



**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).

**NAME OF APPLICANT:** EKUSENI REHAB (PTY.) LTD.

**TEL NO:** 076 148 5718

**FAX NO:**

**POSTAL ADDRESS:** P. O. Box 358, Bethlehem, 9700, OFS.

**PHYSICAL ADDRESS:**

**FILE REFERENCE NUMBER SAMRAD:** KZN 30/5/1/1/2/10917 PR

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## 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 the 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**

**3. Contact Person and correspondence address**

**a) Details of**

**i) Details of the EAP**

Name of The Practitioner:

Geoffrey R. Silk of Geoff Silk Civil & Mining Consultant cc

Tel No.:

Landline: 034 980 7643;

Cell: 083 448 8299

Fax No. :

086 620 6772

e-mail address:

silkgr@telkomsa.net

**ii) Expertise of the EAP.**

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

(with evidence).

B.Sc. (Hons.) [Civ. Eng.]

Professional Registration under EAPASA: Reg. No. 2019635.

Copies of the relevant documents can be found in "Appendix A - EAP Documents" of this report

**(2) Summary of the EAP's past experience.**

(In carrying out the Environmental Impact Assessment Procedure)

A copy of the Curriculum Vitae for Geoffrey R. Silk can be found in "Appendix A - EAP Documents" of this report.

**b) Location of the overall Activity.**

|   |  |
|---|--|
| <b>Farm Name:</b>   | The prospecting area is contained within the property:<br>1) Portion 1 of the farm Knowesley 8926-HS.              |
| <b>Application area (Ha)</b>                                | The total extent of the prospecting area is 43.0962 Hectares.  |
| <b>Magisterial district:</b>                                | Newcastle Local Municipal Area   |
| <b>Distance and direction from nearest town</b>             | The approximate centre of the site lies 18kms south-south-west of the city of Newcastle in Northern KwaZulu Natal. |
| <b>21 digit Surveyor General Code for each farm portion</b> | Portion 1 of the farm Knowesley 8926-HS:<br>N0HS00000000892600001  |

**c) Locality map**

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

A Locality Plan for the proposed prospecting area can be found in "Appendix B - Plans" of this report. Plan No.: KNOW/PR/001.

**d) 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

A plan showing the location and area of the proposed prospecting area as well as the proposed positions of the Phase 1 boreholes, trial pits and trenches can be found in "Appendix B - Plans" of this report. Plan No.: KNOW/PR/003.

A "Site Camp" will be established within the prospecting area and will consist of a caravan, chemical toilet, equipment storage area and a consumables storage area. The camp site perimeter will be demarcated with barrier tape on steel standards.

**(i) Listed and specified activities**

| <b>NAME OF ACTIVITY</b><br><br>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc<br><br>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</b><br><b>Ha or m²</b>   | <b>LISTED ACTIVITY</b><br><b>Mark with an X where applicable or affected.</b> | <b>APPLICABLE LISTING NOTICE</b><br><b>(GNR 544, GNR 545 or GNR 546)</b> |
|---|---|---|--|
| Access roads  | Approximately 100m of access road will require upgrading. | X   | GN 327 - 7th. April 2017   |
| Drill Sites:<br>Phase 1 - 3 No.<br>Phase 2 - TBA  | +50m² / hole site<br>Total area:<br>+- 150m²              | X   | GN 327 - 7th. April 2017   |
| Trial pits:<br>Phase 1 - 11 No.;<br>Phase 2 - TBA   | +50m² / pit site<br>Total area:<br>550m²                  | X   | GN 327 - 7th. April 2017   |
| Trial Trenches:<br>Phase 1 - 350m length  | 350m x 5m<br>Total area:<br>1750m²                        | X   | GN 327 - 7th. April 2017   |
| Camp Site:  | 20m x 20m<br>Total area: 400m²                            | X   | GN 327 - 7th. April 2017   |
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**(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)

Commodity: The commodity to be prospected for is coal.

Access Routes: The drill rig and ancillary vehicles used in the prospecting process will gain access to the drill sites, trial pits and trenches utilising existing access roads as much as possible. Because the terrain is relatively level no new access roads will be constructed, although some work on upgrading existing roads may be necessary.

The mineral distribution within the mineral resource shall be determined by various means, depending on the depth to the final surface profile as follows:

Shallow deposits <3.0m – Trial pits – For safety purposes a maximum 3.0m depth cut-off shall be imposed for trial pits. From the ground survey the 3.0m cut-off line can be accurately determined and trial pit positions can be identified. Trial pits at an agreed spacing interval shall be excavated, by means of a back-actor, down to the base level and the excavation made safe. Face samples shall then be taken manually at 1.0m vertical intervals (Max. 4 samples per trial pit) and subjected to laboratory analysis to determine qualities and yields. Each sample pit shall be accurately located by GPS survey.

Deep deposits >3.0m – Reverse Circulation Drilling – Where the mineral resource depth exceeds 3.0m, sampling shall be carried out by drilling with reverse circulation drilling. Holes shall be drilled at an agreed spacing interval and samples taken at 1.0m vertical intervals and subjected to laboratory analysis to determine qualities and yields. Each sample hole shall be accurately located by survey.

Deep Deposits >3.0m – Trenching – To supplement the reverse circulation drilling on the deep deposits it is proposed that a series of trenches are excavated. These trenches will be excavated by a diesel powered back-actor side casting the material alongside each trench. A minimum depth of 5.0m from surface will be achieved along the entire length of each trench. This will be achieved by benching and battering the sides of the trench to a suitable angle to allow safe access into the trench for a geologist to carry out mapping and sampling of the exposed faces.



## e) Policy and Legislative Context

| APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT<br>(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) | REFERENCE WHERE APPLIED          | HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.<br><br>(E.g. In terms of the National Water Act a Water Use License has/ has not been applied for) |
|--|----------------------------------|---|
| NEMA - Amendments to EIA Regulations   | GN R326 & R327 - 7th. April 2017 | An Environmental Authorisation has been applied for.  |
| National Water Act (1998)  | Section 21 - Water Uses          | A Water Use Licence has not been applied for.   |
|  |                                  |   |
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|  |                                  |   |

## f) 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).

The coal mining industry in Northern KZN has been in decline for more than 20 years and any activity that can promote the resurgence of the industry, albeit on a very small and local scale, should be seen as a positive step towards alleviating the unemployment that resulted from the mine closures, and still exists today.

The re-working and beneficiation of mine residue dumps from numerous, different, mineral resources has become common practice throughout the world, and coal residue is no different. Due to technological improvements in beneficiation methods and the ability to burn higher ash products this process provides a relatively cost effective means of abstracting and marketing a coal product that was originally regarded as a waste, thus maximising the overall utilisation of the mineral resource.

In many instances the mine residue site also has the potential to cause a negative impact on the surrounding environment due to the release of toxic, heavy metals contained within the mineral, through the oxidation or "weathering" of the waste, and the transport of these toxins through contact with water or carried through the air. These impacts are generally of a long-term duration and can adversely affect the quality of soils, watercourses, wetlands etc. many kilometers distant from the source. The re-working of the mine residue site therefore has the potential to remove the long-term threat of pollution emanating from the site.

In order to ensure that the Knowesley Mine Residue site is economically viable to re-work it is necessary for the resource to undergo close examination through various prospecting methods and as such the granting of this prospecting right to the applicant is an essential step towards providing him with the information that is required to make that informed decision.

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

The entire footprint of the Knowesley Mine Residue site has been applied for in this Prospecting Right application as the whole area has been impacted upon by the beneficiation activities associated with the historical mining operations in that area and as such the whole site has the potential to yield a saleable product.

Three different types of exploration techniques are being proposed as follows:

- (a) Shallow deposits <3.0m – Trial pits;
- (b) Deep deposits >3.0m – Reverse Circulation (RC) Drilling and
- (c) Deep Deposits >3.0m – Trenching

Trial pits at an agreed spacing interval shall be excavated, by means of a back-actor, down to the base level and the excavation made safe. Face samples shall then be taken manually at 1.0m vertical intervals (Max. 4 samples per trial pit) and subjected to laboratory analysis to determine qualities and yields. Each sample pit shall be accurately located by GPS survey.

Reverse circulation drilling has been found to be the most effective means of exploration for coal within a mine residue deposit as it can provide an accurate means of sampling the loose material at specified intervals throughout the entire depth of the deposit.

Trenches will be excavated by a diesel powered back-actor side casting the material alongside each trench. A minimum depth of 5.0m from surface will be achieved along the entire length of each trench. This will be achieved by benching and battering the sides of the trench to a suitable angle to allow safe access into the trench for a geologist to carry out mapping and sampling of the exposed faces.

3-D modelling of the analysis results utilising accurate trial pit / trench sample /hole collar positions, surface profile survey and sample depth information will provide detailed information on the mineral resource to accurately model the resource in terms of volume and quality determination.

**h) 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.

**i) 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:

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

- (a) Location where it is proposed to undertake the prospecting:

The prospecting area is contained within the property Portion 1 of the farm Knowesley 8926-HS in the magisterial district of Newcastle, NKZN, and covers a footprint of 43.0962 Hectares.

- (b) Type of activity to be undertaken:

Trial pits shall be excavated on the shallow resource areas by means of a diesel powered back actor.

Reverse circulation drilling is to be the preferred form of deep exploration adopted for this prospecting programme.

Trenching will also be used on the deep deposits, down to a depth of approximately 5.0m, so as to provide a better profile of the structure of the deposit.

(c) Layout of the activity:

Phase 1 of the prospecting programme will consist of 11 No. trial pits on the shallow deposits, 3 RC holes drilled from the top of the mine residue deposit through to the underlying natural strata and +350m of trenching on top of the mine residue deposit.

The proposed locations of the trial pits, RC holes and trenches can be found on Plan No. KNOW/PR/003 in "Appendix B - Plans" of this report.

