G (Saalboomspruit) and B20F (Wilge River).</p> <p>The Wilge River flows in a northerly direction. The Saalboomspruit is a tributary of the Wilge</p>

Environmental Component	Description
	<p>River and flows in a northerly direction some 34 km north east of the project area. Drainage lines occur on the north eastern, south eastern and south western area of the project area. Three catchments were delineated within the proposed Vlakfontein mine area. Approximately 25.3% (134.05 ha) of the entire study area was delineated as wetland. In addition two small farm dams were recorded.</p> <p>Approximately 57% of the proposed Phase 2 expansion area (North Block) study area was delineated as wetland. The Phase 2 expansion area was originally excluded from the Phase 1 mining area as a result of the need for further specialist input into the more sensitive wetlands in the area. There were no wetlands on the proposed Phase 1 area.</p> <p>Wetlands in the landscape can be linked to the presence of both surface water and perched groundwater. Types of wetlands are differentiated based on their hydro-geomorphic characteristics as well as the way in which water moves into, through and out of the wetland system.</p> <p>Three wetland types were identified as follows: (See Figure 11-11).</p> <ul style="list-style-type: none"> • Hillslope seepage: 114.79 ha (85.6% of wetland area) • Depression/pan: 16.06 ha (12% of wetland area) • Unchannelled valley bottom: 3.20 ha (2.4% of wetland area) <p>The most dominant type of wetland on the project site is the hillslope seepage wetland. Three pans were recorded on site with another pan immediately adjacent the western side of the site. On the northern side of the project side an unchannelled valley bottom wetland was delineated. This wetland is maintained by flows feeding into the wetland from the hillslope seepage wetland. Flow is predominantly sub-surface with any surface flows resulting from storm events and overflow from the dam.</p> <p>Functions that are typically attributed to wetlands include biodiversity support, nutrient removal (specifically nitrates removal), sediment trapping, stream flow augmentation, flood attenuation, trapping of pollutants and erosion control.</p> <p>All of the wetlands on the project site are classified as moderately to seriously modified as a result of various activities that have impacted on the wetlands resulting in degradation. The wetlands are considered to be important from a biodiversity perspective given that the wetlands represent a significant percentage of the areas of remaining natural vegetation on the project site.</p>
Topography	<p>The study was done during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>The site is located on a flat to gently undulating plain. The centre of the site is the highest at 1587 metres above sea level (mamsl), and from this point the site slopes to the north-east and towards the south.</p> <p>No hills, outcrops any other major topographical features exist on the project site or the surrounding area. There are pans and wetlands on the site and in the surrounding vicinity.</p> <p>The site has changed since the survey done in 2009, as a result of the Phase 1 mining activities.</p>
Vegetation	<p>The study was done during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>The proposed Vlakfontein Coal Mine is located within the Eastern highveld Grassland within the grassland biome of South Africa. On the project site, the grasslands have largely been lost to cultivation and other land uses with persistent grassland remaining only in areas associated with the wetlands and pans on site.</p> <p>The Mpumalanga Parks Board's provincial biodiversity indicates that most of the study area represents areas with no more natural habitat remaining (cultivated fields). Even the remaining grassland associated with the wetlands is considered to be of least concern.</p> <p>The level of transformation within the study area at a local scale exceeds the threshold of 25%, therefore connectivity within the study area is significantly affected and the loss of any remaining natural vegetation patches will contribute to habitat loss and fragmentation on a regional scale, especially with regards to connectivity.</p> <p>Approximately 23% of the entire project area is considered to be wetlands and thus has a high conservation status from an ecological perspective. Approximately 57% of the proposed Phase 2 expansion area (North Block) study area was delineated as wetland. The Phase 2 expansion area was originally excluded from the Phase 1 mining area as a result of the need for further</p>

