



**BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT  
PROGRAMME REPORT FOR APPLICATION FOR A CHROME ORE  
PROSPECTING RIGHT**

**In respect of Elandsfontein 402 KQ, in Moses Kotane Local Municipality, North  
West Province.**

**DMR Ref: NW/30/5/1/1/3/2/1/12238 EM**

**February 2018**

## DOCUMENT SUMMARY DATA

**PROJECT:** Basic Assessment Report and Environmental Management Programme Report for Application for a Chrome Ore Prospecting Right. In respect of Elandsfontein 402 KQ, in Moses Kotane Local Municipality, North West Province.  
**DMR Ref: NW/30/5/1/1/3/2/1/12238 EM**

**CLIENT:** Samancor Chrome Limited  
**CONTACT DETAILS:** Eric Thabo  
Telephone number: 072 552 9688

**CONSULTANT:** DMT Kai Batla (Pty) Ltd  
**PREPARED BY:** Samantha Moodley  
**CONTACT DETAILS:** PO Box 41955  
Craighall  
2024  
Telephone number: (011) 781 4548/071 678 1951  
Fax number: (086) 545 2720  
E-mail: [Samantha.Moodley@dmt-group.com](mailto:Samantha.Moodley@dmt-group.com)





## mineral resources

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

### **BASIC ASSESSMENT REPORT**

**And**

### **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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

<b>NAME OF APPLICANT:</b>	Samancor Chrome Limited
<b>TEL NO:</b>	011 245 1104
<b>FAX NO:</b>	+27 86 601 2165
<b>POSTAL ADDRESS:</b>	PostNet Suite 803 Private Bag x9 Benmore, 2010
<b>PHYSICAL ADDRESS:</b>	Block B, Cullinan Place, 1 Cullinan Close Morningside, Sandton, 2199
<b>FILE REFERENCE NUMBER SAMRAD:</b>	NW/30/5/1/1/3/2/1/12238 EM

## 1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

**It is therefore an instruction that** the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

**It is furthermore an instruction that** the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

## 2. Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process—

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
  - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
  - (ii) the degree to which these impacts—
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources; and
    - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
  - (i) identify and motivate a preferred site, activity and technology alternative;
  - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
  - (iii) identify residual risks that need to be managed and monitored.

**PART A**  
**SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT**

**1. Contact Person and correspondence address**

**a) Details of:**

**i) Details of the EAP:**

Table 1: EAP details

<b>Name of the Practitioner:</b>	Samantha Moodley
<b>Tel No.:</b>	011 781 4548/ 071 678 1951
<b>Fax No.:</b>	086 545 2720
<b>e-mail address:</b>	<a href="mailto:Samantha.Moodley@dm-tgroup.com">Samantha.Moodley@dm-tgroup.com</a>

**ii) Expertise of the EAP**

**(1) The qualifications of the EAP (with evidence)**

The appointed EAP has the following qualifications:

- B.Soc. Sc. Honours (Geography and Environmental Management) University of KwaZulu Natal, 2005.
- Bachelor of Social Science (B.Soc.Sc) (Geography and Environmental Management), University of KwaZulu Natal, 2004.

**(a) Summary of the EAP's past experience (In carrying out the Environmental Impact Assessment Procedure)**

A highly competent Environmental Consultant with 12 years' experience and advanced knowledge in the global environmental and engineering fields, predominantly in mining, oil and gas, infrastructure development, industrial developments, minerals and metals. Successfully led and contributed to ESIA's for large multi-disciplinary projects and accomplished in producing sound scientific reports that are understandable to non-technical stakeholders. Strong communicator with project and technical teams, client, authorities and public role-players. Successful track record in environmental permitting processes, managing specialists, project budgets, project management, conflict resolution, project administration, interfacing with other disciplines, environmental strategy and policy, environmental and related legislation (South African and international) and public participation processes.

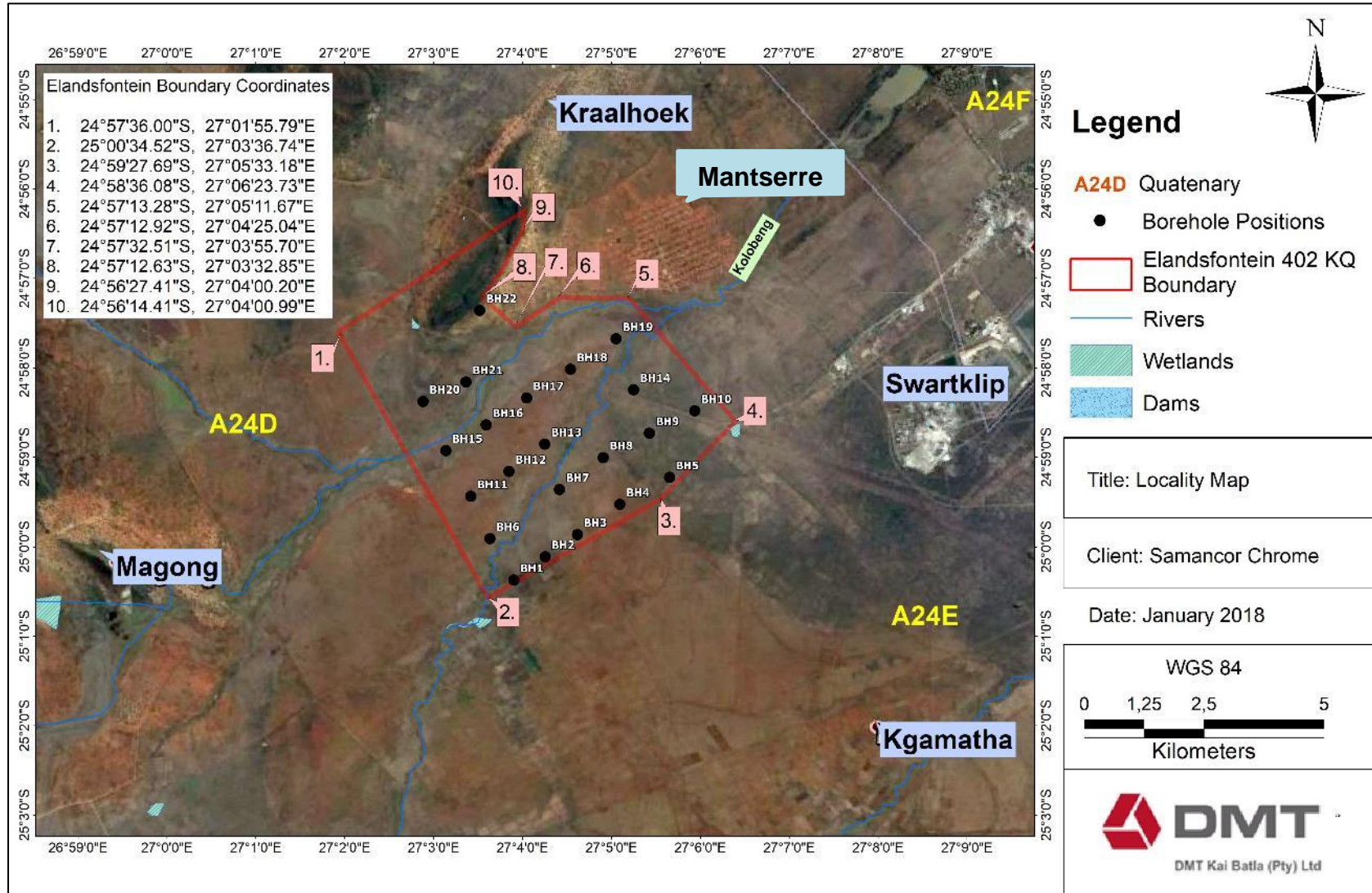
**2. Location of the overall Activity**

Table 2: Property details

<b>Farm Name:</b>	Elandsfontein 402 KQ (Portion 1 and Remaining Extent)
<b>Application area (Ha)</b>	2962.3379 hectares (ha)
<b>Magisterial district:</b>	Bojanala District Municipality
<b>Distance and direction from nearest town</b>	Elandsfontein 402 KQ is located 18km west of the town of Northam as the crow flies. It is accessible via a paved road that diverts from the R510 through Union Mine. This road crosses the property after passing the village of Mantserre.
<b>21 digit Surveyor General Code for each farm portion</b>	T0KQ00000000040200000

**b) Locality map**

(show nearest town, scale not smaller than 1:250000).



**Figure 1: Locality map**

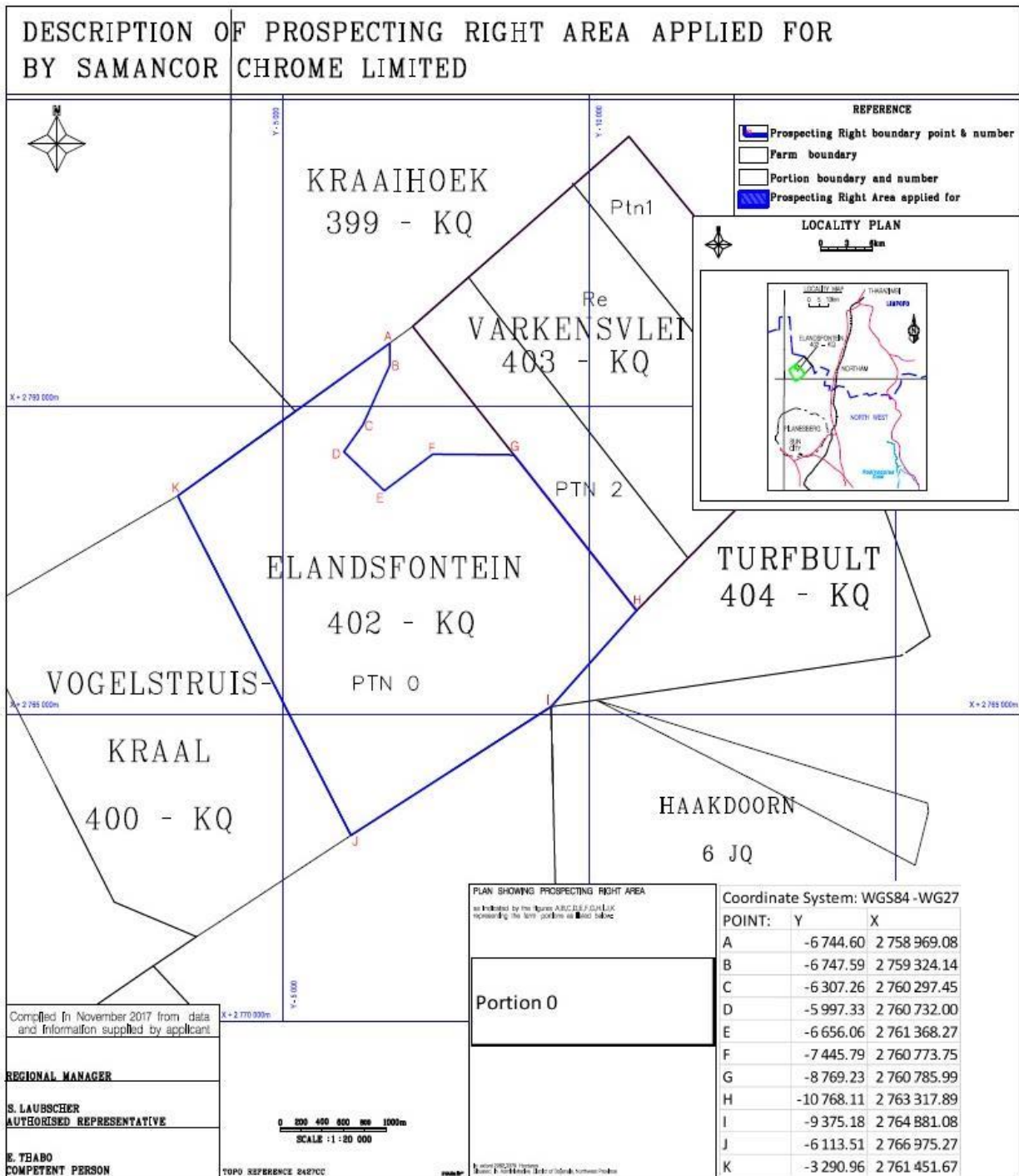


Figure 2: Map showing Elandsfontein and the adjacent properties.

**c) Description of the scope of the proposed overall activity.**

*Provide a plan drawn to a scale acceptable to the competent authority but not less than 1 : 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.*

**(i) Listed and specified activities**

Section 16 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) requires, upon request by the Minister that an Environmental Management Programme be



submitted and that the applicant must notify and consult with Interested and Affected Parties (I&APs). Section 24 of the NEMA requires that activities which may impact on the environment must obtain authorisation from the relevant authority before commencing with the activity. Such activities are listed under Regulations Listing Notice 1 Government Notice (GN) 327, Listing Notice 2 GN 984 and Listing Notice GN 324 of NEMA- as amended in April 2017. Please refer to Table 2 for the details in terms of the listed activities.

**Table 3: NEMA triggered activities**

<b>NAME OF ACTIVITY</b> (E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc ...etc...etc E.g. For mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc... etc... etc) )	<b>Aerial extent of the Activity Ha or m<sup>2</sup></b>	<b>LISTED ACTIVITY</b> Mark with an X where applicable or affected.	<b>APPLICABLE LISTING NOTICE</b> (GNR 544, GNR 545 or GNR 546)
Establishment of 22 drilling sites. The drilling method to be used for the 22 holes is diamond drilling.	2962.34 Ha	X	GNR 327, Listing Notice 1, Activity 20
Clearing of 300m <sup>2</sup> of indigenous vegetation within a Critical Biodiversity Area (CBA). The demarcated working area per site is 100 m <sup>2</sup> (which equals 2200m <sup>2</sup> or 0.2200 Ha).	0.2200 Ha	X	GNR 324, Listing Notice 3, Activity 12

**(ii) Description of the activities to be undertaken**

*(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)*

Samancor Chrome Limited (from here on referred to as Samancor) is lodging an application for a Prospecting Right for the exploration of Chrome (Cr) (Middle Group and Lower Group seams) without bulk sampling.

The mineral distribution in the portions of the area Elandsfontein 402 KQ will be determined following the mineral exploration methods which are outlined in the text below. These mineral exploration methods are planned to follow the mineral exploration value chain where a systematic, phased and cost-effective approach of determining the minerals distribution is followed. At the end of each phase, a decision will be taken to proceed or to abandon the project.

**Phase 1:**

*Data acquisition and Literature review:*

A literature review will commence with data collection- a process of gathering and measuring information in an established systematic manner that enables one to achieve the objective of obtaining information regarding an area one is interested in conducting prospecting activities on. A review of all gathered data and information will result in compilation of a desktop geological report. The desktop study will aid in compiling a preliminary geological model of the area to be utilized in the planning of the geological mapping and sighting of drill holes. This will

be aided by visits to the area, which will be conducted in order to acquire information that might not be available in literature. Detailed geological information will then be gathered which will be used in planning further prospecting and exploration strategy.

#### *Geological mapping*

Geological mapping includes include the field traverse in the farm collecting geological information. Lithological contacts, outcrops, faults, dykes, folds will be mapped including their attitude and characteristics like dip and strikes, thickness etc. This information will be correlated with the literature study information in order to correlate with the correct stratigraphy and lithological units.

#### *Geophysical survey*

A decision will be taken to conduct geophysical observations or procure geophysical data from commercial sources and organizations that collect them. The information that will be acquired will be chiefly magnetic which will be aimed at delineating structures of higher or lower magnetic susceptibility than the surrounding country rocks. If Samancor conducts the observations, these will be airborne surveys conducted with the auspices of a contractor.

### **Phase 2:**

#### *Reconnaissance drilling*

Boreholes will be planned based on the results of the desktop study and geological mapping. Planning includes design of the drilling programme (i.e. determine how many boreholes will be drilled and in which locations the boreholes will be drilled).

Drilling will be conducted using a diamond drill rig. The drilling will be done to ascertain the existence of the expected minerals, its thickness and distribution. The number of boreholes planned is 22. The holes will be drilled to two different sizes (NQ, and BQ)- the size will be determined by the formations. The depths will vary from relatively shallow (approx. 30m) to nearly 150m. The exact depths of the boreholes will be determined while the drilling program is underway and influenced by the depths and dips measured in the previous boreholes.

#### *Sample analysis*

Samples will be sent to a Samancor laboratory for chemical analyses. Resource modelling will be undertaken using the geological data determined from the data collected.

### **Phase 3:**

#### *Resource Modelling and Interpretation of the results.*

A preliminary economic assessment will be conducted to determine whether a project has the potential to be viable. At this stage, the mineralization, regardless of its quantity and quality, is always considered to be a mineral resource. This study is generally based on industry standards rather than derived from detailed, site-specific geological data.

### *Pre-feasibility study*

Information gathered during pre-feasibility studies includes but is not limited to macro and micro economics, mining methods, human resources, environmental, financial, metallurgical etc. In the prefeasibility studies, a series of mining methods are evaluated with the orebody and a most suitable one is chosen. Costs relative to the mining methods are estimated and financial models are built. In the feasibility studies, more information is gathered around the chosen mining method and again models are built to determine the feasibility of the project.

### **Phase 4:**

#### *Detailed Feasibility Modelling and Feasibility Study*

Phase 4 sees the feasibility studies being conducted in greater detail, once all exploration activities have been conducted and completed.

### **Ancillary Activities.**

#### *Access Roads*

Elandsfontein is accessible via a paved road that diverts from the R510 through Anglo American's Anglo Union Mine, located east of Elandsfontein. This road crosses the property after passing Mantserre village (please see Figure 1)- allowing project personnel access to the property. As such, no new access roads will be constructed for the purpose of the proposed activity.

Once the prospecting right has been granted, the applicant will negotiate access with the land owner in order to do a detailed technical evaluation of the prospecting area. A contract will be drawn up and negotiated with the land owner regarding access and the suitability and time of year that is preferred for prospect drilling.

#### *Water Supply*

It is envisaged that the drilling contractor will use a full cart of water (i.e. 500 litres) over two days. On average, 40m is drilled per day and approximately 6 litres of water is used per metre drilled. In terms of sourcing the water, a local borehole will be used in the absence of a local water supply. A road tanker will be utilised for potable water supply- which includes water for drinking purposes and for dust suppression.

With regards to dewatering the boreholes, the appointed contractor will ensure that sufficient measures are implemented to extract any water present in the boreholes prior to these being backfilled and rehabilitated. The process of dewatering is to be included in the contractor's method statement.

#### *Ablution facilities*

Ablution facilities at the drill site will involve the installation of portable toilets by a registered service provider. Sufficient toilet facilities will be provided near construction camp. The toilets will be properly covered and ventilated, and should contain hand washing facilities. The toilets will be placed at a suitable distance from any watercourse, and they will be properly secured to the grounds to avoid toppling in the case of a wind/storm event. The toilets should be cleaned and emptied regularly with waste being disposed of at the nearest treatment facility.

#### *Temporary Office Area*

A temporary site office to provide a shaded area will be erected at the drill sites. No on - site electricity generation through the use of generators will be undertaken. Meals will be provided to the staff and workers as no heating and/or cold storage facilities will be available. A shaded eating area will be provided. The images below depict the typical site camp set up.



**Figure 3: Depiction of a typical prospecting site camp set up by Samancor contractors**

#### *Accommodation*

No accommodation for staff and workers will be provided on - site and all persons will be accommodated in nearby towns. Workers will be transported to and from the prospecting site on a daily basis. Night security staff will be employed once equipment has been established on site.

#### *Blasting*

As the Prospecting Works Programme (PWP) does not allow for bulk sampling, no blasting will take place.

#### *Storage of Dangerous Goods*

Diesel will be brought on site using a bowser with a capacity of 500 litres and the drill rig will be filled on site. As such, no diesel or any other hazardous or dangerous goods of the like will be stored on site.

## d) Policy and Legislative Context

Table 4: Applicable legislation to this Application

<p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b></p> <p>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p><b>REFERENCE WHERE APPLIED</b></p>	<p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b></p> <p>(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
<p><b>Legislation</b></p>		
<p><b>Constitution of South Africa</b></p> <p>The Constitution specifies that everyone has a right;</p> <p>a. to an environment that is not harmful to their health or wellbeing; and</p> <p>b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:</p> <p>i. prevent pollution and ecological degradation;</p> <p>ii. promote conservation; and</p> <p>iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>	<p>Prospecting activities</p>	<p>An EMPr for proposed prospecting activities has been drafted to ensure that prospecting activities shall be conducted in such a manner that significant environmental impacts are avoided, where significant impacts cannot all together avoided be minimised and mitigated in order to protect the environmental right of South Africans.</p> <p>The constitution, and the stipulations it sets out on environmental management are the guiding principles on which environmental and development legislation has been conceptualised. The responsibility that the Applicant has to the environment needs to be in line with the Constitution- hence the need to ensure that all potential harm and pollution is highlighted and brought to the attention of the relevant decision makers (in this case, the Department of Mineral Resources (DMR)).</p>
<p><b>National Environmental Management Act, No. 107 of 1998 (as amended) (NEMA)</b></p> <p><b>Environmental Impact Assessment Regulations-</b></p>	<p>Prospecting activities</p>	<p>In terms of the National Environmental Management Act, No. 107 of 1998 (as amended) (NEMA), an application for Environmental Authorisation was submitted to the DMR on 22 November 2017- (NW 30/5/1/1/3/2/1/12238 EM). This is to authorise the two activities identified in the EIA Regulations GNR 327<sup>1</sup>. The DMR requested the submission of the</p>

<sup>1</sup> Activity 20: Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—  
 (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or

<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b> (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	<b>REFERENCE WHERE APPLIED</b>	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b> (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
<b>as amended: GNR 327 (Listing Notice 1) and GNR 324 (Listing Notice 3).</b>		Basic Assessment Report and EMP within 90 days of the letter (13 March 2018). As such Samancor has appointed DMT-KB as independent EAP to undertake the Basic Assessment Process associated with the Prospecting Right Application. All potential impacts of the proposed prospecting activities have been assessed. The implementation of mitigation measures is included as part of the EMPr and will continue to apply throughout prospecting
<b>Minerals and Petroleum Development Resources Act, Act 28 of 2002 (MPRDA) section 16 (as amended)</b>	Prospecting activities	A Prospecting Right Application has been submitted to the DMR by the Applicant (Ref. No. NW/30/5/1/1/3/2/1/12238 EM).  In terms of Section 16 (3) (b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority. This Report has been compiled as per the requirements of the DMR.
<b>National Environmental Management: Biodiversity Act, 2004</b>	Vegetation clearing	The proposed prospecting will occur within a Critical Biodiversity area. The EMPr will regulate the applicant's implementation of biodiversity management measures to be implemented as part of the project- which are aimed at managing and conserving biological diversity, as well as to minimising the proliferation of alien invasive species.
<b>National Water Act, Act 36 of 1998 (NWA)</b>	N/A	The National Water Act, 1998 (Act No. 36 of 1998) mandates the Minister of Water Affairs to ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons. Furthermore, the Act guides the steps towards the application for and obtaining the required authorisation for proposed developments, should

(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;

but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.

<p><b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b></p> <p>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p><b>REFERENCE WHERE APPLIED</b></p>	<p><b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b></p> <p>(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)</p>
		<p>such developments trigger the need for authorisation prior to their commencement.</p>
<p><b>National Environmental Management: Waste Act, Act 59 of 2008 (NEMWA)NEM: WA (as amended)</b></p>	<p>Management Measures; and environmental awareness plan</p>	<p>The generation of potential waste will be minimised through ensuring employees of the drilling contractor are subjected to the appropriate Environmental awareness campaign before commencement of drilling. It is anticipated that no more than 30m of waste will be generated during operations. It is unlikely that this volume will be exceeded, however the client will comply with legislation in terms of waste management- in particular GN No. 926 of 29 November 2013: <b>National Norms and Standards for the Storage of Waste.</b></p> <p>The Applicant and the appointed contractor will ensure that all waste generated during the drilling activities will be disposed of in a responsible legal manner. Proof of legal disposal will be maintained on site. The EMPr lists measures to manage any waste generated during prospecting.</p>
<p><b>Noise Regulations 1182 and 1183 under the Environment Conservation Act (Act 73 of 1989)</b></p>	<p>Management measures</p>	<p>The drilling and prospecting process will result in substantial noise generation. Limits set under this Act and the associated regulations should be adhered to throughout the prosed process.</p> <p>Noise standards and management measures are discussed further in Part B of this report.</p>
<p><b>National Environmental Management Air Quality Act (NEM: AQA, No 39 of 2004)</b></p>	<p>Management measures</p>	<p>The Air Quality Act governs the standard of air quality and sets out the requirements to be met in terms of maintaining certain air quality levels. Any potential developer must take heed of the declaration of controlled emitters (Part 3 of Act), controlled fuels (Part 4 of Act) with relevant emission standards, as well as the Dust Control Regulations (R. No. 827 of 1 November 2013). These requirements need to be met during the operations to ensure that the air quality in the project area is not impacted on negatively.</p>

<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b> (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	<b>REFERENCE WHERE APPLIED</b>	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b> (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
<b>National Heritage Resources Act, 25 of 1999 (NHRA)</b>	Management measures	Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and the Provincial Heritage Authority notified in order for an investigation and evaluation of the find(s) to take place.  As part of the consultation process, the North west Provincial Heritage Resources Agency (NW PHRA) will be consulted, and comments solicited from them regarding this application.
<b>Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)</b>	Management measures	This Act will be enforced during the construction and it serves to mitigate any potentially negative impacts the proposed project may have on any of the labour force.
<b>Municipal Plans and Policies</b>		
<b>Bojanala District Municipality Integrated Development Plan 2012/2017</b>	Environmental Baseline	IDPs displays the local government's efforts in providing basic services, providing a safe and clean environment while also creating a favourable environment for local economic development. These documents highlight the need to preserve the natural environment in the area by conducting mineral exploration in a responsible manner in consideration of the receiving environment.
<b>Moses Kotane Integrated Development Plan 2012-2017</b>	Environmental Baseline	Mining and mineral exploration is a key economic sector within the Moses Kotane Local Municipality and the North West Province as a whole. The document also highlights the need to preserve the natural environment in the area by conducting mineral exploration in a responsible manner in consideration of the receiving environment.
<b>Moses Kotane Local Municipality Spatial Development Framework (SDF) 2011.</b>	Environmental Baseline	The applicant takes into consideration the need to maximise economic benefit from mining industrial, business, agricultural and tourism development within the area. As well as to promote a climate for economic development in line with the municipal development frameworks.
<b>Standards, Guidance and Spatial Tools</b>		
<b>South African National Biodiversity Institute</b>	Baseline environmental	Used during desktop research to identify sensitive environments within the prospecting rights area.



<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b> (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	<b>REFERENCE WHERE APPLIED</b>	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.</b> (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
<b>(SANBI) Biodiversity GIS (bgis.sanbi.org)</b>	description	
<b>Seri Ed ESRI 2011. ArcGIS Desktop: Version 9.3.1. Redlands, CA: Environmental Systems Research Institute:</b>	Baseline Environmental description and mapping.	Used during desktop research for mapping the locality and sensitive environments within the prospecting rights area.

**e) Need and desirability of the proposed activities.**

*(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).*

Samancor has identified the potential viability of chrome ore in the Moses Kotane area. The applicant chose to prospect for this mineral in this particular area based on previous exploration and mining experience in the northern regions of South Africa. Samancor Chrome produces a significant tonnage of chemical grade product for use by the chrome chemical industry, where it is the feedstock for the production of sodium dichromate. Some of the graded products are used as moulding sand in the casting industry. Chrome is known for its low thermal expansion properties good heat transfer properties - making it a very useful commodity.

