mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**NAME OF APPLICANT: Mineral Sands Resources (Pty) Ltd**

**REFERENCE NUMBER:**

# PROSPECTING WORK PROGRAMME

SUBMITTED FOR A PROSPECTING RIGHT
APPLICATION WITHOUT BULK SAMPLING

**AS REQUIRED IN TERMS OF SECTION 16 READ TOGETHER WITH REGULATION 7(1) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (ACT 28 of 2002)**

# STANDARD DIRECTIVE

All applicants for mining rights are herewith, in terms of the provisions of Section 16 and in terms of Regulation 7(1) of the Mineral and Petroleum Resources Development Act, directed to submit a Prospecting Work Programme, strictly under the following headings and in the following format together with the application for a prospecting right.

## 1. REGULATION 7.1. (a): FULL PARTICULARS OF THE APPLICANT

### Table 1: Applicant's Contact Details

| ITEM | COMPANY CONTACT DETAILS |
|---|---|
| Name | Mineral Sands Resources Pty Ltd |
| Tel no | 021 555 2860 |
| Fax no: | 021 555 2860 |
| Cellular no | 063 298 8813 |
| E-mail address | sibonelo@mineralcommodities.com |
| Postal address | Postnet Suit #2, Private Bag X18, Milnerton, 7435 |

### Table 2: Consultant's Details

| ITEM | CONSULTANT CONTACT DETAILS (If applicable) |
|---|---|
| Name | N/A |
| Tel no | N/A |
| Fax no: | N/A |
| Cellular no | N/A |
| E-mail address | N/A |
| Postal address | N/A |

## 2. REGULATION 7(1)(b): PLAN CONTEMPLATED IN REGULATION 2(2) SHOWING THE LAND TO WHICH THE APPLICATION RELATES

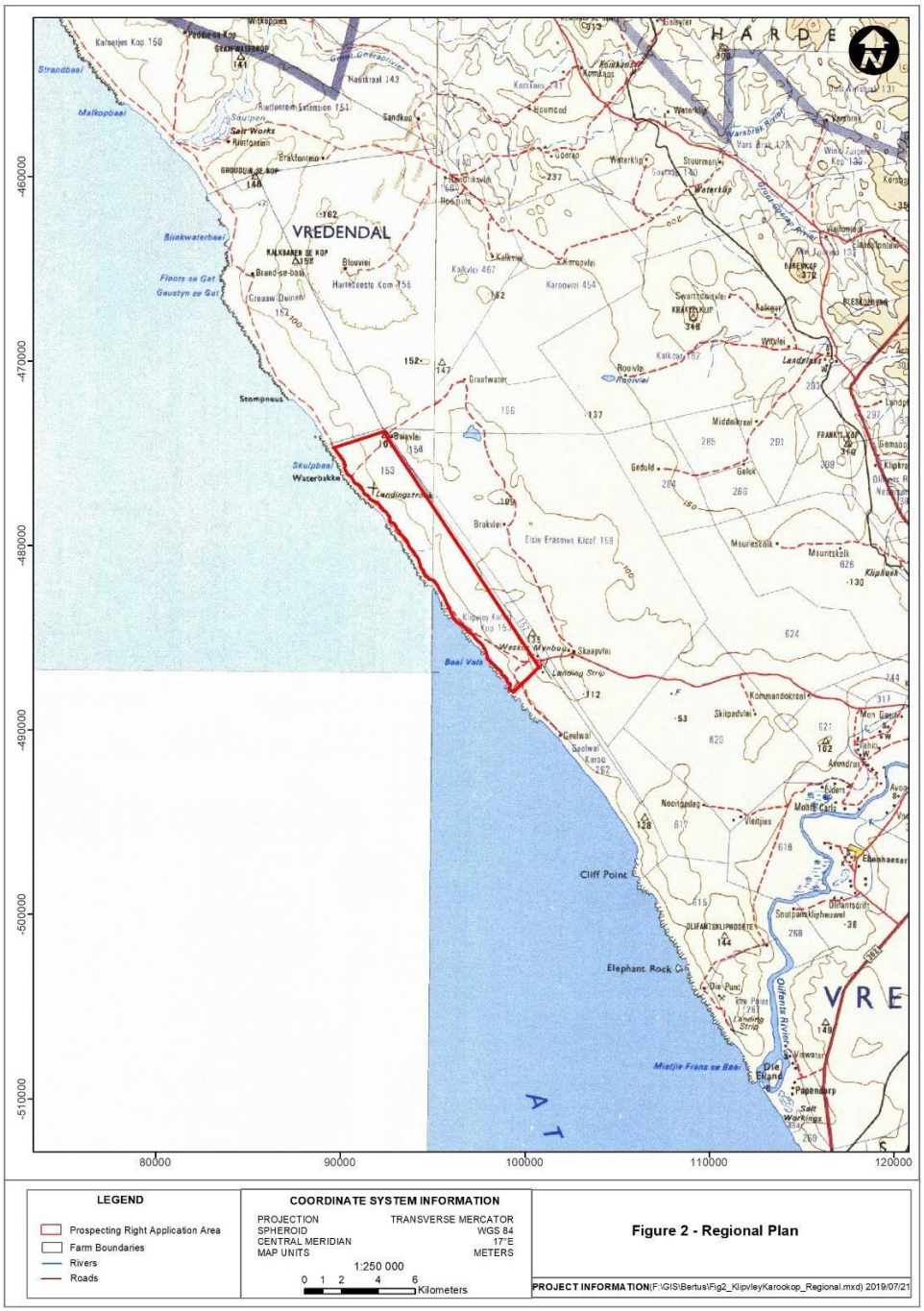


Figure 1A: Prospecting area plan.

