## BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

PROSPECTING RIGHT APPLICATION BY RAYCOM RESOURCES FOR COAL, PSUEDOCOAL AND TORBANITE/OIL SHALE RESOURCES ON PORTION 1 AND THE REMAINDER OF THE FARM DUNOLLY NO. 11 113-GU, PORTIONS 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND THE REMAINDER OF THE FARM CANEWDON LODGE NO. 11 370-GU, PORTIONS 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 AND THE REMAINDER OF THE FARM LOT 221 EMPANGENI NO. 10 379-GU, PORTIONS 3, 6, 7, AND 8 OF THE FARM LOT 197 EMPANGENI NO. 12 418-GU, MULTIPLE ERVEN OF THE WATERSTONE TOWNSHIP-GU AND PORTIONS 2, 3, 8, THE REMAINDER OF PORTION 5, AND THE REMAINDER OF FARM WILTON PARK NO. 11 484-GU SITUATED IN UMHLATHUZE LOCAL MUNICIPALITY UNDER KING CETSHWAYO DISTRICT MUNICIPALITY, UNDER EMPANGENI MAGISTERIAL DISTRICT, KWAZULU-NATAL PROVINCE



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#### COMPILED FOR:



mineral resources & energy Department: Mineral Resources and Energy REPUBLIC OF SOUTH AFRICA

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> 2021 DRAFT REPORT DMRE Ref: KZN 30/5/1/1/2/ 11025 PR.

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#### Disclaimer

The opinions expressed in this Report have been based on the information sourced by Singo consulting through desktop studies, closer existing mine (Richards Bay Quarry, Mpisi Coal) and the local knowledge of land occupiers/ landowners. Opinions presented in this report apply to the site conditions and features as they existed at the time of Singo Consulting's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which Singo Consulting had no prior knowledge nor had the opportunity to evaluate.



mineral resources & energy

Department: Mineral Resources and Energy 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).

| Project applicant:        | Raycom Resources Pty Ltd                           |           |                     |
|---------------------------|--|-----------|---------------------|
| Registration no (if any): | 2017/055355/07                                     |           |                     |
| Trading name (if any):    | Raycom Resources                                   |           |                     |
| Responsible Person,       | Mrs Hazel Madondo                                  |           |                     |
| (e.g.Director, CEO, etc): |  |           |                     |
| Contact person:           | Mr Lesego Mathebula                                |           |                     |
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FILE REFERENCE NUMBER SAMRAD: KZN 30/5/1/1/2/ 11025 PR.

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| 3   | Lesego Mathebula | Applicant           | Raycom Resources Pty Ltd   |
| 4   | Not applicable   | I&AP's              | All Stakeholders           |

r

| Report Sign-Off |   |           |            |
|-----------------|---|-----------|------------|
| Name            | Designation   | Signature | Date       |
| Kenneth Singo   | Principal Environmental Scientist,<br>EAPASA (2019/825) | A star    | 2021/07/07 |
| Nokuthula Nkosi |   | Bosi      | 2021/07/07 |

#### 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 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 ASSSSMENT AND BASIC ASSESSMENT REPORT

#### 1. Contact Person and correspondence address

#### (i) Details of the EAP

|             | 001.00 |     |                                 |
|-------------|--------|-----|---------------------------------|
| Name        | of     | the | Nokuthula Nkosi                 |
| Practitione | r      |     |                                 |
| Tel No.     |        |     | 013 692 0041                    |
| Cell No.    |        |     | 081 386 8589                    |
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 Table 1: Junior Consultant Contact Details

Table 2: EAP Manager and Project Reviewer

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| Cell No.                 | 078 272 7839                  |
| Fax No.                  | 086 5144 103                  |
| Email                    | kenneth@singoconsulting.co.za |

#### (ii) Expertise of the EAP.

#### 2. Summary of the EAP's Company past experience.

Company Profile attached- refer to

Appendix 6.

#### a) Location of the overall Activity.

|  | Farm Name                          | Subdivision   |
|--|------------------------------------|---|
|  | Dunolly No. 11 113-GU              | Portion 1 and Re  |
|  | Canewdon Lodge No. 11<br>370-GU    | Portions 2, 3, 4, 5, 6, 7, 8,<br>9, 10, 11 and Re                             |
|  | Lot 221 Empangeni No.<br>10 379-GU | Portions 1, 2, 6, 8, 9, 10,<br>11, 12, 13, 14 and Re                          |
|  | Lot 197 Empangeni No.<br>12 418-GU | Portions 3, 6, 7, and 8   |
|  | Waterstone Township-GL             | Multiple Erven  |
|  | Wilton Park No. 11 484-<br>GU      | Portions 2, 3, 8, the Re of<br>portion 5, and Re                              |
| Application area (Ha)                                | Approximately 1 682.58 h           | D   |
| Magisterial district:                                | Magisterial District of Emp        | pangeni   |
| Distance and direction from nearest town             | roughly 1km south of Nta           | rth-west of Richards Bay,<br>binamasi and macekane<br>m north-east of Dondolo |
| 21-digit Surveyor General Code for each farm portion | Refer to Table 4 below.            |   |

 Table 3: Locality of the prospecting right application area.

 Table 4: 21-digit surveyor general code for each farm portion

| N0GU0000001148400003 | N0GU0000001148400000   | N0GU0681000000100000   |
|----------------------|--|--|
| N0GU0000001137000008 | N0GU0000001037900012   | N0GU0681000000100000   |
| N0GU0000001137000009 | N0GU0000001784500000   | N0GU06810000105200000  |
| N0GU0000001137000009 | N0GU0000001241800003   | N0GU06810000105100000  |
| N0GU0000001137000008 | N0GU0000001111300001   | N0GU0681000000100009   |
| N0GU0000001137000010 | N0GU0000001037900002   | N0GU0681000000100003   |
| N0GU0000001137000010 | N0GU0000001037900001   | N0GU0681000000100002   |
| N0GU0000001137000000 | N0GU0000001037900000   | N0GU0681000000100013   |
| N0GU0000001111300000 | N0GU0000001037900000   | N0GU0681000000100015   |
| N0GU0000001037900014 | N0GU0000001137000006   | N0GU0681000000100024   |
| N0GU0000001037900013 | N0GU0000001137000002   | N0GU0681000000100000   |
| N0GU0000001037900011 | N0GU0000001137000003   | N0GU0681000000200000   |
| N0GU0000001037900010 | N0GU0000001137000004   | N0GU0681000000300000   |
| N0GU0000001148400002 | N0GU0000001137000011   | N0GU0681000000400000   |
| N0GU0000001148400005 | N0GU0000001137000000   | N0GU06810000029500000  |
| N0GU0000001037900009 | N0GU0000001241800006   |  |
| N0GU0000001037900008 | N0GU0000001241800008   |  |
| N0GU0000001037900007 | N0GU0000001241800007   |  |
| N0GU0000001037900006 |  |  |
|                      | N0GU000000113700008           N0GU000000113700009           N0GU000000113700009           N0GU000000113700008           N0GU0000001137000010           N0GU0000001137000010           N0GU000000113700000           N0GU000000113700000           N0GU0000001137000010           N0GU0000001037900014           N0GU0000001037900013           N0GU0000001037900011           N0GU0000001037900010           N0GU000000114840002           N0GU0000001037900010           N0GU0000001037900010           N0GU000000137900007 | N0GU000000113700008         N0GU0000001037900012           N0GU000000113700009         N0GU0000001784500000           N0GU000000113700009         N0GU0000001241800003           N0GU000000113700008         N0GU000000103790002           N0GU000000113700000         N0GU0000001037900002           N0GU000000113700000         N0GU000000103790000           N0GU000000113700000         N0GU000000103790000           N0GU000000113700001         N0GU000000103790000           N0GU0000001037900014         N0GU000000113700006           N0GU0000001037900013         N0GU000000113700002           N0GU0000001037900011         N0GU000000113700004           N0GU000000114840002         N0GU000000113700001           N0GU0000001137900009         N0GU000000113700001           N0GU0000001137900007         N0GU000000124180008 |

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| F  | arm I  | 121  |
| ۰. | CALLET | LIGI |

2021/04/22 15:16 PIETERMARITZBURG Date Requested 2021 Deeds Office PIET Registration Division GU Farm Name Farm Number Remaining Extent 11113 NOT SELECTED

| PORTION LIST |   |             |                   |                    |
|--------------|---|-------------|-------------------|--------------------|
| Portion      | Owner   | Title Deed  | Registration Date | Purchase Price (R) |
| 0            | SUPER TURF AND LANDSCAPING<br>PROPRIETARY LIMITED | 738731/2017 | 2017/12/05        | R200000.00         |
| t:           | SUPER TURF AND LANDSCAPING<br>PROPRIETARY LIMITED | 727111/2016 | 2016/08/15        | R450000.00         |
| 20           | TRANSNET LTD                                      | 758711/1999 | 1999/12/03        | FI0.00             |
| 4            | SUPER TURF AND LANDSCAPING<br>PROPRIETARY LIMITED | T27111/2016 | 2016/08/15        | R450000.00         |

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Figure 1: Dunolly 111163 GU

| Earm | Lint |
|------|------|
| Farm | LISL |



| HMAN TRUST-<br>HMAN TRUST-<br>HMAN TRUST- | Title Deed<br>T27818/1981<br>T56364/1999<br>T11091/2014<br>T11091/2014<br>T11091/2014 | Registration Date<br>1981/11/17<br>1999/12/02<br>2014/04/04<br>2014/04/04<br>2014/04/04         | R0.00<br>R0.00<br>R2500000.00<br>R2500000.00   |
|---|---|---|--|
| HMAN TRUST-                               | T56364/1999<br>T11091/2014<br>T11091/2014   | 1999/12/02<br>2014/04/04<br>2014/04/04  | R0.00<br>R2500000.00   |
| HMAN TRUST-                               | T11091/2014   | 2014/04/04  | 00400400400  |
| HMAN TRUST-                               |   |   | R250000.00   |
|   | T11091/2014   | 2014/04/04  |  |
| HMAN TRUST-                               |   |   | R250000.00   |
|   | T11091/2014   | 2014/04/04  | R250000.00   |
| HMAN TRUST-                               | 711091/2014   | 2014/04/04  | R250000.0  |
| HMAN TRUST-                               | T11091/2014   | 2014/04/04  | R250000.0  |
| HMAN TRUST-                               | T11091/2014   | 2014/04/04  | H250000.00   |
| HMAN TRUST                                | T11081/2014   | 2014/04/04  | R250000.00   |
| HMAN TRUST                                | T11091/2014   | 2014/04/04  | R250000.0  |
|   | T33575/2015   | 2015/10/26  | R1050000.00  |
|   | CHMAN TRUST-  | CHMAN TRUST- T11091/2014<br>CHMAN TRUST- T11091/2014<br>CHMAN TRUST- T11091/2014<br>T33075/2015 | CHMAN TRUST-         T11091/2014         2014/04/04           CHMAN TRUST-         T11091/2014         2014/04/04           CHMAN TRUST-         T11091/2014         2014/04/04           CHMAN TRUST-         T11091/2014         2014/04/04           CHMAN TRUST-         T11091/2014         2011/01/04           CHMAN TRUST-         T11091/2014         2014/04/04           CHMAN TRUST-         T130075/2015         2015/10/26 |

Figure 2: Canewdon Lodge 11370 GU

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#### Farm List

Date Requested 21 Deeds Office P Registration Division G Farm Name LC Farm Number 12 Remaining Extent N

2021/07/06 12:07 PIETERMARITZBURG GU LOT 197 EMPANGENI 12418 NOT SELECTED

#### PORTION LIST

| PORTIONUST |                            |             |                   |                    |
|------------|----------------------------|-------------|-------------------|--------------------|
| Portion    | Owner                      | Title Deed  | Registration Date | Purchasa Price (R) |
| 3          | UMHLATHUZE MUNICIPALITY    | T35006/2015 | 2015/11/04        | H0.00              |
| 4          | TRANSNET LTD               | T11856/1997 | 1997/04/30        | FI0.00             |
| 1          | TRANSMET   TD              | 7118551007  | 1997/84/30        | B0.00              |
| 6          | TICOR SOUTH AFRICA PTY LTD | T14391/2001 | 2001/03/30        | R2762337.00        |
| 7          | NAS PROPERTY TRUST         | T23687/2018 | 2018/08/02        | R350000.00         |
| 8          | FOURIE GEOFFREY FRANCOIS   | T36440/2006 | 2006/08/03        | R156613.00         |
|            |                            |             |                   |                    |

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Figure 3: Lot 197 Empangeni 12418

#### Farm List

Date Requested Deeds Office

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| Regis | dration Division |
|-------|------------------|
| Farm  | Name             |
| Farm  | Number           |
| Rema  | lining Extent    |

2021/06/30 08:19 PIETERMARIT2BURG GU LOT 221 EMPANGENI 10379 NOT SELECTED

| Portion | Owner                               | Title Deed  | Registration Date. | Purchase Price (R) |
|---------|-------------------------------------|-------------|--------------------|--------------------|
| 0       | TEDDER FARM PTY LTD                 | T1911/1970  | 1970/02/11         | H0.00              |
| 1       | COSMIC GOLD TRADING 364 CC          | T61202/2007 | 2007/12/07         | R4750000.00        |
| 2       | TRANSNET LTD                        | T396/1931   | 1931/02/05         | R0.00              |
| 3       | RSA                                 | T12208/1968 | 1988/05/20         | FI0.00             |
| 62      | P.E.G.INV.CC                        | T35178/2006 | 2006/07/28         | R2250000.00        |
| 7.      | TRANSNET LTD                        | T12465/1997 | 1997/05/07         | R0.00              |
| 8       | DEKKER BROTHERS PROPRIETARY LIMITED | T3000/2015  | 2015/02/10         | R115757.00         |
| 9       | UMHLATHUZE MUNICIPALITY             | T49946/2000 | 2000/18/12         | R83800.00          |
| 10      | UMHLATHUZE MUNICIPALITY             | T49946/2000 | 2000/18/12         | R83800.00          |
| 11      | UMHLATHUZE MUNICIPALITY             | T49946/2000 | 2000/18/12         | R83800.00          |
| 12      | OSHO SA CEMENT PROPRIETARY LIMITED  | T2180/2014  | 2014/01/29         | R8726837.00        |
| 13      | JABELU TRUST                        | T16851/2021 | 2021/06/09         | R950000.00         |

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Figure 4: Lot 221 Empangeni 10379

|   |         |  |             | A Lexis                          | ndee                         |
|---|---------|--|-------------|----------------------------------|------------------------------|
| late Requeste<br>leeds Office<br>legistration D | Inision | 2021/06/30 08:30<br>PIETERMARITZBURG<br>GU |             |                                  |                              |
| farm Name<br>farm Number<br>temaining Ext       |         | WILTON PARK FARM<br>11484<br>NOT SELECTED  |             |                                  |                              |
| PORTION L                                       |         |  | Title Deed  |                                  | Real and the                 |
|   | wher    | NGUNI PROPRIETARY LIMITED                  | 15954/2021  | Registration Date.<br>2021/03/09 | Purchase Price (<br>R3000000 |
|   | BANSNET |  | T524/1931   | 1931/02/16                       | H300000                      |
|   |         | ZE MUNICIPALITY                            | 78492/1960  | 1960/18/25                       | R0.                          |
|   | RANSNET |  | T12840/1997 | 1997/05/13                       | FD.                          |
|   |         | IICAN SUGAR ASSOC                          | T3465/2001  | 2001/01/29                       | R2504000                     |
| 12 C  |         | 2E MUNICIPALITY                            | 15272/2018  | 2018/03/07                       | R410400                      |
|   | MHDATES | ALL REPORT ALL F                           | 1321232018  | - Europaon                       | He load                      |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |
|   |         |  |             |                                  |                              |

Figure 5: Wilton Park Farm 11484 GU

#### 2. Locality map

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

The project area is located on the boarders of the Empangeni town and is surrounded by villages namely Dondolo, Matshana, Ntabinamasi and Macekane. It is approximately 14km north-west of Richards Bay, roughly 1km south of Ntabinamasi and Macekane and approximately 1 km north-east of Dondolo and east of Matshana. The project is located near the Okula River on the northern boundaries and has other smaller rivers such as Mkumbane River and Mandozi River running through the project area. Though there are water courses and water bodies within the project area and in close proximity to the project area, the project is not intending to utilize water for drilling method but instead an air flush method will be used. In addition, buffer zones will be put in place so that dilling does not occur within the no go zones. . The project area is in the middle of the towns mentioned above which all fall under the uMhlathuze Local Municipality and the R34 from the Empangeni town intersects the two sections of the prospecting right application area. The project area may also e access using the R34 gravel road from Ntabinamasi as well as other unpaved roads that run within the farm and the sugar cane fields (refer to Figure 6). The area is characterized by a flat to gentle undulating topography whilst the farms re used for different land uses to be discussed later in this report.

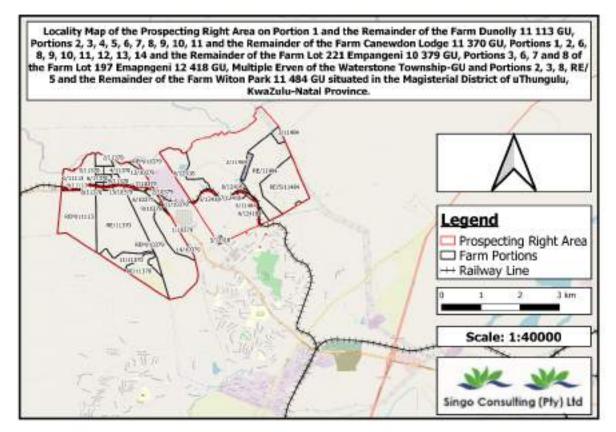


Figure 6: Locality Map of the PR Application Area.

The City of uMhlathuze (KZ 282) is situated on the north-east coast of the province of KwaZulu-Natal, about 180 kilometers north-east of Durban. The uMhlathuze land area covers 123 359ha and incorporates Richards Bay, Empangeni, eSikhaleni, Ngwelezane, eNseleni, Felixton, Vulindlela, Bhucanana and Heatonville as well as the rural areas under Traditional Councils namely, Dube, Mkhwanazi, Khoza (Bhejane), Zungu (Madlebe), Somopho (Mthembu), Obuka (Biyela) and Obizo (Cebekhulu). The population is estimated at 410 456 as per Community Survey 2016, although in terms of Census 2011 the total population was estimated at 334 459. The number of households increased from 86 609 in 2011 to 110503 as per Community Survey 2016. The municipality borders a coastline that spans approximately 45 kilometers. The N2 highway traverses the uMhlathuze Municipality in a north-east direction towards the Swaziland border and south-west towards Durban. It effectively forms a division between Empangeni and Richards Bay. The R34 Provincial Main Road passes through Empangeni towards Melmoth. (Mhlathuze, 2019-2022)



Figure 7: Generalized Locality Map of the Area.

#### 3. 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.

**Phase 1:** Non-Invasive Prospecting:- Desktop Study - Analysis of Existing Data GIS & analytical desktop studies Surveys

Phase 2: Non-Invasive Prospecting: - Multi-Spectral and Aerial Surveys

**Phase 3**: Invasive Prospecting:- Reconnaissance Borehole drilling, Sampling and Analysis

**Phase 4:** Invasive Prospecting: - Resource drilling, Sampling and Analysis, Resource Estimation and Pre-Feasibility Study

Phase 5- Feasibility Studies and Mining Right Application

Since exploration is temporary in nature no permanent structures will be constructed, negotiations and agreements may be made with the farm owners to use any existing infrastructure like access roads and other things like workshops. No accommodation will be provided on site.

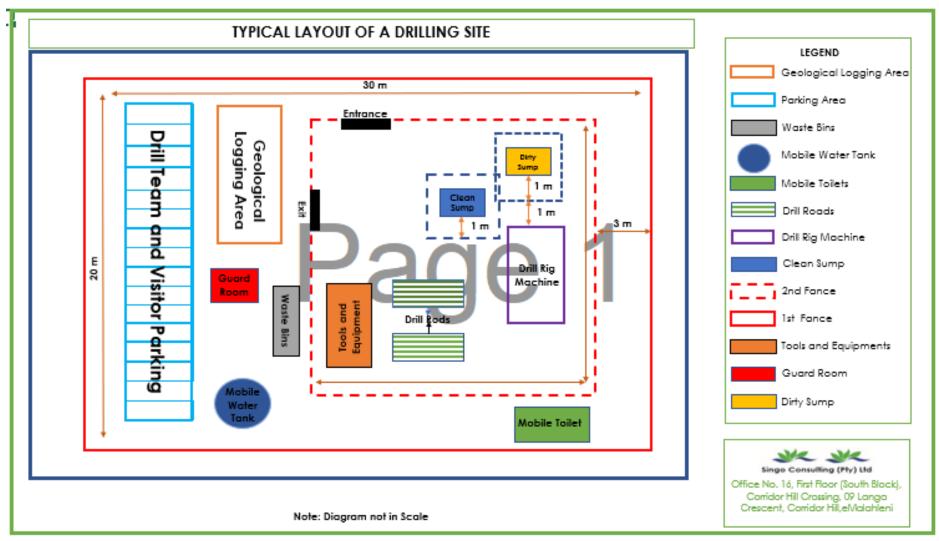


Figure 8: Site Plan of the Area.

### (i) Listed and specified activities

Table 5: Listed and specified activities

| NAME OF ACTIVITY  | Aerial extent        | LISTED  | APPLICABLE                                   | WASTE  |
|---|----------------------|---|--|--|
|   | of the Activity      | ACTIVITY  | LISTING                                      | MANAGEMENT   |
|   | Ha or m <sup>2</sup> |   | NOTICE                                       | AUTHORISATION  |
| (E.g. For prospecting - drill site, site<br>camp, ablution facility,<br>accommodation, equipment<br>storage, sample storage, site<br>office, access route etcetcetc<br>E.g. for mining, - excavations,<br>blasting,   |                      | (Mark with<br>an <b>X</b> where<br>applicable<br>or<br>affected). | (GNR 327, GNR<br>325 or GNR 324)             | (Indicate<br>whether an<br>authorisation is<br>required in terms<br>of the Waste |
| stockpiles, discard dumps or dams,<br>Loading,<br>hauling and transport, Water<br>supply dams and boreholes,<br>accommodation, offices,<br>ablution, stores, workshops, plant,<br>storm water control, berms, roads,<br>pipelines, power lines, conveyors,<br>etcetcetc.) |                      |   |  | Management Act)<br>(Mark with an X)  |
| Prospecting Area  | 1682.58ha            | X   | GNR 327<br>Listing Notice<br>1, Activity 20. |  |
| Vegetation clearing   | 0.9 ha               |   | Not Listed                                   |  |
| Site camp   | 600 m <sup>2</sup>   |   | Not Listed                                   |  |
| Drilling  | 0.9 ha               |   | Not Listed                                   | Not required   |
| Equipment storage   | 50 m <sup>2</sup>    |   | Not Listed                                   |  |
| Site offices  | 40 m <sup>2</sup>    |   | Not Listed                                   |  |
| Ablution facilities   | 30 m <sup>2</sup>    |   | Not Listed                                   |  |
| Temporary road creations  | 300m <sup>2</sup>    |   | GNR 327,<br>Listing Notice<br>1 Activity 56. |  |
| Sample storage  | 40 m <sup>2</sup>    |   | Not Listed                                   |  |

| Drilling method               | Diamond core drilling (Air Flush Method)  |
|-------------------------------|---|
| Number of boreholes           | 15  |
| Depth of boreholes            | 110 m   |
| Duration of drilling          | A borehole takes about 2 days to complete; 15 boreholes will take about 20 days.  |
| Demarcated working<br>area    | 600 m² (600 m² per drilling site based on a 30 m x 20 m grid) which is equals to 0.06 ha per site   |
| Total area to be<br>disturbed | 6000 m <sup>2</sup> (600 m <sup>2</sup> x 15 boreholes = 9 000 m <sup>2</sup> ( <b>0,9 Ha</b> ))<br>20*30=600m <sup>2</sup> *15 boreholes=9000m <sup>2</sup><br>9000m <sup>2</sup> ÷10000=0.9ha |

#### (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)

The exploration project will be conducted in a phased approach for ease of funding and implementation. This project will be conducted in phases, as part of the development. The initial phase will be a literature survey and desktop study, during this phase available data sets from Council of Geosciences (CGS), mining companies, reports, geological maps and satellite imagery will be collected and reviewed. The aim of the review is to better understand the project area as a project (geologically, financially, understand previous and current mining activities and study the communities in and around the project area).

**Phase 1:** Non-Invasive Prospecting:- Desktop Study - Analysis of Existing Data GIS & analytical desktop studies Surveys

Phase 2: Non-Invasive Prospecting:- Multi-Spectral and Aerial Surveys

**Phase 3:** Invasive Prospecting:- Reconnaissance Borehole drilling, Sampling and Analysis

**Phase 4:** Invasive Prospecting: - Resource drilling, Sampling and Analysis, Resource Estimation and Pre-Feasibility Study

Phase 5- Feasibility Studies and Mining Right Application

#### Phase 1 – Desktop Study - Analysis of Existing Data GIS & analytical desktop studies Surveys

The information that has been produced for these phases has been sourced from the produced Prospecting Work Programme (PWP).

The exploration records of all previous work in the area will be re-examined, and the following studies will be carried out:

- Literature review
- Detailed aerial photograph and satellite image interpretation.
- Regional airborne geophysics with main Emphasis on magnetic and gravity
- Regional soil geochemistry interpretation
- Geological mapping will also be carried out.

These records will need to be captured into a GIS format for geological modelling and exploration scheduling analysis.

This work will form an initial desktop and surface fieldwork study to be continued during the period that the prospecting permit application is being assessed and, presumably, approved. A period of 6 months is estimated for this. The following is considered:

#### <u>Data Availability</u>

There is a lot of exploration work that has been done in the area surrounding the project area in the past and currently, this area is known to have good quality and thick coal measures, although the area has not been exploited to its full potential in terms of mining.

The CGS has a good drillhole and geology data set of the area. Some of this data is available and can be made available upon request. There are also a lot of studies that were systematic conducted to achieve academic purposes in the area. Most of these studies are very informative as they contain both structural and geology data of the area. Mining companies with interest within the area also have a huge dataset that can be very useful for targeting and understanding geological setting of the area. Geological maps, reports, these papers and other technical data relevant to the area were gathered and reviewed as part of the literature survey for the exploration project, as well as lists of previous title holders, existing well logs, seam analyses and production histories. Explorers should also maintain an on-going familiarity with research and development in coal geology and exploration technology, as well as in coal.

#### Historical and/or current exploration and/or mining

Most of the good ground around the project area is taken by mining and/or exploration companies which have and are currently undertaking extensive exploration campaigns within the area, both major and junior mining companies can be found within the coalfield. Petmin's Somkele Mine stands out as the main coal mining operation within the coalfield.

There are great prospects for mining within the area, as coal resources have not been fully exploited in terms of mining, some mining companies and exploration companies with interest in the area have projects at various stages of mining and exploration, some of which lie in close proximity to the project area. During consultation with the locals of Ntabinamasi, it was stated that there was an observation of coal on the side of the mountain near Ntambanana. This information also aids in coal seam continuity projections for the project area relative to known projects within the area wherein which coal resources have been determined.

#### Phase 2 – Aerial and Ground Geophysics, Multi-Spectral AND Aerial Surveys

Once targets have been generated in the first phase there will be a need to follow up on these targets. Aerial and ground geophysics supported by Multi Spectral and aerial surveys to sharpen the identified potential areas to determine the sidewall properties, profiles and average grades and to do drill hole targeting. It is anticipated that phase will take approximately 6 months to complete.

Majority of the project area, as per the geology map, is underlain by the upper Karoo Supergroup strata which includes rocks of the coal bearing strata horizons of the Emakwezini Formation and Letaba Formation with the project area being feasible in terms of coal occurrence.

#### Phase 3 – Drilling and Reconnaissance Resource Generation

In the event that the present application is approved and areas with possible targets for the minerals applied for, this identified prospective target will require further subsurface investigation.

Drilling (diamond) of the prospective areas will commence to establish presence of mineralization. Geological borehole logging, down the hole logging and sampling will also be carried out.

The project will make use of the Air Flush Drilling method. Air Flush Drilling makes use of compressed air which drives the drill., Air then drives dirt out which intern allows drilling to carry on. Once water is found, drillers will have to watch the water flow levels, the amount of water in the borehole and the boreholes water recharge rate.

Whole rock analysis of all the potential intersections will be carried out. For budgeting purposes, it is assumed that every meter of the initial holes will be analysed.

It is anticipated that initially 15 boreholes will be drilled. Drill holes could vary in depth from 25m to 110m, with an average depth in the order of 750 meters. The total amount of drilling to be budgeted for at this stage is 110 meters.

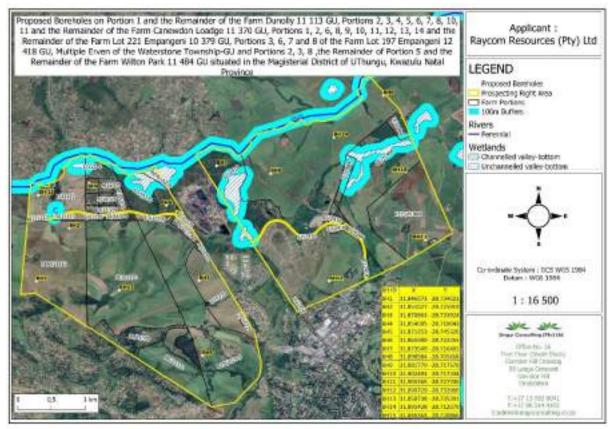


Figure 9: Proposed borehole map

# Phase 4 – - Resource drilling, Sampling and Analysis, Resource Estimation and Prefeasibility Study

Dependent on the results of Phase 3 drilling, a further 4 drill-holes totalling between 100-1000 meters may be required. The geological information generated will be used to model and estimate resource. The resources will at least be expected to be in the Indicated Category according to the appropriate reporting standard (SAMREC, JORC, or NI43 -101).

Diamond drilling for coal exploration programs will involve drilling of boreholes until the rocks of the Dwyka Group are intersected to ensure that all coal seams are intercepted. Borehole spacing will be at 1000m for phase 3, 500m for phase 4 and between 300-250m for phase 5 in order to achieve inferred, indicated and measured resource categories respectively. Core drilling is the only satisfactory means of obtaining representative samples, either of coal seams for thickness and quality assessment, therefore HQ size core will be drilled, core samples will be logged, sampled and taken to a laboratory for analysis. Down-hole geophysical surveying will be undertaken immediately after the drilling of a borehole is complete, a geophysics probe will be sent down the borehole and it will generate a digital section of the borehole with a geophysical log compiled, these will give useful information on thickness and depth of coal and other beds for use in structural and stratigraphic studies. At the end of each drilling phase the drilling site will be rehabilitated in order to get the immediate and surrounding environment to its original condition.

#### Phase 5- Feasibility Study

The final phase of the prospecting programme would involve preparation of a Feasibility study. This would include:

- Resource drilling
- Geological Modelling
- Initial conceptual Mine Planning.
- Planning the infrastructure requirements
- Environmental management planning
- Financial modelling
- Market analysis

- Analysis of transport logistics to markets
- Assessment of personal and training requirements
- Assessment of socio-economic factors

A feasibility study is multidisciplinary in nature and requires the highest levels of expertise available. Such studies are both costly and time consuming.

All listed activities will be done or performance within the radius of 30\*20=600m<sup>2</sup> as shown in Figure 8.

Diamond Drilling (a scout drilling campaign, phase 3, to be followed by a phase 4 and 5 of drilling that will be conducted as an infill campaign) to establish the following:

- Seam thickness
- Coal density
- Seam continuity
- Geological Structures
- Seam and end of hole depth
- Strip (overburden to coal) ratio
- Geotechnical characteristics of coal, roof and floor strata
- Groundwater

#### 4. Policy and Legislative Context

Table 6: Policy and Legislatives

| APPLICABLE<br>LEGISLATION AND<br>GUIDELINES USED TO<br>COMPILE THE REPORT  | REFERENCE<br>WHERE<br>APPLIED | HOW DOES THIS DEVELOPMENT<br>COMPLIY WITH AND RESPOND TO THE<br>LEGISLATION AND POLICY CONTEXT. |
|--|-------------------------------|---|
| (a description of the<br>policy and legislative<br>context within which<br>the development is<br>proposed including<br>an identification of all<br>legislation, policies,<br>plans, guidelines,<br>spatial tools,<br>municipal |                               | (E.g. In terms of the National Water Act a Water Use<br>License has/ has not been applied for)  |

| development<br>planning frameworks<br>and instruments that<br>are applicable to this<br>activity and are to be<br>considered in the<br>assessment process |   |   |
|---|---|---|
|   | Net                                       | No water upo licence is remained for the  |
| Water Use Licence (WUL)   | Not<br>applicable                         | No water use license is required for this<br>Application. Any water required will be<br>obtained from a legal source within<br>the area or brought in via mobile water<br>tanker. The method proposed is air<br>flush method which does not require<br>the usage of water. Appropriate dust<br>extractions / suppression equipment<br>will be a condition imposed on the drill<br>contractor for their drill rigs.  |
| National Environmental<br>Management Act, 1998  | This Basic<br>Assessment<br>Report & EMPr | An Application for Environmental<br>Authorisation was acknowledged by<br>the DMRE on 18 January 2021 with<br>reference: (KZN/30/5/1/1/2/(11025)PR.<br>The application was accepted by the<br>DMRE on 09 March 2021. The Basic<br>Assessment Report in terms of the EIA<br>regulations (which is 90 days from<br>application) must be submitted on 24<br>June 2021. An extension was applied<br>and granted thus the final bar<br>submission is 13 April 2021. |
| National Heritage<br>Resources Act, 1999  | Management<br>measures                    | Should archaeological artefacts or<br>skeletal material be revealed in the<br>area during development activities,<br>such activities should be halted, and<br>SAHRA notified in order for an<br>investigation and evaluation of the<br>finding(s) to take place   |
| National Environmental  | Management                                | The generation of potential waste will  |
| Management: Waste<br>Act,   | measures<br>environmental                 | be minimised through ensuring<br>Employees of the drilling contractor   |
| Act 59 of 2008  | awareness                                 | are subjected to the appropriate<br>Environmental awareness campaign  |
|   | plan                                      | before drilling. All waste generated  |

| (NEMWA)NEM: WA (as<br>amended)                              |  | during the drilling activities will be disposed of in a responsible manner.  |
|---|--|--|
| Mineral and Petroleum<br>Resources Development<br>Act, 2002 | Application<br>for<br>Prospecting in<br>terms of<br>Section 16 | March 2021   |
| Integrated Development<br>Plan (IDP)                        |  | (KZN/30/5/1/1/2/ (11025) PR<br>The IDP of uMhlathuze local<br>municipality identified ending Poverty<br>in all its forms everywhere as one of<br>their primary objectives. If the<br>prospecting is successful, this mine<br>may contribute to job creation<br>resulting to eradication of poverty.  |
| Strategic Development<br>Framework (SDF)                    |  | The area is designated for agricultural<br>and residential usage. Upon<br>processing with mining right/permit<br>application. A SPLUMA application<br>should run parallel to the Mining<br>right/Mining Permit application for<br>rezoning.  |
| UMhlathuze Local<br>Municipality Bylaws                     | This Basic<br>Assessment<br>Report & EMPr                      | Various policies have been adopted<br>by the Council, namely, a broad<br>Environmental Policy that is aligned to<br>the principles of Section 28 NEMA: Duty<br>of<br>Care to the Environment; Policy on<br>ElA"s, and the clearing of vegetation<br>within<br>Public Open Spaces.<br>The focus on energy management<br>and green buildings presents further<br>opportunities for development of a<br>policy framework for the City.<br>Applicable bylaws must be enforced:<br>o Beach<br>o Cemetery<br>o Electricity Supply<br>o Environmental Health<br>o Flammable Liquids<br>o Funeral Undertakers<br>o Keeping of animals<br>o Nuisances |

|  | o Outdoor Advertising         |  |
|--|-------------------------------|--|
|  | o Possession and Discharge of |  |
|  | Fireworks                     |  |

#### 5. 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).

Mining in South Africa directly contributed to the establishment of the Johannesburg Stock Exchange in the late 19th century, and today it still accounts for a large portion of its market capitalization. From this, it is clear that mining in South Africa has shaped the country politically, culturally, and economically and that the South African mining sector has provided the critical mass for a number of industries that are either suppliers to the mining industry, or users of its products. These include, but are not limited to, energy, financial services, water and engineering services, and specialist seismic geological and metallurgical services. The proposed coal prospecting right will not only contribute directly to the South African economy but will also contribute to the development and growth of other industries supporting the mining sector.

The proposed prospecting right in search for Coal, Pseudocoal and Torbanite/Oil Shale resources that is prior to mining project, will contribute to favourable economic impacts on both a local, regional and national scale. Success will result in numerous job creation and skills development opportunities and provide an economic injection in the region. If the project will not proceed; the additional economic activity, skills development and available jobs would not be created, and the coal reserves would remain unutilized.

According to the Spatial Development framework for UMhlathuze Local Municipality it was demonstrated that the main primary sectors that boost their economy and create more jobs is in Agriculture and Mining. See attached table.

|                    | 2005 | 2010 | 2015 |
|--------------------|------|------|------|
| Primary sector     | 14.4 | 13.3 | 15.4 |
| Agriculture        | 3.3  | 3.7  | 3.9  |
| Mining             | 11.1 | 9.7  | 11.5 |
| Secondary sector   | 38.3 | 37.4 | 36.2 |
| Manufacturing      | 32.5 | 31.3 | 30.5 |
| Electricity        | 2.1  | 1.8  | 1.6  |
| Construction       | 3.8  | 4.2  | 4    |
| Tertiary sector    | 47.3 | 49.2 | 48.4 |
| Trade              | 9.4  | 9.7  | 9.7  |
| Transport          | 11.7 | 12.6 | 12.9 |
| Finance            | 10.5 | 11.3 | 14.8 |
| Community services | 15.6 | 15.6 | 28.2 |

Table 7: Performance of Economic Sectors in uMhlathuze

Source: IHS Markit, 2018

The need for this project to be permitted to take place in the area it that it will help with job creation on areas like Macekane, Ntabinamasi, Dondolo, Matshana, Empangeni and Hillview community and ensure the youth is occupied to eliminate countless number of deaths through gunshot as a result of not having anything to keep busy especially within the rural town. The process will give hope to the youth that job opportunities can be created and upon the Mining Right processes, poverty can be decreased significantly within the uMhlathuze Municipal Area. According to the IDP of uMhlathuze it was mentioned that ''Mining of mineral resources is an important economic activity in the region, however there is only one mine in the study area while mining rights have been assigned to the south of the area''. The statement showcases the need for prospecting right to be permitted prior mining processes to ensure that resources are attainable and Raycom Resources (Pty) Ltd can add to the statistics of job creation for the area.

KwaZulu-Natal's coal is situated within five coalfields, namely from west to east, Klip River, Utrecht, Vryheid, Nongoma and Somkele. The project is located in the western part of the Somkele Coalfield and its underlain by rocks of the Karoo Supergroup. Majority of the project area is underlain by the upper Karoo Supergroup strata which includes the Letaba Formation and Emakwezini Formation. Investigations will confirm if the project area is feasible in terms of coal occurrence.

Geographically the Somkhele Coalfield covers a 5-8 km wide zone that extends from the Swaziland border in the north, to Dukaneni in the south. The southern sector, which hosts the Somkhele Mine, is bounded on the eastern side by a line extending north -south through the towns of Somkele, Emakwezeni and Heatonville. The western boundary is formed by the eastern boundary of the Nongoma Coalfield (Fig. 6) and is faulted.

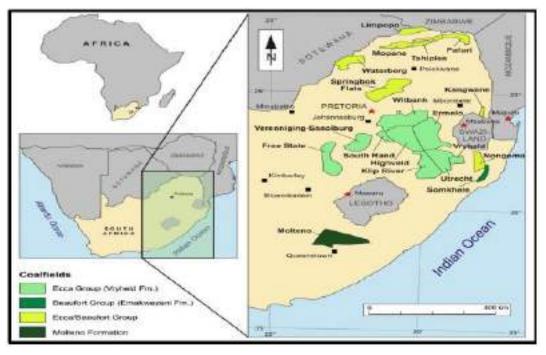


Figure 10: Coalfields Map that shows where the application area falls under.

# 6. Motivation for the overall preferred site, activities and technology alternative.

Geophysical surveys, and drilling are the only major methods used in exploring for deposits of this type and also for resource definition and evaluation. The technology to be used cannot be replaced by any other methods thus these are the preferred activities.

There is no site or layout alternative as the property provides the ideal geological formation for the presence of the minerals applied for. The positioning of the boreholes is determined by the expected location of the mineral reserve.

There are no technology alternatives considered and the proposed site was identified as the preferred alternative due to the following reasons:

• The site offers the mineral sought after as identified from the PWP with information from CGS

• Mining areas in close proximity (e.g. Richards Bay Quarry, Tronox KZN Sands),

•The prospecting area boundaries can be reached using the R34 from Empangeni Town or from Ntabinamasi Town. There are gravel roads used by the farming operations that can be used as access roads within the project area after entering from the R34 national road. Where a borehole is positioned on an area that does not have an access road, it will need to be created.

•No residual waste as a result of the prospecting activity will be produced that needs to be treated on site. The Prospecting method that will be adopted is air flush method which only results to dust components. The dust components will be managed by a sought to take place. The general waste produced on-site will be contained in sealed refuse bins to be transported to the local municipal landfill site. See Figure 11 below.

• Maintenance and servicing of the equipment will be done at an off-site workshop and the amount of hazardous waste to be produced at the site will be minimal and will mainly be as a result of accidental oil or diesel spillages.

• Contaminated soil will be removed to the depth of the spillage and contained in sealed bins until removed from site by a hazardous waste handling contractor to be disposed of at a registered hazardous waste handling site and more information will be discussed after the granting of the prospecting right.



Figure 11: Image showing general waste collection.

# 7. 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.

Details of the development footprint alternatives have been considered. With reference to the site plan provided in Figure 8 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

The property on which or location where it is proposed to undertake the activity is portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU were the only property (ies) alternative considered. The area is utilized for agricultural activities and having prospecting activities in the area will not impact much of the already existing actions. The location of infrastructures has been designed to ensure that no damage is caused on agricultural activities that has to be going on during the drilling process. The area of drilling will be demarcated with visible tapes. The drilling process will make use of air flush method which does not produce enormous dust particles and the drill rig will have dust collector and also the dust that manages to escape will be trapped by having a nest where the demarcation and boundary with visible tapes will be positioned. The method is as follows:

#### DRY DRILLING DUST SUPPRESSION

Dry drilling dust control systems can be up to 99% efficient if properly maintained (Cecala et al., 2012). Dust particles escape from the drill collar with the aid of the bailing air and are contained within the drill deck and shroud. The dust collector system establishes a negative pressure within the shroud and draws the dust particles into the dust collector system. dust collector system is composed of the fan exhaust, which creates the negative pressure, and the filters, which separate the dust from the air. Most filtering systems are self-cleaning. They use regular pulses of compressed air to remove the dust from the filter surface and allow the dust to drop through the bottom of the collector and onto the ground. An additional cyclone may also be installed between the drill deck and the filters. See figure below.

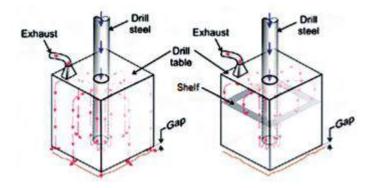


Figure 12: Dust suppression on rigs



Figure 13: Expansion Barriers

#### 8. 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) the property on which or location where it is proposed to undertake the activity

The planned surface work including drilling is important to be done on rocks that have potential to host the minerals to be explored. Somkhele Coalfield holds the subsurface of the area. The location is of interest also due to the already existing mine on the same geology area called Richards Bay Quarry that is mining a hard rock and coal is exposed as a result of the mining method. Locals during consultation have also stated seeing the sought after mineral on the sides of the mountains when heading towards the Thula Thula Reserve area. The farms under application fall within this prospective coal bearing area which is part of the Somkhele Coalfield.

Properties are used for farming, horse-riding and farm housing. A railway line intersects the project area as seen in Figure 7 and is located on the boarders of Okula River approximately 100m away. Adequate infrastructure to undertake the prospecting should the project be successful will not be necessary as there are farmhouses within the project area and tows surrounding the project area. It is important to note that until such time that the non-invasive activities have been completed the exact location of the drill sites are shown on the drill plan. However, should there be any changes , they will be shared with the landowners, all affected departments and stakeholders. The following buffers will be applied to the final site selection:

- No drill site will be positioned within 50m of a structure
- No drill site will be positioned within 100m of a water course or wetland
- Where possible existing access roads will be utilised to access the drill sites.

### b) the type of activity to be undertaken

The exploration records of all previous work in the area will be re-examined, and the following studies will be carried out:

- Literature review
- Detailed aerial photograph and satellite image interpretation.
- Regional airborne geophysics with main Emphasis on magnetic and gravity
- Regional soil geochemistry interpretation
- Geological mapping will also be carried out.

These records will need to be captured into a GIS format for geological modelling and exploration scheduling analysis. Should mineralisation be encountered then further drilling will be undertaken. A suitable level of feasibility study (technical and economic evaluation) will also be undertaken if the results of the phase justify it.

- A total of 15 drill holes are proposed for the site;
- It will be possible to drill 30-40m per day, covering about 1-3 days to drill one hole;
- All holes will be drilled by means of Air flush diamond drill rig. The drilled holes will be co-ordinated by GPS and logged onto a modelling system. It will be mapped onto an ortho-photo (1:10 000) scale.
- The holes will be drilled to an average of 700m and broadness (diameter) may vary between 60 mm - 75.7 mm. This will allow establishment of the thickness of the overburden;
- Holes will not be drilled closer than 100m from any stream/river and not within 100m from a natural wetland. Identified heritage sites will be marked and avoided.
- Overburden will be recorded and the holes filled back simultaneously.
- Drilling will take place one hole at a time. The drill site will be cleared of obstructions and debris and then drilled. Rehabilitation will occur concurrently with drilling were capping of the holes will be done.

#### b) the design or layout of the activity

Since exploration is temporary in nature no permanent structures will be constructed, Negotiations and agreements will be made with the farm owners to use any existing infrastructure like access roads.

- Portable ablution facilities will be used, and a lining will be placed to avoid any contamination to the ground and ground water.
- Activities will be limited to the drilling of 16 boreholes to be determined by the geological formations found during prospecting.
- It is planned to use one rig for all drill holes. Rehabilitation will be closely controlled, and supervision will be focussed.
- No changes to the layout is considered but with the geophysical survey information, the holes can be orientated to match the shape of the good quality of resource.

### c) the technology to be used in the activity

Geophysical surveys and drilling are the only major methods used in exploring for deposits of this type and also for resource definition and evaluation. The technology to be used cannot be replaced by any other methods thus these are the preferred activities. Geophysical surveys also provide an added advantage of being done quickly and so execution can commence early. The safety factor of utilising geophysical surveys is also apparent, as there is less time to keep people exposed to moving machinery.

#### d) the operational aspects of the activity

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage facilities are required. The prospecting will commence with non-invasive prospecting for 6 – 8 months which will entail Multi-Spectral and Aerial Surveys providing digital raster data of the area of interest delineating the Paleo channel on a map. Thereafter a further literature survey will be conducted for 2 - 4 months, combining the results from phase 1 with interpreted geological report. Only then will the applicant commence with invasive prospecting

with the drilling and sampling programme continuing for approximately 12 – 24 months, which will culminate in a report on the drill results. This will again be followed with further non-Invasive prospecting through GIS & analytical desktop studies for 6 – 12 months, producing Pre-Feasibility reports, resource statements and 3D mapping. Once this is complete a decision will be made whether further drilling or sampling is required in specific areas of interest, prior to finalising the Feasibility Report.

The applicant shall ensure that this Environmental Management programme report is provided to the Project Manager and any other person or organisation who may work on the site.

#### e) the option of not implementing the activity

The option of not approving the activities will result in a significant loss to valuable information regarding the minerals statuses present on these properties. The proposed activities have exceptionally low significance since these are short term activities. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. The probability was also used based on looking at other prospecting activities of similar nature. Generally prospecting activities have low impact on the environment. The planned activities negative impacts can be controlled and avoided or minimised therefore the layout does not require revision. Changes in plan will be discussed with the farmers and approvals will be signed. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize the said reserves for future phases will be lost. Loss of potential Employment opportunities for Empangeni and surrounding towns.

#### 9. 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.

#### **Regulatory Framework**

This section of the report provides an overview of the tasks undertaken for the public participation process to date. The public participation process was undertaken in

accordance with the requirements of the EIA Regulations, 2014 (as amended, 07 April 2017) particularly Chapter 6 of this Regulation. It provides a guideline on how public participation processes must be conducted; it further stipulates timeframes in which these processes must be conducted in accordance with.

#### Landowner Identification and Notification

A Landowner was identified through a search conducted online (WinDeed Search) that accesses the Title Deeds office database. A site assessment resulted in acquiring the contacts of landowners we could not find via WinDeed. Notification letters and site notices were left at the gates of the landowners we did not find on the property whilst other landowners were present on site and shared some information regarding the area as well as the contacts of the other landowners. No comments have been received yet.

#### > Adjacent Landowners

Some adjacent landowners were viisted during the site visit. Unfortunately the property owners were not in the country to be consulted but a notification letter was left and the contacts of the site manager taken to further consult and request the information of the owner.

#### Lawful Occupiers

The lawful occupiers found on the site received the notification letters but referred us to the landowner for further consultation.

#### Community

The project area is surrounded by towns namely Empangeni, Hillview, Dondolo, Ntabinamasi, Matshana and Macekane. Upon site inspection between 03/07/21 – 05/07/21, consultation with the locals, a Traditional Court Member Ms. Mthembu and Ward 31 Cllr Mr. Ntombela, the application area has approximately 4 ward councillors and 3 chiefs namely Chief Zungu, Chief Mthembu and Chief Cebekhulu. It was communicated by the Cllr that it is ideal that public meeting be held for this application. Due to the fact that we are currently under alert level 4 of Covid-19 which prohibits gatherings, a date will only be communicated once the Presidents has eased restrictions. Once restrictions are eased meetings will be arranged with the local chiefs, councillors and the community.

The Public Participation Process (PPP) mainly comprises the communications and discussions with Interested and Affected Parties (I&APs) and is of utmost importance in any assessment process. The PPP, inter alia, involves the following:

### Notification of Interested & Affected Parties (I&AP's)

### > Notification of Stakeholders

- Personnel representing Government departments and Non-governmental organizations were consulted using Background Information Document (BID), Consultation letters, and in some instances, consultations were conducted telephonically. The following departments and organization formed part of the consultation process;
  - Department of Agriculture, Forestry and Fisheries
  - Department of Rural Development and Land Reform
  - Department of Water and Sanitation
  - Department of Environmental Affairs
  - Department of Tourism
  - Transnet
  - Eskom
  - uMhlathuze and King Cetshwayo Municipalities
  - Sanral
  - Department of Labour
  - Richards Bay Quarry (nearby operating mine), etc
  - AMAFA
  - KZN Wildlife

#### > Notification of other I&AP

These I&APs details were collected using information in the public domain. Using this information these identified I&APs were contacted via email and through site assessment visits with a description of the prospecting operation and a way to contact for further information and how to be part of the process.

#### > Newspaper advertisement

A newspaper notice was placed in the classifieds section of Zululand Observer on the 30<sup>th</sup> of April 2021 about the prospecting right application (see proof of placement in Figure 14). Notices about the application were placed around the site of the prospecting right application area inviting interested persons to register as I&APs. See figure 11 below.

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Figure 14: Newspaper placement on Zululand Observer

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#### ZO CLASSIFIEDS

Site notices were located close to the farm boundary, close to the farm entrance, close to the highly frequented roads as well as in prominent places round the surrounding towns.





> Site notice placement

To inform surrounding communities and adjacent landowners of the proposed development, site notices were erected on site and at visible locations around the site on the between 02<sup>nd</sup> July 2021 and the 4<sup>th</sup> of July 2021. The site notices also clearly stipulated where and how the DBAR and EMPr can be accessed. See appendix 5 for more.

#### > Public community meeting

A community meeting is yet to be held. A notification will be sent after the 14-day lockdown update from the President. A meeting must be held with the three chiefs and the respective councillors as per procedure before meeting with the community at large. A meeting is also needed for the Empangeni community, though they are not under any chieftaincy but under the uMhlathuze Local Municipality.

One-on one meeting may be held with the landowners under strict Covid restrictions. Alternatively, visual meeting may be arranged via MS Teams or Zoom etc.

## Draft Reports Sharing

The Draft reports will be shared from 13/07/2021 with all registered interested and/or affected parties. The stakeholders have 30days to make comments on the draft BAR & EMPr.

Soft copy reports were shared to minimize the spread of covid-19 through hard copies. It is only those who requested hard copies who were sent hard copies to review and share their comments.