The prospecting for the chrome ore is therefore needed to:

1. Confirm and obtain additional information concerning potential targets through minimally invasive activities (e.g. desktop studies) and invasive (e.g. drilling) activities.
2. Assess if the resource can be extracted through future mining in an environmentally, socially and economically viable manner. Should prospecting activities prove that there are feasible minerals to allow for mining, a new mine may be developed which would generate extensive employment opportunities in an area where employment is needed.

Chrome mining is a key component of the economy and the proposed prospecting is envisaged to contribute to the local economy in the long run. These contributions will include temporary employment creation, skills transferring and a [temporary] contribution to the local economy with the influx of Samancor personnel- which will contribute to the lodging and accommodation establishments in the area. Should Samancor be successful with this prospecting right

application, the envisaged contribution to the local economy can be realised through the eventual beneficiation of the chrome ore deposits.

**f) Motivation for the overall preferred site, activities and technology alternative.**

The proposed site was selected based on extensive research and on information from previous prospecting activities in the area, as well the mining operations currently in place at Union Mine. There are known chrome ore deposits in the area and mineral exploration has been approved in areas close to the proposed project area, such as farm Varkensvlei 403 KQ. Samancor is in the application process for a mining rights over Varkensvlei<sup>2</sup>, which is an adjacent property to Elandsfontein. Samancor holds prospecting rights on the farm Varkensvlei 403 KQ, and the mining right application is being conducted based on the outcomes of the prospecting that took place successfully on the subject property. As such, Elandsfontein 402 KQ is the only selected site, given the knowledge and mineral deposits on neighbouring farms.

In terms of the technologies proposed, the proposed prospecting method (i.e. diamond drilling) has been chosen based on the known success of prospecting when the method is applied. The prospecting activities proposed in the Prospecting Works Programme (PWP) is dependent on the success preceding phases of the programme, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

**g) Full description of the process followed to reach the proposed preferred alternatives within the site.**

*NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.*

Each of the phases is dependent on the results of the preceding one. As such, mapping of the prospecting activities could thus not be undertaken for inclusion in this report. The borehole location is seen in Figure 1.

The stakeholder comment period has not been undertaken yet, and therefore comments raised by I&APs have not been included in this section. However, the sections will be updated in the final report.

**h) Details of the development footprint alternatives considered.**

*With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:*

***i. the property on which or location where it is proposed to undertake the activity;***

Samancor is applying for prospecting rights on the property Elandsfontein 402 KQ (Portion 1 and Remaining Extent) based on existing knowledge of chrome ore deposits in the area. The site has been identified based on knowledge of these mineral deposits and as such, no site alternatives have been considered for the proposed activities. However, the following buffers will be applied to the final site selection:

- No drill site will be positioned within 50m of a structure; and
- Existing access roads will be utilised to access the drill sites (as far as possible).

---

<sup>2</sup> Roux, E. (2017). *EIA/EMPr Report: Application for Mining Right, Environmental Authorisation, Waste Management Licence and Water Use Licence on Varkensvlei 403 KQ*. DMR Reference Numbers: LP30/5/1/2/2/ 10130MR and LP 30/5/1/2/3/2/1(10130) EM. Volume I. Golder Associates, Report Number: 1416935-298836-2. February 2017.

**ii. the type of activity to be undertaken;**

In terms of the technologies proposed, these have been chosen based on the known long-term success of the selected drilling method and prospecting process. The prospecting activities proposed in the Prospecting Works Programme (PWP) is dependent on the preceding phase as mentioned above; therefore, no alternatives are indicated but rather a phased approach of trusted prospecting techniques.

**iii. the design or layout of the activity;**

The preferred site layout is considered to ensure that break areas and ablution facilities are located away from the drilling activities to minimise the noise impacts. Site establishment will be done with closure in mind to ensure that only the required area is disturbed. Due to the location of the proposed drilling- i.e. within reasonable distance from lodgings and accommodation- no camp site will be required. The drilling contractor can make use of existing accommodation within the area.

**iv. the technology to be used in the activity;**

The method and techniques employed for the investigation of potential targets and deposits are suitable for the proposed prospecting activities. They have been selected based on their minimal invasiveness which is envisaged to have minimal impact on the receiving environment.

**v. the operational aspects of the activity;**

The drilling will be done over a period of 24 months where drilling activities will be conducted during daylight hours to minimize exposure to the risks. If necessary the drilling can be timed to occur during school terms or holidays as may be required in certain instances by stakeholders. The time of implementing drilling activities during the course of the day may also be reconsidered in consultation with landowners. Ideally drill activities will occur continuously until such time that a hole is completed. If necessary certain holes can be drilled for a 12-hour day, with no drilling occurring during the night.

**vi. the option of not implementing the activity.**

Drilling is required in order to investigate the potential and feasibility of a resource as well as being used to generate a DMR compliant mineral resource statement. There is no potential for any future investment in a mine without the confirmation of the mineral resources which can only be obtained from drilling activities. Should the prospecting right be refused, effectively a potential chrome ore resource will be sterilised. The socio-economic benefit and most notably the future employment potential of mine development will also be lost if the prospecting activities are not implemented in order to determine the feasibility of any chrome ore deposits that may occur within the area.

**i) Details of the Public Participation Process Followed**

*Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.*

The Draft Basic Assessment Report will be submitted for comment to the competent authority, commenting authorities, landowners, surrounding property owners and other identified

stakeholders for review (see Table 5 for a list of identified stakeholders). Comments received will be recorded and included in the Final Basic Assessment Report. The following public participation process will be applied for the proposed project:

- Identification of stakeholders, including occupiers of the property, owners and occupiers of land adjacent to the site, municipal officials and relevant State Departments as part of the Public Participation Process. Stakeholders will be placed on the project database. The database will be used throughout the process to inform the stakeholders of the project activities.
- In order to canvass the issues and concerns of the broader public and to ensure that all IAPs are afforded the opportunity to comment on the application, the proposed project will be announced as follows:
  - Erection of site notices; (size A2) advertising informing the public of the application by Samancor and displaying the contact details of the EAP. The site notices serve the purpose of informing potential IAPs of the project and therefore afford them the opportunity to comment.
  - Distribution of the Background Information Document (BID) with a registration and comment sheet, and the locality map to state departments and other potential stakeholders through emails.
  - An advert will be placed in the *Rustenburg Herald* newspaper to notify the public about the Basic Assessment and Prospecting Right Application process, invite members of the public to register as I&APs on the project's database and notify the public of the availability of the Draft Basic Assessment Report.
  - A copy of the Draft Basic Assessment Report will be made available for public review for a 30-day review period from 7 February- 9 March 2018.
  - All comments received during the review period of the draft Basic Assessment as well as responses provided have will be captured and recorded within the Comments and Response Report, and included in the Final BAR.
- Once DMR has made a decision on the Application, all registered I&APs will be notified of the outcome of the application.

To date, the following have been identified as I&APs:

**Table 5: Identified Key Stakeholders**

NAME OF I&AP	INSTITUTION	POSITION
Tshilidzi Phalala	Department of Mineral Resources	Regional Manager: Mineral Regulation
Ntanganedzeni Gladys Mushome	Department of Mineral Resources	Mineral Authorisations Officer
Sebenzile Ntshangase	Department of Water and Sanitation	Environmental Specialist
Motshabi Mohlasi	North West READ	Director: Environmental Quality Management
Masego Jansen	Bojanala District Municipality	Municipal Manager
V. Molotsi		Health and Environmental Services
Maggie Ledwaba		
Linda Legotlo		
Moeng Meme Rebecca	Moses Kotane Local Municipality	Councillor – Ward 8
Tau Dorcus Dipuo		Councillor – Ward 34
Katlego Gabanakgosi	Moses Kotane Local Municipality	

NAME OF I&AP	INSTITUTION	POSITION
Chief Saltiel Ramokoka, Mr Frans Moatshe,	Baphalane ba Mantserre Community Development Trust	Chief
Sekete Mokoka	Mantserre Village	Resident
Pier de Vries	Anglo Union Mine	Mineral Resource Manager
Madeleine Bornman	Anglo Union Mine	Environmental Manager
Mr L J Bogatsu	Office of the Regional Land Claims Commissioner, North West Province	Chief Director
Mr Khathu Muruba	National Department of Rural Development and Land Reform	
Hugh Zackey	Department of Rural Development and Land Reform	District Manager
Daniel Masina	Department of Rural Development and Land Reform	Project Co-ordinator
Roelf le Roux	Magalies Water Board	
Damaria Matshaba	Environmental Justice Networking Forum (EJNF)	
David Mosome	South African National Civic Organisation (SANCO)	
Hassan Mekgoe	Luka Environmental Forum	
Mosiane Mothlabane	North West Provincial Heritage Resources Authority	
Tshifhiwa Munzhedzi	SANBI	
Okkie Stevens	South African National Roads Agency Limited (SANRAL)	Land Surveyor
Michael Yorke-Hart	South African National Roads Agency Limited (SANRAL)	Project Engineer
Precious Moeketsi Katlego Motlhabane	Eskom	

ii) **Summary of issues raised by I&APs**

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

Interested and Affected Parties	Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.				
No comments have been received on the project to date. Comments received from I&APs during the public review of the Draft BAR will be included in a Comments and Responses Report that will be submitted with the Final BAR.				

iii) **The Environmental attributes associated with the alternatives.**

*(The environmental attributes described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)*

(1) **Baseline Environment**

(a) **Type of environment affected by the proposed activity.**

*(its current geographical, physical, biological, socio-economic, and cultural character).*

### *Topography*

The topography of the proposed prospecting area and its immediate surroundings is generally flat, with a gentle slope to the north west. The landscape to the east of the site is scattered with tailings dams and rock dumps at the adjacent Anglo American Union Mine, while the area to the north west features isolated ridges and outcrops (Roux, 2017). Further north and west is the generally mountainous area of Northam, while in the far south, the Pilanesberg volcanic crater dominates the landscape (Roux, 2017).

### *Geology*

The chromitite resources in South Africa are situated within the Bushveld Complex ("BC"), which is an enormous saucer-like ultramafic/mafic intrusion extending for about 400km east to west and roughly the same distance north and south.

The ultramafic/mafic rocks of the BC are collectively known as the Rustenburg Layered Suite ("RLS") and have been subdivided, from base to top, into five zones, known as the Marginal, Lower, Critical, Main and Upper Zones. The general sequence and composition of the different zones is shown in Figure 3 below. The continuity of the Critical Zone is intermediate between that of the Lower Zone and Main Upper Zones. The Critical Zone is the host to the chromium and Platinum Group Metals ("PGM") mineralisation within the BC in our area of interest. The Critical Zone spans the areas shown in Figure 3, Elandsfontein 402 KQ falls within the critical zone as seen in Figure 4. Desktop studies and high level geological mapping indicate the occurrence of the chromitite seams of the lower groups ("LGs") and middle groups ("MGs").

The igneous layering within the Critical Zone is remarkably uniform over much of the BC, with individual layers traceable for tens to hundreds of kilometres. It may be subdivided into lower and upper sections and is made up of cyclic units consisting of chromitite, pyroxenite, norite and anorthosite. Cycles in the Lower Critical Zone are entirely ultramafic in character. Cycles in the Upper Critical Zone comprise ultramafic lithologies and also norite-anorthosite.

Chromitite layers occur throughout the Critical Zone, usually, but not always, at the base of crystallisation cycles. The chromitite seams have been classified into lower, middle and upper groups, with the Lower Group occurring in the Lower Critical Zone and the Upper Group in the Upper Critical Zone. The Middle Group chromitite seams straddle the boundary between lower and upper divisions of the Critical Zone. The chromitite seams are named according to their location within the layered succession, with numbers commencing from the bottom up, with the lowermost group being named LG1, followed by LG2, LG3, etc. in the Lower Group (consisting of 7 layers), progressing to MG0, MG1, MG2, etc. in the Middle Group (consisting of 4 layers), and then two layers in the Upper Group, UG1 and UG2. The thickness of these chromitite layers ranges from several millimetres to several metres and named chromitite layers may comprise multiple, composite layers of chromitite separated by interlaminated silicate rocks. The thickest chromitite layers, specifically the LG6 and MG1, are mined for their chromite content.

The target area of this application is underlain by rocks of the Critical Zone of the BC, consisting of chromitite interlayered with pyroxenite, norite, anorthositic norite, and mottled anorthosite. Figure 4 shows the general geology underlying Elandsfontein.

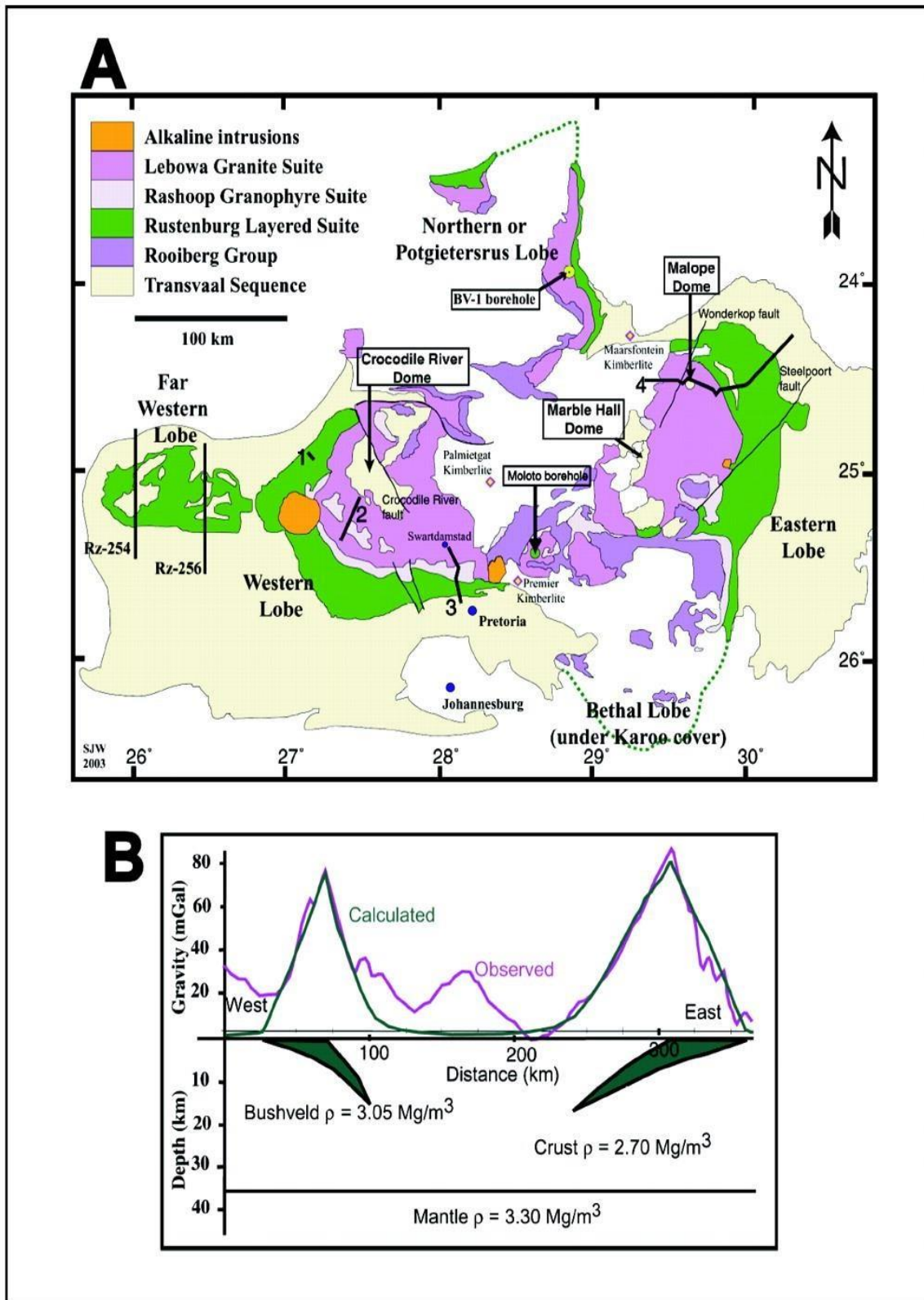
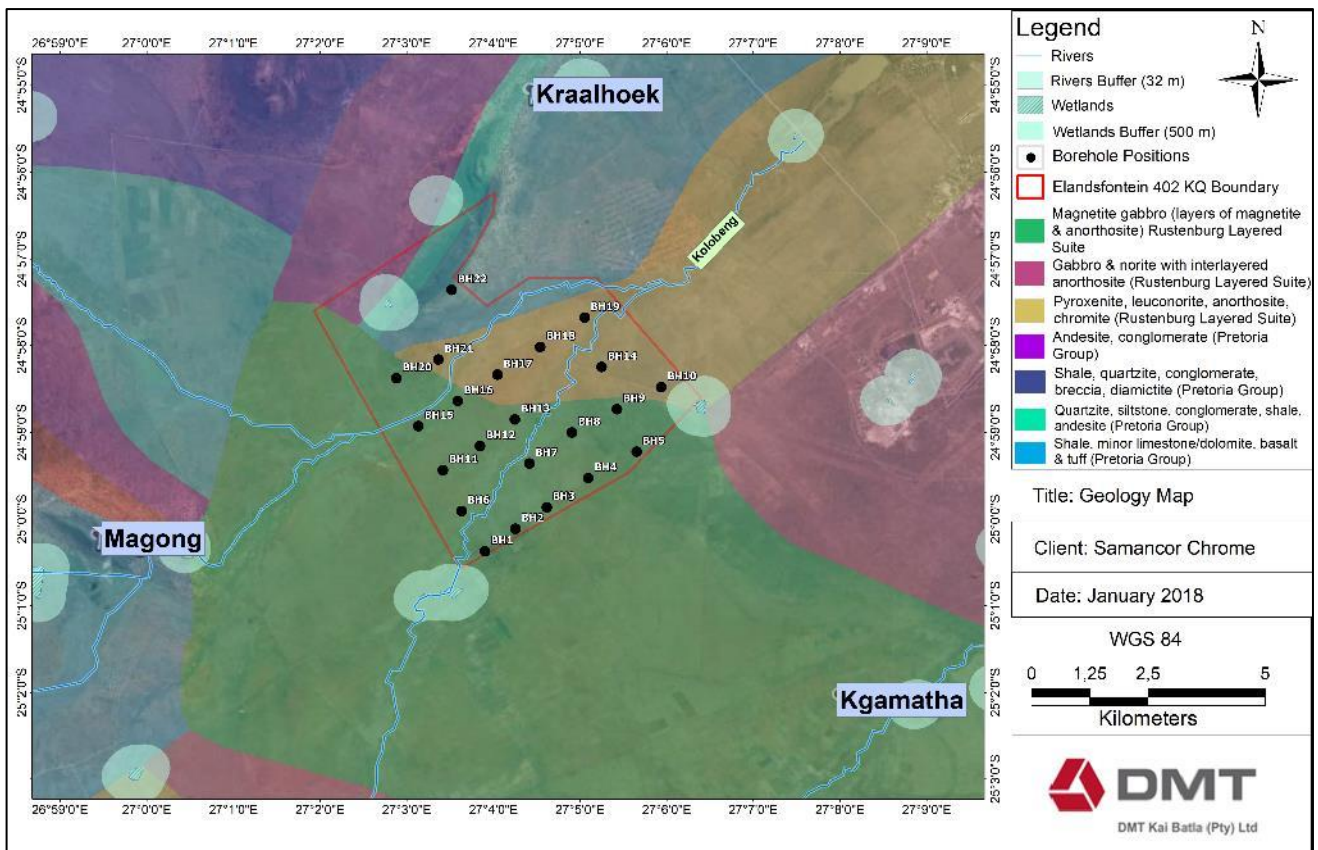


Figure 4: General Geology of the Bushveld Complex (Source: Samancor 2017)

*Cultural Heritage*

The North West province is an area with a rich cultural and heritage history. Artefacts and features from early Iron Age settlers have been found in this area, although none are known to



**Figure 5: General geology underlying Elandsfontein**

exist on the subject property specifically. The nearest locales where such finds have been made are the Pilanesburg area as well as the Rustenburg and Madibeng areas in the far south.

The proposed prospecting activities are not envisaged to change the character of the site or result in significant impacts on heritage resources. The area targeted for prospect drilling is well away from any cultural or heritage sites. The boreholes will be sited on existing farm tracks or previously disturbed farm land, so the potential impact on archaeological resources will be very low. However, if any heritage resources, including graves or human remains, are encountered, these will be reported to the North West Provincial Heritage Authority (HNW).

#### *Climate*

The Elandsfontein area falls within the Summer Rainfall Climatic Zone. The summers are warm to hot (range 15°C – 40°C, annual average 19°C). The average midday temperatures for Brits range from 19.8°C in June to 29.3°C in January. The annual rainfall ranges from 450 to 750mm (average 620mm), frequently accompanied by thunderstorms (Safari Explorer, 2017).

The atmospheric circulation is predominantly anti-cyclonic throughout the year, except near the surface where meso-scale circulations prevail. Elevated inversions due to anticyclonic subsidence reduce the depth of the mixing layer and suppress the diffusion and vertical dispersion of pollutants. The tropical easterlies affect the region throughout the year, but their influence is weaker during the dry winter months. The region experiences successive cold fronts in winter and temperatures ranging from 3°C to 24°C, with an average of 10.9°C. With the passage of a cold front, wind direction changes from northwest to west and south-west. (Ngcukana, N; Walton, N; Webster, L; Burger, R; Piketh, S; Bomba, H; 2011)



The air quality in the region is relatively poor due to emissions from the mining and other industries, agriculture, domestic fuel burning and traffic. Metallurgical process industries are found predominantly in Northam, Brits and Rustenburg. Although the area is currently not regarded as an air pollution 'hot spot,' it has been declared as the Waterberg - Bojanala priority area in anticipation of future developments in the area.

### *Water Resources*

The study area falls within Quaternary Catchment A24D of the Crocodile West Catchment Area. The proposed prospecting area in the vicinity of the Rustenburg Layered Suite aquifer (please refer to Figures 1, 6 and 7). The mainly mafic rocks occur in well-developed layers and include anorthosite, pyroxenite, norite, gabbro and magnetite gabbro. Undeveloped land in the area is broadly underlain by a black silty clay layer varying from 1m to 3m in thickness, which is followed by an eroded noritegabbro or weather and fractured anorthosite, which is again followed by hard rock norite-gabbro. The clay layer has been stripped from some developed areas (Kinnaird 2005; Roux 2015).

The Local Municipality is currently implementing a groundwater optimisation scheme. This will involve identifying existing boreholes by testing for yield and quality. The boreholes will then be equipped and commissioned for augmentation of supply deficiency, and additional boreholes will be drilled and tested depending on the success of the preceding holes<sup>3</sup>. In terms of the groundwater found on Elandsfontein, it is expected that groundwater levels and flow direction generally follow the local topography and that flow would occur mostly along the fractures of the underlying geology. (Heinerud, Sewmohan & Lancaster 2013). This is evident in the positioning of the Kolobeng and Bofule Rivers, which flows in a north easterly- south easterly direction through Elandsfontein (refer to Figure 6 – the sensitivity map). The Kolobeng and Bofule Rivers flow in an east-west, and east-south west directions respectively. To the far northern point (towards the Botswana border) the water is used for irrigation purposes, and the area near its bank is fertile and highly suitable for agricultural activities.

The Bofule is a non-perennial river with an ecosystem that is typically fragile. The Bofule River System supports a number of Conservation Important avifaunal and amphibious species (Kusel 2014). The National Freshwater Ecosystem Priority Areas (NFEPAs) maps show several wetlands around the study area- these have been extracted and depicted in Figure 7- the sensitivity map). The image shows one of these wetlands and its connection to the Bofule, as seen in the sensitivity map (Figure 7).

---

<sup>3</sup> <http://www.moseskotane.gov.za/moses-kotane-local-municipality-budget-speech-20162017/>

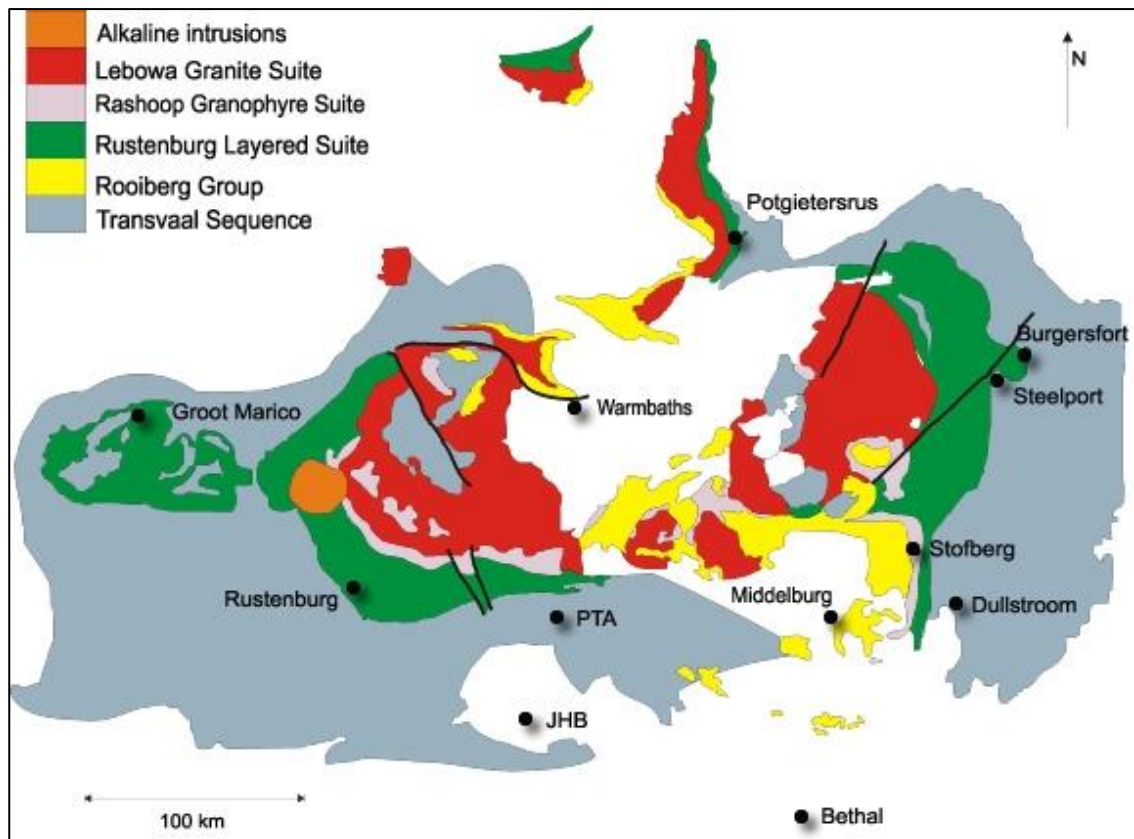


Figure 6: Depiction of the aquifers in the North West Province and surrounding areas (Source: Kinnaird 2005)

### Ecology

The Elandsfontein 402 KQ project area falls within grid square 2427CC. The baseline ecological assessment included in this report includes extractions from the Varkensvlei 403 KQ EIA Report compiled by Golder & Associates (Roux 2017), as the two project areas fall within the same grid square.