## 3. REGULATION 7(1)(c): THE REGISTERED DESCRIPTION OF THE LAND TO WHICH THE APPLICATION RELATES

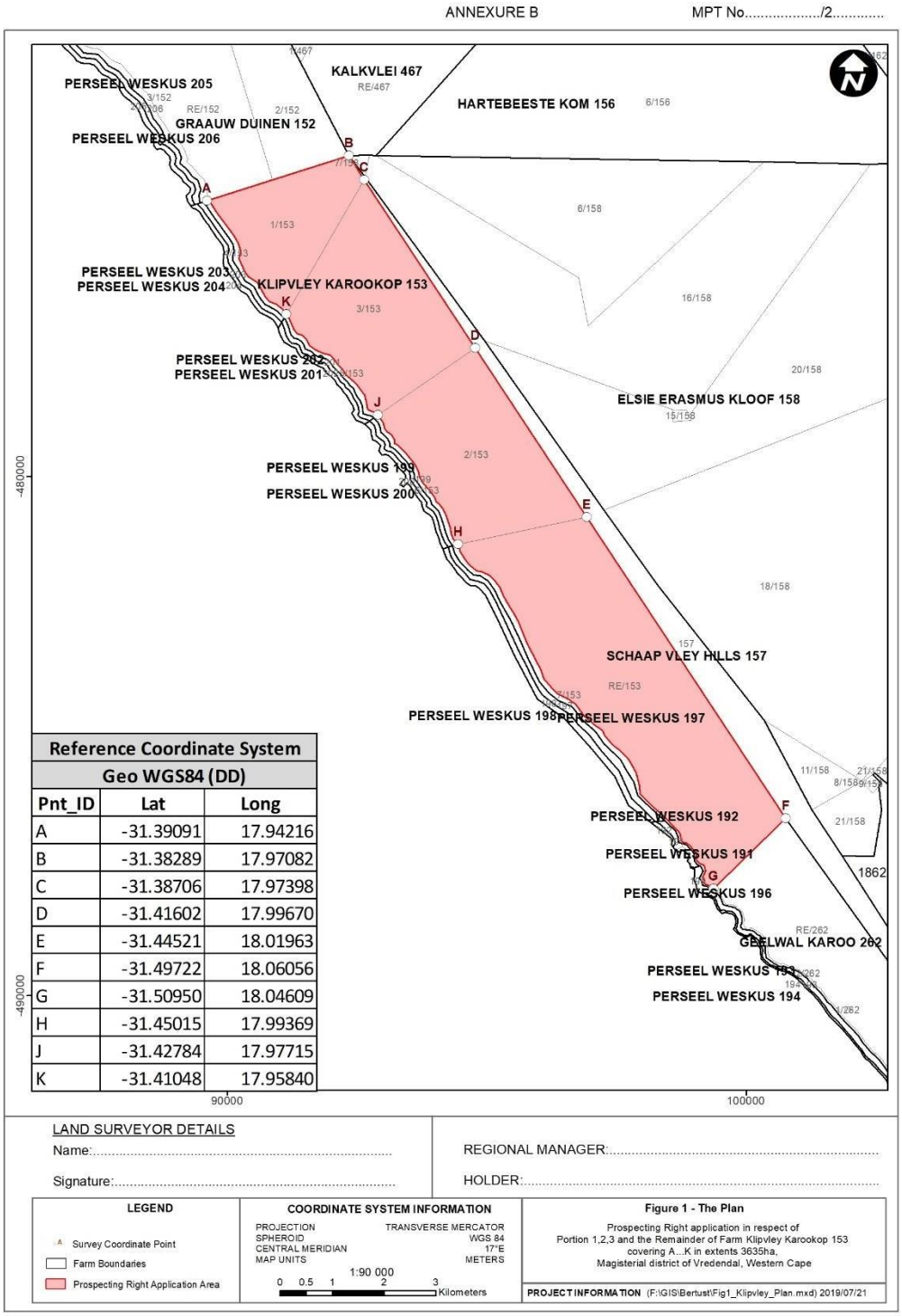


Figure 1B Prospecting area description.

Portions 1, 2, 3 and the remainder of the farm Klipvley Karoo Kop #153 being approximately 3970ha in extend. Located in the administrative district of Vanrhynsdorp – Magisterial District of Vredendal.

| No. | Farm/Erf no. | Name | Area (ha) | SG Code |
|---|---|---|---|---|
| 1 | RE/153 | Klipvley Karookop | 1 595.94 | C07800700000015300000 |
| 2 | 1/153 | Klipvley Karookop | 777.65 | C07800700000015300001 |
| 3 | 2/153 | Klipvley Karookop | 809.88 | C07800700000015300002 |
| 4 | 3/153 | Klipvley Karookop | 451.45 | C07800700000015300003 |
| | **Total** | | **3 634.92** | |

