mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: Black Mountain Mining (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

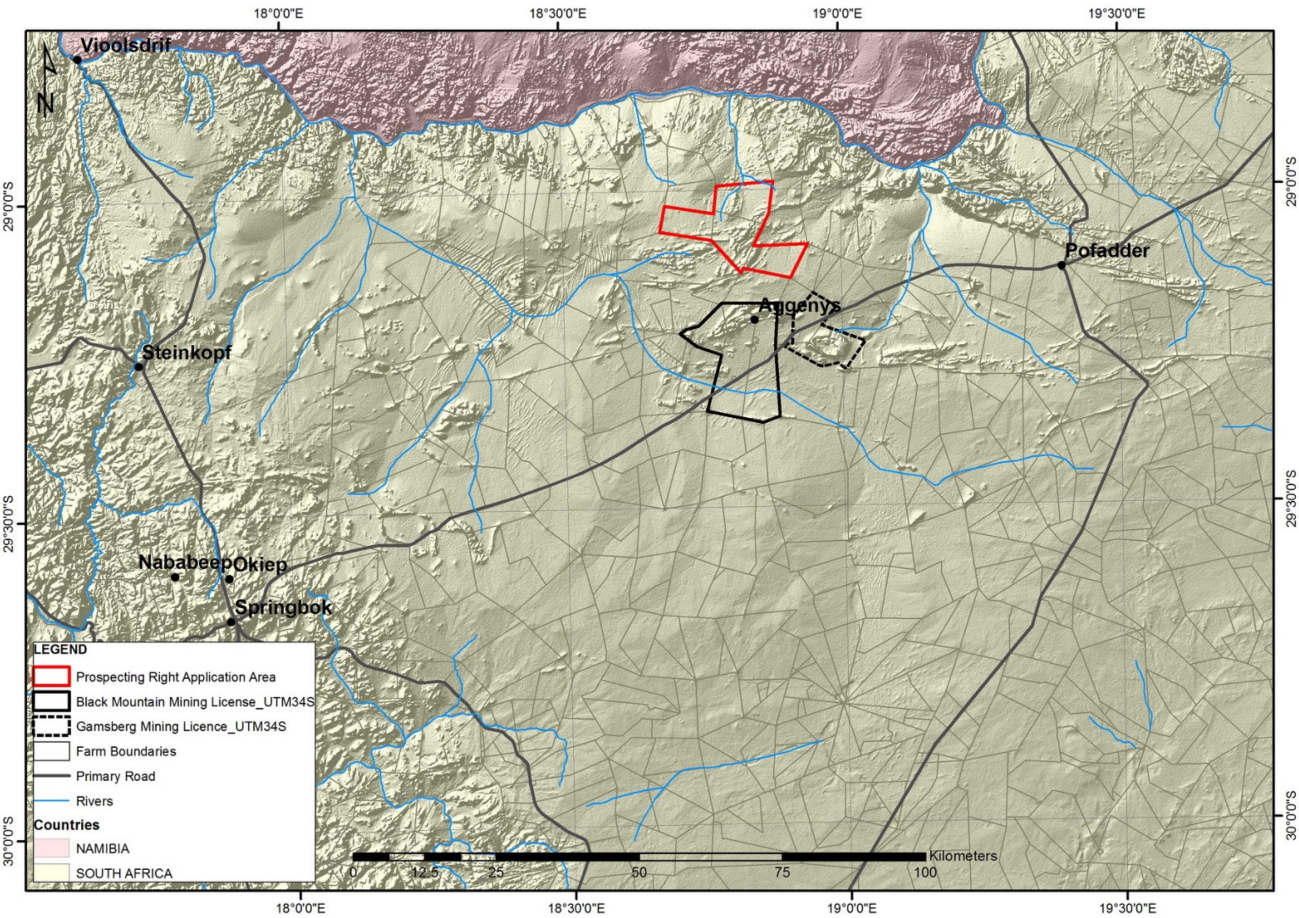
Table 1: Applicant's Contact Details

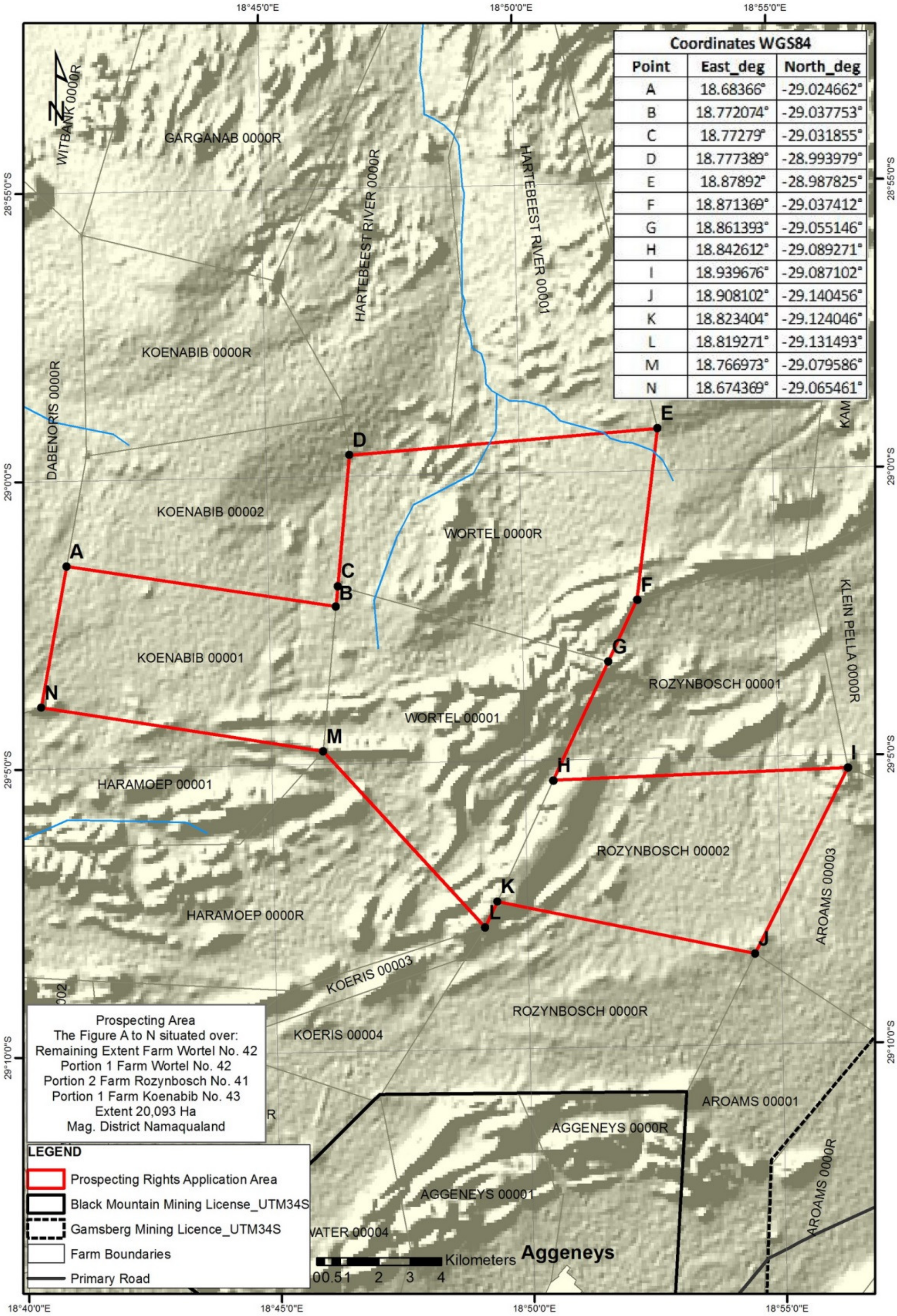
ITEM	**COMPANY CONTACT DETAILS**
Name	Black Mountain Mining (Pty) Ltd.
Tel no	011 6853960 / 011 6853963
Fax no:	086 248 1430
Cellular no	082 5209 920
E-mail address	**DPayne@blackmountain.co.za**
Postal address	1 Penge Road, Aggeneys, Northern Cape, 8893, South Africa

Table 2: Consultant's Details

ITEM	**CONSULTANT CONTACT DETAILS (If applicable)**
Name	The MSA Group (Elmarie van der Walt / Mike Robertson)
Tel no	(011) 880 4209
Fax no:	(011) 880 2184
Cellular no	(073) 675 0539; (072) 524 6860
E-mail address	elmarievdw@msagroupservices.com / miker@msagroupservices.com
Postal address	PO Box 81356, Parkhurst, 2120

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





Point	East_deg	North_deg
A	18.68366°	-29.024662°
B	18.772074°	-29.037753°
C	18.77279°	-29.031855°
D	18.777389°	-28.993979°
E	18.87892°	-28.987825°
F	18.871369°	-29.037412°
G	18.861393°	-29.055146°
H	18.842612°	-29.089271°
I	18.939676°	-29.087102°
J	18.908102°	-29.140456°
K	18.823404°	-29.124046°
L	18.819271°	-29.131493°
M	18.766973°	-29.079586°
N	18.674369°	-29.065461°