We anticipate that more comments will come after they have reviewed the document.

a. Summary of issues raised by I&Aps (Complete the table summarising comments and issues raised, and reaction to those responses)

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wil<br>must be consulted were in fa<br>consulted | ns Comment<br>s<br>Received | Issued Raised | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|-----------------------------|---------------|---|---|
| AFFECTED PARTIES   |                             |               |   |   |
| Landowners/s   |                             |               |   |   |
| Dunolly 11113 GU (portion 1 ar   | nd remaining ext            | tent)         |   |   |
| Suoer Turf and Landscaping<br>Vinesh Naidoo<br>Cell: 082 448 0329  | x                           |               | The site was visited on<br>03/07/2021 and 04/07/2021.<br>The landowner could not<br>be reached telephonically<br>thus consultation took<br>place with the staff working<br>on the premises. A |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|---------------|---|---|
|  |                                  |               | landowner notification was<br>left to be shared with Mr.<br>Naidoo so he can contact<br>Us.   |   |
| Canewdon Lodge 11370 GU  |                                  |               |   |   |
| Almina (Pty) Ltd<br>(remaining extent)<br>Mr. Rusty 082 927 7642   |                                  |               | The site was visited on<br>04/07/2021 where we<br>acquired the contact<br>details of the landowner<br>from one of the workers. the<br>number received |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|--|---|---|
| Ishwarlall Ramlutchman Trust   | 04/07/21                         | Notices seen on gate and requested information. Stated                               | A brief description of the  |   |
| (portion 2-10)   | (phone<br>call)                  | that email address will be   | project was explained. A request for email address  |   |
| Cell: 083 357 8747   |                                  | shared via WhatsApp.   | was made so that more information may be shared.  |   |
| Email:<br><u>ramlutchmanishwar@gmail.c</u><br><u>om</u>  | 09/07/21<br>(sms)                | Email:<br>ramlutchmanishwar@gmail.co<br>m  | An sms was sent to the<br>landowner to remind to<br>remind them to share their<br>email address . |   |
| Roberts Allan David  | 04/07/21                         | Unappreciative of the fact that  | It was explained that the   |   |
| Portion 11   | (face to<br>face)                | consultants are driving on the<br>premises without his<br>knowledge. the process and | number the consultants<br>had was not going through.<br>A brief description of the                |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|---|---|---|
| Cell: 082 932 9262<br>Email:<br>canewdon1@gmail.com  |                                  | assisted in directing consultants<br>to the entrance of Almina (Pty)<br>Ltd where we should ask for Vusi<br>who would assist with the<br>contacts of Mr. Rusty. | project was given and it<br>was explained that the<br>applicant will not step onto<br>the premises to prospect<br>until granted authorisation<br>by the DMRE and that<br>landowners play a critical<br>role in decision making thus<br>they need to voice out their<br>concerns regarding the<br>application. Should he be in<br>in support he should state<br>his T&Cs if opposing he<br>should state as well. |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | s<br>Received               | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|-----------------------------|--|---|---|
|  | 09/07/21<br>(phone<br>call) | Send a WhatsApp or email with<br>your number and I will revert<br>back with what I find. | On 9/7/21 the landowner<br>was called again to explain<br>that the number shared by<br>one of the workers is not<br>going through |   |
| Lot 221 Empangeni 10379 GU   |                             |  |   |   |
| Cosmic Gold Trading 364 CC<br>Portion 1<br>JT Botha  |                             | No issues raised yet.  | The contacts details of the<br>landowner acquired from<br>WinDeed are not going<br>through.                                       |   |
| Cell: 068 877 4875<br>Tel.: 035 753 1939   |                             |  | The site was visited on<br>04/07/21 and a site notice<br>was left at the gate along<br>with a landowner                           |   |

| Interested and Affected Partie<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those w<br>must be consulted were in fo<br>consulted | ons<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant       | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------|----------------------------------|-----------------------|--|---|
|   |           |                                  |                       | notification letter to prompt<br>the landowner to contact<br>us. |   |
| Transnet<br>Portion 2<br>Livhuwani Ndou<br>Email:<br>livhuwani.ndou@transnet.net  | X         |                                  | No issues raised yet. | Notification email was sent<br>to the landowner on<br>30/04/21.  |   |
| Ray Teichmann   |           |                                  |                       |  |   |

| Interested and Affected Partie<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those w<br>must be consulted were in fo<br>consulted | ons<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------|----------------------------------|--|--|---|
| Email:<br>ray.teichmann@transnet.net  |           |                                  |  |  |   |
| P E G Inv CC<br>Portion 6<br>Lynn Hathorn<br>Cell: 083 779<br>1112/0711412257<br>Email:<br>arcadia1@mweb.co.za  | X         | 09/07/21<br>(phone<br>call)      | Currently out of SA.<br>Telecommunication may only<br>resume on 12/07/21 when the<br>landowner is back in SA. Emails<br>may be sent in the meantime. | Landowner was called on<br>the number 083 779 1112<br>acquired from WinDeed<br>but it was not going<br>through. The landowner<br>called back using number<br>071 141 2257. |   |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wh<br>must be consulted were in fa<br>consulted | ns Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant                               | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------------------------|-----------------------|--|---|
| Dekker Brothers (PJ Tabak<br>VerWerkers)  |                             |                       | No contact details were found through WinDeed.   |   |
| Portion 8   |                             |                       | A site visit was done on 04/07/2021 where a site notice was left of the site.            |   |
| uMhlathuze Local Muniipality  | X                           | No issues raised yet. | A consultation email was<br>sent on 30/04/2021. No<br>response has been<br>received yet. |   |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those wh<br>must be consulted were in fac<br>consulted | ns<br>10 | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|----------------------------------|---|--|---|
| Portion 9 – 11  |          |                                  |   |  |   |
| Mhlongo MG  |          |                                  |   |  |   |
| Email:<br><u>mhlongomg@umhlathuze.go</u><br><u>v.za</u>   |          |                                  |   |  |   |
| Email:<br><u>talk2us@umhlathuze.gov.za</u>  |          |                                  |   |  |   |
| Osho SA Cement (CEMZA<br>KZN)   | X        | 09/07/2021<br>(phone<br>call)    | Ms. Joshna (078 994 7996) is the contact aquired from WinDeed. She explained that | Mr. Bonani was called but<br>the call did not go through.  |   |
| Portion 12  |          | Cully                            | she is the attorney for Osho SA   |  |   |
| Mr. Bonani  |          |                                  | Cement. CEMZA KZN was once<br>under Osho group. Osho is no                        |  |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant  |                   |
|--|----------------------------------|--|---|-------------------|
| 081 501 0239   |                                  | longer the landowner and I<br>handled the transfer. That land<br>is now owned by CEMZA KZN<br>and the person you can<br>contact is Bonani who can be<br>reached on 081 501 0239. |   |                   |
| Jabelu Trust Portion 13  |                                  | No issues raised yet.  | The site was visited on<br>04/07/21 and a site notice<br>was left to prompt the<br>landowner to contact us as<br>the contact details are not<br>on WinDeed. |                   |
| Tedder Farm (Pty) Ltd  |                                  | No issues raised yet.  | The site was visited on<br>04/07/21 and a site notice<br>was left to prompt the   | See<br>Appendix 4 |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those wh<br>must be consulted were in fac<br>consulted | ns Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant                               | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------------------------|-----------------------|--|---|
| Remaining extent  |                             |                       | landowner to contact us as<br>the contact details are not<br>on WinDeed.                 |   |
| Lot 197 Empangeni 12418 GU  |                             |                       |  |   |
| UMhlathuze Local Muniipality  | X                           | No issues raised yet. | A consultation email was<br>sent on 30/04/2021. No<br>response has been<br>received yet. | See<br>Appendix 3   |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wi<br>must be consulted were in fo<br>consulted | ns<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|----------------------------------|--|--|---|
| Portion 3   |          |                                  |  |  |   |
| Mhlongo MG  |          |                                  |  |  |   |
| Email:<br><u>mhlongomg@umhlathuze.go</u><br><u>v.za</u>   |          |                                  |  |  |   |
| Email:<br><u>talk2us@umhlathuze.gov.za</u>  |          |                                  |  |  |   |
| TICOR SOUTH AFRICA PTY LTD  | Χ        |                                  | The email address you have is  | The landowner was  |   |
| (Tronox KZN Sands)  |          | (phone<br>call)                  | no longer working as I am no<br>longer with KZN Wildlife. The        | contacted to verify landownership as well and              |   |
| Portion 6   |          |                                  | current email address is   | the email address for the                                  |   |
| Sisiwe Mthethwa   |          |                                  | <u>sisiwe.mthethwa@tronox</u> .com .<br>Drop me an email and we will | sharing of documents. The<br>email address has been        |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted |   | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---|----------------------------------|--|---|---|
| Cell: 079 862 2828<br>Email:sisiwe.mthethwa@tron<br>ox.com   |   |                                  | talk later as I am currently in a meeting.                             | updated from<br>dlaminis@kznwildlife.com to<br>sisiwe.mthethwa@tronox.c<br>om   |   |
| NAS PROPERTY TRUST   | x |                                  | No issues raised yet.  | A site visit was conducted<br>on 03/07/21. A landowner<br>notification letter was left<br>by the door of the property<br>to prompt the landowner to<br>contact the consultants. |   |
| Geoffrey Francois Fourie<br>Email: <u>gfranfour@gmail.com</u>  | X | 03/07/21<br>(face to<br>face)    | Comments will be shared. We<br>would not mind a borehole for<br>water. | A brief description of the<br>project was shared along<br>with a landowner<br>notification email. It was<br>explained that the  |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |  |
|--|----------|-----------------------|--|---|--|
|  |          |                       | landowner share their<br>support or opposition to the<br>proposed project. should<br>they agree, the T&Cs should<br>be stated. |   |  |
| Wilton Park Farm 11484 GU  |          |                       |  |   |  |
| uMhlathuze Local Muniipality X   |          | No issues raised yet. | A consultation email was<br>sent on 30/04/2021. No<br>response has been<br>received yet.                                       | See<br>Appendix 3   |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised | EAPs response to<br>mandated b<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|---------------|---|---|
| Portion 2, 3 and 8   |                                  |               |   |   |
| Mhlongo MG<br>Email:<br><u>mhlongomg@umhlathuze.go</u><br><u>v.za</u>  |                                  |               |   |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted |   | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---|----------------------------------|--|--|---|
| Email:<br><u>talk2us@umhlathuze.gov.za</u>   |   |                                  |  |  |   |
| SASA<br>SOUTH AFRICAN<br>SUGAR ASSOCIATION   | X | 09/07/21<br>(phone<br>call)      | Shared email that can be used<br>( <u>sasri.reception@sugar.org.za</u> ) | A brief description was<br>given an a request for an<br>email address for<br>document sharing was<br>made. |   |
| Remainder of portion 5<br>Sumita Ramgareb (Resource<br>Manager)  |   |                                  |  |  |   |

| Interested and Affected Partie<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those w<br>must be consulted were in fo<br>consulted | ons<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------|----------------------------------|---|---|---|
| Email:<br>sasri.reception@sugar.org.za<br>Christopher Ndleleni<br>(Assistant Farm Manager)  |           |                                  |   |   |   |
| ZULULAND<br>PROPRIETARY LIMITEDNGUNI<br>PROPRIETARY LIMITEDRemaining extentAndre Slabbert EngelbrechtCell: 082 565 9783Tel.: 035 789 1253                               | X         | 09/07/21<br>(WhatsApp<br>)       | Currently in Ivory Coast, West<br>Africa. Email address:<br>asengelbrecht@hotmail.com | The landowner was briefed<br>about it and it was<br>explained Jack who resides<br>on the farm that has<br>purchased a portion of the<br>remaining extent but it will<br>not appear on WinDeed as<br>yet. A request for the<br>landowners email address<br>was made as the WinDeed |   |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wi<br>must be consulted were in fo<br>consulted | ns<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant        | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|----------------------------------|--|---|---|
| Email:<br>asengelbrecht@hotmail.com   |          |                                  |  | results only recoded a number.                                    |   |
| Adjacent<br>Landowners/Occupiers  |          |                                  |  |   |   |
| Security 4 U<br>Mr. Chacha (head of<br>security)<br>Cell: 082 893 4311  | X        | 03/07/21<br>(face to<br>face)    | The landowner is UVS and<br>security 4 U are renting from<br>UVS.<br>The sugar mills will be closing<br>around 2030 and low cost<br>housing il be established in the<br>area. Eskom is bringing a<br>hydropump and the | A brief presentation of the<br>proposed project was<br>explained. |   |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wi<br>must be consulted were in fo<br>consulted | ns<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|----------------------------------|--|--|---|
|   |          |                                  | application has been<br>approved.<br>more information may come<br>from the top management. |  |   |
| Municipalities  |          |                                  |  |  |   |
| Local Municipality  |          |                                  |  |  |   |
| UMHLATHUZE  | X        |                                  | No issues raised.  | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4,  |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those wi<br>must be consulted were in fo<br>consulted | ons<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------|----------------------------------|-----------------------|--|---|
| Email:<br>talk2us@umhlathuze.gov.za   |           |                                  |                       |  |   |
| District Municipality   |           |                                  |                       |  |   |
| KING CETSHWAYO  | X         |                                  | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4,  |
| Municipal Manager   |           |                                  |                       |  |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised | EAPs response to issues as<br>mandated by the<br>applicant |  |
|--|----------------------------------|---------------|--|--|
| Mrs M Ndlovu<br>Tel: +27 35 799 2501<br>Email:<br><u>rheedersc@kingcetshwayo.g</u><br><u>ov.za</u>   |                                  |               |  |  |
| Head of communications<br>Mr Vusumuzi Mahaye<br>Tel: +27 35 799 2600<br>Cell: +27 79 498 3935<br>Email:<br><u>Mahayev@kingcetshwayo.g</u><br><u>ov.za</u>                      |                                  |               |  |  |
| <b>Environmental Manager</b><br>Londeka Ngcobo   |                                  |               |  |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted |   | Date<br>Comment<br>s<br>Received | Issued Raised             | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---|----------------------------------|---------------------------|--|---|
| Tel: +27 35 766 2684<br>Email:<br>ngcobol@kingcetshwayo.go<br>v.za   |   |                                  |                           |  |   |
| Councillor   |   |                                  |                           |  |   |
| Ward 23<br>Cllr Mdaka<br>Cell: 072 270 8708<br>Email:<br><u>mandlamdaka72@gmail.co</u><br><u>m</u>   | X | 09/07/21<br>(telephone<br>)      | Email address was shared. | A brief description of the<br>project was given and a<br>request of an email address<br>for information sharing was<br>made. |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted |   | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---|----------------------------------|---|--|---|
| Ward 24<br>Cllr Dlamini<br>Cell: 071 831 2206  | X | 09/07/21<br>(telephone<br>)      | It was explained that he is the<br>cllr and Dondolo and parts of<br>Empangeni. He referred us to<br>Cllr o ward 23 as that is the<br>councillor of the remaining<br>parts of the Empangeni area<br>that are near the project area.<br>The cllr does not have an email<br>address but had requested<br>sharing of information be done<br>via WhatsApp. | A brief description of the<br>project was given and a<br>request of an email address<br>for information sharing was<br>made. |   |
| Ward 31<br>Cllr Ntombela<br>Cell: 072 524 5575 / 082 437<br>0406   | X | 04/07/21<br>(face to<br>face)    | I am the ward cllr for<br>Ntabinamasi, Macekane and<br>parts of Matshana. This is<br>information the public need to   | A presentation of the<br>proposed project was<br>made and a request for the<br>contact details of the                        |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant |  |
|--|----------------------------------|--|--|--|
| Email:<br>siphoffntombela@gmail.com  |                                  | hear but unfortunately due to<br>adjusted level 4 restrictions. As<br>soon as we are able to hold<br>meeting I will announce to the<br>community and you will be<br>able to present.<br>This application touches on<br>three tribal areas and I am<br>under Chief Mthembu and<br>Chief Zungu. The head Nduna<br>that you can consult is Nduna<br>that you can consult is Nduna<br>/Manyoni under Chief<br>Mthembu (082 643 0725). He<br>can give a wa forward<br>regarding reaching the chiefs | stakeholders/leaders of the<br>community was made.         |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|---|---|---|
|  |                                  | and also lead you regarding<br>the other head Ndunas for<br>Chief Zungu and Chief<br>Cebekhulu. |   |   |
| Ward 32<br>Cllr Ndlovu<br>Cell: 076 781 4751 / 064 546<br>2589   |                                  |   | The cllr was called but he<br>phone goes unanswered<br>and the second number<br>was closed (09/07/2021) |   |
| Traditional Authority  |                                  |   |   |   |

| Interested and Affected Partie<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those w<br>must be consulted were in fo<br>consulted | ons<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------|----------------------------------|---|--|---|
| Mthembu Traditional Council<br>Nduna Manyoni<br>Cell: 082 643 0725  | X         | 09/07/21<br>(phone<br>call)      | At the moment due to<br>restrictions the traditional<br>council does not hold<br>meetings. It would be best to<br>meet with the iNkosi so that you<br>may present to him. You must<br>notify me well ahead of time so<br>that I can organise for you to<br>see the iNkosi so you can<br>present.<br>We are elderly so I don't have<br>an email address nor<br>whatsapp. We will<br>communicate via phone calls. | A brief description of the<br>project was explained<br>along with the fact that the<br>communities are not within<br>the boundaries of the<br>project area but they are in<br>close proximity to the<br>project. A request to<br>explain procedures so that<br>the Chief can be notified<br>was made and a request<br>for an email address was<br>made. A request for a<br>nduna for the Zungu |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted |   | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant   | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---|----------------------------------|--|--|---|
|  |   |                                  | Nduna Zungu can be reached<br>on 073 205 3338.   | Traditional Council was made.  |   |
| <b>Zungu Traditional Council</b><br>Nduna Zungu<br>Cell: 073 205 3338  | X | 09/07/21<br>(phone<br>call)      | The council meets every<br>Tuesday but due to adjusted<br>level 4 it might not be possible<br>for any meeting to be made<br>with the iNkosi at the moment<br>until restrictions ease. Thereafter<br>you are welcome to come and<br>see the iNkosi. | A brief description of the<br>project was explained<br>along with the fact that the<br>communities are not within<br>the boundaries of the<br>project area but they are in<br>close proximity to the<br>project. A request to<br>explain procedures so that<br>the Chief can be notified<br>was made and a request<br>for an email address was<br>made |   |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those wh<br>must be consulted were in fac<br>consulted | ns Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|-----------------------------|-----------------------|--|---|
| Organs of state (Responsible<br>for infrastructure that may be<br>affected Roads Department,<br>Eskom, Telkom, DWA  |                             |                       |  |   |
| environment, forestry<br>& fisheries<br>Department:<br>Environment, Forestry and Fisheries<br>REPUBLIC OF SOUTH AFRICA  | X                           | No Issues raised yet. | Consultation email was sent with BID (30/04/2021).         | Appendix<br>4,  |
| PMB Resource<br>Mr Thembalakhe Sibozana<br>Tel: +27 33 392 7700<br>Fax: +27 33 342 8783<br>Email: <u>PMBResourceCentre</u><br>@daff.gov.za<br>ThembalakheS@daff.gov.za      |                             |                       |  |   |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those wh<br>must be consulted were in fac<br>consulted | Comment<br>s<br>Received         | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant                  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------------------------------|---|---|---|
| Water & sanitation<br>Department<br>Water and Sanitation<br>REPUBLIC OF SOUTH AFRICA  | X 03/05/21<br>(email)            | Direct all applications to Acting<br>Deputy Director Mr. Strini<br>Govender (Sub-Directorate:<br>Water Quality Management). | Email was directed to Mr.<br>Govender as requested.                         | Appendix<br>4, and see<br>page 116  |
| Chief Director: KwaZulu-NatalMrAshleyStarkeyEmail:StarkeyA@dws.gov.zaMr Strini GovenderEmail:   | 03/05/2021                       | Mr Govender can be<br>contacted at<br>govenders2@dws.gov.za or on<br>082 885 9665 or on 031 336 2759.                       |   |   |
| <u>govenders2@dws.gov.za</u><br>Pillay R<br>Email: <u>pillayr@dws.gov.za</u>  | (email)<br>06/05/2021<br>(email) | Consultation email was<br>forwarded to Ms. Sibango.   | The water bodies<br>surrounding the project<br>area as well as those within |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised  | EAPs response to issues as<br>mandated by the<br>applicant   |  |
|--|----------------------------------|--|--|--|
|  | 30/05/2021<br>(email)            | If the project area is in a<br>regulated area the application<br>is subject to a water use license<br>The Department of Water and<br>Sanitation (DWS)<br>acknowledges receipt of the<br>Background Information<br>Document (BID) for the<br>proposed project.<br>DWS looks forward to receiving<br>and reviewing the reports of<br>subsequent environmental<br>stages. | the roject area are<br>classified as no go zones<br>and buffer of 100m from the<br>water course will be<br>applied. In additions, no<br>boreholes will be placed<br>near the water bodies to<br>preserve them. |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------|---|--|---|
|  |          | The Applicant should<br>investigate/ assess if there are<br>any water uses (consumptive<br>and non-consumptive)<br>triggered by this development. |  |   |
| Nerissa Pillay   |          | No issues raised yet.   | Consultation email was sent<br>with BID (30/04/2021)       | Appendix 4  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted                         | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant |                |
|--|----------|-----------------------|--|----------------|
| Email:<br><u>nerissa.pillay@kznwildlife.co</u><br><u>m</u><br>Mrs Dinesree Thambu-<br>Moodley<br>Tel: 033 845 1425<br>Fax: 033 845 1499<br>Email:<br><u>dinesree.thambu@kznwildlife</u><br><u>.com</u> |          |                       |  |                |
| edtea<br>Deartwent :<br>Econnic Development, Tautian and<br>Environmental Affairs<br>PROVINCE OF KWAZULU-MATAL   |          | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4, |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised | EAPs response to issues as<br>mandated by the<br>applicant |  |
|--|----------------------------------|---------------|--|--|
| Siphosakhe Xulu<br>Tel: +27 35 780 6700<br>Email:<br><u>siphosakhe.xulu@kznedtea.g</u><br><u>ov.za</u>   |                                  |               |  |  |
| Control Environmental Officer<br>Skhumbuzo Mpungose<br>Tel: +27 35 780 0316<br>Cell: +27 82 719 9866<br>Email:<br>skhumbuzo.mpungose@kzne<br>dtea.gov.za                       |                                  |               |  |  |
| <b>Environmental Officer</b><br>Ntokozo Mazibuko   |                                  |               |  |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted   | Date<br>Comment<br>s<br>Received | Issued Raised | EAPs response to issues as<br>mandated by the<br>applicant |  |
|--|----------------------------------|---------------|--|--|
| Tel: +27 35 780 0318<br>Email:<br><u>ntokozo.mazibuko@kznedte</u><br><u>a.gov.za</u><br><b>Coastal Unit Manager</b><br>Alfred Matsheke<br>Tel: +27 33 264 2815<br>Cell: +27 82 330 2114<br>Email:<br><u>alfred.matsheke@kznedtea.</u><br><u>gov.za</u> |                                  |               |  |  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted                              | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|-----------------------|--|---|
| public works       x         Department:       Public Works         PROVINCE OF KWAZULU-NATAL         Tel: 033 355 5500         Email: info@kznworks.gov.za   |          | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4,  |
| Iabour         Department:         Labour         Department:         Labour         REPUBLIC OF SOUTH AFRICA         Mbongeni Tshabalala         Email:         Mbongeni.Tshabalala@labo         Ur.gov.za |          | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix 4  |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fac<br>consulted | Received | Issued Raised     | EAPs response to issues as<br>mandated by the<br>applicant |            |
|--|----------|-------------------|--|------------|
| Ms. Zilungile Khanyile<br>Tel: +27 34 212 2127<br>Email:<br>zilungile.khanyile@kzntranspo<br>rt.gov.za   | (        | No issues raised. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix 4 |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant                                      | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|-----------------------|---|---|
| Ms Bernadet Pawandiwa         Tel: +27 33 394 6543         Email:         bernadetp@amafapmb.co.z         Q  |                                  | No issues raised yet. | Consultation email was sent<br>with BID together with<br>request for Amafa form<br>(30/04/2021) |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted   | s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|---------------|-----------------------|--|---|
| SANBI       Image: Constraint of the second se |               | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4.  |
| South African<br>NATIONAL PARKS  |               | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4.  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fac<br>consulted | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|---|----------|-----------------------|--|---|
| Akani Shivambu<br>Tel: +27 13 735 4265 /<br>+27 13 735 4196<br>Email:<br>Akani.shivambu@sanparks.or<br>g<br><b>Tellkom</b><br>Email:<br>wyleaves2@telkom.co.za                | <        | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appenidx4.  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted                             | Date<br>Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|-----------------------|--|---|
| x<br>Siyabonga Nsele<br>Cell: +27 84 233 4610<br>Fax: +27 31 710 5146<br>Email: Nselesi@eskom.co.za<br>Samantha Naicker<br>Tel: +27 31 710 5183<br>Cell: +27 72 957 1007<br>Email:<br>naickesa@eskom.co.za |                                  | No Issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4.  |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fac<br>consulted | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------|-----------------------|--|---|
| Thembisile Sibiya<br>Email: <u>SibiyaTG@eskom.co.za</u><br>Lungile Motsisi<br>Tel: +27 11 800 5734<br>Email: <u>MotsisL@eskom.co.za</u>                                      |          |                       |  |   |
| Email:<br>advocacy@birdlife.org.za   | x        | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021)       | Appendix<br>4.  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|-----------------------|--|---|
| x<br>SARRAL<br>MILDING SOUTH AFRICA<br>Nomsa Modise<br>Email: modisen@nra.co.za<br>NRStat@nra.co.za  |                                  | No issues raised yet. | Consultation email was sent<br>with BID (20/11/2020)       | Appendix<br>4.  |

| Interested and Affected Parties<br>List the names of person<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fac<br>consulted | Received | Issued Raised         | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------|-----------------------|--|---|
| IRANSNET         Livhuwani Ndou         Email:         Livhuwani.ndou@transnet.ne         t         Ray Teichmann         Email:         ray.teichmann@transnet.net          | <        | No issues raised yet. | Consultation email was sent<br>with BID (30/04/2021).      | Appendix<br>4.  |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Received         | Issued Raised                    | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|------------------|----------------------------------|--|---|
| COMMISSION ON RESTITUTION OF<br>LAND RIGHTS<br>Department of Rural<br>Development and Land<br>Reform (DRDLR)   |                  | No comment yet.                  | Land Enquiry email was<br>sent.                            | Appendix<br>4.  |
| Lynn Boucher<br>Email:<br>Lynn.boucher@drdlr.gov.za  | No communication | ity meeting could be held due to | adjusted level 4 of Covid-19 r                             | estrictions.  |

| Interested and Affected Parties<br>List the names of perso<br>consulted in this column, and<br>Mark with an X where those w<br>must be consulted were in fo<br>consulted | ns<br>ho | Date<br>Comment<br>s<br>Received | Issued Raised   | EAPs response to issues as<br>mandated by the<br>applicant  | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------|----------------------------------|---|---|---|
|  |          | Ŭ                                | vill be schedules for when the restr<br>icated with the local councillors ir  |   |   |
| OTHER INTERESTED AND AFFECTED PARTIES  |          |                                  |   |   |   |
| Traditional Court<br>Happy Mthembu (Traditional<br>Court Member)<br>Cell: 060 560 2946<br>Email:<br>khuzwayo.happy@gmail.co<br>m   | X        | 04/07/21<br>(face to<br>face)    | There are three tribal councils<br>surrounding your project area. I<br>am part if the traditional court<br>hence I also sit with the<br>traditional councils so I am in a<br>position where I can also share<br>information with the council.<br>Meetings are prohibited at the<br>moment but when restrictions | A brief description of the<br>project was explained and<br>contact details were<br>requested. Further<br>communication shall<br>happen via email. |   |

| Interested and Affected Parties<br>List the names of persons<br>consulted in this column, and<br>Mark with an X where those who<br>must be consulted were in fact<br>consulted | Date<br>Comment<br>s<br>Received | Issued Raised                                    | EAPs response to issues as<br>mandated by the<br>applicant | Section<br>and<br>paragraph<br>reference<br>in this<br>report<br>where the<br>issues and<br>or response<br>were<br>incorporate<br>d |
|--|----------------------------------|--|--|---|
|  |                                  | are eased it will be easier to conduct meetings. |  |   |

# b. The Environ/mental attributes associated with the alternatives.(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

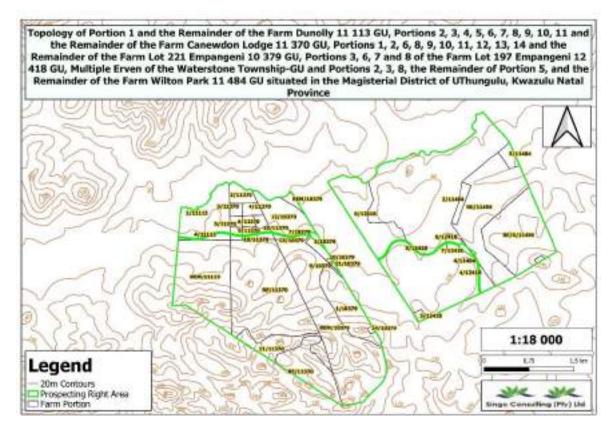
#### a) Baseline Environment

(i) Type of environment affected by the proposed activity.

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

## Topography

Topography is the study of the shape and features of land surfaces. The topography of an area could refer to the surface shapes and features themselves, or a description (especially their depiction in maps). Topography is a field of geoscience and planetary science and is concerned with local detail in general, including not only relief but also natural and artificial features, and even local history and culture. The proposed prospecting area to the east of the R34 is situated on fairly flat topology whilst the western side of the project area is situated on a region with gentle to steep slopes topography. This can be observed on the topology map attached below. The flow of water during rainy seasons flows from the area of high elevation to the area of low elevation as it is indicated or displayed by contour lines. Sheet erosion is likely to occur within the proposed project area. Sheet erosion is the uniform removal of soil in thin layers, and it occurs when soil particles are carried evenly over the soil surface by rainwater that does not infiltrate into the ground due to the steepness of the area.



# Figure 15: Topography of the area. Regional and Local Climate

KwaZulu Natal, is bordered by the Indian Ocean to the east and the Drakensberg Mountain escarpment to the west producing a warm, subtropical climate. The climate of KwaZulu Natal is tourist friendly all-year-round. Situated in the Southern Hemisphere the seasons are reversed, this means traveling from a Northern Hemisphere winter to KZN you will arrive in summer and experience warm weather, lush vegetation and a multitude of birds and animals. The proposed project area lies within uMhlathuze which is characterized by a temperate oceanic climate. This climate generally features cool summers and cool but not cold winters, with a relatively narrow annual temperature range and few extremes of temperature.

Summer (November – February) are hot and humid averaging 28°C and experience the majority of the annual rainfall. Although summer is an excellent time to observe wildlife in prime condition, the game is often obscured by tall grass and thick bush which flourishes in the rainy season. Heavy rains and electrical thunderstorms are common.

Autumn (March – May) in KZN are mild as temperatures begin to cool. This is a good time to see migrating birds gathering for their journey north. Winter (June – August)

with average temperatures of 23°C, are warm, dry and clear. There is occasional frost in the interior and snow often falls in the higher reaches during the winter. Winter sunshine averages almost seven hours a day, some of the highest in the country.

Winters are dry and this is conducive to grass fires, most reserves provide areas for barbecues, but caution is advised when open fires are lit.

Spring (September – October) is the beginning of the rainy season and temperatures begin to warm. This is often the perfect time for viewing game as most wildlife are raising newly born offspring on the fresh growth that arrives with the first rains. This is also the perfect time for viewing flowers as everything is blooming. Migrating birds begin to arrive back during spring and into summer. The precipitation varies 95 mm | 4 inches between the driest month and the wettest month. During the year, the average temperatures vary by 7.7 °C | 45.9 °F.

#### Temperatures of Empangeni per month

Table 8: High and Low temperature

| Janu                                       | uary Februa | ry March | April | May  | June | July | August | Septembe | r Octobe | er Novembe | er December |
|--|-------------|----------|-------|------|------|------|--------|----------|----------|------------|-------------|
| Avg. Temperature 24.1<br>(°C)              | 24.5        | 23.7     | 21.8  | 19.4 | 17.2 | 16.8 | 17.9   | 19.2     | 20.5     | 21.8       | 23.4        |
| Min. Temperature <mark>20.6</mark><br>(°C) | 20.9        | 19.9     | 17.5  | 14.4 | 11.6 | 11.3 | 12.9   | 15       | 16.8     | 18.2       | 19.8        |
| Max. Temperature <mark>27.7</mark><br>(°C) | 28.1        | 27.6     | 26.1  | 24.4 | 22.9 | 22.4 | 22.9   | 23.5     | 24.2     | 25.4       | 27          |
| Avg. Temperature <mark>75.4</mark><br>(°F) | 76.1        | 74.7     | 71.2  | 66.9 | 63.0 | 62.2 | 64.2   | 66.6     | 68.9     | 71.2       | 74.1        |
| Min. Temperature <mark>69.1</mark><br>(°F) | 69.6        | 67.8     | 63.5  | 57.9 | 52.9 | 52.3 | 55.2   | 59.0     | 62.2     | 64.8       | 67.6        |
| Max. Temperature <mark>81.9</mark><br>(°F) | 82.6        | 81.7     | 79.0  | 75.9 | 73.2 | 72.3 | 73.2   | 74.3     | 75.6     | 77.7       | 80.6        |
| Precipitation / 124<br>Rainfall (mm)       | 113         | 125      | 71    | 56   | 30   | 31   | 46     | 64       | 95       | 110        | 110         |

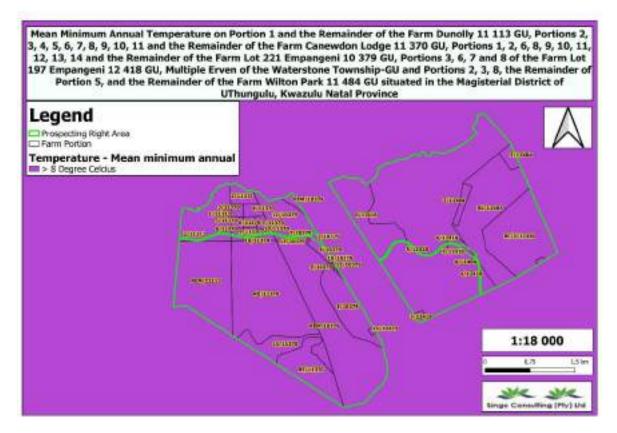


Figure 16: Annual Temperature around the project area

#### Rainfall

Rainfall Data for the proposed prospecting right area was obtained from the WR2005 study (Middleton and Bailey, 2009), the Rainfall Extraction Utility Programme (Kunz, 2004) and the Design Rainfall Estimation Program (Smithers and Schulze, 2002). The daily rainfall extraction utility contains daily patched rainfall data for all official South African Weather Services stations. The rainfall stations considered were close to the site had a reasonable length of record and a relatively complete and reliable data set. Mean annual rainfall within the project area is 801-1000mm. uMhlathuze experiences rain during all months of the year, although there are significant seasonal variations in the monthly rainfall.

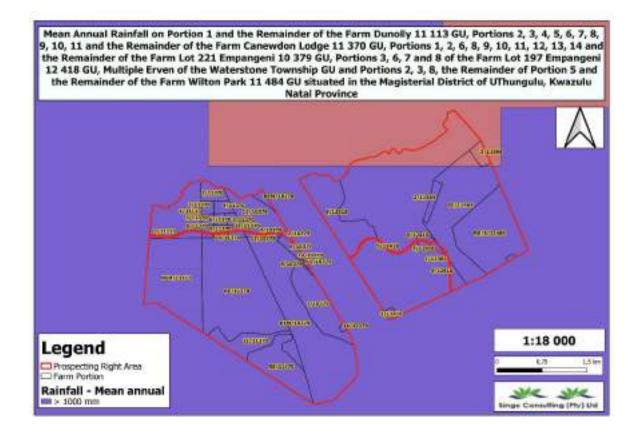


Figure 17: Average monthly rainfall **Air Quality** 

The assessment of the ambient air quality is based on available ambient air quality information identified in the literature review and data supplies by the Department of Environmental Affairs (DEA) and the South African Weather Service (SAWS).

# **Regional Ambient Air Quality**

The National Environmental Management: Air Quality Act, 2004 which is referred as NEM: AQA provides an objective-based approach to the management of air quality at different government and operational levels. NEM: AQA distinctively shift from exclusively source-based air pollution control to holistic and integrated effects-based air quality management. It also focuses on adverse impacts of air pollution on the ambient environment.

The City of uMhlathuze is known to be one of the highly industrialized areas in the country, consisting of various types of industries including smelters, pulp and paper mills, chemicals, harbour, iron steel, fertiliser, coal exporters, mineral mining, forests, cement, blasting, sugar cane and expanding industrial development zone (IDZ). The harbour, also known as Port of Richards Bay, is considered to be the largest in

South Africa. It is known to be one of the growing power houses for exporting and importing activities of different commodities. Apart from the array of industries, are residential areas both rural and urban, in which various domestic activities including burning of wood, tyres, imbawula, and agricultural are conducted.

The Medical Research Council in 2000 conducted a preliminary health study in Richards Bay driven by the public concern about the status of air quality within the City of uMhlathuze. The study found that there was a high level of public concern about air quality and the associated health impacts in the area. In 2006, the City of uMhlathuze through the lead of Environmental Planning Division, appointed the Airshed Planning Professionals (Pty) Ltd to conduct a study purposed to assess air quality within the municipality and use this as one of the tools to inform their Spatial Development Framework.

The Department Agriculture and Environmental Affairs in Kwa-Zulu Natal (DAEA) in partnership with the City of uMhlathuze appointed Gondwana Environmental Solutions to further investigate by conducting a study to describe the range of ambient exposures of criteria pollutants through ambient monitoring systems and it is aimed to assess the potential risks posed by such exposures through health risk assessment concerning the health of communities in the Richards Bay and eSikhaleni.

The effective approach to air quality is highly dependent on eight (8) steps prescribed in the National Framework for Air Quality Management. The government cycle provides a useful framework for achieving continuous improvement over time as depicted in figure below:

#### Noise

The main land uses include agriculture, primarily sugar cane farming. Residential areas exist around the project area with some industrial hubs(Tronox KZN and Maguzulu Park) within the two project areas split by the R34. Farmhouses, a ranch and sugar cane fields cover the project area. There is a network of gravel farm roads which provide access to the project area. As can be expected in a rural area, traffic and ambient noise volumes are moderate as the R34 is the main road used to get from Empangeni to Melmoth. In the proposed Prospecting area, noise will be generally from drilling machinery operating on site. An existing Richards Bay

Quarry, Tronox KZN, the railway line and the national route R34 are primary sources of noise in the area hence ambient noise levels has already been impacted. In the proposed coal prospecting right area, noise will be generally last for at most 10 days.

The effective approach to air quality is highly dependent on eight (8) steps prescribed in the National Framework for Air Quality Management. The government cycle provides a useful framework for achieving continuous improvement over time as depicted in figure below:

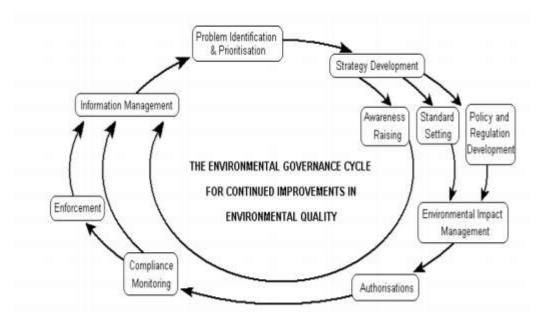


Figure 18: Environmental Governance Cycle for Continued improvements in Environmental Quality

Section 2 (12) of Chapter two (2) of NEM: AQA mandates the local municipalities to monitor the ambient air in order to determine the pollutants and their concentration and come up with strategies of reducing emissions. In response to NEM: AQA, the City of uMhlathuze purchased three (3) ambient monitoring stations and strategically placed them in three different areas of concern. These stations are located at eSikhaleni, Arboretum and Brackenham Cemetery. The data collected by these stations are continuous.

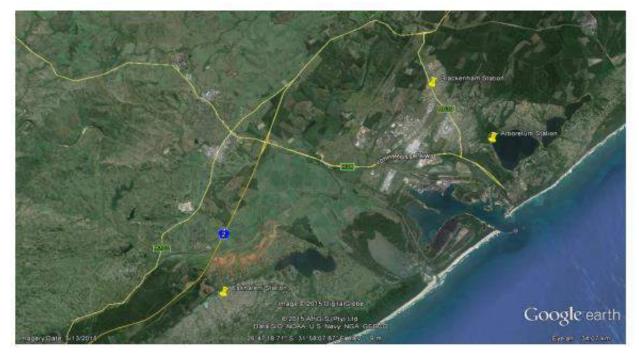


Figure 19: Location of Ambient Air Quality Monitoring Stations (highlighted Yellow Pins)

The pollutants currently measured by these stations include sulphur dioxide (SO2). nitrogen dioxide (NO2), particulate matter with an aerodynamic diameter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5) and ozone (O3). The stations also monitor meteorological data, including Wind direction (WD), Wind speed (WS), temperature (T), Relative Humidity (RH) and Rain Fall (RF).

| Stations | Station name | S-Coordinates | E-Coordinates |
|----------|--------------|---------------|---------------|
| 1        | Arboretum    | 24°45"39,40'' | 32°04"42,40"  |
| 2        | Brackenham   | 28°43"48,90"  | 32°02"05,20"  |
| 3        | eSikhaleni   | 28°52"08,50"  | 31°54"35,10"  |

Table 9: Ambient Air Quality Monitoring Stations Co-ordinates

Table 10: Shows pollutants measured in each monitoring station.

| Stations | Station name | SO2          | NOx          | PM10         | PM2.5        | O3           |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1        | Arboretum    | $\checkmark$ | $\checkmark$ | $\checkmark$ |              | $\checkmark$ |
| 2        | Brackenham   | $\checkmark$ |              |              | $\checkmark$ | $\checkmark$ |
| 3        | eSikhaleni   | $\checkmark$ |              |              | $\checkmark$ | $\checkmark$ |

Table 11: Shows meteorological station and parameters that are monitored.

| Stations | Station    | Int          | Amp1         | WD           | WS           | RH | RF |
|----------|------------|--------------|--------------|--------------|--------------|----|----|
|          | name       | TEMPr        |              |              |              |    |    |
| 1        | Arboretum  | $\checkmark$ | $\checkmark$ | $\checkmark$ |              |    |    |
| 2        | Brackenham | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |    |    |
| 3        | eSikhaleni | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |    |    |

### **Public roads**

The area has gravel routes mostly with the national R34 roue that goes from Empangeni to Melmoth. The unpaved road links to other unnamed roads and a railway which intersects the project area.



Photo 1: access roads to reach boundaries of the project as well as entrances into the portions using unnamed gravel roads



Photo 2: Railway line intersecting project area

### **General Geology**

The general stratigraphy of KZN as pertains to the Somkhele Coalfield is provided below in Figure 15. The general geology of the coal bearing succession is best known from various descriptions available for the Somkhele mine area (Snowden, 2009; Bordy and Prevec, 2008) as well as for the Fuleni project to the south (Tovela, 2011).

The general stratigraphy, sedimentology and palaeontology presented below are amalgamated from these publications.

The Lebombo Basin (which is home to the Somkhele, Swaziland and Kangwane coalfields) is an elongated Phanerozoic depression that stretches in a north-south direction from the Limpopo River in the north, to Empangeni in the south, for a total of some 700 km. Within the Somkhele Coalfield some 600-900 m of Ecca Group and Dwyka Group lithologies underlie the coal bearing Emakwezini Formation. These are not however described here as they are not known in much detail and are not relevant to the description of the producing coal seams in the coalfield.

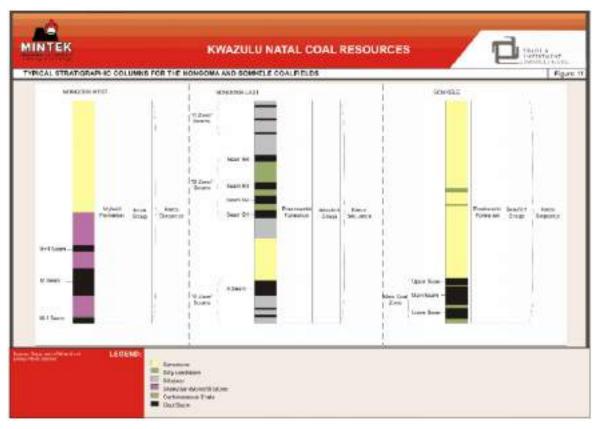


Figure 20: KwaZulu Natal coal resource (Source: TIKZN Coal Resources edit1.2.1.doc)

The project area comprises of the Emakwezini and Letaba Formation. The Letaba formation Coalfield has four coal seams (or coal zones). The seams are named in ascending order the: A (or Lower Seam), B (or Main Seam), C (or Upper Seam 1), and D (or Upper Seam 2).

Emakwezini is the sole representative of the Beaufort Group in the southern half of the Lebombo Basin, is restricted to a narrow, faulted, meridional outcrop and subcrop belt in Swaziland and north-eastern KZN. The unit is also present in the subsurface along the western side of the Lebombo Basin from eMpangeni to at least as far north as Komatipoort (Bordy and Prevec, 2008). It is estimated that the Emakwezini Formation attains a thickness of ±490 m near the village of Somkele (Marshall, 1966), although Bordy and Prevec (2008) provide a figure of 570 m, which is more similar to the figures of ±550 m to the west of Somkele and at Emakwezini (Watson and McGeorge, 1977). Genis (1961) notes that it thins southwards to ±370 m west of Empangeni; however, according to Du Preez (1982), the Emakwezini Formation is ±500 m thick in this area. North of the Somkele Coalfield the Emakwezini Formation thins dramatically, attaining a thickness of only 130-150 m in Swaziland (Davies, 1961) and near Komatipoort (Du Toit, 1918). Lithologically the Emakwezini Formation is dominated by fossiliferous, grey, greenishgrey and brown mudstones, with intercalated coal seams, subordinate white or yellow-white, and medium- to coarse-grained feldspathic sandstones. The coal seams are associated mainly with the mudstones and whilst usually less than 1 m thick, they may locally attain thicknesses of up to 15 m.

|            | GROUP                                    | FORMATION<br>(SACS, 1983) | FORMATION<br>(Cilliers, 1951) |   | Representative<br>Rock Type  | Average<br>thickness (m) |  |
|------------|--|---------------------------|-------------------------------|---|--|--------------------------|--|
|            |  | Drakensberg<br>Basalt     | Drakensberg                   | Lebombo<br>Group                        | Lava,<br>amygdaloidal  | 2500+                    |  |
|            | Stormberg<br>(Upper<br>Triassic)         | Clarens<br>Sandstone      | Cave<br>Sandstone             | Clarens<br>Formation                    | Sandstone,<br>fine-grained   | 45                       |  |
|            |  | Elliot                    | Redbeds                       | Nyoka<br>Formation                      | Mudstone,<br>clayey  | 250                      |  |
| Supergroup |  | Molteno                   | Molteno                       | Ntabeni<br>Formation                    | Sandstone,<br>medium- to<br>coarse-grained                             | 100                      |  |
| Karoo Sup  | Beaufort<br>(U. Permian-<br>L. Triassic) | Beaufort                  | Beaufort                      | Emakwezini<br>(Normandian)<br>Formation | Sandstone,<br>siltstone,<br>mudstone,<br>coal                          | 570                      |  |
|            |  | Volksrust<br>Shale        | Upper Ecca                    | Volksrust<br>Formation                  | Intercalated<br>shale and<br>bright coal                               | 140                      |  |
|            | Ecca<br>(Permian)                        | Vryheid                   | Middle Ecca                   | Vryheid<br>Formation                    | Sandstone and<br>gnit, intercalated<br>carb. siltstone,<br>thick coals | 550                      |  |
|            |  | Pietermanitzburg<br>Shale | Lower Ecca                    |   | Shale, sandstone and grit  | 200                      |  |
|            | Dwyka<br>(Carbon.)                       | Dwyka                     | Dwyka                         | Dwyka                                   | Titlite  | not exposed              |  |

Figure 21: Stratigraphic nomenclature of the Karoo Supergroup in the Somkhele Coalfield (from Snowden, 2009). It should be noted that certain of the unit names are informal and have not yet been accepted by the South African Committee for Stratigraphy (SACS).

# Coal seams

Unlike in the Vryheid Formation hosted coalfields, where up to eight coal seams (or coal zones) are recognized within sandstone dominated package, in the Somkhele Coalfield only four coal seams (or coal zones) exist (Fig 3). The seams are named in ascending order the: A (or Lower Seam), B (or Main Seam), C (or Upper Seam 1), and D (or Upper Seam 2). At the Somkhele mine all of the seams dip at approximately 22° to the southeast. The B Seam coal zone is the main seam packages of economic importance in the Somkhele Coalfield, and is the only seam targeted at the Somkhele mine.

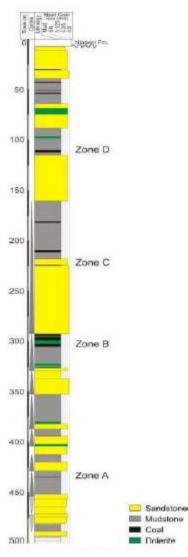


Figure 22: Stratigraphic column of the geology of the Emakwezini Formation within the Somkele Coalfield. Fm. = Formation.

The lowermost A Seam occurs at the boundary between the Lower and Middle Emakwezeni formations. The B Seam occurs some 50 m above the A Seam within the Middle Emakwezini Formation, and some 60 m below the base of the Upper Emakwezini Formation, which hosts the D Seam. The C Seam occurs at the contact between the Middle and Upper Emakwezeni formations and following sequence stratigraphic concepts, should rather be included in the Middle Emakwezeni Formation at the top of the sedimentary cycle (Tovela, 2011).

# **Coal qualities**

Somkhele metallurgical anthracite typically has a low sulphur content (<1 %), low calcium, and low phosphorus contaminants (<0.01 % in seams B1 and B3, and 0.018

– 0.022 % in Seam B2, producing a weighted average of 0.015 %). The sized product is therefore a viable reductant for the titanium and ferrochrome industries in South Africa, and competes with bituminous coals, chars and cokes as a carbon feedstock in the metallurgical industry. The unsized product is used for the pelletizing and sintering of iron ore.

Grobler (2006) provide coal qualities at a 1.6 RD float density for the coal only components of the Somkhele Colliery, as he believed this would best approximate the product. Whilst these have now changed significantly due to practical mining constraints they are provided below as Table 12.

| Coal Seam     | FC (%) | Ash (%) | CV (MJ/kg) | IM (%) | VM (%) | TS (%) | P (%)  | Yield (%) |
|---------------|--------|---------|------------|--------|--------|--------|--------|-----------|
| B (Main) Seam | 72.53  | 16.54   | 29.2       | 1.83   | 9.1    | 0.66   | 0.0199 | 72.33     |

Table 12: Average coal qualities for Somkhele Area 1 at a 1.6 RD float density (after Grobler, 2006).

#### Structure and intrusions

The Somkhele Coalfield is developed on the south-eastern margin of the MKB and forms part of the Natal Monocline, a structure associated with the rifting of Gondwana in the Jurassic and Lower Cretaceous periods. The strata are inclined fairly consistently eastwards to south-eastwards at angles up to 30° (average 15-20°). Large areas of the Somkhele Coalfield are affected by dolerite intrusions of Jurassic age and these intrusive are probably the single most disruptive aspect of the coalfield (Barker, 1999). The area is characterised by a relatively high frequency of dyke intrusions, with cross-cutting dykes in nearly all directions present. The dolerites form sub-vertical dykes and bedding parallel sills. In places a major sill some 90 m thick occurs, between 110-130 m above the B Seam. Dolerite intrusions can negatively influence the coal qualities and disrupt mining. Faults with throws of up to 1300 m are documented in the coalfield.

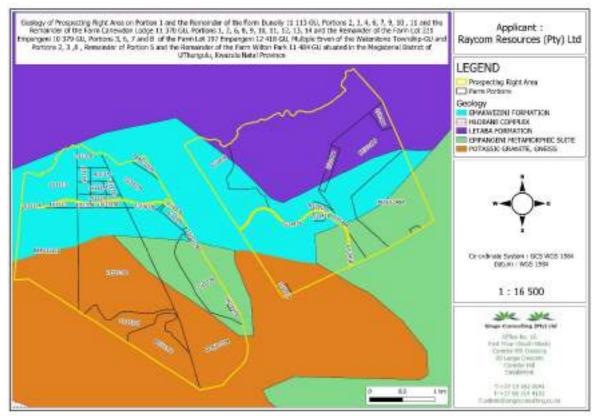


Figure 23: Geological map of the proposed area. Local Geology

The proposed prospecting right area is comprised of two formations namely:

- Letaba Formation
- Emakwezizi Formation

## Soil Study

From a desktop study that was conducted, the map below (Figure 24) was produced. This map shows that the prospecting right area is covered with a couple of soil classes including Structureless Soil and Clays and Lithosols (Shallow soils on hard or weathering rocks).

Freely drained structureless soils are types of soil characterized by sand, red soil which is less productive due to dominating of sand soils have severe limitations that reduce the choice of plants or that require special conservation practices, soils and miscellaneous areas have limitations that preclude commercial plant production and restrict their use to recreational purposes, wildlife habitat, or aesthetic purposes. The most common structureless soils are red apedal and yellow brown apedal soil types.

Lithosols (Shallow soils on hard or weathering rocks) are a group of shallow soils lacking well-defined horizons, especially an entisol consisting of partially weathered rock fragments, usually on steep slopes (Refer to Appendix 5 for Soil Study).

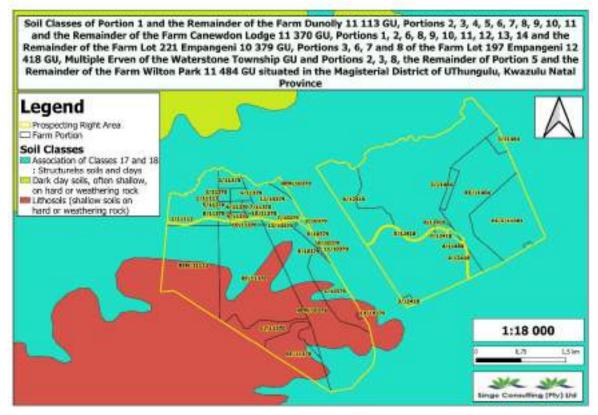


Figure 24: Soil study of the area of interest.