## 4. REGULATION 7(1)(d) and (e): THE MINERAL OR MINERALS TO BE PROSPECTED FOR

### Table 4.1: Minerals to be prospected for

| ITEM | DETAIL |
|---|---|
| **Type of mineral(s)** | DIAMOND (DIA), DIAMOND ALLUVIAL (DA), DIAMOND (GENERAL) (D), GARNET (ABBRASIVE) (Gn), HEAVY MINERALS (GENERAL) (HM), MINERAL (Lx), MONAZITE (HEAVY MINERAL) (Mz), RARE EARTHS (RE), RUTILE (HEAVY MINERAL) (Rt), ZIRCONIUM ORE (Zr), LEUCOXCENE, ILMENITE |
| **Type of minerals continued** | |
| **Type of minerals continued** | |
| **Locality**<br>**(Direction and distance from nearest town)** | The farms are located 40 km west of the town Lutzville, within the Western Cape Province (1:50 000 Sheet 3118 AC Landplaas). Access is via the N7 and 363 tarred roads, and via gravel roads west of Koekenaap. |
| **Extent of the area required for prospecting** | 3635 ha |
| **Geological formation** | The regional geology of the west coast of South Africa consists of thin and narrow elevated Cenozoic marine and aeolian strata draped uniformly onto an undulating Proterozoic basement. The oldest rocks in the immediate area include diverse basement lithologies of the mainly Mesoproterozoic Namaqualand Metamorphic Province with thrust-related slices of the Neoproterozoic Gariep Supergroup and fringes of the Vanrhynsdorp Group volcano-sedimentary lithologies.<br>The generally rocky coastal plain is extensively blanketed by an unconsolidated Cenozoic sedimentary cover. The Cenozoic deposits extending northward from Elands Bay to Alexander Bay are classified as the West Coast Group. |

## 4.2 Description why the Geological formation substantiates the minerals to be prospected for (provide a justification as to why the geological formation supports the possibility that the minerals applied for could be found therein)

The generally rocky coastal plain is extensively blanketed by an unconsolidated Cenozoic sedimentary cover. The Cenozoic deposits extending northward from Elands Bay to Alexander Bay are classified as the West Coast Group. The bulk of the overlying sediments occurs as marine- aeolian couplets with lithologic successions that are increasingly more marine in proportion north of Doring Bay. Conversely, the aeolian component turns dominant south of Hondeklip Bay. Generally, the basal, shallow-marine deposits rest unconformably on four main wave-cut, raised terraces corresponding to late Miocene and Pliocene sea-level transgressive maxima around 90, 50, 30, and 10 m amsl (meters above mean sea level). Heavy minerals, however, are concentrated in both marine and aeolian sediments, particularly north of Doring Bay.

Substantial terrigenous reworking of the marine sediments during the Quaternary to Holocene resulted in the development of complex dune systems interspersed with marine sediment contemporaries south of Hondeklip Bay. These aeolian sediments directly overlie the marine deposits and reach a substantial thickness. These dune systems, which are referred to as the Graauw Duinen Formation, represent some of the oldest remaining aeolian sand deposits mapped north of the Olifants River and overlie reworked Alexander Bay Formation lithologies near the coastline. The

quartzofeldspathic aeolian sands are marked by sharply increasing isopachs, partial induration and significant heavy mineral concentration.

The area applied for is situated to the south of the world class Namakwa Sands mine of Tronox that has been in operation from 1995. The region is well known for heavy mineral concentrations and smaller deposits has been described in the area by the Council for Geoscience in Bulletin 25, by CB Coetzee, 1957. The geological setting of the area is favorable for orogenic gold deposits and informal reports of gold is know from the area. Kaolin deposit has been investigated in the area and has been written up by the Council for Geoscience in Bulletin 36, by H Heystek, 1961.

**4.3 Attach a geological map that justifies the description why there is a possibility that the minerals applied for could occur on the land concerned.**