The layout of any prospecting for Phase 2 will be dependent on the results obtained from Phase 1.

(d) Technology to be used:

Reverse circulation (RC) drilling is to be carried out by means of a diesel powered, mobile, truck mounted drill rig.

A diesel powered back-actor will be used to excavate the trial pits and trenches.

The appointed geologist will extract samples of the mine residue at set intervals down each hole, and from each trial pit and trench and submit these samples for analysis to the preferred laboratory e.g. the SABS Laboratory at Ballengeich.

(e) Operational aspects:

Based on existing topographical knowledge of the mine residue site the proposed holes for Phase 1 of the drilling programme, 3 in number, are expected to be in the region of 25m depth each.

Trial pits will be a maximum of 3.0m deep and the trenches will be a minimum of 5m deep.

(f) Non- implementation of the prospecting operation would impact negatively on the eventual opening of a "mining" operation to exploit the coal resource within the residue site. The prospecting programme will provide essential information to enable the applicant to make an informed decision on whether or not to re-work the mine residue site.

## **ii) 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 or not 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.

A copy of the Consultation Report and its Appendices for this prospecting right application can be found in "Appendix C - Public Participation Exercise" to this report. The PPE process included the following:

- a) The placement of notices at suitable places around the perimeter of the prospecting area;
- b) The placement of a notice in the local newspaper;

- c) Written notification to various Organs of State identified as having an interest in the proposed prospecting programme;
- d) One-on-one meetings with representatives of the various surface owners;
- e) Enquiry with KZN DRD&LR as to the existence of any land claims on the properties. This proved to be negative.
- f) One-on-one meetings with the Mayor of the Newcastle Local Municipality and the elected Ward Councillor of Ward 21 of the Newcastle Local Municipality.
- g) Notices hand delivered to homesteads within a 2km radius of the prospecting site on adjacent properties.
- h) Copies of the Draft Prospecting Works Programme, the Draft Basic Assessment Report and Environmental Management Programme and associated documents were made available for comment to the Competent Authority (DMR), State Departments that administer a law relating to a matter affecting the environment relevant to this application, Organs of State which have jurisdiction in respect of this application and to other Interested and Affected Parties identified during the Public Participation Process.
- i) A minimum period of 30 days was given to all IAPs referred to in (h) above to provide comments on the Draft BAR & EMPr. Comments were received from a number of the IAPs and cognizance was taken of these comments and the recommendations made and, where applicable, they were incorporated into the Final BAR and EMPr document submitted for approval to the DMR.

iii) **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              | Issues raised  | EAPs response to issues as mandated by | 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<br><br>Mark with an <b>X</b> where those who must be consulted were in fact consulted. |          | Comments Received |  | the applicant                          |  |
| <b><u>AFFECTED PARTIES</u></b>   |          |                   |  |  |  |
| <b>Landowner/s</b>   | <b>X</b> |                   |  |  |  |
| Department of Public Works   | X        | 19-09-18          | Written permission for access onto the property granted to Mr. M. Mokoena.   |  | Appendix C - PPE - Item 29   |
|  |          |                   |  |  |  |
| <b>Lawful occupier/s of the land</b>   |          |                   |  |  |  |
| Department of Correctional Services - Ekuseni Youth Development Centre   | X        | 21-11-19          | No issues raised regarding the proposed prospecting operations.  |  | Appendix C - PPE - Item 6  |
| Department of Education - Empondo Primary School   | X        | 21-11-19          | No issues raised regarding the proposed prospecting operations.  |  | Appendix C - PPE - Item 9  |
| <b>Landowners or lawful occupiers on adjacent properties</b>   | <b>X</b> |                   |  |  |  |
| Le Krantz Properties cc, The Farm Cecilia 15106,   | X        | 21-11-19          | No issues raised regarding the proposed prospecting operations, but expressed reservations over the eventual "mining" of the mine residue deposit. |  | Appendix C - PPE - Items 7 & 18  |

|   |          |          |   |   |   |
|---|----------|----------|---|---|---|
| Leeds Trust,<br>Portion 3 of the farm Horn<br>River 4305              | X        | 26-11-19 | Issued the statement "We are not in agreement" but failed to elaborate any further on any detail of the disagreement despite requests for further comments.   |   | Appendix C -<br>PPE - Items<br>10, 17, 22 &<br>25 |
| The M. L. Phillips Trust,<br>Rem. Macclesfield 8418-HS                | X        | 21-11-19 | No issues raised regarding the proposed prospecting operations, but expressed a positive view to the possibility of the entire dump being removed should "mining" eventually take place.  |   | Appendix C -<br>PPE - Items<br>10, 17, 22 &<br>25 |
| Dlamini Family - Kraal on<br>Ptn. 3 of the farm Horn River<br>4305-HS | X        | 06-12-19 | Expressed concern over the possibility of dust emissions during prospecting and raised concern over the quality of the water on the site and its effect on their health and that of their livestock.  | Dust suppression would be in place as required during the prospecting operation. Water quality on the site could not be addressed during prospecting but would be fully investigated and mitigated in the event that "mining" eventually took place.  | Appendix C -<br>PPE - Items 30<br>& 31            |
| <b>Municipal councillor</b>   | <b>X</b> | 26-11-19 | Had previous exposure to the project through the applicant's original Mining Permit application and was confused as to why a prospecting right was now required. Concerned that the expectations of the local community of "mining" taking place would now not be met. Expressed positive reaction to the prospecting operation once the reason for the PR was explained. | Explained that meeting the requirements of the DMR and DWS was a pre-requisite to obtaining the necessary permissions to "mine" the dump. Agreed to a further meeting, with representatives of the local community, to explain the situation to them. | Appendix C -<br>PPE - Items 21<br>& 28            |
| <b>Municipality</b>   | <b>X</b> | 04-12-19 | No issues raised regarding the proposed prospecting operations but was interested in the timeframe required to obtain the necessary authorisations. This was related to Municipal elections in 2020 and the possible change in Councillors.   | The timeframe for the granting of the necessary authorisations was indicated as mid-2020.   | Appendix C -<br>PPE - Item 27                     |

|  |   |          |  |   |   |
|--|---|----------|--|---|---|
|  |   |          |  |   |   |
| <b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e</b> |   |          |  |   |   |
| Department of Water and Sanitation   | X | 04-02-20 | <p>1. Expressed concern that the proposed prospecting activities will cause a certain level of disturbance that will expose reactive material resulting in an impact over and above the existing impacts and that the applicant may not address those issues.</p> <p>2. Water management issues associated with the site are currently managed by DWS. If a new disturbance occurs DWS dictates that the proponent take full responsibility of the management of the whole site. The Applicant needs to commit to accepting responsibility for liabilities related to the site if exploration rights are granted, even if mining does not continue, until final rehabilitation and site closure is achieved. Financial Provision for long term management of the site needs to be provided.</p> <p>3. The Rehabilitation work carried out on the dump by the DWS (then DWAF) shall not be compromised.</p> | <p>1. Responded to this statement in Section (vii) - Point 7 - The statement was made in respect of the existing, long-term impact resulting from seepage water from the PCD. In no way does it imply that the applicant will not address any issues relating to impacts on water quality that may be associated with the proposed prospecting activities.</p> <p>2. The responsibilities dictated by DWS have been understood by the Applicant since the Joint Meeting between DMR, DWS and the Applicant in the DMR Board Room on the 25th. March 2019. The details of the commitment by the Applicant will need to be agreed between all parties prior to finalisation of the prospecting right. Details of the required Financial Provision will also need to be agreed.</p> <p>3. All of the proposed prospecting operations will be carried out with care and regard to minimising any risk to the environment. Mitigation measures will be implemented as necessary to address any risk situation that may arise, as indicated in the EMPR attached.</p> | Appendix C - PPE - Items 1B, 5, 32, 40 & 41 |

|                               |   |          |   |   |                                    |
|-------------------------------|---|----------|---|---|------------------------------------|
|                               |   |          | <p>4. The DWS is of the opinion that the dump has no economic value.</p> <p>5a. Rehabilitation provision is not stated.<br/>5b Rehabilitation provision only takes into consideration the exploration activities and does not accommodate the takeover of responsibility of the entire site.<br/>5c. If exploration granted then applicant shall need to implement measures to improve the work carried out by DWS.</p> <p>6. DWS concerned that the health of the nearby wetland area may be disturbed.</p> <p>DWS objects to the approval of the prospecting permit and may only review its position and opinion if above issues are addressed to their satisfaction.</p> | <p>4. The DWS is entitled to its opinion but the basis upon which it is made is unsound, in the view of the applicant.</p> <p>5a. A financial provision of R161 659,83 (Incl. VAT) has been estimated.<br/>5b. The estimated Financial Provision assumes that mining will take place. In the event that is not the case then the Financial Provision will be reviewed.<br/>5c. Improvement to the work carried out by the DWS should not be a pre-requisite for this application. However, an improvement on the status quo would be the aim.<br/>6. The applicant is confident that none of the proposed prospecting activities will impact on the health of the nearby wetland area. In the event that mining does eventually take place studies will be implemented at that time to assess and quantify the ecological significance of the wetland area.<br/>The DWS objection is noted.</p> |                                    |
| EKZN Wildlife                 | X | 20-11-19 | No response received  |   | Appendix C - PPE - Item 4, 32 & 37 |
| Amajuba District Municipality | X | 20-11-19 | No response received  |   | Appendix C - PPE - Item 1, 32 & 37 |
|                               |   |          |   |   |                                    |
| <b>Communities</b>            |   |          |   |   |                                    |
| Local Community Forum         | X | 04-12-19 | Expressed concern over apparent delay in eventual "mining" of the dump - the withdrawal of the original "Mining Permit" was viewed as taking steps back.  | Explained that a "Mining Permit" was deemed to be inadequate by the DMR and the DWS and that meeting the requirements of the DMR and DWS was a pre-requisite  | Appendix C - PPE - Item 28         |