Photo 3: Soil type observed on site.

According to the soil management plan, soil compaction and volumes of replacement during soil reclamation are the impacts that can be expected from the prospecting phase. Heavy drill rigs equipment to be used during prospecting may lead to areas of decreased soil and land capabilities. Such areas have limited land use options and specialized management needs. However, this impact will be minimal, see recommendations below:

- Coal prospecting infrastructure will have less impact on soils and footprint will be minimal.
- It is anticipated that the Coal prospecting activities will not lead to severe loss of soils and degradation of agricultural potential.
- It is highly recommended to do rehabilitation after the period of Coal prospecting activities cease.
- The core logs of boreholes with coal ore material should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during precipitation events

## Hydrological Description

# Catchment

The prospecting area falls within the Pongola-Mtamvuma Water Management Area (WMA). Majority of the prospecting right area fall within the quaternary catchment W12H whilst the remaining minority is within the W12F quaternary catchment. Figure 25 below illustrates the Quaternary catchment and the Water Management Area (WMA).

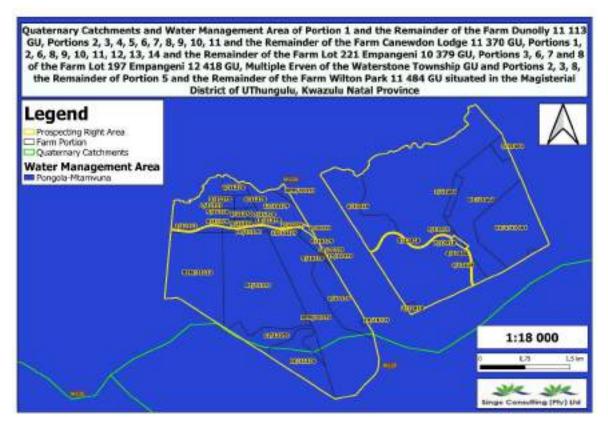


Figure 25: The sub-catchment of the project area inclusive.

The map below illustrates the Pongola-Mtamvuma Water Management Area and the project area is illustrated with a yellow polygon.

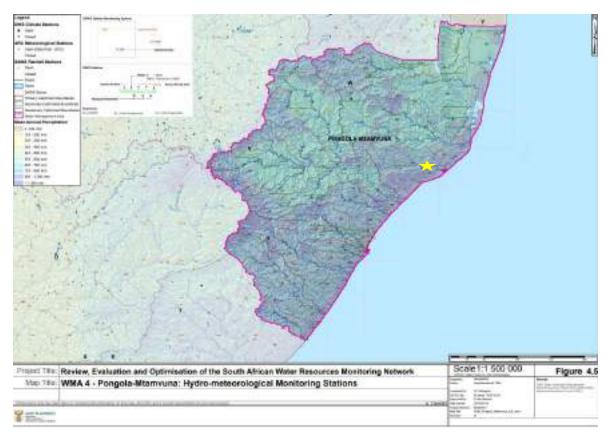


Figure 26: Water Management Area (Source: NWRM Map Book 4 Pongola-Mtamvuna, 2015)

# > Hydrology

The hydrology surrounding the proposed area is very important during prospecting. In this context hydrology is all the surface waters appearing within and nearby the proposed project area, where a potential to be impacted upon by the project exist. The hydrology map, illustrates that the following water bodies exists:

- Channeled valley-bottom wetland
- Unchanneled valley-bottom wetland
- Perennial River

The Okula Perennial River in close proximity to the northern boundaries of the project area. The Mandozi River runs within multiple portions of the Wilton Park Farm. The project area comprises of multiple streams explaining the rich and lush soils found on the land. For this project where prospecting right poses a risk on them, there should be measures and guidelines put in place that will protect the water resources in this area to ensure optimal conservation of water. The prospecting right activities should take place during dry seasons when the water percentages are extremely low. Extreme caution should be taken during prospecting, owing to the

rivers and numerous wetlands existing nearby and within the project area. And all the perennial and non-perennial rivers will be buffered as a no-go area approximately a 1km buffer should apply.

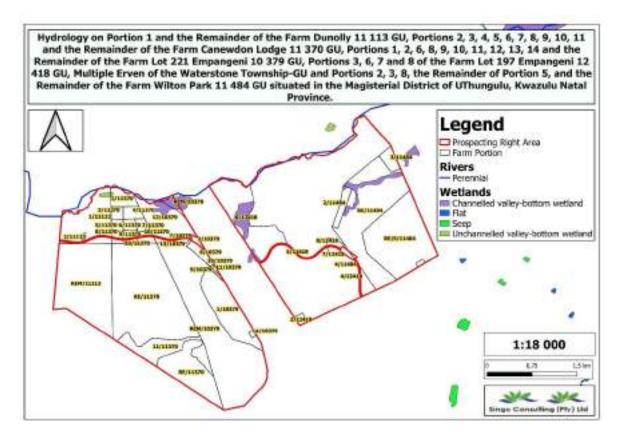


Figure 27: Environmental Sensitive Area Wetlands.



Photo 4: Okula River



Photo 5: Mandozi River

## **Ground Water**

## Acid generation capacity

## Acid mine drainage

Acid mine drainage (AMD) may be a serious problem in projects where sulphate is a by-product, like in this prospecting project, AMD can occur in the drilling activity that will create cracks and fractures thereby disturbing the lithology which may leach into underground water, however only exploration boreholes will be drilled and the impact will be minimal.

When contaminants leaches to underground water AMD can potentially occur. Therefore, acid mine drainage studies should be included as one of the impacts to be mitigated in this area. Acid mine drainage occurrence in an area will be indicated by a decrease in pH. The equations below show the process of acid mine drainage formation detailed in four steps. This process is self-propagating until the ferric iron or pyrite is depleted. Generally, when pyrite combines with oxygen and water, acid mine drainage forms. Acid mine drainage is dangerous and can destroy aquatic life as well as the aesthetic conditions of an environment.

1. Oxidation of Polysulfide to sulphate by O2

2FeS2 + 7O2 +2H2O→2Fe2+ + 4SO42- +H+

2. Oxidation of Fe2+ (ferrous iron) to Fe3+ (ferric iron) by O2  $4Fe2++O2+4H+\rightarrow 4Fe3++2H2O$ 

3. Hydrolysis of iron (ferriciron→ferrichyfroxide, "yellow boy")

4Fe3+ +12H2O→4Fe (OH)3 +12H+

4. Oxidation of polysulfide to sulphate by Fe3+ at low pH

FeS2 + 14Fe3+ +8H2O→15Fe2+ +16H+

#### Total: FeS2 + 15/4 O2 +7/2H2O→2Fe (OH)3 + 2SO42- +4H+

Acid mine drainage can be treated in various ways including:

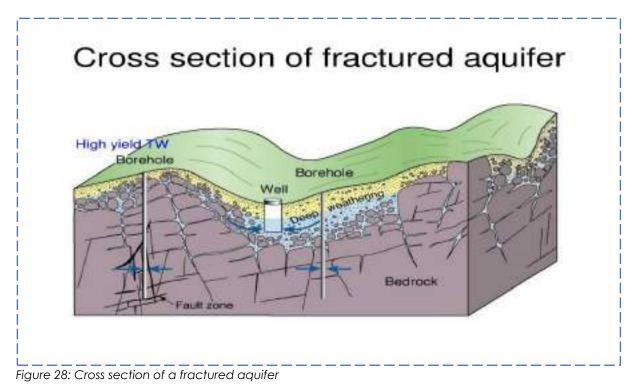
- An increase in pH or raising alkalinity. This can be achieved by neutralization reactions, introducing alkalinity reagents such as Na CO3 or NaCl,
- Removing metals like iron, zinc and aluminium from water.
- Conducting passive treatments of acid mine drainage (limestone leach beds) as well as conducting active treatment of acid mine drainage (treatment plants)

## Hydrogeology

The fractured aquifer consists of the various lithologies of siltstone, shale, sandstone, and the coal seams. The pores of the geological units are generally well cemented, and the principle flow mechanism is fractured flow along secondary structures e.g. faults, bedding plane fractures etc. The intrusion of the fractured aquifer by dolerite dykes and sills has led to the formation of preferential flow paths along the contacts of these lithologies due to the formation of cooling joints. The dykes may act as permeable or semi-permeable features to impede flow across the dykes.

The flow mechanism is fracture flow as can be expected from the crystalline nature of the shale rocks. The water quality is generally characterized by high fluoride levels which limits exploitation of this aquifer in combination with the general low yields, deep (expensive) drilling and the low recharge (Grobbelaar et al, 2004). Mining of the coal seams has resulted in the introduction of an artificial aquifer system which generally dominates the groundwater flow on a local and regional scale.

Below is a cross sectional figure of a typical fractured aquifer. Water exists in fractures in Karoo weathered aquifers. Two important characterizations that exist in the study area is the upper weathered aquifer system and the lower fractured aquifer system. If the purpose of drilling boreholes is for the supply of water, drillers will usually be directed to drill targeting the fault zones, however in the present study where the boreholes to be drilled are for coal and pseudocoal exploration, fault zones and contacts should be avoided at all costs, to minimize the impact to groundwater. The boreholes drilled must be cased to avoid clogging and contamination.



Potential contaminants

The potential contaminants for the prospecting of coal and pseudocoal are minimal and can be controlled easily as this activity will only take place for a short period of time. Fuel and oil handling facilities are likely sources of hydrocarbon related contaminants. Oils, grease and other hydrocarbon products (such as petrol and diesel) handled in these areas may contaminate the environment by spillages and leakages (e.g. from drill rigs).

# Aquifer classification

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area comprises of minor aquifers and the dominant water source is a surface water. Table 13 interprets the meaning of the aquifer classification and when an area is said to have a minor aquifer it means that the aquifer is Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.

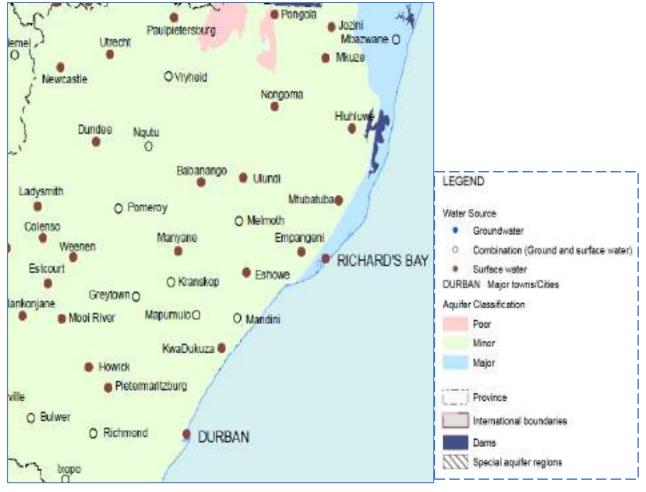


Figure 29: Aquifer classification of South Africa

| Table 13: Aquifer c | characterization |
|---------------------|------------------|
| Aquifer             | Description      |

| Sole source An aquifer used to supply 50% of   | or more of urban domestic water for   |
|--|---|
| aquifer a given area, for which the  | ere are no reasonably available   |
| alternative sources should th  | is aquifer be impacted upon or  |
| depleted.  |   |
| Major aquifer High-yielding aquifer of accept  | able quality water.   |
|  |   |
| region   |   |
|  | acceptable quality or high yielding   |
|  | acceptable quality or high yielding   |
| MinoraquiferModerately yielding aquifer ofregionaquifer of poor-quality water.   | acceptable quality or high yielding<br>of good quality or moderately                                      |
| MinoraquiferModerately yielding aquifer of<br>aquifer of poor-quality water.regionaquifer of poor-quality water.PooraquiferInsignificantly yielding aquifer                                      |   |
| MinoraquiferModerately yielding aquifer of<br>aquifer of poor-quality water.regionaquifer of poor-quality water.PooraquiferInsignificantly yielding aquifer                                      | of good quality or moderately<br>or aquifer that will never be utilized                                   |
| MinoraquiferModerately yielding aquifer of<br>aquifer of poor-quality water.regionaquifer of poor-quality water.PooraquiferInsignificantly yielding aquifer<br>yielding aquifer of poor quality. | of good quality or moderately<br>or aquifer that will never be utilized<br>of contaminate other aquifers. |

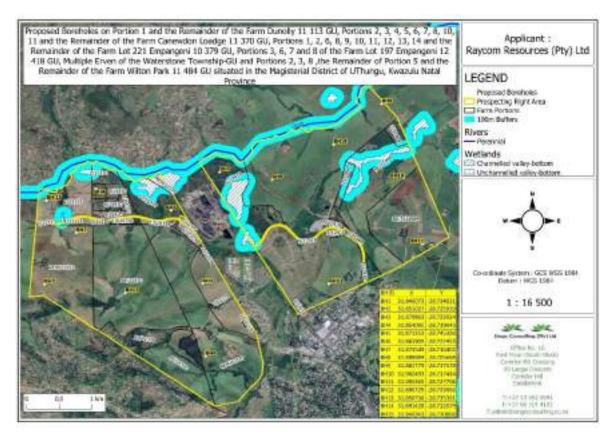


Figure 30: Wetland and Buffer zones.

#### Flora and Fauna

#### <u>Biomes</u>

The area falls in the Savanna Biome of South Africa as seen in Figure 31 below. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa (34.3%). It is a mixture of grasses and trees or shrubs. Shrub-land, bushveld and woodland are types of Savanna. The Biome is a transitional biome between those dominated by forests and those dominated by grasses, characterized mainly by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground the vegetation may be referred to as Shrubveld, where it is dense as Woodland, and the intermediate stages are locally known as Bushveld.

The Savanna biome is well developed over the lowveld and Kalahari region of South Africa where it stretches from the Kalahari in the north-west across to the lowveld in the north-east and southwards to the lowlands of KwaZulu Natal and the Eastern Cape. It is also the dominant vegetation in Botswana, Namibia and Zimbabwe.

More than 5700 plant species grow in the Savanna Biome. They include various types of grasses (e.g. Rooigras) and trees like the Baobab, Mopane, Camel Thorn and Knob Thorn. Most of the savanna vegetation types are used for grazing, mainly by cattle or game. In the southernmost savanna types, goats are the major stock. The proposed project area is characterised by Coast-Hinterland Bushveld vegetation type (Figure 28). This type of vegetation is dominated by Acacia/Mimosoid species.

The vegetation structure is mostly woodlands except where bush clearing has taken place and cultivation activities are taking place. See images below.

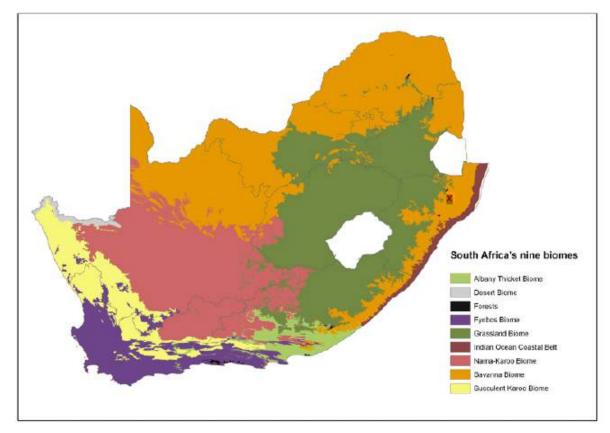


Figure 31: Map of South Africa's 9 Biomes (Project area marked X)

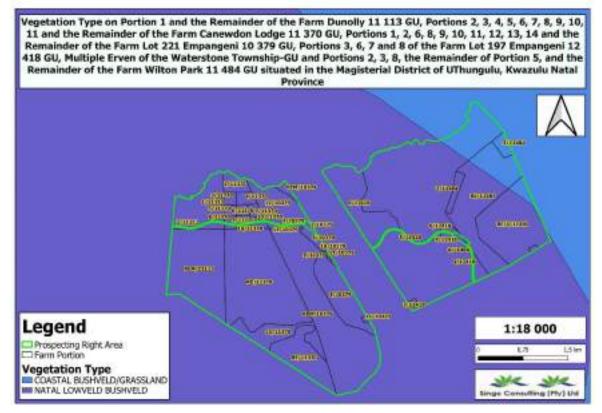


Figure 32: Vegetation type within the project area

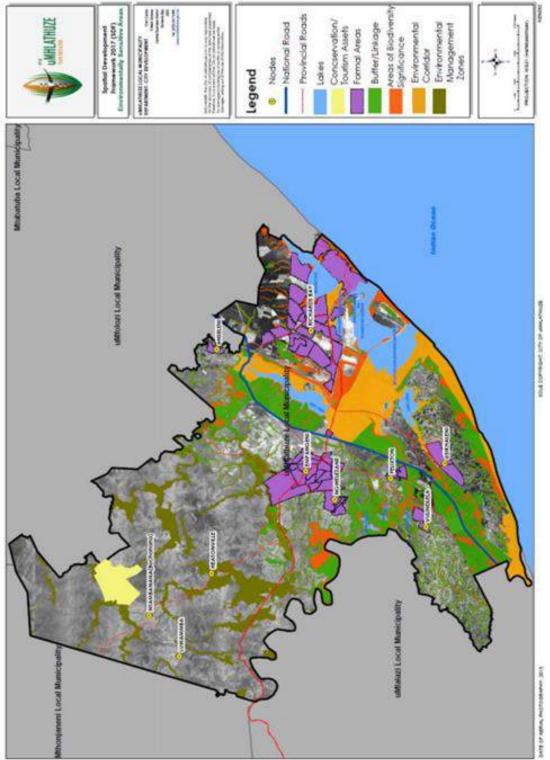


**Biodiversity and Development:** 

The greater uMhlathuze Municipal Area supports a total of 174 Red Data species, which according to the South African National Biodiversity Institute, ranks amongst the highest in the country for an area of its size. This remarkable concentration of Red Data Species is one the main reasons that most of the remaining percentage of undeveloped, indigenous land cover, is considered irreplaceable by Ezemvelo KZN Wildlife for meeting its conservation objectives in the Province.

| Vegetation Type                    | Red Data Species<br>(Significance) | Conservation Target                                  |
|------------------------------------|------------------------------------|--|
| Grasslands                         | 124                                |  |
| Forests                            | 90                                 |  |
| Nseleni River Lake Nsezi<br>System | 70                                 | 100 % following a detailed survey. Conservation of a |
| Large Wetlands                     | 55                                 | substantial portion of the                           |
| Estuaries                          | 28                                 | remaining natural asset in                           |
| Lakes                              | 18                                 | the region is required if                            |
| Mhlathuze River System             | 11                                 | conservation objectives<br>are to be pursued         |
| Swamp Forests                      | 9                                  |  |

All of the remaining ecosystem types are important for supporting Red Data Species, implying that there is a direct conflict with future development imperatives. The Spatial Development Framework on UMhlathuze has identified such development opportunities for the area. Port expansion with associated industrial development is the single most significant opportunity in the area with tremendous potential to grow the local, regional and national economy. The project area is highly sensitive near the Okula river (Wetlands and Estuaries) while on other area of the project is low sensitive. See maps below.



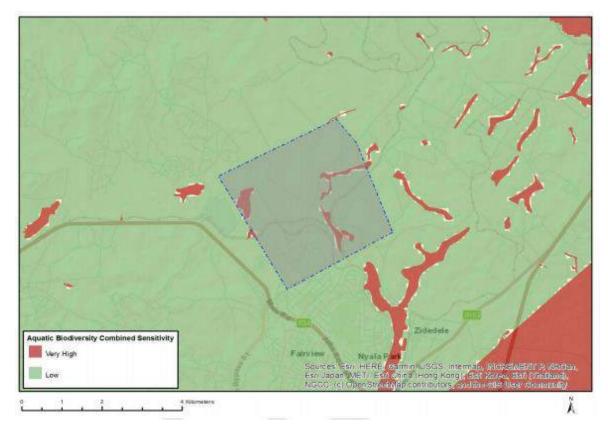


Figure 33: Environmental Sensitive Areas

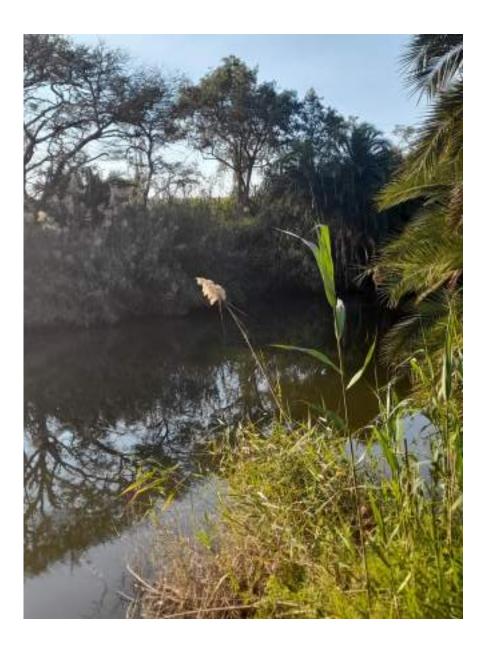




Photo 6: High Sensitivity of the project area (Okula River and Mandozi River respoectively).

#### Fauna

Fauna is all the animal life present in a particular region or time. Fauna expected to occur on site include assemblages within terrestrial and riverine ecosystems, including mammals, birds, reptiles, amphibians and invertebrates.

During site assessment cattle and horses were observed. There were dogs observed in the some of the farmyard houses.



Photo 7: horses observed t ranch within the proposed prospecting area

All Flora and Fauna species will be conserved, & all potential impacts on Floral and faunal species will be managed using management framework stipulated on the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

## Heritage Resources

The City of uMhlathuze has high potential for archaeological heritage resources of different classes of significance. Although a considerable number of sites has been recorded, there remain gaps in availability of data on the local heritage. A desktop survey indicated a total of 125 recorded archaeological sites, which range from the Stone Age Period to the recent historic period. Most of the sites recorded indicated pressure from mining and infrastructure development within the municipal area.

Heritage resources such as Stone Age sites, rock paintings and engravings; stone tools; small, inconspicuous stone walled sites from the Late Iron Age farming communities; formal and informal graveyards, etc may occur in the study area.

The Phase 1 Heritage Impact Assessment conducted revealed that no heritage resources of significance occur within the study area or stand to be affected by the proposed project keeping in mind that the watercourses with be at 100m away from any drilling activities as it contributes to cultural and heritage aspect. There will therefore be no impacts on archaeological or cultural historical sites for any phases of the project.

It is essential to note that it is possible that the Phase 1 HIA may have missed heritage resources in the project area, as some heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

Should, however, any heritage resources of significance be exposed during the rather operational phase of the project, the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities should be stopped, and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the required mitigation measures.

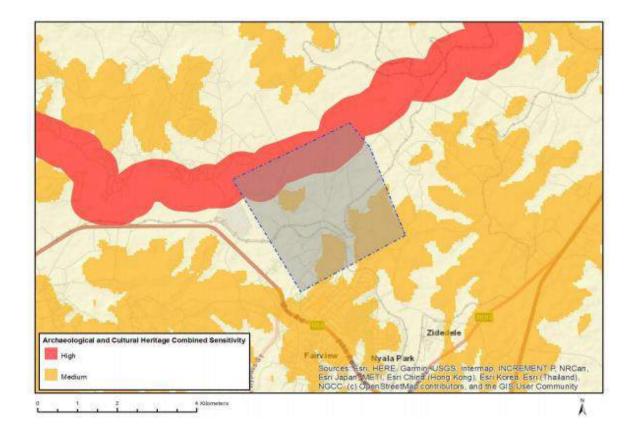


Figure 34: archaeological heritage sensitivity.

## **Agricultural Support Plan**

Agriculture is known to be central in the economic development of rural areas rural communities are particularly vulnerable to climate change and the agricultural support plan is a mechanism to assist farmers to operate and contribute to improved food security and also participate in food value chains. The proposed project area is ranked medium to very high in agricultural support.

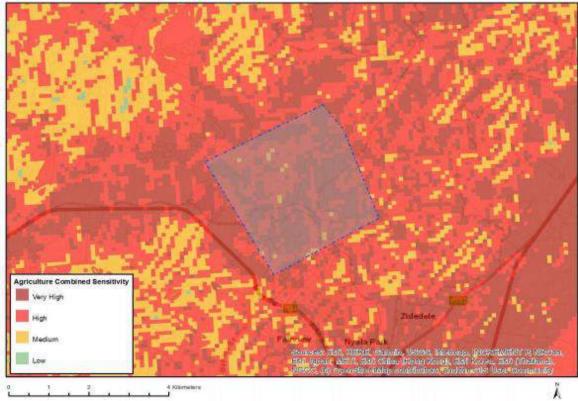


Figure 35: Agricultural Sensitivity of the area.

# Socio-Economic

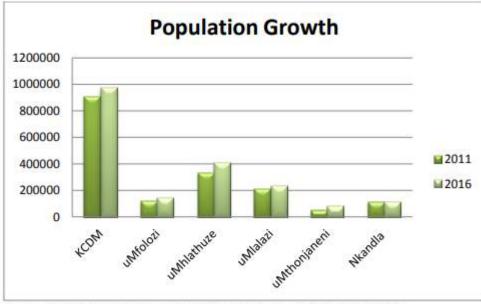
The study area for the proposed projects is in UMhlathuze Municipalities, located in King Cetshwayo District. The population increase in King Cetshwayo District, broken down per municipality is indicated in the table and explanatory figure herewith. *Table 15: Population Numbers* 

|             | KCDM   | IMFOLOZI | UMHLATHU<br>ZE | UMLALAZI | MTHONJA<br>NENI | NKANDLA |
|-------------|--------|----------|----------------|----------|-----------------|---------|
| 2011        | 907519 | 122889   | 334459         | 213601   | 47818           | 114416  |
| 2016        | 971135 | 144363   | 410465         | 233140   | 78883           | 114284  |
| %<br>Growth | 7,01%  | 17,47%   | 22,73%         | 9,15%    | 64,97%          | -0,12%  |

## Source: Statistics SA, Census 2011 and Community Survey 2016

Population growth scenarios have been applied to the base figure from the 2016 Community Survey. Adequate data and research are not available at this time to apply an historic growth trend as the composition of the municipality, in terms of boundaries and wards, has changed post the Local Government Elections of 2016. The following base data has therefore been used:

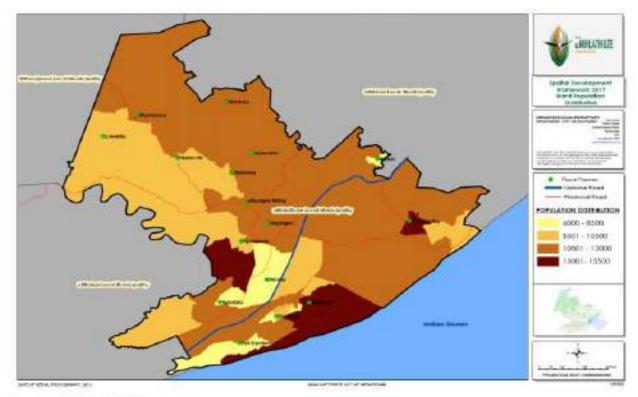
- A baseline population in the uMhlathuze Municipality of 410 465 people in 2016 as per the Community Survey
- A calculated household size of 3.95 as derived from 2011 census data
- A total number of 103 915 households in the municipal area derived from the above Community Survey.



Source: Statistics SA, Census 2011 and Community Survey 2016

Figure 36: Population Growth

The 2016 Community Survey indicates that the population of uMhlathuze Municipality has increased by just over 22% between 2011 and 2016. This increase is indicated in relation to the King Cetshwayo District Family of Municipalities.



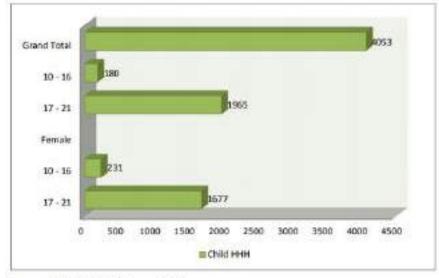
Sowce: uMhlathuze SDF 2017 Figure 37: Population Distribution

## Socio-economic Environment

#### Average Household Income

About 5 % of uMhlathuze Households are Child and Adolescent Headed Households. The needs of these children are complex, many and diverse. Of importance are their rights that are compromised. According to Jacobs (2005)1, Smart (2003)2, and UNICEF (2003)3, these children are often found to be fulfilling parenting roles and tasks like household chores, helping siblings with homework, providing emotional support, taking care of ill parents and providing spiritual guidance to family and sibling. They are vulnerable to all types of abuse because the family environment that served as a safety net has been eroded. The children are at risk of contracting HIV/AIDS and suffer psychological instability. They are often poor; they live in poor conditions and are exposed to hard labour. They are at risk of poor education as they quite often lack money to pay for their schooling or that of their siblings. Other risks are unemployability because of poor education and lack of skills; disease; prostitution; crime; pregnancy; poor or no shelter and no knowledge about their rights. They are exposed to emotional trauma, as they may have to cope with multiple losses in the form of death, sibling dispersal, relocation

and reconstitution of the family after the death of parents. Children in these households need shelter, clothes, food, education, access to health facilities, care giving and life skills, including coping with drugs and alcohol abuse, and protection against physical harm, sexual abuse and exploitation.



Source: Statistics SA. (Census 2011)

Figure 38: Child Headed Households.

## Household income

o At a steady population increase of 1,5% per annum, the municipal population will surpass 500 000 people by 2030.

o The municipality will reach a population of 500 000 before 2021 if a population growth rate of 5% takes place over the next few years.

o At such a 5% per annum population growth rate the number of households in the municipality will double by 2030.

|               | 2 016   | 2 017   | 2 018   | 2 019   | 2 0 2 0 | 2 021   | 2 022   | 2 0 2 3 | 2 024   | 2 0 2 5 | 2 026   | 2 027   | 2 0 28   | 2 029   | 2 0 3 0 |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|
| 1.5% increase | 410.465 | 416 622 | 422.871 | 479 214 | 435 653 | 442 187 | 448 820 | 455 552 | 462 386 | 489 322 | 476 361 | 483 507 | 490.758  | 498 121 | 505 593 |
| Households    | 103 #15 | 105 474 | 107.054 | 108 662 | 110 292 | 111 946 | 113 625 | 115 330 | 117 060 | 118 816 | 120 598 | 122 407 | 124 243  | 124 107 | 127 998 |
| 2% Increase   | 410.465 | 418 674 | 427.048 | 435 589 | 444 301 | 453 187 | 462 250 | 471 495 | 480 925 | 490 544 | 500 355 | 510 362 | 520.549  | 530 980 | 541 600 |
| Households    | 103 915 | 105 993 | 108 113 | 110 276 | 112 481 | 114 731 | 117 025 | 119 366 | 121 753 | 124 188 | 126 672 | 129 205 | 131 790  | 134 425 | 137 114 |
| 3% increase   | 410 465 | 422.779 | 435.462 | 448 526 | 461 982 | 475841  | 490 117 | 504 820 | 519 WS  | 535 564 | 551 631 | 568 180 | 585 225  | 602 782 | 620 845 |
| Households    | 103 915 | 107 033 | 110 244 | 113 551 | 116 957 | 120,466 | 124 080 | 127 803 | 131 637 | 135 586 | 139 453 | 143 843 | 148 158  | 152 603 | 157 181 |
| 4% Increase   | 410.465 | 426 884 | 443 959 | 461 717 | 480 186 | 499 393 | 519 369 | 540 144 | 561 750 | 584 220 | 607 588 | 631 892 | 657 1 68 | 683 454 | 710 793 |
| Households    | 103 915 | 108 072 | 112 395 | 116 890 | 121 566 | 126 429 | 131 486 | 136 745 | 142 215 | 147 904 | 153 820 | 159 973 | 166 372  | 173 026 | 179 947 |
| S% increase   | 410.465 | 430 988 | 457 538 | 475 165 | 498 923 | 523 869 | 550 042 | 577 565 | 606 444 | 635766  | 658 604 | 702 034 | 737136   | 173 993 | 812.693 |
| Households    | 103 915 | 109 111 | 114 566 | 120 295 | 126 310 | 132 625 | 139 256 | 146 219 | 153 530 | 161 207 | 169 267 | 177 730 | 186 617  | 195 948 | 205 745 |

Table 16: Population Growth Scenarios from 2016 to 2030

| Ward | Number | Households | Size |
|------|--------|------------|------|
| 1    | 12146  | 3406       | 3.57 |
| 2    | 12255  | 3931       | 3.12 |
| 3    | 9058   | 2586       | 3.50 |
| 4    | 12473  | 2941       | 4.24 |
| 5    | 15564  | 3391       | 4.59 |
| 6    | 12544  | 3549       | 3.53 |
| 7    | 5895   | 2232       | 2.64 |
| 8    | 5136   | 1815       | 2.83 |
| 9    | 13558  | 4317       | 3.14 |
| 10   | 11311  | 2513       | 4.50 |
| 11   | 9130   | 1513       | 6.03 |
| 12   | 8574   | 1963       | 4.37 |
| 13   | 14928  | 2688       | 5.55 |
| 14   | 12316  | 3263       | 3.77 |
| 15   | 12251  | 3064       | 4.00 |
| 16   | 7801   | 1878       | 4.15 |
| 17   | 10462  | 3346       | 3.13 |
| 18   | 14887  | 2880       | 5.17 |
| 19   | 12019  | 2983       | 4.03 |
| 20   | 8551   | 2488       | 3.44 |
| 21   | 6950   | 1931       | 3.60 |
| 22   | 9181   | 1960       | 4.68 |
| 23   | 10704  | 3323       | 3.22 |
| 24   | 18332  | 4371       | 4.19 |
| 25   | 13870  | 3162       | 4.39 |
| 26   | 11524  | 2909       | 3.96 |
| 27   | 8874   | 2673       | 3.32 |
| 28   | 7441   | 2355       | 3.16 |
| 29   | 15368  | 3368       | 4.56 |
| 30   | 11360  | 3915       | 2.90 |
| 31   | 9820   | 2074       | 4.73 |
| 32   | 9474   | 1586       | 5.97 |
| 33   | 10707  | 1941       | 5.52 |
|      | 364464 | 92315      | 3.95 |

Figure 39: Household Numbers and Sizes **Age Breakdown** 

The population age cohort <15 has been declining at the district and uMhlathuze Local Municipality level while the population cohort for the 15-64 age group has shown an increase at both the district and local municipality level between 2001 and 2011. The latter could be indicative of increased perceptions of Employment opportunities in the uMhlathuze area resulting in an in-migration into the area. An increase in the older age cohort (65+) is also observed between 2001 and 2011. Such could be indicative of the elderly deciding to reside in the area upon retirement or of improved health care facilities and an improved standard of living. *Table 17: Population Age Structure* 

|                    | Popu   | lation | Age Structure (Perentage % of Population) |      |      |      |      |      |  |  |
|--------------------|--------|--------|---|------|------|------|------|------|--|--|
|                    |        | 1      | <   | 15   | 15   | -64  | 65+  |      |  |  |
|                    | 2001   | 2011   | 2001                                      | 2011 | 2001 | 2011 | 2001 | 2011 |  |  |
| DC28: Uthungulu    | 885965 | 907519 | 38.3                                      | 34.8 | 57.3 | 60.7 | 4.4  | 4.5  |  |  |
| KZN282: uMhlathuze | 289190 | 334459 | 33.0                                      | 29.3 | 64.2 | 67.5 | 2.8  | 3.2  |  |  |

Source: Statistics SA, (Census 2011)

## Education

Education levels are provided for the 2001 and 2011 census years. Comparisons are made with the levels in the country, the uThungulu District as well as the local municipalities in the uThungulu district. The following table provides a summary of the situation while more explanatory figures are provided hereafter of specific situations.

Although there has been a slight increase in the primary enrolment levels at national and district level, it remains concerning that, in some instances, nearly 10% of children of school going age, are not attending school. Reasons could relate to access, affordability and other poverty related factors such as HIV/Aids for this. The number of persons that do not have any education (no schooling) has declined between 2001 and 2011 as indicted in the figure hereunder.

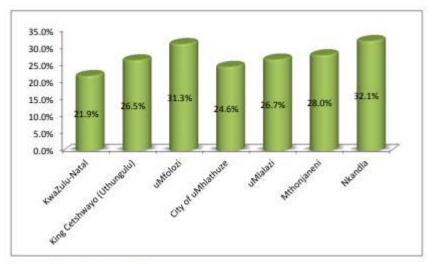
|                 | No Schooling |      | Higher Education |     | Ma        | tric | Primary Educational<br>Enrolment |      |  |
|-----------------|--------------|------|------------------|-----|-----------|------|----------------------------------|------|--|
|                 | 2001         | 2011 | 2001 2011        |     | 2001 2011 |      | aged 6-13<br>2001 2011           |      |  |
| South Africa    | 17.9         | 8.4  | 8.4              | 6.7 | 22.1      | 27.8 | 91                               | 93.1 |  |
| DC28: Uthungulu | 31.6         | 15.7 | 5.8              | 4.2 | 18.3      | 29.5 | 88.3                             | 89.6 |  |
| uMhlathuze      | 18.5         | 7.2  | 10.9             | 7.3 | 27.6      | 36.9 | 90.1                             | 91.7 |  |
| Nkandla         | 49.8         | 28.8 | 2.5              | 1.7 | 11.5      | 21.0 | 88.7                             | 86.7 |  |
| Mfolozi         | 29.6         | 14.6 | 2.3              | 1.2 | 14.5      | 30.3 | 89.3                             | 88.2 |  |
| Ntambanana      | 38.0         | 21.2 | 1.5              | 0.8 | 10.4      | 23.1 | 86.4                             | 91.3 |  |
| uMlalazi        | 39.2         | 22.5 | 3.5              | 2.9 | 13.2      | 22.9 | 87.0                             | 88.9 |  |
| Mthonjaneni     | 37.3         | 23.3 | 3.9              | 2.3 | 14.7      | 22.1 | 85.6                             | 88.9 |  |

Table 18: Comparative Education Levels

Source: Statistics SA, Census 2011

#### Employment

The figures below shows the percentage of persons in the respective municipal wards that are Employed and Unemployed. The highest percentage Employment is in Ward 1, 2, 3, 9, 23 and 29. These wards largely correlate with the developed urban areas of Richards Bay and Empangeni. Unemployment levels seem to be highest (as a percentage) in Wards 6, 19 and 22. These wards largely correlate with areas that are developing (densifying) on the urban periphery of ESikhaleni and Nseleni. With the wards to be incorporated there is positive rate of Employment as compared to Unemployment. The highest rate of Unemployment from the wards to be incorporated in found in ward 5.



Source: Global Insights 2017

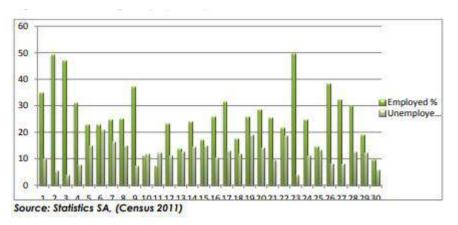


Figure 40: Total Employment within KwaZulu Natal & Percentage Employment per Ward

# **Key Findings**

uMhlathuze is the municipality with the largest population in the district.

o At a projected population annual growth rate for uMhlathuze of 2%, the municipal population will double by the year 2050, 35 years from now. The impact of such a population increase on municipal services as well as other governmental services is very significant.

o The uMhlathuze Local Municipalities has the smallest household size in the district with 3.9. This has remained the same since 2001.

o The municipal wards that have the highest population numbers are wards 5, 13, 18, 24, 25 and 29.

o In line with national and provincial trends, there are more females than males in the Municipality, i.e. 171 516 females and 162 943 males.

o Unemployment levels seem to be highest (as a percentage) in Wards 6, 19 and 22. These wards largely correlate with areas that are developing (densifying) on

the urban periphery of ESikhaleni and Nseleni.

o Very high numbers of persons in Wards 5, 6, 13, 15, 18, 25 and 29 earn less than R1600 per month.

# b) Description of the current land uses.

The locality and extent of current land use within and around the prospecting right area is shown in the figure below. The land uses for majority of the project area is cultivated land, which is where the sugar cane fields are located. The remainder of the farm and surrounding areas is natural lands. Residential/industrial areas are found on the areas illustrated as natural land. The farming type found on the project area is sugar cane (see figures below).

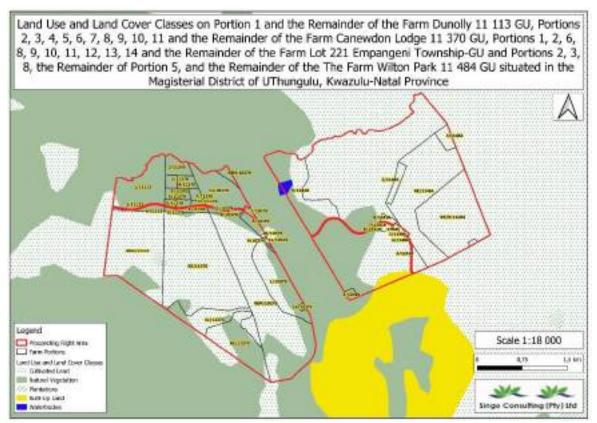


Figure 41: Land use Map of the area of interest.

Farming Type on Portion 1 and the Remainder of the Farm Dunolly 11 113 GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the Farm Canewdon Lodge 11 370 GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the Farm Lot 221 Empangeni 10 379 GU, Portions 3, 6, 7 and 8 of the Farm Lot 197 Empangeni 12 418 GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of Portion 5, and the Remainder of the Farm Wilton Park 11 484 GU situated in the Magisterial District of UThungulu, Kwazulu Natal Province

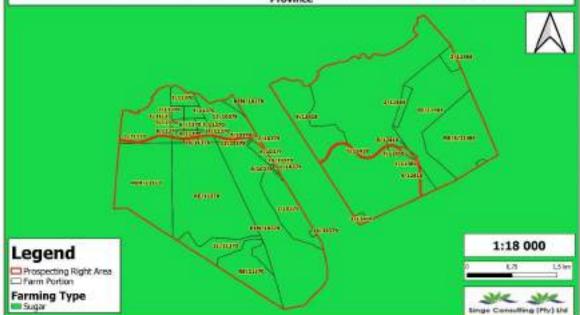


Figure 42: Farming type found within application area

The following table provides a breakdown of land potential/capability in terms of hectares and percentages.

| Land Capability                | Size(Hectares) | Percentage (%) |
|--------------------------------|----------------|----------------|
| High Land Potential            | 11548          | 9.89           |
| Good Land Potential            | 73062          | 62.55          |
| Moderate Land Potential        | 21565          | 18.46          |
| Restricted Land Potential      | 2258           | 1.93           |
| Very Restricted Land Potential | 6975           | 5.97           |
| Waterbodies                    | 1400           | 1.20           |
| Sub-Total                      | 116808         | 100.00         |

Table 19: Land Potential in uMhlathuze

Photo 8: Land usage images.

Like anywhere in SA, there is no doubt that the gross poverty and inequality in UMhlathuze will lead to people seeking jobs from these operations. Th project area could just be a walking distance to seek for Employment to someone eagerly seeking for job. Combined with this landscape of poverty and inequity, the harsh reality of the double family burden carried by many black people in South Africa together with lack of job creation by our government, will further inspired people to go to the forefront of the strike wave around the proposed area.

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

The Project area is situated closer to the Okula river. There is a horse-riding ranch and lamdscaping operation on Dunolly. There are areas that have been demarcated for low income houses. According to locals portions of the project has been approved by the municipality and already has a water system and access roads. The project area has gravel road and also a national route (R34), Electricity poles were observed around the site and also on site, farm homesteads were also observed. A railway line Heatonville also bypasses the farm portions.

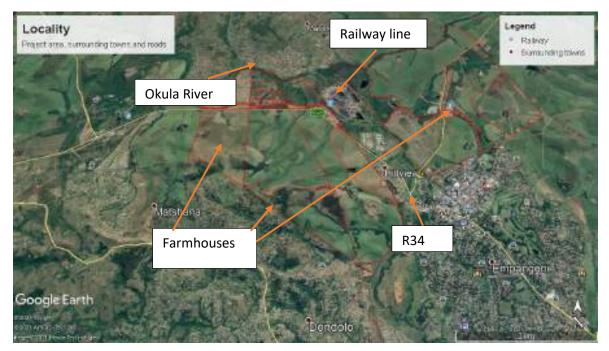


Photo 9: Infrastructures on and around the site.

## 10. Environmental and current land use map.

(Show all environmental, and current land use features)

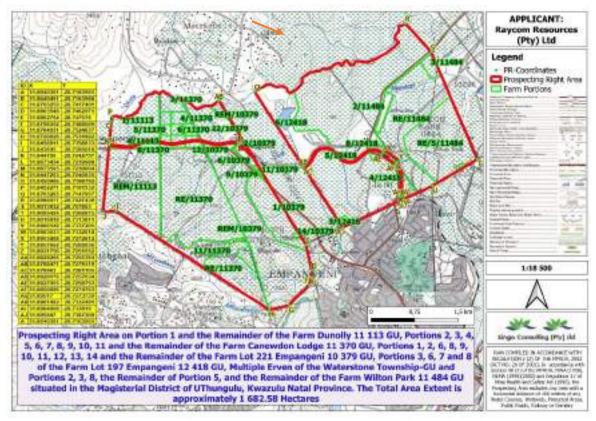


Figure 43: Environmental and current land use maps.

# 11. 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).

| Element                             | Aspects and Impacts  | Mitigation   | Impact | (post-mitiga | lion)       |                          |
|-------------------------------------|--|--|--------|--------------|-------------|--------------------------|
|                                     |  |  | Extent | Duration     | Probability | Level of<br>Significance |
| Soils                               | There will be minor disturbance of the soil at the proposed drill sites.   | Rehabilitate each site as soon as the drilling is completed.   | Low    | Short Term   | Definite    | Low                      |
| Vegetation<br>(Zululand<br>Lowveld) | on the vegetation would occur at proposed<br>drilling sites and the access routes used to get to<br>these sites. However large parts of the site have<br>been transformed. | Environmental awareness training. Drillers to comply<br>with all EMPr procedures. Drilling sites to be located<br>in disturbed areas wherever possible. The<br>prospecting area including drill sites and access<br>routes are to be rehabilitated to as near original<br>condition as possible. No fires to be made in the<br>prospecting area.<br>Sections which have dense vegetation must be<br>avoided during drilling process. |        | Short Term   | Definite    | Low                      |
| Animal life<br>(Ranch of<br>horses) | find horse riding. It is anticipated that the noise and general activity will keep the animal life away from   | injured, but should rather be removed or chased<br>away from the site. Drilling activities will not be   | Low    | Short Term   | Definite    | Low                      |

|                  | Vibrations caused by drilling will scare the animals,                        | controlled access to the farm. No unauthorised visitors/access will be allowed.  |     |            |          |     |
|------------------|--|--|-----|------------|----------|-----|
|                  |  | The drilling position will be located 1.36km away<br>from the position of the houses.<br>Monitoring with the assistance from the landowner<br>will be done to ensure that crocodiles are not<br>negatively impacted for that duration of drilling. |     |            |          |     |
| Surface<br>Water |  | Drilling method will be air flush thus no water will be<br>used to avoid any developing acid mind drainage<br>through the drill holes.   |     | Short term | Possible | Low |
| Ground<br>water  | No groundwater will be used or abstracted during the prospecting operations. | Establish EMPr procedures to minimise hydrocarbon spills.  | Low | Short Term | Possible | Low |
| Air Quality      | Dust creation during drilling operations due to car speed.                   | Establish EMPr procedures to minimise the<br>generation of dust. Ensure vehicles drive slowly and<br>air flush drilling method is used with a compressor to<br>minimize dust   |     | Short Term | Probable | Low |
| Noise            | vehicles. However, this is a sparsely populated                              | Ensure vehicles and equipment are maintained.<br>Silencers should be fitted on all engines should be<br>need arise to ensure game farm experience minimal<br>noise.  |     | Short Term | Definite | Low |

| Cultural |  | If any heritage resources, including fossils, graves or                                   |     | Short Term | Possible | Low |
|----------|--|---|-----|------------|----------|-----|
| Heritage |  | human remains, are encountered these must be  |     |            |          |     |
|          | houses.  | reported to the authorities and the space where they occur must be excluded from drilling |     |            |          |     |
|          |  | procedures.   |     |            |          |     |
| Visual   | The prospecting activity will not change the visual character of the property. | Rehabilitate drill sites and access tracks.   | Low | Short Term | Definite | Low |

| Socioeconomic         | The effect of this prospecting activity for<br>Employment and socio-economic regime<br>would be positive, but very limited in extent and<br>duration. If a significant resource is delineated<br>this could have a significant positive socio-<br>economic impact, however a mining right<br>application would be subject to a separate EIA<br>process. | Environmental awareness training will be provided<br>to all workers. Maximise procurement of goods and<br>services from local providers.                                  |     | Short Term | Definite | Low (positive) |
|-----------------------|---|---|-----|------------|----------|----------------|
| Social<br>Neighbours  | The prospecting operations should not impact on<br>the neighbours due to the distance and low<br>intensity of the prospecting operation.  | Ensure compliance with the EMPr. Ensure workers<br>do not trespass onto neighbours' property.<br>Maintain communications and keep a<br>"Complaints Register" on site.     |     | Short Term | Possible | Low            |
| Solid Waste           | municipal waste site. Any industrial (hazardous)  | Ensure compliance with the EMPr. Include in<br>environmental awareness training. Workers will not<br>stay overnight at the site and waste bins must be<br>placed on site. |     | Short Term | Definite | Low            |
| Traffic and<br>access | Prospecting activities will generate very limited<br>additional traffic. Prospecting vehicles are to<br>access the property via existing roads, extension<br>routes and tracks only.<br>Speeding at the farms   |   | Low | Short Term | Definite | Low            |
| Cumulative<br>Impacts | There are no significant cumulative impacts associated with this prospecting programme.   | No mitigation required for prospecting.   | N/A | N/A        | N/A      | N/A            |

# 12. 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).

# Criteria to Consider when Determining Severity of impacts

The ranking of impacts / determination of significance is estimated using two criteria, namely Consequence and Probability. These consider the contributing factors / criteria listed in the legislation. The definitions of each are provided below.

The evaluation of impacts is conducted in terms of the criteria detailed in Tables below. The various environmental impacts and benefits of this project are discussed in terms of impact status, extent, duration, probability, and intensity. Impact significance is regarded as the sum of the impact extent, duration, probability and intensity and a numerical rating system has been applied to evaluate impact significance; therefore, an impact magnitude and significance rating is applied to rate each identified impact in terms of its overall magnitude and significance.

In order to adequately assess and evaluate the impacts and benefits associated with the project it was necessary to develop a methodology that would scientifically achieve this and to reduce the subjectivity involved in making such evaluations. To enable informed decision - making it is necessary to assess all legal requirements and clearly defined criteria in order to accurately determine the significance of the predicted impact or benefit on the surrounding natural and social environment.

The **Consequence** of an impact resulting from an aspect is expressed as a combination of:

 Nature of impact: An indication of the extent of the damage (negative impacts) or benefit (positive impacts) the impact inflicts on natural, cultural, and/or social functions (environment).

| Rating   | Description                                      | Quantitative<br>rating |
|----------|--|------------------------|
| Positive | A benefit to the receiving environment.          | Р                      |
| Neutral  | No cost or benefit to the receiving environment. | -                      |
| Negative | A cost to the receiving environment.             | Ν                      |

• **Extent** of impact: A spatial indication of the area impacted (i.e. how far from activity the impact is realised). The extent of an impact is considered as to whether impacts are either limited in extent of if it affects a wide area or group of people. Impact extent can be site specific (within the boundaries of the development area), local, regional or national and/or international.

| Rating    | Description  | Quantitative rating |
|-----------|--|---------------------|
| Low       | Site-specific: Occurs within the site boundary.  | 1                   |
| Medium    | Local: Extends beyond the site boundary. Affects the immediate surrounding environment (i.e. up to 5 km from the project site boundary). | 2                   |
| High      | Regional: Extends far beyond the site boundary, widespread effect (i.e. 5 km and more from the project site boundary).                   | 3                   |
| Very high | National and/or international, extends far beyond the site boundary, widespread effect.  | 4                   |

• **Duration** of impact: A temporal indication of the how long the effects of the impact will persist, assuming the activity creating the impact ceases. For example, the impact of noise is short lived (impact ceases when activity ceases) whereas the impact of removing topsoil exists for a much longer period of time.

| Rating | Description   | Quantitative rating |
|--------|---|---------------------|
| Low    | Short term: Quickly reversible, less than project lifespan, 0-5 years.              | 1                   |
| Medium | Medium term: Reversible over time, approximate lifespan of the project, 5-17 years. | 2                   |
| High   | Long term: Permanent. Extends beyond the decommissioning phase, >17 years.          | 3                   |

• Impact Probability: The probability of the impact describes the likelihood of the impact actually occurring.

| Rating     | Description  | Quantitative<br>rating |
|------------|--|------------------------|
| Improbable | Possibility of the impact 146 a terialize 146 g is | 1                      |

|            | negligible, chance of occurrence <10%.                     |   |
|------------|--|---|
| Probable   | Possibility that the impact will 147a terialize is likely, | 2 |
|            | chance of occurrence 10 – 49.9%.                           |   |
| Highly     | It is expected that the impact will occur, chance          | 3 |
| probable   | of occurrence 50 – 90%.                                    |   |
| Definite   | Impact will occur regardless of any prevention             | 4 |
|            | measures, chance of occurrence >90%.                       |   |
| Definite   | Impact will occur regardless of any prevention             | 5 |
| and        | measures, chance of occurrence >90% and is                 |   |
| cumulative | likely to result in in cumulative impacts                  |   |

- Frequency of the impact occurring: An indication of how often an aspect, as a result of a particular activity, is likely to occur. Note that this does not assess how often the impact occurs. It applies only to the aspect. For example driving takes place daily whilst other activities takes place monthly while the resultant frequency of the impacts occurring will vary based on a number of factors.
- Impact Intensity: The intensity of the impact is determined to quantify the magnitude of the impacts and benefits associated with the proposed project.

| Rating                 | Description  | Quantitative |
|------------------------|--|--------------|
|                        |  | rating       |
| Maximum<br>benefit     | Where natural, cultural and / or social functions or processes are positively affected resulting in the maximum possible and permanent benefit.              | +5           |
| Significant<br>benefit | Where natural, cultural and / or social functions or processes are<br>altered to the extent that it will result in temporary but significant<br>benefit.     | +4           |
| Beneficial             | Where the affected environment is altered but natural, cultural<br>and / or social functions or processes continue, albeit in a<br>modified, beneficial way. | +3           |
| Minor<br>benefit       | Where the impact affects the environment in such a way that<br>natural, cultural and / or social functions or processes are only<br>marginally benefited.    | +2           |
| Negligible<br>benefit  | Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are negligibly benefited.               | +1           |
| Neutral                | Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are not affected.                       | 0            |

| Negligible  | Where the impact affects the environment in such a way that<br>natural, cultural and / or social functions or processes are<br>negligibly affected       | -1 |
|-------------|--|----|
| Minor       | Where the impact affects the environment in such a way that<br>natural, cultural and / or social functions or processes are only<br>marginally affected. | -2 |
| Average     | Where the affected environment is altered but natural, cultural<br>and / or social functions or processes continue, albeit in a<br>modified way.         | -3 |
| Severe      | Where natural, cultural and / or social functions or processes are altered to the extent that it will temporarily cease.                                 | -4 |
| Very severe | Where natural, cultural and / or social functions or processes are altered to the extent that it will permanently cease.                                 | -5 |

The proposed activities have very low significance since these are short term activities. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. The probability was also used basing on looking at other prospecting activities of similar nature. Generally prospecting activities have low impact on the environment. The planned activities negative impacts can be controlled and avoided or minimised therefore the layout does not require revision. Changes in plan will be discussed with the farmers and approvals will be signed.