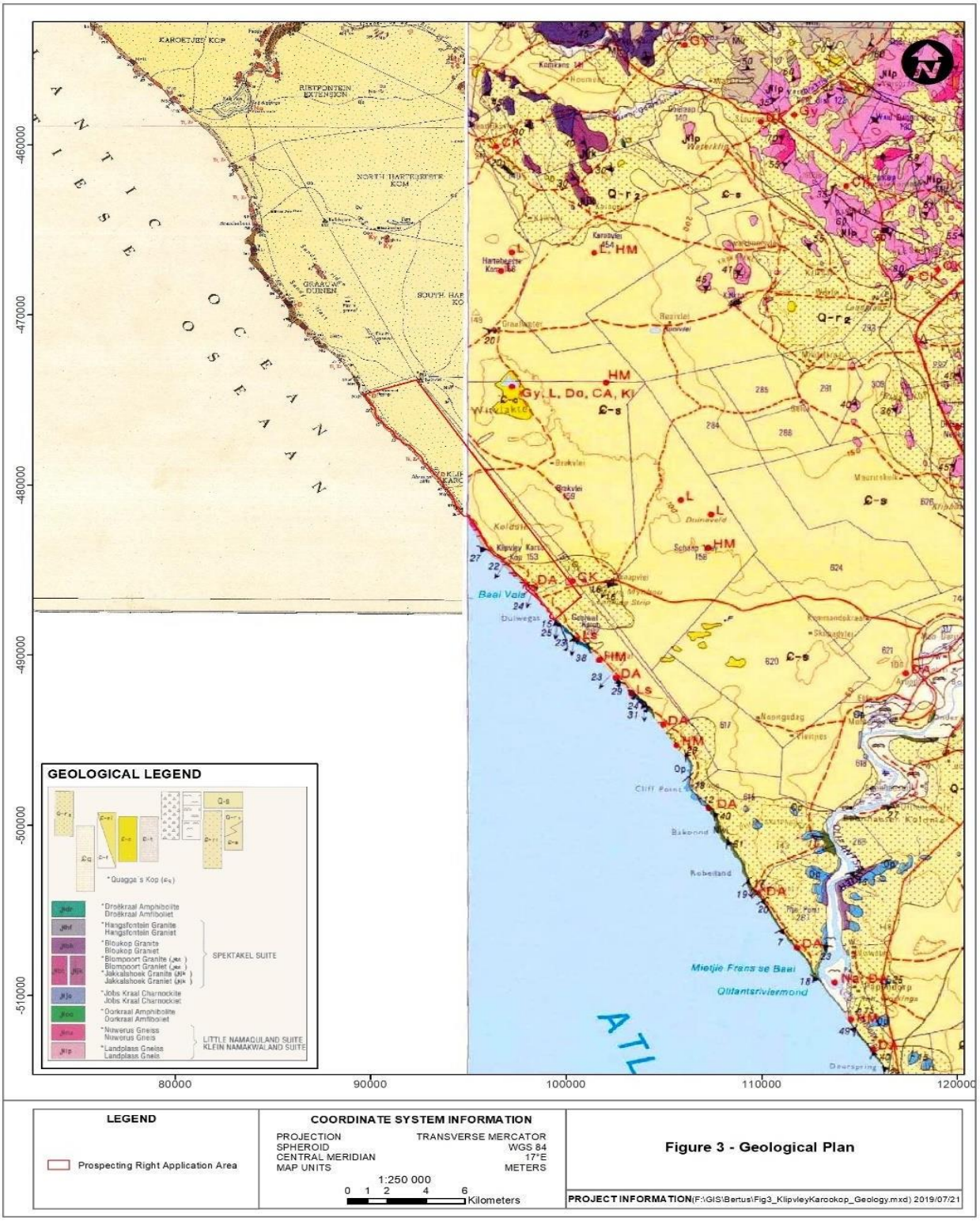


Figure 2. Geological map of application area

## 5. REGULATION 7(1)(f): A DESCRIPTION OF HOW THE MINERAL RESOURCE AND MINERAL DISTRIBUTION OF THE PROSPECTING AREA WILL BE DETERMINED

The existence and possible size of heavy mineral deposits in the application area will be determined as follows:

- **Data review and desk top studies** will involve the following desk-top activities: data acquisition from government and private sources, and analysis of any existing/previous prospecting and drilling data, satellite (Landsat) imagery, aerial photos, and terrain data, as well as geological map interpretation. The synthesis and interpretation of such information will contribute towards providing a clearer picture of the location and characteristics of the heavy mineral deposit/s and will guide the in-field prospecting programme.

- **Mapping and surface sampling:** Surface mapping will be conducted by the project geologist and assistants and will take place over a period of 3 months. Such mapping will encompass GPS controlled traverses, and aerial photo mapping. Surface sampling. Where heavy mineral concentrations are noted on surface 25-liter surface samples will be collected manually with a shovel and plastic sampling bag for concentration and laboratory analysis to determine the type of minerals present and the tenor of mineralization. Each pit will be 50cm x 50cm in size and dug to a maximum depth of 1m. The final number of samples will be determined by the size of surface mineralized areas if any, 200 samples are planned for initially. Each sample locality will be backfilled and fully rehabilitated concurrently with sampling.

- **Reconnaissance Drilling** will involve surveying and pegging of the anticipated deposit. This sub-phase will include the following activities: Surveying of the mapped area to be prospected. A grid (average 500m x 500m) will be marked on the map, after which those positions will be marked in the field by a surveyor with labelled droppers (pegs). Shallow small diameter auger drilling will take place at these positions down to a depth of 4m. A total of 100 auger drill holes are planned initially and may be followed up with additional drilling. Access routes to the drill sites will also be located (existing roads will used and new tracks only permitted in exceptional circumstances).

- **Evaluation drilling** will be conducted with the Air-core drilling method to access the deeper lying sediment package. Existing geological information in the area indicate mineralization down to 10m depth. A total of 250 Air-core holes are planned to an average depth of 30m. More drilling may be required depending on results. Drill cutting will be sampled and analysed for heavy mineral content as described above for surface sampling.

- **Analytical desk-top study.** All the data collected will be analysed and compiled into a final report/model in order to determine the potential of the project and to outline possible future drill sampling programs if any.

**AND**

**REGULATION 7(1)(h): ALL PLANNED PROSPECTING ACTIVITIES MUST BE CONDUCTED IN PHASES AND WITHIN SPECIFIC TIMEFRAMES**

The prospecting will be conducted in 3 phases, each one dependent on the results of the previous.

- **Phase 1** will involve the following desk-top activities: data acquisition from government and private sources, and analysis of any existing/previous prospecting and drilling data, satellite (Landsat) imagery, aerial photos, and terrain data, as well as geological map interpretation. The synthesis and interpretation of such information will contribute towards providing a clearer picture of the location and characteristics of the heavy mineral deposit/s, and will guide the in-field prospecting programme.

- **Phase 2:** Surface mapping will be conducted by the project geologist and assistants, and will take place over a period of 3 months. Such mapping will encompass GPS controlled traverses, and aerial photo mapping. Surface sampling. Where heavy mineral concentrations are noted on surface 25 liter surface samples will be collected manually with a shovel and plastic sampling bag for concentration and laboratory analysis to determine the type of minerals present and the tenor of mineralization. Each pit will be 50cm x 50cm in size and dug to a maximum depth of 1m. The final number of samples will be determined by the size of surface mineralized areas if any, 200 samples are planned for initially. Each sample locality will be backfilled and fully rehabilitated concurrently with sampling.