|   |   |          |  |   |                                      |
|---|---|----------|--|---|--------------------------------------|
|   |   |          |  | to obtaining the necessary permissions to "mine" the dump.  |                                      |
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| <b>Dept. Land Affairs</b>                   |   |          |  |   |                                      |
| KZN DRD&LR - Mrs. L. Boucher                | X | 20-08-19 | Confirmation that there are no land claims on the properties associated with the prospecting area.   | No response given.  | Appendix C - PPE - Item 1A           |
| <b>Traditional Leaders</b>                  |   |          |  |   |                                      |
| Not applicable                              |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
| <b>Dept. Environmental Affairs</b>          |   |          |  |   |                                      |
| Not applicable                              |   |          |  |   |                                      |
| <b>Other Competent Authorities affected</b> |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
| <b><u>OTHER AFFECTED PARTIES</u></b>        |   |          |  |   |                                      |
| Not applicable                              |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
|   |   |          |  |   |                                      |
| <b><u>INTERESTED PARTIES</u></b>            |   |          |  |   |                                      |
| Wilbat Projects                             |   | 04-02-20 | Letter of objection to the prospecting right received.<br>1. Respondent claims that it already has a mining permit in place for the same mineral and property. | Receipt of the objection letter was acknowledged in writing.<br>Under separate cover the claims by the respondent were addressed in writing as follows: | Appendix C - PPE - Items 36, 38 & 42 |

[illegible]

**iv) The Environmental attributes associated with the alternatives.**(The environmental attributed 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).

The prospecting area is contained within the property Portion 1 of the farm Knowesley 8926-HS - Extent 255,5640 Hectares.

The total extent of the prospecting area is 43.0962 Hectares.

The original ground profile is relatively flat with an average slope of 2.1% towards the Horn River to the north-west. The mine residue deposit covers an area of approximately 12.2Ha. and rises approximately 25m above the original ground level. Three pollution containment ponds lie immediately to the east of the residue dump and cover a combined area of approximately 10.25 Ha. The remainder of the area within the prospecting footprint is relatively level and is laid to grass where topsoil exists and exhibits areas of exposed mine residue where the soils have either been eroded or were never replaced during rehabilitation.

The harsh nature of the mine residue material restricts any bio-logical development and also discourages any socio-economic activities on the site as the water contained within the site is of an acidic nature and does not promote the existence of fish or other wildlife. However, immediately adjacent to the prospecting area, between the site and the Horn River, seepage water from the pollution containment ponds has helped to maintain a wetland area in which birdlife can be seen to be prominent.

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

There are no land uses currently associated with the proposed prospecting right footprint. The site is rehabilitated to a certain degree but has no economic value agriculturally and is effectively dormant from that perspective.

**(c) Description of specific environmental features and infrastructure on the site.**

One feature that could be described as having an environmental influence is the storage of polluted water in the containment ponds. From observations taken of the surface area down grade of the toe of the PCD wall it can be seen that seepage water from the PCD, despite its obvious poor quality, provides a source of water that helps to maintain the nearby wetland area.

**(d) Environmental and current land use map.**

(Show all environmental, and current land use features)

A plan showing the current "land uses" in the immediate vicinity of the proposed prospecting area can be found in "Appendix B - Plans" of this report - Plan No. KNOW/PR/004.

**v) 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).

Potential impact of each main activity in each phase, and corresponding significance assessment:

Construction Phase:

No impacts of any significance identified during this phase of the project.

Operational Phase:

Impact: OP(i) - Increased traffic movements on the existing dirt roads that will need to be utilised to gain access to the site (approximately 550m in length) may result in the degradation of the roads, especially during the rainy season when they will be more susceptible to erosion.

- a) Nature of Impact: Should the dirt roads become impassable, this could impact on the effective running of the normal activities on the property.
- b) Extent: The impact could extend to the "Site".
- c) Duration: The duration would be "Medium Term".
- d) Intensity: Provided mitigation measures are carried out timeously the intensity of the impact will be maintained at "Medium".
- e) Probability: The likelihood of this impact occurring is "Probable".
- f) Level of Significance: Because of the importance of maintaining accessibility for all the existing operations on the property the level of significance of this impact must be taken as "High".

The following table summarises the above:

Significance rating scale

| Extent | Duration    | Intensity | Probability | Level of Significance |
|--------|-------------|-----------|-------------|-----------------------|
| Site   | Medium Term | Medium    | Probable    | High                  |

Impact: OP(ii) - Increased traffic movements on the dirt roads and excavation works for exploration may result in excessive dust emissions, especially during the dry, winter season.

- a) Nature of Impact: Excessive dust emissions could impact on the adjacent agricultural lands and residential areas.
- b) Extent: The extent to which the dust emissions would impact would depend on the prevailing wind levels at the time, but could extend to the "Site".
- c) Duration: The duration of the impact would be "Medium Term" as, without mitigation, it will continue throughout the phases of the prospecting operation.

- d) **Intensity:** The intensity of the impact would be rated as “Low” as the volume of traffic associated with the prospecting operation would be limited to a few vehicle movements per day (probably less than 10) during the exploration process and the dust emissions from exploration will be localised.
- e) **Probability:** It is “Probable” that the impact will occur and provision will have to be made to provide mitigation measures.
- f) **Level of Significance:** The level of significance is rated as “Low” as the movement of existing vehicles on the property would create the same impact and the exploration locations are remote from the residential area. However, mitigation measures must still be available, if required.

The following table summarises the above:

#### Significance rating scale

|        |           |           |             |                       |
|--------|-----------|-----------|-------------|-----------------------|
| Extent | Duration  | Intensity | Probability | Level of Significance |
| Site   | Long term | Low       | Probable    | Low                   |

**Impact: OP(iii) -** The use of diesel powered, mechanical equipment for the exploration operations may result in oil and fuel spillages into the ground during re-fuelling operations or minor services.

- a) **Nature of Impact:** Fuel and oil spills into the ground can impact on the vegetation and the surface and ground water regimes.
- b) **Extent:** This would depend on the size or volume of the oil/fuel spillage and the locality of the spill in relation to water resources. Storage of fuel and oil on site will not be permitted during the prospecting operation, these will be brought to site as and when required (probably daily) in a mobile, trailer-mounted bowser carrying approximately 1,000 to 1,500 litres of fuel and 25 to 50 litres of various oils.  
In a worst case scenario the impact could be “Regional” as the contents of the bowser could be discharged accidentally into the ground alongside a flowing watercourse and the contamination could then be spread for many kilometres down-stream, affecting fish and other aquatic life, water resources, livestock, etc..  
On the other hand the extent could be “Local” as it could be a small spillage of fuel (<1 litre) into the soil during a re-fuelling operation, which would only impact on the soils and vegetation in the immediate area of the spill.
- c) **Duration:** The potential for the impact to occur would be throughout the life of the prospecting operation i.e. 5 years, and as such would be rated as “Long Term”, but the risk would only be during those periods when prospecting was physically taking place.
- d) **Intensity:** Irrespective of the size of the “spill” the intensity would always be rated as “High” as any spillage of fuel or oil would be disastrous to the plant and/or animal life it comes into contact with.
- e) **Probability:** The likelihood of a major spillage of fuel or oil taking place is “Improbable” but awareness of the potential impacts that may occur in the event of such an incident happening must form part of the exploration crews safety, health and environment (SHE) induction, before prospecting commences, in order to mitigate against such an incident.  
The occurrence of minor spillages of oils, and especially fuels, would be rated as “Highly Probable” and as such it is important that mitigation measures e.g. metal spill trays of adequate size, are in place at all times during these procedures in order to minimise that risk.
- f) **Level of Significance:** Irrespective of the size of the spill the level of significance would always be rated as “High”.

The following table summarises the above:

Significance rating scale – Large Fuel/Oil Spill

|          |           |           |             |                       |
|----------|-----------|-----------|-------------|-----------------------|
| Extent   | Duration  | Intensity | Probability | Level of Significance |
| Regional | Long term | High      | Improbable  | High                  |

Significance rating scale – Small Fuel/Oil Spill

|        |            |           |                 |                       |
|--------|------------|-----------|-----------------|-----------------------|
| Extent | Duration   | Intensity | Probability     | Level of Significance |
| Local  | Short term | High      | Highly probable | High                  |

Impact: OP(iv) – Exploration sites that are left un-rehabilitated could pose a danger to humans and animals should they step into the void.

- a) Nature of Impact: Open trial pit and trench excavations and drill holes can cause unnecessary injury or even death to humans and livestock that unwittingly step into the hole.
- b) Extent: This impact would be limited to the “Site”.
- c) Duration: If holes and excavations are left open they could remain a danger to livestock and animals over a very long period of time. With the necessary mitigation, however, the impact can be reduced to a “Short term” duration with all holes and excavations being backfilled during each phase of the exploration.
- d) Intensity: The intensity of the impact would be rated as “Low” because of the small areas affected in relation to the overall size of the site.
- e) Probability: Because of the relatively small areas of disturbed ground compared to the overall size of the site the probability rating would be “Probable”.
- f) Level of Significance: Livestock are generally part of someone’s livelihood and as such are very valuable commodities and their safety cannot be treated lightly, even though they should not be allowed onto the site. The significance of this impact should still be “High” and the corresponding mitigation needs to be imposed to reduce it to an acceptable level.

The following table summarises the above:

Significance rating scale

|        |            |           |             |                       |
|--------|------------|-----------|-------------|-----------------------|
| Extent | Duration   | Intensity | Probability | Level of Significance |
| Site   | Short term | Low       | Probable    | High                  |

Impact: OP(v) - Extraneous material generated during the exploration operation e.g. domestic refuse, oil filters, air filters etc., would present a hazard to livestock and animals and result in general poor housekeeping if not adequately contained.