Environmental Component	Description
	<p>specialist input into the more sensitive wetlands in the area. There were no wetlands on the proposed Phase 1 area.</p> <p>A further 60% of the entire project area is considered to be of moderate conservation value from an ecological perspective as these areas represent the remaining elements of natural vegetation, whether disturbed or not, and still possess the potential to function as source areas for species or refuge areas for species important to the maintenance and functioning of the remaining ecosystems in the area.</p>
Visual aspects	<p>The site is characterised by the Vlakfontein Phase 1 mining project, other mining projects, agricultural fields and residential settlements.</p> <p>The overall visual quality of the Vlakfontein site is very disturbed by mining.</p> <p>The sense of place for the Vlakfontein area would be that of agriculture and mining.</p>
Water quality	<p>The water quality study was done during the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009), for the existing and approved mining boundaries.</p> <p>Thirteen monitoring points were established on the site to assess the surface and groundwater baseline situation prior to mining. Data was collected over a period of three months (August to October 2009) and assessed against the South African National Standard for drinking water (SANS241:2006) and Department of Water Affairs Irrigation and Livestock Watering Guidelines (DWAf, 1996).</p> <p>A total of twenty two samples were taken at the thirteen sites. No further monitoring was done.</p> <p>The three-month monitoring exercise was not appropriate to establish a water quality baseline for the site, but merely to get an understanding of the range of water quality variations present in the groundwater and surface water during that particular period.</p> <p>Piper plots indicate that most of the water samples are categorised as calcium-bicarbonate waters suggesting recent recharge from rain events. Exceptions are Venter's Spring (on portion 20) and the Wetland (Dam 2) whose chemistry is dictated by other (local) factors.</p> <p>Metals and metalloids generally occur in negligible traces apart from elevated levels of iron and manganese in a few samples. With so few samples analysed it is difficult to identify the source of these iron and manganese concentrations, but this should be resolved with future more sustained sampling.</p>

5. Description of alternatives

Alternatives considered in the project development and planning include the following:

Location Alternatives

Other locations for the placement of the opencast were investigated; however these locations were not suitable relative to the mineral resource and its accessibility.

Mining Method Alternatives

Due to the shallow depth of the coal seam, underground mining would be less safe, more difficult and expensive compared to opencast mining in this area.

Opencast Mining method involves the removal of the non-mineralised material, usually termed as "overburden", which is temporarily stored within the site boundary, to access the coal. The acceptable ratio of coal to overburden is broadly governed by prevailing economic factors, linked to the value of the coal set against the cost of extraction. Opencast mining ensures a quick build-up of production, large quantum of production and maximum possible recovery of coal. The constraint to the application of strip mining is the economic limits of the stripping ratio and to some extent the damage to the surface environment.

Truck and shovel method

An alternative to using truck and shovel methods of opencast mining is to make use of a dragline. Opencast mining can make use of a dragline where areas of coal are extensive and deep. A dragline is capable of moving vast quantities of overburden and coal. A truck and shovel method will be used at Vlakfontein mine Phase 2, instead of a dragline, due to the location of the coal, the size of the deposit and the topography. The truck and shovel method is also more flexible.

Input Alternatives

The consideration of different inputs into the Proposed Development is still being investigated. These inputs could include: construction materials; equipment; sources of power. It is assumed that electricity will be the predominant energy source from an environmental perspective and therefore this alternative will require no further attention in this study.

Methods for transportation of product

Two alternatives for transportation of product can be listed which includes transportation via roads and transportation via conveyor belt.

It is expected that the option of transportation via roads will be the preferred alternative given the substantial investment that would be required in conveyors for a relatively short life of mine project.

Demand Alternatives

AEMFC is currently mandated with the development of state-owned coal resources to secure the supply of coal to Eskom. Coal will be stockpiled and then transported by road truck to Kendal Power Stations, as there are an existing agreement between Vlakfontein Mine and these power stations.

Post Mining Land Use

Post mining land use options will be re visited during the Impact phase since land use options were identified during the initial EMP process which covered this Northern Block area

No-Project Option

The current land use is for agriculture (maize). The no-mining option will result in the continuation of such land use. Although it could probably remain economically viable, the continuation of agriculture will not provide the level of economic growth to the area that mining would offer. After mine closure and rehabilitation of mined areas, the land capability may return to grazing, allowing the continuance of certain agricultural practices.