- **Phase 3** will involve surveying and pegging of the anticipated deposit. This sub-phase will include the following activities: Surveying of the mapped area to be prospected. A grid (average 500m x 500m) will be marked on the map, after which those positions will be marked in the field by a surveyor with labelled droppers (pegs). Shallow small diameter auger drilling will take place at these positions to an average depth of 4m. A total of 100 auger drill holes are planned initially and may be followed up with additional drilling Access routes to the drill sites will also be located (existing roads will used and new tracks only permitted in exceptional circumstances)

• **Phase 4** will be conducted with Air Core drilling method to access the deeper lying sediment package. A total of 250 Air-core holes are planned down to an average depth of 30m. More drilling may be required depending on results. Drill cutting will be sampled and analyzed for heavy mineral content as described above for surface sampling.

• **Phase 5** will involve analytical desk-top study. All the data collected will be analyzed and compiled into a final report/model in order to determine the potential of the project and to outline possible future drill sampling programs if any.

| Phase | Operation | Time Frame | Quantities |
|---|---|---|---|
| Phase 1 | Data review and desk top studies | 6 months | Entire area |
| Phase 2 | Mapping and surface sampling | 12 months | Phase 1b: ~ 200 samples |
| Phase 3 | Reconnaissance drilling | 18 months | Phase 2a: ~ 100 holes |
| Phase 4 | Evaluation Air-core drilling | 12 months | Phase 2b: ~ 250 holes |
| Phase 5 | Analytical desktop study | 12 months | All data |

**AND**

**REGULATION 7(1)(i): TECHNICAL DATA DETAILING THE PROSPECTING METHOD OR METHODS TO BE IMPLEMENTED AND THE TIME REQUIRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION**

- **Field Mapping**

Field mapping is done manually by a geologist using enlarged aerial photographs, topographic maps and satellite imagery. All geological and surface features are recorded on the relevant imagery, transferred to the topographic map and compiled into a detailed base map that can be used for further prospecting and exploration planning. The time estimate for mapping is 12 months.

- **Surface Sampling**

Where heavy mineral concentrations are noted on surface 25 liter surface samples will be collected manually with a shovel and plastic sampling bag for concentration and laboratory analysis to determine the type of minerals present and the tenor of mineralization. Each pit will be ~ 50cm x 50cm in size and dug to a maximum depth of 1m. Each sample locality will be backfilled and fully rehabilitated concurrently with sampling. A total of 200 samples is planned for initially to be collected over an estimated 12-month period.

- **Reconnaissance Drilling**

Hand held engine operated auger drill. The auger is portable and will be walked to site from the closest track. Approximately 100 auger drill holes are anticipated to be drilled. The auger is in essence a corkscrew-type drill where the helical ridge raises the drilled material to the surface for sampling purposes (Figure 4). A total of 100 drill holes are planned for initially to be collected over an estimated 18-month period.

Additional auger drill holes to check for continuity of the heavy mineral deposits could be required and will be determined by the results of the first phase of drilling.

Figure 4 – An example of a hand held engine driven auger drill

- **Evaluation Air-Core Drilling**

Air-core drilling uses steel or tungsten blades to bore a hole into unconsolidated ground. The drill cuttings are removed by the injection of compressed air into the hole. This method of drilling is used to drill unconsolidated sands and soft sediments. Where possible, air-core drilling is preferred over RAB drilling as it provides a more representative sample. Air-core drilling is relatively inexpensive and is often used in first pass exploration drill programs. Air-core drilling is limited to depths of 50-60 metres and is drilled using a smaller rig known as an Air-core rig. Such drill is for drilling of deeper holes and use of such will be restricted to existing farm tracks and roads.

A total of 12 months is allowed for the reconnaissance drilling phase in order to allow for interpretation and modeling of the data.

Figure 5 – An example of an Air-core drill mounted on the back of a Land Cruiser.

- **Analytical Desktop Study**

All the data collected will be analysed and compiled into a final report/model in order to determine the potential of the project and to outline possible future bulk sampling programs if any. It is estimated that the analysis of the results can be completed in a 12-month period.

**The table below incorporates the information required in respect of Regulations 7(1)(f), 7(1)(h) and 7(1)(i):**

**Table 5.1**

| Phase | Activity<br>(what are the activities that are planned to achieve optimal prospecting) | Skill(s) required<br>(refers to the competent personnel that will be employed to achieve the required results) | Timeframe<br>(in months) for the activity) | Outcome<br>(What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, *etc*.) | Timeframe for outcome<br>(deadline for the expected outcome to be delivered) | What technical expert will sign off on the outcome?<br>(e.g. geologist, mining engineer, surveyor, economist, *etc.*) |
|---|---|---|---|---|---|---|
| 1. | **Non-Invasive Prospecting**<br>Desk top study | Geologist | Month 1 - 6 | Geological map | Month 6 | Geologist |
| 2. | **Invasive Prospecting**<br>Geological mapping and surface sampling | Geologist Labourers x 2 | Month 7-18 | Heavy mineral concentrates<br>Analytical data Geological model<br>Prospecting target | Month 18 | Geologist |
| 3. | Reconnaissance Auger Drilling | Geologist Labourers x 4<br>Geologist Drill foreman Labourers x 4 | Month 19-36 | Heavy mineral concentrates<br>Analytical data Geological model<br>Prospecting target | Month 36 | Geologist |
| 4. | Evaluation Air-core drilling | | Month 37-48 | Heavy mineral concentrates<br>Analytical data Geological model<br>Resource estimation | Month 48 | Geologist |
| 5. | **Non-Invasive Prospecting**<br>Resource estimation and financial analysis | Geologist | Month 49-60 | Geological report Final target areas<br>Financial economic assessment<br>Planning for next phase of evaluation of the discovered resources | Month 60 | Geologist |

## 6. REGULATION 7(1)(g): A DESCRIPTION OF THE PROSPECTING METHOD OR METHODS TO BE IMPLEMENTED

### (i) DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place e.g. aerial photography, desktop studies, aeromagnetic surveys, etc.)