- a) Nature of Impact: Detritus left behind by the exploration crew can be extremely dangerous to animals. In addition it spoils the natural beauty of the area and is an unacceptable practice in a civilised society.
- b) Extent: Lightweight plastics can be carried by the wind for many kilometres and as such can pose a danger to the livestock of farmers on the site and adjacent properties. Heavier objects such as oil filters, air filters and the like would obviously remain within the local area.

- c) Duration: With the correct mitigation in place the duration of this impact would be “Short term”. General good-housekeeping of the exploration site must form part of the exploration crew’s induction and the required receptacles for litter and other waste must be provided by the exploration contractor.
- d) Intensity: Because of the serious implications of this impact (i.e. could cause the death of animals) its intensity should be rated as “High”.
- e) Probability: Unless the necessary mitigation is carried out (i.e. waste receptacles are provided) then the probability of this impact occurring is “Highly probable”.
- f) Level of Significance: Any form of threat to animals and to the general good- housekeeping on the site must be taken with the utmost seriousness and as such the significance rating of this impact is “High”.

The following table summarises the above:

#### Significance rating scale

|          |            |           |                 |                       |
|----------|------------|-----------|-----------------|-----------------------|
| Extent   | Duration   | Intensity | Probability     | Level of Significance |
| Regional | Short term | High      | Highly Probable | High                  |

Impact: OP(vi) - The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews.

- a) Nature of Impact: Inadequate toilet and ablution facilities will lead to these activities being carried out in the veld.
- b) Extent: These activities would be confined to site.
- c) Duration: The duration of this impact would be “Short term”.
- d) Intensity: The intensity would be low due to the small number of persons involved.
- e) Probability: Unless the necessary mitigation is carried out the probability of this impact occurring is “Highly probable”.
- f) Level of Significance: Uncontained ablution/toiletry activities at any level are of “High” significance and need to be treated as such

The following table summarises the above:

#### Significance rating scale

|        |            |           |                 |                       |
|--------|------------|-----------|-----------------|-----------------------|
| Extent | Duration   | Intensity | Probability     | Level of Significance |
| Site   | Short term | Low       | Highly Probable | High                  |

Impact: OP(vii) - There is an increased risk of veld fires occurring with the establishment of the camp site for the exploration crew.

- a) Nature of Impact: The occurrence of veld fires is generally seasonal i.e. during the dry winter months, and as such particular care must be taken during that period. The use of open fires by the exploration crew for either cooking or heating shall be strictly forbidden under any circumstances and care taken not to discard a lighted cigarette or match directly onto the veld.
- b) Extent: Depending on the prevailing weather conditions e.g. high winds, a veld fire can travel for 10s of kilometres causing devastation in its wake. Its extent must therefore be rated as “Regional”.

- c) Duration: The risk of the impact must be rated as “Long term” as it lasts for as long as the prospecting operation is underway.
- d) Intensity: Should a veld fire occur as a result of the exploration programme then the intensity for the area affected by the fire must be rated as “High” as the process of the affected section of the environment will temporarily cease.
- e) Probability: The likelihood of the impact occurring should be rated as “Probable” and as such it is imperative that the necessary mitigation measures, i.e. health & safety induction of the exploration crew; are adequately carried out prior to the commencement of exploration operations.
- f) Level of Significance: Because of the serious consequences of a veld fire and the potential extent of the impact the level of significance must be rated as “High”.

The following table summarises the above:

#### Significance rating scale

|          |           |           |             |                       |
|----------|-----------|-----------|-------------|-----------------------|
| Extent   | Duration  | Intensity | Probability | Level of Significance |
| Regional | Long term | High      | Probable    | High                  |

Impact: OP(viii) - There is an increase in the risk of veld fires occurring due to the exposure of mine residue that may be subject to spontaneous combustion.

- a) Nature of Impact: The occurrence of veld fires is generally seasonal i.e. during the dry winter months, and as such particular care must be taken during that period. The exposure of mine residue that is already subject to spontaneous combustion, or is likely to exhibit this phenomenon, can provide the trigger for a veld fire to start.
- b) Extent: Depending on the prevailing weather conditions e.g. high winds, a veld fire can travel for 10s of kilometres causing devastation in its wake. Its extent must therefore be rated as “Regional”.
- c) Duration: The risk of the impact must be rated as “Long term” as it lasts for as long as the prospecting operation is underway.
- d) Intensity: Should a veld fire occur as a result of the exploration programme then the intensity for the area affected by the fire must be rated as “High” as the process of the affected section of the environment will temporarily cease.
- e) Probability: The likelihood of the impact occurring should be rated as “Probable” and as such it is imperative that the necessary mitigation measures, i.e. health & safety induction of the exploration crew; are adequately carried out prior to the commencement of exploration operations.
- f) Level of Significance: Because of the serious consequences of a veld fire and the potential extent of the impact the level of significance must be rated as “High”.

The following table summarises the above:

#### Significance rating scale

|          |           |           |             |                       |
|----------|-----------|-----------|-------------|-----------------------|
| Extent   | Duration  | Intensity | Probability | Level of Significance |
| Regional | Long term | High      | Probable    | High                  |



## Decommissioning/Monitoring/Closure Phases:

Impact: DMCP(i) - Disturbed areas associated with the exploration sites will be susceptible to the invasion of alien plant species.

- a) Nature of Impact: Disturbed areas encourage the establishment of invasive, alien plant species that, if left in place, can disrupt the delicate balance of nature and cause the indigenous plant life in that area to die.
- b) Extent: Although the disturbed areas at each exploration site are relatively small they do offer a foothold for the alien plants and promote them spreading even further afield and the extent should be rated as “Site”.
- c) Duration: If left unattended then the duration would extend to “Long term”.
- d) Intensity: The intensity should be rated as “Medium” as the affected environment is altered but function and process continue, albeit in a modified way.
- e) Probability: The likelihood of the impact occurring is rated as “Probable” and as such provisions have to be made for mitigation to be carried out.
- f) Level of Significance: Alien invasion is a national problem and is viewed as a highly significant factor in the use of water throughout the country. Its significance therefore, even on the small scale of this project, should be rated as “High”.

The following table summarises the above:

### Significance rating scale

| Extent | Duration  | Intensity | Probability | Level of Significance |
|--------|-----------|-----------|-------------|-----------------------|
| Site   | Long term | Medium    | Probable    | High                  |

### Assessment of potential cumulative impacts.

Impact: CUM(i) - The exploration work on the site will increase the volume of traffic utilising the dirt access roads which may result in degradation of the road surfaces.

- a) Nature of Impact: Should the access roads become impassable, this could impact on the effective running of the current activities on the property as the surface owner relies on access being maintained at all times of the year to all sections of the property.
- b) Extent: The impact could extend to the “Site”.
- c) Duration: Mitigation must be carried out as and when required during each phase of the prospecting in order to maintain access. The duration would therefore be “Medium Term”.
- d) Intensity: Provided mitigation measures are carried out timeously the intensity of the impact will be maintained at “Medium”.
- e) Probability: The likelihood of this impact occurring is “Probable”.
- f) Level of Significance: Because of the importance of accessibility to the farm owner the level of significance of this impact must be taken as “High”.

The following table summarises the above:

## Significance rating scale

|        |             |           |             |                       |
|--------|-------------|-----------|-------------|-----------------------|
| Extent | Duration    | Intensity | Probability | Level of Significance |
| Site   | Medium Term | Medium    | Probable    | High                  |

**vi) 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).

**AN ASSESSMENT OF THE NATURE, EXTENT, DURATION, PROBABILITY AND SIGNIFICANCE OF THE IDENTIFIED POTENTIAL ENVIRONMENTAL, SOCIAL AND CULTURAL IMPACTS OF THE PROPOSED PROSPECTING OPERATION.**

### Method used to qualify identified impacts (Significance Rating):

Activities within the framework of a development, and their respective construction and operational phases, give rise to certain impacts. A site will be described for each aspect as it currently stands, taking cognisance of the disturbance and impact regimes operating. For the purpose of assessing these impacts, a project is divided into three phases from which impacting activities can be identified, namely:

- a) Construction phase - All the establishment, infrastructure development and related activities on site, until the site is commissioned.
- b) Operational phase - All activities, including the prospecting operation and maintenance until all the prospecting has been completed.
- c) Decommissioning phase - All activities relating to the prospecting operation until it is no longer operative and a closure certificate is issued.

The activities arising from each of these phases will be determined by the EAP and scheduled. This is to identify activities which require certain environmental management actions to mitigate the impacts arising from them. The criteria against which the activities will be assessed are given in the next section.

### Assessment criteria:

The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure.

a) Nature of impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected, and how.

b) Extent

The physical and spatial size of the impact. This is classified as:

- i) Local - The impacted area extends only as far as the activity, e.g. a footprint of the proposed activity.
- ii) Site - The impact could affect the whole, or a measurable portion of the property.
- iii) Regional - The impact could affect the area including the neighbouring farms the transport routes and the adjoining towns.

c) Duration

The lifetime of the impact; this is measured in the context of the lifetime of the proposed prospecting operation, which has a Construction Phase of 2 months; Operational Phase of 4 years and a Decommissioning Phase of approximately 2 years.