Elandsfontein 402 KQ is completely underlain by Dwaalboom Thornveld (as seen in Figure 6) which corresponds to the Savannah Biome and more particularly to the Central Bushveld Bioregion as defined by Mucina & Rutherford (2006). Dwaalboom Thornveld occurs on plains and is characterised by scattered, low to medium high, deciduous microphyllous trees and shrubs with a few broad-leaved tree species. An almost continuous herbaceous layer that is dominated by grass species occurs beneath the tree and shrub layer. The vegetation is largely comprised of woody plants such as the *Acacia tortilis* and *A. nilotica*- which are the most prominent, as well as the *A. tenuispina*, *A. erubescens* plants species type in this vegetation (Mucina & Rutherford, 2006).

Mucina & Rutherford's (2006) have noted the following species as important taxa in this vegetation type:

Table 6: A list of the characteristic plant species found in the Dwaalboom Thornveld vegetation type (Mucina & Rutherford, 2006)

Vegetation	Taxa
Trees	<i>Acacia erioloba</i> , <i>Acacia erubescens</i> , <i>Acacia nilotica</i> , <i>Acacia tortilis</i> subsp <i>heteracantha</i> , <i>Acacia fleckii</i> , <i>Acacia burkei</i> , <i>Rhus lancea</i>
Shrubs	<i>Diospyros lycioides</i> subsp. <i>lycioides</i> , <i>Grewia flava</i> , <i>Mystroxydon aethiopicum</i> , subsp. <i>burkenum</i> , <i>Agathisanthemum bojeri</i>
Graminoids	<i>Aristida bipartite</i> , <i>Bothriochloa inculpta</i> , <i>Digitaria eriantha</i> subsp <i>eriantha</i> , <i>Ischaemum afrum</i> , <i>Panicum maximum</i> and <i>Cymbopogon pospischilii</i>

Vegetation	Taxa
Herbs	<i>Blepharis integrifolia</i> , <i>Chaemecrista absus</i> , <i>Cleome Maculata</i> , <i>Dicoma anomala</i> , <i>Kyphocarpa angustifolia</i> , <i>Limeum viscosum</i> , <i>Lophiocarpus tenuissimus</i>
Endemic Taxon	<i>Rhus maricoana</i>

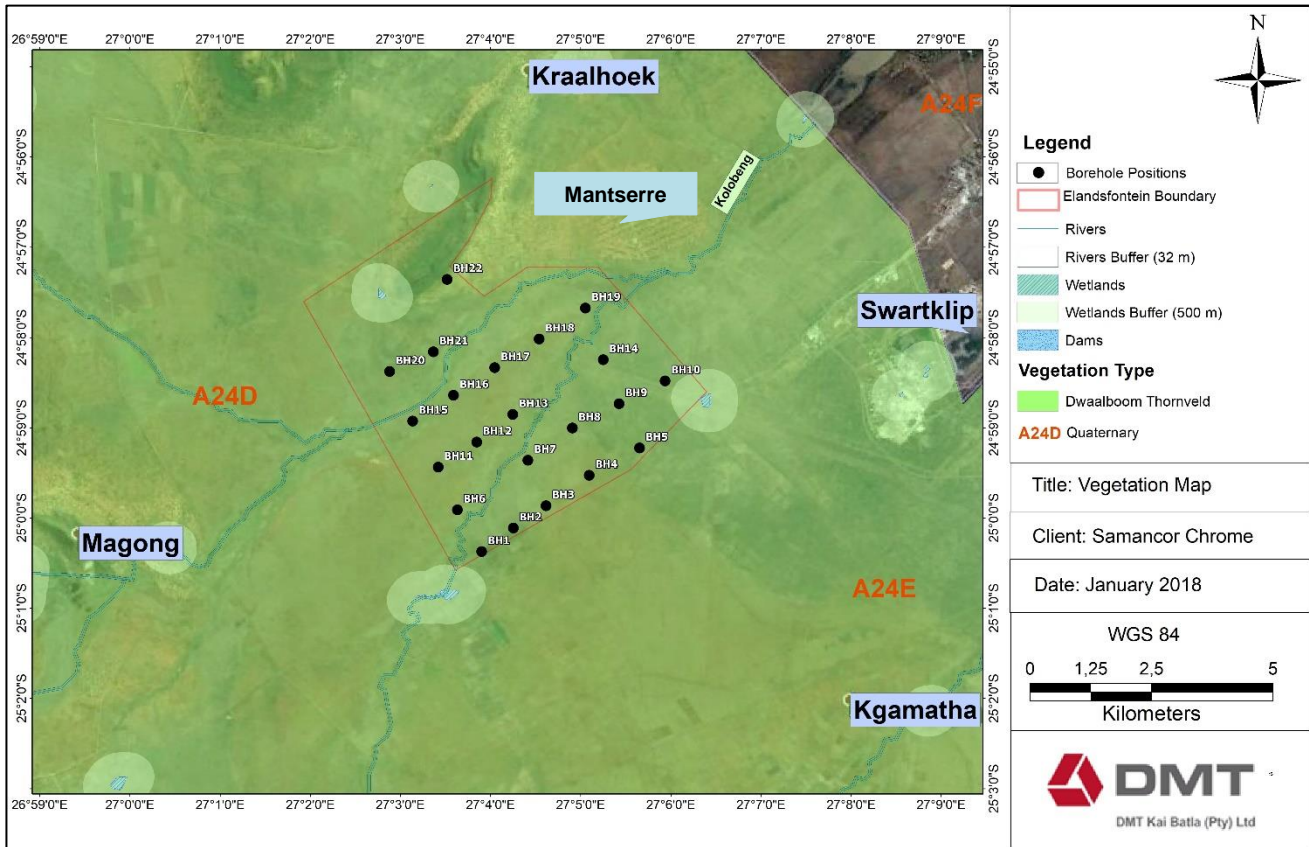


Figure 7: Vegetation map

Dwaalboom Thornveld is classified as a “Least Threatened” vegetation type and only 6% of the vegetation is under formal conservation. This conservation status is largely attributed to cultivation and less to urbanisation, as well as the encroachment of alien and invasive plant species. In terms of sensitive plant species, it is stated in the Golder & Associates (2017) specialist ecological study that, the highly transformed vegetation in the area makes it highly unlikely for there to be any Red Data plant species occurring in this vegetation type.

### Fauna

The baseline of the faunal species occurrence on site was based on information conducted on the ecological assessment for grid square 2427CC and the neighboring 2427CB. The habitat on Elandsfontein and immediate surroundings has been transformed in recent years due to anthropogenic activity (Roux 2017). This also resulted in their being a generally low species diversity in this area as a direct and indirect result of cultivation and urbanisation.

A list of species known to occur in this area was based on the field work conducted by in the ecological baseline assessment conducted by Hudson & Kimberg, P in 2013<sup>4</sup> and 2016. Table

<sup>4</sup> Hudson, A and P. Kimberg (February 2013). *Ecological Baseline Assessment for Mining Right Applications on Varkensvlei /Nootgedacht and Haakdoorn drift*. Johannesburg: Golder Associates Africa (Pty) Ltd.

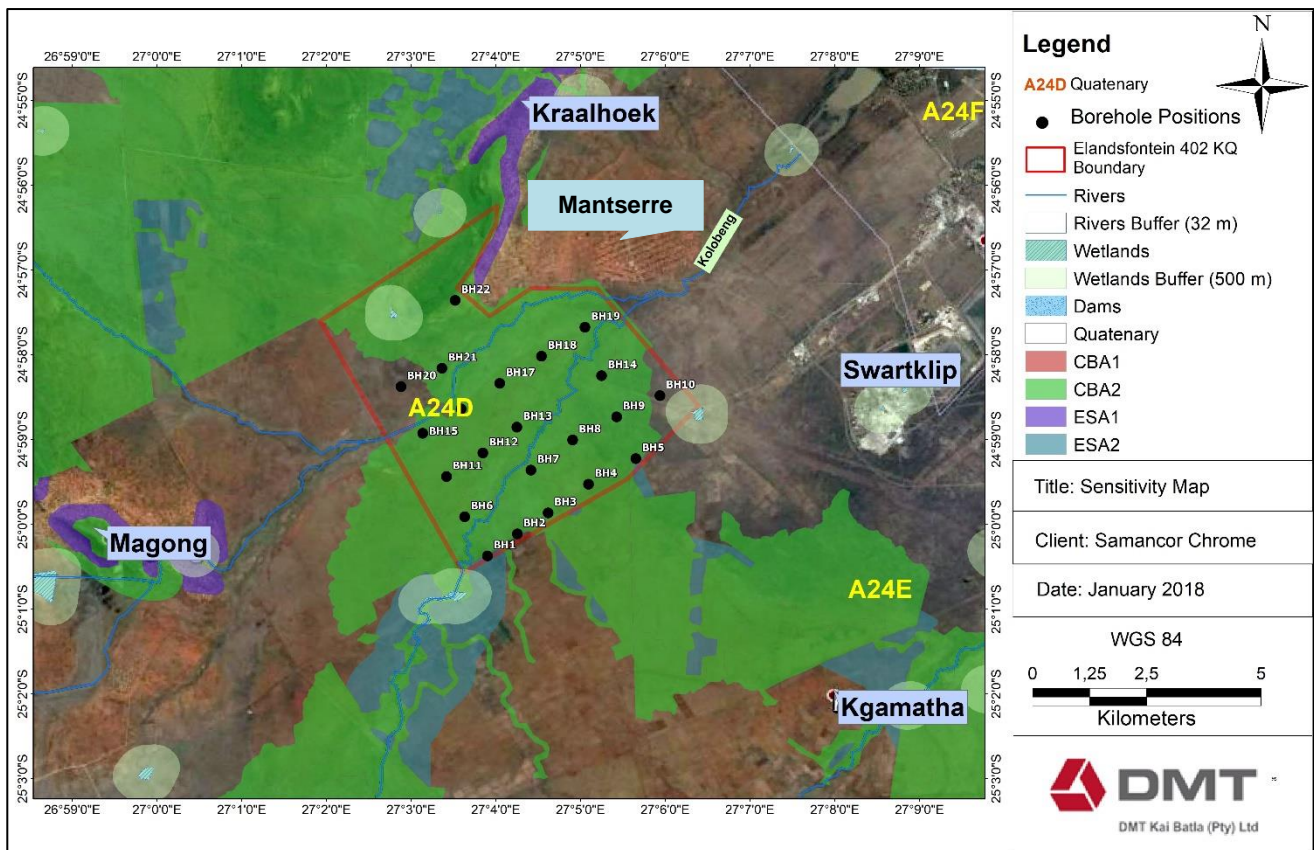
7 below gives a summary of the fauna that identified in the study, as well as the threat status each species has been assigned.

**Table 7: List of species common known to occur in grid square 2427CC and the neighbouring 2427CB (Roux 2017)**

Scientific Name	Common Name	NEM:BA Threatened and Protected Species List (2007)	IUCN Red List of Threatened Species (2012.2)	Probability of occurrence
<b>Mammals</b>				
<i>Neamblysomus julianae</i>	Juliana's Golden Mole	Vulnerable	Vulnerable	Low
<i>Amblysomus septentrionalis</i>	Highveld Golden Mole	Not listed	Near Threatened	Low
<i>Parahyaena brunnea</i>	Brown Hyaena	Protected	Near Threatened	Low
<i>Mellivora capensis</i>	Honey Badger	Protected	Near Threatened	Moderate
<b>Red Data Avifauna (bird) species</b>				
<i>Buphagus erythrorhynchus</i>	Red billed Oxpecker	Near threatened	-	Low
<i>Gyps africanus</i>	African White-backed Vulture	Vulnerable	Endangered	Low
<i>Gyps coprotheres</i>	Cape Griffon Vulture	Vulnerable	Endangered	Low
<i>Polemaetus bellicosus</i>	Martial Eagle	Vulnerable	Endangered	Low
<i>Pterocles gutturalis</i>	Yellow throated Sandgrouse	Near Threatened	-	Probable
<i>Torgos tracheliotus</i>	Lappet-faced Vulture	Vulnerable	Endangered	Low
<b>Red Data and protected Arthropods</b>				
<i>Hadogenes gracilis</i>	Rock Scorpion	Protected	-	Low
<i>Hadogenes troglodytes</i>	Rock Scorpion	Protected	-	Low
<i>Metisella meninx</i>	Marsh Sylph	Vulnerable	-	Low
<i>Spialia paula</i>	Mite Sandman	Vulnerable	-	Low

### Site Sensitivity

A substantial portion of Elandsfontein is identified as a Critical Biodiversity Area (CBA) as seen in the sensitivity map (Figure 7). A CBA is so categorised because of biodiversity patterns, edaphic interfaces, linkages, significant patches of endangered vegetation and the presence of rare plant species with restricted ranges (NW DACE, 2009). In addition, the north west of the site lies adjacent to an Ecological Support Areas (ESA). ESAs and CBAs are features. in the landscape that are critical to retaining biodiversity and supporting ecosystem functioning and services (NW DACE, 2009). In 2009 the North West DACE published the results of their conservation assessment, which aimed to map CBA's in the province- and the sensitivity map depicts the results from the DACE undertaking.



**Figure 8: Sensitivity map**

The study area has been modified by agriculture and urbanization in the north-eastern areas of the property which has influenced the areas ecological functions to an extent. Furthermore, the mineral exploration operations in the area have also influenced the site sensitivity in the area around Elandsfontein- although this is mainly due to edge effects rather than physical transformation of the greater property. As stated

The proposed prospecting will be situated within the remaining natural area, away from any of the watercourses depicted in the sensitivity map. It must be noted that that the prospecting will be confined to the designated area (i.e. the drilling pad) and invasive activities will be undertaking within stringent timeframes. Considering these factors, the “Least Threatened” status assigned to the vegetation, as well as the and the low species diversity on site, the ecological sensitivity of Elandsfontein is regarded as being generally low. However, as required by legislation, appropriate measures will be implemented to minimize any potentially adverse impacts of the prospecting (please refer to Part B of this report for recommended management measures).

**(b) Description of the current land uses.**

Current land uses in the area surrounding Elandsfontein include cultivation- predominantly along the southern boundary of the subject property (see Figure 8). There are built up areas in the north east of the property, namely Mantserre (which is approximately 10km away from Elandsfontein) and Kraalhoek, which is 10km away. Further west is the village of Magong which is approximately 22km from the subject property.

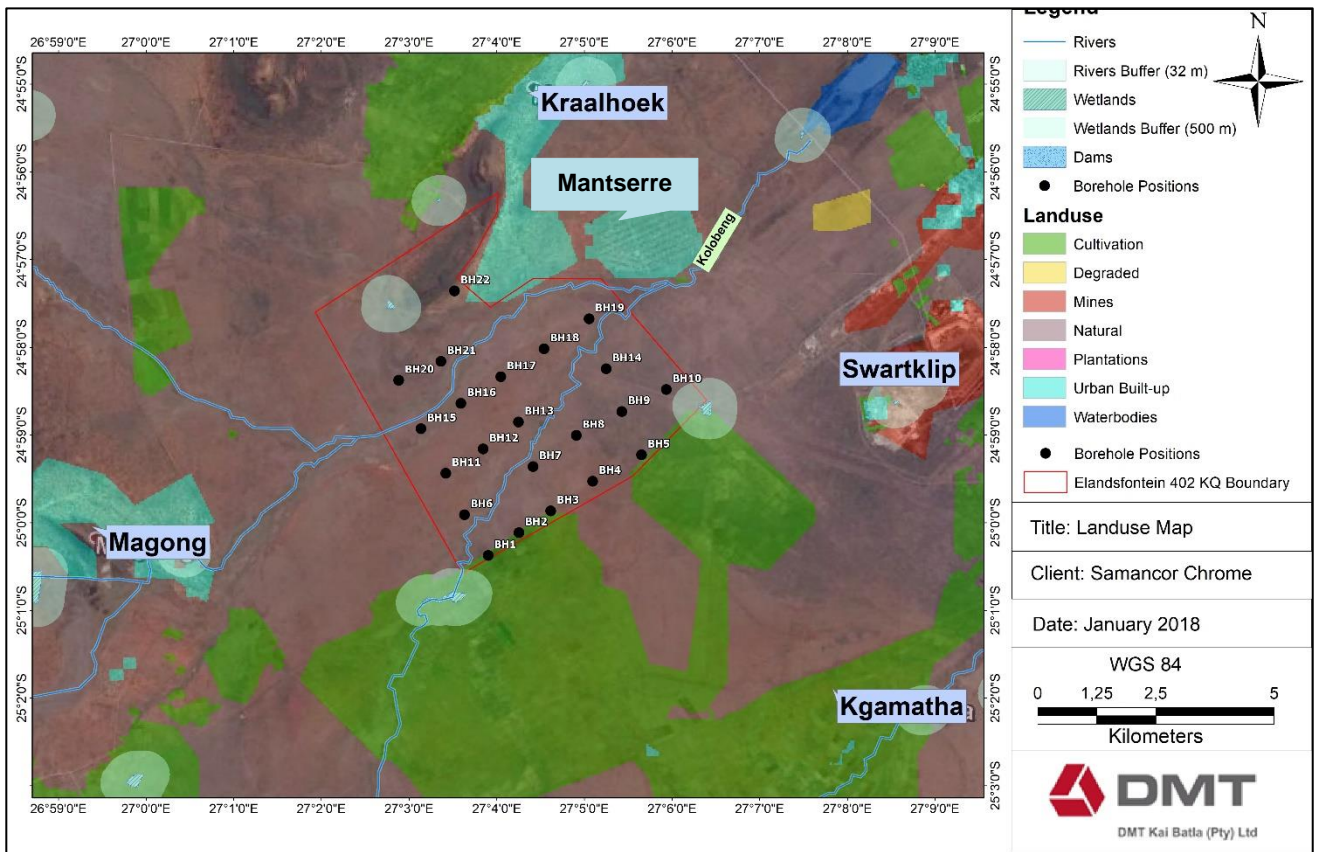


Figure 9: Land use map

In term of mine operations in the area, Union Mine (as mentioned above), operations in Swartklips and Northam are some of the closest operations to the subject property. The proposed mining area is surrounded by mainly agricultural activities, with some undeveloped land to the east (Varkensvlei) and between Elandsfontein and Magong village in the west. The mining industry in makes up over 30% of the North West provincial gross domestic product (PGDP) and it is the leading economic sector within the Bojanala DM. As such, mining is a dominating activity in the in the provincial land use. And the proposed prospecting will be an extension of this activity.

**iv) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts**

*(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).*

The following are potential impacts associated with the prospecting activity:

Table 8: Summary of potential impact risks

Potential Impacts	Phase	Reversible	Irreplaceable Damage	Can impact be avoided
Disturbance to heritage/cultural features on site	Construction/ Set-up; Operational	No	Yes	Yes

Potential Impacts	Phase	Reversible	Irreplaceable Damage	Can impact be avoided
Noise caused by the drilling rig travelling to and being established on each site, the diesel engine driving the drill, vehicles going to and from the drilling site and the voices of the drilling crew.	Construction/ Set-up; Operational	Yes	No	No
Visual disturbance caused by the drilling rig and other equipment, soil stockpiles, signage and demarcations around site, etc.	Construction/ Set-up; Operational	Yes	No	No
Traffic disturbances caused by increase of vehicle movement around the drilling site.	Construction/ Set-up; Operational	Yes	No	Yes
Dust generated by the drilling operation and vehicles travelling over unpaved areas	Construction/ Set-up; Operational	Yes	No	No
Disturbance soil and vegetation in the project area	Construction/ Set-up; Operational	Yes	No	No
Potential contamination of soil, surface water and groundwater with hydrocarbons	Construction/ Set-up; Operational	Yes	No	Yes
Disturbance to animal life in the vicinity	Construction/ Set-up; Operational	Yes	No	Yes
Friction between local residents/landowners and prospecting personnel	Construction/ Set-up; Operational	Yes	No	Yes

It is not anticipated that the prospecting activities will have any lasting material effects on existing land uses on the prospecting areas or any other areas in their vicinity.

**v) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;**

*(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).*

Please refer to the full description of the Impact Assessment Methodology on page 15, subsection j).

**vi) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.**

*(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)*

It is not anticipated that the prospecting activities will have any lasting material effects on existing land uses on the prospecting areas or any other areas in their vicinity and as such no alternative site or layout has been proposed. Should comments be received that warrant changing the layout, the Applicant will implement changes to ensure not one is negatively affected.

The invasive activities that entail the drilling of the 22 exploration holes will have a minimal environmental and social impact as the drill site will be confined to an area of approximately 0.2200 Ha of the 2962.34 Ha sized property. This needs to be viewed in the context of the entire prospecting right area under application which covers and it needs to be kept in mind that of the identified impacts will occur for a limited time and the extent of the impacts will be localized. All of the identified impacts can be suitably mitigated with the residual impact ratings being of low significance. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist.

These impacts are listed in Table 13: Impact Assessment.

**vii) The possible mitigation measures that could be applied and the level of risk.**

*(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).*

Please refer to the full description of the Impact Assessment below.

**viii) Motivation where no alternative sites were considered.**

The proposed prospecting borehole locations were dictated by the locality of the Chrome Ore as indicated by the Council of Geoscience. In addition, positioning the proposed boreholes in different location may have had negative implications on the water resource found on the property, on the cultivated area in the north and south and potentially on the residents of Mansterre. Therefore, the current alternative has been so chosen to ensure that potential impact receptors are kept to a minimum.

**ix) Statement motivating the alternative development location within the overall site**

*(Provide a statement motivating the final site layout that is proposed)*

The proposed prospecting borehole locations were dictated by the locality of the Chrome Ore as indicated by the Council of Geoscience. The positioning the proposed boreholes in an alternative location may have had negative implications on the water resources found on the property, on the cultivated area in the north and potentially on the residents of the surrounding villages. Therefore, the current alternative has been so chosen to ensure that potential impact receptors are kept to a minimum.

**j) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.**

*(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)*

This section provides the detailed methodology used for the assessment of the significance of potential environmental impacts in the EIA. This methodology allows for the identified potential impacts to be analysed in a systematic manner, with significance rating (from insignificant to very high) assigned to each potential impact. The significance of an impact is defined as a



combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequence include extent, intensity and duration of the impact and are presented in Table 9 below.

**Table 9: Criteria used to determine the consequence of the impact**

Rating	Definition of Rating	Score
<b>A. Extent– the area in which the impact will be experienced</b>		
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
<b>B. Intensity– the magnitude or size of the impact</b>		
Low	Site-specific and wider natural and / or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and / or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and / or social functions or processes are severely altered	3
<b>C. Duration– the time frame for which the impact will be experienced</b>		
Short-term	For the duration of project activities / up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

The combined score of these three criteria corresponds to a consequence rating, as set out in Table 10 below. (Note that the lowest possible consequence score is 3.)

**Table 10: Method used to determine the consequence score**

<b>Combined Score (A+B+C)</b>	3 – 4	5	6	7	8 – 9
<b>Consequence Rating</b>	Very low	Low	Medium	High	Very high

Once the consequence is derived, the probability of the impact occurring is considered, using the probability classifications presented in Table 11 below.

**Table 11: Probability classification**

<b>Probability of impact – the likelihood of the impact occurring</b>	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall significance of impacts is determined by considering consequence and probability using the rating system prescribed in Table 12 below.

**Table 12: Impact significance ratings**

		Probability			
		Improbable	Possible	Probable	Definite
Consequence	Very Low	<b>INSIGNIFICANT</b>	<b>INSIGNIFICANT</b>	<b>VERY LOW</b>	<b>VERY LOW</b>
	Low	<b>VERY LOW</b>	<b>VERY LOW</b>	<b>LOW</b>	<b>LOW</b>
	Medium	<b>LOW</b>	<b>LOW</b>	<b>MEDIUM</b>	<b>MEDIUM</b>
	High	<b>MEDIUM</b>	<b>MEDIUM</b>	<b>HIGH</b>	<b>HIGH</b>
	Very High	<b>HIGH</b>	<b>HIGH</b>	<b>VERYHIGH</b>	<b>VERY HIGH</b>

Finally the impacts are considered in terms of their status (positive or negative) and the confidence in the ascribed impact significance rating is noted. The classification for considering the status of impacts and the confidence in assessment is laid out in Table 12.

**Table 13: Impact status and confidence classification**

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a ‘benefit’)
	– ve (negative – a ‘cost’)
	Neutral
Confidence of assessment	
The degree of confidence in predictions based on available information, the environmental consultant’s judgment and / or specialist knowledge.	Low
	Medium
	High

Different types of impacts were also considered in the impact ratings, as listed in **Box 0-1**.

**Box 0-1: Types of Impact**

**Direct** – impacts that result from the direct interaction between a project activity and the receiving environment (e.g. dust generation which affects air quality).

**Indirect** – impacts that result from other (non-project) activities but which are facilitated as a result of the project or impacts that occur as a result of subsequent interaction of direct project impacts within the environment (e.g. reduced water supply that affects crop production and subsequently impacts on subsistence-based livelihoods).

**Cumulative** – impacts that act together with current or future potential impacts of other activities or proposed activities in the area / region that affect the same resources and / or receptors (e.g. combined effects of waste water discharges from more than one project into the same water resource, which may be acceptable individually, but cumulatively result in a reduction in water quality).

There is no statutory definition of ‘significance’ and its determination is therefore necessarily partially subjective. Criteria for assessing the significance of impacts arise from the following key elements:

Status of compliance with relevant local legislation, policies and plans, any relevant or industry policies, environmental standards or guidelines and internationally accepted best practice:

- The consequence of the change to the biophysical or socio-economic environment (e.g. loss of habitats, decrease in water quality) expressed, wherever practicable, in quantitative terms. For socio-economic impacts, the consequence must be viewed from the perspective of those affected, by taking into account the likely perceived importance of the impact and the ability of people to manage and adapt to the change;
- The nature of the impact receptor (physical, biological, or human). Where the receptor is physical (e.g. a water resource) its quality, sensitivity to change and importance must be considered. Where the receptor is biological, its importance (e.g. its local, regional, national or international importance) and its sensitivity to the impact must be considered. For a human receptor, the sensitivity of the household, community or wider societal group must be considered along with their ability to adapt to and manage the effects of the impact; and
- The probability that the identified impact will occur. This is estimated based upon experience and / or evidence that such an outcome has previously occurred.

The impact significance rating also reflects the need for mitigation. While low significance impacts may not require specific mitigation measures, high significance negative impacts demand that adequate measures be put in place, to reduce the residual significance (impact significance rating, after mitigation), as described below in **Box 0-2**.