- Desktop review of existing information and reports. Aerial and satellite interpretation including remote sensing data. Geological mapping is a manual process carried out on foot and causing no ground disturbance. Mapping is done manually by a geologist using enlarged aerial photographs, satellite imagery and topographic maps. All geological and surface features are recorded on the aerial photographs, transferred to the topographic map and compiled into a detailed base map that can be used for further prospecting and exploration planning.

### (ii) DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

Surface Sampling

Where heavy mineral concentrations are noted on surface 25 liter surface samples will be collected manually with a shovel and plastic sampling bag for concentration and laboratory analysis to determine the type of minerals present and the tenor of mineralization. Each pit will be ~ 50cm x 50cm in size and dug to a maximum depth of 1m. Each sample locality will be backfilled and fully rehabilitated concurrently with sampling.

Auger Drilling.

Hand held engine operated auger drill. The auger is portable and will be walked to site from the closest track. Approximately 100 auger drill holes are anticipated to be drilled. The auger is in essence a corkscrew-type drill where the helical ridge raises the drilled material to the surface for sampling purposes (Figure 4). A total of 100 drill holes are planned for initially to be collected over an estimated 18-month period.

Evaluation Air core Drilling

Air-core drilling uses steel or tungsten blades to bore a hole into unconsolidated ground. The drill cuttings are removed by the injection of compressed air into the hole. This method of drilling is used to drill unconsolidated sands and soft sediments. Where possible, air-core drilling is preferred over RAB drilling as it provides a more representative sample. Air-core drilling is relatively inexpensive and is often used in first pass exploration drill programs. Air-core drilling is limited to depths of 50-60

metres and is drilled using a smaller rig known as an Air-core rig. Such drill is for drilling of deeper holes and use of such will be restricted to existing farm tracks and roads.

**(iii) DESCRIPTION OF PRE-/FEASIBILITY STUDIES**

(Activities in this section includes but are not limited to: initial, geological modeling, resource determination, possible future funding models, etc.)

A preliminary geological model will be compiled once the geological mapping and reconnaissance sampling and drilling have been completed. This will be done using standard software for the compilation of geological models and cross-sections from drill and sample data.

Metallurgical and petrographical studies to determine the mineralogy, best processing and recovery system to upgrade the minerals to a saleable product.

Modelling of cut-off grades to determine if an inferred or indicated resource can be upgraded into reserve category. JORC or SAMREC compliant resource is the targeted outcome.

Based on the resource model and planned processing method an economic feasibility study will be done to determine if the deposit can be economically mined.

## Commitment to provide addendums in respect of additional prospecting activities

I herewith commit to provide the Department of Mineral Resources with an addendum in respect of both the EM Plan and Prospecting Work Programme regarding any future in-fill prospecting required but not described above, prior to undertaking such activities. The addendum will cover all the Regulations as per the Prospecting Work Programme.

I agree that the addendums will provide for similar activities only and if the scope changes I would be required to apply in terms of Section 102 of the MPRDA for an amendment of the Prospecting Work Programme

Mark with X

| | |
|---|---|
| **ACCEPT** | X |

## 7. REGULATION 7(1)(j)(i): DETAILS WITH DOCUMENTARY PROOF OF THE APPLICANT'S TECHNICAL ABILITY OR ACCESS THERETO TO CONDUCT THE PROPOSED PROSPECTING OPERATION

### 7.1 Competencies to be employed in terms of the Mine Health and Safety Act

| **COMPETENCIES TO BE EMPLOYED** (List the legal appointments that will be made in terms of the Mine Health and Safety Act, appropriate for the type of operation) |
|---|
| Existing in-house geologists, environmental officers, OHS officers, field staff and operators will be used that currently employed by MSR Tormin operation near the prospecting site.<br><br>This includes the following people:<br>Mine geologist - Thulisiwe Hlela<br>Exploration geologist – External Consultant<br>Environmental officer - Sibonelo Mkhize<br>Radiation officer Consultant – Liezel van Zyl<br>Drilling work will be contracted out. |

**I herewith confirm that I, in Table 9.1 have budgeted and financially provided for the required skills listed above.**

| | |
|---|---|
| **CONFIRMED** (Mark with an **X**) | X |

7.2 List of Appropriate equipment at your disposal (If Applicable)

**Table D: Appropriate Equipment Available**

| |
|---|
| 4x4 vehicles – fully fitted with safety lights and communication equipment |
| Geophysical equipment – FDEM, Resistivity and radiation detection equipment |
| Laboratory to analyse HMS including XRF and XRD machines and lab personnel |
| GPS equipment, geological hammers, surveying equipment, sampling bags |
| Geological software e.g.Micromine, ArcInfo, ArcView |

7.3 Technical skills provided Free of Charge

7.3.1 Information (CV's) in respect of skills already acquired (append)

See Annexure 1A below

7.3.2 Copy of the relevant contractual agreements between the service provider and the applicant relative to the duration of the planned prospecting period, where applicable. (append)

All sample analyses will be done by the MSR Tormin mine laboratory. The mine owns and operates a state of the art heavy liquid separation (HLS) lab using TBE with density range between 2.92 and 2.96g/ml with Panalytical XRD machines (the Rietveld method after HLS in an automated mode setup). Industrial laboratory XRF machines (Panalytical Epsilon 3 ED) are used by Tormin mine as a grade verification check on the XRD zircon content.