- i) Short term - The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than any of the phases.
- ii) Medium term - The impact will last up to the end of the phases, where after it will be entirely negated.
- iii) Long term (duration of operation) - The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter.
- iv) Permanent - The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

d) Intensity

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project. Is the impact destructive, or benign? Does it destroy the impacted environment, alter its functioning, or slightly alter it? These are rated as:

- i) None - No impact whatsoever
- ii) Low - The impact alters the affected environment in such a way that the natural processes or functions are not affected.
- iii) Medium - The affected environment is altered, but function and process continue, albeit in a modified way.
- iv) High - Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

e) Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

- i) Improbable - The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
- ii) Probable - There is a possibility that the impact will occur to the extent that provisions must be made therefore.
- iii) Highly probable - It is most likely that the impacts will occur at some of the development. Plans must be drawn up before the undertaking of the activity.
- iv) Definite - The impact will take place regardless of any prevention plans, and there can only be relied on mitigation actions or contingency plans to contain the effect.

f) Determination of significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

- i) No significance - The impact is not substantial and does not require any mitigation action.
- ii) Low - The impact is of little importance, but may require limited mitigation.
- iii) Medium - The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
- iv) High - The impact is of great importance. Failure to mitigate, with the objective reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

NOTE: Unless indicated otherwise, [e.g. High (+ve)] the level of significance refers to a negative impact.

**vii) 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)

The Public Participation Exercise carried out for this proposed prospecting operation involved the following:

1. A notice placed in a local newspaper, The Newcastle Advertiser;
2. Notices placed at prominent positions on the access road to the site, around the boundary fence of the prospecting area and on the boundary fence between the farms Knowesley and Cecilia;
3. Notices with supporting documentation hand delivered to the occupiers and owners of the target property and its adjacent farms;
4. Written notifications, with supporting documentation, e-mailed to various Organs of State (e.g. EKZN Wildlife) and Government Departments (e.g. Newcastle Local Municipality, DWS, DPW and DCS);
5. One-on-one meetings held with the respective land owners and surface occupiers of the target property and its adjacent farms;
6. One-on-one meetings with the Mayor and elected Ward 21 Councillor from Newcastle Local Municipality and
7. A meeting with members of the local Community Forum.

One response, via SMS, was received from a written notification handed to the occupier of a kraal in proximity to the site - Mr. V. E. Dlamini. His concerns were regarding dust emissions from the site associated with the prospecting activities and the quality of water on the site.

With regard to dust emissions - any alternative layout of the proposed prospecting activities, i.e. drill holes, trenches and trial pits; would be unlikely to have any influence, positive or negative, on dust emissions. Mitigation measures in the form of adequate dust suppression during the prospecting activities will be required to address this concern.

With regard to water quality - this is an on-going problem that has been associated with the residue site since its original creation and is not an issue that can be addressed during the prospecting operation. In the event that mining does eventually take place then the issue of water quality will have to be addressed at that time.

[NOTE: The DWS expressed their concern over this statement (C&R Report - Item 40) - In response to DWS, the statement is made in respect of the long-term impact resulting from seepage water from the PCD. In no way does it imply that the applicant will not address any issues relating to impacts on water quality that may be associated with the proposed prospecting activities.]

The one-on-one meetings did produce responses from individual parties, both positive and negative, and these responses have been instrumental in directly influencing the proposed prospecting operation as follows:

1. Access onto the site - Vehicles and equipment used during the prospecting operation will be required at all times to use a designated route through the DCS Ekuseni Youth Development Centre complex to minimise interaction with workers and residents on the property.
2. Dust emissions - Adequate dust suppression measures are required at all times.
3. Noise emissions - Mechanical equipment to be fitted with suitable silencing mufflers.
4. Working hours - All prospecting activities to be restricted to daylight hours.

5. Security - Prospecting area to be adequately fenced off to prevent unlawful and dangerous access onto the site by livestock and human.

**viii) 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).

1. Access onto the site - The least intrusive route for prospecting equipment and vehicles to gain access onto and egress from the site will be agreed with representatives of DCS. All employees of, and representing, the applicant during the prospecting operation shall be made aware of this route and an instruction given for them to follow that same route at all times and to maintain vehicle speeds below the stipulated speed limit.

The risk of an incident occurring involving prospecting equipment or vehicles and a pedestrian or private vehicle on the DCS property must be avoided at all cost.

2. Dust emissions -

Drill holes - drilling equipment to be fitted with suitable and operative dust suppression equipment.

Trenching - dust suppression equipment (e.g. pressure water sprays) to be available on site at all times.

Trial pits - dust suppression equipment (e.g. pressure water sprays) to be available on site at all times.

Dust suppression equipment must be seen to be effective under any and all circumstances during the prospecting operation. If a dust suppression system is found to be ineffective then the respective prospecting operation must be suspended until such time as the system is fixed or a suitable, alternative system is employed.

3. Noise emissions - Mechanical equipment to be maintained on a regular basis and any indication of mufflers becoming inoperative or ineffective is to be rectified with immediate effect.

The effectiveness of the muffler systems on the equipment must be verified through practical testing at selected sensitive areas around the site e.g. the kraal of the Dlamini Family on Ptn. 3 of Horn River or the Empondo Primary School buildings.

4. Working hours - Working hours are limited to daylight hours without exception.

5. Security - Existing fenceline around the prospecting area is to be inspected prior to the commencement of prospecting and any breach in the fencing is to be repaired.

Regular inspections of the fenceline around the prospecting site must be carried out throughout the prospecting operation and any breaches that are located are to be repaired with immediate effect.

6. Veld Fires - Suitable fire-fighting equipment is to be available during the prospecting operation.

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

No alternative to the overall prospecting area has been considered as it is a finite area defined by the prospecting right application.

**x) Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)**

The layout of the prospecting holes, the trenches and the trial pits for Phase 1 of the prospecting operation has been selected so as to provide sufficient sampling opportunities across the entire surface of the site that will yield enough quality information to justify further prospecting in Phase 2.

**i) 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.)**

A full Environmental Impact Assessment Report can be found in "Appendix D - EIA Report".

**j) 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).

| NAME OF ACTIVITY<br><br>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc<br><br>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.) | POTENTIAL IMPACT<br><br>(Including the potential impacts for cumulative impacts)<br><br>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...) | ASPECTS AFFECTED                                 | PHASE<br><br>In which impact is anticipated<br><br>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure) | SIGNIFICANCE if not mitigated | MITIGATION TYPE<br><br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br><br>E.g.<br>Modify through alternative method.<br>Control through noise control<br>Control through management and monitoring through rehabilitation.. | SIGNIFICANCE if mitigated                                |
|--|---|--|---|-------------------------------|--|--|
| OP(i) - Access   | Surface disturbance   | Degradation of the existing roads                | Operational   | High                          | Restrict access to exploration site during periods of heavy rainfall.  | Low  |
| OP(ii) - Vehicle and Equipment Movement & Activities   | Dust emissions  | DCS Residents and employees and other local IAPs | Operational   | Low                           | Adequate dust suppression measures in place  | Low  |
| OP(iii) - Equipment Servicing/Maintenance - Oil/Fuel spillage  | Potential contamination of surface and ground water   | Surface and ground water                         | Operational   | High                          | No storage of oils/fuels on site; Spilltrays used; Spill-kits available on site; Remedial action plan in place.  | Significance is still High to ensure continued awareness |

|   |  |   |                 |      |  |  |
|---|--|---|-----------------|------|--|--|
| OP(iv) - Rehabilitation of exploration sites.                     | Risk of injury to human and livestock.                                       | Local community members; Livestock                      | Operational     | High | Drill holes, trial pits and trenches will be backfilled to surface once the exploration site has been cleared for rehabilitation by the geologist.       | None   |
| OP(v) - Extraneous material generated to be adequately contained. | Pollution & bad house-keeping.   | Danger to livestock and general appearance of the site. | Operational     | High | Waste disposal receptacles strategically positioned at the exploration site. Waste disposed of at an appropriately registered waste disposal site.       | Low  |
| OP(vi) - Ablution and toilet facilities.                          | Contamination in the veld.   | Risk of pollution to surface and ground water           | Operational     | High | Portable toilet and ablution facilities established on site. Facilities shall be serviced as necessary by the supplier.                                  | Low  |
| OP(vii) & (viii) - Risk of veld fires                             | Veld fire affecting neighbouring properties                                  | Danger to human, livestock and pasturage.               | Operational     | High | No open fires. Health & safety induction for the crew to highlight the risks of veld fires. Suitable fire-fighting equipment to be on-hand at all times. | Significance is still High to ensure continued awareness |
| DMCP(i) - Invasion of alien plant species.                        | Disturbed areas are more susceptible to the invasion of alien plant species. | Indigenous vegetation at risk                           | Decommissioning | High | Monitor exploration sites post prospecting, for a period of 12 months, and report signs of such occurrence to the applicant for immediate attention      | Low  |
|   |  |   |                 |      |  |  |

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix**







**k) 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):-

| LIST OF STUDIES UNDERTAKEN  | RECOMMENDATIONS OF SPECIALIST REPORTS | SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT<br>(Mark with an X where applicable) | REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED. |
|---|---------------------------------------|---|--|
| No Specialist Reports were commissioned for this prospecting right application. |                                       |   |  |
|   |                                       |   |  |
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|   |                                       |   |  |

Attach copies of Specialist Reports as appendices



## **I) Environmental impact statement**

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

During the Construction Phase there are no impacts of high significance that have been identified.

During the Operational Phase the main impacts of significance were identified as:

- Drill holes, trenches and trial pits that are left un-rehabilitated could pose a danger to livestock or other animals should they step into the void.
- Increased traffic movements on the gravel sections of the designated access road to the site may result in the degradation of the road, especially during the rainy, summer season when it will be more susceptible to erosion.
- The use of diesel powered, mechanical equipment for the drilling operations may result in oil and fuel spillages into the ground during re-fuelling operations or minor services.
- Extraneous material generated during the drilling operations e.g. domestic refuse, oil filters, air filters, old drill bits etc., would present a hazard to livestock and other animals and result in general poor house-keeping if not adequately contained.
- The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews.
- There is an increase in the risk of veld fires occurring with the establishment of a temporary camp site for the drill and excavator crews.
- There is an increase in the risk of veld fires occurring due to the exposure of mine residue that may be subject to spontaneous combustion.