#### **Box 0-2: Definitions of Impact Significance**

<i>Insignificant</i> : the potential impact is negligible and no mitigation measures or environmental management is required.
---

<i>Very Low &amp; Low</i> : no specific mitigation measures required, beyond normal environmental good practices.
---

<i>Medium - High</i> : specific mitigation measures should be devised, to reduce the impact significance to an acceptable level. If mitigation is not possible, compensation measures should be considered.
---

<i>Very High</i> : specific mitigation measures should be identified and implemented, to reduce the impact significance to an acceptable level. If such mitigation is not possible, very high significance negative impacts should be considered in the project's authorisation process.
--

*Note that impact significance will be rated in the prescribed way both without and with the effective implementation of the recommended mitigation measures.*

**k) Assessment of each identified potentially significant impact and risk**

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

**Table 14: Impact Assessment**

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
<p><b>Site establishment activities</b></p> <ul style="list-style-type: none"> <li>- Vegetation clearance</li> <li>- Topsoil stripping &amp; stockpiling</li> <li>- Drill pad compaction</li> <li>- Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage</li> <li>- Vehicle movements</li> <li>- Waste management</li> </ul>	Cultural and Heritage (-ve)	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction / Set-up	1	1	1	Possible	3 (VL)	<ul style="list-style-type: none"> <li>• All Samancor and contractor personnel involved in the prospecting activities will be made aware of the locations of any identified heritage resources, the necessity of avoiding impacts on such resources and the penalties for damaging them;</li> <li>• Personnel will be informed about the consequences of unlawful removal of cultural and historical remains and artefacts associated with heritage sites. It will be emphasised that archaeological artefacts such as potsherds, stone tools, grinding stones, etc. must be left in situ and undisturbed.</li> <li>• A safe distance of at least 50 metres will be maintained between any potentially identified heritage resource and drilling rig or any other infrastructure associated with the prospecting activities;</li> <li>• Where necessary, directional drilling will be practised to assess ore reserves situated below identified heritage resources, without affecting such resources;</li> <li>• The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken.</li> </ul>	Negligible

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
	Noise (-ve)	Noise Generation	Construction / Set-up	1	3	1	Definite	5 (L)	<ul style="list-style-type: none"> <li>Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings;</li> <li>Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition; and</li> <li>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	3(VL)
	Visual (-ve)	Visual intrusion	Construction / Set-up	1	3	1	Definite	5 (L)	<ul style="list-style-type: none"> <li>The drilling rig and other visually prominent items on the site will be located in consultation with the landowner;</li> <li>Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	3 (VL)
	Traffic (-ve)	Increase in traffic volumes in the vicinity of the drilling site	Construction / Set-up	1	2	1	Probable	4 (VL)	<ul style="list-style-type: none"> <li>Traffic signs to be put around the site to notify motorist of the activities</li> <li>Construction vehicles to make trips on/off site only when necessary</li> <li>Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	3 (VL)
	Dust fall (-ve)	Dust fall & nuisance from	Construction / Set-up	2	3	1	Definite	6 (M)	<ul style="list-style-type: none"> <li>The proposed operation falls within the boundaries of the Bojanala Platinum District Municipality and the mine will be required to</li> </ul>	3 (VL)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
		activities							<p>operate within the air quality requirements of the Municipality's Air Quality Management Plan.</p> <ul style="list-style-type: none"> <li>Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	
	Soil and Vegetation (-ve)	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.	Construction / Set-up	1	3	3	Definite	7 (H)	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad.</li> <li>Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	6 (M)
	Animal life (-ve)	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life	Construction/ Set-up	1	3	2	Definite	6 (M)	<ul style="list-style-type: none"> <li>Environmental awareness training sessions should be part of the workers' induction and site workshops; and</li> <li>If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of and faunal specialist.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	5 (L)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
		away from the site while the prospecting is ongoing.								
	Loss of biodiversity (-ve)	The removal of vegetation and minimised animal life in the area may potentially affect the ecological composition of the CBA and ESA.	Construction/ Set-up	1	3	2	Definite	6 (M)	<ul style="list-style-type: none"> <li>Measures to manage animal life to be implemented and adhered to.</li> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>Re-vegetation to be implemented in line with the rehabilitation plan.</li> </ul>	5 (L)
	Social (-ve)	Friction between local residents/land owners and construction personnel	Construction / Set-up	1	2	2	Definite	5 (L)	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> <li>A community liaison officer will be mandated with informing the local residents of the commencement of prospecting activities.</li> <li>There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> <li>The Applicant will keep a complaints register and implement a grievance procedure to address any issues, concerns and grievances that may arise during the prospecting activities.</li> </ul>	4(VL)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
	Job creation (+ve)	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	2	1	1	Definite	4 (VL)	<ul style="list-style-type: none"> <li>Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	4 (VL)
<b>Exploration drilling - Drilling</b> - Drill maintenance & refuelling - Core sample collection & storage - Vehicle movements - Waste generation & management	Noise (-ve)	Noise Generation	Operations	1	2	1	Definite	4 (VL)	<ul style="list-style-type: none"> <li>Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition; and</li> <li>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	3(VL)
	Cultural and Heritage (-ve)	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction / Set-up	1	2	2	Possible	5 (L)	<ul style="list-style-type: none"> <li>All Samancor and contractor personnel involved in the prospecting activities will be made aware of the locations of any identified heritage resources, the necessity of avoiding impacts on such resources and the penalties for damaging them;</li> <li>Personnel will be informed about the consequences of unlawful removal of cultural and historical remains and artefacts associated with heritage sites. It will be emphasised that archaeological artefacts such as potsherds, stone tools, grinding stones, etc. must be left in situ and undisturbed.</li> </ul>	4(VL)



NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
									<ul style="list-style-type: none"> <li>A safe distance of at least 50 metres will be maintained between any potentially identified heritage resource and drilling rig or any other infrastructure associated with the prospecting activities;</li> <li>Where necessary, directional drilling will be practised to assess ore reserves situated below identified heritage resources, without affecting such resources;</li> <li>The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken</li> </ul>	
	Visual (-ve)	Visual intrusion	Operations	1	2	1	Definite	4 (VL)	<ul style="list-style-type: none"> <li>The drilling rig and other visually prominent items on the site will be located in consultation with the landowner;</li> <li>Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	3(VL)
	Dust fall (-ve)	Dust fall & nuisance from activities	Operations	1	2	1	Definite	4 (VL)	<ul style="list-style-type: none"> <li>The proposed operation falls within the boundaries of the Bojanala Platinum District Municipality and the mine will be required to operate within the air quality requirements of the Municipality's Air Quality Management Plan.</li> <li>Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	3(VL)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
	Soil and Vegetation (-ve)	Soil and vegetation disturbance from drill pad preparation	Operations	1	3	3	Definite	7 (H)	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	6 (M)
	Animal life (-ve)	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Operations	1	2	2	Definite	5 (L)	<ul style="list-style-type: none"> <li>Measures implemented during site establishment should apply in this phase as well.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	4 (VL)
	Loss of biodiversity (-ve)	The removal of vegetation and minimised animal life in the area may potentially affect the ecological	Construction/ Set-up	1	3	2	Definite	6 (M)	<ul style="list-style-type: none"> <li>Measures to manage animal life to be implemented and adhered to.</li> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>Re-vegetation to be implemented in line with the rehabilitation plan.</li> </ul>	5 (L)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
		composition of the CBA and ESA.								
	Social (-ve)	Friction between local residents/land owners and construction personnel	Operations	1	2	2	Definite	5 (L)	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> <li>A community liaison officer will be mandated with informing the local residents of the commencement of prospecting activities.</li> <li>There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> <li>The Applicant will keep a complaints register and implement a grievance procedure to address any issues, concerns and grievances that may arise during the prospecting activities.</li> </ul>	5(L)
	Job creation (+ve)	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	2	2	1	Definite	5 (L)	<ul style="list-style-type: none"> <li>Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	5 (L)
	Surface and groundwater contamination (-ve)	There is potential contamination of the surface and groundwater by hydrocarbons,	Operations	1	2	2	Possible	5 (L)	<ul style="list-style-type: none"> <li>Vehicles and equipment must be regularly serviced and maintained.</li> <li>Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages;</li> <li>A spill kit will be available on each site where prospecting activities are in progress; and</li> </ul>	4 (VL)

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated					MITIGATION TYPE	SIGNIFICANCE if mitigated
				EXTENT	INTENSITY	DURATION	PROBABILITY	RATING		
		especially considering the Kolobeng and Bofule river flowing through the property.							<ul style="list-style-type: none"> <li>Any spillages must be cleaned up immediately to prevent further contamination.</li> </ul>	

**I) Summary of specialist reports.**

*(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-*

<b>LIST OF STUDIES UNDERTAKEN</b>	<b>RECOMMENDATIONS OF SPECIALIST REPORTS</b>	<b>SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)</b>	<b>REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.</b>
-----------------------------------	--	---	---

Attach copies of Specialist Reports as appendices

No specialist studies were commissioned for this application. The EIR compiled by Roux (2017) has been used as a literature basis for the environmental baseline of Elandsfontein 402 KQ.

**m) Environmental impact statement**

**(i) Summary of the key findings of the environmental impact assessment;**

The majority of the prospecting activities are non-invasive and hence will have very low to negligible environmental or social impact. The invasive activities that entail the drilling of 22 exploration holes will have a minimal environmental and social impact as each drill site will be confined to an area of 0.2200 hectares (2200m<sup>2</sup>). This needs to be viewed in the context of the entire prospecting license area under application which covers just 2962.34 Ha.

The assessed impact ratings after implementation of the mitigation measures above are summarised as follows:

**Table 15: Summary of impact significance**

Potential Impacts (Positive: +Ive; Negative: -Ve)	Impact Significance Pre-Mitigation	Impact Significance Post-Mitigation
<b>Site establishment activities</b>		
Cultural and Heritage (-ve)	Very Low	Negligible
Noise (-ve)	Low	Very Low
Visual (-ve)	Low	Very Low
Traffic (-ve)	Very Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and Vegetation (-ve)	High	Medium
Animal life (-ve)	Medium	Low
Social (-ve)	Low	Very Low
Job creation (+ve)	Very Low	Very Low
<b>Exploration drilling</b>		
Cultural and Heritage (-ve)	Very Low	Negligible
Noise (-ve)	Very Low	Very Low
Visual (-ve)	Very Low	Very Low
Traffic (-ve)	Low	Very Low
Dust fall (-ve)	Very Low	Very Low
Soil and Vegetation (-ve)	High	Medium
Animal life (-ve)	Low	Very Low
Social (-ve)	Low	Low
Job creation (+ve)	Low	Low
Surface and groundwater contamination (-ve)	Medium	Low

All of the identified impacts will occur for a limited and the extent of the impacts will be localised. All of the identified impacts can be suitably mitigated with the residual impact ratings being of low-medium significance. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist.

**(ii) Final Site Map**

*Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix C**.*

Please refer to Appendix C for the composite map the proposed location of the prospecting boreholes.

**(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;**

- Destruction or loss of Cultural and Heritage Resources during the construction/set-up phase (although this is unlikely as no features of cultural/heritage significance have been identified on site);
- Noise Generation from construction / set-up and operational activities of drilling;
- Visual intrusion caused by the drilling activities in the largely rural setting;
- Increase in traffic volumes in the vicinity of the drilling site during site establishment and prospecting activities;
- Dust fall & nuisance from construction / set-up and drilling activities;
- Soil and vegetation disturbance from drill pad preparation during the construction / set-up and operational phase as contractors rehabilitate one site and move to the next site and prepare it;
- Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing;
- Friction between local residents/landowners and construction personnel during drilling;
- Potential contamination of the surface and groundwater resources in the vicinity of the drilling area; and
- Temporary employment will be created for the clearing of the land and establishing the drilling site.

**n) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;**

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

The objectives of the EMPr will be to:

- Provide sufficient information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts.
- Provide sufficient information and guidance to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.
- Ensure an approach that will provide the necessary confidence in terms of environmental compliance.
- Provide a management programme that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures it is anticipated that the identified social & environmental impacts can be managed and mitigated effectively. Through the implementation of the mitigation and management measures it is expected that:

- Heritage/cultural resources can be managed by avoidance of known resources and through consultation with landowners/stakeholders. Drilling contractor personnel will also be briefed of these sensitivities and consequences of any damage/removal of such features;
- Noise generation can be managed through consultation and restriction of n operating hours and by maintaining equipment and applying noise abatement equipment if necessary;
- Visual intrusion can be managed through consultation with landowners/ stakeholders and by suitable siting of drill pads and use of screens (natural vegetation or shade cloth etc.);
- Traffic is managed as far as possible and vehicle congested is prevented in and around the drilling site;
- Dust fall can be managed by application of wet suppression on exposed surfaces and use of water during drilling;
- Soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and disturbed areas will be re-vegetated with locally indigenous species as soon as possible, to prevent extended impacts on the CBA;
- Animal life is protected and preserved at all times and the prospecting activities has minimal disturbance to the surrounding habitat;
- Social friction with landowners can be managed by employing strong, experienced personnel with proven skills in public consultation and conflict resolution during stakeholder consultation phases. All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and that they treat local residents with respect and courtesy at all times;
- Equipment and vehicles will be maintained to prevent hydrocarbon leaks and spills;
- Employment is created during the prospecting- contributing to the local economic even if it is only on a temporary basis.

**o) Aspects for inclusion as conditions of Authorisation.**

Any aspects which must be made conditions of the Environmental Authorisation

- Maintain a minimum 500m (preferably 1000m) buffer from any infrastructure or dwelling;
- Landowners and land occupiers should be engaged (re-consulted) at least 1 month prior to any site activities being undertaken once drill sites are known; and
- A map detailing the drilling locations should be provided to the landowners as well as the DMR prior to commencement of prospecting activities.

**p) Description of any assumptions, uncertainties and gaps in knowledge.**

(Which relate to the assessment and mitigation measures proposed)

- It is assumed that the description of the proposed project, provided by the applicant is sufficient for providing the authorities with the right information for understanding the proposed project.



- It is assumed that the public consultation process to be undertaken as part of the Environmental Impact Assessment (EIA) will suffice and that the application will be considered objectively based on stakeholders' response to the proposed activities.

**q) Reasoned opinion as to whether the proposed activity should or should not be authorised**

**i) Reasons why the activity should be authorized or not.**

It is the opinion of the EAP that the proposed prospecting activities should be authorised.

- The environmental impacts associated with the limited drilling activities are minimal provided that the proposed mitigation is implemented;
- The spatial extent of the physical impact is less than 1 hectare per drill site over a prospecting right license area of more than 2962.34 Ha hectares, 22 drill sites will be established in total throughout the duration of the drilling programme;
- With appropriate care and consideration, the impacts resulting from drilling can be suitably avoided, minimised or mitigated;
- With implementing the appropriate rehabilitation activities, the impacts associated with the drilling activities can be reversed; and
- Without implementation of prospecting activities, the knowledge concerning the potential mineral resource within the prospecting right area will not be confirmed.

**ii) Conditions that must be included in the authorisation**

- Maintain a minimum 500m (preferably 1000m) buffer from any infrastructure or dwelling;
- Landowners and land occupiers should be engaged (re-consulted) at least 1 month prior to any site activities being undertaken once drill sites are known;
- A map detailing the drilling locations should be provided to the landowners as well as the DMR prior to commencement of prospecting activities.
- Record must be kept of the implementation of the EMP measures and monitoring of the efficiency of the implemented measures; and
- A suitable closure plan must be submitted to show sufficiently providence for the avoidance, management and mitigation of environmental impacts associated with the decommissioning of the proposed activities.

**r) Period for which the Environmental Authorisation is required.**

The authorisation is required for the duration of the prospecting right which is an initial 5 years plus a potential to extend the right by an additional 3 years. Therefore, a total period of 8 years is required.

**s) Undertaking**

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

An undertaking is provided at the end of this report.

**t) Financial Provision**

*State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.*

A financial provision of approximately, **R 144 401.73** which includes concurrent and post-operation rehabilitation activities has been made by Samancor. A breakdown of these costs is presented in the table below. Please refer to Appendix E for more details on the financial provision for the proposed activity.

**i) Explain how the aforesaid amount was derived.**

The drilling contractor will be responsible for rehabilitating the drill pad once the drilling activities have been completed at each exploration hole. The financial guarantee was calculated using the DMR official financial quantum calculator. This amount was calculated using contractor rates for rehabilitation- particularly where post-operational rehabilitation is concerned. The table below shows how the amount was derived, based on the 2016 inflation rate.

**Table 16: Rehabilitation and closure costing<sup>5</sup>**

Description	Unit	Quantity	Unit Rate	Total Cost	Assumptions
<b>Scheduled Closure</b>					
<b>1 INFRASTRUCTURAL AREAS</b>					
<b>1.1 Rehabilitation of access roads and other tar surfaces</b>					
<b>1.1.1</b> Exploration/prospecting area					
Gravel Roads					
Rip disturbed area	/ha	10	R 10,904.74	R 109,047.42	Assumed access roads to be 3 m wide, and covering no more than 1.5 km in length, per drilling site (hence, 4500m <sup>2</sup> x 22 = 99000m <sup>2</sup> / 9.9 ha)
<b>Sub-total for Infrastructural Area</b>				<b>R 109,047.42</b>	
<b>2 MINING AREA</b>					
2.1 Drill sites					Assumed 22 drill sites, as indicated in the prospecting right application. Depth of each borehole to not exceed depth of 150m.
<b>2.1.1</b> General surface reclamation					
Rip disturbed area	/ha	0.22	R 10,904.74	R 2,280.68	Assumed area of each sump to be approximately 10mx10m = 100 m <sup>2</sup> x 22
Revegetate prospecting area	/ha	0.22	R 31,972.61	R 7,033.97	It is assumed that vegetation would be required over approximately 40% of
<b>Sub-total for Mining Area</b>				<b>R 9,314.65</b>	
<b>3 WATER MANAGEMENT</b>					
Reinstatement of drainage lines	/ha	0	R 334.50	R 0	Same area as for post-closure monitoring
<b>Sub-total for Water Management</b>				<b>R 0</b>	

<sup>5</sup> The rates used to determine the rehabilitation and closure costing was adapted from the rates used in the following report: Roux, E; Perry, E.; (2015). 1419224 - 13318 - 4 Environmental Management Plan for Prospecting on Zandfontein 447 JQ. Submitted. Johannesburg: Golder Associates Africa (Pty) Ltd. The rates were inflated using the 2016 AND 2017 CPI Index, to arrive at the amounts included in this table.

Description	Unit	Quantity	Unit Rate	Total Cost	Assumptions	
SUB-TOTAL 1				R 118,362.07		
<b>4 ADDITIONAL ALLOWANCES</b>						
4.1	Preliminary and general	sum	1	R 18,484.81	R 14,203.45	12 percent of sub-total 1
4.2	Contingencies	sum	1	R 15,404.00	R 11,836.21	10 percent of sub-total 1
Sub-total for Additional Allowances				R 26,039.66		
SUB-TOTAL 2				R 26,039.66		
<b>TOTAL (SUB-TOTAL 1 + SUBTOTAL 2)</b>				<b>R 144,401.73</b>		

- ii) **Confirm that this amount can be provided for from operating expenditure.** (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme).

The overall funding for the prospecting work programme is approximately **R 4 387 043** and funds will be released on a phase by phase basis, dependent on the results obtained i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. The table below shows a breakdown of the expected costs throughout the exploration process. The amount is also reflected in the Prospecting Work Programme submitted to the DMR.

Table 17: Fund allocation for the prospecting works

ACTIVITY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Expenditure (R')	Expenditure (R')	Expenditure (R')	Expenditure (R')	Expenditure (R')	Expenditure (R')
PHASE 1 Desktop studies and Geological Mapping	R 259 500				
PHASE 2- Reconnaissance Drilling and Interpretation	R 710 714.29	R 710 714.29 R 5 400			
PHASE 3- Resource Drilling and Interpretation		R 852 857.14	R 852 857.14		
PHASE 4- Feasibility Drilling and Drilling				R 497 500	R 497 500
<b>Annual Total</b>	R 970 214	R 1 568 971	R 852 857	R 497 500	R 497 500
				<b>TOTAL</b>	<b>R 4 387 043</b>

u) **Specific Information required by the competent Authority**

- i) **Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-**

**(1) Impact on the socio-economic conditions of any directly affected person.**

*(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix**)*

A full consultation process is currently being run for this permitting process. The purpose of the consultation is to provide affected persons the opportunity to raise any potential concerns.

Concerns raised will be captured and addressed within the public participation section of this report, and submitted in the Final BAR to the Competent Authority. As the final positioning of the drill sites cannot be confirmed without completion of phase 1 of the prospecting programme, a recommendation has been made to ensure that the directly affected landowners are re-consulted a minimum of 1 month prior to implementing invasive activities (drilling)- should the prospecting right be granted. The purpose of the re-consultation is to ensure that socio-economic impacts on directly affected persons can be raised and where possible addressed.

**(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act**

*(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).*

Mitigation measures proposed in this report take into account that no drill site will be located within 50m of any identified heritage site (which may occur during the prospecting programme) based on the desktop work underdone. Furthermore, from desktop studies undertaken, no heritage sites have been identified to occur in the area. Should any artefacts or objects be unearthed during the prospecting process, the relevant procedure will be followed in addressing the finds. Furthermore, and in compliance with heritage legislation, a Notification of Intent to Develop (NID) will be submitted to Heritage North West (HNW). The NID will be submitted when the draft BAR is released for public comment and proof of submission will be included in the Final BAR.

**v) Other matters required in terms of sections 24(4)(a) and (b) of the Act.**

*(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4**).*

The proposed site was selected based on extensive research and also following on information from previous prospecting activities in the area. In terms of the technologies proposed, the proposed prospecting has been chosen based on the long-term success of the company in terms of their mineral exploration history. The prospecting activities proposed in the Prospecting Works Programme (PWP) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

**PART B**

**ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

**1) Draft environmental management programme.**

**a) Details of the EAP,**

*(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).*

It is confirmed that the requirements for the provision of the details and expertise of the EAP are already included in PART A, section (1)(a).

**b) Description of the Aspects of the Activity**

*(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).*

It is confirmed that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h).

**c) Composite Map**

*(Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers)*

Please refer to Appendix C for the Composite Map.

**d) Description of Impact management objectives including management statements**

**i) Determination of closure objectives.**

*(ensure that the closure objectives are informed by the type of environment described)*

Closure of each prospecting site will entail rehabilitation of the disturbed areas to as close to their pre- prospecting condition after removal of the drilling rig and supporting vehicles. The closure-related objectives are as follows:

- To ensure that all areas that were impacted by prospecting activities are physically stable and non-eroding after closure;
- Ripping, shaping, and vegetating of the remaining disturbed areas and integrating these into the surrounding surface topography.
- To limit the possible adverse environmental consequences arising from the prospecting after closure and ensure that environmental functionality, where relevant, is reinstated;
- Ensuring that the rehabilitated site is free-draining and run-off is routed to local/natural catchments, to sustain catchment yield;
- To eliminate potential latent safety threats to humans and animals through the proper closure of core drill holes;
- To remove and properly dispose of all prospecting -related waste; and
- To re-instate pre-existing land uses/capabilities over the affected portions of the prospecting sites.

**ii) Volumes and rate of water use required for the operation.**

It is envisaged that the drilling contractor will use a full cart of water (i.e., 500 litres) over two days. On average, 40m is drilled per day and approximately 6 litres of water is used per metre drilled. In terms of sourcing the water, a local borehole will be used .in the absence of a local water supply. A road tanker will be utilised for potable water supply- which includes water for drinking purposes and for dust suppression.

iii) **Has a water use licence has been applied for?**

A Water Use Licence has not been applied for, given that the proposed prospecting does not trigger any water uses as per Section 21 of the National Water Act.

iv) Impacts to be mitigated in their respective phases

Table 18: Measures to rehabilitate the environment affected by the undertaking of any listed activity

<b>ACTIVITIES</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>PHASE</b> (of operation in which activity will take place.  State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).	<b>SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m<sup>2</sup>)</b>	<b>MITIGATION MEASURES</b> (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	<b>COMPLIANCE WITH STANDARDS</b> (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	<b>TIME PERIOD FOR IMPLEMENTATION</b> Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.  With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:-  Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
<b>Site establishment activities:</b> - Vegetation clearance - Topsoil stripping & stockpiling - Drill pad compaction - Placement of temporary portable toilets and resting place. - Vehicle movements - Waste management	Construction / setup phase & Operational phase	<i>NQ/BQ diamond drill holes</i>	Any buried artefacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and determine appropriate mitigation measures. The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken.	Heritage Act	Before and during drilling activities
	Construction / setup phase & Operational phase	<i>NQ/BQ diamond drill holes</i>	Control noise generation by maintaining equipment. Limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays. Maintain a buffer of 500m between drill sites and dwellings. The resting place shall be located outside of the 82dB Zone of the drill site.	SANS 10103 guideline	Before and during drilling activities

<b>ACTIVITIES</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>PHASE</b> <b>(of operation in which activity will take place.</b>  <b>State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).</b>	<b>SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m<sup>2</sup>)</b>	<b>MITIGATION MEASURES</b> (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	<b>COMPLIANCE WITH STANDARDS</b> (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	<b>TIME PERIOD FOR IMPLEMENTATION</b> Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.  With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:-  Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
<b>Exploration drilling:</b> - Drilling - Drill maintenance & refuelling - Core sample collection & storage - Vehicle movements - Waste generation & management	Operational Phase	NQ/BQ diamond drill holes	The drilling rig and other visually prominent items on the site will be located in consultation with the landowner; The existing vegetation will as far as possible- be used to screen the prospecting operations from view. If necessary, the operations can be screened from view by erecting a shade cloth barrier.	N/A	Before and during drilling activities
	Construction / setup phase & Operational phase	NQ/BQ diamond drill holes	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces. Maintain a buffer of 500m between drill sites and dwellings.	GN R. 827 (NEM: AQA)	Before and during drilling activities
	Construction / setup phase & Operational phase	NQ/BQ diamond drill holes	The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and will not be dozed or scraped with vegetation roots left intact for later re-growth; and Disturbed areas will be	NEMBA	Before and during drilling activities



<b>ACTIVITIES</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>PHASE</b> (of operation in which activity will take place.  State; Planning and design, Pre-Construction, Construction, Operational, Rehabilitation, Closure, Post closure).	<b>SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m<sup>2</sup>)</b>	<b>MITIGATION MEASURES</b> (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	<b>COMPLIANCE WITH STANDARDS</b> (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	<b>TIME PERIOD FOR IMPLEMENTATION</b> Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.  With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:-  Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
			revegetated with locally indigenous species as soon as possible.		
	Construction / setup phase & Operational phase	0.100 Ha per drill site	Potential disturbance to water course...		
	Construction / setup phase & Operational phase	0.100 Ha per drill site	All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution, including environmental coordinator where applicable; All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area. A community liaison officer will be mandated with informing the local residents of the commencement of prospecting activities. The Applicant will	NEMA	Before and during drilling activities

<b>ACTIVITIES</b> (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc  E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>PHASE</b> <b>(of operation in which activity will take place.</b>  <b>State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).</b>	<b>SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m<sup>2</sup>)</b>	<b>MITIGATION MEASURES</b> (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	<b>COMPLIANCE WITH STANDARDS</b> (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	<b>TIME PERIOD FOR IMPLEMENTATION</b> Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.  With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either:-  Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
			keep a complaints register and implement a grievance procedure to address any issues, concerns and grievances that may arise during the prospecting activities.		
	Construction / setup phase & Operational phase	2962.34 Ha	All drilling activities will be cognisant of the Kolobeng and Bofule River flowing through the site. The Applicant will ensure that the drilling contractor is aware of the implications of affecting or disturbing the water resources, and operations will take place responsibly and sustainably, and in a manner that will not trigger any permitting requirements of the National Water Act.	NWA	Before and during drilling activities