• Impact Significance: The impact magnitude and significance rating is utilised to rate each identified impact in terms of its overall magnitude and significance.

| Impact   | Rating | Description   | Quantitative<br>rating |
|----------|--------|---|------------------------|
| Positive | High   | Of the highest positive order possible within the bounds of impacts that could occur.   | +12-16                 |
|          | Medium | Impact is real, but not substantial in relation<br>to other impacts that might take effect<br>within the bounds of those that could<br>occur. Other means of achieving this<br>benefit are approximately equal in time,<br>cost and effort. | +6-11                  |
|          | Low    | Impacts is of a low order and therefore<br>likely to have a limited effect. Alternative<br>means of achieving this benefit are likely to<br>be easier, cheaper, more effective and less   | +1-5                   |

|          |        | time consuming.                                 |        |
|----------|--------|---|--------|
| No       | No     | Zero impact                                     | 0      |
| impact   | impact |   |        |
| Negative | Low    | Impact is of a low order and therefore likely   | -1-5   |
|          |        | to have little real effect. In the case of      |        |
|          |        | adverse impacts, mitigation is either easily    |        |
|          |        | achieved or little will be required, or both.   |        |
|          |        | Social, cultural, and economic activities of    |        |
|          |        | communities can continue unchanged.             |        |
|          | Medium | Impact is real, but not substantial in relation | -6-11  |
|          |        | to other impacts that might take effect         |        |
|          |        | within the bounds of those that could           |        |
|          |        | occur. In the case of adverse impacts,          |        |
|          |        | mitigation is both feasible and fairly          |        |
|          |        | possible. Social cultural and economic          |        |
|          |        | activities of communities are changed but       |        |
|          |        | can be continued (albeit in a different         |        |
|          |        | form). Modification of the project design or    |        |
|          |        | alternative action may be required.             |        |
|          | High   | Of the highest order possible within the        | -12-16 |
|          |        | bounds of impacts that could occur. In the      |        |
|          |        | case of adverse impacts, there is no            |        |
|          |        | possible mitigation that could offset the       |        |
|          |        | impact, or mitigation is difficult, expensive,  |        |
|          |        | time-consuming or a combination of these.       |        |
|          |        | Social, cultural and economic activities of     |        |
|          |        | communities are disrupted to such an            |        |
|          |        | extent that these come to a halt.               |        |

# 13. 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)

# Potential impact on heritage resources

There are no graves or historical ruins in the proposed prospecting area that were observed. The area has been extensively used for agriculture in the past and therefore no to very limited heritage resources are present apart from the Okula river as according to the screening report that was conducted. The prospecting is so localised that it is not anticipated that there will be any impact on heritage resources. The major activity involved drilling and it is going to be done along current access routes with an open view of creating additional routes on areas where pegged positions cannot be accessed, unless a different hole gets to be drilled along the existing route.

# Potential impacts on communities, individuals, or competing land uses in close proximity

The following impacts are regarded as community impacts:

- Potential groundwater and soil pollution resulting from accidental hydrocarbon spills and soil erosion
- Noise during prospecting operations- There are no residential housing within the radius from the prospecting sites therefore noise impact will be limited
- Influx of persons (jobseekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime
- Creation of limited temporary jobs for locals. Impact on current land use: A large majority of the prospecting area is currently used for agricultural activities including game farming.

# Potential impact of vegetation

Prospecting site will be cleared to a maximum of 600m<sup>2</sup>. Therefore, vegetation clearance will be limited, and sites will be sited as to avoid large trees or shrubs. The site camp will be established at the existing farmhouses therefore no vegetation clearance will be required. Existing access roads will be utilised and in areas without existing farmhouses and roads, gazebo will be erected, and additional roads will be created. It should be noted that roads will be created only when the is a need.

# 14. 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). This section contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding on the holder of the prospecting right after approval of the Environmental Management Programme Report. It is essential that this area be carefully studied, understood, implemented and adhered to at all time.

The applicant shall ensure that this Environmental Management Programme Report is provided to the Project Manager and any other person or organisation who may work on the site. Raycom Resources Development shall ensure that any person or organisation that works on the site complies with the requirements of this Environmental Management Programme Report.

# Responsibility

- The environment affected by the prospecting operations shall be rehabilitated, as far as is practicable, to its existing state.
- The environment affected by prospecting shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals.
- The prospecting shall not result in the pollution of the environment or lead to the degradation thereof.
- It is the responsibility of the Company to ensure that the Project Manager, Employees and contractors are capable of complying with all the statutory requirements which must be met in order to prospect, which includes the implementation of this EMPr.
- The Project Manager will be responsible for the practical implementation of this EMPR.

# Schedule

Ongoing, during the prospecting period.

# **Community relations**

The Company shall notify the landowner two weeks before prospecting operations commence. The notice shall include contact details for any complaints about the actual prospecting activities. The Company shall keep a "Complaints Register" on site. The Register shall contain the contact details of the person who made the complaint, and information regarding the complaint itself. The Company shall respond to all complaints within seven days. Copies of all responses should be kept together with the Register.

# Schedule

Ongoing, during the prospecting period.

# Layout Plan

A copy of the layout plan as provided for in Regulation 2(2) must be available at the prospecting site for scrutiny when required.

# Schedule

Ongoing, during the prospecting period.

# Workers

Environmental awareness training must be provided to all workers. Workers will not be allowed to trespass onto neighbouring properties.

# Schedule

Ongoing, during the prospecting period.

# Protection of flora and fauna

Except to the extent necessary for carrying out the prospecting activities, flora shall not be removed, damaged or disturbed nor shall any vegetation be planted. It is anticipated that the noise and general activity will keep the animal life away from the site whilst drilling is taking place. If animals are encountered during the prospecting operations they must not be killed or injured. Trapping, poisoning and / or shooting of animals is strictly prohibited. No domestic pets are permitted on site.

# Schedule

Ongoing, during the prospecting period.

# Road safety and access

The access road to and routes in the prospecting area must be established in consultation with the landowner and existing roads and tracks shall be used as far as practicable. The erection of temporary gates in fence lines and the open or closed status of farm gates is not necessary as there is already existing fence and gates. Tracks across areas covered by natural vegetation will be kept to the absolute minimum required.

Employees must comply with all speed and traffic regulations on public roads and should not exceed 40km/hour on farm roads. Any changes should be communicated with the stakeholders, landowners and the departments affected.

#### Schedule

Ongoing, during the prospecting period.

#### Water

No water will be sources as the drilling method planned to be used is Air Flush method which uses a compressor. No groundwater will be used or abstracted during the drilling programme. employees will bring in their own drinking water on a daily basis (25L's).

# Schedule

Ongoing, during the prospecting period.

# Office / Camp Site

In order to minimise impacts in the prospecting area, temporary office or camp site (Gazebo) will be erected. All employees will stay offsite during the night. The employees will drive to the site every day when drilling operations are in progress. A security company may be contracted to protect the drilling equipment overnight or over weekends if the drill contractors have a weekend off.

# Schedule

Ongoing, during the prospecting period.

#### Vehicles and Fuel

Vehicles will be kept to the absolute minimum required to complete the prospecting tasks. This will consist of 4WD vehicles (bakkies), a drilling rig, and a fuel bowser. All

servicing and refuelling of the support vehicles will take place in town (i.e. outside of the prospecting area).

If emergency maintenance is required in the field, the Company must ensure that no pollution occurs. When servicing equipment, drip trays shall be used to collect the waste oil, hydraulic fluid and other lubricants. Drip trays shall be provided in the prospecting area for stationary plant (such as the drill rig).

Vehicles and equipment used in the prospecting operation must be adequately maintained so that no spillage of oil, diesel, petrol or hydraulic fluid occurs.

Only the drilling rig will need to be refuelled in the prospecting area. The surface under the refuelling point shall be protected against pollution by means of carefully placed drip trays. If any hazardous substances such as fuels and oils etc. are brought to the site and left overnight then they shall be securely stored in an open area with temporary fencing in a previously disturbed area. This area should be located on a facility with a PVC lining in order to prevent soil and groundwater pollution.

The Company shall ensure that there is always a supply of absorbent material available to absorb / breakdown / encapsulate minor hydrocarbon spills. The quantity of such materials shall be able to handle a minimum of a 200-litre hydrocarbon spill.

Used oil should be collected in a suitable container and this should then be removed from the site, either for resale or for recycling.

Any effluents or waste containing oil, grease or other industrial substances must be collected in a suitable container and removed from the site, either for resale, recycling or for appropriate disposal at a recognised facility.

# Schedule

Ongoing, during the prospecting period.

# **Toilet facilities**

Portable/ mobile chemical toilets must be brought to the site during the Invasive Prospecting Phases (i.e. Drilling). These toilets must be serviced regularly.

# Schedule

Ongoing, during the prospecting period.

# Waste management

Biodegradable waste and non-biodegradable waste (e.g. glass bottles, plastic bags, metal scrap, etc.) shall be disposed of in different containers. All waste must be removed from the site on a daily basis and disposed of at a recognised waste disposal facility (e.g. nearest municipal waste site). Specific precautions shall be taken to prevent waste from being dumped on or in the vicinity of the prospecting site.

If any hazardous waste is generated, then this must be transported to a recognised waste disposal facility.

# Schedule

Ongoing, during the prospecting period.

# Effluents

Any effluents or waste containing oil, grease or other industrial substances must be collected in a suitable container and removed from the site, either for resale, recycling or for appropriate disposal at a recognised facility.

# Schedule

Ongoing, during the prospecting period.

# Access to drill sites

The project manager will flag the most appropriate access route to each drill site. Drill site access tracks shall be rehabilitated, as far as is practicable, to their original state. A map showing the proposed sites for the second phase of activity must be submitted to the DMRE for approval before the second phase of drilling commences.

# Schedule

Peg positions of borehole sites prior to commencement of drilling operations. Vehicle access requirements are ongoing, during each drilling phase.

# Drilling

The following procedures at each drilling site must be complied with:

- Every effort must be made to minimise the area needed at each drilling site.
- Vegetation should not be cut or trimmed unless absolutely essential.
- The area that was disturbed by the drilling operation at each site shall be rehabilitated, as far as is practicable, to its original state as soon as the drilling is completed.
- Photographs, for monitoring purposes, should be taken before drilling commences and after each drilling site has been rehabilitated. These photographs should be included in the required Performance Assessment Reports.

# Schedule

Ongoing, during the prospecting period.

# Heritage Resources

If any heritage resources, including graves or human remains, are encountered these should be reported to responsible authorities immediately and areas where they occur must be fenced out.

# Windblown sand and dust

During prospecting operations all reasonable measures must be taken to minimise the generation of dust and to prevent windblown sand. These measures include:

- Removal or cutting of lowveld vegetation shall be avoided unless absolutely essential.
- Vehicles should not exceed 40 km/hour along farm roads.

# Schedule

Ongoing, during the prospecting period.

# Noise

The noise levels on the site should be limited by taking the following measures:

- Vehicles and equipment should be regularly maintained.
- Silencers should be installed and maintained on machinery, trucks and prospecting equipment.
- No loud music should be played in the prospecting area.

# Schedule

Ongoing, during the prospecting period.

# Rehabilitation

If the access tracks to the drill sites and the drill sites themselves result in new patches of exposed earth, then it will be necessary to re-establish a protective vegetative cover over these areas. This can be achieved by contracting labour to manually cut and prune branches from the local shrubs and spread these over the area to be rehabilitated. Seeds from these branches will fall onto the ground. The spread cut branches will hold the topsoil and sand in place (i.e. protect it from erosion), help to retain moisture in the soil and also initially protect the seedlings of germinating plants.

# Schedule

Rehabilitation of the drilling sites – immediately after each drilling phase.

# Environmental Related Emergencies and Remediation

The Company will operate on the principle that "prevention is better than cure" and so will institute procedures to reduce the risk of emergencies taking place. These will include ensuring that all contracts specify that the contractor is required to comply with all the environmental measures specified in this EMPR, environmental awareness training, on-going risk assessment and emergency preparedness.

# **Emergency telephone numbers**

All employees shall have the telephone numbers of emergency services, including the local ambulance and firefighting service. All employees must be made aware of procedures to be followed during the environmental awareness training course.

# Fire

The Company shall ensure that there is basic firefighting equipment available on Site at all times. This shall include at least two rubber beaters and at least one fire extinguisher. The Company shall advise the relevant authority of a fire as soon as one starts and shall not wait until the fire is out of control.

# Hydrocarbon spills

The Company shall ensure that all employees are aware of the procedures to be followed for dealing with hydrocarbon spills. The Company shall ensure that the necessary materials and equipment for dealing with hydrocarbon spills and leaks is available on Site at all times.

The Company shall ensure that there is always a supply of absorbent material readily available to absorb/ breakdown and where possible is designed to encapsulate minor hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200 I of hydrocarbon liquid spill.

There are a number of different products on the market, which can be used as absorbents and encapsulators of hydrocarbons. The following are examples of these products:

- Spill-Sorb
- Drizzit
- Enretech
- Peat Moss

In the event of a significant hydrocarbon spill, the following procedure is required:

- The source of the spillage shall be isolated
- The spillage must be contained using sand berms, sandbags, pre-made booms, sawdust or absorbent materials.
- The area shall be cordoned off, secured and made safe.
- If a serious spill has occurred in a sensitive environment, then the Department of Environmental Affairs and Development Planning: Directorate Pollution & Waste Management must be notified.

Treatment and remediation of spill areas shall be undertaken to the satisfaction of the Project Manager. Remediation may include in-situ bioremediation using appropriate products (e.g. Enretech-1 and / or the removal of the spillage together with the contaminated soil and the disposal at a recognised facility.

# 15. Motivation where no alternative sites were considered.

Since exploration is temporary in nature no permanent structures will be constructed, Negotiations and agreements will be made with the farm owners to use any existing infrastructure like access roads and their farmhouses.

# 16. Statement motivating the alternative development location within the overall site.

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

As is clear from the information provided, each of the phases is dependent on the results of the preceding phase. The location and extent of drilling will be determined based on information derived from the desktop investigations and surveys. An estimated number and extend have been provided, but this will be finalised.

Since exploration is temporary in nature no permanent structures will be constructed, Negotiations and agreements will be made with the farm owner to use any existing infrastructure like access roads, farmhouses and other things like coreshed.

# 17. 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 ere 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.)

In order to identify the potential impacts associated with the proposed prospecting activities the following steps were undertaken:

- Landowner and stakeholder consultation, Environmental assessment conducted for neighbouring projects.
- A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop

investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:

-South African National Biodiversity Institute (SANBI) Biodiversity

-Geographic Database LUDS system

-Geographic Information System base maps

-Municipal Integrated Development Plan and Spatial Development Framework.

- Site visits conducted in July 2021. The site visit was used to ground truth the desktop information and do consultation.
- The rating of the identified impacts was undertaken in a quantitative manner as provided in this document. The ratings are undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and actual views.
- The identification of management measures is done based on the significance of the impacts and measures that have considered appropriate and successful, specifically as Best Practical and Economical Options.

# 18. 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  | POTENTIAL   | ASPECTS             | PHASE   | SIGNIFICANCE if  | MITIGATION TYPE  | SIGNIFICANCE if  |
|---|---|---------------------|---|--|--|--|
| (E.g. For prospecting – drill<br>site, site camp, ablution<br>facility, accommodation,<br>equipment storage,<br>sample storage, site office,<br>access route<br>etcetcetc<br>E.g. For mining,-<br>excavations, blasting,<br>stockpiles, discard dumps<br>or dams, Loading, hauling<br>and transport, Water<br>supply dams and<br>boreholes,<br>accommodation, offices,<br>ablution, stores,<br>workshops, processing<br>plant, storm water control,<br>berms, roads, pipelines,<br>power lines, conveyors,<br>etcetcetc.) | IMPACT<br>(Including the<br>potential impacts<br>for<br>cumulative<br>impacts)<br>(e.g. dust, noise,<br>drainage<br>surface<br>disturbance, fly<br>rock, surface<br>water<br>contamination,<br>groundwater<br>contamination,<br>air<br>pollution<br>etcetc) | AFFECTED            | In which impact is<br>anticipated<br>(e.g.<br>Constructio<br>n, commissioning,<br>operational<br>Decommissioning,<br>closure, post-<br>closure) | not mitigated<br>Pos High (+12-16),<br>Pos Medium (+6 –<br>11), Pos Low (+1-<br>5), No impact (0),<br>Neg Low (-1-5),<br>Neg Medium (-<br>611), Neg<br>High (-12-16) | (modify, remedy, control, or<br>stop) through<br>(e.g. noise control measures,<br>stormwater control, dust<br>control, rehabilitation, design<br>measures, blasting controls,<br>avoidance, relocation,<br>alternative activity etc.<br>etc)<br>E.g.<br>Modify through alternative<br>method.<br>Control through noise control<br>Control through management<br>and monitoring through<br>rehabilitation | mitigated<br>Pos High (+12-<br>16), Pos Medium<br>(+6 – 11), Pos<br>Low (+15), No<br>impact (0), Neg<br>Low (-1-5), Neg<br>Medium (-611),<br>Neg High (-12-16) |
| Ground / Airborne Surveys   | Poor access<br>control  | Loss of livestock's | Phase 1   | 5  | Access control measures<br>Consultation with landowner   | 5  |
| Data collection & assessment  | None  | Not applicable      | Phase 2   | 0  | No mitigation required   | 0  |
| Data assessment   | None  | Not applicable      | Phase 2   | 0  | No mitigation required   | 0  |
| Site Camp establishment   | None  | Not applicable      | Phase 3   | 0  | No mitigation required   | 0  |

| Drilling | Noise                  | Animals and people      | Prospecting Phase 3 | 7  | Noise Control. Ensure vehicles<br>and equipment and<br>maintained. Silencers should be<br>fitted on all engines.  |   |
|----------|------------------------|-------------------------|---------------------|----|---|---|
| Drilling | Surface<br>Disturbance | Animals,<br>Environment | Prospecting Phase 3 | 10 | Rehabilitate each site as soon<br>as the drilling is completed.<br>Avoid significant vegetation<br>such as trees and large shrubs<br>Raised blade clearing will be<br>conducted to minimize<br>disturbance and aid<br>rehabilitation efforts Fire<br>emergency procedure will be<br>developed to contain and<br>minimise destruction of flora<br>and faunal habitat which may<br>result from fire |   |
| Driving  | Air pollution          | Animals, people,        | Prospecting Phase 3 | 7  | Establish EMPr procedures to  | 5 |

|                                |  | Environment                        |                        |        | minimise the generation of dust.<br>Ensure vehicles drive slowly.<br>Comply with traffic regulations.<br>Keep to speed limits. Ensure<br>compliance with the EMPr.   |     |
|--------------------------------|--|------------------------------------|------------------------|--------|--|-----|
| Drilling                       | Ground water pollution   | Animals, people                    | Prospecting Phase<br>3 | Medium | Establish EMPr procedures to minimise hydrocarbon spills.  | Low |
| Accommodation and Site<br>camp | Solid Waste  | Animals, people<br>and environment | Prospecting Phase<br>3 | Low    | Ensure compliance with the<br>EMPr. Include in environmental<br>awareness training. Workers will<br>not stay overnight at the site.  |     |
| Access roads                   | Soil compaction<br>resulting from<br>repeated use of<br>access roads to<br>drill sites | Loss of soil<br>resources          | Phase 3                | 9      | Where track clearing is<br>necessary, raised blade<br>clearing be conducted to<br>minimize disturbance and aid<br>rehabilitation efforts As part of<br>rehabilitation, all compacted<br>roads and drill pads will be<br>ripped and revegetated |     |

| Access roads                     | Potential<br>destruction of<br>unknown<br>heritage<br>resources | Loss of Cultural<br>and/or Heritage<br>Significant | Phase 3 | 5 | Prior to the establishment of<br>access roads or drill pads, a<br>heritage assessment will be<br>conducted on the selecting<br>drilling sites and access roads. It<br>is anticipated that limited to no<br>heritage resources will be<br>found due to the areas altered<br>and agricultural activities<br>together with game farming. |   |
|----------------------------------|---|--|---------|---|---|---|
| GIS & analytical desktop studies | None identified   |  | Phase 4 | 0 | No mitigation required  | 0 |

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix 3

# 19. 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    |           | RECOMMENDATIONS OF SPECIALIST REPORTS  | SPECI | ALIST   |        | REFERENCE TO        |
|------------|-----------|--|-------|---------|--------|---------------------|
| STUDIES UI | NDERTAKEN |  | RECO  | MMEND   | ATIONS | APPLICABLE          |
|            |           |  | THAT  | HAVE    | BEEN   | SECTION OF REPORT   |
|            |           |  | INCLU | DED     | IN     | WHERE SPECIALIST    |
|            |           |  |       | THE EIA | REPORT | RECOMMENDATIONS     |
|            |           |  | (Mark | with    | an X   | HAVE BEEN INCLUDED. |
|            |           |  | where | applico | able)  |                     |
| Soil Study |           | The soils within the area have the dominant structureless soils and undifferentiated clays in other parts of the prospecting farms.        | Х     |         |        | Part A, Section b   |
|            |           | The land use on the investigation site is covered largely by uncategorized land use type, degraded land, waterbodies, and cultivated land. |       |         |        |                     |
|            |           | The coal, pseudocoal and torbanite/oil shale prospecting infrastructure will have less impact on soils and footprint will be minimal.      |       |         |        |                     |

|                     | It is anticipated that the coal, pseudocoal and torbanite/oil shale prospecting   |   |                   |
|---------------------|---|---|-------------------|
|                     | activities will not lead to severe loss of soils and degradation of agricultural potential at a large scale.  |   |                   |
|                     | Rehabilitation must be done after the period of coal and pseudocoal prospecting activities cease.   |   |                   |
|                     | And all the wetlands and non-perennial rivers will be buffered as "no go" area preferably a 100m buffer will apply  |   |                   |
|                     | No washing of any mechanical equipment's or vehicles should be allowed 100m from the water resources and on site.   |   |                   |
|                     | The core logs of boreholes with coal and pseudocoal material should be<br>cleared from the ground immediately after logging by the geologists to<br>prevent washing and leaching to the water resources during precipitation<br>events.   |   |                   |
| Wetland Delineation | All wetlands and non-perennial streams of increased ecological importance and sensitivity should be considered during all phases of the development.  | Х | Part A, Section b |
|                     | Access to the site should be limited to a single access entry point and access to the remainder of the wetland features should be prohibited to prevent compaction of soils, loss of vegetation and increased erosion.  |   |                   |
|                     | Access into adjacent wetlands and rivers, particularly by vehicles, is to be strictly controlled.   |   |                   |
|                     | All spills must be cleaned up and treated accordingly.  |   |                   |
|                     | Ensure that permanent, seasonal and temporary wetland zone as well as riparian zones functionality is maintained through provision of measures to ensure that soil wetting conditions are maintained.   |   |                   |
| Hydrological Study  | It can be concluded that the prospecting of Coal, Pseudocoal and<br>Torbanite/Oil Shale will cause minimal impact on the water resources. The<br>prospecting right activity should take place during dry seasons where the<br>water percentages in the surrounding streams and wetlands are very low. |   | Part A, Section b |
|                     | Drilling activity should not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site.   |   |                   |

|     | Extreme caution should be taken during prospecting, owing to the perennial<br>rivers (UMhlatuze River) and non-perennial rivers and the Channelled valley-<br>bottom wetlands, existing within the project area. No washing of any<br>mechanical equipment's or vehicles will be allowed near the water resources.<br>All the wetlands and non-perennial streams will be buffered as "no go" area<br>preferably a 1 km buffer will apply. |                   |
|-----|---|-------------------|
| For | It can be concluded that the prospecting activity will cause minimal impact<br>on the water resources. The prospecting right activity should take place during<br>dry seasons where the water percentages in the surrounding streams and<br>wetlands are exceptionally low.   | Part A, Section b |
|     | Drilling activity should not be conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site to avoid water contamination.  |                   |
|     | The exploration boreholes should be cased during drilling and properly rehabilitated after drilling.  |                   |
|     | Extreme caution should be taken during prospecting, owing to the non-<br>perennial river and numerous wetlands existing within and nearby the project<br>area. No washing of any mechanical equipment's or vehicles will be allowed<br>near the water resources.  |                   |
|     | All the wetlands and non-perennial rivers will be buffered as no go area preferably a 100m buffer will apply.   |                   |
|     | The core logs of boreholes with mineral of interest should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall  |                   |

Attach copies of Specialist Reports as appendices (Refer to appendix 6)

# 20. Environmental impact statement

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

The majority of the prospecting activities are non-invasive and hence will have very low to negligible environmental or social impact. The invasive activities that entail the drilling of approximately 15 exploration holes will have a minimal environmental and social impact as the whole drill area will be confined to a space of 0.9 hectares. This needs to be viewed in the context of the entire prospecting license area under application, which covers just 1682.58Ha. The proposed drilling method is Air flush which requires no water to operate. According to the Screening report, the area is:

| Theme   | Very High<br>sensitivity | High<br>sensitivity | Medium<br>sensitivity | Low<br>sensitivity |
|---|--------------------------|---------------------|-----------------------|--------------------|
| Agriculture Theme                             | x                        |                     |                       |                    |
| Animal Species Theme                          | e=                       | X                   |                       |                    |
| Aquatic Biodiversity Theme                    | X                        |                     |                       | 2                  |
| Archaeological and Cultural<br>Heritage Theme |                          | x                   |                       |                    |
| Civil Aviation Theme                          |                          | X                   |                       |                    |
| Defence Theme                                 |                          |                     |                       | X                  |
| Paleontology Theme                            | X                        |                     |                       |                    |
| Plant Species Theme                           |                          |                     | Х                     |                    |
| Terrestrial Biodiversity Theme                |                          |                     |                       | X                  |

With reference to the above results, it was clearly deduced from the maps that the area is sensitive on certain parts of the farm for each category which falls under highly/high or medium sensitive. The area has been chosen to conduct the drilling process bearing in mind the outcomes of the screening report and the fact that the activities of drilling results into minimal impact. Section where according to screening report showcases that they are high sensitive, it will be marked as a no-go area to ensure no heritage, palaeontology, terrestrial and aquatic biodiversity is negatively impacted.

The proposed prospecting operation will not affect any existing alternative land uses on the property or on adjacent property or non-adjacent property. The following actions are subject to the proposed mitigation measures and require monitoring:

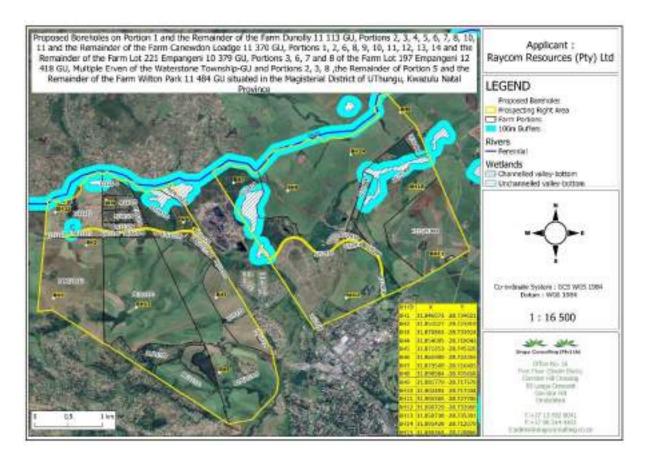
- The clearing of vegetation
- The storage of hydrocarbon based materials on site
- On-site waste management

- The creation of roads/tracks
- The removal of storage and soil
- The traversing of vehicles through populated areas within the prospecting area
- Groundwater: Monitor the water quality of the boreholes
- Surface Water: Monitor water quality of the stream and stream flow
- Monitor the game farm through entrance making of register of all drillers and being recognised by landowners at each farm.

Monitoring of the required mitigation measures is to take place on site daily by the site geologist. Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE.

# (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 .Attached as **Appendix 4** 



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

| Table 20: Summary | of positive and | d negative impacts |
|-------------------|-----------------|--------------------|
|                   | or positive and | a negative impacts |

| Proposed Activity               | Potential Impacts   |
|---------------------------------|---|
| Desktop Study                   | No impacts on site  |
| Airborne / Ground<br>Geophysics | <ul> <li>Low impacts from short-term staff and</li> <li>vehicle access to the site,</li> <li>interfering with the animal grazing paddocks</li> <li>managing fences and gates</li> <li>Livestock/ wild animals falling into dug trenches.</li> <li>Creation of Employment</li> </ul> |

| Drilling<br>Sample processing /<br>evaluation / decision<br>making | <ul> <li>Access tracks</li> <li>Disturbance of vegetation and topsoil</li> <li>Oil &amp; fuel spills</li> <li>Noise</li> <li>Labour issues</li> <li>Litter</li> <li>Possible discovery of fossils</li> <li>Creation of Employment</li> <li>No impacts on site.</li> </ul> |
|--|---|
| Rehabilitation   | Replacing topsoil, covering with brushwood etc  |

The proposed activities have very low significance since these are short term activities. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. Generally prospecting activities have low impact on the environment as they utilize a small space from the applied extent. The planned activities negative impacts can be controlled and avoided or minimised therefore the layout does not require revision. Mitigation measures will be used to control any potential impact. The area being it a sensitive area, drilling positions have been planned on spaces that will not evolve uncontrollable impacts.

# 21. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

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

The objectives of the EMPr will be to:

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

- Provide a management programme that is effective and practical for implementation. Through the implementation of the proposed mitigation measures it is anticipated that the identified social & environmental impacts can be managed and mitigated effectively. Through the implementation of the mitigation and management measures it is expected that:
- Noise generation can be managed through consultation and restriction of n operating hours and by maintaining equipment and applying noise abatement equipment if necessary;
- Dust fall can be managed by application of wet suppression on exposed surfaces and use of water during drilling, however in the method proposed no enormous dust is anticipated, thus no wet suppression is required or dust suppression. Speed limit will be maintained to ensure dust is minimal due to vehicle movement.
- Soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required and disturbed areas will be re vegetated with locally indigenous species as soon as possible.
- Animal life is protected and preserved at all times and the prospecting activities has minimal disturbance to the surrounding habitat with supervision from landowners especially in the game farm.
- Social friction with landowners can be managed by regular engagement with the landowner and the entering into an access agreement with the landowner.

Monitoring of the required mitigation measures is to take place on site daily by the site geologist. Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE.

The Company will operate on the principle that "prevention is better than cure" and so will institute procedures to reduce the risk of emergencies taking place. These will include ensuring that all contracts specify that the contractor is required to comply with all the environmental measures specified in this EMPr, environmental awareness training, on-going risk assessment and emergency preparedness. All employees shall have the telephone numbers of emergency services, including the local ambulance and firefighting service. All employees must be made aware of procedures to be followed during the environmental awareness training course.

# 22. Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

Maintain a minimum 500 m buffer from any infrastructure or dwelling; The Landowner should be engaged at least 1 month prior to any site activities being undertaken once drill sites are known; and a map detailing the drilling locations should be provided to the landowner as well as the DMR prior to commencement of prospecting activities.

The company should comply with all environmental legislation. Specific aspects to be adhered to from environmental legislation include; National Environmental Management Act, Act 107 of 1998 (NEMA), Minerals and Petroleum Resources Development Act, Act 28 of 2002 (MPRDA),

National Water Act, Act36 of 1998 (NWA) and Conservation of Agricultural Resources Act, Act No. 43 of 1983 (CARA)

# 23. Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

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

# 24. Reasoned opinion as to whether the proposed activity should or should not be authorised

# I. Reasons why the activity should be authorized or not.

It is the opinion of the EAP that the proposed prospecting activities should be authorised. The environmental impacts associated with the limited drilling activities are minimal provided that the proposed mitigation is implemented; The spatial extent of the physical impact is less than 0.9Ha for the whole drill site over a prospecting right area of more than 1682.58 ha, 15 drill sites will be established in total throughout the duration of the drilling programme; With appropriate care and consideration the impacts resulting from drilling can be suitably avoided, minimised or mitigated; With implementing the appropriate rehabilitation activities, the impacts associated with the drilling activities can be reversed; and Monitoring of the required mitigation measures is to take place on site daily by the site geologist. Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner to compile the required annual environmental compliance report required by the DMRE.

Without implementation of prospecting activities the knowledge concerning the potential mineral resource within the prospecting right area will not be confirmed.

# II. Conditions that must be included in the authorisation

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

# 25. Period for which the Environmental Authorisation is required.

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

# 26. 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.

Confirmed.

# 27. Financial Provision

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

A financial provision of approximately, **R67 519.00** which includes rehabilitation activities will be made available by Raycom Resources. The applicant undertakes to provide financial provision through funding from the investors of Raycom Resources.

| pplicant:<br>valuator: | Nokuthula Nkosi   |      |               |                     | Ref No.:<br>Date:             |                            | N 30/5/1/1/2/1102<br>Jul-21    |
|------------------------|---|------|---------------|---------------------|-------------------------------|----------------------------|--------------------------------|
| No.                    | Description   | Unit | A<br>Quantity | B<br>Master<br>Rate | C<br>Multiplication<br>factor | D<br>Weighting<br>factor 1 | E=A*B*C*D<br>Amount<br>(Rands) |
| 1                      | Dismantling of processing plant and related structures<br>(including overland conveyors and powerlines) | m3   | 0             | 17,14               | 1                             | 1                          | 0                              |
| 2 (A)                  | Demolition of steel buildings and structures  | m2   | 0             | 238,71              | 1                             | 1                          | 0                              |
| 2(B)                   | Demolition of reinforced concrete buildings and structures  | m2   | 0             | 351,79              | 1                             | 1                          | 0                              |
| 3                      | Rehabilitation of access roads  | m2   | 300           | 42,72               | 1                             | 1                          | 12816                          |
| 4 (A)                  | Demolition and rehabilitation of electrified railway lines  | m    | 0             | 414,61              | 1                             | 1                          | 0                              |
| 4 (A)                  | Demolition and rehabilitation of non-electrified railway lines  | m    | 0             | 226,15              | 1                             | 1                          | 0                              |
| 5                      | Demolition of housing and/or administration facilities  | m2   | 0             | 477,42              | 1                             | 1                          | 0                              |
| 6                      | Opencast rehabilitation including final voids and ramps   | ha   | 0             | 242984,15           | 1                             | 1                          | 0                              |
| 7                      | Sealing of shafts adits and inclines  | m3   | 0             | 128,15              | 1                             | 1                          | 0                              |
| 8 (A)                  | Rehabilitation of overburden and spolls   | ha   | 0             | 166847,44           | 1                             | 1                          | 0                              |
| 8 (B)                  | Rehabilitation of processing waste deposits and evaporation<br>ponds (non-polluting potential)          | ha   | 0             | 207805,47           | 1                             | 1                          | 0                              |
| 8(C)                   | Rehabilitation of processing waste deposits and evaporation<br>ponds (polluting potential)              | ha   | 0             | 603565,59           | 1                             | 1                          | 0                              |
| 9                      | Rehabilitation of subsided areas  | ha   | 0             | 139709,6            | 1                             | 1                          | 0                              |
| 10                     | General surface rehabilitation  | ha   | 0,9           | 132171,31           | 0,1                           | 1                          | 11895,4179                     |
| 11                     | River diversions  | ha   | 0             | 132171,31           | 1                             | 1                          | 0                              |
| 12                     | Fencing   | m    | 0             | 150,77              | 1                             | 1                          | 0                              |
| 13                     | Water management  | ha   | 0             | 50255,25            | 1                             | 1                          | 0                              |
| 14                     | 2 to 3 years of maintenance and aftercare   | ha   | 0             | 17589,34            | 1                             | 1                          | 0                              |
| 15 (A)                 | Specialist study  | Sum  | 0             | 0                   | े <b>1</b>                    | 1                          | 0                              |
| 15 (B)                 | Specialist study  | Sum  | 0             | 0                   | 1                             | 1                          | 0                              |
|                        |   |      |               |                     | Sub To                        | tal 1                      | 24711,4179                     |
| 1                      | Preliminary and General 29  |      | 2965,         | 5,370148 weightin   |                               | factor 2                   | 2965,370148                    |
| 2                      | Contingencies   |      |               | 24                  | 71,14179                      |                            | 2471.14179                     |
| 1                      | Nokuthula Nkosi   |      |               |                     | Subtol                        | tal 2                      | 30147,93                       |

#### CALCULATION OF THE QUANTUM

# a. Explain how the aforesaid amount was derived.

The drilling contractor will be responsible for rehabilitating the drill pad once the drilling activities have been completed at each exploration hole. The financial guarantee was calculated using the DMRE official financial quantum calculator. This information has been provided in the Prospecting Work Programme that was submitted to the DMRE.

#### CALCULATION OF THE QUANTUM

Applicant



| Ref No.: |
|----------|
| Date:    |

DMRE REF: KZN 30/5/1/1/2/11025PR

| valuator: | Nokuthula Nkosi   |      |          |                | Ref No.:<br>Date:        |                       | Jul-21            |  |
|-----------|---|------|----------|----------------|--------------------------|-----------------------|-------------------|--|
|           |   |      | A        | В              | C                        | D                     | E=A*B*C*D         |  |
| No.       | Description   | Unit | Quantity | Master<br>Rate | Multiplication<br>factor | Weighting<br>factor 1 | Amount<br>(Rands) |  |
| 1         | Dismantling of processing plant and related structures<br>(Including overland conveyors and powerlines) | m3   | 0        | 17,14          | 1                        | 1                     | 0                 |  |
| 2 (A)     | Demolition of steel buildings and structures  | m2   | 0        | 238,71         | 1                        | 1                     | 0                 |  |
| 2(B)      | Demolition of reinforced concrete buildings and structures  | m2   | 0        | 351,79         | 1                        | 1                     | 0                 |  |
| 3         | Rehabilitation of access roads  | m2   | 300      | 42,72          | 1                        | 1                     | 12816             |  |
| 4 (A)     | Demolition and rehabilitation of electrified railway lines  | m    | 0        | 414,61         | 1                        | 1                     | 0                 |  |
| 4 (A)     | Demolition and rehabilitation of non-electrified railway lines  | m    | 0        | 226,15         | 1                        | 1                     | 0                 |  |
| 5         | Demolition of housing and/or administration facilities  | m2   | 0        | 477,42         | 1                        | 1                     | 0                 |  |
| 6         | Opencast rehabilitation including final voids and ramps   | ha   | 0        | 242984,15      | 1                        | 1                     | 0                 |  |
| 7         | Sealing of shafts adits and inclines  | m3   | 0        | 128,15         | 1                        | 1                     | 0                 |  |
| 8 (A)     | Rehabilitation of overburden and spoils   | ha   | 0        | 166847,44      | 1                        | 1                     | 0                 |  |
| 8 (B)     | Rehabilitation of processing waste deposits and evaporation<br>ponds (non-polluting potential)          | ha   | 0        | 207805,47      | 1                        | 1                     | 0                 |  |
| 8(C)      | Rehabilitation of processing waste deposits and evaporation<br>ponds (polluting potential)              | ha   | 0        | 603565,59      | 1                        | 1                     | 0                 |  |
| 9         | Rehabilitation of subsided areas  | ha   | 0        | 139709,6       | 1                        | 1                     | 0                 |  |
| 10        | General surface rehabilitation  | ha   | 0,9      | 132171,31      | 0,1                      | 1                     | 11895,4179        |  |
| 11        | River diversions  | ha   | 0        | 132171,31      | 1                        | 1                     | 0                 |  |
| 12        | Fencing   | m    | 0        | 150,77         | 1                        | 1                     | 0                 |  |
| 13        | Water management  | ha   | 0        | 50255.25       | 1                        | 1                     | 0                 |  |
| 14        | 2 to 3 years of maintenance and aftercare   | ha   | 0        | 17589,34       | 1                        | 1                     | 0                 |  |
| 15 (A)    | Specialist study  | Sum  | 0        | 0              | 1                        | 1                     | 0                 |  |
| 15 (B)    | Specialist study  | Sum  | 0        | 0              | 1                        | 1                     | 0                 |  |
|           |   |      |          | í.             | Sub To                   | tel 1                 | 24711,4179        |  |
| 1         | Preliminary and General   |      | 2965,3   | 370148         | weighting                | factor 2              | 2965,370148       |  |
| 2         | Continential  |      | A 19     |                | 71,14179                 |                       | 2471,14179        |  |
| 4         | Contingencies   |      |          | 24             | Subtot                   | 2 10                  | 30147,93          |  |
| 4         | Nokuthula Nkosi   |      |          | 13             | Subtor                   | 812                   | 30141,93          |  |
| E         | 2021/07/05  |      |          |                | VAT (1                   | 5%)                   | 37371,45          |  |
|           |   |      |          | 13             | Grand                    |                       | 67519             |  |

b. 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).

Work will be approved on a phase-by-phase basis, dependent on the results obtained in the previous phase i.e. although prospecting work may be provided for financially in the budget for a specific year, it will only take place if justified. The amount is also reflected in the Prospecting Work Programme submitted to the DMRE which amount to R1 117 000.00.

#### 28. Specific Information required by the competent Authority

- a. 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** 

Current land uses inside the prospecting area such as sugar cane farming, grass harvesting and free moving of horses may be temporarily impacted through the presence of the fenced areas that drill rigs will operate within. These are however, small areas, approximately 30m x 20m in total. These areas will be rehabilitated post drilling activities and the areas will once again become available for grazing and other uses. The current access roads are useful, however creations will be made.

# 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).

Whilst no heritage resources have been identified within the proposed prospecting area care will be taken to avoid any sensitive heritage resources that may otherwise be identified during the prospecting. Where graves or fossils are identified proposed boreholes will be moved to avoid features of this type. If fossils or graves are discovered, the relevant authorities will be immediately notified and drilling will be stopped in this area unless the heritage areas are closer to whereby where they occur can be demarcated and declared as a no-go area. The area does threatened ecosystems or critical biodiversity, however no sensitive parts will be negatively affected by the drilling procedures owing to the small scale of the prospecting activity. The only potential negative impact is related to the proposed borehole sites that will need to be cleared and possibly access roads to some of these sites. These should be placed on previously disturbed land or tracks. Any natural vegetation should be avoided. The location of the boreholes/pegging must be done.

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

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

The proposed site was selected based on extensive research and also following on information from previous and current prospecting as well as mining activities around

the area. The area is known for coal resources and there are mines currently mining close to the application area (The Richards Quarry) and also the Mnisi coal Mine. In terms of the technologies proposed, the proposed prospecting has been chosen based on the history and current state of coal in the area. The prospecting activities proposed in the Prospecting Works Programme (PWP) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

# PART B

# **ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

# 1) Draft environmental management programme.

#### a) **Details of the EAP**,

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

Details of EAP are included in PART A section 1 (a).

# b) Description of the Aspects of the Activity

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

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

# c) Composite Map

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

Exploration is a temporal activity thus no permanent structures will be erected, however a general layout is enclosed in Figure 4.

# 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)

The following section details the goals and objectives that Raycom Resources will aim to achieve. It includes both a commitment to ensure legal compliance and then highlights the goals and objective for those impacts which are deemed most significant for exploration.

# **Environmental Legislation**

To comply with all environmental legislation. Specific aspects to be adhered to from environmental legislation include;

# National Environmental Management Act, Act 107 of 1998 (NEMA)

As the NEMA is the cornerstone of all environmental legislation, the management measures implemented by the Raycom Resources will strive to adhere to the principles of NEMA:

- That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- that the disturbance of landscapes and sites that constitute the nations cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;
- that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

#### I. Volumes and rate of water use required for the operation.

No water will be required for drilling purposed as the method to be adopted is Air flush drilling method.

# II. Has a water use licence has been applied for?

No water licence has been applied for.

### III. Impacts to be mitigated in their respective phases Measures to rehabilitate the environment affected by the undertaking of any listed activity

| ACTIVITIES  | PHASE   | SIZE AN   | MITIGATION MEASURES   | COMPLIANCE WITH  | TIME PERIOD FOR   |
|---|---|---|---|--|---|
| (E.g. For prospecting - drill<br>site, site camp, ablution<br>facility, accommodation,<br>equipment storage,<br>sample storage, site<br>office, access route<br>etcetcetc<br>E.g. For mining,-<br>excavations, blasting,<br>stockpiles, discard dumps<br>or dams, Loading, hauling<br>and transport, Water<br>supply dams and<br>boreholes, | (of<br>operati<br>on in which<br>activity<br>will<br>take place.<br>State;<br>Planning<br>and design,<br>Pre-<br>Construction'<br>Construction, | SIZE AN<br>SCALE c<br>disturbanceor<br>(volumes,<br>tonnages<br>and hectare<br>m <sup>2</sup> ) | MITIGATION MEASURES<br>(describe how each of the<br>recommendations in herein will<br>remedy the cause of pollution or<br>degradation and migration of<br>pollutants) | COMPLIANCE WITH<br>STANDARDS<br>(A description of how each of<br>the recommendations herein<br>will comply with any prescribed<br>environmental management<br>standards or practices that<br>have been identified by<br>Competent Authorities) | TIMEPERIODFORIMPLEMENTATIONDescribe the time period when<br>the measures in the<br>environmentalmanagement programme must<br>bebeimplemented<br>Measuresbeimplemented<br>when<br>required.With regard to Rehabilitation<br>specifically this must take<br>place at the earliest<br>opportunityWith regard to<br>Rehabilitation, therefore state<br>either:- |
| accommodation, offices,<br>ablution, stores,<br>workshops, processing<br>plant, storm water control,<br>berms, roads, pipelines,<br>power lines, conveyors,<br>etcetcetc.)  | Operational,<br>Rehabilitation,<br>Closure, Post<br>closure).   |   |   |  | upon cessation of the<br>individual activity or.<br>Upon the cessation of mining,<br>bulk sampling or alluvial<br>diamond prospecting as<br>the case may be.  |
| Site Office and core shed   | Prospecting<br>Phase 3  | N/A   | No permanent structures for offices<br>and coreshed will be put on site.  | N/A  | N/A   |

| Accommodation | Prospecting | N/A | In order to minimise impacts in the | N/A | N/A |
|---------------|-------------|-----|-------------------------------------|-----|-----|
|               | Phase 3     |     | prospecting area, no camp site will |     |     |
|               |             |     | be established. All employees will  |     |     |
|               |             |     | stay outside prospecting area. The  |     |     |
|               |             |     | employees will drive to the site    |     |     |
|               |             |     | every day when drilling operations  |     |     |
|               |             |     | are in progress.                    |     |     |
|               |             |     | A security company may be           |     |     |
|               |             |     | contracted to protect the drilling  |     |     |
|               |             |     | equipment overnight or over         |     |     |
|               |             |     | weekends if the drill contractors   |     |     |
|               |             |     | have a weekend off.                 |     |     |
|               |             |     |                                     |     |     |
|               |             |     |                                     |     |     |

### IV 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).   | POTENTIAL<br>IMPACT   | ASPECTS<br>AFFECTED | PHASE<br>In which impact is<br>anticipated  | MITIGATION<br>TYPE   | STANDARD TO BE<br>ACHIEVED  |
|--|---|---------------------|---|--|---|
| (E.g. Excavations, blasting,<br>stockpiles, discard dumps<br>or dams, Loading, hauling<br>and transport, Water<br>supply dams and<br>boreholes,<br>accommodation, offices,<br>ablution, stores,<br>workshops, processing<br>plant, storm water control,<br>berms, roads, pipelines,<br>power lines, conveyors,<br>etcetcetc.). | (e.g. dust, noise,<br>drainage<br>surface<br>disturbance,<br>fly rock,<br>surface water<br>contamination,<br>groundwater<br>contamination,<br>air<br>pollution<br>etcetc) |                     | (e.g. Construction,<br>commissioning,<br>operational<br>Decommissioning,<br>closure, post<br>closure) | <ul> <li>(modify, remedy, control, or stop)<br/>through</li> <li>(e.g. noise control measures, storm-<br/>water control, dust control,<br/>rehabilitation, design measures,<br/>blasting controls, avoidance,<br/>relocation,<br/>alternative activity etc. etc)</li> <li>E.g.</li> <li>Modify through alternative<br/>method.</li> <li>Control through noise control</li> </ul> | (Impact avoided, noise<br>levels, dust levels,<br>rehabilitation standards, end<br>use objectives) etc. |

|                           |   |  |              | <ul> <li>Control through management<br/>and monitoring</li> <li>Remedy through rehabilitation</li> </ul>   |  |
|---------------------------|---|--|--------------|--|--|
| Site Office and core shed | Physical surface<br>disturbance   | Visual                                 | Post Closure | No construction on site. If need be to<br>utilise existing building and<br>agreement to be done with farmer                                      | Impact avoided                                   |
| Accommodation             | Physical surface<br>disturbance   | sturbance utilise existing building of |              | No construction on site. If need be to<br>utilise existing building and<br>agreement to be done with farmer                                      | Impact avoided                                   |
| Site Establishment        | Dust and<br>Noise from<br>Vehicles driving in<br>veld to access<br>the proposed drill<br>site | Air                                    | Operation    | Noise control, Reduce dust by driving<br>slow. Ensure vehicles and equipment<br>are maintained.<br>Silencers should be fitted on all<br>engines. | Impact controlled<br>SANS10103<br>NEM:AQA GNR827 |
| Site Establishment        | Carbon emissions<br>due to internal<br>combustion of<br>fuel                                  | Air                                    | Operation    | Ensure vehicles and equipment are maintained.  | Impact controlled<br>NEM:AQA GNR827              |

| Drilling | Noise | Environmental | Operation | Ensure vehicles and equipment are | Impact controlled |
|----------|-------|---------------|-----------|-----------------------------------|-------------------|
|          |       | nuisance      |           | maintained. Silencers should be   |                   |
|          |       |               |           | fitted on all engines.            |                   |

| Drill site | Removal of<br>top soil for sump.<br>Drainage surface<br>disturbance | Biodiversity loss          | Operations and<br>Post Closure | with topsoil that has the surrounding<br>vegetation seedbanks.<br>Badly damaged areas shall be<br>fenced in to enhance rehabilitation.<br>Areas to be rehabilitated must be<br>planted with a mixture of local<br>pioneer species indigenous to the<br>area, as soon as the new growing<br>season starts.<br>To get the best results in a specific<br>area, it is a good idea to consult with<br>a vegetation specialist officer of the<br>Dept of<br>Agriculture or the local extension.<br>Seed distributors can also give<br>valuable advice as to the mixtures<br>and amount of seed necessary to<br>seed a certain area.<br>Re-seeding, as well as fencing in of<br>badly damaged areas, will always<br>be at the discretion of the<br>Environmental Control Officer and in<br>compliance with EMPR. | Impact controlled |
|------------|---|----------------------------|--------------------------------|---|-------------------|
| Drill Site | Dust  | Air pollution              | Operation                      | Comply to dust control measures   | Impact controlled |
| Drilling   | Use of drilling<br>machine  | Ground water contamination | Operation and Post<br>Closure  | Put control measures by using air flush.  | Impact controlled |

| Drilling | Failure of drill<br>sludge control<br>system | Surrounding<br>environment,<br>Ground water<br>contamination | Operation | Establish EMPr procedures to<br>minimise hydrocarbon spills and<br>ensure you use a flush method. | Impact controlled |
|----------|--|--|-----------|---|-------------------|
| Drilling |  | Surrounding<br>environment<br>and water<br>contamination     | Operation | Establish EMPr procedures to minimise hydrocarbon spills.   | Impact controlled |

### V Impact Management Actions

(B 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).

| ACTIVITY   | POTENTIAL IMPACT  | MITIGATION | TIME PERIOD FOR  | COMPLIANCE WITH STANDARDS   |
|--|---|------------|--|---|
| whether listed or not<br>listed.   |   | ТҮРЕ       | IMPLEMENTATION   |   |
| (E.g. Excavations, blasting,<br>stockpiles, discard dumps<br>or dams, Loading, hauling<br>and transport, Water<br>supply dams and<br>boreholes,<br>accommodation, offices,<br>ablution, stores,<br>workshops, processing<br>plant, storm water control,<br>berms, roads, pipelines,<br>power lines, conveyors,<br>etcetcetc.). | (e.g. dust, noise,<br>drainage surface<br>disturbance, fly rock,<br>surface water<br>contamination,<br>groundwater<br>contamination, air<br>pollution etcetc) | through    | when the measures in the<br>environmental<br>management programme<br>must be implemented<br>Measures must be<br>implemented when<br>required. With regard to<br>Rehabilitation specifically<br>this must take place at the<br>earliest opportunity. With | (A description of how each of the<br>recommendations in 2.11.6 read<br>with<br>2.12 and 2.15.2 herein will comply<br>with any prescribed<br>environmental<br>management standards or<br>practices that have been<br>identified by Competent<br>Authorities) |

| Site Office and core shed | Physical surface<br>disturbance   | No construction on site. If need be<br>to utilise existing building and<br>agreement to be done with farmer                                      |                         | N/A  |
|---------------------------|---|--|-------------------------|--|
| Accommodation             | Physical surface<br>disturbance   | No construction on site. If need be<br>to utilise existing building and<br>agreement to be done with farmer                                      |                         | N/A  |
| Site Establishment        | Dust and Noise from<br>Vehicles driving in veld<br>to access the proposed<br>drill site | Noise control, Reduce dust by<br>driving slow. Ensure vehicles and<br>equipment are maintained.<br>Silencers should be fitted on all<br>engines. |                         | Raycom Resources will ensure that<br>all employees,<br>contractors, visitors comply with<br>the EMPR |
| Site Establishment        | Carbon emissions due  | Ensure vehicles and equipment  | Ongoing during activity | Raycom Resources will  |

|            | to internal combustion of<br>fuel                               | are maintained.  |                                       | ensure that all employees,<br>contractors, visitors comply with<br>the EMPr                          |
|------------|---|--|---------------------------------------|--|
| Water      | Affecting Okula and<br>Mandozi                                  | No water will be used during drilling  | Monitoring ground water               | Have annual checking's.  |
| Drilling   | Noise   | Ensure vehicles and equipment<br>are maintained. Silencers should<br>be fitted on all engines. |                                       | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with<br>the EMPr |
| Drill site | Removal of topsoil for<br>sump. Drainage surface<br>disturbance | _  | Upon cessation of individual activity | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with<br>the EMPr |
| Drill Site | Dust  | Comply to dust control measures  | Ongoing during activity               | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with<br>the EMPR |
| Drilling   | Use of air flush during drilling operations.                    | Put control measures   | Ongoing during activity               | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with the EMPR    |

| Drilling | _ | Establish EMPR procedures to<br>minimise hydrocarbon spills. | Ongoing during activity | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with<br>the EMPR |
|----------|---|--|-------------------------|--|
| Drilling |   | Establish EMPR procedures to<br>minimise hydrocarbon spills. | Ongoing during activity | Raycom Resources will ensure that<br>all Employees, contractors, visitors<br>comply with<br>the EMPR |

### 30. 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.

For a prospecting operation such as this, the primary closure and environmental objectives are to:

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

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

The environmental objectives in relation to closure were consulted with affected parties. It was explained that should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use. The end-use of the area will therefore not be changed by the prospecting operations.