The mine plans to promote sustainable local economic development, to give communities the skills required to remain economically viable and successful after mine closure. If the project were not to proceed, the additional economic activity, skills development and available jobs would not be created, the coal reserves would remain unutilised, the current land uses and economic activities would continue as at present, with little or no economic growth developing in the region.

If AEMFC were not to proceed with the proposed operation, mining of these coal reserves will not necessarily be avoided, as another application in terms of the MPRDA, Act 28 of 2002 can be made by another company. Unless the government declares the area "off limits" to mining, mining houses will continue to attempt to mine the coal reserves

6. Consideration of legislation and guidelines

Legislation pertinent to the project is discussed below. Comments in this section refer to SRKs interpretation and must not be taken as a legal opinion and are subject to modification in terms of discussions with the relevant authorities.

Environmental Assessment Process / Approach to the Environmental Impact Assessment

Environmental authorisation is required in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA, Act No. 28 of 2002), and the National Environmental Management Act (NEMA, Act 107 of 1998), before the proposed project may commence.

MPRDA, Act No. 28 of 2002

Section 102 of the MPRDA is relevant for the environmental authorisation, due to the EMP amendment process (amendment of rights, permits, programmes and plans). This process includes assessing the baseline project area, identifying anticipated environmental and socio-economic impacts and developing mitigation measures to alleviate any potential negative impacts associated with the project.

NEMA, Act 107 of 1998

The following listed activities are relevant for the Environmental Authorisation according to NEMA: Government Gazette No.33306 of 18 June 2010

Government Notice Number. R544:

(Activity 11) Pumping out of groundwater influxes from the mine.

(Activity 18) Stream diversion / Excavations of flood plain;

(Activity 22) The construction of access roads to and from the northern block;

(Activity 28) Expansion and changes requiring new or amendment of existing permits or licenses, in terms of the National Water Act;

(Activity 40) To mine the northern block it will be necessary to construct stormwater structures;

Government Notice Number. R545)

(Activity 15) The proposed northern block mining area is more than 100 ha.

The process for a Basic Assessment is described in regulations 21 to 25 of GN R544 and the environmental consultant must conduct a public participation process as set out in regulation 54 to 56.

A full EIA as stipulated in GNR 545 consists of a Scoping and Impact Assessment Phase. This form of an EIA is generally intended for larger scale projects, whereby the environmental impacts are more extensive thereby a more comprehensive means of impact identification is required. The impacts of such a project may lead to extensive environmental degradation, or solely require a scoping phase in order to assess and identify impacts not easily predicted or identified. An EIA seeks to identify the environmental consequences of a proposed project from the beginning and helps to ensure that the project, over its life cycle, will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

According to the information listed above an Environmental Impact Assessment (EIA) is being undertaken and an Environmental Management Programme (EMP) will be prepared for this project by independent environmental consultants (SRK Consulting), and submitted to the National Department of Environment Affairs (DEA) and Department of Mineral Resources (DMR), the

decision-making authorities, on behalf of the holder of the converted mining right reference number (436) MR, in this case African Exploration Mining and Finance Corporation.

Two parallel processes are being followed during the Scoping Phase being an Environmental Technical process and the Public Participation process.

7. Public Participation Process

Public Involvement Activities Undertaken to Date

Activities that were undertaken for the public involvement process during the Scoping Phase are:

- Development of stakeholder database;
- Preparation of documentation for notification of stakeholders (background information document, invitation letters, media advertisement and site notices) and distribution of these;
- Public notification;
 - The intention to develop the proposed project was advertised in in three languages, Afrikaans, English and isiZulu. It appeared in two newspapers, The Witbank News and Streeks Nuus on the 2nd of November 2012 and the 6th of November 2012 respectively. Refer to Appendix G for a copy and proof of the newspaper advertisements.
 - Sites notices (Size A2: 594 mm X 841 mm) notifying I&APs of the proposed activity; were placed in and around the project area (Appendix D). The site notices were written in English and Zulu. The notices were placed at the following areas on the 7th of November 2012.
 - Entrance gate to the Vlakfontein mine;
 - Transnet Gate;
 - Farm House (1);
 - Farm workers houses / Two Line Water Tank,
 - Wilge Library / Post office,
 - Concor's hostel;
 - Vlakfontein Mine Houses (houses on AEMFC property);
 - Anglo Houses (houses on Anglo property);
 - Twoline residential extension;
 - Farm House (2);
 - OPSA Oil Sep.
- Public comment period of Background Information Document;
 - An invitation letter to the public meeting and accompanying BIDs were send with registered mail on the 29th of October 2012 and emailed to I&AP's and key stakeholders on the 7th of November 2012. I&AP's for whom no e-mail address could be located were sent a Short Message Service (SMS) notifying them of the proposed project (7th of November 2012), and contact number of SRK Consulting personnel, whereby additional information could be obtained.
- Public meeting;