## e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph);

**Table 19: Impact management outcomes**

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
<b>Site establishment activities (-ve)</b> - Vegetation clearance - Topsoil stripping & stockpiling - Drill pad compaction - Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage - Vehicle movements - Waste management	Cultural and Heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction / Set-up	<ul style="list-style-type: none"> <li>All Samancor and contractor personnel involved in the prospecting activities will be made aware of the locations of any identified heritage resources, the necessity of avoiding impacts on such resources and the penalties for damaging them;</li> <li>Personnel will be informed about the consequences of unlawful removal of cultural and historical remains and artefacts associated with heritage sites. It will be emphasised that archaeological artefacts such as potsherds, stone tools, grinding stones, etc. must be left in situ and undisturbed.</li> <li>A safe distance of at least 50 metres will be maintained between the any potentially identified heritage resource and drilling rig or any other infrastructure associated with the prospecting activities;</li> <li>Where necessary, directional drilling will be practised to assess ore reserves situated below identified heritage resources, without affecting such resources;</li> <li>The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken.</li> </ul>	Heritage Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Noise	Noise Generation	Construction / Set-up	<ul style="list-style-type: none"> <li>• Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays;</li> <li>• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings;</li> <li>• Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition; and</li> <li>• If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	SANS 10103
	Visual	Visual intrusion	Construction / Set-up	<ul style="list-style-type: none"> <li>• The drilling rig and other visually prominent items on the site will be located in consultation with the landowner;</li> <li>• Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>• If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	N/A
	Traffic	Increase in traffic volumes in the vicinity of the drilling site	Construction / Set-up	<ul style="list-style-type: none"> <li>• Traffic signs to be put around the site to notify motorist of the activities</li> <li>• Construction vehicles to make trips on/off site only when necessary</li> <li>• Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	National Traffic Act Regulations

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Dust fall	Dust fall & nuisance from activities	Construction / Set-up	<ul style="list-style-type: none"> <li>The proposed operation falls within the boundaries of the Bojanala Platinum District Municipality and the mine will be required to operate within the air quality requirements of the Municipality's Air Quality Management Plan.</li> <li>Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	GN R. 827 (NEM: AQA)
	Soil and vegetation	The potential impact of the proposed prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.	Construction / Set-up	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad.</li> <li>Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	NEMBA
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It	Construction/ Set-up	<ul style="list-style-type: none"> <li>Environmental awareness training sessions should be part of the workers' induction and site workshops; and</li> </ul>	NEMBA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.		<ul style="list-style-type: none"> <li>If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of an animal specialist.</li> </ul>	
	Loss of biodiversity	The removal of vegetation and minimised animal life in the area may potentially affect the ecological composition of the CBA and ESA.	Construction / Set-up	<ul style="list-style-type: none"> <li>Measures to manage animal life to be implemented and adhered to.</li> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>Re-vegetation to be implemented in line with the rehabilitation plan.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	NEMBA
	Social	Friction between local residents/land owners and construction personnel	Construction / Set-up	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> </ul>	NEMA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
				<ul style="list-style-type: none"> <li>• A community liaison officer will be mandated with informing the local residents of the commencement of prospecting activities.</li> <li>• There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> <li>• The Applicant will keep a complaints register and implement a grievance procedure to address any issues, concerns and grievances that may arise during the prospecting activities.</li> </ul>	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	<ul style="list-style-type: none"> <li>• Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>• Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	NEMA
<b>Exploration drilling (-ve)</b> - Drilling - Drill maintenance & refuelling - Core sample collection & storage	Cultural and Heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Operations	<ul style="list-style-type: none"> <li>• All Samancor and contractor personnel involved in the prospecting activities will be made aware of the locations of all identified heritage resources, the necessity of avoiding impacts on such resources and the penalties for damaging them;</li> <li>• Personnel will be informed about the consequences of unlawful removal of cultural and historical remains and artefacts associated with heritage sites. It will be emphasised that archaeological artefacts such as potsherds, stone tools, grinding stones, etc. must be left in situ and undisturbed.</li> </ul>	Heritage Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
- Vehicle movements - Waste generation & management				<ul style="list-style-type: none"> <li>• A safe distance of at least 50 metres will be maintained between the identified heritage resource and drilling rig or any other infrastructure associated with the prospecting activities;</li> <li>• Where necessary, directional drilling will be practised to assess ore reserves situated below identified heritage resources, without affecting such resources;</li> <li>• If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately.</li> <li>• The find must be reported to a heritage specialist so that systematic and professional investigation/ excavation can be undertaken.</li> </ul>	
	Noise	Noise Generation	Operations	<ul style="list-style-type: none"> <li>• Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays;</li> <li>• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition; and</li> <li>• If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	Heritage Act



<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Visual	Visual intrusion	Operations	<ul style="list-style-type: none"> <li>The drilling rig and other visually prominent items on the site will be located in consultation with the landowner;</li> <li>Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	SANS 10103
	Traffic	Increase in traffic volumes in the vicinity of the drilling site	Operations	<ul style="list-style-type: none"> <li>Traffic signs to be put around the site to notify motorist of the activities</li> <li>Construction vehicles to make trips on/off site only when necessary</li> <li>Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	N/A
	Dust fall	Dust fall & nuisance from activities	Operations	<ul style="list-style-type: none"> <li>The proposed operation falls within the boundaries of the Bojanala Platinum District Municipality and the mine will be required to operate within the air quality requirements of the Municipality's Air Quality Management Plan.</li> <li>Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	National Traffic Act Regulations
	Soil and vegetation	Soil and vegetation	Operations	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> </ul>	GN R. 827 (NEM: AQA)

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		disturbance from drill pad preparation		<ul style="list-style-type: none"> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> </ul>	
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Operations	Measures implemented during site establishment should apply in this phase as well.	NEMBA
	Loss of biodiversity	The removal of vegetation and minimised animal life in the area may potentially affect the ecological	Construction / Set-up	<ul style="list-style-type: none"> <li>Measures to manage animal life to be implemented and adhered to.</li> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>Re-vegetation to be implemented in line with the rehabilitation plan.</li> </ul>	NEMBA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		composition of the CBA and ESA.		<ul style="list-style-type: none"> <li>Measures to manage animal life to be implemented and adhered to.</li> <li>The CBA and ESA ecological composition should be maintained as far as possible.</li> </ul>	
	Social	Friction between local residents/ land owners and construction personnel	Operations	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> <li>A community liaison officer will be mandated with informing the local residents of the commencement of prospecting activities.</li> <li>There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> <li>The Applicant will keep a complaints register and implement a grievance procedure to address any issues, concerns and grievances that may arise during the prospecting activities.</li> </ul>	NEMBA
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	<ul style="list-style-type: none"> <li>Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	NEMA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Surface and groundwater contamination	There is potential contamination of the water resources due to hydrocarbon leaks/ spills	Operations	<ul style="list-style-type: none"> <li>• Vehicles and equipment must be regularly serviced and maintained.</li> <li>• Refuelling of vehicles and equipment will be done with care to minimise the chance of</li> <li>• spillages;</li> <li>• A spill kit will be available on each site where prospecting activities are in progress; and</li> <li>• Any spillages must be cleaned up immediately to prevent further contamination.</li> </ul>	NWA

Please refer to Appendix F for additional measures that need to be implemented during the propose activities.

**f) Impact Management Actions**

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

**Table 20: Impact management actions**

<p><b>ACTIVITY</b> Whether listed or not listed.</p> <p>(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p><b>POTENTIAL IMPACT</b></p> <p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...)</p>	<p><b>MITIGATION TYPE</b></p> <p>(modify, remedy, control, or stop) through</p> <p>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)</p> <p>E.g.</p> <p>Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation..</p>	<p><b>TIME PERIOD FOR IMPLEMENTATION</b></p> <p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity.</p> <p>.With regard to Rehabilitation, therefore state either:-.</p> <p>Upon cessation of the individual activity or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>	<p><b>COMPLIANCE WITH STANDARDS</b></p> <p>(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>
<p><b>Site establishment activities:</b></p> <ul style="list-style-type: none"> <li>- Vegetation clearance</li> <li>- Topsoil stripping &amp; stockpiling</li> <li>- Drill pad compaction</li> <li>- Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage.</li> <li>- Vehicle movements</li> <li>- Waste management</li> </ul> <p><b>Exploration drilling:</b></p> <ul style="list-style-type: none"> <li>- Drilling</li> <li>- Drill maintenance &amp; refuelling</li> <li>- Core sample collection &amp; storage</li> <li>- Vehicle movements</li> <li>- Waste generation &amp; management</li> </ul>	<p>Cultural and Heritage</p>	<p>Undertake heritage survey prior to site activities in order to identify cultural/heritage features and cordon these off with Chevron tape. Avoid cultural/heritage impacts by maintaining 50m buffer from any identified heritage feature. Any buried artefacts that may be uncovered during site activities will require such activities to stop and a qualified archaeologist will be commissioned to assess their significance and determine appropriate mitigation measures.</p>	<p>Before and during drilling activities</p>	<p>Heritage Act</p>
	<p>Noise</p>	<p>Control noise generation by maintaining equipment. Limited to daylight hours on</p>	<p>Before and during drilling activities</p>	<p>SANS 10103</p>

<b>ACTIVITY</b> <b>Whether listed or not listed.</b>  (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  E.g. Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation..	<b>TIME PERIOD FOR IMPLEMENTATION</b>  Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:- Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	<b>COMPLIANCE WITH STANDARDS</b>  (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
		Mondays to Saturdays and no activities on Sundays and public holidays. Maintain a buffer of 500m-1000m between drill sites and dwellings. If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.		
	Visual	The drilling rig and other visually prominent items on the site will be located in consultation with the landowner; Make use of existing vegetation as far as possible to screen the prospecting operations from view; and If necessary, the operations can be screened from view by erecting a shade cloth barrier.	Before and during drilling activities	N/A
	Dust fall	Control dust emission by ensuring drill rig employs dust suppression system. Low vehicle speeds will be enforced on unpaved surfaces.	Before and during drilling activities	GN R. 827 (NEM: AQA)
	Soil and vegetation	The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and will not be dozed or scraped with vegetation roots left intact for later re-growth; and Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.	Before and during drilling activities Disturbed areas to be revegetated as soon as possible	N/A

<b>ACTIVITY</b> <b>Whether listed or not listed.</b>  (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>MITIGATION TYPE</b>  (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  E.g. Modify through alternative method. Control through noise control Control through management and monitoring Remedy through rehabilitation..	<b>TIME PERIOD FOR IMPLEMENTATION</b>  Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	<b>COMPLIANCE WITH STANDARDS</b>  (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
	Social	All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution; All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area; There will be a strict requirement to treat local residents with respect and courtesy at all times.	Before and during drilling activities	NEMA
	Surface and groundwater contamination	Operations will be carried out so as to mitigate any impacts on the water resources, by implementing measures to manage any potential incidents. Vehicles and equipment must be regularly serviced and maintained. Furthermore, refuelling of vehicles and equipment will be done with care to minimise the chance of spillages.  Any spillages must be cleaned up immediately to prevent further contamination.	During drilling activities	NWA

**i) Financial Provision**

**(1) Determination of the amount of Financial Provision.**

**(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.**

The closure objectives are to record and communicate the results of the monitoring programme during decommissioning to the participating stakeholders, and to receive an effective closure certificate (should the prospect indicate that the resource(s) would not support a sustainable mining operation. The objectives are to minimise the area to be disturbed and to ensure that the areas disturbed during the prospecting activities are rehabilitated and stable, as per the commitments made in the EMP.

As well as to sustain the pre-prospecting land use, and return the site to its near natural state as far as possible once drilling operations have been concluded.

**(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.**

The following have been highlighted as closure objectives:

- Minimising the area to be disturbed and to ensure that the areas disturbed during the prospecting activities are rehabilitated and stable, as per the commitments made in the EMP.
- Sustaining the pre-prospecting land use, and return the site to its near natural state as far as possible.
- This EMP will be made available to and discussed with each landowner before any prospecting commences on his/her property.
- Access to each property and placement of the drill rig and other infrastructure will be done in consultation with the relevant landowner.

**(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

After drilling has been completed in one area, the drilling team will ensure the site is restored to its original state by implementing the measures listed in Table 21 below.

**Table 21: Rehabilitation measures**

<b>Aspect/Impact</b>	<b>Rehabilitation Measure</b>	<b>Monitoring Frequency and Responsibility</b>
<b>Removal of structures</b>	<ul style="list-style-type: none"><li>• Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works; and</li><li>• Ensure that all access roads utilised during construction (which are not earmarked for closure and rehabilitation) are</li></ul>	Once-off, Samancor



Aspect/Impact	Rehabilitation Measure	Monitoring Frequency and Responsibility
	returned (as far as possible) to their state prior to construction.	
<b>Vegetation clearing/Replanting</b>	<ul style="list-style-type: none"> <li>Remove any emerging alien and invasive vegetation to prevent further establishment;</li> <li>All planting work is to be undertaken by suitably qualified personnel making use of the appropriate equipment;</li> <li>Transplant during the winter (between April and September); and</li> <li>Plant indigenous plants to minimise the spread of alien and invasive vegetation.</li> </ul>	When revegetation is done and in blooming season,
<b>Topsoil replacement</b>	<ul style="list-style-type: none"> <li>Replace and redistribute stockpiled topsoil together with herbaceous vegetation, overlying grass and other fine organic matter in all disturbed areas of the prospecting site, including temporary access routes and roads. Replace topsoil to the original depth (i.e. as much as was removed prior to construction).</li> <li>Prohibiting the use of topsoil suspected to be contaminated with the seed of alien vegetation. Alternatively, the soil is to be sprayed with specified herbicides.</li> <li>Backfill planting holes with excavated material / approved topsoil, thoroughly mixed with weed free manure or compost (per volume about one quarter of the plant hole), one cup of 2:3:2 fertiliser and an approved ant and termite poison.</li> <li>Where local soil has poor drainage, broken rock (Approx. 75 mm in diameter) must be placed to a depth of 150mm at the bottom of the planting hole prior to planting and backfilling with approved plant medium mixture.</li> </ul>	Once-off, Samancor
<b>Waste and Rubble Removal</b>	<ul style="list-style-type: none"> <li>Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates.</li> <li>Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site.</li> </ul>	Once-off, Samancor
<b>Solid &amp; Hazardous Waste</b>	<ul style="list-style-type: none"> <li>Store hazardous waste as indicated on the approved Environmental Management Programme (EMPR).</li> <li>Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site.</li> <li>Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner.</li> <li>Do not hose oil or fuel spills into a storm water drain or sewer, or into the water resources on the Elandsfontein farm</li> <li>Dispose of all visible remains of excess cement and concrete after the completion of tasks. Dispose of in the approved manner (solid waste concrete may be treated as inert construction rubble, but wet cement and liquid slurry, as well as cement powder must be treated as hazardous waste).</li> </ul>	Once-off, Samancor
<b>Erosion protection</b>	<ul style="list-style-type: none"> <li>Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site.</li> <li>Retain shrubbery and grass species wherever possible.</li> <li>Perform regular monitoring and maintenance of erosion control measures.</li> </ul>	After rainfall events

**(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.**

Closure of each prospecting site will entail rehabilitation of the disturbed areas to as close to their pre- prospecting condition after removal of the drilling rig and supporting vehicles.

The closure-related objectives are as follows:

- To ensure that all areas that were impacted by prospecting activities are physically stable and non-eroding after closure;
- Ripping, shaping, and vegetating of the remaining disturbed areas and integrating these into the surrounding surface topography.
- To limit the possible adverse environmental consequences arising from the prospecting after closure and ensure that environmental functionality, where relevant, is reinstated;
- Ensuring that the rehabilitated site is free-draining and run-off is routed to local/natural catchments, to sustain catchment yield;
- To eliminate potential latent safety threats to humans and animals through the proper closure of core drill holes;
- To remove and properly dispose of all prospecting -related waste; and
- To re-instate pre-existing land uses/capabilities over the affected portions of the prospecting sites.

The Applicant is required to make the prescribed financial provision for the rehabilitation or management of negative environmental impacts. If the Applicant fails to rehabilitate or manage any negative impact on the environment, the DMR may, upon written notice to the Applicant use all or part of the financial provision to rehabilitate or manage the negative environmental impact in question. The Company will specify that the drilling contractor is required to comply with all the environmental measures specified in the EMP. This will include avoiding unnecessary disturbance of natural vegetation and the rehabilitation of each drill site, immediately after drilling has been completed. All tracks to the drill sites must be rehabilitated at the end of the prospecting programme. The financial provision provides for the final checking of all sites before site clearance.

**(e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.**

The quantum of the financial provision required is **R 144 401.73**. Samancor is required to update and review the quantum of the financial provision on an annual basis (as per Regulation 54 (2) of the MPRDA). This amount has been provided for by Samancor, and Appendix E illustrates the Applicant's financial capability for undertaking the prospecting. The amount is inclusive of concurrent and post-closure rehabilitation.

**(f) Confirm that the financial provision will be provided as determined.**

Please refer to Appendix E for more details on the financial provision for the proposed activity.

- g) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including**
- (i) Monitoring of Impact Management Actions**
  - (ii) Monitoring and reporting frequency**
  - (iii) Responsible persons**
  - (iv) Time period for implementing impact management actions**
  - (v) Mechanism for monitoring compliance**

**Table 22: Mechanisms for monitoring compliance**

<b>SOURCE ACTIVITY</b>	<b>IMPACTS REQUIRING MONITORING PROGRAMMES</b>	<b>FUNCTIONAL REQUIREMENTS FOR MONITORING</b>	<b>ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)</b>	<b>MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS</b>
All Prospecting Activities	N/A	Ensure that the prospecting programme is being implemented in line with the approved prospecting works programme.	Samancor Geologist	Submit an annual prospecting progress report to DMR
	All commitments contained in the BA Report and accompanying EMPr	Ensure commitments made within the approved BAR and EMPr are being adhered to.	Internal environmental control officer and independent EAP	Undertake and submit an environmental performance audit every two years to DMR
Drilling Activities	Noise	Weekly inspections will cover the following: <ul style="list-style-type: none"> <li>• Implementation of effective waste management</li> <li>• Establish and implement a stakeholder compliant register on site and ensure that all complaints are responded to promptly.</li> <li>• Ensure that an oil spill kit is readily available.</li> <li>• Ensure that all chemicals and hydrocarbons are stored within</li> </ul>	Appointed drilling contractor	Weekly inspection and reporting
	Dust fall			
	Visual			
	Soil & vegetation			
	Social			
	Housekeeping & maintenance			
	Waste management			
	Rehabilitation			

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		<ul style="list-style-type: none"> <li>• Ensure that the fire brake is maintained.</li> <li>• Rehabilitation of drill pads.</li> <li>• Records of water intersections on borehole logs.</li> <li>• Control and minimise the development of new access tracks.</li> <li>• Appropriate storage and handling of topsoil.</li> </ul>		
Post drilling	Groundwater Revegetation Stability Soil erosion Alien invasive species	Monitor the external boreholes within 500m from drill post drilling (if any). The Drill site shall be monitored six monthly until closure certificate is obtained.	Environmental Coordinator	Monitoring Report

**h) Indicate the frequency of the submission of the performance assessment/ environmental audit report.**

Environmental Performance Assessment (EPA) audits or reviews are a requirement of all PR holders, as stipulated in the MPRDA Regulations 54 and 55 (MPRDA Regulations, Government Notice (GN) 527, 2004, as amended). In compliance with these Regulations, the audit process is to be conducted on a biennial basis (i.e. every two years).

**i) Environmental Awareness Plan**

**(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.**

It is standard practice at Samancor Chrome to require of its own employees and the employees of contractors that will be working on a new project or at a new site to attend an induction course where the nature and characteristics of the project and the site are explained. The course includes key information abstracted from the EMP pertaining to the potential environmental impacts, the mitigation measures that will be applied, the monitoring activities that will be undertaken and the roles and responsibilities of contractors' and Samancor personnel. The full EMP document is also made available to attendees.

The environmental training courses will include, amongst others, aspects such as:

- Awareness training for contractors and employees
- Job specific training – training for personnel performing tasks which could cause potentially significant environmental impacts;
- Comprehensive training – on emergency response, spill management, etc;
- Specialised skills; and
- Training verification and record keeping.
- Environmental issues on site;
- Roles and responsibilities;
- The construction environmental management measures;
- Cultural awareness; and
- Heritage discovery procedures.
- All attendees shall remain for the duration of the course and, on completion, sign an attendance register that clearly indicates participants' names. A copy of the register shall be kept on record by Samancor

**(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.**

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. This should be in conjunction with the implementation of the EMP.

**j) Specific information required by the Competent Authority**

*(Among others, confirm that the financial provision will be reviewed annually).*

Samancor will update and review the quantum of the financial provision on an annual basis (as per Regulation 54 (2) of the MPRDA). In addition, formal monitoring and performance assessment reviews of compliance will be undertaken annually.

## 2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein.



---

Signature of the environmental assessment practitioner:

DMT Kai Batla Pty Ltd

---

Name of company:

5 February 2018

---

Date

**-END-**

## REFERENCES

Hudson, A and P. Kimberg (February 2013). *Ecological Baseline Assessment for Mining Right Applications on Varkensvlei /Nootgedacht and Haakdoordrift*. Johannesburg: Golder Associates Africa (Pty) Ltd.

Ngcukana, N; Walton, N; Webster, L; Burger, R; Piketh, S; Bomba, H;. (May 2011). *Bojanala Platinum District Municipality. Draft Air Quality Management Plan*.

Roux, E; Perry, E;. (2015). 1419224 - 13318 - 4 *Environmental Management Plan for Prospecting On Zandfontein 447 JQ Submitted* Johannesburg: Golder Associates Africa (Pty) Ltd.

*Rustenburg Climate*. (n.d.). Retrieved March 20 , 2017, from SA Explorer: [http://www.saexplorer.co.za/south-africa/climate/brits\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/brits_climate.asp)

Thabo, F. E. (2014). *Prospecting Work Programme Submitted for a Prospecting Right Application without Bulk Sampling on various Portions of the farm Zandfontein, 447 JQ, District of Madibeng*. Johannesburg: Samancor Chrome.

*The Local Government Handbook*. (n.d.). Retrieved March 20, 2017, from <http://www.localgovernment.co.za/locals/view/188/madibeng-local-municipality>

## **APPENDICES**

**Appendix A: Authority Correspondence**

**Appendix B: Curriculum Vitae of EAP**

**Appendix C: Project Maps**

**Appendix D: PPP & Comments and Response Report**

**Appendix E: Financial Provision**

**Appendix F: Additional Impact Management Outcomes**



## **Appendix A: Authority Correspondence**



## mineral resources

Department:  
Mineral Resources  
REPUBLIC OF SOUTH AFRICA

**Directorate:** Mineral Regulation: North West Region,  
Private Bag A1, Klerksdorp, 2570 Cnr Margaretha Prinsloo & Voortrekker Streets  
Vaal University of Technology Building, Klerksdorp, 2571  
**Enquiries:** Gladys Mushome **Tel:** (018) 487 4300 **Fax:** (018) 487 4394  
**E-Mail:** [Ntanganedzeni.Mushome@dmr.gov.za](mailto:Ntanganedzeni.Mushome@dmr.gov.za) **Ref:** NW 30/5/1/1/3/2/1/ (12238) EM.

### REGISTERED MAIL

DMT-Kai Batla (Pty) Ltd  
(Samancor Chrome Limited)  
P.O. Box 41955  
Craighall  
2024

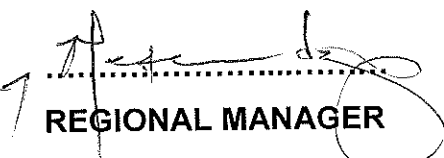
**Attention: Samantha Moodley**                      **Fax no: 086 545 2720**

**ACKNOWLEDGEMENT RECEIPT OF AN APPLICATION FOR ENVIRONMENTAL AUTHORISATION AS REQUIRED IN TERMS OF REGULATION 3(6) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO.107 OF 1998): ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 LODGED IN TERMS OF REGULATION 19 OF THE ABOVE-MENTIONED REGULATIONS AS READ TOGETHER WITH SECTION 12 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2008 (ACT NO. 49 OF 2008) AS AMENDED.**

1. The above-mentioned matter refers.
2. This letter serves to inform you that your application for an Environmental Authorisation lodged on the **22<sup>nd</sup> November 2017** is hereby acknowledged.
3. You are required to consult with every organ of state that administers a law relating to a matter affecting the environment relevant to this application in terms of Chapter 3, Regulation 7(2) read with Chapter 6, Regulation 41(b). This includes; but is not limited to the National Department of Agriculture, Forestry and Fisheries, Department of

4. Any public participation process must be conducted for a period of at least 30 days as per Chapter 2, Regulation 3(8).
5. Submit three hard copies of Basic Assessment Report and Environmental Management Programme to the office and one soft copy on SAMRAD portal online system within **90 days from the date of lodgement of your application.**
6. Kindly note that acknowledgement of your environmental authorisation application does not grant you a right to commence with the listed activities (mining operation) applied for.
7. In case of the tribal authority, you are required to ensure that proof of consultation of the community concerned is supported by a resolution which is taken in a meeting attended/facilitated by the Department of Rural Development and Land Reform.
8. Further note that in terms of regulation 45 of the National Environmental Management Act, 1998 (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014, failure to submit the documents or meet any timeframes prescribed in terms of the said Regulations will deem the application as having lapsed.
9. Kindly also note your application has been assigned to **Gladys Mushome** who could be reached at the following contact details: Tel: (018) 487 4300/4322.

Yours faithfully

  
.....  
**REGIONAL MANAGER**  
**MINERAL REGULATION**  
**NORTH WEST REGION**  
**DATE: 01/12/2017**

ALL THE CORRESPONDENCE SHOULD BE ADDRESSED TO THE ATTENTION OF THE REGIONAL MANAGER OF DEPARTMENT OF MINERAL RESOURCES: NORTH WEST REGION.

## **Appendix B: Curriculum Vitae of EAP**

## COMPETENT PERSON'S CERTIFICATE

**Position:** Senior Environmental Manager  
**Name of Firm:** DMT-Kai Batla (Pty) Ltd  
**Name of Staff Member:** Samantha Moodley  
**Profession:** Principal Environmental Consultant  
**Nationality:** South African

### Professional Profile

A highly competent Environmental Consultant with 12 years' experience and advanced knowledge in the global environmental and engineering fields, predominantly in oil and gas, infrastructure development, industrial developments, minerals and metals. Successful track record in environmental permitting processes, managing specialists, project budgets, project management, conflict resolution, project administration, interfacing with other disciplines, environmental strategy and policy, environmental and related legislation (South African and international) and public participation processes. Successfully led and contributed to ESIA's for large multi-disciplinary projects and accomplished in producing sound scientific reports that are understandable to non-technical stakeholders. Strong communicator with project and technical teams, client, authorities and public role-players.

### Membership in Professional Societies

- International Association for Impact Assessment (or)

### Key Qualifications:

- Environmental and Social Impact Assessments according to international best practice standards, i.e. IFC Performance Standards.
- Project Management.
- Business Integration (environmental engineering sustainability).
- Identifying key environmental attributes, opportunities and constraints.
- Sensitivity analyses and sustainability assessments.
- Strategic environmental management plans.
- Technical report writing including: scoping reports; environmental and social impact assessment reports; environmental management plan reports and amendments; inception reports; status quo reports; desired state reports; environmental management framework reports; strategic environmental assessment reports; performance assessment reports; ecological specialist reports.
- Global experience (Botswana, Mozambique, Malawi, Nigeria, Zimbabwe and South Africa).
- Coordinating and managing specialists including developing terms of references, managing information needs, organising site visits, reviewing reports.
- Infrastructure experience (port and marine terminals, industrial plants, rail and road).
- Coal mining experience (Mozambique, Botswana and South Africa).
- Public participation processes including: communication strategies; stakeholder's analysis; background information documents, issues and responses reports; feedback stakeholders during public and focus group meetings.