However, should the prospecting operation yield positive results, then the farm could be subject to a mining right application and another more comprehensive Public Participation, Scoping, EIA and EMPR process. If a mining right is granted then the area will be rehabilitated according to the requirements of the approved Environmental Management Programme that would apply throughout the life of the mine.

# (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 activities involved are for prospecting and will involve no permanent removal of soil and rock.

Should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use. The end-use of the area will therefore not be changed by the prospecting operations.

However, should the prospecting operation yield positive results, then the farm could be subject to a mining rights application and another more comprehensive Public Participation, Scoping, EIA and EMPR process. If a mining right is granted then the area will be rehabilitated according to the requirements of the approved Environmental Management Programme that would apply throughout the life of the mine.

| le | e 21: Rehabilitation pla                 |   |   |
|----|--|---|---|
|    | Aspect / Impact                          | Rehabilitation Measure  | Monitoring<br>Frequency &<br>Responsibility                                       |
|    | Removal of<br>construction<br>structures | <ul> <li>Clear and completely remove from<br/>site all construction plant<br/>equipment, storage containers,<br/>signage, temporary fencing,<br/>temporary services, fixtures and<br/>any other temporary works<br/>(excluding those already on the<br/>site); and</li> <li>Ensure that all access roads utilised<br/>during construction (which are not<br/>earmarked for closure and<br/>rehabilitation) are returned (as far<br/>as possible) to their state prior to<br/>construction.</li> </ul> | Once off,<br>Raycom<br>Resources  |
|    | Vegetation<br>clearing/Replant<br>ing    | <ul> <li>Remove any emerging alien and invasive vegetation to prevent further establishment;</li> <li>All planting work is to be undertaken by suitably qualified personnel making use of the appropriate equipment;</li> <li>Transplant during the winter (between April and September); and</li> <li>Plant indigenous plants to minimise the spread of alien and invasive vegetation.</li> </ul>  | When<br>revegetation is<br>done and in<br>blooming season,<br>Raycom<br>Resources |

Table 21: Rehabilitation plan.

| excavated material / approved |
|-------------------------------|
|-------------------------------|

| Waste and<br>Rubble<br>Removal | <ul> <li>compost (per volume about one quarter of the plant hole), one cup of 2:3:2 fertiliser and an approved ant and termite poison.</li> <li>Clear the site of all inert waste and rubble, including surplus rock, foundations and batching plant aggregates.</li> <li>Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site.</li> </ul>   | Once off,<br>Raycom<br>Resources |
|--------------------------------|---|----------------------------------|
| Solid &<br>Hazardous<br>Waste  | <ul> <li>Environmental Management<br/>Programme (EMPRR).</li> <li>Dispose of all hazardous waste not<br/>earmarked for reuse, recycling or<br/>resale at a registered hazardous<br/>waste disposal site.</li> <li>Remove from site all temporary fuel<br/>stores, hazardous substance stores,<br/>hazardous waste stores and<br/>pollution control sumps. Dispose of<br/>hazardous waste in the approved<br/>manner.</li> <li>Do not hose oil or fuel spills into a<br/>storm water drain or sewer, or into<br/>the surrounding natural<br/>environment.</li> </ul> | Once off,<br>Raycom<br>Resources |

| Erosion<br>protection | <ul> <li>Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the</li> <li>construction site.<br/>Retain shrubbery and grass species</li> <li>wherever possible.<br/>Perform regular monitoring and maintenance of erosion control measures.</li> </ul> | events |
|-----------------------|---|--------|
|-----------------------|---|--------|

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

The amount for rehabilitation is anticipated to be an operating cost and provided for in the Prospecting Work Programme. Drill site rehabilitation will be undertaken by the contract drilling company on completion of every borehole. This will include:

- The removal of all wastes generated on-site by the drilling activity.
- Backfilling of sumps, where applicable
- The ripping of cleared and compacted soils where this may have occurred; and
- The re-contouring of drill sites to resemble the topography similar to that prior to the commencement of drilling activities.
- Take photos of the site before prospecting commences and after prospecting.

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

The quantum of the financial provision required is therefore: **R 67 51.00**. The Company must annually update and review the quantum of the financial provision *(Regulation 54 (2))*. Table for calculations attached below.

#### CALCULATION OF THE QUANTUM

Applicant:



Ref No.:

DMRE REF: KZN 30/5/1/1/2/11025PR

| Applicant:<br>Evaluator: | Nokuthula Nkosi   | Nokuthula Nkosi |          |  | Ref No.:<br>Date:        |                       | Jul-21            |  |
|--------------------------|---|-----------------|----------|--|--------------------------|-----------------------|-------------------|--|
|                          | 2+  |                 | A        | В  | C                        | D                     | E=A*B*C*D         |  |
| No.                      | Description   | Unit            | Quantity | Master<br>Rate   | Multiplication<br>factor | Weighting<br>factor 1 | Amount<br>(Rands) |  |
| 1                        | Dismantling of processing plant and related structures<br>(including overland conveyors and powerlines) | m3              | 0        | 17,14  | 1                        | 1                     | o                 |  |
| 2 (A)                    | Demolition of steel buildings and structures  | m2              | 0        | 238,71   | 1                        | 1                     | 0                 |  |
| 2(B)                     | Demolition of reinforced concrete buildings and structures  | m2              | 0        | 351,79   | 1                        | 1                     | 0                 |  |
| 3                        | Rehabilitation of access roads  | m2              | 300      | 42,72  | 1                        | 1                     | 12816             |  |
| 4 (A)                    | Demolition and rehabilitation of electrified railway lines  | m               | 0        | 414,61   | 1 1                      | 4                     | 0                 |  |
| 4 (A)                    | Demolition and rehabilitation of non-electrified railway lines  | m               | 0        | 226,15   | 1                        | 1                     | 0                 |  |
| 5                        | Demolition of housing and/or administration facilities  | m2              | 0        | 477,42   | 1                        | 1                     | 0                 |  |
| 6                        | Opencast rehabilitation including final voids and ramps   | ha              | 0        | 242984,15  | 1                        | 1                     | 0                 |  |
| 7                        | Sealing of shafts adits and inclines  | m3              | 0        | 128,15   | 1                        | 1                     | 0                 |  |
| 8 (A)                    | Rehabilitation of overburden and spolls   | ha              | 0        | 166847,44  | 1                        | 1                     | 0                 |  |
| 8 (B)                    | Rehabilitation of processing waste deposits and evaporation<br>ponds (non-polluting potential)          | ha              | 0        | 207805,47  | 1                        | 1                     | 0                 |  |
| 8(C)                     | Rehabilitation of processing waste deposits and evaporation<br>ponds (polluting potential)              | ha              | 0        | 603565,59  | 1                        | 1                     | 0                 |  |
| 9                        | Rehabilitation of subsided areas  | ha              | 0        | 139709,6   | 1                        | 1                     | 0                 |  |
| 10                       | General surface rehabilitation  | ha              | 0,9      | 132171,31  | 0,1                      | 1                     | 11895,4179        |  |
| 11                       | River diversions  | ha              | 0        | 132171,31  | 1                        | 1                     | 0                 |  |
| 12                       | Fencing   | m               | 0        | 150,77   | 1                        | 1                     | 0                 |  |
| 13                       | Water management  | ha              | 0        | 50255,25   | 1                        | 1                     | 0                 |  |
| 14                       | 2 to 3 years of maintenance and aftercare   | ha              | 0        | 17589,34   | 1                        | 1                     | 0                 |  |
| 15 (A)                   | Specialist study  | Sum             | 0        | 0  | <u>1</u>                 | 1                     | 0                 |  |
| 15 (B)                   | Specialist study  | Sum             | 0        | 0  | t                        | 1                     | 0                 |  |
|                          |   |                 |          | 1  | Sub To                   | tal 1                 | 24711,4179        |  |
| 4                        | Preliminary and General   |                 | 2965     | 370148   | weighting                | factor 2              | 2965,370148       |  |
| 194                      |   |                 |          | All and a second s |                          |                       | 2009/3808/2 F 192 |  |
| 2                        | Contingencies   |                 |          | 2471,14179   |                          |                       | 2471,14179        |  |
|                          | Aleksakola Alkand   |                 |          | 13   | Subtot                   | al 2                  | 30147,93          |  |
| N<br>E                   | Nokuthula Nkosi<br>2021/07/05   |                 |          | 23   | VAT (1                   | 5%)                   | 37371,45          |  |
|                          |   |                 |          | 1  | Grand 1                  | Total                 | 67519             |  |

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

Raycom Resources undertakes to provide financial provision and a Bank Guarantee will be the method of providing for the financial provision. The amount is anticipated to be an operating cost and provided for in the Prospecting Work Programme.

## Table 22: Application Quantum Calculation



Applicant: Evaluator:



Ref No.:

Date:

Jul-21

|        |   |      | A        | В              | C                        | D                     | E=A*B*C*D         |
|--------|---|------|----------|----------------|--------------------------|-----------------------|-------------------|
| No.    | Description   | Unit | Quantity | Master<br>Rate | Multiplication<br>factor | Weighting<br>factor 1 | Amount<br>(Rands) |
| 1      | Dismantling of processing plant and related structures<br>(including overland conveyors and powerlines) | m3   | 0        | 17,14          | 1                        | 1                     | 0                 |
| 2 (A)  | Demolition of steel buildings and structures  | m2   | 0        | 238,71         | 1                        | 1                     | 0                 |
| 2(B)   | Demolition of reinforced concrete buildings and structures  | m2   | 0        | 351,79         | 1                        | 1                     | 0                 |
| 3      | Rehabilitation of access roads  | m2   | 300      | 42,72          | 1                        | 1                     | 12816             |
| 4 (A)  | Demolition and rehabilitation of electrified railway lines  | m    | 0        | 414,61         | 1                        | 1                     | 0                 |
| 4 (A)  | Demolition and rehabilitation of non-electrified railway lines  | m    | 0        | 226,15         | 1                        | 1                     | 0                 |
| 5      | Demolition of housing and/or administration facilities  | m2   | 0        | 477,42         | 1                        | 1                     | 0                 |
| 6      | Opencast rehabilitation including final voids and ramps   | ha   | 0        | 242984,15      | 1                        | 1                     | 0                 |
| 7      | Sealing of shafts adits and inclines  | m3   | 0        | 128,15         | 1                        | 1                     | 0                 |
| 8 (A)  | Rehabilitation of overburden and spoils   | ha   | 0        | 166847,44      | 1                        | 1                     | 0                 |
| 8 (B)  | Rehabilitation of processing waste deposits and evaporation<br>ponds (non-polluting potential)          | ha   | 0        | 207805,47      | 1                        | 1                     | 0                 |
| 8(C)   | Rehabilitation of processing waste deposits and evaporation<br>ponds (polluting potential)              | ha   | 0        | 603565,59      | 1                        | 1                     | 0                 |
| 9      | Rehabilitation of subsided areas  | ha   | 0        | 139709,6       |                          | 1                     | 0                 |
| 10     | General surface rehabilitation  | ha   | 0,9      | 132171,31      | 0,1                      | 1                     | 11895,4179        |
| 11     | River diversions  | ha   | 0        | 132171,31      | 1                        | 1                     | 0                 |
| 12     | Fencing   | m    | 0        | 150,77         | 1                        | 1                     | 0                 |
| 13     | Water management  | ha   | 0        | 50255,25       | 1                        | 1                     | 0                 |
| 14     | 2 to 3 years of maintenance and aftercare   | ha   | 0        | 17589,34       | 1                        | 1                     | 0                 |
| 15 (A) | Specialist study  | Sum  | 0        | 0              | 1 1                      | 1                     | 0                 |
| 15 (B) | Specialist study  | Sum  | 0        | 0              | 1                        | 1                     | 0                 |
|        |   |      |          | 1              | Sub To                   | tal 1                 | 24711,4179        |

| 4                         | Proliminary and Canaral | 2965,370148 | weighting factor 2 | 2965,370148 |
|---------------------------|-------------------------|-------------|--------------------|-------------|
| 1 Preliminary and General |                         | 2803,370140 | 1                  | 2903,370140 |
| 2                         | Contingencies           | 247         | 1,14179            | 2471,14179  |
| ь — 70-                   | 55 C                    |             | Subtotal 2         | 30147,93    |
| SIGN                      | Nokuthula Nkosi         |             |                    |             |
| DATE                      | 2021/07/05              | 1           | VAT (15%)          | 37371,45    |
|                           |                         |             |                    |             |
|                           |                         | 1           | Grand Total        | 67519       |

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

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

| SOURCE ACTIVITY                  | IMPACTS REQUIRING<br>MONITORING<br>PROGRAMMES            | FUNCTIONAL REQUIREMENTS FOR<br>MONITORING | ROLES AND RESPONSIBILITIES<br>(FOR THE EXECUTION OF THE<br>MONITORING<br>PROGRAMMES) | MONITORING AND REPORTING<br>FREQUENCY and TIME PERIODS<br>FOR IMPLEMENTING IMPACT<br>MANAGEMENT ACTIONS   |
|----------------------------------|--|---|--|---|
| Drilling (Site<br>Establishment) | The clearing of<br>vegetation                            | Monitor daily                             | Geologist/ EAP   | Daily by Geologist, Annually by<br>independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR |
| Drilling                         | The storage of<br>hydrocarbon based<br>materials on site | Monitor daily                             | Geologist/ EAP   | Daily by Geologist, Annually by<br>independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR |
| Drilling                         | On-site waste<br>management                              | Monitor Daily                             | Geologist/ EAP   | Daily by Geologist, Annually by<br>independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR |

| Drilling | The creation of | Monitor daily | Geologist/ EAP | Daily by Geologist, Annually by    |
|----------|-----------------|---------------|----------------|------------------------------------|
|          | roads/tracks    |               |                | independent environmental          |
|          |                 |               |                | assessment practitioner to compile |
|          |                 |               |                | the required annual environmental  |
|          |                 |               |                | compliance report required by the  |
|          |                 |               |                | DMR                                |
| Drilling | The removal of  | Monitor Daily | Geologist/ EAP | Daily by Geologist, Annually by    |

|          | storage and soil   |               |                | independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR                                    |
|----------|--|---------------|----------------|---|
| Drilling | Driving activities   | Monitor Daily | Geologist/ EAP | Daily by Geologist, Annually by<br>independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR |
| Drilling | Groundwater:<br>Monitor the water<br>quality of the<br>boreholes | Monitor Daily | Geologist/ EAP | Daily by Geologist, Annually by<br>independent environmental<br>assessment practitioner to compile<br>the required annual environmental<br>compliance report required by the<br>DMR |

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

Environmental audit report will be submitted annually.

### i) Environmental Awareness Plan

## a. Manner in which the applicant intends to inform his or her Employees of any environmental risk which may result from their work.

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

employees should be provided with environmental awareness training before prospecting operations start. All new employees should be provided with environmental awareness training Induction courses will be provided to all employees by a reputable trainer.

# b. Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

No risks have been identified other than those that have been identified within this document, these are to be communicated to all contractors and all contractors are to be provided with a copy of the approved EMPR. Environmental training needs for each section should be identified and addressed to ensure environmental management is part of day-to-day operations. The environmental risk responsibilities guide the training requirements of each individual. The responsibility for each level of management according to the Integrated Risk Management and ISO14001 role descriptions are. Environmental training recommended for the different levels of management guide the training needs identification process. This is a minimum guideline, and any additional training can be added where section specific issues or high-risk items require training and awareness It is the responsibility of the line manager to ensure environmental training needs for individual staff members are identified, agreed to, facilitated and tracked.

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

The financial provision will be reviewed annually indicating work that would have been completed and money used for rehabilitation as required by the law.

### 2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports  $\boxtimes$
- 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;  $\boxtimes$  and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.

Signature of the environmental assessment practitioner:

Name of company:

Date:

-END-

#### Appendix 1: DMR letters



Private Bag X 54307, Centers, 4080, 333 Antes Londonte Street, 3<sup>14</sup> Floor Durban Bay House, Durban, Ter (011) 335 9080, Fax (031) 306 Steen Reference: K2W 356111(3) 1025 PH Empirica: Mr. Sandia, Apapta Email address: Sandha Astronomical Street, an

#### REGISTERED MAIL

THE MANAGER RAYCOM RESOURCES (PTY) LTD P.O BOX 114 KYALANI JOHANNESBURG 1684

Dear Sin/Madam

ACCEPTANCE OF AN APPLICATION FOR PROSPECTING RIGHT IN TERMS OF SECTION 16(4) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002)

- Please be informed that your application for Prospecting of Coal on Portion 1 and the Remainder of the Farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the Farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the Farm Lot 221 Empangeni No. 10 379-GU, Portions 3, 6, 7 and 8 of the Farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8 the Remainder of Portion 5, and the Remainder of Farm Wilton Park No. 11 484-GU situated in the Magisterial District of UThungulu, is hereby accepted on the above mentioned properties, in terms of section 16 (2) of the Act
- 2. Take note that in light of the minimum requirements as stipulated on regulation 16 (1) and 16 (2) of the EIA Regulations, your application for an Environmental Authorisation was deemed incomplete as it was not accompanied by this

162N 2015111021 PR

Asseptiants Of An Application Fer Prospecting Right In Terms Of Section 16 Of The Minetal And Petodeum Resources Development Act, (Ad 28 Of 2002) Te Prospecti Fer Cold, Provideout, Torbania/Of Shale On Postan 1 And The Hamalader Of The Farm Queeky No. 11 115-Qu, Postants 2, 2, 4, 5, 5, 7, 6, 9, 10, 11 And The Remainder Of The Farm Queeky Lodge No. 11 370-Su, Postants 1, 2, 4, 5, 9, 10, 11, 12, 13, 14 And The Remainder Of The Farm Lot 271 Empangent No. 10 375-Gu, Postant 3, 4, 7 And 3 Of The Farm Lot 107 Empanyem No. 12 418-Gu, Multiple filmen Of The Weterstein Torestite-GU And Postants 2, 2, 8 The Remainder Of Postant 8, And The Remainder Of Pare Witten Park, No. 11 454-Gu Student In The Magnitude Olistics Of Ultimagues: Response Resource (Phyl. Ud. 8/P

- acceptance letter as per Regulation 16 (1) (Ix) and considering that it is now completed by this acceptance letter, you are hereby required to submit the documents as stipulated on Regulation 19 (1) to 19 (8) of the EIA Regulation (only in cases where Basic Assessment Report is applicable or Regulation 21 (Scoping Report and Regulation 23 (Environmental Impact Report) (only in cases where applicable). All submission timeframes are effective from the dates of this acceptance letter.
  - Please take further note that in terms of section 16 (4) of the Act, you are required to: -
  - 3.1 Upload unto the SAMRAD system one copy and submit three (03) hard copies of the requisite environmental reports as required by section 16 of the MPRDA within ninety (90) days from the date of this letter. (24<sup>th</sup> June 2021).
  - 3.2to consult in the prescribed manner with the landowner, lawful occupier and any interested and affected party including the Land Restitution Commission and include the result of such consultation in the relevant environmental reports to be submitted and uploaded on the SAMRAD system on or before 12<sup>th</sup> April 2021 (within 30 days from the date of this letter)

Please note that the consultation process referred to in paragraph 2.2 above does not imply issuing letters and requesting the affected parties to indicate whether they support your proposed project or not.

It includes among others an extensive process of giving and discussing the specific details of the proposed project, giving the I & A Parties an opportunity to table their comments, objection and support, it also involves your written responses and specific commitments made in dealing with the issues raised during the consultation.

Note that it is important to ensure that your consultation process is comprehensive so that your Environmental Impact Assessment and Environmental Management Plan can be informed by all potential impacts that your project may have.

#### K2N 20001/1025 P.H.

Acceptance Of An Application For Proceeding Right in Terms Of Bestien 18 Of The Minerel And Polyleum Resources Genetopment Act, (Act 25 OF 2002) To Proceed For Soal, Pseudoscal, TerturiterOl Shate On Porton 1 And The Remainder Of The Farm Danoity Ho. 11 113-Go. Porton 2, 3, 4, 5, 6, 7, 8, 9, 16, 11 And The Remainder Of The Farm Canasister Lodge No. 11 370-Go. Portion: 1, 1, 6, 5, 9, 10, 11, 12, 13, 14 And The Remainder Of The Farm Lot 201 Biogengent No. 10 375 Go. Portons 3, 6, 7 And 6 Of The Farm List 197 Empiripers No. 12 415-Go. https:// Enset.org/The Waterstone Township OU And Porters 2, 3, 6 The Remainder Of Porton 3, And The Remainder Of Taxin William Part. No. 11 404-Uo Statement of The Magnetical Dates Of Ufferingsite Rescord (Porton 1, And The Remainder Of Farm William Part. No. 11 404-Uo Statement In The Magnetical Dates Of Ufferingsite Rescord (Porton 1, And Tes Sch

- 4. Should the land be owned by the communities or a Trust on behalf of the community, a proper and thorough consultation process must be engaged upon and a legitimate Tribal Resolution or consent must be obtained from the Traditional Authority / Council or Trust and be submitted with the results of consultation. Should you need any assistance or guidance relating to the required consultation process & procedure in traditional institutions, please contact the District office of the Department of Cooperative Governance and Traditional Atlairs in UThungulu District Municipality.
- 5. Further note that the acceptance of your application does not grant you the right to commence with prospecting activities. It only signifies that your application will be processed and evaluated. The Minister or his delegate will make a decision once the process of the evaluation and appeal on the Environmental Authorization application has been finalized.
- 6. You are in terms of Section 17(1) of the Act required to give effect to the objects referred to in Section 2 (d) of the Act. Therefore please submit on or before 19<sup>th</sup> May 2021 (within 60 days from the date of this letter) to this office for the attention of Regional Manager any documentation proving such including but not limited to:-
- 6.1 Duly signed shareholders agreements with your empowerment partner in which provision <u>shall</u> be made for entrepreneurs, local community and employees,
- 6.2 Share certificates,
- 6.3 Details relating to the equity by the BEE shareholders, Any other agreement relating to the BEE shareholding including the voting pool agreement where applicable,
- 6.4 Articles and memorandum of association of the company.
- 6.5 Any other information that may be necessary to explain and serve as evidence that the applicant meets the appropriate HDSA ownership and/or compliance requirements of the aforesaid Act and Mining Charter.
- Please submit within 60 days (19<sup>th</sup> May 2021) from date of this letter for the attention of Regional Manager a complete prospecting work programme prepared

#### K2N 30/51/10/11035 PR

Acceptance Of An Application For Prospecting Flight in Terror Of Section 16 Of The Ministel And Persistent Resources Development Act, (Act 28 DF 2022) To Prespect For Goal, Prevalousal, TerbanterOf State On Portion 1 And The Remainder Of The Farm Durintly No. 11 113-Ou, Portions 2, 3, 4, 5, 5, 7, 8, 9, 10, 11 And The Remainder Of The Farm Careevidin Lotigo No. 11 370-Ou, Portions 1, 2, 5, 8, 9, 10, 11, 12, 12, 14 And The Remainder Of The Farm Lot 201 Employee Mills 13 378-Ou, Portions 3, 8, 7 And 8 Of The Parm Let 197 Employee Ros. 12 418-Ou, Multiple Even Of The Watersteine Termship-OU And Portions 2, 1, 8 The Remainder Of Portion 8, And The Remainder Of Farm Watership Act, Multiple Constrained for The Watersteine Termship-OU And Portions 2, 1, 8 The Remainder Of Portion 8, And The Remainder Of Farm Watership Act, Multiple Constrained for The Watersteine Termship-OU And Portions 2, 1, 8 The Remainder Of Portion 8, And The Remainder Of Farm Watership Act, 11 484-

In terms of Regulation 7 of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002): Mineral and Petroleum Development Regulation.

- You are also required to adhere with the requirements of Mine Health and Safety Inspectorate and upload on system the required information and details on or before 12<sup>th</sup> April 2021 (within 30 days from the date of this letter)
- Please be advised that your application might be processed in terms of section 9

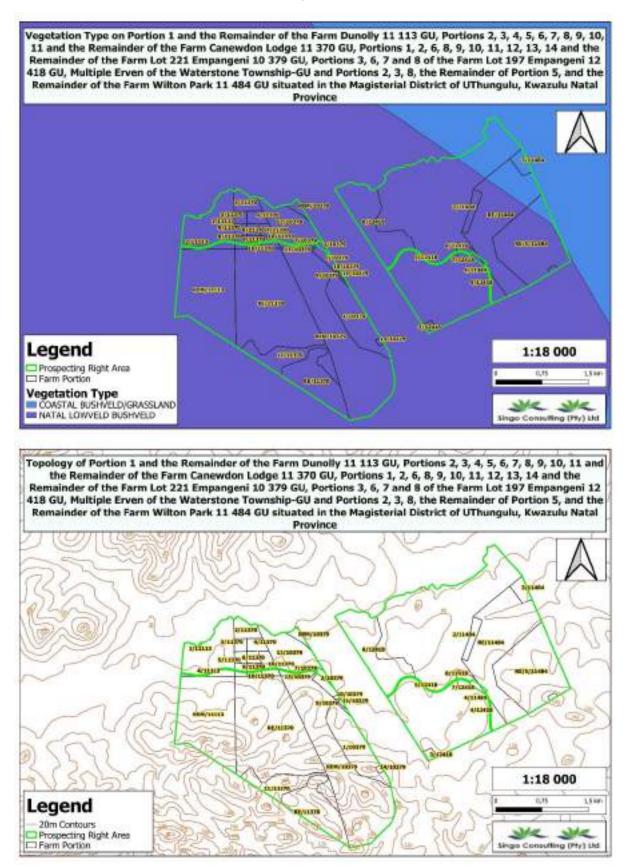
   (1) (b) of the Act. If this office discovers that there is an existing or pending application on the same properties and for the same mineral, this application shall discontinue.
- 10. Please take note that failure to adhere to the timeframe stipulated above and to submit any documentation required in terms of this notice will result into noncompliance with the provision of the Act and the Amendment Act and will result in the refusal of your application.

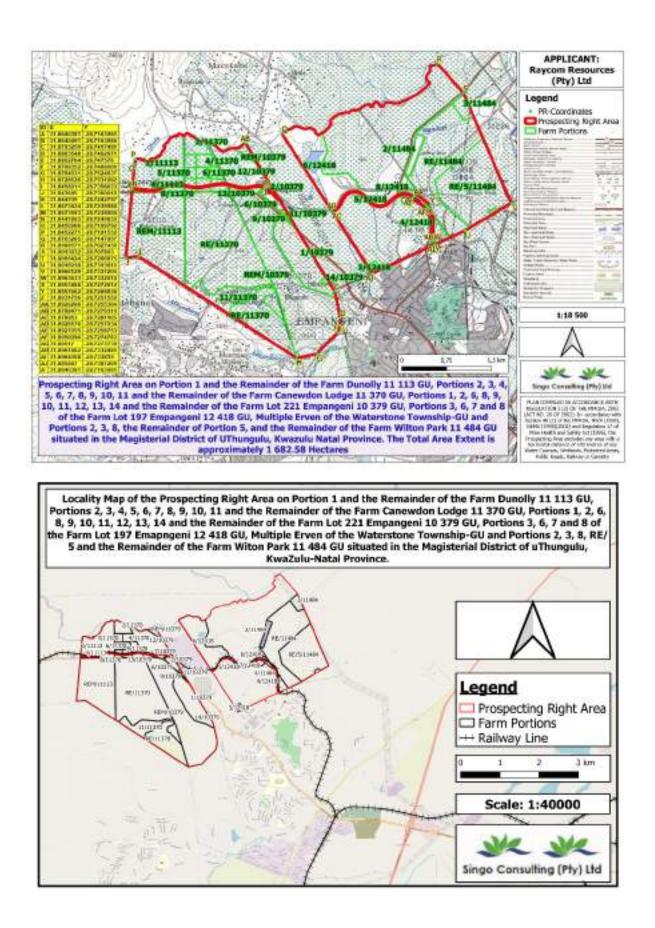
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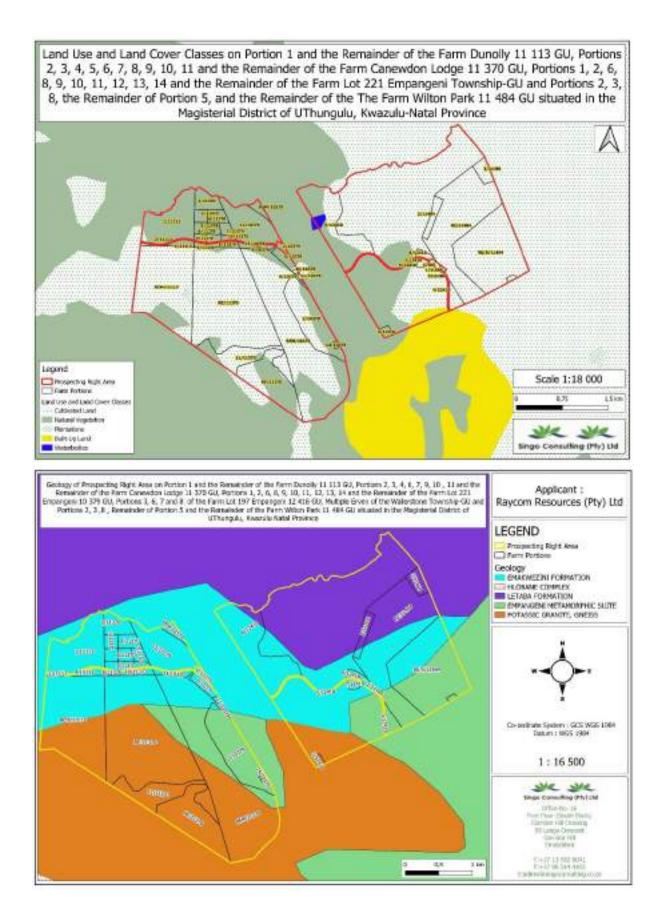
K2N 385/110/15025 PH

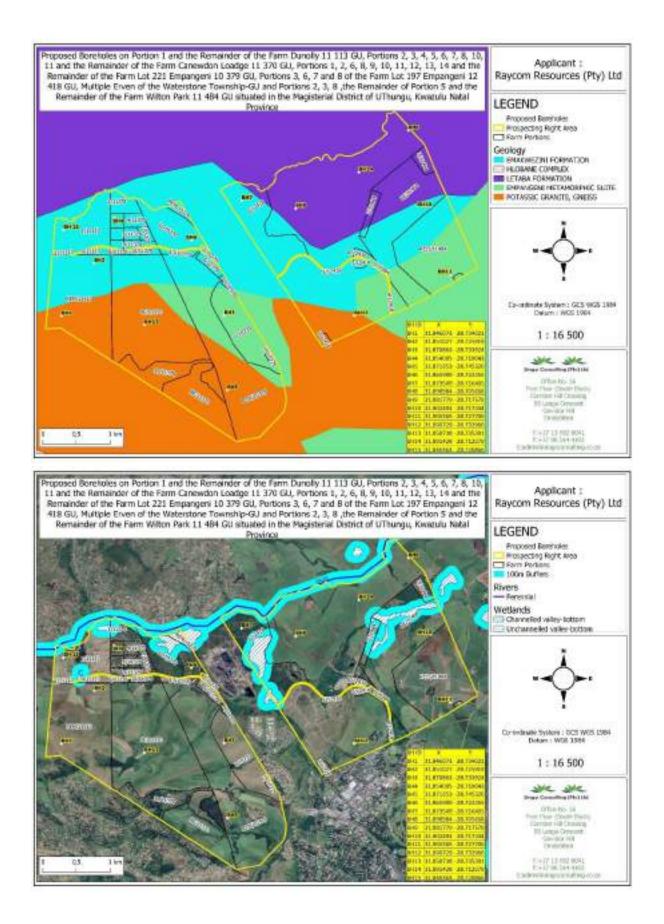
Acceptance Of An Approximit For Prospecting Right In Terms Of Section 16 Of The Mineral And Petrateurs Resources Development Act (Act 39 Of 2002) To Present Per Cast, Prevaluosat, Torgania-Dil Shale On Porton 1 And The Remainder Of The Fare, Durinity No. 11 113-GJ, Portons 2, 2, 4, 5, 6, 7, 8, 8, 10, 11 And The Remainder Of The Fare Canevion Lodge No. 11 370-GJ, Portons 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 And The Remainder Of The Fare Lat 221 Enganges No. 10 370-GJ, Portons 2, 8, 7 And 8 Of The Fares Lot 107 Stepangeri No. 12 818-GJ, Multiple Envel Of The Waterstore Township OU And Portons 2, 2, 8 The Remainder Of Porton 5, And The Remainder Of Paris Webs Fart, No. 11 484-Ou Structed In The Abgedenial District Of UThunguky, Raycon Resource (Phyl Lid & N

#### Appendix 2: Maps for Raycom Resources Project









### Appendix 3: Stakeholder's Engagement.

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|---|--|--|--|--------|
| Masind, Netale <masind@singsconsulting.cn.zz></masind@singsconsulting.cn.zz>  | . they they be   | · 节和外州   | -> Farward   | +++    |
| To Totikäiräunikäiteise jovisi<br>C: Tenneth Singo'i valasirääsingisconsiktingissaan'i Takateriäsingoconsillingissasti dedineyd   | ting a consulting co.co  |  | FR 20/TUBLE  | 0 3408 |
| Background Information Document.pdf 🛫   |  |  |  |        |
| Seod Day,   |  |  |  |        |
| hope this email finds you well.   |  |  |  |        |
| ingo. Consulting (Phy) Ltd on behalf of Roycom Resources (Phy) Ltd, hereby with to in<br>Prospecting Right together with an Environmental Authorization to the EwaZulu Nata<br>DWRE) for the purpose of Prospecting for <b>Cool</b> , <b>Pseudoccol</b> and <b>Totsanile/Oil Shale</b><br><b>Durolly No. 11 113-OU, Portions 2, 3, 4, 5, 6, 7, 8, 7, 10, 11 and the Remainder of the fr</b><br><b>8, 9, 10, 11, 12, 13, 14 and the Remainder of the Isam Lot 221 Empongeni No. 10 379-O</b><br><b>Empangeni No. 12 418-OU, Multiple Erven of the Waterstone Toemship-OOI and Portio</b><br><b>Remainder of farm Witten Park No. 11 484-OU, shoated in utilizatione Local</b> Municiple<br><b>Mittim Juliadiction of Empangeni Magisterial District, KwaZulu-Natal Province, (DWRE)</b><br><b>Inis Notification is being given in compliance with the terms of: Mineral and Petroleu</b><br>2002) (MPRDA), National Environmental Management Act. 1996 (Act No. 107 of 1995<br>Witch regulates that state-holders must be notified of Raycom Resources (Phy) Ltd.'s in<br>mentioned minerals.  | a Department of Min<br>on the portion 1 and<br>arm Conewdon Lodg<br>GU. Partient 3, 4, 7, a<br>res 2, 3, 8, the Remain<br>alty under King Cetal<br>Ref. KZN 30(5/1)/1/2/<br>im Resources Develo<br>S), and ElA Regulatio<br>S), and ElA Regulatio  | aral Resource.<br>d the Remaind<br>ge No. 11 370-<br>and 8 of the fam<br>sder of portion<br>thirdy a Cistrict<br>1 1025 PRI.<br>pment Act. 20<br>ns (os amend- | and Energy<br>ler of the form<br>GU. Portions 1,<br>m Let 197<br>5, and the<br>Municipality.<br>102 (Act No. 2)<br>ed. 07 April 20 | 2.4.   |
|   | minht he wreak-real  | be enforcing (   | any of the   |        |
| his invitation is being extended to you because the department that you represent   | right po prising   |  |  |        |
|   |  | -  | s, situated  | W      |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) L  |  | -  | S, SITUATED<br>→ Farward   | W      |
| This invitation is being extended to you because the department that you represent PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) L Masindi, Nefale <masindi@singoconsulting.co.za> To tall2ss@umhtshuze.gev.zs/ Cc *terveth, Singo; *udian@singoconsulting.co.zs/, takater@singoconsulting.co.zs/, takater@singoco</masindi@singoconsulting.co.za> | TD, ON THE VAR   | EOUS FARM  | 1 messee   | •••    |

Good Day,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

This Notification is being given in compliance with the terms of: Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of Raycom

Resources (Pty) Ltd.'s intention to obtain Prospecting Right for the above-mentioned minerals.

This invitation is being extended to you because the department that you represent might somehow be enforcing any of the Republic of South Africa's laws of which ensures; prevention of pollution & environmental degradation, promotes sustainable development & socio-economic development, or instead might be affected by prospecting activities. Hence you are being offered an opportunity to:

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;

• Comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme Report (EMPr)

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Assessment Practitioner (EAP) to manage the Environmental Authorization process, by conducting Environmental Impact Assessment, Public Participation for the proposed project and compile an Environmental Management Programme Report. A Basic Assessment process has commenced, for your participation kindly fill the registration and comment form at the end of the Background Information Document (BID) attached and register your comments, issues, questions that you may have about the proposed project. Should you need any clarity on the attached document or have any queries with regards to the project, please do not hesitate to contact the appointed EAP on the details provided below.

Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.

If you know anyone who might be interested in this project, kindly forward this email to that person.

Kind regards,



PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ...

| MN | Masindi, Nefale «masindii@sin<br>Te: Whiongoht6@amhiath.cos.gov.ta<br>Ce: "Keweth, Singo"; hudueri@singov |   |
|----|---|---|
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| t) Reply | 역) Taply All | -> Forward    | -    |
|----------|--------------|---------------|------|
|          |              | Fri 2021/04/9 | 1141 |

Good Day, Mr Sphelele Zulu.

Thope this email finds you well.

Singe Cansulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DNRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunoity No. 11 113-GU. Portions 2, 3, 4, 5, 4, 7, 8, 9, 10, 11 and the Remainder of the farm Conewdon Lodge No. 11 370-GU. Portions 1, 2, 4, 8, 7, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 10 379-GU. Portions 3, 6, 7, and 8 of the farm Lot 1977 Empangeni No. 12 418-GU. Multiple Erven of the Vaterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Willion Park No. 11 484-GU. shuated in uMhiothras Local Municipality under King Cetshwaya Oktrict Municipality. within Jurisdofon of Empangeni Magisterial District, KwaZulu-Natal Pravince, (DWRE Ret; KZN 30/5/1/1/2/ 11025 PR).

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PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ...

| - | Masindi, Nefale «masindi@singoconsulting.co.za»<br>Te "MikingoNG@enhishane.gov.ca"<br>Ce: Kenneth. Sege: "sidaari@singoconsulting.co.ar"; teleleri@singoconsulting.co.ar |  |  |
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Good Day, Mr Sphelele Zulu,

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| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON  | THE VAR   | EOUS FARM  | S, SITUATED  | W                      |  |
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| Singo Consulting (Phy) Eld on behalt of Raycom Resources (Phy) Eld, hereby with to inform yo<br>Prospecting Sight hogether with an Environmental Authoritation to the KwaZuki Natal Depart<br>(DMRE) for the purpose of Prospecting for Cool, Pseudocool and Torbante/Oil Shale on the (<br>Dunoily Ne. 11 113-GU, Partiana 2, 3, 4, 5, 4, 7, 8, 9, 10, 11 and the Remainder of the form Con<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the form Loi 221 Empangeni No. 10 379-GU. Partie<br>Empangeni No. 12 418-GU. Multiple Erven of the Vaterstone Township-GU and Portions 2, 3, 8<br>Remainder of form Witten Park No. 11 484-GU, shuars d in utilization to coal Municipality and<br>within Jurisdiction of Empangeni Magisterial District. KweZuku-Natel Province. (DMRE Bot K2N)<br>This Notification is being given in compliance with the ferms of: Mineral and Petroleum Resources<br>(PRPA), Notification is being given in compliance with the ferms of: Mineral and Petroleum Resources<br>(PRPA), Notification is being given in compliance with the ferms of: Mineral and Petroleum Resources<br>(PRPA), Notification statistic must be notified of Raycom Resources (Phy) Ltd.'s InterNon-I<br>mentioned minerals. | ment of Min<br>portion 1 an<br>ewdon Lodg<br>ono 3, 4, 7, o<br>I, the Remat<br>or King Cats<br>30/5/1/1/2/<br>nces Develo<br>IA Regulatio | eral Resources<br>d the Remaind<br>ge No. 11 370-4<br>nd 8 of the fam<br>nder of portion<br>hwayo District<br>11025 PR).<br>pment Act, 30<br>ns [cs amendi | cond Energy<br>er of the form<br>3U, Portions 1,<br>m Lot 197<br>5, and the<br>Municipality,<br>(2) (Act No. 2)<br>ad, 07 April 20 | , 2, 6,<br>8 of<br>17] |  |
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Good Day, Mr Vusumuzi Mahaye,

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| Good Day,   |   |   |   | -       |
| Thops this email finds you well.  |   |   |   |         |
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| Excloginand Information Declamant pdf 🖕   |              |                 |                           |                |
| Good Day, Mr Thembalakhe Sbozana.   |              |                 |                           | -              |
| I hope this erroll finds you well.  |              |                 |                           |                |
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| Ta 'Thembalaktes@dofl.gov.za'<br>Cz: Kenneth, Siege', hudzan@siegoconsuffing.co.za' takoles@siegoconsuffing.co.za'  |              | 14              | Fri 2021/4                | 1.00 14.20     |
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| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) L  | TD, ON THE VAR   | EOUS FARM  | S, SITUATED  | ) W                                  |
|---|--|--|--|--------------------------------------|
| Masindi, Nefale «masindi @singpoonsulting.co.za»<br>Tr. "BarkeyAQdwr.gov.ca"<br>Cr. "Kennefs, Singo"; Yudain@singoccanulting.co.za) "takarav@ongeconsulting.co.za"  | t) taply   | Ry Reply All   | -+ Pervest   | 30 14:32                             |
| Background information Document.pdf   |  |  |  |                                      |
| Good Day, Mr Ashley Starkey,  |  |  |  |                                      |
| Thope this email finds you well.  |  |  |  |                                      |
| Singo Consulting (Phy) Ltd on behalf of Raycom Resources (Phy) Ltd, hereby wish to in<br>Prospecting Right together with an Environmental Authorization to the Kwa2ulu Notal<br>(DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Tarbante/OE Shale<br>Dunolly No. 11 113-GU, Partians 2, 3, 4, 5, 4, 7, 8, 9, 10, 11 and the Remainder of the for<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the form Lot 221 Empangeni No. 10 379-0<br>Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Parties<br>Remainder of form Wilton Park No. 11 484-GU, shutted in Ukhlichtuse Local Municipal<br>within Burisdiction of Empangeni Magisterial Dattict, Kwc2ulu-Natal Province, (DMRE 5<br>This Notification is being given in compliance with the terms of Mineral and Petroleur<br>2002) (MPRDA). National Environmental Management Act, 1996 (Act No. 107 of 1998<br>which requires that statisholden must be notified at Raycom Resources (Phy) Ltd. Sint | Department of Min<br>on the partian 1 ani<br>am Canewdon Lodg<br>30. Portions 3, 6, 7, a<br>ns 2, 3, 8, the Remail<br>alty under King Cets<br>bet: KZN 30/5/1/1/2/<br>m Resources Develo<br>1, and EIA Regulatio | eral Resource<br>d the Remains<br>je No. 11 370-<br>and 8 of the far<br>nder of portion<br>hwayo District<br>11025 PR),<br>pment Act. 25<br>ns (as amend | s and Energy<br>ler of the tarm<br>GU, Partians 1<br>m Lat 197<br>i \$, and the<br>Municipality.<br>202. (Act No. 2<br>ed. 07 April 20 | 1<br>, <b>2. 6</b> ,<br>8 of<br>217) |
| menSoned minerals;  |  |  |  |                                      |
| This invitation is being extended to you because the department that you represent  | might be somehow   | be enforcing   | any of the   | 2                                    |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) L  | TD, ON THE VAR   | EOUS FARM  | s, situated  | ) W                                  |
| Masindi. Nefale <masindi@singoconsulting.co.za></masindi@singoconsulting.co.za>   | to Reply   | *) Reply All   | -> Fervard   |                                      |
| To: Stalley-Ağdusigor.ta/<br>Cr. Kerveth, Singo'; "wittanv@singisconsulting.co.tat; takasai@singocensulting.co.tal  |  |  | Fir 2021/14  | 841                                  |
| Ledopround Information Document pall  |  |  |  |                                      |
| Good Day, Mr Ashley Starkey,  |  |  |  |                                      |

I hope this email finds you well.

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- Register as an I&AP and to respond to the environmental compliance process;
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Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.

If you know anyone who might be interested in this project, kindly forward this email to that person.



Kind regards,

PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ...

| Mesind, Nefale <masinci@strapcorsulting.cs.za></masinci@strapcorsulting.cs.za>   | thy Reply  | (f) Exply All   | -> Forward   |         |
|--|--|---|--|---------|
| To priny@dwilghvilghvilghvilghungscommitting.co.uk hatalan@ungocomuting.co.uk  |  |   | Pri:2211.04/   | 5114.55 |
| Racignumi informatian Documentalit u   |  |   |  |         |
| Good Day, Pillay R.  |  |   |  |         |
| hope this email finds you well.  |  |   |  |         |
| Singal Consulting (Pty) Ltd. on behalf of Raycom Resources (Pty) Ltd. hereby wish to init<br>Prospecting Right together with an Environmental Authorization to the Kwa2uu Natati<br>(D/RE) for the purpose of Prospecting for <b>Coal</b> , <b>Pseudocoal</b> and <b>Torbanite/Oil Shale</b> o<br><b>Dunoity No. 11 113-GU. Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the fam<br/>8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 10 379-GU<br/><b>Impangeni No. 12 418-GU. Multiple Erven of the Watertone Township-GU and Portions</b><br/><b>Remainder of farm Withon Park No. 11 484-GU.</b> situated in uMilathues Local Municipal<br/>within Jursdiction of Empangeni Magisterial District, Kwa2uu-Natal Province. (D/RE Re<br/>Phil Notification is being given in compliance with the terms of Mineral and Petroleum<br/>2002) (MPRDA), National Environmental Management Act. 1996 (Act No. 107 of 1998),<br/>which requires that stakebolders must be notified of Raycom Resources (Pty) Ltd.'s inte<br/>mentioned minerals.</b> | Department of Min<br>in the portion 1 and<br>m Conewdon Lodg<br>U Portions 3, 6, 7, a<br>t 2, 3, 8, the Remail<br>th under King Cetat<br>et: K2N 30/3/17/17/<br>Resources Develo<br>, and EA Regulatio | eral Resource<br>d the Remaind<br>ge No. 11 370-<br>and 8 of the far<br>adder of portion<br>hways District<br>11025 PR).<br>poment Act. 20<br>prs [os amend | s and Energy<br>ler of the form<br>GU. Portions 1<br>m Lot 197<br>1.5, and the<br>Municipality.<br>202 (Act No. 2<br>ed. 07 April 20 | 8 of    |
| his invitation is being extended to you because the department that you represent m  | light be somehow   | be enforcing  | any of the   |         |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LT  | D, ON THE VAR  | L'anner an  | Paris 20   | DW.     |
| Masindi, Nefale «masisd/@singoconsulting.co.za»  | + Reply  | 62 Belly All  | -> Forward   | ***     |
| To pilaysticket.gov.ts'<br>Cr. Kerneth. Singe'; tudeni@singutomolfing.co.ae'; tuketni@singutomolfing.co.ae'  |  |   | Rei 2020 (M  | /30143  |
| Background Information Document pet  |  |   |  |         |

Good Day, Pillay R,

I hope this email finds you well.

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| RE: PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (P  | TY) LTD, ON THE V         | AREOUS FA       | RMS, SITUA                 | TE            |
|--|---------------------------|-----------------|----------------------------|---------------|
| Pillay Renelle (DBN) -(PillayR@dws.gov.za)-<br>To Missell Netze<br>Co Kentelli, Sngol, radiartificegoconschag.co.za takalee@singcounsulting.co.za                      | ी रहर                     | (iii) Reply All | → Forward<br>Mice 2020/05/ | -++<br>58.082 |
| Finitian up. Start by Monday, St. May 2021. David y Manday, 62 May 2021.     Sparragilized to this recorrege, or 2021/00/00 11:05.      Dever Ser/Mandam               |                           |                 |                            |               |
| Please be advised that you will need to direct all applications to the Acting Deputy Director: Mr St   | ini Govender (Sub-Directo | eater Water Qu  | яку Мападитог              | n.            |
| Mr Govender can be contacted at governmen.2.0dvv.gov.as or on 052 685 9865 or on 051 338 2757  | <b>9</b> .                |                 |                            |               |
| Regarite<br>Receive Karen Pillay   |                           |                 |                            |               |
| Water Ocality Planning<br>Sub-Onscients: Water Use<br>Department of Water & Santation<br>PO Sox 0198, Dahaa, 4806<br>Tal no. (001) 336 2742<br>Cell no. (001) 336 2743 |                           |                 |                            |               |
| RE: PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (P  | TY) LTD, ON THE V         | AREOUS FA       | RMS, SITUA                 | ITE           |
| Piloy Renelle (DBN) < Piloy@Sdws.gov.za>   | t) Reply                  | (f) Reply dil   | -> Forward                 | 449           |

Te: Macindi, Nidala Ce: Nenesth, Singel: nukarin@kingocensulling.co.azi tekalen@kingoconsulting.co.azi (3) Followings: Start by Monday, 60 May 2021, Due by Monday, 60 May 2021, Tau replied to this message on 2021/05/00 11:53. Mon 3021/05/08 08:21

# Dear Sir/Madam

Please be advised that you will need to direct all applications to the Acting Deputy Director: Mr Strini Govender (Sub-Directorate: Water Quality Management).

Mr Govender can be contacted at <u>govenders2@dws.gov.za</u> or on 082 885 9665 or on 031 336 2759.