- The public meeting was held on the 13th November 2012 at Etoro Supermarket.
 - The, farm Vlakfontein 569 (portion 3) is owned by the Anglo Operations. A focus group meeting was held with representatives of Anglo Operations on the 5th of December 2012.
- Collation of comments received into a Comments and Response Report.

8. Need and desirability of the Proposed Project

The Vlakfontein Phase 2 operation will extend the profitability and life of the AEMFC by an additional 16 years.

Despite the slow economic recovery from the 2008 economic recession, there is still a high demand for coal in South Africa and internationally. Kusile Power Station will also be commissioned within the next few years and Vlakfontein will be a supplier to the Power Station which is in close proximity of the mine. This means that should any one of the suppliers, such as the Vlakfontein, reduce their production and deliver less coal, alternative sources would have to be found to maintain required supplies. This could result in the establishment of a new coal mine, with environmental impacts at the location of the new mine.

The proposed extension of the mining activities is not different to the surrounding environment where coal mining is common.

9. Identification of Potential Impacts

In terms of the NEMA and MPRDA regulations, as part of the scoping study objective, the EAP needs to identify and describe the environment that may be affected by the activities and the manner in which the physical, biological, socio-economic and cultural aspects of the environment may be affected by the activity.

Concerns were raised by stakeholders and affected parties during focus group discussions, comments received in writing and telephonically from stakeholders. The project team's understanding of the project, considering the particular environment and previous experience on projects of a similar nature has also lead to the identification of potential impacts to be investigated. Anticipated environmental and socio-economic impacts were identified and mitigation measures will then be developed during the EIA phase, to mitigate any potential negative impacts associated with the project. The following potential issues were identified:

Table ES2: Summary of potential Environmental and Social Impacts

Element of Environment	Potential Impact Descriptions
Air Quality	<p>Potential for dust generation during the construction phase of the new open cast pit</p> <p>Potential dust and fume emissions associated with vehicle movement with respect to site preparation with respect to site preparation and driving to and from site.</p> <p>Potential for the Vlakfontein Phase 2 opencast mine to produce dust during the operational phase</p> <p>Potential for dust to be generated from the gravel surfaced roads.</p> <p>These emissions may affect the local residents and the workers on the project and may have a wider influence on the regional air quality.</p>
Biodiversity	<p>Potential loss of habitat associated with the wetlands and pans;</p> <p>Potential disturbance of vegetation and fauna.</p> <p>Potential for roads to contribute to fragmentation of local biodiversity, however the indigenous flora and fauna has already been disturbed by human and mining activities.</p> <p>Potential vibration, as a result of the proposed development, and will be assessed and the impact on the biodiversity in the area should be determined.</p>
Groundwater	<p>Potential modifications to groundwater flow.</p> <p>Potential groundwater contamination.</p> <p>Potential residual impacts after closure</p> <p>Hydro carbon contamination from the historical oil bunker, the adjacent underground workings having been used for oil storage in the past.</p>
Heritage	<p>Graves were found on the North-eastern corner of the farm Vlakfontein Extension 3. The graves will be fenced off, and the area around it will not be mined. The required buffer will be maintained and no mining will take place within this distance</p> <p>No other cultural heritage resources or graves within the Vlakfontein Phase 2 opencast mine footprint was uncovered. During the construction, if any artefacts are uncovered they will be reported to the nearest museum where a heritage practitioner will conduct an assessment and provide mitigation measures.</p>
Noise and Vibration	<p>Potential for construction activity at the project site to result in some localised noise.</p> <p>Potential for ambient noise to be generated by the Vlakfontein Phase 2 opencast mine plant.</p> <p>The construction and operation of the Vlakfontein Phase 2 opencast mine may contribute to noise and vibration impacts.</p>
Safety	<p>Potential for damage to property and life from blasting and vibrations including fly rock;</p> <p>Potential for increased traffic resulting in reduced road traffic safety;</p> <p>Potential for reduced visibility on roads due to dust contributing to an increased potential for road accidents.</p>
Sense of place	<p>Potential for damage to the roads affecting business, tourist and local use of roads;</p> <p>Potential for increased numbers of people in the area;</p> <p>Potential for increased traffic to the area contributing to the on-going damage of roads and traffic safety concerns;</p> <p>Loss of bird and animal life and scenic beauty of the area;</p> <p>Change in landscape and topography.</p>
Socio-Economic	<p>The extension of the mine to Phase 2 has a positive impact in the form of additional temporary and permanent employment opportunities.</p> <p>Negative impacts may include:</p> <p>Potential influx of people to the area looking for employment;</p> <p>Potential for skills transfer and skills development;</p> <p>Potential health and safety impacts of surrounding community members as a result of increased traffic and waste generation.</p> <p>Potential visual impacts on surrounding sensitive receptors including neighbouring communities</p> <p>Loss of agricultural land;</p> <p>Potential for reduced agricultural productivity on adjacent properties due to increased dust and reduced water availability or quality;</p>