### Education:

Degree/Diploma	Field	Institution	Year
B.Soc. Sc. Honours	Geography and Environmental Management	University of KwaZulu Natal	2005

Degree/Diploma	Field	Institution	Year
Bachelor of Social Science (B.Soc.Sc)	Geography and Environmental Management	University of KwaZulu Natal	2004

#### Employment Record:

Position	Company	Job description	Duration
Manager: Environmental Division	<b>Fourth Element Consulting (Pty) Ltd</b>	Manager: Environmental Division	2014
Environmental Advisor	<b>Hatch Goba (Pty) Ltd</b>	Environmental Advisor	2011 – 2013
Senior Environmental Consultant	<b>ERM Southern Africa</b>	Senior Environmental Consultant	2006 – 2011

#### Business and Project Management

- Pro-actively seeking out additional opportunities with the various parties involved in projects.
- Managing budgeting, work planning, team briefing, progress monitoring, financial monitoring, invoicing, reviews and QA/QC.
- Managing and contributing to high quality, successful proposals over the last 8 years.

#### Authorisation Permitting Studies

- Authoring and/or project managing a variety of environmental authorisations processes.
- Successfully undertaking EIAs for a range of projects across a number of sectors all over Africa.
- Excellent understanding of the legislative requirements associated with EIAs as well as an understanding of the in-country, South African and provincial regulatory and permitting processes.
- Fostering good relationships with competent authorities as well as local authorities in South Africa.
- Assisting clients in ensuring that projects meet international environmental and social assessment standards (including those of the IFC, World Bank, the African Development Bank (AfDB) and JBIC and others).
- Applying expertise to assist in the development of bankable projects in compliance with the Equator Principles and IFC Performance Standards in the last 2 years. This includes working for project developers seeking finance from the Equator Principles Financial Institutions as well as acting on behalf of project lenders in reviewing project compliance against the Equator Principles.

#### Engineering Interface

- Experience in working alongside engineering design teams in applying the required environmental assessment methodologies, at the appropriate time within the project life cycle process, providing her with the ability to recognise potential gaps that need to be addressed during the EIA and allowing for improved integration of information between the EIA project team and the engineering design team. This experience allowed her to manage potential EIA schedule delays by detailed planning and communication of required engineering inputs to the EIA and identification of tasks which can be advanced independently of the engineering design.
- Providing a managed interface between clients, engineering design teams and environmental assessment practitioner to facilitate the effective integration of environmental considerations into the design and planning processes.

#### Global Work experience

- Worked on Projects in: Botswana, Mozambique, Malawi, Zambia, Zimbabwe, Nigeria and South Africa.
- Proposals prepared for: Botswana, Brazil (Sao Paulo), Canada, Democratic, Lesotho, Liberia, Malaysia, Mozambique, Malawi, Namibia, Sierra Leone, Swaziland, Zambia, Zimbabwe and South Africa.

#### Technical Papers, Conferences and Seminars

- Kamal Govender, Stuart Heather-Clark, Samantha Moodley, EIA for coal barging on the Zambeze River: A successful EIA, IAIA 11, Mozambique, 2011.

## Key Strengths

- Strong prioritisation and time management skills with particular focus on meeting deadlines.
- Able to manage multiple projects simultaneously in a team environment.
- Track record for meeting timelines and meeting expectations.
- Responds quickly to changing situations and works well under pressure while maintaining individual team effectiveness.
- Able to cope with ambiguity, contradiction, stress and uncertainty.
- Attention to detail, planning, organisation and daily delivery requirements.
- Excellent internal and external negotiation skills with ability to engage and influence clients.
- Good interpersonal skills - works well with others, motivates and encourages.
- Solid judgment and management skills to effectively deal with people's needs/issues.

## Key Project Experience:

### OIL AND GAS PROJECTS

#### **EIA for NEMA Rectification Applications, Shell SA, Western Cape and Gauteng, 2006, Project Consultant**

This project entailed the completion of the National Environmental Management Act (NEMA) Rectification Applications for above and below ground fuel storage sites. Responsibilities included coordinating the public consultation as well as the project report write-up for multiple sites.

#### **Proposed aboveground storage facility and baghouse at ArcelorMittal, Vanderbijlpark Works, 2008, Assistant Project Manager**

Appointed to undertake a Basic Assessment process for an aboveground storage facility and baghouse emission abatement technology for ArcelorMittal's Sinter Plant

#### **EIA for underground storage tank at Mafube Colliery, 2008, Project Manager**

Appointed to undertake a Scoping/ EIA process for a proposed underground storage tank at Mafube Colliery

#### **Mafube Coal Mining BA for AST installation 2010, Project Manager**

Appointed to undertake a Basic Assessment for the proposed installation of aboveground storage tanks at Mafube Colliery, Middelburg, Mpumalanga Province

#### **ENGEN London Rd EIA 2009-Ongoing, Project Manager**

Appointed to undertake an EIA for the proposed construction of two filling stations at the N3/London Road intersection, Gauteng.

#### **Vodacom EA Audit 2009, Project Manager**

Appointed to undertake an environmental audit of the Environmental Authorisation for the installation of bulk above ground storage tanks at the Vodacom 6 Development in Midrand, Gauteng.

#### **Chevron ERP and EMP for depot at OR Tambo 2009, Project Consultant**

Appointed to undertake an EMP and ERP for bulk fuel off-loading at the rail siding near OR Tambo Airport, Gauteng.

#### **ENGEN Filling Station EIA, Ventersdorp EIA 2010, Project Manager**

Appointed to undertake an EIA for the proposed construction of an Underground Storage Tank (UST) at the Voorwaarts Filling Station in the North West Province

### MINING PROJECTS

#### **Order of Magnitude Study for Rio Tinto Iron and Titanium - TIO4 Program, Mozambique, 2011**

Hatch was appointed by Rio Tinto Mining and Exploration Limited (RTME) to conduct the OMS for the proposed mineral sand mining project in Mutamba, Mozambique. Key responsibilities on this project included reviewing the environmental requirements in terms of the permitting as well as design standards associated with the project.

**Environmental, Social and Health Impact Assessment (ESHIA) of the Mmamabula Coal and Power Station in Botswana for CIC, 2006-2009, Project Consultant**

CIC required an integrated ESHIA to be undertaken for a new coal mine and power station in south eastern Botswana. This ESHIA was required to meet the IFC Performance Standards. This is a multifaceted project which has a number of EIAs being conducted parallel to each other. Assisted with compiling ESHIA for the entire project, Compiled the Environmental Awareness Plan, assisted with other Management Plans, and overall project management.

**ESIA for proposed Sheba's Ridge Mine, 2007-2008, Project Consultant**

The project involves the development of a large, greenfield open pit nickel and copper mine and processing plant in Limpopo Province, South Africa. The ESIA was guided by Equator Principle and IFC requirements. Designated as the coordinator for the public participation process and was involved with managing stakeholder database, interacting with stakeholders and the writing up of documentation required for public participation process.

**Project Mafutha Environmental Baseline Study, South Africa, 2008, Assistant Project Manager**

Project Mafutha comprises a coal-to-liquid plant, a coal mine a town, water supply infrastructure and associated activities. As part of the pre-feasibility studies for Project Mafutha, ERM was appointed to undertake the Environmental Baseline Assessment. The project required delicate managing, in light of stakeholder expectations, the client's ongoing property purchasing negotiations, client's prospecting activities, and a related basic assessment for road construction and widening (also being undertaken by ERM). Managing a multi-disciplinary team of specialists, managing a desktop and detailed assessment and managing the public participation aspect required integration of different expertise and project components. The timeframe was short (12 months) and required innovative solutions to run processes in parallel to deliver on time.

**Mafube EMPR Revision 2010, Project Manager**

Appointed to undertake a revision of the EMPR for Mafube Colliery, Middelburg, Mpumalanga Province as per a Directive issued by DMR.

**Anglo Prospecting EMP 2010, Project Manager**

Appointed to undertake an EMP for prospecting activities carried out by a mine in Rustenburg. The EMP involved researching environmental and social impacts of prospecting activities as well as providing adequate mitigation measures for these impacts.

**Coal of Africa Due Diligence, South Africa**

**Coal of Africa, 2011, Project Consultant**

ERM was appointed Coal of Africa Limited to undertake an independent International Finance Corporation and Equator Principles review of the proposed Makhado Colliery Project in the Limpopo Province, South Africa. This includes a review of all environmental and social factors to determine overall conformance with IFC performance standards.

**INFRASTRUCTURE PROJECTS**

**Kudumatse Wellfield EIA for Mmamabula Energy Project, 2007-2008, Project Consultant**

Specific responsibilities for this project included working with specialists to ensure that the different environmental and social impacts of the project were carefully considered. Involvement in the public



participation process of the EIA included holding meetings with relevant authorities and potentially affected communities. Further responsibilities included drafting of the Terms of Reference and EIS.

**Railway Link and Services Corridor EIA for Mmamabula Energy Project, 2007 to 2008, Assistant Project Manager**

Appointed to undertake EIA process for a proposed railway line, road upgrade and water supply pipelines as part of the Mmamabula Energy Project in Botswana. Key roles on this project included management of specialists and compilation of ESIA.

**Basic Assessment for Road Construction and Widening, South Africa, 2008, Assistant Project Manager**

Appointed to undertake a Basic Assessment for a proposed road construction and widening project to facilitate bulk sampling as part of clients' prospecting activities.

**Riversdale Coal Barging Project, Phase 1, Mozambique, 2009  
Project Consultant**

Appointed to undertake a baseline sensitivity analysis of the proposed Zambezi River Coal Barging project with a view to identifying baseline sensitivities and potential fatal flaws.

**ESIA for Riversdale Zambezi River Coal Barging Project, Mozambique, 2009 to 2011  
Assistant Project Manager**

The ESIA is to meet the Mozambican regulatory requirements as well as best practice as defined by the IFC Performance Standards. Key responsibilities on this project include regular interaction with client, managing a suite of specialists, budget control and compiling necessary reports.

**Beira Coal Terminal EMP, Mozambique  
Vale, 2011, Project Consultant**

A comprehensive construction and operational Environmental Management Plan was prepared for Vale for the proposed coal terminal located at the Port of Beira, Mozambique.

**EIA for Riversdale Beira Transhipment Project, Mozambique, 2010 to 2011, Project Manager**

The EIA is to meet the Mozambican regulatory requirements. Key responsibilities on this project include regular interaction with client, managing subcontractors, budget control and compiling necessary reports

**FEL 2 and FEL 3 Studies for Expansion of Terminal de Carvão da Matola Lda ("TCM") at Port of Maputo, Mozambique, 2011-2013, Environmental Manager.**

Hatch Africa (Hatch) was appointed by Grindrod Terminals to carry out investigations for the proposed new coal terminal which will be developed and constructed in two phases. Samantha served as the Environmental Manager on the Project in which she managed the environmental requirements related to the expansion of Matola's TCM Facility. This involved compiling of project Environmental design criteria which are needed to guide the Project Technical Team during the planning phases and design work, interfacing and coordinating with engineering disciplines, management of the EAP undertaking environmental authorisation process (Environmental and Social Impact Assessment), managing of monitoring programmes, report review, construction management in terms of environmental compliance, as well as ensuring environmental best practice is applied to the expansion in feasibility and during project execution.

**Vereeniging City Urban Design Framework, Gauteng Provincial Government, 2012-2013,  
Environmental Specialist**

Appointed to as environmental specialist to inform the project design approach. Key responsibilities on this project involved addressing the environmental and social sectors, which includes the development of environmental and social inputs to the Status Quo report and the development of environmental and social sector plans. In addition to the sector specific input, sustainability input to the integrated visioning and sector planning process was provided.

### **INDUSTRIAL PROJECTS**

#### **FEL 2 and FEL 3 Studies for Nyanza Light Metals Recovery of Titanium from Slag Project, South Africa, Ongoing, Environmental Advisor**

Hatch was retained by Arkein Capital to evaluate beneficiation options of discard furnace slag from Evraz Highveld as Nyanza Light Metals intends to construct and operate an industrial rutile pigment production facility in an area yet to be determined in South Africa. The environmental scope involves project deliverables that are based directly on those defined and described in the Hatch Project Lifecycle Process (PLP) ensuring that the sustainable development aspects of the study are adequately addressed.

#### **Fry's Metals, 2009, Project Manager**

Appointed to undertake a legal review for the proposed new Battery Crusher at the Fry's Metals plant in Germiston.

#### **Technical Consulting for an Environmental Impact Assessment for Bus Assembly Plant, Confidential Client, Nigeria, 2008, Project Manager**

Appointed to provide technical support to the team carrying out an EIA for a proposed bus assembly plant in Nigeria. The EIA process and report was audited against the Nigerian regulatory EIA requirements. Recommendations were made to address gaps.

#### **Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualification, my experience, and me.



---

Samantha Moodley

## **Appendix C: Project Maps**

26°59'0"E 27°0'0"E 27°1'0"E 27°2'0"E 27°3'0"E 27°4'0"E 27°5'0"E 27°6'0"E 27°7'0"E 27°8'0"E 27°9'0"E

**Elandsfontein Boundary Coordinates**

1. 24°57'36.00"S, 27°01'55.79"E
2. 25°00'34.52"S, 27°03'36.74"E
3. 24°59'27.69"S, 27°05'33.18"E
4. 24°58'36.08"S, 27°06'23.73"E
5. 24°57'13.28"S, 27°05'11.67"E
6. 24°57'12.92"S, 27°04'25.04"E
7. 24°57'32.51"S, 27°03'55.70"E
8. 24°57'12.63"S, 27°03'32.85"E
9. 24°56'27.41"S, 27°04'00.20"E
10. 24°56'14.41"S, 27°04'00.99"E

**Kraalhoek**

**A24F**

**Mantserre**

**Kolobeng**

**Swartklip**

**A24D**

**Magong**

**A24E**

**Kgamatha**

26°59'0"E 27°0'0"E 27°1'0"E 27°2'0"E 27°3'0"E 27°4'0"E 27°5'0"E 27°6'0"E 27°7'0"E 27°8'0"E 27°9'0"E



**Legend**

- A24D** Quaternary
- Borehole Positions
- Elandsfontein 402 KQ Boundary
- Rivers
- ▨ Wetlands
- ▨ Dams

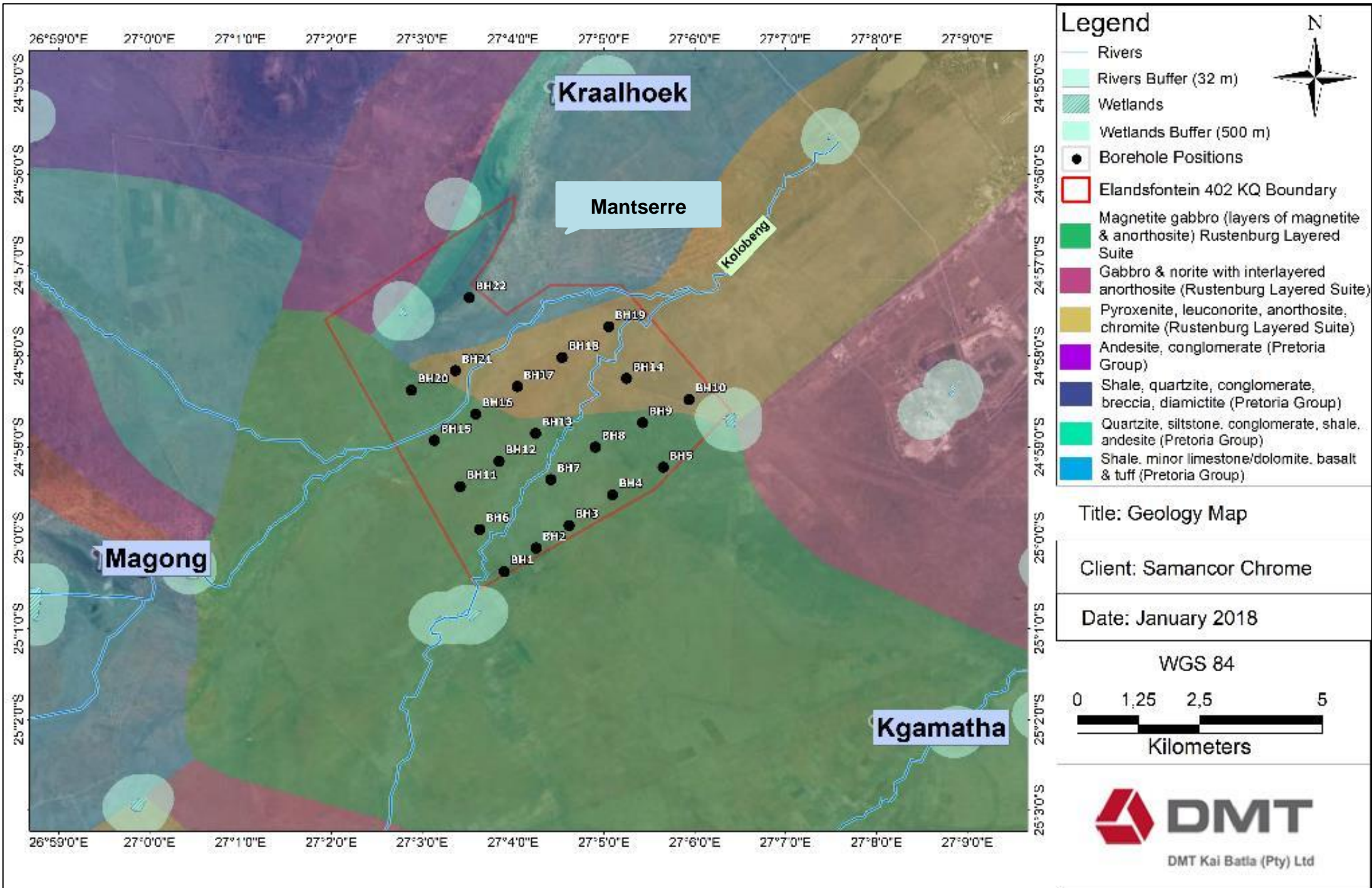
Title: Locality Map

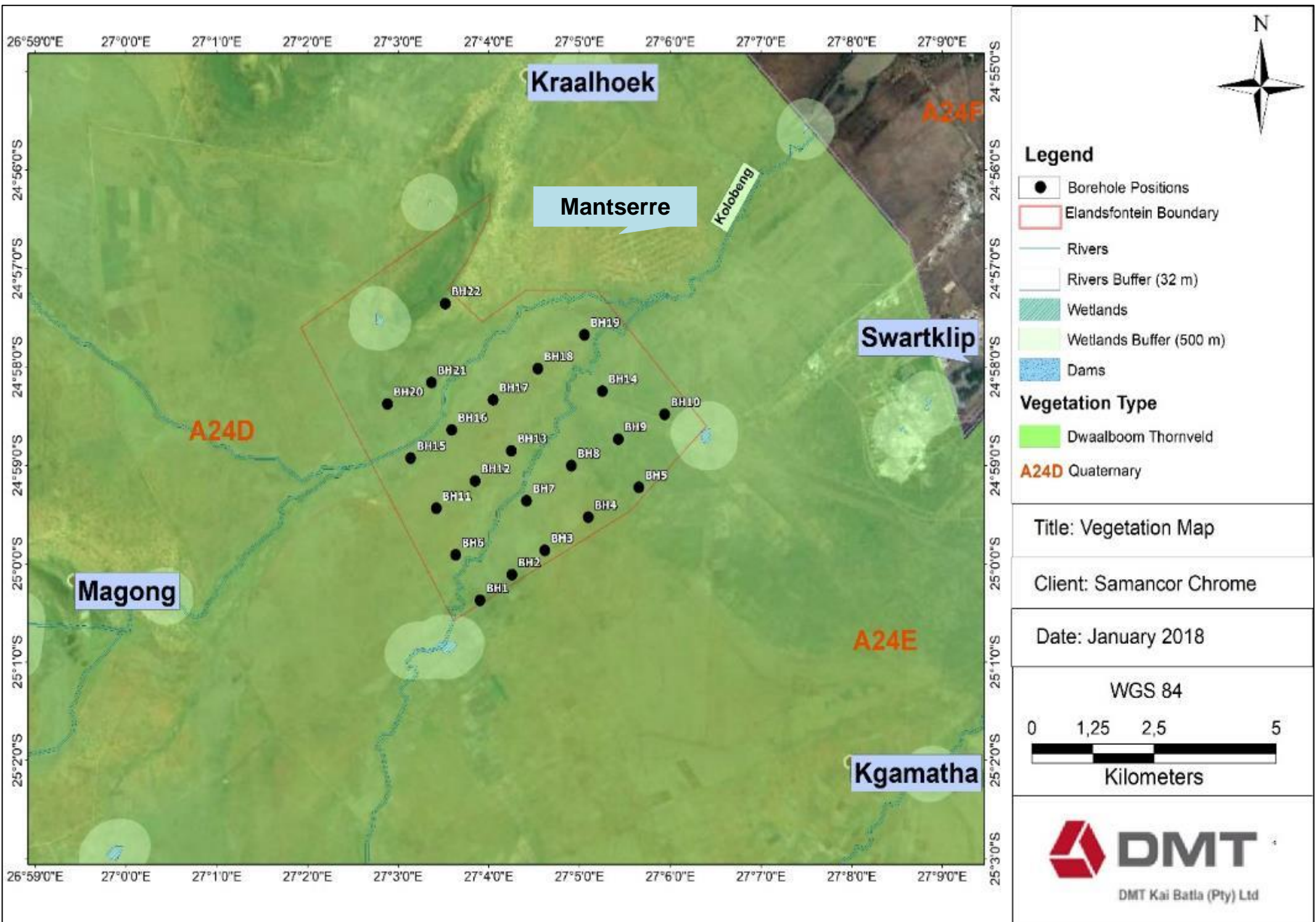
Client: Samancor Chrome

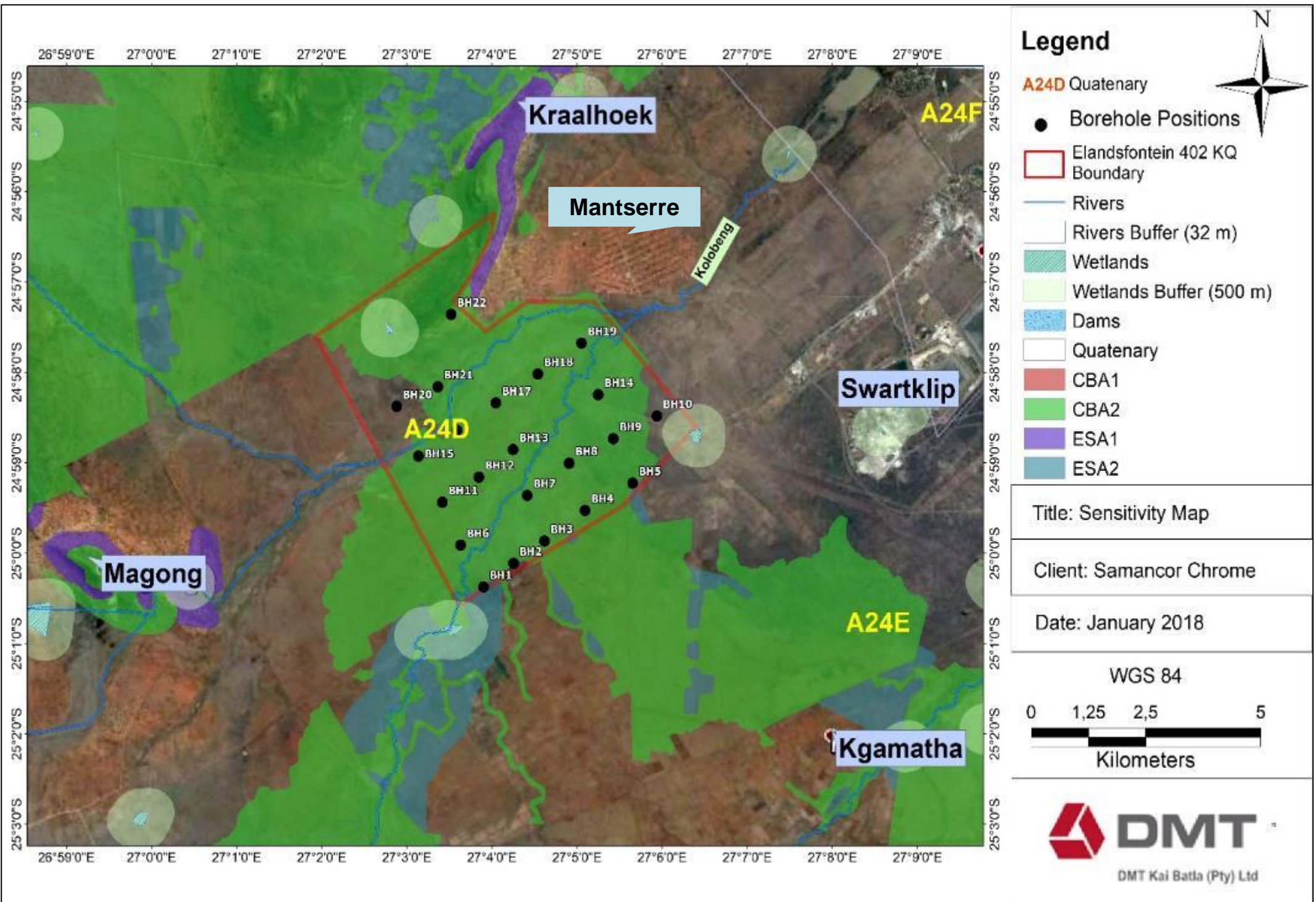
Date: January 2018

WGS 84









**Legend**

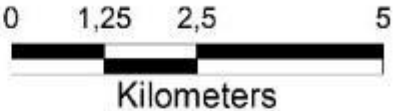
- A24D Quaternary
- Borehole Positions
- Elandsfontein 402 KQ Boundary
- Rivers
- Rivers Buffer (32 m)
- Wetlands
- Wetlands Buffer (500 m)
- Dams
- Quaternary
- CBA1
- CBA2
- ESA1
- ESA2