The Tormin mine laboratory completes its own internal QA/QC using Certified Reference Material ("CRM") at the rate of approximately 1 in 50 and sending every 25th sample to the external labs.

7.3.3 ALL other evidence of Technical Ability (append)

MSR has an operating mine in the area of prospecting and as such will make use of available personnel and in-house skills where possible.

The Health and Safety Manager from the Tormin Mineral Sands Mine (Tormin) at Geelwal Karoo will ensure that proper procedures are in place prior to any physical activities taking place. The Geologist in full time employ at Tormin will assist with the identification of sampling sites and analysis of geological data during the Geophysical Surveys. To facilitate the sampling phase, lower confidence testing of the grab samples can be handled by the Metallurgist and the laboratory at Tormin Mine.

MSR have a strong track record in the prospecting and development of HMS deposits in South Africa.

## 8. REGULATION 7(1)(j)(ii): DETAILS WITH DOCUMENTARY PROOF OF A BUDGET AND DOCUMENTARY PROOF OF THE APPLICANT'S FINANCIAL ABILITY OR ACCESS THERETO

MSR's immediate holding company is MRC Resources (Pty) Ltd, a South African registered company. Its ultimate holding company is Mineral Commodities Limited (MRC), Australian public company listed on the Australian Stock Exchange.

MSR's ability to source funding required for the prospecting activities outlined in the PRA is linked to its position as a subsidiary of MRC. Its latest annual report and ASX releases are freely available on its website www.mineralcommodities.com where is strong cash flow position is indicated. Please find attached a March 2020 ASX release indicating a yearly EBITDA of US$21.3 million and an after-tax profit of US$13.4 million.

The construction of infrastructure for the Tormin operations were completed in

late 2013 and mining operations commenced in December 2013. The processing plant is currently producing non-magnetic saleable concentrate, Ilmenite saleable concentrate and Garnet saleable concentrate.

Based on the above and the relatively low costs of the proposed prospecting activities, MRC/ MSR is considered financially capable of funding this project with internal cash funds.

**AND**

**9. REGULATION 7(1)(k) A COST ESTIMATE OF THE EXPENDITURE TO BE INCURRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION (remember to also include prospecting fees)**

## Table 9.1

| ACTIVITY | YEAR 1 Expenditure (R') | YEAR 2 Expenditure (R') | YEAR 3 Expenditure (R') | YEAR 4 Expenditure (R') | YEAR 5 Expenditure (R') |
|---|---|---|---|---|---|
| **PHASE 1 (6 months)** | | | | | |
| Geologist, prospecting fees | 250 000 | | | | |
| **PHASE 2 (12 months)** | | | | | |
| Surface sampling | 300 000 | | | | |
| Analytical costs, prospecting fees | | 200 000 | | | |
| **PHASE 3 (18 months)** | | | | | |
| Auger drilling | | 300 000 | | | |
| Analytical costs, prospecting fees | | | 500 000 | | |
| **PHASE 4 (12 months)** | | | | | |
| Air-core drilling | | | 500 000 | 500 000 | |
| Analytical costs, prospecting fees | | | | 800 000 | |
| **PHASE 5 (12 months)** | | | | | |
| Geologist, prospecting fees | | | | | 700 000 |
| **Annual Total** | 550 000 | 500 000 | 1 000 000 | 1 200 000 | 700 000 |
| | | | | **Total Budget** | **3 950 000** |

**NOTE! If any person (including the applicant) provides services in any job or skills category at a reduced rate or free of charge, then such person's Curriculum Vitae (CV) must be attached as documentary proof of the technical ability available to the applicant.**

## 10 FINANCIAL ABILITY TO GIVE EFFECT TO THE WORK PROGRAMME

### 10.1 The amount required to finance the Work Programme.

(State the amount required to complete the work)

As per Table 9.1 the total amount required is SAR 3.95 million.

### 10.2 Detail regarding the financing arrangements

(Elaborate on the financing arrangements, in terms of where the finance will be sourced, extent to which the financing has been finalized and on the level of certainty that such financing can be secured.)

As mentioned in Section 9, MSR's ability to source funding required for the prospecting activities is linked to its position as a subsidiary of MRC and its current positive cashflow from its Tormin mining operation. Due to the relatively low costs of the proposed prospecting activities, funding will be obtained internally from MRC and its holding company MSR.

### 10.3 Confirmation of supporting evidence appended

(Attach evidence of available funding and or financing arrangements such as balance sheets, agreements with financial institutions, underwriting agreements, etc. and **specifically confirm** in this regard what documentation has been attached as appendices).

Please see attached profit release of EBITDA US$13.4million - **Annexure B**.