Element of Environment	Potential Impact Descriptions
	Potential loss of income ; Potential reduced property values; Potential lack of security in further investment in properties; Disparity between market value and replacement value of property;
Soils/Land Use/Land Capability	Potential loss of soil resource. Potential loss of land capability. Potential for construction infrastructure to lead to a loss of resource and change in land capability due to hydrocarbon and other contamination. Potential change in land use. Potential soil erosion from run-off passing over disturbed areas and soil stockpiles. Potential soil contamination due to spillage of oil, fuel and chemicals. Existing land capability will be disturbed.
Surface water	Potential surface water contamination. Potential silt generation impact of surface water. Potential discharge of water to natural environment. Potential decrease of quantity of surface water runoff to surrounding minor catchments. Removal of wetlands, due to the proposed stream diversion and the mining operation. Cumulative contribution of pollution of the Saalklapspruit River to the proposed stream diversion.
Topography	The topography of the site will be altered as a result of the construction of the Vlakfontein Phase 2 opencast min, other infrastructure and the proposed stream diversion. Temporary modifications to topography as a result of Vlakfontein Phase 2 opencast mine and proposed stream diversion.
Visual	Facilities would be expected to be located outside of direct line of sight, as far as practical, i.e. not on topographical highs if possible. However, recognizing that Vlakfontein Phase 2 mine dumps and topsoil dumps are elevated structures and the area is generally quite flat some visual impact will occur to some community members and some screening of the facilities may be required.

Although mitigation and management measures are already applied in terms of the existing Vlakfontein Phase 1 authorisation, the existing Environmental management plan will be revised in order to add the additional developments and infrastructure, to mitigate and manage these anticipated impacts to an acceptable level.

10. Specialist Studies

With regard to Specialist Studies, most of the information exists from previous studies undertaken for the Vlakfontein Phase 1 Environmental Authorisation (Pre-mining in 2009) This information will however be reviewed for adequacy and use within this process, most of the Specialist Studies however needs to be updated and remodelled to include the current operation.

The following specialist studies will be studied and interrogated and where required be updated to inform the EIA:

- Air quality assessment, for the ambient noise levels changed since 2009;
- Aquatic ecology assessment; a cumulative assessment due to the loss of wetlands in the broader area;
- Blasting and vibrations assessment;
- Closure cost assessment;
- Geochemistry assessment;
- Noise assessment (desktop update);;
- Socio-economic assessment of the region(desktop update);

- Traffic assessment (desktop update);
- Visual aspects (desktop update).