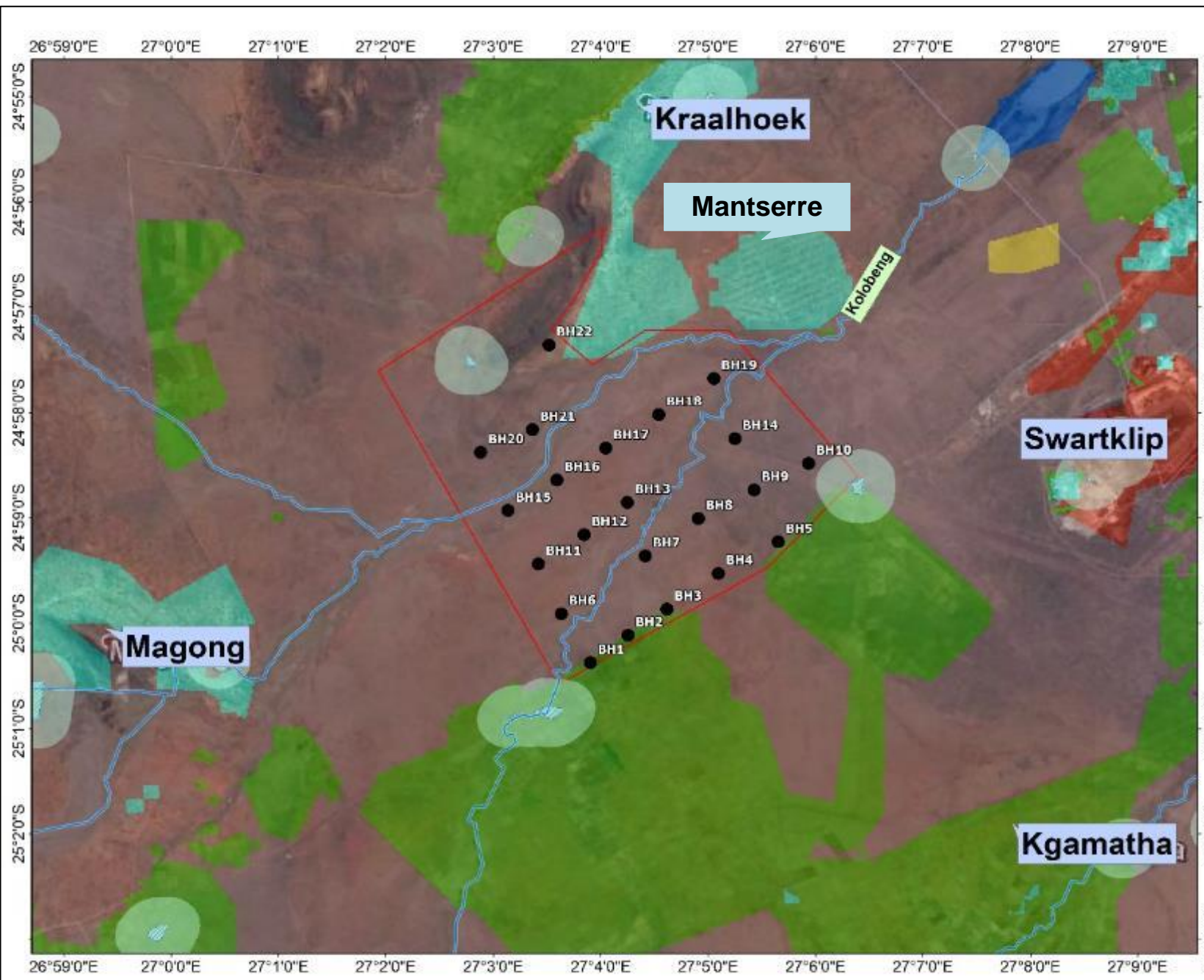
Title: Sensitivity Map

Client: Samancor Chrome

Date: January 2018

WGS 84





**Legend**

- Rivers
- Rivers Buffer (32 m)
- Wetlands
- Wetlands Buffer (500 m)
- Dams
- Borehole Positions

**Landuse**

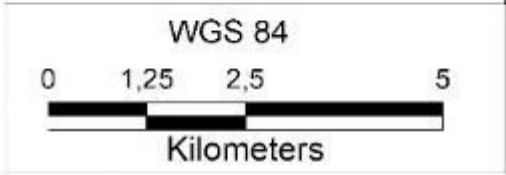
- Cultivation
- Degraded
- Mines
- Natural
- Plantations
- Urban Built-up
- Waterbodies
- Borehole Positions
- Elandsfontein 402 KQ Boundary



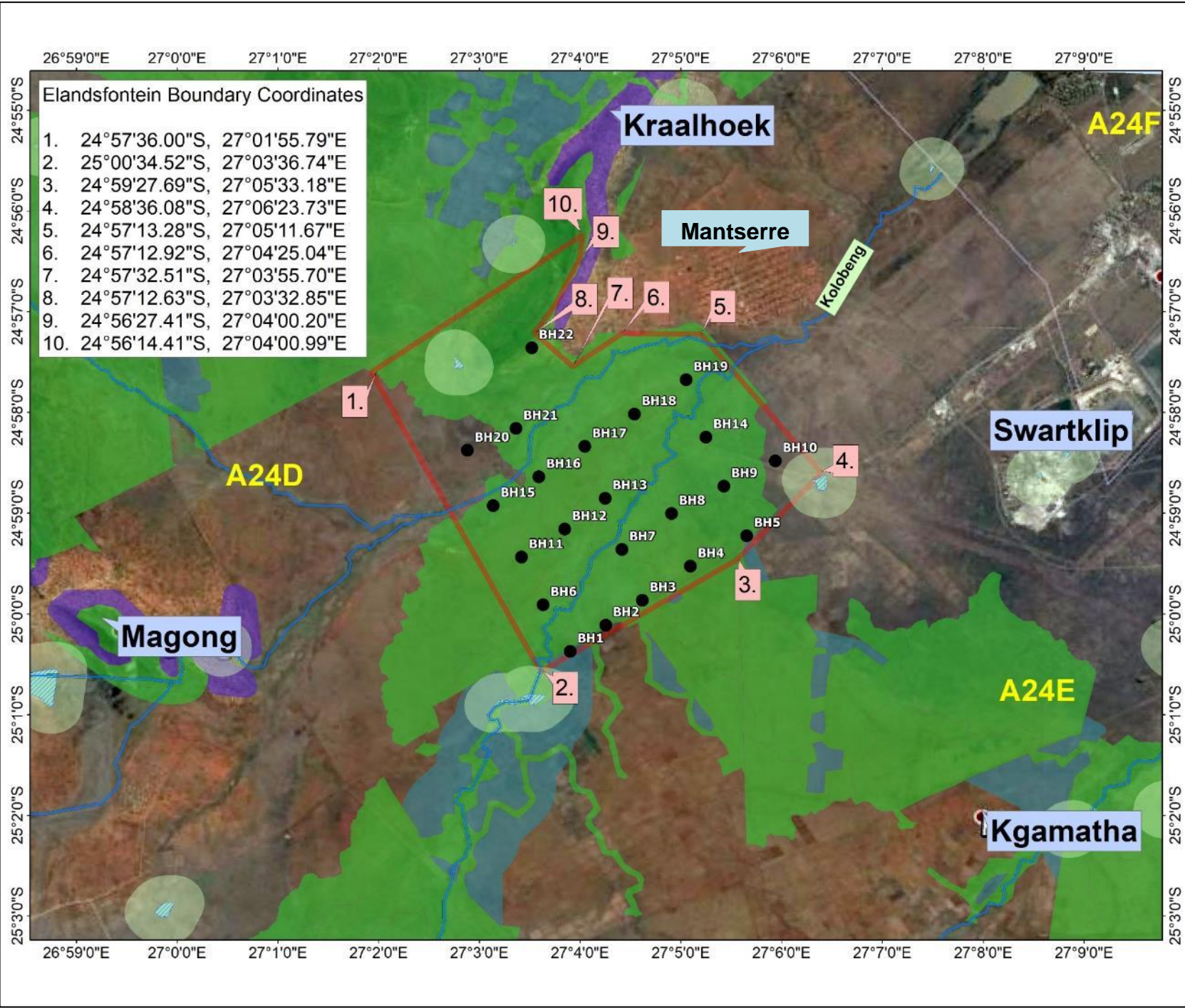
Title: Landuse Map

Client: Samancor Chrome

Date: January 2018







**Elandsfontein Boundary Coordinates**

1.	24°57'36.00\"S	27°01'55.79\"E
2.	25°00'34.52\"S	27°03'36.74\"E
3.	24°59'27.69\"S	27°05'33.18\"E
4.	24°58'36.08\"S	27°06'23.73\"E
5.	24°57'13.28\"S	27°05'11.67\"E
6.	24°57'12.92\"S	27°04'25.04\"E
7.	24°57'32.51\"S	27°03'55.70\"E
8.	24°57'12.63\"S	27°03'32.85\"E
9.	24°56'27.41\"S	27°04'00.20\"E
10.	24°56'14.41\"S	27°04'00.99\"E

**Legend**

- A24D Quaternary
- Borehole Positions
- Elandsfontein 402 KQ Boundary
- Rivers
- Rivers Buffer (32 m)
- Wetlands
- Wetlands Buffer (500 m)
- Dams
- Quaternary
- CBA1
- CBA2
- ESA1
- ESA2


Title: Composite Map

Client: Samancor Chrome

Date: January 2018

WGS 84

0 1,25 2,5 5  
Kilometers



DMT  
DMT Kai Batla (Pty) Ltd



## **Appendix D: PPP and Comments and Response Report**

## 1. INTRODUCTION

### 1.1. Application for a Prospecting Right

This Consultation Report has been compiled for an application for a Prospecting Right and Environmental Authorisation Application that has been submitted in terms of the Mineral and Petroleum Resources Development Act (Act No.28 of 2004) (MPRDA) and the National Environmental Management Act, Act No. 107 of 1998 (NEMA). The application for a Prospecting Right on Portion 3 of the farm Elandsfontein 402 KQ (Portion 1 and Remaining Extent (RE)) was submitted to the North West Department of Mineral Resources (DMR) on 22 November 2017 (DMR Ref: NW/30/5/1/1/3/2/1/12238 EM).

As part of the application process, the DMR requires that the applicant undertake public consultation as part of the basic assessment (BA) process. In fulfilment of this requirement, Samancor Chrome Limited appointed DMT-Kai Batla (Pty) Ltd (DMT-KB) to conduct the public consultation process with the land owners and other affected parties and to compile this report. This report describes the process used to notify stakeholders and Interested and Affected Parties (I&APs) of the applications.

The proposed prospecting will be taking place in the North West Province. The activities applied for will take place on the following property(ies):

**Table 23: Table 1: Proposed farms and farm portions**

Farm(s) Name	Farm No.	Portions
Elandsfontein KQ	402	1
Elandsfontein KQ	402	RE

### 1.2. The Applicant

Samancor has lodged an application for a prospecting right with the North West DMR. The applicant's details are as follows:

**Table 24: Applicant contact details**

<b>Name</b>	Samancor Chrome Limited
<b>Physical Address</b>	Lot B Floor , 1 Cullinan Place, Morningside, Sandton, 2199
<b>Postal Address</b>	PostNet Suite 803, Private Bag x9, Benmore 2010
<b>Tel:</b>	0112451104
<b>Email:</b>	<a href="mailto:Eric.thabo@samancorcr.com">Eric.thabo@samancorcr.com</a>
<b>Contact Person:</b>	Eric Thabo

### 1.3. Environmental Assessment Practitioner

DMT-Kai Batla (Pty) Ltd (DMT-KB) has been appointed on behalf of Samancor as the independent environmental consultants to undertake the Public Participation Process and compile the Basic Assessment Report and Environmental Management Programme (EMPR) for this application process.

**Table 25: EAP Contact Details**

<b>Name</b>	Samantha Moodley
<b>Tel:</b>	011 781 4548
<b>Fax:</b>	086 545 2720
<b>Cell:</b>	071 678 1951
<b>Email:</b>	<a href="mailto:Samantha.Moodley@dm-group.com">Samantha.Moodley@dm-group.com</a>
<b>Postal Address:</b>	P.O. Box 41955, Craighall, 2024, South Africa

## **2. PUBLIC PARTICIPATION PROCESS**

---

### **2.1. Legislative Framework**

In terms of Section 24 (4) of the Act and Regulation 41 (b) of the NEMA Regulations (2014), Samancor is required to consult with, and notify in writing, all landowners or lawful occupiers and any other interested & affected party (I&AP) regarding the proposed development and potential impacts arising therefrom. In order to ensure compliance with the NEMA and Regulations the following activities have been undertaken to date:

- Identification of Stakeholders I&APs;
- Development and on-going updating of an I&AP database;
- Advertising the notification of application for environmental authorisation and the WML and BA process in a regional/ local newspaper;
- Placement of site notices;
- Physical distribution of Information Documents (BIDs) to I&APs during site visits;
- Email distribution of BIDs to I&APs; and
- Placement of the Draft BAR and EMP in public venues for public review and comment.

These aspects that form part of the public participation process (PPP) will be discussed in detail below.

### **2.2. Objectives of Public Participation**

Following the requirements for public participation in terms of the NEMA, objectives of the PPP include providing sufficient and accessible information to enable stakeholders to:

- Identify issues of concern;
- Contribute to local knowledge and experience; and
- Ensure that their comments, issues of concern and suggestions are correctly captured, addressed and considered in the BA process and BAR.

### **2.3. Commencement of PPP**

Upon receipt of the acknowledgement of the application and Application Number NW/30/5/1/1/3/2/1/12238 EM, in November 2017, and in compliance with the NEMA, DMT-KB commenced with the PPP for the application process on 7 February 2018. This will be concluded on 9 March 2018, allowing I&APs a 30-day comment period to respond to the proposed application.

### **2.4. Identification of Interested & Affected Parties**

A database of Interested & Affected Parties (I&APs) for the proposed application was developed and updated during the PPP. I&APs were identified at national, provincial, district and local levels. Other I&APs surrounding the project site were also identified and added to the database and the general public was invited through advertisements and the distributed BID documents to register as I&APs on the database.

### **2.5. Written Notification**

#### *Advertisements*

An advertisement was placed in a regional newspaper (i.e. the *Rustenburg Herald* newspaper) on 7 February 2018 to advertise Samancor's intention to apply for environmental authorisation.

The advertisement served to notify the public about the PR application, provided the description and location of the proposed activities, the availability of the Draft BAR for review and comment and the 30-day public review period, and details on the environmental consultants to contact for the BID and further information on the proposed project. Please refer to **Appendix E2** for the advertisement tear sheet.

#### *Site Notices*

A2-sized site notices containing the same information as the advertisements were put up around the proposed project area on 31 January 2018. A total of 4 site notices were erected. Please refer to Table 4 for a list of where site notices were placed and to **Appendix E1.1** for photographic evidence.

**Table 26: Site notice placement**

Site Notice Location	Coordinates	
	Latitude	Longitude
"Joko" Tuckshop	-24.9514	27.0951
Adjacent to Mantserre Post Office	-24.9455	27.0929
Mantserre Primary School	-24.9489	27.0920
Baphalane Tribal Office	-24.9503	27.0945

#### *Background Information Document*

A background information document (BID) to provide further information on the proposed project and BA process was prepared for I&APs. The BID provided the following information:

- Purpose of the BID;
- Appointed EAP;
- Project Description including proposed project activities;
- Basic Assessment and Public Participation process;
- Contact details of the EAP for I&APs to register and send through written issues, concerns or queries; and
- Map of the proposed project area.

Please refer to **Appendix E4** for a copy of this BID.

#### *Site Visit*

A site visit was undertaken on 31 January 2018. The aim of the site visit was to familiarise ourselves with the project area; to put up site notices, and identify additional I&APs to update the database. During the site visits, DMT-KB consulted with I&APs on the proposed development and recorded details of I&APs not previously identified.

#### *Draft Reports*

The Draft BAR and EMPr were made available to the public in both print and online. A copy of the Draft BAR was placed at the Mantserre Community Library and a soft copy was made available on Dropbox via the following link:

[https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC\\_HD4a2EyzieFa?dl=0](https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC_HD4a2EyzieFa?dl=0)

### 3. PROOF OF PUBLIC PARTICIPATION

---

**APPENDIX E1**  
**Advertisement**

**Appendix E1.1**  
**Site Notices**



**NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) (MPRDA) AND SECTION 24 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1998 (NEMA) DMR REF NO: NW 30/5/1/1/3/2/1/12238 EM**

**Notice is hereby given in terms of Section 24 (4) (v) of the National Environmental Management Act, Act No. 107 of 1996 (NEMA) to carry out the following activities that require Environmental Authorisation**

**Project Applicant:** Samancor Chrome Limited

**Project Location:** The project is located on the farm Elandsfontein 402 KQ, within the Moses Kotane Local Municipality in the North-West Province. Elandsfontein 402 KQ is located 18km west of the town of Northam as the crow flies. It is accessible via a paved road that diverts from the R510 through Union Mine. This road crosses the property after passing the village of Mantserre.

**Project Description:** Samancor has applied for a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) to conduct prospecting activities to ascertain if economically viable deposits of chrome occur within the 2962-hectare study area. In order to obtain environmental authorization from the Department of Mineral Resources (DMR), a Basic Assessment (BA) process needs to be followed.

## **PUBLIC CONSULTATION**

**Environmental Consultants:** DMT-Kai Batla (Pty) Ltd (DMT-KB)

**Public Consultation Process:** DMT-KB has been appointed as the Independent Environmental Consultants to conduct the public consultation, compilation of the Basic Assessment Report and Environmental Management Plan (EMP) as part of the environmental impact assessment process. All interested & affected parties (IAPs) are invited to participate in this proposed project by forwarding comments or concerns relating to the project to DMT-KB. To register as an IAP please submit your name and contact details in writing to DMT-KB by **9 March 2018**. A background information document (BID) can be obtained from DMT-KB upon request.

The Draft Basic Assessment Report (BAR) and Environmental Management Plan (EMP) are available for commenting for a period of 30 days (**7 February – 9 March 2018**). To access these reports, please go to the following venues:

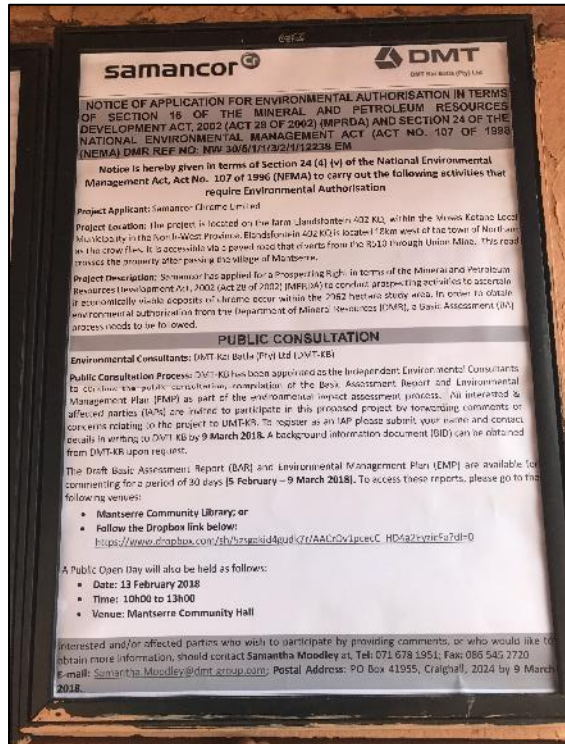
- **Mantserre Community Library; or**
- **Follow the Dropbox link below:**

[https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC\\_HD4a2EyzieFa?dl=0](https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC_HD4a2EyzieFa?dl=0)

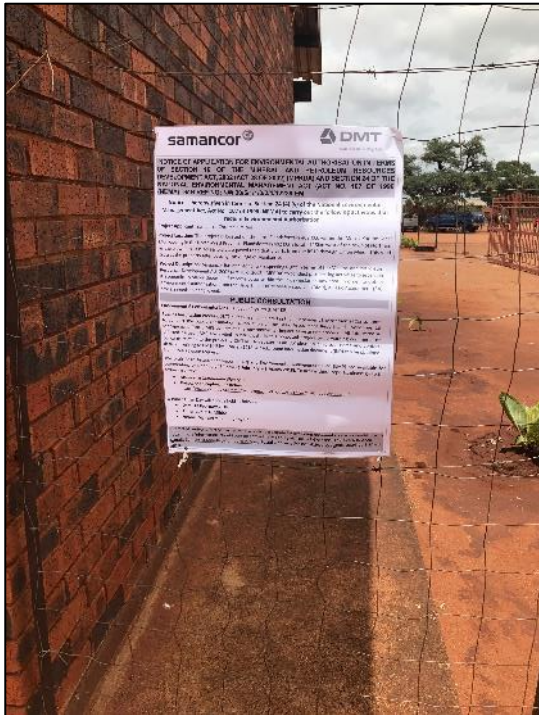
Interested and/or affected parties who wish to participate by providing comments, or who would like to obtain more information, should contact **Samantha Moodley** at, **Tel:** 071 678 1951; **Fax:** 086 545 2720; **E-mail:** [Samantha.Moodley@dm-group.com](mailto:Samantha.Moodley@dm-group.com); **Postal Address:** PO Box 41955, Craighall, 2024 by **9 March 2018**.

## Proof of Site Notice Placement

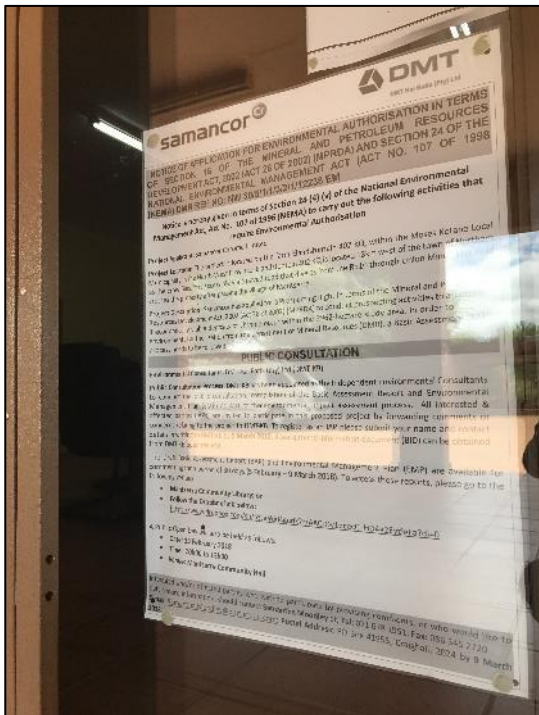
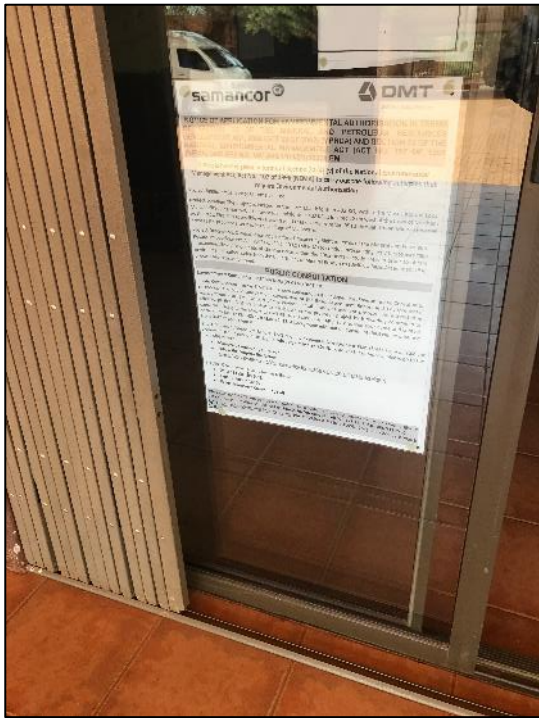
# “Joko” Tuckshop



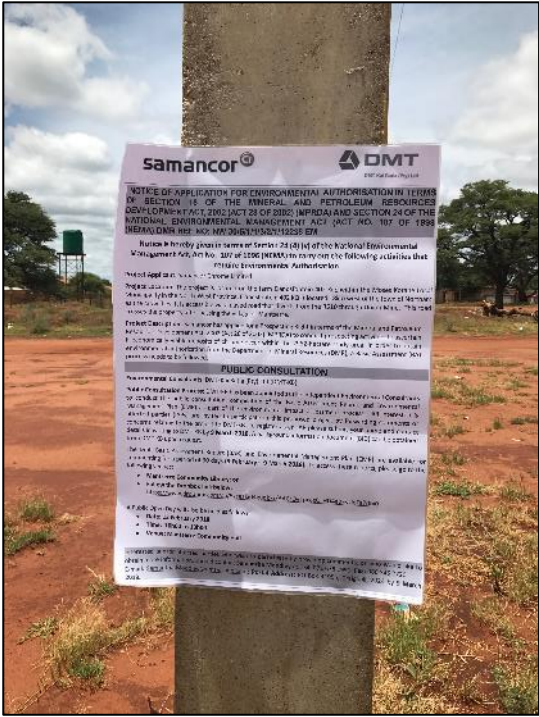
# Mantserre Primary School



# Baphalane Tribal Authority Office



# Lamp post Opposite Mantserre Post Office



## APPENDIX E1.2

### Newspaper Advertisement

**NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) (MPRDA) AND SECTION 24 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1996 (NEMA) DMR REF NO: NW 30/5/1/1/3/2/1/12238 EM**

**Notice is hereby given in terms of Section 24 (4) (v) of the National Environmental Management Act, Act No. 107 of 1996 (NEMA) to carry out the following activities that require Environmental Authorisation**

**Project Applicant:** Samancor Chrome Limited

**Project Location:** The project is located on the farm Elandsfontein 402 KQ, within the Moses Kotane Local Municipality in the North-West Province. Elandsfontein 402 KQ is located 18km west of the town of Northam as the crow flies. It is accessible via a paved road that diverts from the R510 through Union Mine. This road crosses the property after passing the village of Mantserre.

**Project Description:** Samancor has applied for a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) to conduct prospecting activities to ascertain if economically viable deposits of chrome occur within the 2962-hectare study area. In order to obtain environmental authorization from the Department of Mineral Resources (DMR), a Basic Assessment (BA) process needs to be followed.

#### **PUBLIC CONSULTATION**

**Environmental Consultants:** DMT-Kai Batla (Pty) Ltd (DMT-KB)

**Public Consultation Process:** DMT-KB has been appointed as the Independent Environmental Consultants to conduct the public consultation, compilation of the Basic Assessment Report and Environmental Management Plan (EMP) as part of the environmental impact assessment process. All interested & affected parties (IAPs) are invited to participate in this proposed project by forwarding comments or concerns relating to the project to DMT-KB. To register as an IAP please submit your name and contact details in writing to DMT-KB by **9 March 2018**. A background information document (BID) can be obtained from DMT-KB upon request.

The Draft Basic Assessment Report (BAR) and Environmental Management Plan (EMP) are available for commenting for a period of 30 days (**7 February – 9 March 2018**). To access these reports, please go to the following venues:

- **Mantserre Community Library; or**
- **Follow the Dropbox link below:**  
[https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC\\_HD4a2EyzieFa?dl=0](https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC_HD4a2EyzieFa?dl=0)

Interested and/or affected parties who wish to participate by providing comments, or who would like to obtain more information, should contact **Samantha Moodley** at, Tel: 071 678 1951; Fax: 086 545 2720  
**E-mail:** [Samantha.Moodley@dm-group.com](mailto:Samantha.Moodley@dm-group.com); **Postal Address:** PO Box 41955, Craighall, 2024 by **9 March 2018**.

**Newspaper Proof of Ad**  
To be included in Final BAR



## **Appendix E2 Stakeholder Notification**

## **APPENDIX E3**

### **Comments and Responses**

No comments have been received on the project to date. Comments received from I&APs during the public review of the Draft BAR will be included in a Comments and Responses Report that will be submitted with the Final BAR.

**APPENDIX E4**  
**Background Information Document**

# BACKGROUND INFORMATION DOCUMENT

## ENVIRONMENTAL AUTHORIZATION APPLICATION FOR THE PROSPECTING OF CHROME ORE IN MOSES KOTANE LOCAL MUNICIPALITY, IN THE NORTH WEST PROVINCE

### APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF GOVERNMENT NOTICE REGULATION 327 (LISTING NOTICE 1) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT- AS AMENDED (ACT NO. 107 OF 1998)

**DMR REF NO: NW 30/5/1/1/3/2/1/12238 EM**

#### PURPOSE OF THE DOCUMENT

This Background Information Document (BID) provides information to assist stakeholders in participating in the environmental authorisation process for the proposed project. This BID has been developed to:

- Share information about the proposed project;
- Present the Basic Assessment (BA) process that will be followed to obtain environmental authorisation according to the MPRDA and NEMA; and
- Provide more details about the Public Participation Process (PPP) which will be followed.

#### APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER

Samancor Chrome Limited (Samancor) has appointed DMT-Kai Batla (Pty) Ltd, as the independent environmental assessment practitioner (EAP), to undertake the required Basic Assessment (BA) process and to compile an Environmental Management Plan (EMP). DMT-KB will also be undertaking the public participation process (PPP) for the BA.

#### PROJECT DESCRIPTION

The proposed overall activity will include prospecting for chrome deposits (Middle Group and Lower Group seams) on Elandsfontein 402 KQ (Portion 1 and Remaining Extent), within Moses Kotane Local in the North West Province (see Figure 1). There will be drilling of 27 boreholes with a varying depth, ranging between 30m and 150. Drilling will be conducted using a diamond drill rig. The holes will be drilled to two different sizes (NQ, and BQ) determined by the formations. The applicant will implement rehabilitation of the working

area immediately after the drilling work has been completed to restore [as far as possible] the receiving environment to its near-natural state.

#### THE ENVIRONMENTAL AUTHORISATION PROCESSES

Samancor is applying for Environmental Authorisation in terms Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and Section 24 of the National Environmental Management Act (Act No. 107 of 1998 (NEMA)). The proposed development has triggered activities from Listing Notice 1 (Government Notice Regulation (GN R. 327)) of the 2017 Environmental Impact Assessment (EIA) Regulations which, in compliance with legislation, requires that a BA process be carried out before the development is implemented.

Table 1 provides a list of activities pertaining to the proposed development. A BA/EMP process evaluates the potential positive and negative impacts of a project and develops measures to mitigate and manage these impacts. The summary of the authorisation process is depicted in Figure 2. For this proposed project, environmental authorisation has to be granted by a competent authority (i.e. the North West Regional Department of Mineral Resources (DMR) before Samancor can commence with their proposed activities.

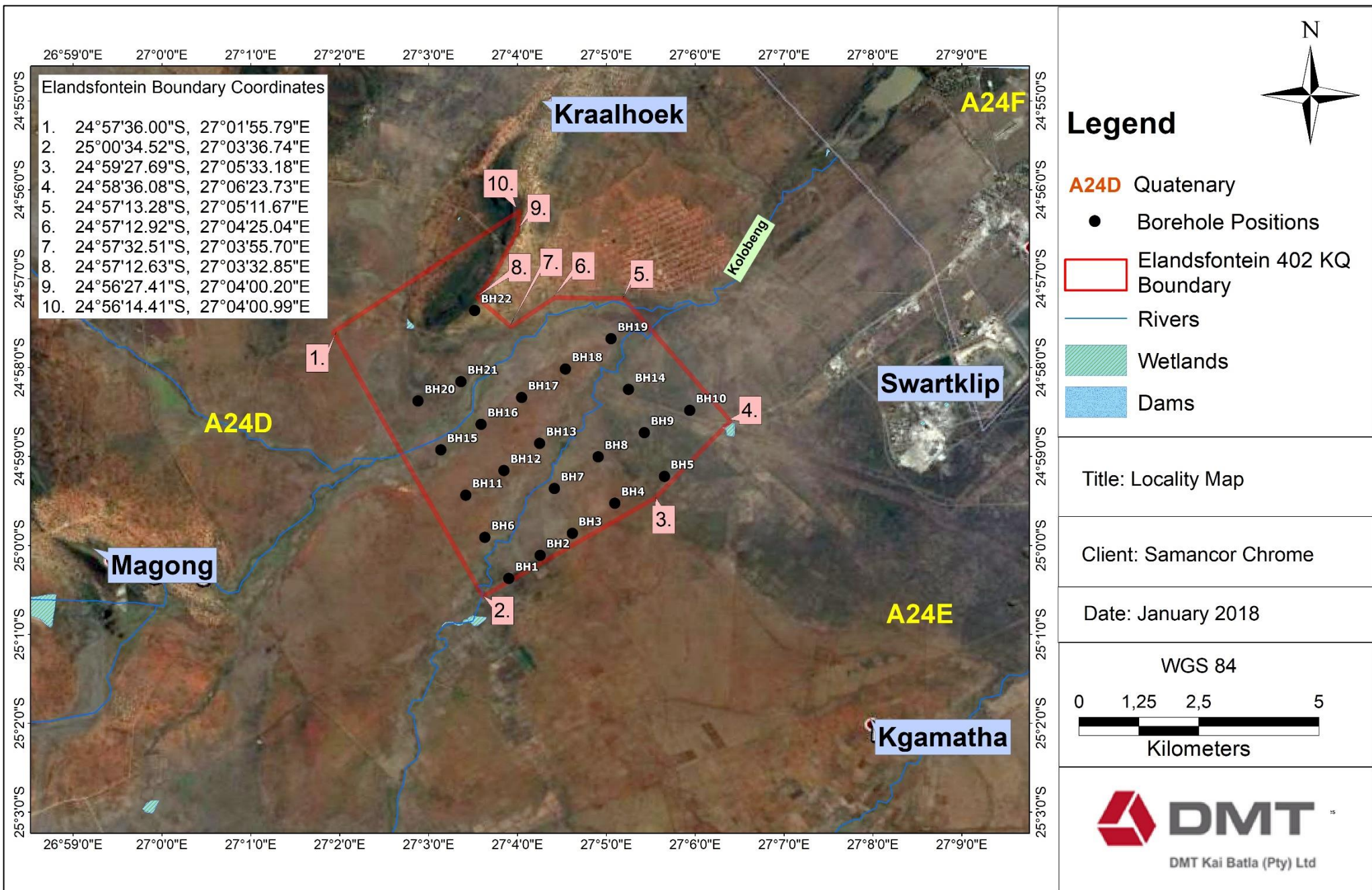


Figure 10: Locality map

Table 27: Triggered Activities from NEMA and MPDRA

ASSOCIATED WITH THE PROJECT LISTED ACTIVITIES	
Legislation	Summary of Triggered activities
Mineral Petroleum Development Resources Act, No. 28 of 2002	<p><b>Section 16 of the MPRDA:</b></p> <p>(1) Any person who wishes to apply to the Minister for a prospecting right must simultaneously apply for an environmental authorisation and must lodge the application-</p> <p>(a) at the office of the Regional Manager in whose region the land is situated;</p> <p>(b) in the prescribed manner; and</p> <p>(c) together with the prescribed non-refundable application fee.</p>
National Environmental Management Act, No. 107 of 1998 (as amended) (NEMA)	<p><b>GNR 327 (Listing Notice 1), Activity 20:</b></p> <p>Activity 20: Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including—</p> <p>(a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or</p> <p>(b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing;</p> <p>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies.</p> <p><b>GNR 324 (Listing Notice 3), Activity 12:</b></p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>h. North West</p> <p>iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;</p> <p>v. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>

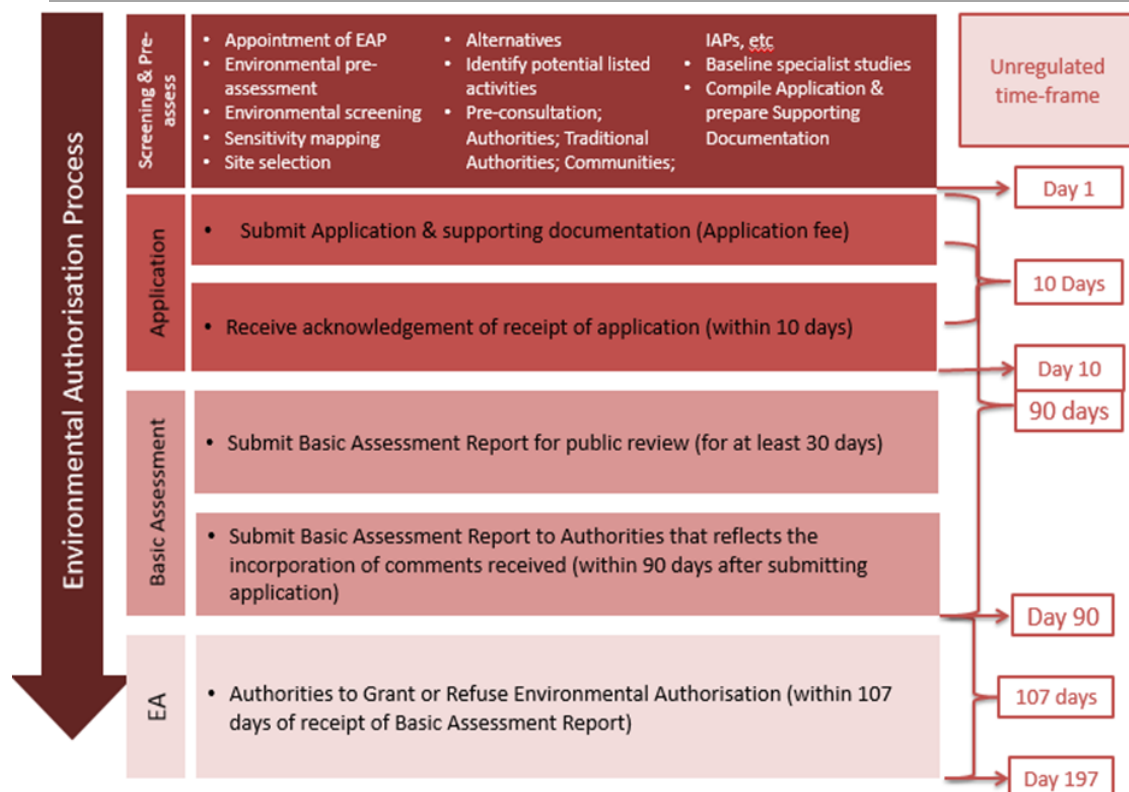


Figure 2: Basic Assessment Process

## PUBLIC PARTICIPATION PROCESS

The aim of the Public Participation Process (PPP) is to allow Interested and Affected Parties (I&APs) the opportunity to gain an understanding of the project and consider all facets of the proposed development. The PPP will:

- Provide I&APs with information about the proposed development and associated potential impacts;
- Allow I&APs the opportunity to raise concerns on the proposed project; and
- Incorporate the concerns raised by I&APs in the study and ultimate decision-making process.

To maximize on time and resources and to fast track environmental authorisation, the PPP will be streamlined with the BA process. The following activities will take place during the process:

- Advertising the BA Process: An advertisement will be placed in the *Rustenburg Herald* newspaper and site notices will be placed at the project site and public venues;
- Registering I&APs and key stakeholders on the database. Letters of notification and BIDs will be distributed to I&APs informing them that Environmental Authorisation is being applied for by Samancor. The Draft BA Report and EMP will be placed at a public venue in the duration of the review period.
- Consultation with and transfer of information to I&APs through a public open day;
- Recording all comments, issues and concerns raised by I&APs and preparation of a PPP report and Comments & Responses Report.
- Updating of the BAR and EMP taking into consideration all comments received; and
- Submission of the final BA Report and EMP to the the Department of Mineral Resources (DMR) for Environmental Authorisation.

## GETTING INVOLVED

Surrounding communities, government and other stakeholders such as traditional authorities, community leaders, Non-Governmental Organisations (NGOs) and others are invited to register as I&APs. Stakeholders have the opportunity to comment on the draft BAR and

EMP and these comments will be incorporated into the final report and a separate public participation report will be compiled and submitted to the relevant authorities.

The Draft Basic Assessment Report (BAR) and Environmental Management Plan (EMP) are available for commenting for a period of 30 days 7 February – 9 March 2018). To access these reports, please go to the following:

- Mantserre Community Library; or
- Follow the Dropbox link below:  
[https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC\\_HD4a2EyzieFa?dl=0](https://www.dropbox.com/sh/5zsgakid4gudk7r/AACrOv1pcecC_HD4a2EyzieFa?dl=0)

Stakeholders are being offered an opportunity to comment on the project by filling in the attached comments page.

Once the authorities have made a decision regarding the project, stakeholders will be informed accordingly.

## How to get involved?

All persons who wish to take part in the Public Participation Process by commenting on or raising any concerns regarding the development are invited to do so through the following means:

- 1) Registering as an Interested and Affected Party (In writing or telephonically at the details provided below);
- 2) Submit any comments in writing on the response sheet attached to this document if you have any (and return to us by the 9 March 2018); and
- 3) Review the Draft Basic Assessment and Environmental Management Plan and raise any concerns or comments.

Contact Details for Registering as an I&AP and Commenting on the Project

Contact: Samantha Moodley (Environmental Assessment Practitioner- EAP)

Postal Address: P.O. Box 41955, Craighall, 2024

Tel: 011 781-4548/071 678 1951

Fax: 086 545 2720

Email: [Samantha.Moodley@dm-tgroup.com](mailto:Samantha.Moodley@dm-tgroup.com)





## **Appendix E: Financial Provision**



## Appendix F: Additional Impact Management Outcomes

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop)  Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
<b>Planning and Project Management</b>	<b>EMPR</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>A finalized EMP must address all authorization conditions stipulated by the DEA (and other commenting authorities).</li> <li>The EMP should also encompass all environmental impact mitigation measures as identified in the final BAR.</li> </ul>	MPRDA & NEMA
	<b>Appointment of Environmental Officer</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>Samancor will appoint an Environmental Officer (EO) during construction given the short duration of construction and the low significance impacts which are envisaged. The EO will be responsible for monitoring the compliance of the construction workers and employees on site with the EMP and ensure their co-operation.</li> </ul>	MPRDA & NEMA
	<b>Permits and Permissions</b>		Planning	<ul style="list-style-type: none"> <li>Moses Kotane Local Municipality must ensure that all licensing, permits or certificates required for the project are obtained and in place prior to the commencing of any construction activities on site.</li> </ul>	MPRDA & NEMA
	<b>Emergency Response Planning</b>	Safety and health personnel on site	Planning	<ul style="list-style-type: none"> <li>Plan all emergency responses including:</li> <li>Response procedures to fires, explosions, or any accidents that will require rapid medical responses; and</li> <li>Responses to community and stakeholder concerns and communication procedures with potentially affected parties (I&amp;AP).</li> </ul>	MPRDA & NEMA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	<b>Project Schedule</b>	Undertaking the project in a timeous manner	Planning	<ul style="list-style-type: none"> <li>Plan and develop a construction sequence to alleviate noise generation during the construction phase.</li> </ul>	N/A
	<b>Method Statement</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>Ensure that a method statement has been compiled and submitted to the Site/Drilling Manager.</li> </ul>	N/A
	<b>Grievances</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>Develop grievance mechanisms for the recording and management of complaints and grievances specifically including (but not limited to) grievances from those living in the area.</li> </ul>	N/A
	<b>Records and Administration</b>	Project Management	Planning	<b>Ensure the following are up to date and available on site:</b> <ul style="list-style-type: none"> <li>A complaints register.</li> <li>An approved method statement.</li> <li>Copies of the EMPr.</li> <li>Environmental Permits and authorizations.</li> <li>Copies of weekly checklists, compliance reports, incidence reports and corrective action reports.</li> <li>Photographs of areas of concern (photos of non-compliance areas as well corrective action).</li> <li>Attendance registers of environmental awareness training.</li> </ul>	
	<b>Recruitment of Labor</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>Where possible, the contractor must make use of local labour in support of the local economy.</li> <li>Advertise employment opportunities adequately, so as not to limit application opportunities.</li> </ul>	Basic Conditions of Employment Act, No. 75 of

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
				<ul style="list-style-type: none"> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	1997 (as amended)
<b>PRE-DRILLING/ EXPLORATION</b>					
	<b>Site establishment</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>The Contractor must, in agreement with the Applicant, decide upon an area for the location of a construction camp. The construction camp should be properly demarcated and fenced, and be adequately sized, with sufficient space for site offices, construction vehicles, equipment, material and waste storage areas.</li> <li>The camp must be located in an area with minimal damage or disturbance to the environment.</li> <li>Establish 'NO-GO' areas- where no construction personnel, equipment/machinery or vehicles are permitted. Any identified Environmental Sensitive or important areas should be designated as 'NO-GO' areas.</li> </ul>	NEMA, NEMBA, OHS A
	<b>Site Housekeeping</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>The construction camp should be kept clean and orderly at all times.</li> </ul>	OHS A
	<b>Ablution Facilities</b>	Project Management	Planning	<ul style="list-style-type: none"> <li>Sufficient toilet facilities should be provided near construction camp. The toilets should be properly covered and ventilated, and should contain hand washing facilities.</li> </ul>	OHS A

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
				<ul style="list-style-type: none"> <li>• Portable toilets should be properly secured to the grounds to avoid toppling in the case of a wind/storm event.</li> <li>• Ensure that all toilets function properly and are in a hygienic state. The toilets should be cleaned and emptied regularly.</li> <li>• Ensure that there are no spillages when toilets get cleaned and emptied.</li> <li>• Urination on site should be strictly prohibited.</li> </ul>	
<b>Site establishment activities (-ve)</b> - Vegetation clearance - Topsoil stripping & stockpiling - Drill pad compaction - Erection of office, toilets, fuel storage (if not by road tanker), water tanker, core storage - Vehicle movements - Waste management	Cultural and Heritage	Destruction or loss of Cultural and Heritage Resources: No cultural/heritage artefacts have been identified on site	Construction / Set-up	<ul style="list-style-type: none"> <li>• Environmental Permits and authorizations.</li> <li>• Copies of weekly checklists, compliance reports, incidence reports and corrective action reports.</li> </ul>	Heritage Act
	Noise	Noise Generation	Construction / Set-up	<ul style="list-style-type: none"> <li>• Photographs of areas of concern (photos of non-compliance areas as well corrective action).</li> </ul>	SANS 10103
	Visual	Visual intrusion	Construction / Set-up	<ul style="list-style-type: none"> <li>• Attendance registers of environmental awareness training.</li> </ul>	N/A

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Traffic	Increase in traffic volumes in the vicinity of the drilling site	Construction / Set-up	<ul style="list-style-type: none"> <li>• Traffic signs to be put around the site to notify motorists of the activities</li> <li>• Construction vehicles to make trips on/off site only when necessary</li> <li>• Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	National Traffic Act Regulations
	Signage	Traffic volumes, safety	Construction / Set-up	<ul style="list-style-type: none"> <li>• The construction management needs to communicate the commencement and duration of construction activities to the community.</li> <li>• Clear signage needs to be put up to make and keep the community aware of construction activities so as to prevent any hazardous occurrences.</li> <li>• Provide adequate safety warning signage on the roads.</li> </ul>	National Traffic Act Regulations
	Dust fall	Dust fall & nuisance from activities	Construction / Set-up	<ul style="list-style-type: none"> <li>• Wet suppression should be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>• Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	GN R. 827 (NEM: AQA)
	Soil and vegetation	The potential impact of the proposed	Construction / Set-up	<ul style="list-style-type: none"> <li>• The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> </ul>	NEMBA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		prospecting on the vegetation would occur at proposed drilling sites and the access routes used to get to these sites.		<ul style="list-style-type: none"> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad.</li> <li>Rather that surface vegetation is cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> </ul>	
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Construction/ Set-up	<ul style="list-style-type: none"> <li>Environmental awareness training sessions should be part of the workers' induction and site workshops; and</li> <li>If any animals are encountered they must not be killed or injured, but should rather be removed or chased away from the site with the assistance of an animal specialist</li> </ul>	NEMBA
	Social	Friction between local residents/land	Construction / Set-up	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in public consultation and conflict resolution;</li> </ul>	NEMA



<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		owners and construction personnel		<ul style="list-style-type: none"> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> <li>There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> </ul>	
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Construction/ set-up	<ul style="list-style-type: none"> <li>Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	NEMA
	<b>Storage and Disposal of Waste</b>	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practises.	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>Litter generated by construction workers must be collected in containers that are clearly labelled, and disposed of weekly at registered waste disposal sites.</li> <li>Sufficient weather- and vermin- proof bins should be placed on site for the disposal of solid waste. Littering on site should be strictly prohibited. The burning of waste on site should also be prohibited.</li> <li>All waste generated from construction activities (building rubble, solid and liquid waste etc.), should be disposed of as frequently at an appropriately licensed refuse facility.</li> </ul>	National Waste Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
				<ul style="list-style-type: none"> <li>Minimize waste generation, e.g. by providing re-usable items and refillable containers (e.g. for drinking water) and adopt a 'cradle to grave' responsibility for wastes.</li> <li>Comply with legal requirements for waste management and pollution control and employ "good housekeeping" and monitoring practices.</li> </ul>	
	<b>Hazardous Waste</b>	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practises.	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>Any hazardous waste that may be generated should be separated from general waste and stored in clearly marked and properly sealed secondary containers.</li> <li>Any hazardous waste generated should be disposed of accordance with the Hazardous Chemical Substances Regulations, 1995 (Regulation 15).</li> </ul>	National Waste Act
	<b>Spills and Leaks</b>	Safety and aesthetic/ visual aspects of the property, as well as waste disposal practises.	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>Any equipment that is leaking should be temporarily decommissioned and removed from the construction site, to a surface with an impermeable surface and waste water collection system.</li> <li>Spill response kits must be readily available and accessible to all personnel on site.</li> </ul>	National Waste Act
	<b>PPE</b>			Ensure that all persons on site use Personal Protective Equipment (PPE) at all times, this including safety boots, safety vests, protective masks etc.	Employment Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	<b>Illegal Fires</b>			Ensure that no fires are ignited on site unless required for construction purposes, in which case the EO should designate areas for the fires. The designated areas should be as far as possible from vegetation.	NEMA
	<b>Erosion</b>	The properties of the receiving environment, and ensuring that the ground is not susceptible to erosion beyond that which can be rehabilitated.	Construction/ set-up & Operation	<ul style="list-style-type: none"> <li>• Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities.</li> <li>• All topsoil stockpiles (if any) must be protected against wind, erosion and seeds, i.e. by use of shade cloth or netting.</li> <li>• Topsoil stockpiles should not exceed 2 meters in height.</li> </ul>	NEMA
<b>EXPLORATION</b>					
<b>Exploration drilling (-ve)</b> - Drilling - Drill maintenance & refuelling	Noise	Noise Generation	Operations	<ul style="list-style-type: none"> <li>• Construction/setup, operational and decommissioning activities will be limited to daylight hours on Mondays to Saturdays and no activities on Sundays and public holidays;</li> <li>• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition; and</li> </ul>	Heritage Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
- Core sample collection & storage - Vehicle movements - Waste generation & management				<ul style="list-style-type: none"> <li>If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.</li> </ul>	
	Visual	Visual intrusion	Operations	<ul style="list-style-type: none"> <li>The drilling rig and other visually prominent items on the site will be located in consultation with the landowner;</li> <li>Make use of existing vegetation as far as possible to screen the prospecting operations from view; and</li> <li>If necessary, the operations can be screened from view by erecting a shade cloth barrier.</li> </ul>	SANS 10103
	Traffic	Increase in traffic volumes in the vicinity of the drilling site	Operations	<ul style="list-style-type: none"> <li>Traffic signs to be put around the site to notify motorist of the activities</li> <li>Construction vehicles to make trips on/off site only when necessary</li> <li>Construction vehicles to adhere to local speed limits as far as possible when driving in around site</li> </ul>	N/A
	Dust fall	Dust fall & nuisance from activities	Operations	<ul style="list-style-type: none"> <li>Wet suppression will be applied to ensure that no visible dust is raised by any of the prospecting operations;</li> <li>Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings; and</li> <li>Low vehicle speeds will be enforced on unpaved surfaces.</li> </ul>	National Traffic Act Regulations

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b> (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Soil and vegetation	Soil and vegetation disturbance from drill pad preparation	Operations	<ul style="list-style-type: none"> <li>The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required;</li> <li>No clear scraping (dozing) be carried out unless absolutely necessary to establish a level drill pad. Rather that surface vegetation be cleared to make way for the drilling rig leaving the roots intact so that vegetation can coppice and regrow; and</li> <li>Disturbed areas will be re-vegetated with locally indigenous species as soon as possible.</li> </ul>	GN R. 827 (NEM: AQA)
	Animal life	Animal life will be affected in the immediate vicinity of the drilling rig. It is anticipated that the noise and general activity will keep the animal life away from the site while the prospecting is ongoing.	Operations	Measures implemented during site establishment should apply in this phase as well.	NEMBA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	Social	Friction between local residents/ land owners and construction personnel	Operations	<ul style="list-style-type: none"> <li>All operations will be carried out under the guidance of a strong, experienced manager with proven skills in stakeholder liaison officer.</li> <li>All prospecting personnel will be made aware of the local conditions and sensitivities in the prospecting area and the fact that some of the local residents may not welcome the prospecting activities in the area;</li> <li>There will be a strict requirement to treat local residents with respect and courtesy at all times.</li> </ul>	NEMBA
	Job creation	Employment will be created for the clearing of the land and establishing the drilling site.	Operations	<ul style="list-style-type: none"> <li>Where possible, first preference should be given to locals for job opportunities that will be created through the project.</li> <li>Implement a transparent process of recruiting construction staff, following pre-established and accepted criteria.</li> </ul>	Basic Conditions of Employment Act, No. 75 of 1997 (as amended)
<b>DECOMMISSIONING AND REHABILITATION</b>					
<b>Rehabilitation of the drill sites and surroundings</b>	<b>Removal of construction structures</b>	Ensuring the receiving environment is not impacted on any further, by	Rehabilitation	<ul style="list-style-type: none"> <li>Clear and completely remove from site all construction plant equipment, storage containers, signage, temporary fencing, temporary services, fixtures and any other temporary works; and</li> </ul>	NEMA

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
		dismantling machinery and equipment appropriately.		<ul style="list-style-type: none"> <li>Ensure that all access roads utilised during construction (which are not earmarked for closure and rehabilitation) are returned (as far as possible) to their state prior to construction.</li> </ul>	
	<b>Waste and Rubble Removal</b>	Visual aspects by preventing any further pollution.	Rehabilitation	<ul style="list-style-type: none"> <li>Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates.</li> <li>Load and haul excess spoil and inert rubble to fill in borrow pits / dongas or to dump sites indicated / approved by an environmental control specialist</li> <li>Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site.</li> </ul>	National Waste Act
	<b>Solid &amp; Hazardous Waste</b>			<ul style="list-style-type: none"> <li>Store hazardous waste as indicated on the approved Environmental Management Programme (EMPr).</li> <li>Dispose of all hazardous waste not earmarked for reuse, recycling or resale at a registered hazardous waste disposal site.</li> <li>Remove from site all temporary fuel stores, hazardous substance stores, hazardous waste stores and pollution control sumps. Dispose of hazardous waste in the approved manner.</li> <li>Do not hose oil or fuel spills into a storm water drain or sewer, or into the surrounding natural environment.</li> <li>Dispose of all visible remains of excess material when exiting the site.</li> </ul>	National Waste Act

<b>ACTIVITY</b> (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b> (Including the potential impacts for cumulative impacts)  (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (E.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b> (modify, remedy, control, or stop) Through  (E.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)  (E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation)	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
	<b>Erosion protection</b>		Rehabilitation	<ul style="list-style-type: none"> <li>• Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction site.</li> <li>• Retain shrubbery and grass species wherever possible.</li> <li>• Perform regular monitoring and maintenance of erosion control measures.</li> </ul>	NEMA