## 11 CONFIRMATION OF THE AVAILABILITY OF FUNDS TO IMPLEMENT THE PROPOSED PROJECT.

See Section 10.3 above

## 12 I HEREWITH CONFIRM THAT I HAVE BUDGETED AND FINANCIALLY PROVIDED FOR THE TOTAL BUDGET AS IDENTIFIED IN REGULATION 7(1)(K).

| | |
|---|---|
| **Confirmed (Mark with an X)** | **X** |

## 13 REGULATION 7(1) (m): UNDERTAKING, SIGNED BY THE APPLICANT, TO ADHERE TO THE PROPOSALS AS SET OUT IN THE PROSPECTING WORK PROGRAMME

**Table: 13.1**

| **Herewith I, the person whose name and identity number is stated below, confirm that I am the Applicant or the person authorised to act as representative of the Applicant in terms of the resolution submitted with the application, and undertake to implement this prospecting work programme and adhere to the proposals set out herein.** | |
|---|---|
| **Full Names and Surname** | Sibonelo P. Mkhize |
| **Identity Number** | 8204195444088 |

**END**

# Annexure A

# Thulisiwe Claudia Hlela| Geologist

Physical Address: Lutzville, Western Cape, South Africa
Cell: +27 82 562 3561
Email: thulisiwe_hlela@yahoo.com

## 1. Professional Profile

Currently employed as a Mineral Resource Manager responsible for mining resource management and managing mine expansion exploration projects.

## 2. Core Skills

- Mining/ Production Geology
- Managing Drilling Projects
- Database Management

## 3. Career Summary

**Jan 2014 – Present** — **Mineral Sands Resources (Pty) Ltd, Mineral Sands**
**Mineral Resource Manager**

*Outline: M*anagement of Mine Survey, Geology, Planning and Geotechnical functions of the mine to ensure optimal safe extraction of the mineral resource.

*Key Responsibilities:*

- Ensure geological, mining and survey data collection, interpretation, analysis and presentation
- Reporting
- Compile scope of works for projects
- Manage drafting of Codes of Practices
- Manage consultants to ensure quality outputs in line with scope of works
- Provide on-the-job training
- Manage mine expansion drilling projects
- Conducted mine grade control and mine production duties

**May 2008 – Dec 2013** — **Foskor (Pty) Ltd, Phosphate**
**Geologist**

*Outline:* Mine grade control with a focus in database management to ensure data integrity; liaised with processing plant production teams on issues of ore quality; grade control modelling for mine scheduling and resource management.

*Key Responsibilities:*

- Conducted and supervised mine grade control
- Managed geological and geochemical databases

**Thulisiwe Claudia Hlela| Geologist**

Physical Address: Lutzville, Western Cape, South Africa
Cell: +27 82 562 3561
Email: thulisiwe_hlela@yahoo.com

- Conducted geological solids modelling, grade control modelling and mining reconciliation analysis
- Assisted in short-, medium- and long-term mine planning
- Liaised with processing plant to inform on mine ore quality
- Conducted a quality assurance and quality control (QA/QC) study for blasthole samples
- Managed a geotechnical study of the open pit
- Managed the revision of the mine's code of practice for combatting slope instability and rock burst accidents

**Jan 2006 – Apr 2008** **Richards Bay Minerals (Pty) Ltd, Mineral Sands**
**Drilling Geologist/ Production Geologist**

*Outline:* Drilled in front of mining faces for resource estimation and grade control , analysed, presented mine production data and liaised with processing plant production teams on ore quality.

*Key Responsibilities:*

- Supervised reverse circulation (RC) and sonic drilling; logged and sampled core
- Updated borehole databases
- Conducted mine grade control and production
- Assisted with mine short- and medium-term planning
- Investigated the viability of a hand-held x-ray fluorescence machine for the analysis of field drill samples

**Feb 2005 – Dec 2005** **Kudu Granite Operations (Pty) Ltd, Dimension Stone**
**Geologist-in-training**

*Outline:* Drilled in front of quarrying faces to define granite blocks for production planning and to inform blasting activities (whether ore or waste) and exploration for expansion and alterative orebodies.

*Key Responsibilities:*

- Supervised diamond drilling, logged and sampled core
- Conducted outcrop and quarrying face mapping
- Estimated block recoveries and performed block classification according to quality

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## 4. Education and Qualifications

***Tertiary***

- 2010 | University of Stellenbosch | Management Development Programme-Certificate

**Thulisiwe Claudia Hlela| Geologist**

Physical Address: Lutzville, Western Cape, South Africa
Cell: +27 82 562 3561
Email: thulisiwe_hlela@yahoo.com

- 2004 | University of Johannesburg | BSc Hons Geology
- 2003 | University of Kwa-Zulu Natal | BSc Geology

*Certificate of attendance short courses*

- 2005 | The Geological Society of South Africa (GSSA) | Drilling Methods and Techniques in Exploration and Mining
- 2005 | GSSA | Technical Evaluation of Exploration Projects
- 2007 | AcQuire Techonology Solutions | AcQuire Concepts, Storage and QA/QC of Results, Reports
- 2007 - 2013 | Surpac/ Geovia | Surpac Foundation, Geology and Resource Estimation
- 2013 | Snowden | Successful Sampling, QA/QC of Assay Data, Grade Control, Practical Reconciliation
- 2013 | Innovative Business Solutions | Project Management For Exploration Geologists
- 2014 | Dr Isobel Clark | Practical Geostatistics

*Software*

- Surpac
- AcQuire
- Minescape
- Trimble Business Centre
- ModelMaker
- Global Mapper

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5. **Membership Of Professional Bodies**

- Member | The Geological Society Of South Africa
- Registered Professional | The South African Council For Natural Scientific Professions

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6. **Referees**

- Available upon request