Proposed mitigation measures include the following:

Drill sites to be rehabilitated:

All drill holes, trenches and trial pits will be cordoned off with barrier tape until they are backfilled to surface once the holes, trenchews or trial pits have been cleared for rehabilitation by the geologist. No depressions or holes will be left at the exploration sites that may pose a threat to the safety of livestock or other animals.

Traffic Restrictions:

Traffic to and from the exploration site will be kept to a minimum at all times and should the prevailing weather conditions (i.e. heavy rainfall over an extended period) be such that access to certain sections of the site may cause degradation of the road surface then that road will be temporarily closed until such time as the conditions improve to an acceptable level.

Oil and Fuel Spillage:

No storage of oils, greases, fuels or any other potentially dangerous substance will be allowed on site.

During re-fuelling of equipment spill trays shall be deployed to collect and contain any accidental spillage of fuel.

Should oil need to be drained from a machine, spill trays shall be used to contain the oil and then it is to be transferred to a "Used-Oil" drum for transportation off-site and disposal at a re-cycling point.

In the event that a spill does take place then the appropriate remedial action shall be taken immediately, depending on the size and locality of the spill. The sub-contract drill and excavator crews must have the appropriate action plan as part of their health & safety induction along with any ancillary workers e.g. mechanic, electrician etc.

Good housekeeping:

Waste disposal receptacles shall be strategically positioned at the exploration sites to accommodate the various types of waste, i.e. domestic waste, metal waste and contaminated waste e.g. filters. Each of these waste types shall be collected from site on a regular basis and disposed of at an appropriately registered waste disposal site.

Suitable ablution and chemical toilet facilities will be available to site personnel throughout the prospecting operation. These facilities will be maintained in good working order at all times and services as required.

Veld Fires:

No open fires will be permitted at any time at the exploration sites. Alternative means of cooking and heating must be provided by the sub-contractors.

Security personnel, approved by the respective land owner, who will remain on site during the non-operating periods to secure the prospecting sites, will not be allowed to establish any form of open fire.

Smoking cannot be prohibited on site but the health & safety induction for the crew must highlight the risks associated with carelessly discarded matches and cigarettes in the veld.

Adequate fire-fighting equipment shall be available throughout the prospecting operation to handle the risk of a veld fire due to spontaneous combustion of the disturbed mine residue material.

During the Decommissioning and Post Closure Phase the main impacts of significance were identified as:

- Disturbed areas associated with the exploration sites will be susceptible to the invasion of alien plant species.

Proposed mitigation measures for the above impacts are to periodically monitor the condition of each exploration site post prospecting, for a period of at least 12 months, to check on the re-establishment of vegetation, signs of surface erosion and the existence of alien plant species on the disturbed areas and to report signs of any such occurrence to the applicant for immediate attention.

Alien Weed and Plant Eradication has been addressed in the EIA Report and by following the basic steps laid out in that report the risk of alien weeds and plants establishing on areas disturbed by the prospecting operations can be kept to a minimum.

## **(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**

A plan showing the proposed exploration sites for Phase 1 of the prospecting programme can be found in "Appendix B - Plans" to this report. Plan No. KNOW/PR/003.

There are no "Exclusion Areas" identified within the target footprint.

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

### **Positive Impacts:**

a) The prospecting provides the potential for mining to commence in the near future which will provide much needed job opportunities for the local community.

No risk associated with this impact.

### **Negative Impacts:**

a) Risk of oil / fuel spillage associated with refuelling and servicing activities involving mechanical equipment.

The preferred drilling contractor has many years of experience with this type of operation, they are based locally and they have a proven track record of providing a professional service. The risk of incidents occurring involving fuel / oil spills is always present but they are well equipped to effectively handle any such incident.

b) Risk of contaminating drill hole sites, surface erosion emanating from a drill hole site and endangering livestock.

All of the above risks are associated with the rehabilitation of the drill sites. As stated previously, the preferred drilling contractor has many years of experience with this type of operation and is well versed in the requirements of hole restoration. Provided the recommended mitigation measures are fully implemented these risks are minimal.

c) Good housekeeping is to be maintained at the exploration site at all times. Refuse bins are to be available at all times, regularly emptied and the contents disposed of at a suitably registered disposal site. Toilet and ablution facilities will be available for site personnel at all times and these units will be correctly maintained throughout the prospecting operation.

### **d) Veld Fires**

The risk of a veld fire is always present due to the proclivity of the mine residue to spontaneous combustion. This risk will be increased when the mine residue is disturbed by the trenching and trial pits, especially if the prospecting takes place during the dry, winter months. To minimise this risk, suitable fire-fighting equipment will be available throughout the prospecting operation.

Strict enforcement of the "no open fire" rule at the exploration and camp sites will be maintained at all times and the drill crew will be fully informed as to these conditions.

### **e) Alien plant invasion on disturbed areas**

Wherever ground is disturbed the risk of alien plant invasion occurring is increased multi-fold and in order to minimise this risk the basic regular follow up inspections and plant clearing are required to be carried out until such time as the indigenous vegetation has been able to re-establish itself.

Alien Weed and Plant Eradication has been addressed in the EIA Report and by following the basic steps laid out in that report the risk of alien weeds and plants establishing on areas disturbed by the prospecting operations can be kept to a minimum.

**m) 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.**

Impact Management Objectives:

- 1) To carry out the proposed prospecting operation with minimal short-term and long-term disruption or risk to the agricultural activities taking place on the properties.
- 2) To clearly communicate to the respective land owners all aspects of the proposed prospecting operation.
- 3) To keep the land owners informed of any deviations from the established prospecting programme and to obtain their approval to any programme changes prior to them being carried out.
- 4) To ensure that all personnel associated with the prospecting operation are fully conversant with the terms and conditions of the Environmental Authorisation and of the Approved EMPr and that they abide by those terms and conditions at all times.

Impact Management Outcomes:

- 1) The successful implementation of the proposed prospecting programme, carried out in accordance with the Environmental Authorisation and approved EMPr, and rehabilitation carried out to the satisfaction of the surface owner.

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

Any aspects which must be made conditions of the Environmental Authorisation

See Section p(ii) below.

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

(Which relate to the assessment and mitigation measures proposed)

Not applicable.

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

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

ENVIRONMENTAL IMPACTS:

From the EIA it has been established that there is no "fatal flaw" associated with the proposed prospecting operation. Mitigation measures can be implemented that will reduce the risks associated with all environmental impacts that have been identified as attributable to the prospecting to an acceptable level.



In view of the above, there is no apparent reason associated with environmental impacts why the prospecting activities should not be authorised.

#### DEPARTMENT OF WATER AND SANITATION (DWS):

In their response to our request for comments on the Draft BAR and EMPR the DWS are objecting to the approval of the prospecting right and "may only review its position and opinion if the ... issues are addressed (to its satisfaction) prior to the Competent Authority granting approval."

The DWS is seeking for "the Applicant ... to commit to accepting and taking over all responsibilities and liabilities related to the site should exploration be granted even if mining does not continue. The Applicant shall need to abide by this commitment until final rehabilitation and closure of the entire site is achieved by the Applicant."

The Applicant has agreed in principle to this condition, however, there are potentially numerous legal implications to such a commitment that fall outside the scope of this document and these will need to be agreed between the parties concerned.

Without a resolution to this objection from DWS it is uncertain as to whether or not the DMR would be prepared to still issue a prospecting right.

#### WILBAT PROJECTS:

Wilbat Projects are registered as an IAP and claim that the Applicant's prospecting right application is invalid due to there being an existing Mining Permit on the property for the same mineral under Wilbat Projects. This claim is refuted by the Applicant and a PAIA application has been submitted to the DMR requesting verification or otherwise of the claim by Wilbat Projects. Should their claim be justified then that would put the approval of this application in question.

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

Concomitant list of appropriate technical or management options:

- Where an activity associated with the exploration programme is likely to cause disturbance to any part of the environment, beyond the demarcated limits of the drill hole sites themselves, e.g. access roads, fence lines etc.; then consultation with the surface owner should be carried out prior to that activity taking place. The severity of an impact may be significantly reduced due to the "local knowledge" of the surface owner and, furthermore, his or her inclusion in the process will assist in establishing a good working relationship between the two parties.
- Careful consideration should be made of potential environmental impacts associated with the exploration process at the time of siting the drill hole, trench or trial pit positions in the field. Should the impact potential be such that the exploration activity may create far-reaching negative impacts then the managerial decision of either re-positioning or even abandoning that exploration site should be considered.
- No open fires will be permitted at the drill camp site.
- No major servicing or repairs of equipment will be carried out on the site. In the event that a machine suffers a major mechanical failure then the unit should be removed from site for repairs.
- Adequately sized spill-trays must form part of the standard equipment carried with the service and re-fuelling crews and these items must be used at all times during servicing and re-fuelling of the mechanical equipment on site associated with the exploration programme.
- Disturbed areas associated with the exploration sites shall be returned as near as possible to their original environmental status after completion of the exploration operation, at the discretion of the appointed geologist.

- Should a water supply be required for the drilling operation then the source of this water must be agreed with the land-owner prior to the commencement of any drilling.
- Monitoring of the exploration sites and any further mitigation against environmental impacts that may be required, shall be continued beyond the period of the exploration programme until such time as closure has been obtained from the DMR for the prospecting licence.

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

The Environmental Authorisation is required for a period of 3 (three) years.

**r) 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.**

It is hereby confirmed 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.

**s) Financial Provision**

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

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

An amount of R161 660 (One Hundred and Sixty one Thousand, Six Hundred and Sixty Rands) has been estimated as the amount that will be required to both manage and rehabilitate the environment in respect of rehabilitation.

Rehabilitation of Borehole, Trench and Trial Pit Sites:

The preferred contractor(s) appointed to carry out the exploration operation will be responsible for the rehabilitation of all boreholes, trenches and trial pits in accordance with the approved EMPr and to a condition that is satisfactory to the land owner and land occupier.