Regards Renelle Karen Pillay

Water Quality Planning Sub-Directorate: Water Use Department of Water & Sanitation PO Box 1018, Durban, 4000 Tel no. (031) 336 2742 Cell no. 082 908 3748

## RE: PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATE ...



| Masindi, Nefale «masindi@singoconsulting.co.za»  | S Reply       | <li>Repy All</li> | -) Fenard  | -    |
|--|---------------|-------------------|------------|------|
| To Thile/Rendix (DBN)  |               |                   | Man 202015 | 1301 |
| 🚬 (c. Tenneth, Singo); nutzeni@angaccensuting.co.co; takalani@angaccensuting.co.co;                                      |               |                   |            |      |
| () This message is part of a tradical conversation. Clock here to find all related messages or to open the original flag | gged message. |                   |            |      |

# Good Morning Renelle Karen Pillay,

Thank you for your response, email will be directed to govenders2@dws.gov.za.



| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD  | ), ON THE VARI   | EOUS FARM  | S, SITUATED                                       | W   |
|---|--|--|---|-----|
| Masindi, Nefale «masinds@singacoms/ting.co.za»<br>Tr. 'goverdes2@dvs.gos.ts'<br>Cr. Tarveth, Singo', 'rodae @angaccenating.co.as', telasia@angaccenating.co.zs'   | to Repp  | 45 Reply.ce                                      |   | *** |
| Background Information Document and with 100 100  |  |  |   |     |
| Good Day. Mr Stilni Covender,   |  |  |   | 8   |
| Thope this email finds you well.  |  |  |   |     |
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| Empangeni No. 12 418-GU. Multiple Erven of the Waterstone Township-GU and Portions<br>Remainder of farm Witton Park No. 11 404-GU. stituated in utilitatives Local Municipality<br>within Jurisdiction of Employeeni Magisterial District. Rwa2uU-Natal Province. (DWRE Ref   | y under King Cets                                      | twayo Obtict                                     |   |     |
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| This invitation is being extended to you because the department that you represent mit  | ght be somehow   | be entorcing                                     | any at the  |     |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD  | ON THE VARE  | OUS FARM   | S, SITUATED                                       | W   |
|   | 10000  | and an order                                     | -> Forward  |     |
| Masindi, Netale <masindi@singcconsulting.co.za></masindi@singcconsulting.co.za>   | €) Baply   | *) Reply Al                                      | - gristings.                                      |     |
| Masindi, Nefale «masindi@singoconsulting.co.za»<br>10. 'goverdes2@dvs.gov.z#<br>Cz. 'Kerweth, Singe', tudaei@ingscores/ting.co.a/; 'bioder#@eingscores/ting.co.a/   | c) yrteft  | (a) Bably YR                                     | 61252104  |     |

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From: Sibango Lwandle (DBN) <<u>SibangoL@dws.gov.za</u>> Sent: Tuesday, 04 May 2021 10:10 To: admin@singoconsulting.co.za; mesindi@singoconsulting.co.za Subject: RE: PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED WITHIN UMHLATHUZE LOCAL MUNICIPALITY. DMRE REF: KZN 30/5/1/1/2/ (11025) PR.

### Good Morning Ms Nefale

Thank you for identifying the Dept of Water and Sanitation (DWS) as one of the key stakeholders (I&AP) for this project. DWS looks forward to receiving further correspondence with regards to the subsequent Environmental Assessment processes.

### Theat you.

Sibango Ewandle L.L. | Water Quality Management | Department of Water and Sanitation – KZN Region 88 Joe Slovo Street, 14<sup>th</sup> Southern Life Building | Private Bag X54304, Durban, 4000 Tel: 031 336 2760, Cell phone: 082 879 9722 e-mail: <u>sibangol@dws.gov.za</u>

From Malibyi Ziyonda (DBN) - <u>MolibiaZiridist pov 22</u>5 Seef: Thursday, Ob May 2021 12:20 Te: <u>maindi@hintecomoliting.co.ac edmin@hintecomoliting.co.ac</u> Subject: DMS Comments for Proposed Prospecting Right Application

#### Good Day Siz/ Madem

Rindly find the attached convenients on behalf of the Department of Water and Sanitation for the proposed Prospecting Right Application for Ecol, Pseudoccal and Torbanta.

#### Begards,

Ziyanda Malibiji I Water Quality Management I Department of Woter and Senitation – K2N 88 Joe Slavo Street, Southern Life Building, 54<sup>th</sup> Floor 1 Private Bag X54304, Darton, 4001 Tel: 031.336 2967 e-mail: malibilit@doc.gov.za



KWAZULU-NATAL REGION Private Bag X 54304, Durban, 4000. Southern Life Building, 88 Field (Joe Skovo) Street, Durban. Tel: (031) 336 2700. Fax: (031) 305 9915. www.dws.gov.za

r: Ms.Z. Malbiji ⊒: malbiji2@dws.gov.za Date: 06 May 2021

Singo Consulting (Pty) Ltd Office No. 16, 1<sup>st</sup> Floor (South Block) Corridor Hill Crossing, 09 Langa Crescent, Corridor Hill, Emalahleni

### ATTENTION: TSHISEVHE TSHIFHANGO

Dear Sir/ Madam

RE: BACKGROUND INFORMATION DOCUMENT FOR THE PROPOSED PROSPECTING RIGHT APPLICATION FOR COAL, PSEUDOCOAL AND TORBANITE/ OIL SHALE ON PORTION 1 AND THE REMAINDER OF THE FARM DUNOLLY NO. 11 113-GU, PORTIONS 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND THE REMAINDER OF THE FARM CANEWDON LODGE NO. 11 370-GU, PORTIONS 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 AND THE REMAINDER OF THE FARM LOT 221 EMPANGENI NO. 10 379-GU, PORTIONS 3, 6, 7 AND 8 OF THE FARM LOT 197 EMPANGENI NO. 12 418-GU, MULTIPLE ERVEN OF THE WATERSTONE TOWNSHIP- GU AND PORTIONS 2, 3, 8, THE REMAINDER OF PORTION 5, AND THE REMAINDER OF FARM WILTON PARK NO. 11 484-GU, WITHI UMHLATHUZE LOCAL MUNICIPALITY

Reference is made to the Background Information Document (BID) received electronically by the Department of Water and Sanitation (Department) on the 30<sup>th</sup> April 2021. This Department has the following comments which must be addressed and form part of the subsequent environmental assessment process. The subsequent environmental report(s) must be submitted to this office for further review to ensure compliance with statutory requirements, assessment of scientific and technical adequacy and to ensure issues raised have been adequately addressed.

- The Applicant is reminded to include details on water and wastewater provisions for the proposed project/ development, amongst others;
  - 1.1 A breakdown of the water requirements for all phases of the development;
  - 1.2 The source of water to be used for the development;

Page 1 of 2

- Wastewater and sewage treatment and/or management for all phases of the development; and
- 1.4 Proof of sustainability of both water and wastewater provisions for the lifetime of the project/ development.
- The Applicant is reminded to conduct an impact assessment to determine the potential impacts of the proposed development on watercourses including the mitigation measures outlining how the impacts will be mitigated and managed to avoid detrimental impacts on the watercourse.
- The Applicant is reminded to indicate the cradle to grave management plan for the waste (both general and hazardous waste) to be generated.
- A detailed and project specific Environmental Management Programme for all phases of the project must be attached.
- 5. The Applicant is reminded to include the erosion control measures to be implemented.
- The Applicant is reminded to include a Stormwater Management Plan for the proposed development/project.

It is the responsibility of the Applicant to identify all water uses triggered by the undertakings in terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) and to ensure that all applicable water uses are authorized as such.

### N.B.

The Applicant is reminded that if this development, parts of it and its infrastructure are located within the regulated area then the project must be authorized by this Department prior to commencement of the activity. Therefore the Applicant will be required to apply for a Water Use Authorisation as the activity will not be a permissible water use as stipulated in Section 22 of the National Water Act. Act 36 of 1998.

Please do not hesitate to contact this office should you have any concerns, comments or queries.

For PROVINCIAL HEAD: KWAZULU-NATAL ZM/zm 16878

Page 2 of 2

| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTV) LTD, O   | N THE VAR   | EOUS FARM  | S, SITUATED  | ) W           |
|---|---|--|--|---------------|
| Marindi, Nefale «marindi Bringpochtufting co.zs»  | they Keply  | (f) Kapiy All  | -) Penyati   |               |
| 10 - Yertesapelay@kerwiklfle.com<br>En Kerwith, Singe: 'neban@wingoconsatting.co.as') tekelen@wingoconsatting.co.as'; 'Owen'  |   |  | Fx 2021/94   | 20 1445       |
| Lectopeand information Document.pdf 🖕   |   |  |  |               |
| Good Day, Netiza Pilay,   |   |  |  |               |
| I hope this email finds you well.   |   |  |  |               |
| Single Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd. hereby with to inform y<br>Prospecting Right logether with an Environmental Authorization to the KiwaZulu Natal Depa<br>(DMRE) for the purpose of Prospecting for <b>Cost, Pseudocost</b> and <b>Torbanile/Oil Shale</b> on the  | rtment of Min   | end Resource   | s and Energy   |               |
| Dunoity No. 11 113-GU. Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the form Co<br>8, 9, 10, 11, 12, 13, 14 and the Ternainder of the form Lot 221 Empangeni No. 10 375-GU. Por<br>Empangeni No. 12 418-GU. Multiple Erven of the Watertone Township-GU and Portions 2, 3<br>Remainder of form William Park No. 11 484-GU, situated in uMiniathuse Local Municipality un<br>within Jurisdiction of Empangeni Magisterial District. KwaZuku-Natal Provinces. (DWRE Ref. K2<br>This Notification is being given in compliance with the terms of: Mineral and Petroleum Rese<br>2002) (MERDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and<br>which requires that stateholders must be notified of Raycom Resources (Pty) Ltd.'s Interflor<br>mentioned minerals. | flore 3, 4, 7, a<br>8, the Remain<br>der King Catal<br>N 30/5/1/1/2/<br>xurces Develo<br>BA Regulatio | nd 8 of the fai<br>tder of portion<br>hwaya District<br>11025 PR),<br>pment Act, 2<br>ns (as amend | m Lot 197<br>5, and the<br>Municipality<br>102 (Act No. 2<br>ed. 07 April 20 | 18 of<br>017] |
| This invitation is being extended to you because the department that you represent might  | be somehow  | be enforcing   | any of the   |               |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, O   | IN THE VAR  | EOUS FARM  | IS, SITUATE  | D W           |
| Maxindi, Nefale <masindi@singcconsulting.co.za></masindi@singcconsulting.co.za>   | ty heph   | (8) Repty All  | -> Forward   | m             |
| To: Vestica alike/distrived de cont<br>Co: Tenneth, Singer; Vederin@ singeconsulting.co.zo; Takaleri@singeconsulting.co.zo; Direct  |   |  | Fri 2021/94  | 100 1045      |
| Background Information Document pdf 🖕   |   |  |  |               |

Good Day, Nerissa Pillay,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

This Notification is being given in compliance with the terms of: Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of Raycom Resources (Pty) Ltd.'s intention to obtain Prospecting Right for the above mentioned minerals.

This invitation is being extended to you because the department that you represent might be somehow be enforcing any of the Republic of South Africa's laws of which ensures; prevention of pollution & environmental degradation, promotes sustainable development & socio-economic development, or instead might be affected by prospecting activities. Hence you are being offered an opportunity to:

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;

• Comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme Report (EMPr)

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Assessment Practitioner (EAP) to manage the Environmental Authorization process, by conducting Environmental Impact Assessment, Public Participation for the proposed project and compile an Environmental Management Programme Report. A Basic Assessment process has commenced, for your participation kindly fill the registration and comment form at the end of the Background Information Document (BID) attached and register your comments, issues, questions that you may have about the proposed project. Should you need any clarity on the attached document or have any queries with regards to the project, please do not hesitate to contact the appointed EAP on the details provided below.

Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.



| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES   | S (PTY) LTD, ON THE VA  | REOUS FARM   | S, SITUATED  | XW                                |
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| Masinol, Nefale «masindi @singcconsulting.ci.zz»<br>Tr. Vinesee Nanbudkonwikife.com<br>Cr. Herneth Singe: TustavidSingconsulting.co.zx   | 53 Rep  | у бланула  | -> Royand<br>Price 100   | 444                               |
| Background Information Document pel  |   |  |  |                                   |
| Good Day. Mis Dinesree Thambu-Moodley.   |   |  |  | 2                                 |
| I hope this email finds you well.  |   |  |  |                                   |
| Singo Consulting (Pty) Ltd on behalt of Raycom Resources (Pty) Ltd, hereby<br>Prospecting Right together with an Environmental Authorization to the Kwa<br>(DWRE) for the purpose of Prospecting for Coal, <b>Pseudocoal</b> and <b>Torbanile</b> ,<br><b>Durolly No. 11 113-GU</b> . Portions 2, 3, 4, 5, 4, 7, 8, 7, 10, 11 and the Remainde<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangent No.<br><b>Empangent No. 12 418-GU</b> . Multiple Erves of the Waterstone Township-GU or<br><b>Remainder of farm Witten Park No. 11 484-GU</b> , situated in utilitative Local<br>within Julidiction of Empangent Magisterial District, Kwa2uka-Natal Province<br>This Notification is being given in compliance with the ferms of: Mineral and<br>2002) (MPRDA), National Environmental Management Act. 1978 (Act No. 11<br>which requires that statesholders must be notified of Raycom Resources (Phreentioned minerals.  | 200 Natal Department of /<br>(OII Shale on this portion 1<br>er of the form Conewdon Lo<br>5, 10 379-GU, Portions 3, 4, 1<br>and Portions 2, 3, 8, the Ren<br>Municipality under King C<br>6, (DMRE Ref: K2N 30/5/1/1)<br>d Potroleum Resources Dev<br>07 of 1978), and EA Regula | Ameral Resource<br>and the Remains<br>dige No. 11 370-<br>, and 8 of the to<br>ainder of portion<br>showayo District<br>2/ 11025 PR).<br>stopment Act. 2<br>from Jos amena | s and Energy<br>der of the form<br>GU, Portions 1<br>rm Lot 197<br>n.5, and the<br>Municipality.<br>002 (Act No. 2<br>led: 07 April 20 | 1, <b>2, 4</b> ,<br>19 of<br>217] |
| This invitation is being extended to you because the department that you r   | represent might be sometho  | w be enforcing   | any of the   |                                   |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCE  | s (PTY) LTD, ON THE V   | AREOUS FARM  | ns, situate  | D W                               |
| Masindi. Netale «masindi@singoconsulting.co.za»  | ← Re  | ely . (Fj. Rophy Ad  | -> Forward   |                                   |
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Good Day, Mrs Dinesree Thambu-Moodley,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

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Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.



| Masindi, Nefale «masindi @singoconsulting.co.za»  | t) Bert   | 15 EppyAl  | -> Fervird  |              |
|---|---|--|---|--------------|
| To "Shik mithics@kmethex.gov.ze"<br>[c: 'Keneth, Sege'; 'subser@ongoconsulting.cc.ze'; takalan@ongoconsulting.cc.ze'  |   |  | Fe 2021/04/   | 201452       |
| Endopsund Information Document.pol  |   |  |   |              |
| Good Day, Mr Shie Manize ,  |   |  |   |              |
| hope this email finds you well.   |   |  |   |              |
| Singo Cansulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish<br>Properting Right logether with an Environmental Authorization to the Kwalulu I   |   |  |   | a a          |
| Propecting Right together with an Environmental Authorization to the KiwaZulut<br>(DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanile/Oil S<br>Dunally No. 11 113-GU, Partians 2, 3, 4, 5, 4, 7, 8, 9, 10, 11 and the Remainder of t<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the form Lot 221 Empangeni No. 10 3<br>Empangent No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Pv<br>Remainder of form Wilton Park No. 11 484-GU, shuated in uMhlathuze Local Mun  | Natal Department of Mil<br>hale on the portion 1 an<br>he form Conewdon Lod<br>179-GU, Portford 3, 6, 7, 4<br>ortions 2, 3, 8, the Remai<br>Icipality under King Cet  | teral Resource<br>d the Remains<br>ge No. 11 370-<br>and 8-of the fa-<br>inder of portion<br>thways District   | s and Energy<br>der af the farm<br>GU. Partians 1<br>im Lat 197<br>1 5, and the   |              |
| Singo Cansulting (Pty) Ltd on behalt of Raycam Resources (Pty) Ltd, hereby with<br>Propecting Right together with an Environmental Authorization to the Kwa2uur<br>(DMRE) for the purpose of Prospecting for Cool, Pseudocool and Tarbanite/OH S<br>Dunalty No. 11 113-GU, Particles 2, 3, 4, 5, 4, 7, 8, 9, 10, 11 and the Remainder of the<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the form Lot 221 Empangeni No. 10 3<br>Empangeni No. 12 418-GU, Multiple Erven of the Materstone Township-GU and Pi<br>Remainder of form Witton Park No. 11 484-GU, shutched in UMHathuze Local Mun<br>within Jurkdiction of Empangeni Magisterial District Kwa2uki-Natal Province. (DM<br>This Notification is being given in compliance with the Terms of: Mineral and Pete<br>2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of<br>which requires that stakeholders must be notified of Raycom Resources (Pty) Ltd<br>menformed minerals. | Natiol Department of Mill<br>hale on the portion 3 at<br>the form Conewdon Lod<br>(779-GU, Portions 3, 8, 7, 1<br>ortions 2, 3, 8, the Remain<br>(clipality under King Ceth<br>ARE Ref. K2N 30/5/17/172)<br>ofeum Resources Develo<br>(1998), and BA Regulation   | teral Resource<br>d the Remaind<br>ge No. 11 870-<br>and 8-of the fai<br>inder of portion<br>through District<br>(11025 PR).<br>appment Act, 20<br>ars (as amend               | s and Energy<br>ler of the form<br>GU, Portions 1<br>im Lot 197<br>h 5, and the<br>Municipality.<br>202 (Act No. 2<br>ed, 07 April 20                   | 2,4,<br>8 of |
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Good Day, Mr Sihle Mkhize ,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

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- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;

• Comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme Report (EMPr)

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| Masindi, Nefale «masindi@singoconsulting.co.za»  | the Reply  | (if) Reply All  | -> Ferward  |            |
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| is Natification is being given in compliance with the terms of: Mineral and Petraleum Res<br>(02) (MPRDA). National Environmental Management Act. 1998 (Act No. 107 of 1998), and<br>high requires that stakeholders must be notified of Raycom Resources (Pty) Ltd.'s Intention<br>rentioned minerals.  | ources Develo<br>I EIA Regulatio<br>n to abtain Pro                                      | pment Act. X<br>ns las amend<br>specting Righ   | ed, 07 April 20<br>If for the abov                              | 17)        |
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Good Day, ,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

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Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.

If you know anyone who might be interested in this project, kindly forward this email to that person.



Kind regards,

### PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ....

| Masindi, Nefale <masindi@singoconsuiting.co.za></masindi@singoconsuiting.co.za>   | 57.849   | Why Reply 48  | -> Forward   | ***        |
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| Good Day, Mundo Viladom Mithenjana.   |  |   |  |            |
| I hope this email finds you well.   |  |   |  |            |
| Singo Consulting (Ptv) Ltd on behalf of Roycom Resources (Ptv) Ltd, hereby<br>Prospecting Right together with an Environmental Authorization to the Kwai<br>(DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/<br>Dunoity No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 7, 10, 11 and the Romainde<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empargent No<br>Empargent No. 12 418-GU, Multiple Erven of the Vaterstone Township-GU o<br>Remainder of farm Witton Park No. 11 484-GU, stuated in ul/Mathues Local<br>within Judisdiction of Empargent Maginterial District, KwaJulu-Natal Province | Uru Natal Department of Mil<br>Oil Shale on the portion 1 ar<br>of the farm Canewdon Lod<br>10 379-GU. Portions 3, 4, 7, 4<br>nd Portions 2, 3, 8, the Rema<br>Municipality under King Cet | teral Resource<br>of the Remains<br>ge No. 11 370-<br>and 8 of the ta<br>inder of partia<br>thways District | is and Energy<br>der of the farm<br>GU. Portions 1<br>mi Lot 197<br>n 5, and the |            |
| This Notification is being given in compliance with the terms at: Mineral and<br>2002) (NPRDA), National Environmental Management Act, 1998 (Act No. 1)   | 17 of 1998), and EA Regulati   | ons (as amend   | led: 07 April 20   | 171        |
| which requires that stokeholders must be notified of Raycom Resources (Pty  |  |   |  | 0          |
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| Masindi, Nefale «masindi@singconsulting.co.za»  | 4 Really  | 47 Reply All   | -> Forward   |                    |  |  |  |
| To 'info@kawerka.gov.a/<br>Cc 'Terreth, Singo'; 'inderri@singeconsulting.co.a/  |   |  | 76321/04   | 311517             |  |  |  |
| Bickground Information Bocument pdf<br>1020108  |   |  |  |                    |  |  |  |
| Good Day,   |   |  |  |                    |  |  |  |

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concerns and provide suggestions for enhanced benefits;
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• Comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme Report (EMPr)

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| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON   | THE VAR                                       | OUS FARM   | S, SITUATED                     | W         |
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| Masindi, Nefale «masindi@singcconsulting.co.za»  | 4- Reply                                      | No Raphy All   | -+ Fanuard                      | - 101     |
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| Good Day, Moongeni Ishabalala  |   |  |                                 | -         |
| I hope this email finds you well.  |   |  |                                 |           |
| Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby with to inform yo<br>Prospecting Right together with an Environmental Authorization to the KwaZulu Notal Depart<br>(DNRE) for the purpose of Prospecting for <b>Cool, Pseudocool</b> and <b>Tobante/Oil Shale</b> on the p  | ment of Min<br>contion 1 an                   | end Resource<br>d the Remaind                        | s and Energy<br>ler of the farm |           |
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| This Notification is being given in compliance with the terms of: Mineral and Petraleum Resou<br>2002) (MPRDA). National Environmental Management Act. 1998 (Act No. 107 of 1998), and E<br>which requires that stakeholders must be notified of Raycom Resources (Pty) Ltd.'s intention<br>menfioned minerals.  | A Regulatio                                   | ns las amend   | ed. 07 April 20                 | 971       |
| This invitation is being extended to you because the department that you represent might b   | e somehow                                     | be enforcing.  | any of the                      | ē         |
| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON   | THE VAR                                       | EOUS FARM  | S, SITUATED                     | D W       |
| Masindi, Nefale «masindii@singeconsulting.co.za»   | () Reply                                      | ≪j ReplyAl   | → Forward                       | m         |
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Good Day, Mbongeni Tshabalala,

I hope this email finds you well.

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PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W...

| Masindi, Nefale < masind/@singoconsulting.co.za>  | to Reply  | 带j Reply All                                      | -> Fernard.                                       |        |
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| To 'sikegikiktanyin@kertanipert.gov.as'<br>Co 'Kerneth, Sego': 'solani@virgeconsubing.co.as', takatari@xingoconsubing.co.as', 'dubesy@ki  | allocourged com,  |   | Ni 2521.04  | 301535 |
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| Good Day, Ms. Zlungle Khanyle .   |   |   |   |        |
| I hope this email finds you well.   |   |   |   |        |
| Singo Consulting (Phy) Ltd on behalf of Raycom Resources (Phy) Ltd, hereby with to init<br>Prospecting Right together with an Environmental Authorization to the KwaZulu Natal<br>(DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanile/Oil Shale of<br>Dunally No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 7, 10, 11 and the Remainder of the far<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the form Lot 221 Empangeni No. 10 379-O | Department of Min<br>on the portion 1 and<br>rm Canewdon Lodg | ieral Resource<br>dithe Remains<br>ge No. 11 370- | s and Energy<br>Ser of the form<br>GU. Portions 1 | 1      |

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This invitation is being extended to you because the department that you represent might be somehow be enforcing any of the

PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ...



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I hope this email finds you well.

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## PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED W ....

| Masindi, Netale «masindi@sngcconsulting.co.za»   | F5 Royly   | Hj Reph All   | $\rightarrow$ Ferward  | ***                            |
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| Good Day, Ms Bernadet Pawandiwa,   |  |   |  | -                              |
| I hope this small trids you well.  |  |   |  |                                |
| Prospecting Right together with an Environmental Authorization to the Kwalulu Natal Depar<br>(DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Tarbanite/OII Shale on the<br>Dunalty No. 11 113-GU, Partians 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Car<br>8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 10 379-GU, Part<br>Empangeni No. 12 418-GU. Multiple Erven of the farm Lot 221 Empangeni No. 10 379-GU, Part<br>Empangeni No. 12 418-GU. Multiple Erven of the Vaterstone Township-GU and Partiens 2, 3, 4<br>Remainder of farm Witton Park No. 11 484-GU, situated in uMhlathuse Local Municipality und<br>within Jurualiction of Empangeni Magisterial District, Kwalulu-Narial Province. (DMRE Ret: K2N<br>This Notification is being given in compliance with the terms of Mineral and Petroleum Reso<br>2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and if<br>which requires that stakeholden must be notified of Raycom Resources (Phy) Ltd.'s Intention<br>mentioned minerals. | partian 1 and<br>newdon Lodg<br>ions 3, 6, 7, a<br>8, the Remain<br>ler King Ceth<br>Har Regulation<br>SA Regulation | I the Remains<br>e No. 11 370-<br>nd 8 of the fai<br>ider of portion<br>ways Dirtlet<br>11025 PRI,<br>prment Act, 2<br>rs (as amend | ter of the form<br>GU, Portions 1<br>m Lot 197<br>5, and the<br>Municipality,<br>202 (Act No. 2<br>ed. 07 April 20 | , <b>2</b> , 6,<br>9 at<br>971 |
| This invitation is being extended to you because the department that you represent might b   | e somehow l  | be enforcing  | any of the   | 5                              |
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| Masindi, Nefale «masindi@singoconsulting.co.za»  | 5 Reply  | Hy Reply All  | -> Ferward   |                                |
| To berradetp@anafapmb.cn.zz<br>Cr. Vesneth, Singo; "udsen@singoconsuting.cn.zz; "takalan@singoconsuting.cn.zz; "Owm"   | 11   | 1   | Fi 202 (A  | 4/30 15:37                     |

Good Day, Ms Bernadet Pawandiwa,

I hope this email finds you well.

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| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PT  | GEID, ON THE HAS   |   |   |            |
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| 16 Wanistoanbu@unparbiorg<br>Es Wannih Singer (indent@ungeconsilling.co.se) bikalan@ungeconsilling.co.se) Own   | 0  |   | PH221/04  | 20 7248    |
| Excignment information Disconnerst pdf 🖕  |  |   |   |            |
| Good Day, Akani Shikambu,   |  |   |   |            |
| I hope this email finds you well.   |  |   |   |            |
| Singo Consulting (Pty) Urd on behalf of Raycom Resources (Pty) Urd, hereby with<br>Prospecting Right together with an Environmental Authorization to the KwaZuk/1   | Notal Department of Mil  | ieral Resource  | s and Energy  |            |
| [DMRE] for the purpose of Prospecting for Goal, Pseudocoal and Terbanite/Oil S<br>Dunoity No. 11 113-GU, Portians 2, 3, 4, 5, 6, 7, 8, 7, 10, 11 and the Remainder of t   | he form Conewdon Lod   | ge No. 11 370-  | GU, Portions 1  |            |
| 8, 7, 10, 11, 12, 13, 14 and the Remainder of the form Lot 221 Empangeni No. 10 3   | 179-GU, Portions 3, 6, 7, 6  | and 8 of the far  | m Lot 197   |            |
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| Empangent No. 12 418-GU. Multiple Erven of the Waterstone Township-GU and M<br>temainder of farm Witten Park No. 11 484-GU, shuated in uMhlathwe Lacal Mun<br>within Jurisdiction of Empangent Magisterial District, KwaZuka-Natal Province, (DM<br>This Notification is being given in compliance with the terms at: Mineral and Patr<br>2002) [MPRDA], National Emvironmental Management Act, 1998 (Act No. 107 of<br>which requires that stakeholders must be notified of Raycom Resources (Phy) Lid<br>mentioned minerats.<br>This Invitation is being extended to you because the department that you represe<br>PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PT<br>Mainti, Matale amount of the province of the resources) | icipality under King Ceh<br>(RE Ref. KIN 30/5/1/1/2)<br>oleum Resources Devel<br>1998), and BA Regulati<br>('s intention to obtain Pr<br>cent might be somehow                                     | nder of portion<br>hwaya District<br>11025 PR)<br>apment Act, 32<br>are (al-amenia<br>organizating Righ<br>be enforcing of          | s, and the<br>Municipality.<br>202 (Act No. 2<br>ed, 07 April 20<br>If for the above<br>any of the                | 917]<br>As |
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| Singe Consulting (Phy) Ltd on behalt of Raycom Resources (Phy) Ltd, hereby with to<br>Prospecting Right together with an Environmental Authoritation to the Kwatuk via<br>(DMRE) for the purpose of Prospecting for Coal, Pseudoceal and Totbanik/OII She<br>Dunolly No. 11 113-GU, Partions 2, 3, 4, 5, 4, 7, 8, 1, 10, 11 and the Remainder of the<br>6, 5, 10, 11, 12, 13, 14 and the Remainder of the form Let 221 Impongeni No. 10 37<br>Empangeni No. 12 418-GU. Multiple Erven of the Waterstone Township-GU and Port<br>Remainder of term Witten Park No. 11 484-GU, structed in UKPlathuse Local Munici<br>within Jurisdiction of Empangeni Magisterial Division, Kwažulu-Narial Province. (DWR<br>Init Notification is being given in compliances with the terms of Mineral and Petrol<br>2002) (MPRDA). National Environmental Management Act. (1978 (Act No. 107 of 15<br>which requires that stakeholders must be notified at Raycom Resources (Phy) Ltd. 5<br>mentioned minerals. | tot Department of Min<br>le on the perfer 1 and<br>larm Conewdon Lodg<br>N-GU, Portions 3, 6, 7, a<br>fons 2, 3, 8, the Remain<br>pairly under King Cettil<br>5 Ref: K2N 99/5/1/1/2/<br>aum Resources Develo<br>78), and EA Regulatio | erci Renource<br>d the Remaind<br>pe No. 11 370-<br>nd 8 of the far<br>nder of portion<br>hways District<br>11025 PR),<br>pment Act, 25<br>ns (a) amend | Cond Energy<br>or of the form<br>SU, Portions 1,<br>m Lot 197<br>5, and the<br>Municipality,<br>02 (Act No. 2<br>ed, 07 April 20 | 2. 4.<br>S of |
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Cr. Kenneh, Singel: rudani@singecons.drig.cr.ari, 'arkelni@singocensifing.co.ari, 'defree@singccansiling.co.ari

Good Day, Siyabonga Nsele,

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Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

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| Good Day, Samaniha Nakker,   |  |   |  | -                    |
| Thope this email finds you well.   |  |   |  |                      |
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Good Day, Samantha Naicker,

I hope this email finds you well.

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RE PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATE ...

 Samantha Naicker - (NaickeSa@eskom.co.za)

 <sup>(1)</sup> Reply ® Reply All
 <sup>(2)</sup> Apply All

Good afternoon Masindi,

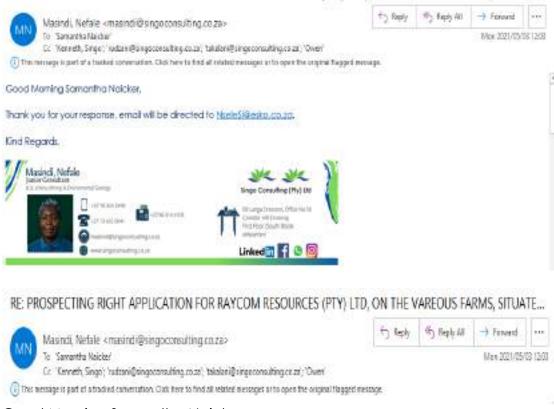
Please note the process for these applications:

Kindly forward it to Mr Siyabonga Nsele (Eskom Lands & Rights Manager) <u>NseleSi@esko.co.za</u>

Mr Nsele will allocate your application to an officer for investigation.



### RE: PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATE ...



Good Morning Samantha Naicker,

Thank you for your response, email will be directed to NseleSi@esko.co.za.

| Kind Regards,<br>Masindi, Nefale<br>Junior Consultant<br>BSC Plong Manta & Environmental Geology | Singo Consulling (Pty) Lid   |
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| -27 75.524 5499<br>-27 86.514 4105<br>-27 86.514 4105<br>-27 86.514 4105                         | 09 Langa Crescent, Office No. 16<br>Corridor: Hill Crossing<br>First Roor South Block)<br>eMplahleni |
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| Masindi Nefale «masindi@singoconsulting.cn.za»   | to le  | oly (*) Reply All   | $\rightarrow$ Fervard  |          |
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| Good Day, Themblike Sibiya,   |  |  |  |             |
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#### PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON THE VAREOUS FARMS, SITUATED V

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Masindi, Nefale «masindi@singoconsulting.co.za» To SibyrRi@estrm.co.ar

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Good Day, Thembisile Sibiya,

I hope this email finds you well.

Singo Consulting (Pty) Ltd on behalf of Raycom Resources (Pty) Ltd, hereby wish to inform you that it has submitted an application for a Prospecting Right together with an Environmental Authorization to the KwaZulu Natal Department of Mineral Resources and Energy (DMRE) for the purpose of Prospecting for Coal, Pseudocoal and Torbanite/Oil Shale on the portion 1 and the Remainder of the farm Dunolly No. 11 113-GU, Portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the farm Canewdon Lodge No. 11 370-GU, Portions 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 197 Empangeni No. 10 379-GU, Portions 3, 6, 7, and 8 of the farm Lot 197 Empangeni No. 12 418-GU, Multiple Erven of the Waterstone Township-GU and Portions 2, 3, 8, the Remainder of portion 5, and the Remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province. (DMRE Ref: KZN 30/5/1/1/2/ 11025 PR).

This Notification is being given in compliance with the terms of: Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and EIA Regulations (as amended, 07 April 2017) which requires that stakeholders must be notified of Raycom Resources (Pty) Ltd.'s intention to obtain Prospecting Right for the above-mentioned minerals.

This invitation is being extended to you because the department that you represent might somehow be enforcing any of the Republic of South Africa's laws of which ensures; prevention of pollution & environmental degradation, promotes sustainable development & socio-economic development, or instead might be affected by prospecting activities. Hence you are being offered an opportunity to:

- Register as an I&AP and to respond to the environmental compliance process;
- Raise issues of concerns and provide suggestions for enhanced benefits;
- Contribute to local knowledge;

• Comment on the Draft Basic Assessment Report (DBAR) & Environmental Management Programme Report (EMPr)

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Assessment Practitioner (EAP) to manage the Environmental Authorization process, by conducting Environmental Impact Assessment, Public Participation for the proposed project and compile an Environmental Management Programme Report. A Basic Assessment process has commenced, for your participation kindly fill the registration and comment form at the end of the Background Information Document (BID) attached and register your comments, issues, questions that you may have about the proposed project. Should you need any clarity on the attached document or have any queries with regards to the project, please do not hesitate to contact the appointed EAP on the details provided below.

Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.



| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, ON  | THE VARE  | OUS FARMS  | , SITUATED   | W                 |
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| Good Day: .   |   |  |  |                   |
| I hope this email finds you well.   |   |  |  |                   |
| Single Consulting (Pty) Ltd on behalf of Raydom Resources (Pty) Ltd, hereby with to inform you<br>Prospecting Right together with an Environmental Authoritation to the Kwaduk Natal Departity<br>(DARE) for the purpose of Prospecting for Cool. Provide cool and Tarbonite/OEShale on the price<br>Dunality No. 11 113-GU, Participa 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the Remainder of the tarm Carris, 8, 9, 10, 11, 12, 13, 14 and the Remainder of the farm Lot 221 Empangeni No. 12 418-GU. Multiple Enten of the Watestone Township-GU and Partons 2, 3, 4<br>Remainder of farm Witten Park No. 11 484-GU, strategies Township-GU and Partons 2, 3, 9<br>Remainder of farm Witten Park No. 11 484-GU, strategies Township-GU and Partons 2, 3, 9<br>Remainder of Empangeni Magisterial Datrict, KwaZub-Natal Province. (DMRE Bell X2N)<br>This Notification of Empangeni Magisterial Datrict, KwaZub-Natal Province. (DMRE Bell X2N)<br>2000 (MPRDA), National Environmental Management Act, 1998 (Act No. 107 of 1998), and E<br>which requires that stakeholders must be notified at Raydom Resources (Phy) Ud.'s Intention I<br>mentioned minerals. | mant of Mini<br>ortion 1 and<br>water Lodg<br>ritors 3, 4, 7<br>the Remat<br>or King Cath<br>30/5/1/1/2/<br>roos Develo<br>A Regulation<br>o obtain Pro | and Resourced<br>the Remains<br>ge No. 11 S/D-<br>nder of partial<br>ways District<br>11025 PR).<br>pment Act, 20<br>re (as amenda<br>specifing Righ | and Energy<br>let of the tarm<br>CIU, Portiana 1,<br>lemitud 197<br>5, and the<br>Municipality.<br>02 (Act No. 28<br>ed, 07 April 20<br>I for the abov | 2.<br>9 of<br>17) |
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| PROSPECTING RIGHT APPLICATION FOR RAYCOM RESOURCES (PTY) LTD, OF  | THE VAR   | EOUS FARM  | IS, SITUATE  | D W               |
| Masindi, Nafale «masindi@singconsulting.co.za»  | <> Reply  | 6 <sub>7</sub> Eaply All   | -> Forward   |                   |
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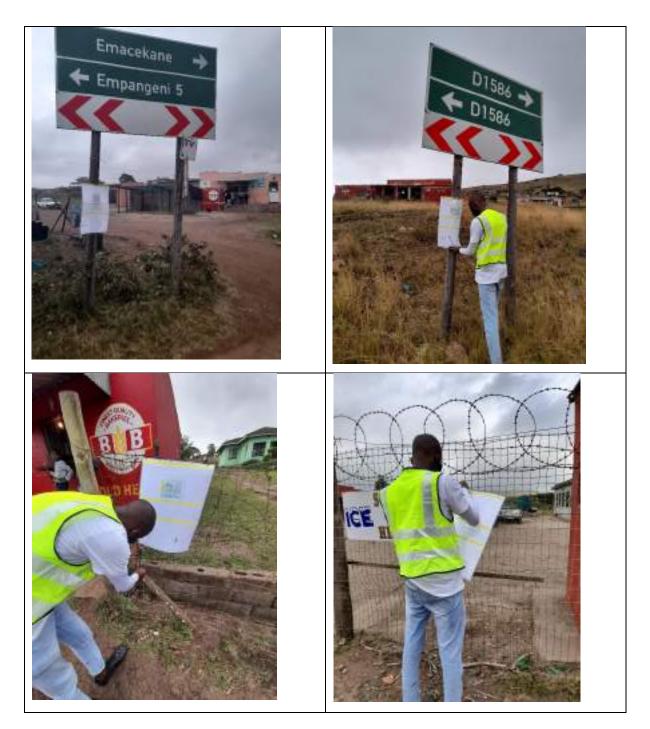
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Please find the attached Background Information Document (BID) for detailed description of the proposed project and timelines.



Appendix 4: Site Inspection, Site Notice Plugging and Access routes.

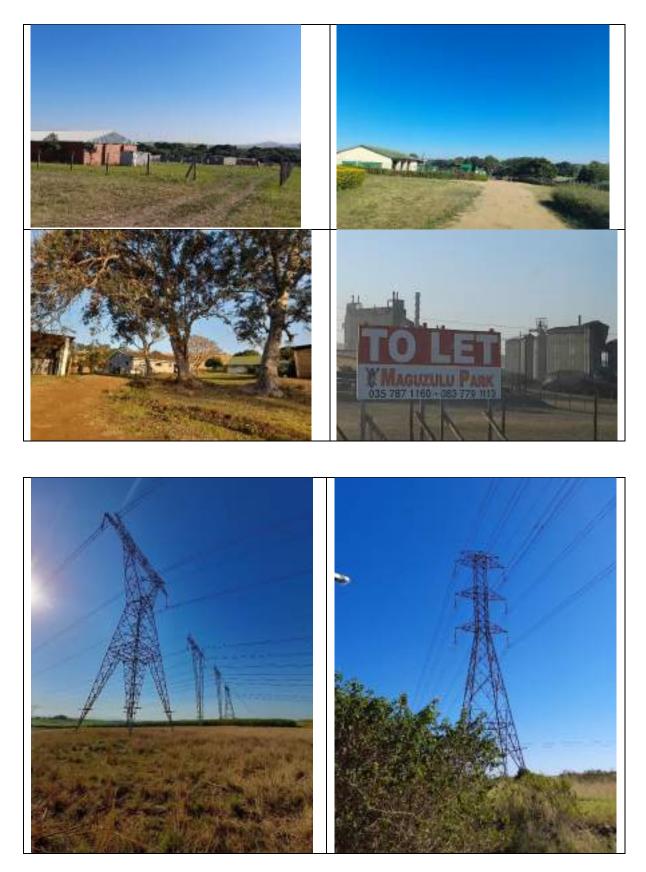




Plugged Site notices



Okula and Mandozi River



Power lines running through proposed prospecting area



Fauna observed on site



Access roads



Railway track intersecting project area

Appendix 5: Basic Specialist Studies and Screening Reports

#### **Appendix 6: Company Profile**

# NDINANNYI KENNETH SINGO



Singo Consulting (Pty) Ltd

Private Bag X 7214. Postnet Suite 125, Witbank 1035 Office No. 16, First Floor (South Block), Corridor Hill Crossing, 09 Langa Crescent, Corridor Hill, eMalahleni, Witbank, 1040. Tel No.: 072-081-6682/078-2727-839 Fax No.: 086-514-4103 F-mail address: kenneth@strap.computing.co.ta

|                       | E-mail a | adrett: <u>kenneth@singoconsultrig.co.2</u> g                              |
|-----------------------|----------|--|
| TERRARY EDUCATION     |          |  |
| Qualification         | 3        | Ph.D. (Geology, Applied Environmental Mineralogy & Geochemistry)           |
| Institution           |          | University of Johannesburg   |
| PhD Project Title     |          | in Search of the Possible Economic Potential, through Conceptual Study,    |
|                       |          | on Reclamation of Defunct Mine Residue areas for Development               |
|                       | Purp     | oses: Case study of Musina Copper Mine, Giyani Louis Moore Gold Mine and   |
|                       |          | Zwigodini Nyala Magnesite Mine, South Africa                               |
| Qualification         | 3        | M.Sc. (Environmental Management)   |
| Institution           | 1        | University of South Africa   |
| Masters Project Title | 12       | An Assessment of Heavy Metal Pollution in the Vicinity of the Defunct      |
|                       |          | Copper Mine Dumps in Musina, South Africa                                  |
| Qualification         | 3        | B.Sc. (Hons) Mining & Environmental Geology                                |
| Institution           | 20       | University of Vendia   |
| Honours Project Title | -        | Structural Control on Kimberlite Pipes: A Case Study of Venetia Kimberlite |
|                       |          | Pipe-K19, Venetia Open Cast Diamond Mine, South Africa                     |
| WORK EXPERIENCE       |          |  |
| Company               |          | Singo Consulting   |
| Position              | 4        | Director/Frincipal Consultant  |
| Duration              | 1        | 9 August 2012TODATE  |
| Key Focus Area        | 1        | Environmental Projects   |
|                       |          |  |

Technical work:

- Environmental Impact Assessment
- Environmental Management Plans
- Social and Community Development Plans
- Geological (Exploration, Resource Estimation and Competency Report)
- Hydrological and Hydrology (Surface and Groundwater Studies)
- Soil Science (Soil profiling, Modelling and Soil Chemistry)
- Environmental Control Office
- Geotechnical (Soil and Rock)
- Mining Feasibility Studies

#### TRAINING COURSES

- 17-19 April 2012: GSSA Drilling Methods & Techniques in Resource Exploration
- > 13-14 September 2012: GSSA Exploration Drill Site Safety
- > 3 May 2013: SHE Representative Training
- > 6-10 May 2013: Witwatersrand University, A3 SHE Risk Assessment Management
- 22 July 2013: AATCGS Geophysics 101: Basics of Geophysics and Its Application in Coal
- 31 July 2013; Mentorship Training
- > 14 April 2014: A2 Safety for Managers
- > 13 May 26 June: Lump Ore Beneficiation (Basic Coal Preparation): Metallurgy G101-105, Colliery Training College, Witbank
- 14-17 July 2014: Safety Leadership Programme
- 6-8 Oct 2014: Understanding Coal Guality, ALS Witbank Training
- 3-7 Nov 2014: Foundation for Leadership Programme
- 3 Feb 2015: 4X4 Defensive Driving Training
- > 1 May 2015: Assertiveness Awareness and Training
- > 21-22 July 2016: Time Management Training

#### SYMPOSIUMS

- 29 July 2013: Presenter: 4<sup>th</sup> Prof Humphrey Memorial Post-Graduate Symposium, University of South Africa
- > 11 November 2015: Presenter: Wits GSSA REI Colloquium: Economic Potential and Viability of reclaiming mine dumps in the Limpopo Provice.

#### CONFERENCES

#### UST OF CONFERENCE PROCEEDINGS AND SYMPOSIUMS:

- 26-28 November 2012: Aminergy Acid Mine Drainage South Africa Conference
- 10-12 March 2014: Presenter: SAICE 5<sup>th</sup> International Mining and Industrial Waste Management Conference
- 29 Sept-3 Oct 2014: 9th International Mine Closure Conference, Sandton
- > 16-17 March 2015: Workshop: South Africa Mining-Related Landscape" Rehabilitation Status Quo: Identifying Work Required to Close Current Knowledge gaps, WRC, Pretoria.
- 8-11 Sept 2015: Land Rehabilitation Society of Southern Africa (LaRSSA): Mine rehab and biodiversity.
- N.K. Singo\*, 2015, Wits GSSA REI Colloquium: Economic Potential and Viability of reclaiming mine dumps in the Limpopo Province. 11th November 2015, Witwatersrand University, Johannesburg, South Africa.
- N.K. Singo\* and J.D. Kramers, 2016. Uranium as a potential health hazard as well as (even) an economic asset in the Louis Moore tailings dump, near Giyani, Limpopo Province. In symposium Proceedings: 6th Mintek Analytical Symposium "The Environment", Mintek G4, Randburg, Johannesburg, South Africa, Friday 21st October 2016.

- N.K. Singo\* and J.D. Kramers, 2017. Chrysofile (white asbestos) occurrence in the Nyala Magnesite Mine dumps and the solis around them, and its health implications to the community of Zwigodini Village, Limpopo Province. 5th Annual Conference. 1-4 August 2017, Resilient Landscapes in a Changing Climate.
- N.K. Singo" and J.D. Kramers, 2017. Unlocking the potential economic benefit of a tailings dump through resource modeling and estimation: SHE (safety, health, and environmental) issues and solutions. MineSafe 2017 Conference, Striving for zero harm (driving excellence through compliance), Emperors Palace, Hotel Casino Convention Resort, Johannesburg, 30–31 August 2017, The Southern African Institute of Mining and Metallurgy (SAIMM).

### LIST OF PUBLICATIONS.

- N.K. Singo, and J.D., Kramers, 2017. Geochemical and Mineralogical Characterization of two low grade stockpiles (mine residue deposits): acid mine drainage vs. neutral-alkaline mine drainage perspectives. A case study of the Musina (Copper) and Nyala (Magnesium) mines, South Africa.
- N.K. Singo, and J.D., Kramers, 2017. Preferred tailings retreatment approach to unlock value and create environmental sustainability of the Louis Moore tailings dump, near Giyani, South Africa.
- N.K. Singo, and J.D., Kramers, 2017. Copper tailings retreatment to deliver economic value with concurrent rehabilitation at the Musina mine, South Africa.

List of selected Projects current conducted and successfully completed (as a Lead EAP) Mining Permits, Mining Rights, Filling station and Prospecting Right:

Basic Assessment Report (BA) Mabeskraal (Tambootierand) Filling Station with a convenience store within a portion of portion 0 of the farm Tambootierand farm no.143., North West province.

#### DIVINE ENERGY HOLDINGS

Cell: 078 728 4021 012 771 6004 Fax: (+27) 86 514 4103 taderera@icloud.com

> Basic Assessment Report and Environmetal Management Programme Report in Respect of a Portion of Portion 01 of The Farm Elandslaagte 368 JS, Magisterial District of Middelburg, Mpumalanga Province

AARNOOT MINING (PTY) LTD

Tel No.: 079 024 2252 / 073 226 4578. E-mail address: kekanamolfs@gmail.com

> Establishment of Coal Mining Operation On the Farm Middelburg Town and Townlands, Farm 287 JS (Portion RE), in Middelburg, Mpumalanga Province

### AC & S DISTRIBUTORS AND MINING SUPPLIES (PTY) LTD

Keiskamma Street, Rietfontein Farm 314, Portion 8 Private Bag X1838 Middelburg Mpumalanga 1050

- Environmental impact assessment report and environmental management programme Mining Right Report on Portion 10 of the farm Graspan 222 IS, situated in the Msukaligwa Local Municipality within the District of Gert Sibande in the Mpumalanga Province.
- Prospecting Right Application on Portion(s) 15 and 16 of the farm Spitzkop 333 KT under the magisterial district of Sekhukhune land, in Limpopo Province

MOBILE: +27 72 7276 041 FAX +27 (0) 086 5390 133

E: carbet.malapane@carbetandlaps.co.za

Mining permit by Lence Holdings (Pty) Ltd for the proposed aggregate pit on Portion of the Remaining Extent of the Farm Njelepoort 193 MT, situated in the Magisterial District of Dzanani, Limpopo Province.

LENCE HOLDINGS (PTY) LTD 156 Klien Nieuw Muckleneuk Water Kloof 001811

> APPLICATION FOR MINING RIGHT, INTEGRATED WATER USE LICENSE AND ENVIRONMENTAL AUTHORISATION, ON DIFFERENT PORTIONS OF THREE FARMS: MOOIHOEK 168 HT, KUPSPRUIT 136 HT,

LIPSPRUIT 138 HT FOR OPENCAST THAT WILL TRAMSFORM TO UNDERGROUND COAL MINE IN THE MAGISTERIAL DISTRICT OF PIET RETIEF, MPUMALANGA

#### LEZALEUHLOKOHLOKO MINING AND PROJECTS CC.

CELL NO: 078 146 1436 FAX NO: 086 5144 103

> Prospecting Right Application for Chrome and Platinum Group Metals (PGMs) in all Portions of the Farm Droogekloof 471 KR, situated under the Magisterial District of Waterberg, Limpopo Province

#### VHARANANI MINING (PTY) LTD

| TEL NO:           | 015 295 6085       |  |
|-------------------|--------------------|--|
| FAX NO:           | 015 295 6918       |  |
| POSTAL ADDRESS:   | P.O.BOX 4546       |  |
|                   | POLOKWANE          |  |
|                   | 0700               |  |
| PHYSICAL ADDRESS: | 3A Schoeman Street |  |
|                   | Polokwane          |  |
|                   | 0699               |  |

### List of Projects:

List of Projects conducted and successfully completed as Environmental Control Officer (ECO) in mining Permits.

| Client Nome        | Contract Mort date<br>(dd/mm/yyyy) | Contract End date<br>(dd;mm;/yyyy) | *Contoct Ferson | Contact Person's phone<br>number(s) and Email<br>Address<br>H Mduza<br><u>branduza/Ricbud.com</u><br>Riaan CoalX<br>«riaan@coalx.co.za»<br>076.246.3677<br>simelane@b@gmail.com,<br>imelane@jament.co.za |  |
|--------------------|------------------------------------|------------------------------------|-----------------|--|--|
| Coali-šalmoral     | 26-02-2018                         | Ongoing                            | Ran Telma       |  |  |
| New Verture Mining | 23-4-2017                          | Ongoing                            | Nr. G8 Smelane  |  |  |
| Yerali Mineral     | 3-8-2017                           | Ongoing                            | Mr. Rambauli 1J | ora 501 2819   |  |
| Benicon Mining     | 1-10-2018                          | Orgoing                            | Mr Gavin Kotzen | 063 625 4555<br>017 547 1047   |  |

CHERESH TROMOTE PROSPER

28 March 2011

Mr N Singo P O Box 1034 Makhado 0920

Dear Mr Singo

## APPLICATION FOR MEMBERSHIP - MEMBER NO 967334

I have pleasure in advising you that your application for membership of the Geological Society of South Africa was ratified by the Council of the Society.

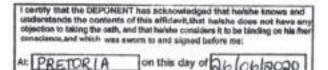
Trusting that your association with the Society will be pleasant and stimulating.

Kind regards

SB.Sin

CRAIG SMITH EXECUTIVE MANAGER

CERTIFIED TRUE COPY MD TSHAKHUMA CA (SA)



Administening oeth complied with the regulations contained in Government Gazetta No.R1255 of 21 July 1972, as amended

Signature: MUUL

COMMISSIONER OF OATHS SAIT Member MG TSHAKHUMA Ex Officio - MTP (RSA) 542 Platinum park 2, 44 Theron Str Ciarina 0182







This is to certify that

NO TERMONIA CA (SA)

# **Singo Consulting Pty Limited**

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is a member of the Wildlife and Environment ciety of South Africa (WESSA)

> Member Number MB1242730

Membership Period 2019 to 2020 From: 25 November 2019



Registration Number in terms of the Non-Profit Organisations Act 1997: 000 – 716 Registration Number: 1933/004658/08 (Non-Profit Company) Tax Exemption Number: 18/11/13/1903 | PBO Number: 130001903

THE WILDLIFE AND ENVIRONMENT SOCIETY OF SOUTH AFRICA



## OF SOUTHERN AFRICA

# LAND REHABILITATION SOCIETY OF SOUTHERN AFRICA

hereby certifies that

# Dr Ndinannyi Kenneth Singo

is a fully paid-up member of the Society having all the rights and privileges of a

# Associate Member

Membership ID:

On behalf of the Executive Council

President of the Society Date Joined: 10 June 2015

Vice President of the Society Expiry date: 13 May 2021

CERTIFIED TRUE COPY MG TSHAKHUMA CA (SA)

| objection to taking the oath.  | NT has acknowledged that helphe knows and<br>of this affidavit, that helphe does not have an<br>and that helphe considers it to be binding on his de<br>twom to and signed before me: |
|--|---|
| AL PRETORIA  | on this day of 26/06/2020   |
| Admisistaring cast comptee<br>Gazette No.R 1258 of 21 July<br>Signature:                                   |   |
| COMMISSIONER OF (<br>SAIT Member MG TS)<br>Ex Officio - MTP (RSA<br>542 Platinum park 2, 4<br>Clarina 0182 | AKHUMA  |

CERTIFIED TRUE COPY MG TSHANHUMA CA (SA)



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NDENANNYI KENNETH SINGO

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UNISA

## OFFICIAL STATEMENT

#### NDINANNYI KENNETH BIRGO

HAS IN THE ACADEMIC YEAR 2019 COMPLIED WITH THE REQUIREMENTS FOR THE DEGREEF OF

MASTER OF SCIENCE

WHICH IS TO BE AWARDED

IN THE BUBLECT ENVIRONMENTAL MANAGEMENT

TITLE OF DEBURTATION

AN ARDERIGHT OF HEAVY METAL POLLUTION NEAR AN OLD COPPER MAKE DUMP AN MUSICAL DOUTH AFRICA.