11. Evaluation of the EMP/EIA

Before the proposed development can proceed, approval has to be obtained from the regulatory authorities. The Final Scoping Report will be submitted to the Mpumalanga Department of Minerals and Resources (DMR) and the Department of Environmental Affairs (DEA) for review. The Impact Assessment Phase will entail confirmation of detailed specialist investigations, reporting and further stakeholder involvement. Once a Final EIA/EMP is submitted to DMR and DEA, a decision can be taken as to whether the project may proceed or not.

DMR and DEA will consult with various other government departments before making a decision on whether or not to authorise this project, and to take into account other legislation for example, the National Water Act, (NWA), and the National Environmental Management Act. Waste Management Act (NEMA: WA), the Mine, Health and Safety Act (MHSA), the South African Heritage Resources Act (SAHRA) and others.

12. Proposed Process for the Remainder of the Studies

Public Involvement

The following is recommended with regard to the public consultation to be conducted during the EIA/EMP Phase of the study:

- A progress feedback letter will be sent to all identified or registered stakeholders following the completion of the Scoping Phase to those that participated to date, and to keep them informed of the next steps in the project;
- The key decision making authorities will then comment on the Final Scoping Report and Plan of Study (POS) with regards to the way forward for the Impact Assessment Phase of the study. This work will sequentially proceed accordingly;
- A Draft EIA/EMP Report will then be generated for the proposed development and this will, once again, be made available for public comment for a 40-day commenting period;
- In addition a public meeting will be held with stakeholders. Summary reports and an updated comments and repose report will be distributed to all registered stakeholders;
- The Final EIA/EMP Report will be updated with any issues and concerns raised by the registered I&APs, and further again made available for a 21 day commenting period to the public;
- Thereafter the report will be finalised and submitted to lead decision making authorities (DMR, DEDET, DEA and DWA) for a decision regarding the project;
- The environmental authorisation decision will be communicated to all key stakeholders as well as those that have participated in the study to date; and
- The project decision-making process will ensure that I&AP inputs are considered. This does not mean that the development should be stopped by public involvement, but rather that decisions be guided by peoples input.

13. Summary of Issues Raised by Interested and Affected Parties

Most of the issued related to Air Quality, Blasting or cracked houses, Socio economic issues (job creation and safety) and the Water or wetland.

Air Quality,

- My husband and child are sick because of the mine;
- The mine is affecting us badly. It is destroying us due to the dust it creates. It feels as if the mine doesn't care about us. Our health is being damaged, as we have chest ailments now. I am crying because we are being badly affected by the dust and we are not being compensated with money, I am now suffering from Tuberculosis;
- How is the mine going to control the dust?;
- I am complaining about the smoke and dust due to blasting from the mine. I took my child to the Doctor, as the child has lung problems. The doctors say the child is sick due to the dust;
- We are concerned about all of the mines in our area. The atmosphere has changed due to the dust and noise.

Blasting and vibrations;

- My house is cracking due to the mines blasting;
- Our houses are damaged and messed up very badly, the mine had promised us a better place to stay but they are not doing so;
- Our houses crack and nobody gets compensated by the mines even when they are gaining millions;
- I am complaining about the blasting, because we were raising this for many times, but the mine keep on promising that they will move the people but they don't;
- If there is any blasting within 500 meters of the pipelines Transnet must be notified;
- What is going to happen in regard to houses that were affected by the blasting?
- During blasting my house is vibrating, after blasting my walls are cracked, I need compensation from the mine, as I am unemployed.

Closure land use;

- What is the intended land use post closure for this section of the mine?;
- What will happen to the mine when the mine is done?.

Socio economic.

- Compensate the community with free electricity or fix our houses. Give us some coal that we are not cold during the winter;
- Please instead of damaging out property, try to help us improve and give us electricity instead we want to benefit from the surrounded mines;
- We want electricity;
- Today they say they are moving to Phase 2, which means they finish with Phase 1. We affected by the dust why they don't move us and they will work in peace.
- The houses falling apart please move us thanks.
- I stayed there at Vlakfontein just want know that since the people are going to move to Phola, how are they going to survive there because they are unemployed and as they stay there now they do something to eat and support their children;
- What will the company do in regard to the nearest community, workers, employees?
- What is the plan for the company in its procurement on BBBEE score card?