The cost of this rehabilitation has been included in the price stated in the respective quotations for RC Drilling and ExcavatorHire, copies of which can be found in "Appendix E - Financial Provision" of this report.

Further amounts of R1000 per borehole site, R2000 per 100m of trenching and R250 per trial pit, plus Ps&Gs and Contingencies, have also been allowed for.

Rehabilitation of Access Roads:

All access roads are already in place on the exploration site and no rehabilitation of these roads is necessary. However, an amount of R2 500 has been allowed for as a contingency should repairs to the road be required on cessation of exploration.

- 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 as the case may be).

It is hereby confirmed that all amounts required for the rehabilitation works associated with this proposed prospecting operation can be provided for from operating expenditure.

**t) 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** .

It has been established that there are no persons whose socio-economic conditions will be directly affected by the proposed exploration programme as there are no lawful occupiers of the portion of Ptn. 1 of Knowesley 8926-HS that has been demarcated for exploration.

- (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).

There are no indications of any impact on any National Estate referred to in Section 3(2) of the National Resources Act by the proposed prospecting operation.

The disturbed nature of the entire site means that there are no indications on the exploration site of any places, buildings, structures or equipment of cultural significance; historical settlements; natural features of cultural significance; geological sites of scientific or cultural importance; archaeological or palaeontological sites or graves or burial grounds.

**u) 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 exploration site is a finite area that is defined by the existence of a mine residue site established during historical mining activities in that area. There are no feasible alternatives to this site to be considered.

## 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 hereby confirmed that the details of the appointed EAP for this application, Mr. Geoffrey R. Silk, are included in Part A, Section 1(a) of the BAR and that the Curriculum Vitae for Geoffrey R. Silk and other supporting documentation can be found in "Appendix A - EAP Documents" of this report.

- 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 hereby confirmed that the required description of the aspects of the activity covered by this draft environmental management programme are included in Part A, Section (1)(h) herein.

#### 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 any areas that should be avoided, including buffers)

A plan showing the proposed borehole, trench and trial pit sites for Phase 1 of the exploration programme can be found in "Appendix B - Plans" to this report. Plan No. KNOW/PR/003.

There are no "Exclusion Areas" identified within the target footprint.

#### 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)

Impact Management Objectives:

- 1) To carry out the proposed exploration operation with minimal short-term and long-term disruption or risk to the activities taking place on the property by the Department of Correctional Services.
- 2) To clearly communicate to the land owner and land occupier all aspects of the proposed prospecting operation.
- 3) To keep the land owner and land occupier informed of any deviations from the established prospecting programme and to obtain their approval to any programme changes prior to them being carried out.
- 4) To ensure that all personnel associated with the exploration operation are fully conversant with the terms and conditions of the Environmental Authorisation and of the Approved EMP and that they abide by those terms and conditions at all times.

## Impact Management Outcomes:

1) The successful implementation of the proposed exploration programme, carried out in accordance with the Environmental Authorisation and approved EMPr, and rehabilitation carried out to the satisfaction of the surface owner and surface occupier.

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

The proposed exploration activities involve reverse circulation drilling of boreholes and excavation of trenches and trial pits and as such no water is required to carry out these activities.

Water required for human consumption and ablution/toilet facilities shall be brought to site as required.

No water use licence application has been submitted to DWS.

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

iv) Impacts to be mitigated in their respective phases

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

| ACTIVITIES  | PHASE   | SIZE AND SCALE of disturbance                 | MITIGATION MEASURES   | COMPLIANCE WITH STANDARDS   | TIME PERIOD FOR IMPLEMENTATION   |
|---|---|---|---|---|--|
| <p>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</p> <p>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.)</p> | <p>(of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).</p> | <p>(volumes, tonnages and hectares or m²)</p> | <p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p> | <p>(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)</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. .With regard to Rehabilitation, therefore state either:-</p> <p>..</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> |
| OP(i) - Increased traffic movements on access roads.  | Operational   | 10 Vehicles per day (Estimate)                | Limited access during periods of heavy rainfall.  |   | During prospecting operations.   |
| OP(ii) - Traffic movements on access roads resulting in excessive dust emissions.   | Operational   | 10 Vehicles per day (Estimate)                | Dust suppression as and when required.  |   | During prospecting operations.   |
| OP(iii) - Oil / fuel spillage   | Operational   | Not Specified                                 | No storage of oils or fuels on site.<br>Spill trays of adequate size to be used during re-filling of equipment with fuels or draining     |   | During prospecting operations.   |

|   |             |   |  |  |  |
|---|-------------|---|--|--|--|
| OP(iv) - Exploration sites that are left un-rehabilitated could pose a danger to humans and animals should they step into the void.   | Operational | +/- 10,000 m2 mainly associated with trenching                            | <p>of oils.<br/>Action plan in place to handle a fuel/oil spill event</p> <p>All exploration sites to be fully rehabilitated to the satisfaction of the surface owner once all geological information has been obtained.</p> |  | During prospecting operations, after Geologist has cleared each exploration site for rehabilitation. |
| OP(v) - Extraneous material generated during the exploration operation e.g. domestic refuse, oil filters, air filters etc., would present a hazard to livestock and other animals and result in general poor house-keeping if not adequately contained. | Operational | Varies per exploration site depending on drilling trenching or trial pit. | Refuse containers available at the drill site at all times and employed regularly.   |  | Prior to commencement of prospecting operation at a specific exploration site.                       |
| OP(vi) - The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews.   | Operational | 50m2  | Portable unit to be available on site throughout exploration - unit to be serviced as required.  |  | During prospecting operations.   |



|   |                                |                              |  |  |   |
|---|--------------------------------|------------------------------|--|--|---|
| OP(vii) & (viii) - Veld fires                                     |                                | Varies per exploration site. | No open fires permitted at the camp site. Awareness of the dangers of veld fires to be included in the induction of the drill crew and ancillary personnel.<br>Adequate fire fighting equipment to be available as required. |  | During prospecting operations.  |
| DCMP(i) - Alien plant invasion on disturbed areas of drill sites. | Decommissioning & Post Closure | Varies per exploration site. | Monitoring of exploration sites for an agreed period after cessation of prospecting.   |  | On cessation of prospecting operations for a minimum period of 12 months. |
|   |                                |                              |  |  |   |
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## e) Impact Management Outcomes

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

| <b>ACTIVITY</b><br>(whether listed or not listed).<br><br>(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><br><br>(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><br>In which impact is anticipated<br><br>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure) | <b>MITIGATION TYPE</b><br><br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br><br>E.g.<br><ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation..</li> </ul> | <b>STANDARD TO BE ACHIEVED</b><br><br>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc. |
|--|--|--|--|---|--|
| OP(i) - Increased traffic movements on access roads.   | Restricted access  | Damage to access road                                    | Operational  | Limit usage of access roads during periods of heavy rainfall  | Impact avoided   |
| OP(ii) - Traffic movements on access roads resulting in excessive dust emissions.  | Dust impact to adjacent residential area   | Well being of residents                                  | Operational  | Implement dust control measures as and when required  | Impact avoided   |
| OP(iii) - Oil / fuel spillage  | Contamination of soils, surface water and/or groundwater   | Vegetation and water quality                             | Operational  | Ensure that all personnel involved in re-fuelling and servicing operations on site are adequately trained and are suitably equipped to perform their duties correctly.  | Impact avoided   |
| OP(iv) - Exploration sites that are left un-rehabilitated could pose a danger to humans and  | Injury or death to humans and livestock  | Injury or even loss of life that could be life-changing. | Operational  | Rehabilitation of exploration sites carried out effectively   | Impact avoided   |

|   |   |   |   |   |                       |
|---|---|---|---|---|-----------------------|
| <p>animals should they step into the void.</p> <p>OP(v) - Extraneous material generated during the exploration operation e.g. domestic refuse, oil filters, air filters etc., would present a hazard to livestock and other animals and result in general poor house-keeping if not adequately contained.</p> | <p>Pollution and possible injury or even death to livestock</p> | <p>Loss of livelihood by land owner</p>                                       | <p>Operational</p>                      | <p>Provision of receptacles for different waste types and regular disposal of collected waste at suitable disposal sites.</p> | <p>Impact avoided</p> |
| <p>OP(vi) - The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews.</p>  | <p>Pollution of the veld.</p>                                   | <p>General good hygiene and housekeeping.</p>                                 | <p>Operational</p>                      | <p>Good housekeeping of exploration site.</p>   | <p>Impact avoided</p> |
| <p>OP(vii) &amp; (viii) - Veld fires</p>  | <p>Loss of pastureland and grazing</p>                          | <p>The livelihood of adjacent landowners could be seriously impacted upon</p> | <p>Operational</p>                      | <p>Education of exploration personnel on dangers of veld fires.<br/>Fire-fighting equipment on hand</p>                       | <p>Impact avoided</p> |
| <p>DCMP(i) - Alien plant invasion on disturbed areas of exploration sites.</p>  | <p>Loss of natural habitat</p>                                  | <p>Degradation of lands</p>   | <p>Decommissioning and Post-Closure</p> | <p>Regular monitoring of disturbed areas</p>  | <p>Impact avoided</p> |

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## 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).

| <b>ACTIVITY</b><br>whether listed or not listed.<br><br>(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><br><br>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...) | <b>MITIGATION TYPE</b><br><br>(modify, remedy, control, or stop) through<br>(e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)<br><br>E.g.<br><ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> </ul> Remedy through rehabilitation.. | <b>TIME PERIOD FOR IMPLEMENTATION</b><br><br>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.<br><br>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..<br><br>Upon cessation of the individual activity<br>or.<br><br>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be. | <b>COMPLIANCE WITH STANDARDS</b><br><br>(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) |
|--|--|--|---|--|
| OP(i) - Increased traffic movements on access roads.   | Restricted access  | Limit usage of access roads during periods of heavy rainfall   | As required according to weather conditions.  | Not applicable   |
| OP(ii) - Traffic movements on access roads resulting in excessive dust emissions.  | Dust impact to adjacent residential area   | Implement dust control measures as and when required   | As required according to weather conditions.  | Not applicable   |