DESERVATION ADDITIED ON 3 SEPTEMBER JUST

MARK FOR DESERTATION 125

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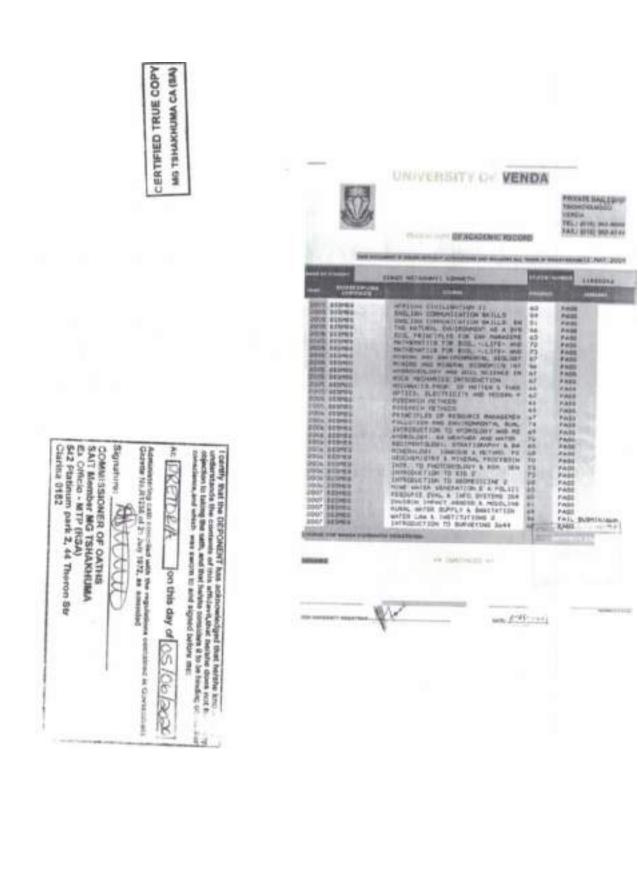
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# UNIVERSITY OF VENDA



PRIVATE BAG 1500 THOHOVANDOU VENDA TEL: (015) 982-8000 FAX: (015) 982-4749

TRANSCRIPT OF ACADEMIC RECORD

THIS DOCUMENT IS INDUCED INT NOUT ALTERNATIONS AND INCLUDES ALL YEARS OF REDISTRATION 11 MAY 2009

|   | NEED OF NEEDONT  |                            | INSO NDINANNYI KENNETH   | STUDENT NUMBER   |  | 11550242    |
|---|--|----------------------------|--|--|--|-------------|
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I certify that the DEPONENT has acknowledge understands the contents of this affidavit, that objection to taking the oath, and that he/she conside conscience, and which was sworn to and signed

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MG TSHAKHUMA CA (SA)

AL PRETORIA on this day of

Administering oath complied with the regulations Gazette No.R1258 of 21 July 1972, as amended

Signature:

COMMISSIONER OF OATHS SAIT Member MG TSHAKHUMA Ex Officio - MTP (RSA) 542 Platinum park 2, 44 Theron Str Clarina 0182

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# University of Venda



This is to Certify that the Degree of

Bachelor of Earth Sciences in Alining and Environmental Geology

> was Awarded to CINED ROIMANTE REMAINS

at a Ceremony held on the

17-80.Y-2018 in Accordance with the Provisions of the Act and Statute



Bice Chancellor

CERTIFIED TRUE COPY MA TSHAKHUMA CA (5A)

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# BASIC PROSPECTING RIGHT HYDROGEOLOGICAL

BASIC HYDROGEOLOGICAL STUDY FOR A PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION FOR RAYCOM RESOURCES (PTY) LTD ON PORTION 1 AND THE REMAINDER OF THE FARM DUNOLLY NO. 11 113-GU, PORTIONS 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 AND THE REMAINDER OF THE FARM CANEWDON LODGE NO. 11 370-GU, PORTIONS 1, 2, 6, 8, 9, 10, 11, 12, 13, 14 AND THE REMAINDER OF THE FARM LOT 221 EMPANGENI NO. 10 379-GU, PORTIONS 3, 6, 7, AND 8 OF THE FARM LOT 197 EMPANGENI NO. 12 418-GU, MULTIPLE ERVEN OF THE WATERSTONE TOWNSHIP-GU AND PORTIONS 2, 3, 8, THE REMAINDER OF PORTION 5, AND THE REMAINDER OF THE FARM WILTON PARK NO. 11 484-GU, SITUATED IN UMHLATHUZE LOCAL MUNICIPALITY UNDER KING CETSHWAYO DISTRICT MUNICIPALITY, WITHIN JURISDICTION OF EMPANGENI MAGISTERIAL DISTRICT, KWAZULU-NATAL PROVINCE, SOUTH AFRICA.

# PREPARED FOR PREPARED BY Singo Consulting (Pty) Ltd Office No. 16, First Floor (South Block) Corridor Hill Crossing, 09 Langa Crescent Corridor Hill, eMalahleni, 1035. Tell No.: 013 692 0041 Cell No.: 072-081-6682/078-2727-839 Fax No.: 086-514-4103 E-mail address: kenneth@singoconsulting.co.za DMRE REF: KZN 30/5/1/1/2/ 11025 PR). 2021

Hydrogeological study for Raycom Resources (Pty) Ltd for Prospecting Right Application of Coal,

Pseudocoal and Torbanite/ Oil Shale

#### **Project Information**

Report Type Basic Prospecting Right Hydrogeological Report

Project Title: Hydrogeological Report for Prospecting Right Application that has been Lodged for Coal, Pseudocoal and Torbanite/ Oil Shale, located on portion 1 and the remainder of the farm Dunolly No. 11 113-GU, portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the remainder of the farm Canewdon Lodge No. 11 370-GU, portions 1, 2, 6, 8, 9, 10, 12, 13, 14 and the remainder of the farm Lot 221 Empangeni No. 10 379-GU, portions 3, 6, 7 and 8 of the farm Lot 197 Empangeni No. 12 418-GU and portion 2, 3, 8, the remainder of portion 5, and the remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, Kwazulu-Natal Province, South Africa.
Client Raycom Resources (Pty) Ltd

Site Location Empangeni, Kwazulu-Natal Province, South Africa

Version 1

Approval

Date 07 May 2021

Compiled By Bogosi Ramodisa (Hydrogeologist Intern) Singo Consulting (Pty) Ltd

 Reviewed By Mutshidzi Munyai (Hydrogeologist) Singo Consulting (Pty) Ltd (Water Resources Science (Candidate Natural Scientist), Environment Science (Candidate Natural Scientist) (SACNASP Registration Number 122464)
 Final Review Dr. Kenneth Singo (Principal Consultant of Singo Consulting (Pty) Ltd) Electronic signatures







#### **Report Credentials**

#### Disclaimer:

Copyright:

The results and conclusions of this report are limited to the Scope of Work agreed between Singo Consulting (Pty) Ltd and Raycom Resources (Pty) Ltd for whom this investigation has been conducted. All notions made and all knowledge contained within this report and its attachments hinge on the convenience to and dependability of relevant information, including maps, previous reports and word-of-mouth, from the Client and affected parties. All work conducted by Singo Consulting (Pty) Ltd is done in accordance with the Singo Consulting (Pty) Ltd Standard Operating Procedures. The copyright in all text and other topics (involving the approach of comprehensive writing) is the absolute property of Singo Consulting (Pty) Ltd, unless were referenced to external parties. It is a criminal offence to replicate and/or use, without written permission, any matter, technical procedure and/or technique contained in this document. This document must be referenced if any material included in it is used in any other document.



#### **EXECUTIVE SUMMARY**

Singo Consulting (Pty) Ltd was appointed by Raycom Resources (Pty) Ltd as an independent consulting company, to conduct a hydrogeological study. The hydrogeological study is being conducted in support of a prospecting right application for Raycom Resources (Pty) Ltd situated in uMhlathuze local municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, Kwazulu-Natal Province, South Africa.

#### OUTCOMES OF THE INVESTIGATION

- E Drilling activity will not be conducted near water resources.
- And all the wetlands such seep, perennial and non-perennial rivers will be buffered, and a 500m buffer will apply.
- The topography of the project area is situated in a concave topography range from 80 200 mamsl.
- Extreme caution will be taken during prospecting, washing of any mechanical equipment or vehicles will be allowed near the water resources.
- Water samples will be taken from selected the exploration boreholes by using approved sampling techniques and adhering to recognized sampling procedures. Samples will be analysed for both organic as well as inorganic pollutants, as mining activity often led to hydrocarbon spills in the form of diesel and oil.
- The core logs of exploration boreholes will be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- After prospecting, rehabilitation of the disturbed area will take place.
- The numerical model will be recalibrated as soon as more hydrogeological data such as monitoring holes are made available. This would enhance model predictions and certainty.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.



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#### **1 INTRODUCTION**

#### 1.1 Background information

Singo Consulting (Pty) was appointed by Raycom Resources (Pty) Ltd to conduct a hydrogeological study for the Prospecting Right Application which has been submitted for the prospecting of Coal, Pseudocoal and Torbanite/Oil Shale on the located on portion 1 and the remainder of the farm Dunolly No. 11 113-GU, portions 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and the remainder of the farm Canewdon Lodge No. 11 370-GU, portions 1, 2, 6, 8, 9, 10, 12, 13, 14 and the remainder of the farm Lot 221 Empangeni No. 10 379-GU, portions 3, 6, 7 and 8 of the farm Lot 197 Empangeni No. 12 418-GU and portion 2, 3, 8, the remainder of portion 5, and the remainder of farm Wilton Park No. 11 484-GU, situated in uMhlathuze Local Municipality under King Cetshwayo District Municipality, within Jurisdiction of Empangeni Magisterial District, Kwazulu-Natal Province, South Africa.

This report is not planned to be an intense description of the proposed project; however, it is conducted as a specialist provisional geohydrological study to evaluate the geohydrological impact the prospecting activity has on the environment.

#### 1.2 Project location

A locality map created by QGIS software illustrates detailed and comprehensive information regarding the surrounding settlements and infrastructure of the proposed project area. The proposed project area is located approximately 14 km North-West of Richards Bay, approximately 1 km North of North-West of Empangeni and South to South-East of Ntambinamasi.



Hydrogeological study for Raycom Resources (Pty) Ltd for Prospecting Right Application of Coal,

Pseudocoal and Torbanite/ Oil Shale

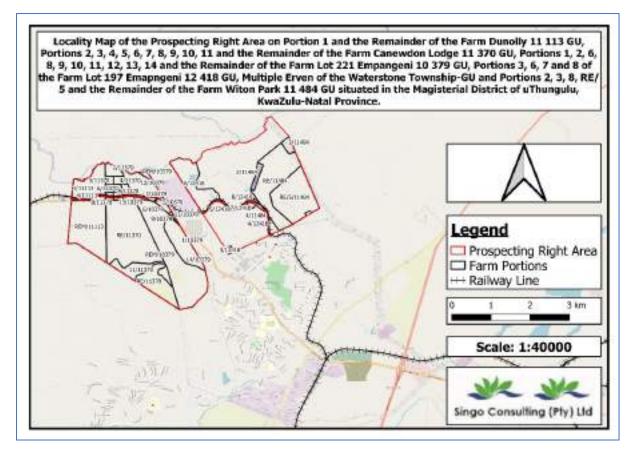


Figure 1: Locality map of the proposed project.

#### **2 GEOHYDROLOGICAL SETTING.**

#### 2.1 Topography and drainage

Topography is the study of the shape and features of land surfaces. The topography of an area could refer to the surface shapes and features themselves, or a description (especially their depiction in maps). Topography is a field of geoscience and planetary science and is concerned with local detail in general, including not only relief but also natural and artificial features, and even local history and culture.

The flow of water during rainy seasons flows from the area of high elevation to the area of low elevation as it is indicated by contour lines. The topography of the project area is situated in a concave topography ranging from 80 - 200 mamsl as displayed by the contour lines on the topology map below.



#### Pseudocoal and Torbanite/ Oil Shale

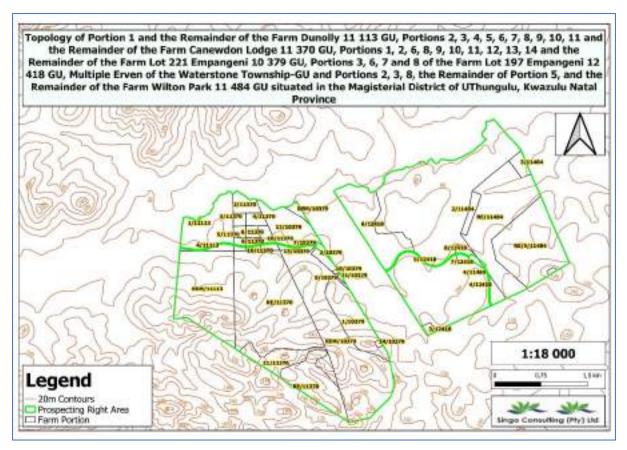


Figure 2: Topology within the project area.

The hydrology surrounding the proposed area is of vital importance as well. In this context hydrology is all the surface water appearing within and nearby the proposed project area, where a potential to be impacted upon by the project exist. The hydrology map, illustrates that the following water bodies exists within and nearby the project area:

- 🔜 Perennial river
- 🔜 Seep
- 🔜 Flat
- Channelled valley-bottom wetland
- Unchannelled valley-bottom wetland

These are important natural water resources that should not be disturbed by anthropogenic activities. For this project where prospecting right poses a risk on them, there should be measures and guidelines put in place that will protect the water resources in this area to ensure optimal conservation of water. The prospecting right will take place during dry seasons where the water percentages are exceptionally low in the water bodies. Drilling activity will not be



conducted near these water resources, the exploration geologists will be advised to drill and sample away from rivers and wetlands on site.

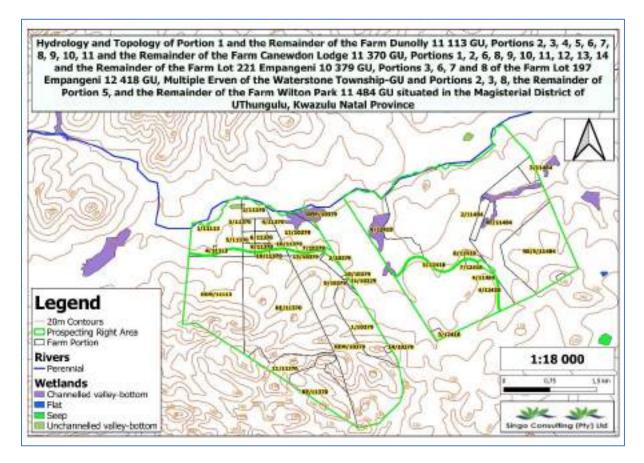


Figure 3: Hydrology and topology of the prospecting right area.

#### 2.2 Climate

Empangeni is 121 m above sea level. The climate in Empangeni is warm and temperate. Empangeni has significant amount of rainfall during the year, even on the driest month. The Köppen-Geiger climate classification is Cfa. The average annual temperature is 21.7 °C and the annual rainfall is 944 mm. The driest month is June and it has precipitation of 42 mm. January has the most precipitation, with an average of 113 mm. February is the Warmest month with an average of 25 °C. July has the average temperature of 17.7 °C and it is the lowest average temperature of the year.

There is a difference of 71 mm of precipitation between the driest and wettest months. The variation in annual temperature is around 7.3 °C. (Source: <u>https://en.climate-d</u> <u>ata.org/africa/south-africa/kwazulu-natal/empangeni-715226/</u>).



Hydrogeological study for Raycom Resources (Pty) Ltd for Prospecting Right Application of Coal,

#### Pseudocoal and Torbanite/ Oil Shale

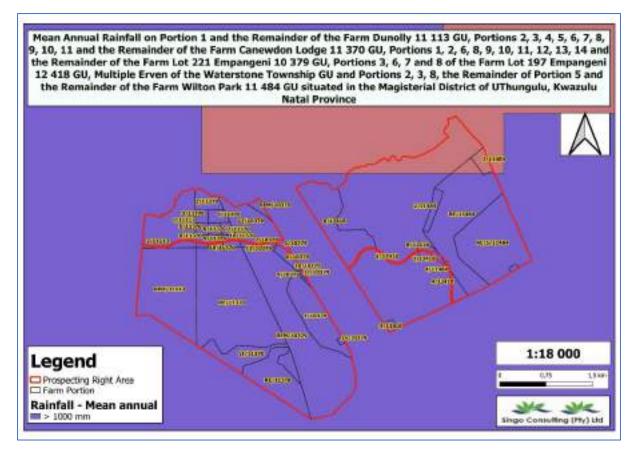
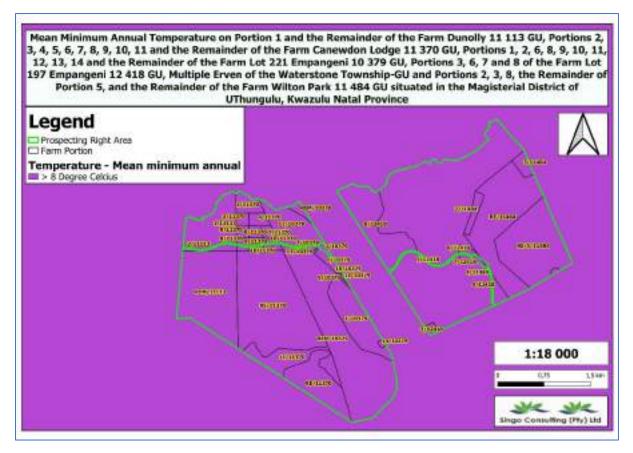


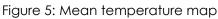
Figure 4: Annual rainfall map.



Hydrogeological study for Raycom Resources (Pty) Ltd for Prospecting Right Application of Coal,

Pseudocoal and Torbanite/ Oil Shale





#### 2.3 Catchment Description

The regional hydrological setting of the project site is indicated in figure 4. The project area is in the Pongola-Mtamvuna Management Area (WMA). The project area falls under the quaternary catchment of W12E, W12F and W12H. The WR2012 study, presents hydrological parameters for each quaternary catchment including area, mean annual precipitation (MAP) and mean annual runoff (MAR). Based on the WR2012 study, the project area falls within the quaternary catchment of W12E, W12F and W12H. The total catchment area of W12E is 399 km<sup>2</sup> with MAP of 1041 millimetre (mm). The total catchment area of W12F is 320 km<sup>2</sup> with MAP of 1039 millimetre (mm).



#### Pseudocoal and Torbanite/ Oil Shale

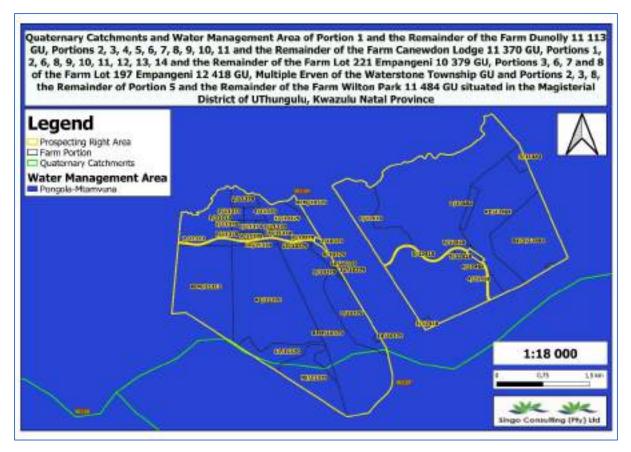


Figure 6: Quaternary Catchment map

#### **3 SCOPE OF WORK**

The following assignments were completed for this hydrogeological study:

#### 1. Desktop Study

- Project Initiation and Data Collection
- Review available site specific hydrogeological and hydrological information to conceptualize the different aquifer systems and their interaction with surface water features in the area.

#### 2. Hydrogeological Modelling

Numerical Groundwater Flow and Transport Model

- Model inputs
- Model Calibration
- Scenario Modelling
- Hydrogeological Impact Assessment



Use the model to predict potential mining impacts on the shallow and deep groundwater flow systems, groundwater seepages and spring discharges.

#### 3. Reporting

Writing a comprehensive geohydrological report outlining all the findings and existing environment of the proposed project area. This groundwater specialist report compiles all methodologies, findings, quantitative analysis (geochemical assessment and modelling outcomes), impact assessments, recommendations (proposed monitoring programme and recommended mitigation measures for predicted impacts) and conclusions. The conceptual and numerical model development, simplifying assumptions and outcomes of predictive simulations is documented in accordance with the Standard Guide for Documenting a Ground-Water Flow Model Application (ASTM, 2006).

#### 4. Site visits

Site visit is the most significant part of the investigation, site visits will be conducted as part of environmental assessment, to confirm the water bodies observed on the hydrological map and to take pictures of the current environmental condition before the commencement of prospecting.

#### 5. Project Management and Meetings

As part of consultation process, meetings will be held once the landowner is identified and the community, to address the intention of Raycom Resources (Pty) Ltd to prospect Coal, Pseudocoal and Torbanite/Oil shale.

#### **4 METHODOLOGY**

#### 4.1 Desktop study

A literature study of all available relevant data was performed to provide additional data where required. Data sourced from the literature study was incorporated into the entire research report and referenced accordingly. Data was sourced from: science literature (journals, textbooks, reports, maps etc.), GIS data available to the author from Singo Consulting (Pty) Ltd, DWS, SAWS weather station records and available relevant scientific work performed on the study area. A detailed list of all the sources of the literature incorporated into the research report is provided in the reference list.



#### 4.2 Hydrocensus

The Hydrocensus main objective is to record the groundwater data available i.e. counting the number of boreholes if present, recording their names, conditions, coordinates as well as measuring the water levels. This helps to identify the baseline groundwater use and users within the study area. A detailed Hydrocensus is conducted on and around the site within the distance 2km radius from the project area to obtain a representative population of the boreholes in the area. During the Hydrocensus, all available details of boreholes and borehole-owners are collected and recorded.

#### 4.3 Drilling and sitting of boreholes.

The exploration boreholes will be drilled one at a time at various locations within the proposed project area. The depths of the drill holes will average 100 m and will be determined onsite whilst the drilling programme is underway as influenced by the depths and dips measured in other holes. A buffer of 500m will be kept from identified wetlands and rivers. A buffer of 100 meters will be kept from public roads.

The drill site will be fenced off, cleared, and drilled. Rehabilitation will occur immediately after drilling. As a site is drilled, it will be rehabilitated, and the drilling crew will move onto the next planned hole. This procedure will be followed until all the holes are drilled. Drilling will be conducted in consultation with the landowners. No other excavations, bulk sampling or pitting is planned throughout prospecting phase.

#### 4.4 Groundwater modelling

During model setup, the conceptual model is translated into a numerical model. This stage entails selecting the model domain, defining the model boundary conditions, discretizing the data spatially and over time, defining the initial conditions, selecting the aquifer type, and preparing the model input data. The above conditions together with the input data are used to simulate the groundwater flow in the model domain for pre steady state conditions.

#### **Conceptual model**

A conceptual model is a simplification of the complex real system down to familiar aspects that can easily be solved. This conceptual model is just a step prior to a solution model which can either be analytical or numerical.



#### Numerical model

Numerical groundwater modelling consists of flow and transport modelling types. Groundwater flow modelling can be represented by finite difference method or finite element. In this project finite difference method is used. The chosen software is MODFLOW.

#### 4.5 Groundwater availability assessment

The fractured aquifer system (~ 15 to 40m) present in the fresh rock below the weathered zone are well cemented, and do not allow significant water flow. All groundwater movement therefore occurs along secondary structures such as fractures, cracks, and joints in the rock. These structures are best developed in sandstone and quartzite; hence the better water yielding properties of the latter rock type.

#### **5 BASELINE INFORMATION**

#### 5.1 Geology

#### 5.1.1 Regional geology

The Ecca Group is a sedimentary geological unit that comprises mostly of dark clastic sedimentary strata such as shale, siltstone, fine to very coarse, pebbly sandstone and economically significant coal in the Vryheid formation with minor coal in the Volksrust Formation. These sediments were deposited under aqueous to sub-aqueous reducing conditions and have been interpreted as marine, lacustrine, deltaic and fluvial deposits (po. cit). The Ecca Group attains its maximum 3000m thickness in the southern part of the Karoo Basin (Catuneanu, 1986). Generally, the Ecca Group consists of dark grey, carbonaceous mudrocks, with lamination and displaying weathering. Almost all of South Africa's coal resources and one-third of the coal resources in the southern hemisphere are from the rocks of the Ecca Group. The coal seams is described to be horizontal throughout in the Main Karoo Basin except where the seams are associated with dolerite intrusions. The distribution, lateral extent, thickness and maceral content of these coal seams are controlled by basin tectonic and differential subsidence.

**Beaufort Group** sediments were deposited in an intracratonic basin receiving detritus from a source area located to the south and west (Ryan 1967, Martini 1974, Turner 1975). Sedimentation was initiated by source area uplift (especially in the south), possibly due to collision between two lithospheric plates reproducing a cordilleran type orogenic event as predicted by modern plate tectonic theory (Dewey and Bird 1970). The sediments consist mainly of mudstones, siltstones and sandstones, and along the southern margin of the basin they have been caught up in the Cape Orogeny and extensively folded. Northwards the

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folding decreases in intensity and dies out completely on approaching the northern boundary of the study area where the sediments are flat-lying.

The **Beaufort Group** lies conformably on the **Ecca Group**, the contact between them records a gradual change from a deltaic depositional system to a fluvial depositional system in response to source area uplift and the northward progradation of Beaufort sediments, accompanied by a gradual shallowing and shrinkage of the Ecca Basin in the same general direction. Thus argillaceous sediments assigned to the **Ecca Group** in the northern part of the basin may be the time equivalent of the **Beaufort Group** in the south (Turner 1978) and the boundary on a basinwide scale must be diachronous.

The Ecca-Beaufort boundary is generally defined and mapped on the basis of the first occurrence of red and purple mudstones characteristic of the **Beaufort Group**. Unfortunately this definition cannot be applied in many areas because of the sporadic distribution of red and purple mudstones in the lower part of the Beaufort succession, as pointed out by Ryan (1967). A more reliable and accurate indication of the boundary is the presence of thick, laterally persistent sandstones of delta front origin that Johnson (1976) included in his Waterford Formation at the top of the **Ecca Group**. These sandstones can be distinguished from those in the Beaufort on the basis of their internal structure (presence of deformation structures and lack of cross-bedding), coarsening-upwards as opposed to fining-upwards grain-size trends, and the interbedded shales, which are generally darker, more carbonaceous and better laminated than the argillaceous rocks in the Beaufort

#### 5.1.2 Local geology

#### **Emakwezini Formation**

The Emakwezini Formation, which is the sole representative of the Beaufort Group in the southern half of the Lebombo Basin, is restricted to a narrow, faulted, meridional outcrop and subcrop belt in Swaziland and north-eastern KZN. The unit is also present in the subsurface along the western side of the Lebombo Basin from Empangeni to at least as far north as Komatipoort (Bordy and Prevec, 2008). It is estimated that the Emakwezini Formation attains a thickness of ±490 m near the village of Somkele (Marshall, 1966), although Bordy and Prevec (2008) provide a figure of 570 m, which is more similar to the figures of ±550 m to the west of Somkele and at Emakwezini (Watson and McGeorge, 1977). Genis (1961) notes that it thins southwards to ±370 m west of Empangeni; however, according to Du Preez (1982), the Emakwezini Formation is ±500 m thick in this area. North of the Somkele Coalfield the Emakwezini Formation thins dramatically, attaining a thickness of only 130-150 m in Swaziland (Davies, 1961) and near Komatipoort (Du Toit, 1918). Lithologically the Emakwezini Formation is



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dominated by fossiliferous, grey, greenish-grey and brown mudstones, with intercalated coal seams, subordinate white or yellow-white, and medium- to coarse-grained feldspathic sandstones. The coal seams are associated mainly with the mudstones and whilst usually less than 1 m thick, they may locally attain thicknesses of up to 15 m.

#### The Volksrust Formation

The **Volksrust Formation** is a transgressive argillaceous succession that conformable overlies the Vryheid formation. The formation was formed during a basinal transgression followed by regression and it comprises 0f 150 – 250m of dark siltstone or mudstone (SACS, 1980). The rocks sediments are fine-grained overall, indicating that the rock sediments were deposited in both lacustrine to lagoonal and shallow coastal setting. The Volksrust Formation immediately underlies the Emakwezini Formation of the Beaufort group.

#### Granite gneiss formation

The Granite Gneiss Formation is located in the Natal sector of the Proterozoic Namaqua-Natal Mobile Belt, about 10 km southwest of Empangeni. It forms a prominent east-west trending elongate whalebacked massif some 30 km in length, within amphibolitic gneisses and schists of the Tugela Group. A suite of twelve different, gneissic granitoids has been-recognised within the Formation on the basis of field relationships, mineralogy and supportive geochemistry. They range in composition from peraluminous syenite to peralkaline granite. Peraluminous varieties are typically muscovite and garnet-bearing whereas metaluminous granites in the formation contain olivegreen biotite and/or hornblende and sphene. Riebeckite, aegerine and yellowbrown biotite, with accessory fluorite and zircon are characteristic of the peralkaline granites.

#### Letaba Formation

Within Kruger National Park, the Letaba River is underlain by granite and granitic gneiss as well as volcanic rocks of the Karoo Supergroup which form part of the sediment source within the river (Heritage et al., 2001) (Fig. 2.3). The Letaba River flows over Karoo volcanic rocks of the Lebombo monocline which consists of the Letaba Basalt Formation, Sabie River Basalt Formation, Jozini Rhyolite Formation and Karoo sediments (Erlank, 1984). The basalt of the Letaba Basalt Formation is made of olivine and pyroxene and contains oxides and trace elements of potassium, titanium, rubidium and barium (Erlank, 1984). The olivine present in the basalt of the Letaba Basalt Formation is very rich in magnesium and is referred to as picrate, due to its high magnesium content and is present as large phenocrysts of olivine (Bristow et al., 1989).



### Hydrogeological study for Raycom Resources (Pty) Ltd for Prospecting Right Application of Coal,

#### Pseudocoal and Torbanite/ Oil Shale

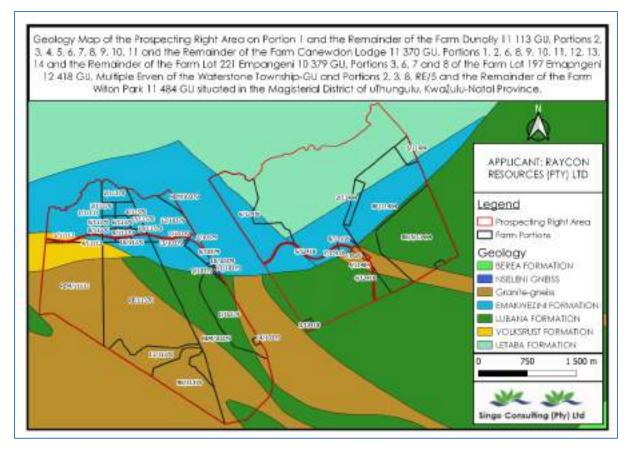


Figure 7: Geology of the prospecting right area

#### 5.3 Hydrogeology

Typically, five distinct aquifer types:

- > Basement (fractured Achaean-Proterozoic igneous/ metamorphic)
- Hard rock (e.g. Table Mountain TMG, Waterberg and Natal Groups sandstone; fractured)
- > Karst/ dolomite (dissolution)
- > Karoo (fractured and influenced by dykes)
- Porous (intergranular Quaternary alluvial, coastal, Aeolian and other surficial unconsolidated deposits)

The study area falls under **the hard (e.g. Table Mountain TMG, Waterberg and Natal Groups sandstone; fractured)**. For effective borehole yields, the boreholes must target the fracture zones in this area.



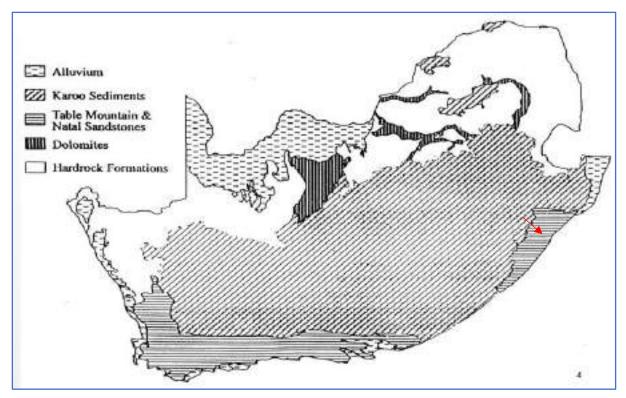


Figure 8: Aquifers of South Africa (Dippenaar, 2016).

The study area is situated within the Emakwezini Formation of the Beaufort Group (Karoo Supergroup). The area has been structurally deformed, with the main structures consisting of block type normal faulting. As a result of the faulting, tilting of strata took place with the direction of dip in a south-easterly direction (average strike of strata is 30°). The general angle of dip of strata in the area of the mine is 22°. Associated with these block faults and related structures, are various dolerite sills and dykes of different ages. These aquifers have no to low potential in terms of development due to these factors, and are of minor regional importance. Therefore, the aquifer can be classified as a Minor Aquifer System according to the Parsons Classification method (Parsons, 1995).

Recorded water strikes (intersection of aquifers) vary between 12 to 102 mbgl for the Karoo aquifers. Shallow groundwater occurrence (<10 mbgl) is associated with younger (post-Karoo age) unconsolidated alluvial sediments, close to major streams. The average depth of weathering in the Karoo age rocks is ±11 m, with recorded weathering up to 25 m deep. Most water strikes were encountered below the weathered zone. It can be assumed that weathered aquifers are of minor importance (from an aquifer supply point of view), especially in the higher ridges. Perched weathered aquifers are likely to form during wet periods and shallow wells have been reported in the lower lying areas, close to streams.

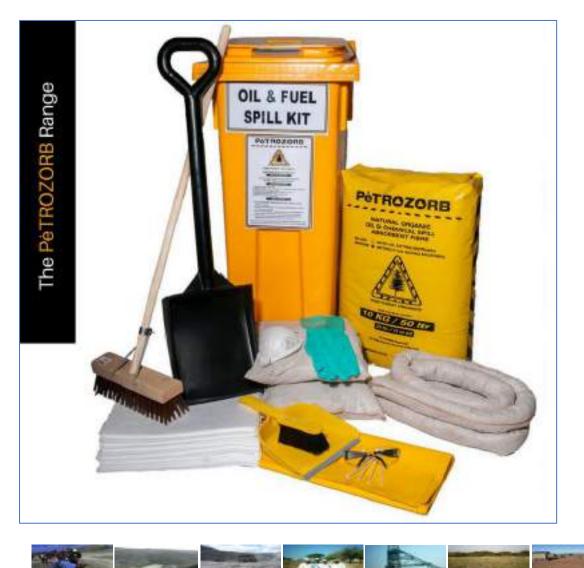


The groundwater within the deeper fractured rock aquifer occurs within discrete zones due to secondary processes such as fracturing, faulting and contact metamorphism along intrusive rock contacts. These aquifers, with the exception of regional faults, normally have a limited extent and interconnectivity. Borehole blow yields from fractured aquifers according to the boreholes drilled in this area are highly variable, ranging from dry to 2.5 l/s.

#### 5.4 Potential contaminants

The potential contaminants for the prospecting of Coal, Pseudocoal, and Torbanite/ Oil Shale is minimal and can be controlled easily as this activity will only take place for a short period of time. Fuel and oil handling facilities are likely sources of hydrocarbon related contaminants. Oils, grease, and other hydrocarbon products (such as petrol and diesel) handled in these areas may contaminate the environment by spillages and leakages (e.g., from drill rigs).

Absorbent Spill kits will be made available near the drill rigs during drilling activities refer to figure 9. The oil absorbent chemicals will ensure that no oils infiltrate down to the underground to cause any groundwater contamination.



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Figure 9: Examples of Absorbent spill kit to be used.

#### **6 AQUIFER CLASSIFICATION**

The figure below illustrates aquifer classification of different areas in South Africa. It can be deduced that the project area pointed by the red arrow comprises of minor aquifers and the dominant water source is a surface water. Table 1 interprets the meaning of the aquifer classification and when an area is said to have a minor aquifer it means that the aquifer is Moderately yielding aquifer of acceptable quality or high yielding aquifer of poor-quality water.

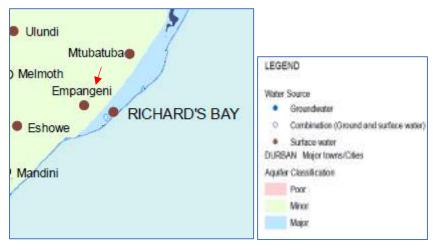


Figure 10: Aquifer classification of South Africa.

| Table 1: A | Aquifer char | acterisation |
|------------|--------------|--------------|
|------------|--------------|--------------|

| Aquifer |         | Description  |
|---------|---------|--|
| Sole    | source  | An aquifer used to supply 50% or more of urban domestic water for a given        |
| aquifer |         | area, for which there are no reasonably available alternative sources            |
|         |         | should this aquifer be impacted upon or depleted.                                |
| Major   | aquifer | High-yielding aquifer of acceptable quality water.                               |
| region  |         |  |
| Minor   | aquifer | Moderately yielding aquifer of acceptable quality or high yielding aquifer       |
| region  |         | of poor-quality water.   |
| Poor    | aquifer | Insignificantly yielding aquifer of good quality or moderately yielding          |
| region  |         | aquifer of poor quality, or aquifer that will never be utilized for water supply |
|         |         | and that will not contaminate other aquifers.                                    |
| Special | aquifer | An aquifer designated as such by the Minister of Water                           |
| region  |         |  |



#### **7 GROUNDWATER MODELLING**

#### 7.1 Software model choice

MODFLOW software is the chosen software to model groundwater flow and contaminant transport in this situation. The finite difference numerical model was created using the US Department of Defence Groundwater Modelling System (GMS9.2) as Graphical User Interface (GUI) for the well-established MODFLOW and MT3DMS numerical codes.

MODFLOW is a 3D, cell-centred, finite difference, saturated flow model developed by the United States Geological Survey. MODFLOW can perform both steady state and transient analyses and has a wide variety of boundary conditions and input options. It was developed by McDonald and Harbaugh of the US Geological Survey in 1984 and underwent eight overall updates since. The latest update (MODFLOW-NWT) incorporates several improvements extending its capabilities considerably, the most important being the introduction of the Newton formulation of MODFLOW. This dramatically improved the handling of dry cells that has been a problematic issue in MODFLOW in the past.

MT3DMS is a 3-D model for the simulation of advection, dispersion, and chemical reactions of dissolved constituents in groundwater systems. MT3DMS uses a modular structure similar to the structure utilized by MODFLOW and is used in conjunction with MODFLOW in a two-step flow and transport simulation. Heads are computed by MODFLOW during the flow simulation and utilized by MT3DMS as the flow field for the transport portion of the simulation.

Elevation data is crucial for developing a credible numerical model, as the groundwater table in its natural state tends to follow topography. The best currently available elevation data is derived from the SRTM (Shuttle Radar Tomography Mission) DEM (Digital Elevation Model) data. The SRTM consisted of a specially modified radar system that flew on board the Space Shuttle Endeavour during an 11-day mission in February of 2000, during which elevation data was obtained on a near-global scale to generate the most complete high-resolution digital topographic database of Earth. Data is available on a grid of 30 meters in the USA and 90 meters in all other areas.

#### 7.2 Model set-up and boundaries

During model setup, the conceptual model is translated into a numerical model. This stage entails selecting the model domain, defining the model boundary conditions, discretizing the data spatially and over time, defining the initial conditions, selecting the aquifer type, and preparing the model input data. The above conditions together with the input data are used to simulate the groundwater flow in the model domain for pre steady state conditions.



#### 7.3 Groundwater elevation and gradient

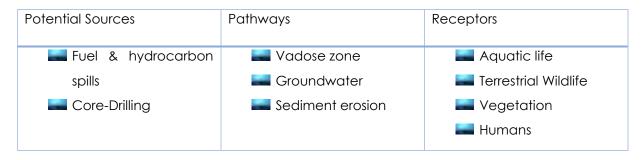
- Constant head boundary conditions on west and east boundaries
- Single layer aquifer of 30 m thickness
- Hydraulic head of 10 m along western boundary and 30 m along the eastern boundary
- Uniform hydraulic conductivity of 0.001 m/d

#### 7.4 Groundwater sources and sinks

Following the characterization of the aquifers, contaminant sources and groundwater receptors, the conceptual model was transformed into a numerical model so that the groundwater flow conditions, and mass transport can be solved numerically. A conceptual model is a simplified, but representative description of the groundwater system that illustrates the interaction of the sources, pathways, and receptors at the site.

- The **sources** represent any entity that contributes to the groundwater quantity and/or quality
- The **pathways** are the aquifers through which the groundwater and contaminants migrate and
- The **receptors** are humans, rivers or natural ecosystems that depend on the groundwater and will be impacted negatively if the water is depleted by dewatering or is contaminated.

Table 2: Possible source, pathways and receptors





#### 7.5 Model results

Prior to the drilling of the prospecting boreholes, a baseline steady state groundwater flow model was set-up and calibrated. The objective of the steady state model is to simulate the undisturbed groundwater system in the region prior to commencement of prospecting activities. The impacts of the prospecting activities can then be determined by comparing the transient state results with the steady state results. Groundwater flow model was developed to determine the flow direction as well as flow velocity of water before any disturbances to the natural environment.

#### 7.5.1 Groundwater flow model

Before any activity can take place, the surrounding environment and the groundwater will not be affected by solute contamination. The concentration of possible contaminants is assumed to be zero, therefore we will only have a groundwater flow model illustrating how the groundwater is flowing before any activity commence.

#### **8 GEOHYDROLOGICAL IMPACTS**

During the prospecting phase of Coal, Pseudocoal and Torbanite/ Oil Shale the following impacts are envisioned:

- Clearing of vegetation leading to increased runoff and less infiltration.
- Diesel and oil spillages from the drill rig
- Increase in volume of contaminated water that needs to be managed within the footprint.
- Erosion of stream banks as a result of crossings and diversions leading to siltation of the stream

During the prospecting period, the following management measures will apply:

- All spillages will need to be cleaned up as soon as practically possible.
- Providing spill absorbing material
- All equipment utilizing hydrocarbons will be stored on a hard-standing surface.
- Wehicles and machinery will be maintained in good order to minimize leakages.



Table 3: Groundwater impact assessment

|                                      | Prospecting right impact assessment table   |   |                                     |                                    |                                   |  |
|--------------------------------------|---|---|-------------------------------------|------------------------------------|-----------------------------------|--|
|                                      | ny: Singo Consultin                         |   | Environmental                       | I Consulting firm                  |                                   |  |
| Department: Lan                      | d and water divisio                         |   | •                                   | <u>.</u>                           |                                   |  |
| Potential<br>environmental<br>impact | Cause of the<br>impact                      | Risk Assessm<br>Recommended measures/remarks for<br>mitigation  | Impact risk<br>before<br>mitigation | Impact risk<br>after<br>mitigation | Responsible<br>person(s)          | When<br>mitigation<br>should be<br>implemented |
| Fuel &<br>hydrocarbon<br>spills      | Drill rig, trucks,<br>and cars              | Clean up immediately after accidental<br>spills & Divert run-off.<br>Providing spill absorbing material<br>All equipment utilizing hydrocarbons<br>will be stored on a hard-standing<br>surface.<br>Vehicles and machinery will need to<br>be maintained in good order to<br>minimize leakages. |                                     |                                    | The project<br>management<br>team | During the<br>prospecting<br>activities        |
| Aquifer<br>contamination             | During drilling<br>exploration<br>boreholes | <ul> <li>Install casing and rehabilitate the exploration boreholes</li> <li>Take water samples from the drilled boreholes</li> </ul>  |                                     |                                    | The project<br>management<br>team | After drilling                                 |
| vegetation                           | ,   | <ul> <li>Rehabilitate the site by using a<br/>hoe to dug the compacted<br/>soil or a tractor.</li> </ul>  |                                     |                                    | The project<br>management<br>team | After pegging<br>and drilling                  |



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| Surface water<br>contamination   | <ul> <li>working<br/>equipment<br/>machinery</li> <li>Using water<br/>from the river<br/>to operate</li> </ul> | <ul> <li>Avoid drilling near surface water</li> <li>Do not wash equipment and vehicles at or near water bodies</li> <li>Conduct prospecting during dry seasons when the water percentages in wetlands and rivers are very low</li> <li>All the wetlands and rivers will need to be buffered as no go area</li> </ul> |        |                                 | The project<br>management<br>team | During<br>prospecting<br>period    |
|--|--|--|--------|---------------------------------|-----------------------------------|------------------------------------|
| Erosion of<br>stream banks as<br>a result of<br>crossings and<br>diversions<br>leading to<br>siltation of the<br>streams |  | Do desktop study and avoid working<br>near the water bodies  |        |                                 | Prospecting team                  | During the<br>prospecting<br>phase |
| Soil compaction  | constructing   | Rehabilitate these roads by digging<br>with tractors and ploughing<br>vegetation   |        |                                 | The project<br>management<br>team | After the<br>prospecting<br>phase  |
| Water and soil<br>contamination  | Core logging   | The core logs of boreholes with<br>mineral of interest should be cleared<br>from the ground immediately after<br>logging by the geologists to prevent<br>washing and leaching to the water<br>resources during rainfall  |        |                                 | The project<br>management<br>team | After the<br>prospecting<br>phase  |
|  |  | Impact Classifi  | cation |                                 |                                   |                                    |
| Low environment  | al Impact.   | Medium environmental Impact  |        | High<br>environmental<br>impact | Very High environm                | ental impact                       |



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#### 9 CONCLUSIONS AND RECOMMENDATIONS

- It can be concluded that the prospecting activity will cause minimal impact on the water resources as the mitigation measures will strictly be implemented at the commencement of the project. The prospecting right activity will take place during dry seasons where the water percentages in the surrounding streams are exceptionally low.
- Drilling activity will not be conducted within 500m from watercourses, the exploration geologists will be advised to drill and sample more than 500m from rivers and wetlands on site.
- The exploration boreholes must be cased during drilling and properly rehabilitated by cap sealing the borehole after drilling.
- Extreme caution will be taken during prospecting, owing to the river and numerous wetlands existing within and nearby the project area. No washing of any mechanical equipment or vehicles will be allowed near the water resources.
- Rivers and wetlands will be buffered as no go area, a 500m buffer will apply.
- The core logs of boreholes with mineral of interest should be cleared from the ground immediately after logging by the geologists to prevent washing and leaching to the water resources during rainfall.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.



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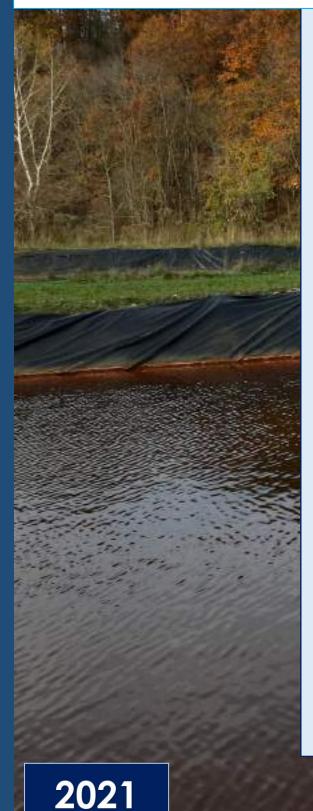


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# PROSPECTING RIGHT HYDROLOGICAL STUDY

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#### HYDROLOGICAL REPORT FOR RAYCOM RESOURCES, LOCATED IN UMHLATHUZE LOCAL MUNICIPALITY, KWAZULU-NATAL PROVINCE, SOUTH AFRICA



## PREPARED FOR



## PREPARED BY



#### Singo Consulting (Pty) Ltd

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## DMRE REF: KZN 30/5/1/1/2/11025 PR

#### **PROJECT INFORMATION**

| Report Type    | Prospecting Right Hydrological Report                                 |
|----------------|---|
| Project Title: | Hydrological Report for Raycom resources, Located in Umhlathuze Local |
|                | Municipality, Kwazulu-Natal Province, South Africa                    |
| Client:        | Raycom resources  |
| Site Location: | Kwazulu-Natal Province, South Africa                                  |
| Version:       | 1   |
| Date:          | 19 May 2021   |

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|                     |  | Electronic signatures |
|---------------------|--|-----------------------|
| Compiled By         | Connie Sigauke (Junior Hydrogeologist)     |                       |
|                     | Singo Consulting (Pty) Ltd                 | CHILLIGiauso          |
| Reviewed By         |  |                       |
| Final Review<br>and | Dr. Kenneth Singo (Principal Consultant of |                       |
| Approval            | Singo Consulting (Pty) Ltd) South African  | At ingo               |
|                     | Council for Natural Scientific Professions | 20                    |
|                     | (SACNASP: Earth Science Reg. No:           |                       |
|                     | 400069/16),                                |                       |



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#### **EXECUTIVE SUMMARY**

Singo Consulting (Pty) Ltd was designated by Raycom Resources as an independent consulting company to conduct a hydrological study. The hydrogeological study is being conducted to endorse a prospecting right application for Raycom Resources, located in Umhlathuze Local Municipality, Kwazulu-Natal Province, South Africa.

#### Terms of Reference

This project involves the compilation of a specialist surface water report for the proposed prospecting right project. This includes the following aspects:

- Baseline assessment.
- Impact assessment and mitigation measures.

#### Environmental Legislation - DWAF Government Notice 704

Government Notice 704 (Government Gazette 20118 of June 1999) (hereafter referred to as GN 704), was established to provide regulations on the use of water for mining and related activities aimed at the protection of water resources. The proposed prospecting project is not an actual mining activity at its current stage, it is however a related activity; and listed under GN 704. Therefore, the proposed infrastructure is designed in accordance with GN 704, and the following design principles are applicable:

- Condition 4
  - ✓ Defines the area in which mine workings or associated structures may be located, with reference to a watercourse and associated flooding.
  - ✓ Any residue deposit, dam, reservoir together with any associated structure or any other facility should be situated outside the 1:100-year flood-line.
  - ✓ Any underground or opencast mining, prospecting or any other operation or activity should be situated or undertaken outside of the 1:50 year flood-line.
  - ✓ Where the flood-line is less than 100 metres away from the watercourse, then a minimum watercourse buffer distance of 100 metres is required for infrastructure and activities.
- Condition 5
  - ✓ Indicates that no residue or substance which causes or is likely to cause pollution of a water resource may be used in the construction of any dams, impoundments or embankments or any other infrastructure which may cause pollution of a water resource.



- Condition 6
  - $\checkmark$  Describes the capacity requirements of clean and dirty water systems.
  - Clean and dirty water systems must be kept separate and must be designed, constructed, maintained and operated to ensure conveyance of flows of a 1:50 year recurrence event.
  - ✓ Clean and dirty water systems should not spill into each other more frequently than once in 50 years.
  - ✓ Any dirty water dams should have a minimum freeboard of 0.8 m above full supply level.
- Condition 7
  - ✓ Describes the measures which must be taken to protect water resources.
  - ✓ All dirty water or substances which may cause pollution should be prevented from entering a water resource (by spillage, seepage, erosion etc) and ensure that water used in any process is recycled as far as practicable.
- Condition 10
  - ✓ Describes the requirements for operations involving extraction of material from the channel of a watercourse.
  - Measures should be taken to prevent impacts on the stability of the watercourse; prevent scour and erosion resulting from operations; prevent damage to in-stream habitat through erosion, sedimentation, alteration of vegetation and flow characteristics; construct treatment facilities to treat water before returning it to the watercourse; and implement control measures to prevent pollution by oil, grease, fuel and chemicals.

### Methodology

A desktop study was conducted to evaluate current and previous land uses to assess the implications for hydrological contaminations. The methods that were used to establish groundworks for this study include:

- ♦ QGIS 2.14.9 software for Geographic Information Systems (GIS) works
- Design Rainfall Estimation package (Smithers and Schulze, 2003) for the design of rainfall depth.
- Site visits for:
  - ✓ Obtaining information on normal flow rates, river health and potential factors that could influence the hydrological modelling of flows.



✓ Identifying the likely surface water impacts associated with the planned prospecting development and recommendation of possible mitigation measures to reduce the impacts.

### OUTCOMES OF THE INVESTIGATION

- The project area is situated in a flat-lying topographical range with an elevation of ~50 - 650 mamsl.
- Drilling activities will not be conducted near water resources; and a 500m buffer will apply to all the wetlands, perennial and non-perennial rivers.
- Absorbent Spill kits will be made available near the drill rigs during drilling activities.
- The core logs from exploration boreholes will be cleared from the ground immediately after logging to prevent washing and leaching onto the water resources during rainfall.
- Extreme caution will be taken during prospecting, therefore, washing of any mechanical equipment or vehicles will not be allowed near the water resources.
- Water samples will be taken from selected exploration boreholes using approved sampling techniques and adhering to recognized sampling procedures.
- Samples will be analysed for both organic and inorganic pollutants since mining activities often lead to hydrocarbon spills in the form of diesel and oil.
- The numerical model will be recalibrated as soon as more hydrogeological data such as monitoring holes are made available, this will enhance the model predictions and certainty.
- After prospecting, rehabilitation of the disturbed area will commence.