- When you advertise contracts for supply or employment, please advertise in Witbank News newspaper;
- We are business people; we request the Mine management to engage with the surrounding community on how to obtain information regarding more business opportunities from the mine;
- Is the mine going to employ the people from that place or what?;
- I own a small company; we need help to get the contract to transport coal from the Vlakfontein Phase 2 mine;
- People from Phola Location are still looking for employment, please we are the women in business, and we need help;
- Our people do not get employment and places to stay.
- In terms of job creation, around communities, what about them because they don't get opportunities even general workers from straight to the mine.

Noise,

- I stay in Two-line, plastic, dust and noise is a problem;
- We are concerned about all of the mines in our area. The atmosphere has changed due to the dust and noise.

Safety,

- What is being done in regard to the trucks on the road?
- How are you going to transport coal to the crusher?

Water or Wetland;

- Stormwater from the mine's side to our houses is a concern;
- Wetlands along the N12 Highway, will they be impacted upon if the water regime changes
- How would Vlakfontein manage decant water from the old underground and potentially from the new pit after closure?
- My groundwater and drinking water dried up.
- What will the impact be of moving the stream as it can cause wash – away's on the lines as this is then not its natural route.
- What about the law prohibiting mining in a Wetland.

Other

- Bring the mine managers who are responsible for answering the questions.
- We have meetings, we raise our concerns and nothing happens.
- What is the life span of the mine
- When we write our concerns, we expect a reply;
- When we ask to speak to the mine managers, they say they don't have answers, and they don't even talk about moving us. We keep on attending the meetings.

Conclusion

The benefits, disadvantages and impacts of the proposed Vlakfontein Phase 2 mine will be investigated during the Impact Assessment Phase, it is however a great concern that over 57% of the Phase 2 area is wetland area. SRK supports the fact that wetlands should be avoided and protected. The Phase 2 expansion area (North Block) was excluded from the original (Phase 1) application, as a result of the need for further specialist input into the more sensitive wetlands in the area. There are therefore several anticipated impacts that will require a more detailed investigation, assessment and potential for mitigation and management.

The terms of reference explains the plan on how the Proposed Vlakfontein Phase 2 project will proceed. SRK suggest that additional specialist studies needs to be done, in order to fully gasp the full extent of the Vlakfontein Phase 2 impacts.

More detailed investigation will be done during the Impact Assessment Phase, whereby together with the comprehensive PPP to be followed, these impacts will be quantified and the proposed mitigation and management assessed to determine whether the severity of their impacts are reduced to an acceptable level, and if the proposed development is authorized with proposed mitigation and management measures, or whether further assessment, or mitigation and management is required. Additional impacts may be identified during the Impact Assessment Phase, which may require further investigation and consideration that are not so far identified.

It is foreseen that the detailed Impact Assessment Phase will meet all the requirements of the NEMA, NWA and the MPRDA ensuring that the regulatory authorities are provided with sufficient information enabling informed decision making.

YOUR COMMENT ON THE SCOPING REPORT

This Scoping Report will be available for comment for a period of 21 days from 16 April to 9 May 2013. Copies of the Scoping Report, and the Comments and Response Report, are available at the following public places and upon request from the public participation office:

PUBLIC PLACE	LOCALITY	TELEPHONE
Phola library	Qwabe Street, Phola, Mpumalanga.	(013) 645 0094
Ogies Public Library	Old School Building, No. 1 Main Street, Ogies, Mpumalanga.	Ms Ntombikayise Jele (013) 643 1024, (013) 643 1150 or (013) 643 1027
Eltoro Supermarket, Butchery and Conference Centre	Ogies, Mpumalanga.	Lientjie Schambriel (013) 243 5694
Post Office at Wilge Village.	Ogies, Mpumalanga.	
SRK Website	Pretoria; Gauteng	(012) 361 9821

The following methods of public review of the Scoping Report are available:

- Completing the comment sheets enclosed with the report (see attached Background Information Document);
- Additional written submissions; and
- Comment by email, fax or telephone.

DUE DATE FOR COMMENT

9 May 2013

Please submit comments to the public participation officers:

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