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| OP(iii) - Oil / fuel spillage   | Contamination of soils, surface water and/or groundwater | Ensure that all personnel involved in re-fuelling and servicing operations on site are adequately trained and are suitably equipped to perform their duties correctly. | During induction of site personnel prior to the commencement of any operations.<br>Time period required is 1 day.   | Not applicable |
| OP(iv) - Exploration sites that are left un-rehabilitated could pose a danger to humans and animals should they step into the void.   | Injury or death to humans and livestock                  | Rehabilitation of exploration sites carried out effectively  | On completion of exploration work at drill sites, trenches and trial pits and after clearance is granted by the appointed Geologist. The surface profile at disturbed areas is to be made safe by backfilling voids and re-profiling surface to blend in with the surrounding ground. | Not applicable |
| OP(v) - Extraneous material generated during the exploration operation e.g. domestic refuse, oil filters, air filters etc., would present a hazard to livestock and other animals and result in general poor house-keeping if not adequately contained. | Pollution and possible injury or even death to livestock | Provision of receptacles for different waste types and regular disposal of collected waste at suitable disposal sites.   | Throughout the entire period of the exploration programme on site.  | Not applicable |

|   |                                 |   |  |                |
|---|---------------------------------|---|--|----------------|
| OP(vi) - The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews. | Pollution of the veld.          | Good housekeeping of drill hole sites   | Throughout the entire period of the exploration programme on site. | Not applicable |
| OP(vii) & (viii) - Veld fires   | Loss of pastureland and grazing | Education of exploration personnel on dangers of veld fires.<br>Fire-fighting equipment on hand | Throughout the entire period of the exploration programme on site. | Not applicable |
| DCMP(i) - Alien plant invasion on disturbed areas of exploration sites.   | Loss of natural habitat         | Regular monitoring of disturbed areas   | Minimum of 12 months after cessation of drilling operations.       | Not applicable |
|   |                                 |   |  |                |
|   |                                 |   |  |                |
|   |                                 |   |  |                |





**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 as follows:

- (i) To ensure that adequate mitigation measures are put in place before, during and after the exploration programme has been carried out to make certain that the impacts that have been identified within the EIA, which are listed below, are maintained at or below acceptable levels:
  - (a) Degradation of access roads;
  - (b) Dust emissions from traffic movements on access roads;
  - (c) Oil/fuel spillages into the ground;
  - (d) Surface contamination by drill, trench and triasl pit materials;
  - (e) Surface erosion of disturbed areas;
  - (f) Voids i.e. drill holes, trenches and trial pits left open;
  - (g) Detritus left at the exploration sites;
  - (h) Risk of veld fires;
  - (i) Invasion of disturbed areas by alien vegetation.
- (ii) To ensure that the pre-prospecting environment towards health and safety of the livestock and other animals on the property is maintained;
- (iii) To promote and develop a trusting relationship with the surface owner and surface occupiers in order to provide a sound basis for a long-term association with both parties in the event that the prospecting identifies an economically viable resource on the site that has the potential to develop into a mine.

The closure objective will be to leave the environment of the post-prospecting site as near as possible to that of the pre-prospecting environment and, with regard to the social environment, to develop a long-term relationship between the applicant and the surface owner and surface occupiers based on mutual trust.

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

The environmental objectives on closure of the prospecting operation will be to leave the site in a similar condition to that prior to the commencement of prospecting.

The representatives of the surface owner (DPW) and the surface occupiers (DCS) have been provided with copies of the description of the existing status within the proposed prospecting footprint of the cultural, socio-economic or biophysical environment, as the case may be, prior to the proposed prospecting operation.

Copies of the signed description documents can be found in "Appendix C - Public Participation Exercise" to this report.

**(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.**

The prospecting consists of Reverse Circulation drilling for boreholes, which create minimal disturbance at each of the drill hole sites, and the excavation of trenches and trial pits, all of which will be backfilled and levelled off once exploration is completed. It is not possible to depict the rehabilitation of these sites on a drawing.

Existing access roads will be used wherever possible that will require no rehabilitation.

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

The surface owner (DPW) and the Surface Occupier (DCS) of the property associated with this prospecting right application have been kept informed throughout all phases of the application process of the proposed prospecting operation and have been given the opportunity to comment on the proposals that have been made. Where necessary these comments have been incorporated into the proposals.

The closure objectives for this project, in terms of the rehabilitation of the site, have all been aimed at satisfying the needs of the surface owner and surface occupier and as such it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

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

A financial provision has been calculated to cover the rehabilitation and on-going monitoring costs for 3 No. Borehole Sites, 350m stretch of trenching and 11 No. Trial Pits.

An amount of R161 660,00 (Incl. VAT) has been estimated as the Financial Provision required for this prospecting operation.

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

It is hereby confirmed that the financial provision as detailed in (e) above will be provided for by the applicant as determined.

**Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including**

- g) Monitoring of Impact Management Actions
- h) Monitoring and reporting frequency
- i) Responsible persons
- j) Time period for implementing impact management actions
- k) Mechanism for monitoring compliance

| SOURCE ACTIVITY   | IMPACTS REQUIRING MONITORING PROGRAMMES | FUNCTIONAL REQUIREMENTS FOR MONITORING  | ROLES AND RESPONSIBILITIES<br>(FOR THE EXECUTION OF THE MONITORING PROGRAMMES) | MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS                                 |
|---|---|---|--|--|
| OP(i) - Increased traffic movements on access roads.  | Degradation of access roads             | Regular inspection of the access road especially during periods of high rainfall.   | Appointed Environmental Control Officer  | During periods of heavy rainfall   |
| OP(ii) - Traffic move-ments on access roads resulting in excessive dust emissions.          | Dust impact on residential area.        | Regular inspection of the access road and exploration sites for dust emissions.   | Appointed Environmental Control Officer  | During extended periods of dry weather   |
| OP(iii) - Oil / fuel spillage   | Soil and water contamination            | Regular monitoring of on-site re-fuelling or servicing operations.  | Appointed Environmental Control Officer  | During each re-fuelling or servicing operation on site.  |
| OP(iv) - Exploration sites that are left un-rehabilitated could pose a danger to humans and | Injury to humans and livestock          | Monitoring of each exploration site and liaison with appointed Geologist as to when rehabilitation of a site can be undertaken. | Appointed Environmental Control Officer  | On completion of each exploration site and after clearance by appointed Geologist for rehabilitation of that exploration site. |

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| <p>animals should they step into the void.</p>   |   |   |  |   |
| <p>OP(v) - Extraneous material generated during the exploration operation e.g. domestic refuse, oil filters, air filters etc., would present a hazard to livestock and other animals and result in general poor house-keeping if not adequately contained.</p> | <p>General good housekeeping and injury to livestock.</p> | <p>Regular monitoring of each exploration site and the camp site.</p> | <p>Appointed Environmental Control Officer</p> | <p>Daily during exploration operations on site.</p> |
| <p>OP(vi) - The establishment of a site camp on the property requires ablution and toilet facilities for the drilling and excavator crews.</p>   | <p>General good hygiene and house-keeping</p>             | <p>Regular monitoring of each exploration site and the camp site.</p> | <p>Appointed Environmental Control Officer</p> | <p>Daily during exploration operations on site.</p> |

[illegible]



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

The performance assessment / environmental audit report drafted by the appointed Environmental Control Officer, shall be submitted to the following parties on a monthly basis during prospecting operations and quarterly thereafter:

- 1) Applicant;
- 2) Surface owner (DPW) and Surface Occupier (DCS);
- 3) Competent Authority;
- 4) Any other party specified in the Environmental Authorisation.

**m) 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.**

Environmental Awareness Plan:

The following procedures will be adopted with all persons employed by Ekuseni Rehab (Pty.) Ltd on the proposed prospecting operation on a portion of Ptn. 1 of Knowesley 8926-HS:

1. All persons employed on the project will undergo an induction training course emphasising the following points:
  - a) Safety and
  - b) Environmental awareness.
2. Each job category will be analysed and aspects of the job description that may impact on safety and/or environment will be highlighted. The respective employees will then be briefed as to any environmental risks which may result from their work and the manner in which those risks must be dealt with in order to promote safety and avoid pollution or degradation of the environment and to ensure that impacts are kept to a minimum.
3. Inspections of the site will be carried out on a regular basis (at least every other day during drilling operations) by the appointed Environmental Control Officer and any indication of disregard for safety and the environment will be dealt with accordingly.

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

Regular monitoring by the appointed Environmental Control Officer of all aspects of the proposed exploration operation, including establishment, operational and decommissioning works, shall be carried out in accordance with the specified timeframes and reported upon to the Interested and Affected Parties identified in Section (l) above. Any risks identified during the monitoring shall be acted upon immediately by the applicant, or their representative, and the necessary mitigation measures implemented.

The appointed Environmental Control Officer will be required to carry out follow-up monitoring and reporting of any risks that are subjected to mitigation measures.

**n) Specific information required by the Competent Authority**  
(Among others, confirm that the financial provision will be reviewed annually).

It is hereby confirmed that the financial provision for this prospecting right, as detailed in this EMPR, shall be reviewed annually on the anniversary of the approval of the Environmental Authorisation.

## **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. ☒

SEE SIGNATURE PAGE ATTACHED

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Signature of the environmental assessment practitioner:

GEOFF SILK CIVIL AND MINING CONSULTANT CC

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Name of company:

12th. February 2020

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Date:

**-END-**