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### **1.INTRODUCTION**

### 1.1. Background Information

Singo Consulting (Pty) was designated by Raycom Resources as an independent consulting company to conduct a hydrological study. The hydrological study is being conducted to endorse a prospecting right application for Raycom Resources, located in Umhlathuze Local Municipality, Kwazulu-Natal Province, South Africa.

The prospecting Right Application is submitted for the prospecting of Coal, Pseudocoal and Torbanite/Oil Shale on portion 1 and the Remainder of Dunolly farm (No.11, 113-GU), portions 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11; the Remainder of the farm in Canewdon Lodge (No.11, 370-GU), portions 1, 2, 6, 8, 9, 10, 11, 12, 13, and 14; the Remainder of the farm in Lot 221 Empangeni (No.10, 379-GU), portions 3, 6, 7; Portion 8 of the farm in Lot 197 Empangeni (No.12, 418-GU); Multiple Erven of the Waterstone Township-GU, portions 2, 3, 8, and the Remainder of portion 5; and lastly, the Remainder of Wilton Park farm (No.11, 484-GU).

This report is not an intense description of the proposed project; however, it is presented as a provisional specialist hydrological study to evaluate surface water studies, providing the surface water information required for the environmental authorisations of the proposed prospecting project.

### 1.2. Project Location

Figures 1 and 2 are locality maps with comprehensive information pertaining to the surrounding settlements and infrastructures in the proposed project area. The proposed prospecting area is situated approximately 14 km North-west of Richards Bay, approximately 1 km North to North-West of Empangeni and South to South-East of Ntambinamasi, in the Umhlathuze local municipality, under King Cetshwayo District Municipality, within the Jurisdiction of Empangeni Magisterial District, KwaZulu-Natal Province.



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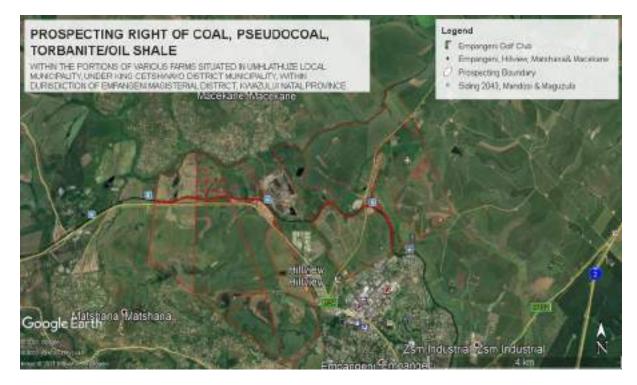


Figure 1: Google Earth Map of the Proposed prospecting Project Area.

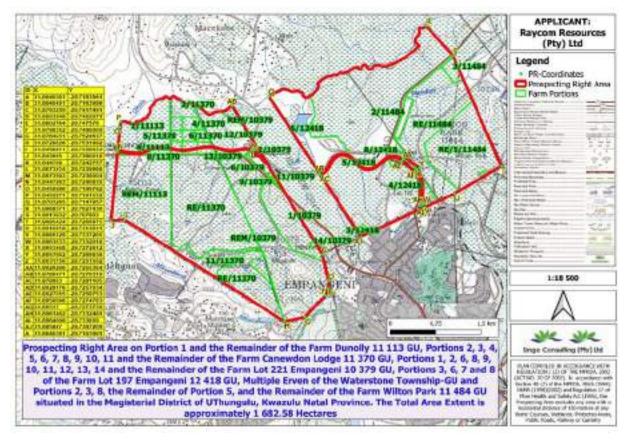


Figure 2: Regulation 2(2) Map of the Proposed Project Area.



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### 1.3. Aims and Objectives of The Study

The main objectives of this concise hydrological study are to:

- Identify the potential for surface water contamination within the study area and the nature of the contaminants likely to be encountered where the coal, pseudocoal and torbanite prospecting will take place,
- Gather all the relevant information and recommendations in a hydrological report, prepared in a manner that it can be used in conjunction with the Environmental Management Program document for this project.

### 2. SCOPE OF THE WORK

The scope of the work is centred around the following aspects:

- Baseline studies
  - ✓ Site visits to correlate the information from desktop studies and the actual conditions of the proposed project area.
  - ✓ The maps from hydrological studies to indicate the catchment areas and any strategic points.
  - ✓ Estimates of the Mean Annual Runoff (MAR), peak flow rates and volumes for these catchments using the WR2021 data.
- Impact assessments
  - ✓ All surface water impacts will be described, and mitigation measures will be proposed to be incorporated with the Environmental Impact Assessment/Environmental Management Plan (EIA/EMP), for the construction, operation, decommissioning and post closure phases of this project.



### **3. METHODOLOGY**

### 3.1. Desktop Study

A desktop study was conducted to evaluate the current and previous land uses in the project area to assess the implications for hydrological contaminations. This desktop study included:

- Assessment of historical aerial photography for the proposed and surrounding areas.
- Background information on the climate, rainfall, geology, and hydrological structures within the proposed development area. This information will assist in making calculated decisions regarding the development of the proposed prospecting project, considering all the possible associated impacts on the local surface water regimes.
- The use of QGIS 2.14.9 for Geographic Information Systems (GIS) works in the proposed area.
- Review and summary of any previous reports or studies regarding the environmental, geological or groundwater conditions, in or within the vicinity of the proposed area.

### 4. AN OVERVIEW OF RELEVANT LEGISLATIONS AND STANDARDS

### 4.1. Legal Framework

The DWA's vision for water quality management in South Africa is to:

- Ensure the continuous improvement of Water Quality Management,
- Secome a recognized world leader in Water Quality Management,
- Be proactive, dynamic, efficient and effective in its service delivery to the public,
- Provide necessary policies and systems to ensure integrated sustainable management of water quality,
- Promote cooperative governance across all spheres of management, and
- Ensure a fully capacitated and loyal workforce to support its functions.

### 4.2. National Legislations

The National legislations applicable to surface water management include:

- The Constitution of the Republic of South Africa, 1996 (No. 108 of 1996)
  - ✓ The Bill of Rights states that everyone has the right to an environment that is not harmful to their health or well-being.
- National Water Act, 1998 (Act 36 of 1998)
  - Provides for the protection of the quality of water and water resources in South Africa and provides for the establishment of Water Management.



### 4.3. National Policy/Guidelines

The National policy and guidelines applicable to surface water management include:

- South African Water Quality Guidelines, First Edition, 1996
  - These guidelines set out the minimum water quality requirements for a range of water quality parameters for each water user.
- Development of a Waste Discharge Charge System, Framework Document, Second Edition, 2000
  - ✓ Provides a framework for the implementation of a system to charge for water use such as the discharge of waste that have impacts on water resources.
- ✤ Best Practice Guidelines for the mining sector, DWAF 2006, 2008
  - ✓ This framework deals with aspects of the DWA's water management hierarchy and with integrated mine water management, pollution prevention and minimisation of impacts, water reuse and reclamation and water treatment.
- Best Practice Guidelines for the mining sector, DWAF 2006, 2008
  - ✓ Deals with general water management strategies, techniques and tools which could be applied cross-sectorial and deals with storm water management, water and salt balances, water monitoring systems, impact prediction.
- Best Practice Guidelines for the mining sector, DWAF 2006-2008
  - ✓ Deals with specific mining activities and addresses the prevention and management of impacts from small scale mining, water management for Mine Residue Deposits, pollution control dams, water management for surface mines, and water management for underground mines.



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### **5. BASELINE INFORMATION.**

### 5.1. Climate

The proposed project area is in Empangeni Magisterial District, at an elevation of 121 m above sea level. The climate of this area is defined by the Köppen-Geiger climate classification as a humid subtropical climate (CFa). Empangeni is dominated by warm and temperate climatic conditions. This area receives a significant amount of rainfall during the year, even on the driest months. The average annual temperature and rainfall is 21.7°C and 944 mm, respectively (Figure 3 and 4). The driest month is June, with precipitation of 42 mm, whereas January has the most precipitation (average of 113 mm). February has an average of 25°C, making it the warmest month of the year. In Empangeni, the lowest average temperature of the year is in July, with an average of 17.7°C (Climate-data.org, DOI: https://en.climate-data.org/africa/south-africa/kwazulu-natal/empangeni-715226/). Figure 5 shows a special annual rainfall map for the proposed project area.

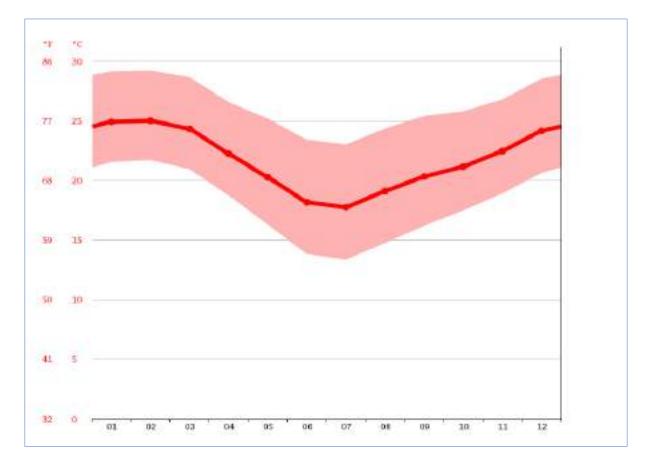


Figure 3: Average annual temperatures for Empangeni (Climate data. Org).



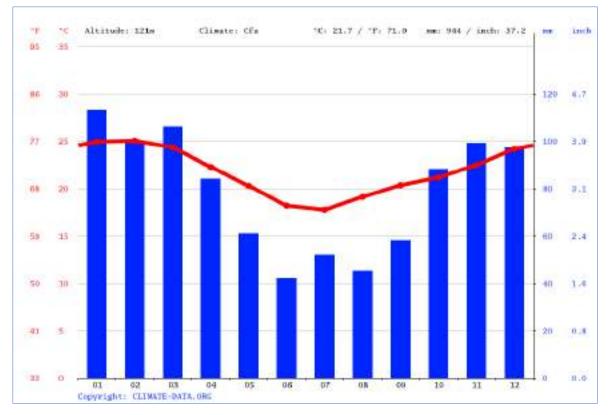


Figure 4: Average annual rainfall for Empangeni.

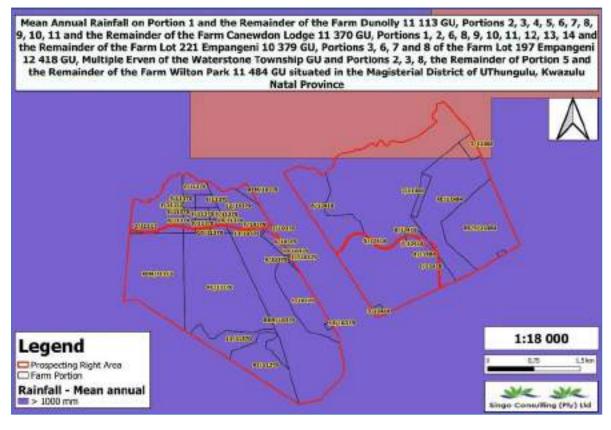


Figure 5: Annual rainfall map for the proposed project area.



### 5.2. Topography and Drainage

Topography refers to the study of the form and features of land surfaces. The topography of an area is defined by the configuration of surface shapes and features, including its relief and the position of its natural and man-made features. Topography is a field of geoscience and planetary science that entails the practice of graphic delineation in detail, usually depicted on maps (topographic maps) or charts, of natural and man-made features of a place or a region in a way that shows their relative positions and elevations. (Merriam-Webster.com, DOI: <u>https://www.merriam-webster.com/dictionary/topography</u>). One portion of the proposed project area is characterized by gentle slopes and the other portion is characterized by concave steep surfaces at the top and flattens out towards the bottom. This can be observed on the topographic map attached below. The flow of water during rainy seasons is from areas of high elevation to those of low elevation, as defined by the contour lines. The project area is defined by a concave topography, ranging from 80-200 mamsl as observed on the contour lines on the topological map (Figure 6).

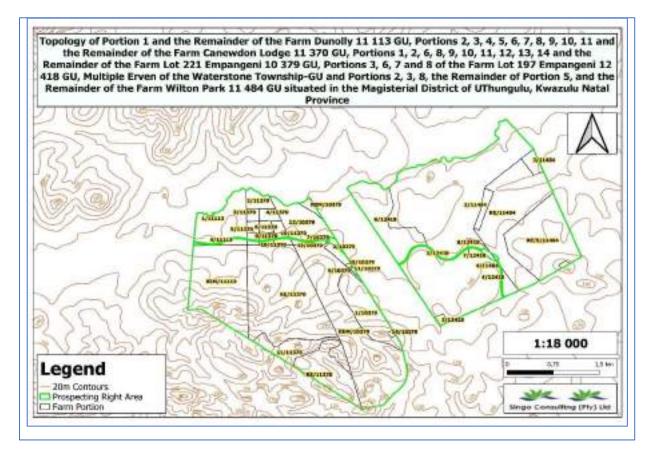


Figure 6: Topological map of the proposed project area, showing the delineated prospecting right area, farm portions and the elevations (contour lines).



### Drainage

For the purpose of this study, it is important to investigate and evaluate the hydrological aspects of the project area. Here, hydrology refers to all the surface water appearing within and around the proposed project area, these are all waters that may be impacted by operation of the proposed project. These are important natural water resources that should not be altered by anthropogenic activities. In this project, there should be measures and guidelines in place for protecting and ensuring optimal conservation of the water resources in any case that this prospecting right may pose a risk on them. The prospecting, should right be granted, will take place during dry seasons where the water percentages are exceptionally low in the water bodies. Drilling activities will not be conducted near these water resources, and the exploration geologists will be advised to drill and sample away from the rivers and wetlands on site. Figure 7 depicts all the water bodies that exist and flow within and nearby the project area, namely:

- Perennial river
- Seep and flat wetlands
- Channelled and unchannelled valley-bottom wetlands.

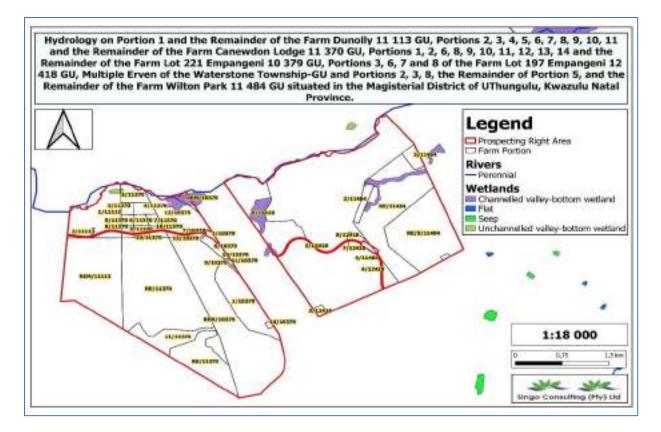


Figure 7: Hydrology map showing the water bodies within and around the proposed project area.



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### 5.3. Catchment Elucidation for The Project Area

Figure 8 shows the regional hydrological setting of the project area. The WR2012 study presents the hydrological parameters for each quaternary catchment including the area, mean annual precipitation (MAP) and mean annual runoff (MAR). The project area is in the Pongola-Mtamvuna Management Area (WMA). Based on the WR2012 data, the project area falls within the quaternary catchment of W12E, W12F and W12H. The total catchment area for W12E is 399 km<sup>2</sup> with MAP of 1041 millimetres (mm). The total catchment area for W12F and W12H is 320 km<sup>2</sup> with MAP of 1285 millimetres (mm) and 485 km<sup>2</sup> with MAP of 1039 millimetres (mm), respectively.

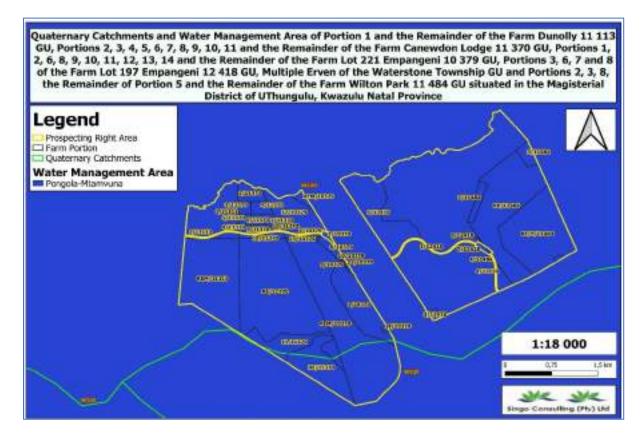


Figure 8: Quaternary catchment map for the proposed project area showing the Water Management Area and quaternary catchments.



### 5.4. Geology of The Area

This section will give an account of the geological setting within which the project area is located; however, this account will be biased, leaning mostly towards the geological history associated with the coal formation (the main commodity to be prospected for in this project).

### Regional and local geology

### The Karoo Supergroup

The proposed project area regionally falls under the main Karoo Supergroup. The sedimentary part of the Karoo Supergroup is subdivided into four main lithostratigraphic units, which from the base up are the Dwyka, Ecca, Beaufort and Stormberg groups (Johnson et al., 1996; SACS, 1980;). These are capped by 1.4 km of basaltic lavas of the Drakensberg Group (Johnson et al., 1996; Veevers et al., 1994), the extrusion of which is related to the break-up of Gondwana (Cox, 1992). The basement to the Karoo Supergroup fills in both the Main Karoo Basin (MKB) and the northern basins (Bordy et al., 2004; Hancox, 1998; Rutherford, 2009).

### ✓ The Dwyka Group

The Dwyka Group rocks in South Africa are amongst the most important glaciogenic deposits from Gondwana. This Group is known for exposures along the Dwyka River east of Laingsburg and forms the basal succession of the Karoo Supergroup. The Dwyka Group strata are mostly contained within bedrock valleys incised into Archean to lower Palaeozoic bedrocks (Visser, 1990; Visser and Kingsley, 1982; Von Brunn, 1996). The lithologies in the areas underlying the coalfields of South Africa consist of a heterolithic arrangement of massive and stratified polymictic diamictites, conglomerates, sandstones and drop stone-bearing varved mudstones. The easily identifiable lithologies form a good marker below the coal bearing Ecca Group. In the distal sector of the MKB, these sedimentary strata accumulated largely as ground moraine associated with continental ice sheets and is generally composed of basal lodgement and supraglacial tills. These deposits are generally massive; however, crude horizontal bedding occur in places towards the top (Tankard et al., 1982). The basement of the Ermelo Coalfield are only poorly developed, except in the far south, where the unit exhibits variable thickness (Greenshields, 1986).



The Dwyka group is usually confined to palaeovalleys and consists of diamictites, sandstones and siltstones, attributed to glacial deposits, such are formed as moraines in glacial outwash fans and lakes, and on sandur plains. Wakerman (2003) noted that on the Sheepmoor project area, the Dwyka Group is between 3 and 30 m thick and consists of massive polymictic diamictite capped by interbedded siltstones and mudstones. He further noted that some units contain well-rounded dropstones of exotic provenance. The Pietermaritzburg Formation is not exposed in the Ermelo Coalfield and is rarely intersected in its entirety in any of the boreholes drilled during exploration programmes. According to Greenshields (1986) it is thinly developed or absent in the centre of the Ermelo Coalfield, but may reach a thickness of up to 75 m in the south of the coalfield. Van Alphen (1990) documented a thickness of 12 m for the Pietermaritzburg Formation in his field area, whereas Wakerman (2003) documented thicknesses of between 3 and 48 m for the Sheepmoor project area.

### ✓ The Ecca Group

The Ecca Group is the focus of the proposed area, due to its ability to host different coalfields. The project area falls within the Ermelo Coalfield. In the 1970s, several studies (Cadle, 1974; Hobday, 1973, 1978; Mathew, 1974; Van Vuuren and Cole, 1979) showed that the Ecca Group could be subdivided into several informal units, based on the cyclic nature of the sedimentary fills. In 1980, the South African Committee for Stratigraphy (SACS, 1980) introduced a formal lithostratigraphic nomenclature for the Ecca Group in the northern, distal sector of the MKB, which replaced the previously used informal Lower, Middle and Upper subdivisions with the Pietermaritzburg Shale Formation, the Vryheid Formation and the Volksrust Shale Formation. The proposed project area falls within the Vryheid formation, under the Somkhele coalfield. The general geology of the coal bearing succession is best known from various descriptions available for the Somkhele mine area (Snowden, 2009; Bordy and Prevec, 2008) as well as for the Fuleni project to the south (Tovela, 2011). The Lebombo Basin (which is home to the Somkhele, Swaziland and Kangwane coalfields) is an elongated Phanerozoic depression that stretches in a north-south direction from the Limpopo River in the north, to Empangeni in the south, for a total of some 700 km. Within the Somkhele Coalfield some 600-900 m of Ecca Group and Dwyka Group lithologies underlie the coal bearing Emakwezini Formation.

The Emakwezini Formation, which is the sole representative of the Beaufort Group in the southern half of the Lebombo Basin, is restricted to a narrow, faulted, meridional outcrop and subcrop belt in Swaziland and north-eastern KZN. The unit is also present in the subsurface along the western side of the Lebombo Basin from Empangeni to at least as far north as Komatipoort (Bordy and Prevec, 2008). It is estimated that the Emakwezini Formation attains



a thickness of ±490 m near the village of Somkhele (Marshall, 1966). In the north of the Somkele Coalfield, the Emakwezini Formation thins dramatically, attaining a thickness of only 130-150 m in Swaziland (Davies, 1961) and near Komatipoort (Du Toit, 1918). Lithologically the Emakwezini Formation is dominated by fossiliferous, grey, greenish-grey and brown mudstones, with intercalated coal seams, subordinate white or yellow-white, and medium- to coarse-grained feldspathic sandstones. The coal seams are associated mainly with the mudstones and are usually less than 1 m thick and may locally attain thicknesses of up to 15 m. Figure 9 shows the general local geology of the proposed prospecting area.

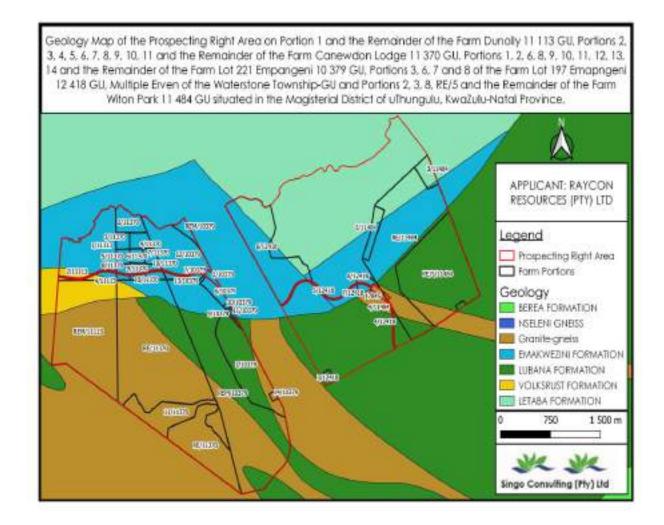


Figure 9: Geological map of the proposed prospecting area.



### 6. SURFACE WATER IMPACT ASSESSMENT

This Environmental Management Programme (EMPr) addresses the management of potential environmental impacts related to the proposed project with respect to surface water and should be used for the management, mitigation, and monitoring of the environmental impacts. The risk identification and mitigation exercise involve identification of down streams in the proposed prospecting area, as well as a description of the identified risks the environment may incur during the various phases of the project. The ranking system used in the study is presented in Table 1 and Table 2 shows the calculated impact that this prospecting project may have on the water courses in and around the project area.

The risk rating matrix methodology used is based on the following quantitative measures:

- The probability of the impact occurrence,
- The frequency of the impact occurrence,
- The special extent of the impact occurrence,
- The intensity of the impact occurrence, and
- The duration of the impact occurrence.

The formular for the Risk Significance Value (RSV) is given by:

### $RSV = (M + D + I + F) \times P$

Where:

M- Is the magnitude of the impact.

D- the duration of the impact

I-the intensity of the impact

F- the frequency of the impact

P- the probability of the impact occurring.



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....Eq 1

Table 1: Risk Assessment Significance Value

| The maximum value that can be achieved is 100 Significance Points (SP). Environmental effects were |                                   |             |  |  |  |  |  |  |  |
|--|-----------------------------------|-------------|--|--|--|--|--|--|--|
| rated as follows:  |                                   |             |  |  |  |  |  |  |  |
| Significance   | Environmental Significance Points | Colour Code |  |  |  |  |  |  |  |
|  |                                   |             |  |  |  |  |  |  |  |
| High (positive)  | >60                               | н           |  |  |  |  |  |  |  |
| Medium   | 30 to 60                          | М           |  |  |  |  |  |  |  |
| (positive)   |                                   |             |  |  |  |  |  |  |  |
| Low (positive)   | <30                               | L           |  |  |  |  |  |  |  |
| Neutral  | 0                                 | Ν           |  |  |  |  |  |  |  |
| Low (negative)   | >-30                              | L           |  |  |  |  |  |  |  |
| Medium   | -30 to -60                        | М           |  |  |  |  |  |  |  |
| (negative)   |                                   |             |  |  |  |  |  |  |  |
| High (negative)  | <-60                              | н           |  |  |  |  |  |  |  |

### Status of Impact

+: Positive (A benefit to the receiving environment)

N: Neutral (No cost or benefit to the receiving environment)

-: Negative (A cost to the receiving environment)

| Magnitude: =M                     | Duration: =D                                    |
|-----------------------------------|---|
| 10: Extremely high/do not know    | 5: Permanent                                    |
| 8: High                           | 4: Long-term (ceases with the operational life) |
| 6: Moderate                       | 3: Medium-term (5-15 years)                     |
| 4: Low                            | 2: Short-term (0-5 years)                       |
| 2: Minor                          | 1: Immediate                                    |
| 0: Not applicable/none/negligible | 0: Not applicable/none/negligible               |
| Scale: =S                         | Probability: =P                                 |
| 5: International                  | 5: Definite/do not know                         |
| 4: National                       | 4: Highly probable                              |
| 3: Regional                       | 3: Medium probability                           |
| 2: Local                          | 2: Low probability                              |
| 1: Site only                      | 1: Improbable                                   |
| 0: Not applicable/none/negligible | 0: Not applicable/none/negligible               |



### 6.1. Impacts That May Occur

The following impacts are envisioned during the coal prospecting period:

- Clearing of vegetation leading to increased runoff and less infiltration.
- Diesel and oil spillages from the drill rig.
- Increase in volume of contaminated water that needs to be managed within the footprint.
- Erosion of stream banks as a result of crossings and diversions leading to siltation of the streams.

### **Mitigation Measures**

These are the management measures that will apply during the coal prospecting period:

- All spillages will need to be cleaned up as soon as practically possible.
- Spill absorbing material must be provided.
- Vehicles and machinery will be maintained in good order to minimize leakages.
- Spillages will be cleaned up spillages immediately and contaminated materials will be disposed at a permitted waste site.
- All equipment utilizing hydrocarbons will be stored on a hard-standing surface.

Table 2: Surface water impact assessment.

|   | Pro                            | ospecting right impact of   | assessment t                           | able                               |                                   |   |  |
|---|--------------------------------|---|--|------------------------------------|-----------------------------------|---|--|
| Name of Company: Singo Consulting (Pty) Ltd     Sector: Environmental Consulting firm       Department: Land and water division     Sector: Environmental Consulting firm |                                |   |  |                                    |                                   |   |  |
|   |                                | Risk Assessm  | nent                                   |                                    |                                   |   |  |
| Potential environmental<br>impact   | Cause of the<br>impact         | Recommended<br>measures/remarks<br>for mitigation   | Impact<br>risk<br>before<br>mitigation | Impact risk<br>after<br>mitigation | Responsible<br>person(s)          | When<br>mitigation<br>should be<br>implemented? |  |
| Fuel & hydrocarbon spills   | Drill rig, trucks,<br>and cars | -Clean up<br>immediately after<br>accidental spills &<br>divert run-off from<br>highways that may<br>contain<br>hydrocarbons into<br>pollution control<br>dams to regulate<br>the pollution.<br>-Providing spill<br>absorbing material<br>-All equipment<br>utilizing<br>hydrocarbons will<br>be stored on a hard-<br>standing surface. |  |                                    | The project<br>management<br>team | During the<br>prospecting<br>activities         |  |



|   |   |  | environme<br>Impact   | ental | environmental<br>impact | impact   |  |
|---|---|--|---|-------|-------------------------|--|--|
| Low environmental impact.   |   |  |   | ontal |                         |  |  |
| Impact Classification<br>Low environmental Impact.  |   |  | Medium  |       | High                    | Very High envir                                  | onmental                                       |
| contamination.  |   | boreholes<br>mineral of<br>should be<br>from the g<br>immediate<br>logging to<br>washing a<br>leaching to<br>water reso<br>during rain                       | with<br>interest<br>cleared<br>round<br>ely after<br>prevent<br>nd<br>o the<br>purces |       |                         | management<br>team                               | prospecting<br>phase                           |
| Soil compaction<br>Water and soil   | During<br>constructing<br>gravel roads to<br>access the<br>site.<br>Core logging            | Rehabilitat<br>roads by d<br>with tracto<br>ploughing<br>vegetation<br>The core lo   | ligging<br>prs and<br>n.  |       |                         | The project<br>management<br>team<br>The project | After the<br>prospecting<br>phase<br>After the |
| Erosion of stream banks as a<br>result of crossings and<br>diversions leading to<br>siltation of the streams. | During<br>prospecting<br>activities like<br>logging and<br>sampling.                        | Do desktor<br>and avoid<br>near the w<br>bodies.   | p study<br>working<br>vater   |       |                         | Prospecting<br>team                              | During the<br>prospecting<br>phase             |
|   | trom the river<br>to operate the<br>drill rig.  | water bod<br>-Conduct<br>prospectin<br>dry season<br>the water.<br>percentag<br>wetlands of<br>are excep<br>low.<br>-All the we<br>and rivers<br>to be buffe | ng during<br>hs when<br>ges in<br>and rivers<br>tionally<br>etlands<br>will need      |       |                         |  |  |
| Surface water<br>contamination  | yard<br>-Washing of<br>working<br>equipment<br>machinery.<br>-Using water<br>from the river | -Avoid drill<br>surface wa<br>-Do not wa<br>equipmen<br>vehicles at<br>water bod   | ater.<br>ash<br>t and<br>t or near  |       |                         | The project<br>management<br>team                | During<br>prospecting<br>period                |
| Clearing of vegetation<br>leading to increased runoff<br>and less infiltration                                | During<br>pegging, and<br>preparation of<br>the drilling                                    | Rehabilitat<br>by using a<br>dig the co<br>soil or a tro   | hoe to<br>mpacted   |       |                         | The project<br>management<br>team                | After pegging<br>and drilling                  |
|   |   | -Vehicles c<br>machinery<br>to be mair<br>good orde<br>minimize le   | v will need<br>ntained in<br>er to  |       |                         |  |  |



Impact

impact

### 7. MONITORING PLAN

The objective of the surface water management and monitoring measures is to minimise the impact on surface water dependent systems to be retained from disturbance within and adjacent to controlled sites; to maintain hydrological regimes of surface water so that the environmental values are protected and, to check compliance with license requirements and for reporting purposes. Water dependent systems are parts of the environment in which the composition of species and natural ecological processes are determined by the permanent or temporary presence of flowing or standing surface water or groundwater. The in-stream areas of rivers, riparian vegetation, springs, wetlands, floodplains, groundwater-dependent terrestrial vegetation are all examples of water dependent systems (Department of Water, January 2013). The objectives of these systems will be achieved if there are no impacts on the in-stream and downstream fitness for use criteria.

### 8. CONCLUSIONS AND RECOMMENDATIONS

- It can be concluded that the prospecting activity will cause minimal impact on the water resources as the following mitigation measures will strictly be implemented at the commencement of the project:
  - Rivers and wetlands will be buffered as no go area, and a 500m buffer will apply.
  - ✓ Extreme caution will be taken during prospecting, owing to the river and numerous wetlands existing within and nearby the project area. No washing of any mechanical equipment or vehicles will be allowed near the water resources.
  - ✓ Drilling activities will not be conducted within 500m from watercourses, and the exploration geologists will be advised to drill and sample at more than 500m from rivers and wetlands on site.
  - ✓ The exploration boreholes must be cased during drilling and properly rehabilitated by cap sealing the borehole after drilling.
  - ✓ Absorbent Spill kits will be made available near the drill rigs during drilling activities.



✓ The borehole core logs with the mineral of interest should be cleared from the ground immediately after logging to prevent washing and leaching into the water resources during rainfall.

### **9 REFERENCES**

### **10 APPENDICES**

**Appendix A: Site pictures** 



## SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION OR FOR A PART TWO AMENDMENT OF AN ENVIRONMENTAL AUTHORISATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED DEVELOPMENT FOOTPRINT ENVIRONMENTAL SENSITIVITY

### **EIA Reference number:** KZN 30/5/1/1/2/11025PR

**Project name:** Dunolly 11113 GU, Canewdon Lodge 11370 GU, Lot 221 Empangeni 10379 GU, Lot 197 Empangeni 12418 GU, Wilton Park 11484 GU

**Project title:** Dunolly 11113 GU, Canewdon Lodge 11370 GU, Lot 221 Empangeni 10379 GU, Lot 197 Empangeni 12418 GU, Wilton Park 11484 GU

Date screening report generated: 13/01/2021 14:08:39

Applicant: Raycom Resources (Pty) Ltd

**Compiler:** Singo Consulting (Pty) Ltd

Compiler signature:

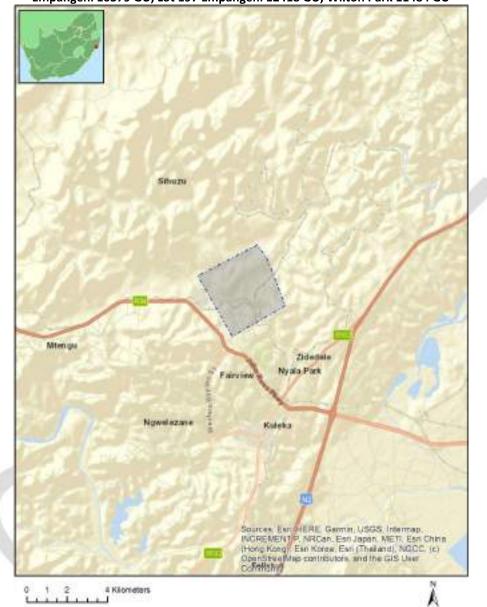
Application Category: Mining | Prospecting rights

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# **Proposed Project Location**

### Orientation map 1: General location



General Orientation: Dunolly 11113 GU, Canewdon Lodge 11370 GU, Lot 221 Empangeni 10379 GU, Lot 197 Empangeni 12418 GU, Wilton Park 11484 GU

# Map of proposed site and relevant area(s)



# Cadastral details of the proposed site

### Property details:

| No | Farm Name   | Farm/ Erf | Portion | Latitude     | Longitude    | Property     |
|----|-------------|-----------|---------|--------------|--------------|--------------|
|    |             | No        |         |              |              | Туре         |
| 1  | WATERSTONE  | 1         | 9       | 28°43'50.32S | 31°53'26.85E | Erven        |
| 2  | WATERSTONE  | 1         | 0       | 28°42'54.03S | 31°53'15.09E | Erven        |
| 3  | WATERSTONE  | 1         | 0       | 28°42'59.21S | 31°53'9.32E  | Erven        |
| 4  | WATERSTONE  | 1         | 0       | 28°43'50.76S | 31°53'16.4E  | Erven        |
| 5  | WATERSTONE  | 1         | 0       | 28°42'54.21S | 31°53'15.03E | Erven        |
| 6  | WATERSTONE  | 1         | 1       | 28°44'9.97S  | 31°53'16.84E | Erven        |
| 7  | WATERSTONE  | 1         | 15      | 28°43'43.58S | 31°53'39.72E | Erven        |
| 8  | WATERSTONE  | 1         | 24      | 28°44'1.77S  | 31°53'33.97E | Erven        |
| 9  | WATERSTONE  | 2         | 0       | 28°44'8.98S  | 31°53'13.35E | Erven        |
| 10 | WATERSTONE  | 4         | 0       | 28°44'9.38S  | 31°53'19.57E | Erven        |
| 11 | WATERSTONE  | 1         | 0       | 28°43'52.81S | 31°53'49.74E | Erven        |
| 12 | WATERSTONE  | 3         | 0       | 28°44'12.04S | 31°53'15.63E | Erven        |
| 13 | WATERSTONE  | 1052      | 0       | 28°43'25.41S | 31°53'29.76E | Erven        |
| 14 | WATERSTONE  | 1         | 3       | 28°43'28.96S | 31°53'15.3E  | Erven        |
| 15 | WATERSTONE  | 1         | 28      | 28°43'23.97S | 31°53'30.51E | Erven        |
| 16 | WATERSTONE  | 1051      | 0       | 28°43'22.5S  | 31°53'29.68E | Erven        |
| 17 | WATERSTONE  | 1         | 2       | 28°44'3.03S  | 31°53'23.15E | Erven        |
| 18 | WATERSTONE  | 1         | 13      | 28°43'50.08S | 31°53'32.51E | Erven        |
| 19 | WATERSTONE  | 295       | 0       | 28°44'12.59S | 31°53'20.54E | Erven        |
| 20 | WATERSTONE  | 1         | 0       | 28°43'48.92S | 31°53'6.16E  | Erven        |
| 21 | LOT 197     | 12418     | 0       | 28°43'25.95S | 31°52'47.94E | Farm         |
|    | EMPANGENI   |           |         |              |              |              |
| 22 | WILTON PARK | 11484     | 0       | 28°43'15.95S | 31°54'1.28E  | Farm         |
| 23 | RESERVE 5   | 15824     | 0       | 28°40'57.17S | 31°53'34.08E | Farm         |
| 24 | LOT 197     | 12418     | 0       | 28°44'15.1S  | 31°53'9.93E  | Farm         |
|    | EMPANGENI   |           |         |              |              |              |
| 25 | LOT 197     | 17845     | 0       | 28°43'35.06S | 31°53'38.94E | Farm         |
|    | EMPANGENI   |           |         |              |              |              |
| 26 | WILTON PARK | 11484     | 2       | 28°43'4.55S  | 31°53'35.92E | Farm Portion |

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| 27 | WILTON PARK          | 11484 | 5  | 28°43'27.65S | 31°54'10.18E | Farm Portion |
|----|----------------------|-------|----|--------------|--------------|--------------|
| 28 | LOT 197<br>EMPANGENI | 12418 | 2  | 28°43'31.15S | 31°53'18.15E | Farm Portion |
| 29 | LOT 197<br>EMPANGENI | 12418 | 0  | 28°43'53.13S | 31°53'49.75E | Farm Portion |
| 30 | LOT 197<br>EMPANGENI | 12418 | 6  | 28°43'13.68S | 31°52'33.1E  | Farm Portion |
| 31 | WILTON PARK          | 11484 | 3  | 28°42'37.15S | 31°54'5.16E  | Farm Portion |
| 32 | WILTON PARK          | 11484 | 4  | 28°43'39.7S  | 31°53'44.14E | Farm Portion |
| 33 | LOT 197<br>EMPANGENI | 12418 | 4  | 28°43'50.46S | 31°53'46.22E | Farm Portion |
| 34 | WILTON PARK          | 11484 | 0  | 28°43'11.39S | 31°53'45.69E | Farm Portion |
| 35 | WILTON PARK          | 11484 | 5  | 28°43'27.91S | 31°54'10.2E  | Farm Portion |
| 36 | LOT 197<br>EMPANGENI | 12418 | 0  | 28°43'50.96S | 31°53'16.4E  | Farm Portion |
| 37 | RESERVE 5            | 15824 | 4  | 28°41'46.77S | 31°52'35.77E | Farm Portion |
| 38 | WILTON PARK          | 11484 | 1  | 28°43'36.39S | 31°53'42.39E | Farm Portion |
| 39 | LOT 197<br>EMPANGENI | 12418 | 1  | 28°43'23.56S | 31°53'20.52E | Farm Portion |
| 40 | LOT 197<br>EMPANGENI | 12418 | 7  | 28°43'33.215 | 31°53'29.85E | Farm Portion |
| 41 | RESERVE 5            | 15824 | 5  | 28°42'4.91S  | 31°53'9.69E  | Farm Portion |
| 42 | LOT 197<br>EMPANGENI | 17845 | 0  | 28°43'34.55S | 31°53'38.42E | Farm Portion |
| 43 |                      | 18343 | 0  | 28°43'53.06S | 31°53'49.73E | Farm Portion |
| 44 |                      | 18343 | 0  | 28°43'50.86S | 31°53'16.41E | Farm Portion |
| 45 |                      | 18343 | 0  | 28°42'54.32S | 31°53'15.05E | Farm Portion |
| 46 | LOT 197<br>EMPANGENI | 12418 | 0  | 28°43'7.4S   | 31°53'4.57E  | Farm Portion |
| 47 | LOT 197<br>EMPANGENI | 12418 | 3  | 28°44'15.55S | 31°53'10.02E | Farm Portion |
| 48 | RESERVE 5            | 15824 | 0  | 28°41'37.11S | 31°54'41.88E | Farm Portion |
| 49 | RESERVE 5            | 15824 | 22 | 28°41'52.9S  | 31°53'16.14E | Farm Portion |
| 50 | WILTON PARK          | 11484 | 6  | 28°42'38.56S | 31°53'35.66E | Farm Portion |
| 51 | WILTON PARK          | 11484 | 8  | 28°43'40.66S | 31°54'23.73E | Farm Portion |
| 52 | WILTON PARK          | 11484 | 0  | 28°43'11.7S  | 31°53'45.72E | Farm Portion |
| 53 | LOT 197<br>EMPANGENI | 12418 | 8  | 28°43'28.725 | 31°53'31.71E | Farm Portion |
| 54 | LOT 197<br>EMPANGENI | 12418 | 5  | 28°43'37.33S | 31°53'10.37E | Farm Portion |
| 55 | RESERVE 5            | 15824 | 48 | 28°41'29.34S | 31°51'2.74E  | Farm Portion |
| 56 | RESERVE 5            | 15824 | 0  | 28°31'5.17S  | 32°0'3.79E   | Farm Portion |

Development footprint<sup>1</sup> vertices:

| Footprint | Latitude     | Longitude    |
|-----------|--------------|--------------|
| 1         | 28°42'53.36S | 31°52'13.58E |
| 1         | 28°42'10.37S | 31°53'48.65E |
| 1         | 28°42'28.11S | 31°54'4.94E  |
| 1         | 28°43'36.02S | 31°54'34.19E |
| 1         | 28°44'19.12S | 31°53'9.1E   |
| 1         | 28°42'53.36S | 31°52'13.58E |

<sup>&</sup>lt;sup>1</sup> "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No nearby wind or solar developments found.

### Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

## Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmental sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

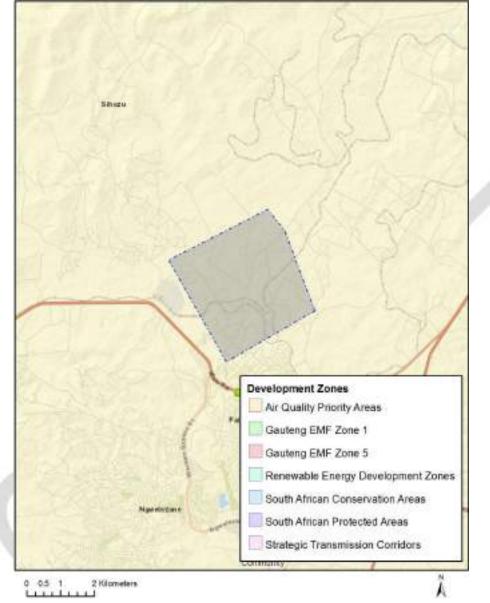
Mining | Prospecting rights.

### Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this footprint are indicated below.

No intersection with any development zones found.

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones



Project Location: Dunolly 11113 GU, Canewdon Lodge 11370 GU, Lot 221 Empangeni 10379 GU, Lot 197 Empangeni 12418 GU, Wilton Park 11484 GU

### Proposed Development Area Environmental Sensitivity

The following summary of the development footprint environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

| Theme | Very High   | High        | Medium      | Low         |
|-------|-------------|-------------|-------------|-------------|
|       | sensitivity | sensitivity | sensitivity | sensitivity |

| Agriculture Theme              | Х |   |   |   |
|--------------------------------|---|---|---|---|
| Animal Species Theme           |   | X |   |   |
| Aquatic Biodiversity Theme     | Х |   |   |   |
| Archaeological and Cultural    |   | X |   |   |
| Heritage Theme                 |   |   |   |   |
| Civil Aviation Theme           |   | X |   |   |
| Defence Theme                  |   |   |   | Х |
| Paleontology Theme             | X |   |   |   |
| Plant Species Theme            |   |   | Х |   |
| Terrestrial Biodiversity Theme |   |   |   | Х |

### Specialist assessments identified

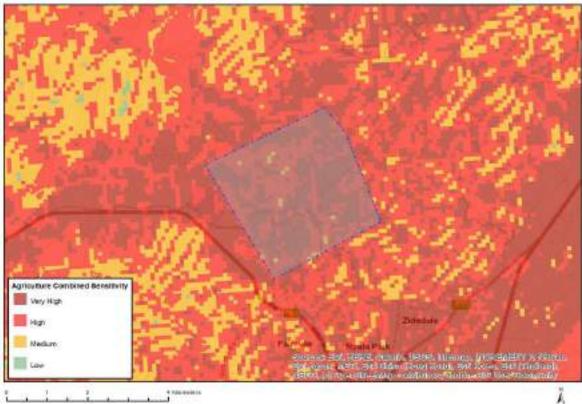
Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

| N<br>o | Speci<br>alist<br>asses<br>smen<br>t   | Assessment Protocol  |
|--------|--|--|
| 1      | Agricul<br>tural<br>Impact<br>Assess<br>ment   | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted General Agriculture Assessment Protocols.pdf                |
| 2      | Archae<br>ologica<br>I and<br>Cultura<br>I<br>Heritag<br>e<br>Impact<br>Assess<br>ment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted General Requirement Assessment Protocols.pdf                |
| 3      | Palaeo<br>ntology<br>Impact<br>Assess<br>ment  | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted General Requirement Assessment Protocols.pdf                |
| 4      | Terrest<br>rial<br>Biodive<br>rsity<br>Impact<br>Assess<br>ment                        | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted Terrestrial Biodiversity Assessment Protocols.pdf           |
| 5      | Aquati<br>c<br>Biodive<br>rsity<br>Impact<br>Assess<br>ment                            | <u>https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/</u><br><u>Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf</u> |

| 6 | Noise<br>Impact<br>Assess<br>ment             | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted Noise Impacts Assessment Protocol.pdf        |
|---|---|---|
| 7 | Radioa<br>ctivity<br>Impact<br>Assess<br>ment | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted General Requirement Assessment Protocols.pdf |
| 8 | Plant<br>Species<br>Assess<br>ment            | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted Plant Species Assessment Protocols.pdf       |
| 9 | Animal<br>Species<br>Assess<br>ment           | https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/<br>Gazetted Animal Species Assessment Protocols.pdf      |

# Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed footprint for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.



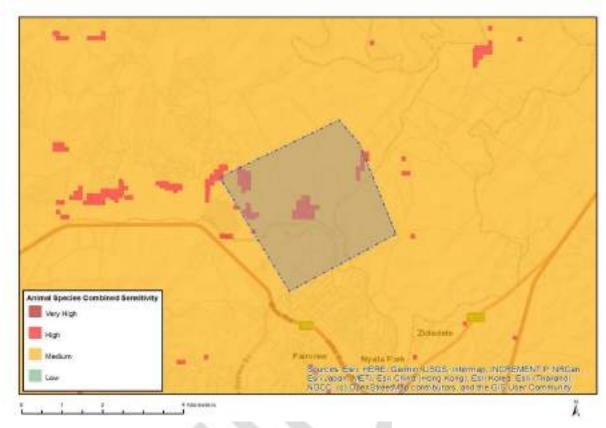
### MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

Very High sensitivity **High sensitivity Medium sensitivity** Low sensitivity Х

### **Sensitivity Features:**

| Sensitivity | Feature(s)  |
|-------------|---|
| High        | Land capability;09. Moderate-High/10. Moderate-High   |
| High        | Old Fields;Land capability;09. Moderate-High/10. Moderate-High  |
| High        | Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate                             |
| High        | Subsistence Farming 1;Land capability;09. Moderate-High/10. Moderate-High                             |
| Medium      | Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate  |
| Very High   | Land capability;11. High/12. High-Very high/13. High-Very high/14. Very high/15. Very high            |
| Very High   | Old Fields;Land capability;11. High/12. High-Very high/13. High-Very high/14. Very high/15. Very high |
| Very High   | Subsistence Farming 1;Land capability;11. High/12. High-Very high/13. High-Very high/14. Very         |
|             | high/15. Very high  |

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### MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at <u>eiadatarequests@sanbi.org.za</u> listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       | Х                |                    |                 |

| Sensitivity | Feature(s)                             |
|-------------|--|
| High        | Aves-Nettapus auritus                  |
| High        | Aves-Circus ranivorus                  |
| High        | Sensitive species 9                    |
| Medium      | Invertebrate-Pomatonota dregii         |
| Medium      | Insecta-Iolaus diametra natalica       |
| Medium      | Invertebrate-Forest invertebrate       |
| Medium      | Insecta-Deloneura millari millari      |
| Medium      | Reptilia-Kinixys natalensis            |
| Medium      | Sensitive species 5                    |
| Medium      | Mammalia-Dendrohyrax arboreus          |
| Medium      | Invertebrate-Physophorina livingstonii |
| Medium      | Invertebrate-Arytropteris basalis      |
| Medium      | Mammalia-Lycaon pictus                 |
| Medium      | Amphibia-Hyperolius pickersgilli       |
| Medium      | Aves-Halcyon senegaloides              |

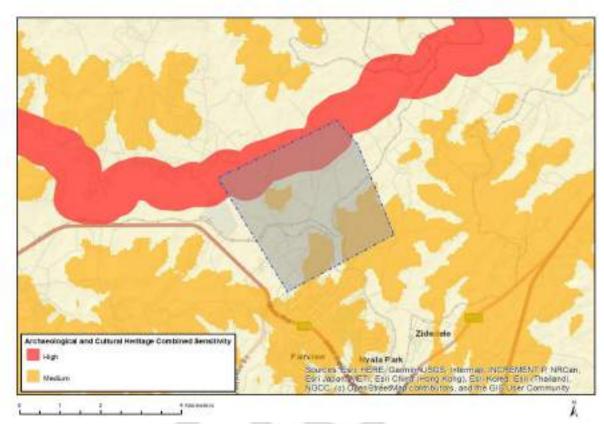
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## MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| X                     |                  |                    |                 |

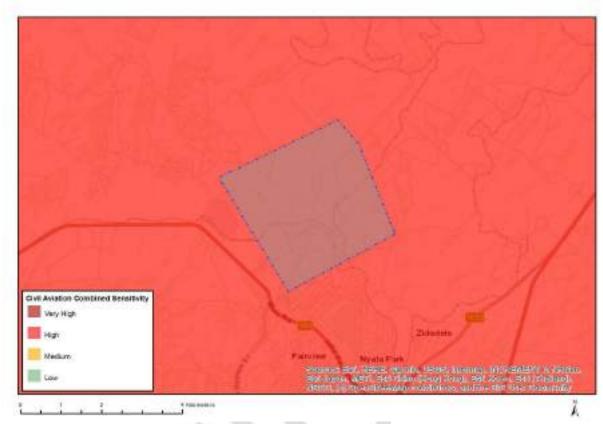
| Sensitivity | Feature(s)             |
|-------------|------------------------|
| Low         | Low sensitivity        |
| Very High   | Wetlands and Estuaries |
|             |                        |

# MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       | Х                |                    |                 |

| Sensitivity | Feature(s)                         |
|-------------|------------------------------------|
| High        | Within 500 m of an important river |
| Medium      | Mountain or ridge                  |



### MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       | Х                |                    |                 |

| Sensitivity | Feature(s)                                    |
|-------------|---|
| High        | Within 8 km of other civil aviation aerodrome |

### MAP OF RELATIVE DEFENCE THEME SENSITIVITY



| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       |                  |                    | Х               |

| Sensitivity | Feature(s)      |
|-------------|-----------------|
| Low         | Low sensitivity |

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### MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
| x                     |                  |                    |                 |

| Sensitivity | Feature(s)  |  |
|-------------|---|--|
| Low         | Features with a Low paleontological sensitivity       |  |
| Very High   | Features with a Very High paleontological sensitivity |  |

# 

### MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY

Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at <u>eiadatarequests@sanbi.org.za</u> listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       |                  | Х                  |                 |

| Sensitivity | Feature(s)                              |  |
|-------------|---|--|
| Low         | Low Sensitivity                         |  |
| Medium      | Sensitive species 1252                  |  |
| Medium      | Aspalathus gerrardii                    |  |
| Medium      | Thesium polygaloides                    |  |
| Medium      | Fimbristylis aphylla                    |  |
| Medium      | Pachycarpus concolor subsp. arenicola   |  |
| Medium      | Nidorella tongensis                     |  |
| Medium      | Senecio ngoyanus                        |  |
| Medium      | Wolffiella denticulata                  |  |
| Medium      | Cassipourea gummiflua var. verticillata |  |
| Medium      | Oxygonum dregeanum subsp. streyi        |  |
| Medium      | Pavonia dregei                          |  |
| Medium      | Sensitive species 649                   |  |
| Medium      | Sensitive species 1221                  |  |
| Medium      | Disperis woodii                         |  |

| Medium | Sensitive species 191 |
|--------|-----------------------|

# Testing in the second secon

### MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       |                  | 2                  | Х               |

### Sensitivity Features:

| Sensitivity | Feature(s)      |
|-------------|-----------------|
| Low         | Low Sensitivity |