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

No.	Registered Land Description	Magisterial District	Extent (Ha)	Land Owner	Title Deed	SG Code
1	Portion 2 Rozynboch 41	NAMAQUALAND	4567.6356	VAN NIEKERK IZAK JACOBUS	T41025/1984	C05300000000004100002
2	Portion 1 Koenabib 43	NAMAQUALAND	4144.7076	OONAB BOERDERY C C	T62340/2001	C05300000000004300001
3	RE Wortel 42	NAMAQUALAND	5688.5499	VAN DEN HEEVER PIETER ANDRIAS	T35898/2007	C05300000000004200000
4	Portion 1 Wortel 42	NAMAQUALAND	5691.4113	VAN DEN HEEVER RAYMOND PAUL	T22713/1965	C05300000000004200001
	TOTAL AREA (HA)		**20092.3044**			

The farm boundaries are described by the following coordinates:

FARM	POINT No.	X-COORDINATE	Y-COORDINATE
Remaining Extent Wortel 42	1	18.777389°	-28.993979°
	2	18.87892°	-28.987825°
	3	18.871369°	-29.037412°
	4	18.861393°	-29.055146°
	5	18.77279°	-29.031855°
Wortel 42 portion 1	1	18.77279°	-29.031855°
	2	18.861393°	-29.055146°
	3	18.819271°	-29.131493°
	4	18.766973°	-29.079586°
Rozynbosch 41 portion 2	1	18.842612°	-29.089271°
	2	18.939676°	-29.087102°
	3	18.908102°	-29.140456°
	4	18.823404°	-29.124046°
Koenabib 43 portion1	1	18.68366°	-29.024662°
	2	18.772074°	-29.037753°
	3	18.766973°	-29.079586°
	4	18.674369°	-29.065461°

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)	Ferrous & base metals: Copper Ore Cu, Zinc Ore Zn, Lead Ore Pb, Iron Ore Fe, Manganese Ore Mn All associated metals and minerals
Type of minerals continued	Precious metals: Gold Ore Au, Silver Ore Ag All associated metals and minerals
Type of minerals continued	
Locality **(Direction and distance from nearest town)**	The area is located approximately 22 kilometers north of the town of Aggeneys, District Namaqualand, Northern Cape Province.
Extent of the area required for prospecting	The area is 20,093 (twenty thousand and ninety three) hectares.
Geological formation	The target geological formation is the Bushmanland 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 Prospecting Right application area is located between 7km and 25km north of the town of Aggeneys, and the Aggeneys - Gamsberg base metal mines. The terrain varies from flat lying plains with poor outcrop of granitic gneiss and slivers of meta-sediments in the east to mountainous terrain in the west. Meta-sedimentary rocks underlie the mountainous terrain. The mountains raise some 100m above the plain and are capped by massive white quartzite. The meta-sedimentary rocks are of mid-Proterozoic age and correlate to the Bushmanland Sequence. These metamorphosed sedimentary rocks consist of white to blue quartzite, biotite - sillimanite schist and poorly developed iron formations. These rocks correlate to the metasedimentary sequence hosting the zinc – copper – lead – silver deposits at Aggeneys and Gamsberg which is illustrated in the geological map in section 4.3. The inferred tectono-stratigraphic setting of the prospecting area is therefore considered favourable for hosting zinc-copper-lead-silver mineralization similar to that currently being exploited at the Black Mountain Mine.

The broad stratigraphy is described below. The following stratigraphic classification is used in the Aggeneys area:

- **The Wortel Subgroup**

The Wortel Subgroup is subdivided into the Aluminous Schist (bottom) and White Quartzite Formations (top). Quartz- biotite- sillimanite- muscovite schist forms the bulk of the Aluminous Schist Formation. The White Quartzite Formation consists off layered to massive, white to light grey weathering metaquartzite.

- **The Kouboom Subgroup**

The Kouboom Subgroup is subdivided into the Pelitic Schist, Dark Quartzite and Diamictite Formations. The Pelitic Schist Formation consists of quartz - muscovite - biotite - sillimanite schist with sparse interlayers of thin, lenticular muscovite quartzite beds. The Dark Quartzite Formation consists of quartz with accessory zircon, apatite, muscovite, serecite, sillimanite, hematite and magnetite. Conglomerate lenses are locally developed in the quartzite.

- **The Gams Formation**

The Gams Formation conformably overlies the Kouboom Formation. Stratiform basemetal (Cu, Pb, Zn, Fe, Mn and Ba) mineralization and chemical sediments (banded iron formation, calc-silicate rocks, marble and baritic rocks) are characteristic of the sequence.

- **The Koeries Formation**

Muscovite quartz rocks, grading from schist to quartzite, conglomerate lenses and amphibolite form the bulk of the Koeries Formation.

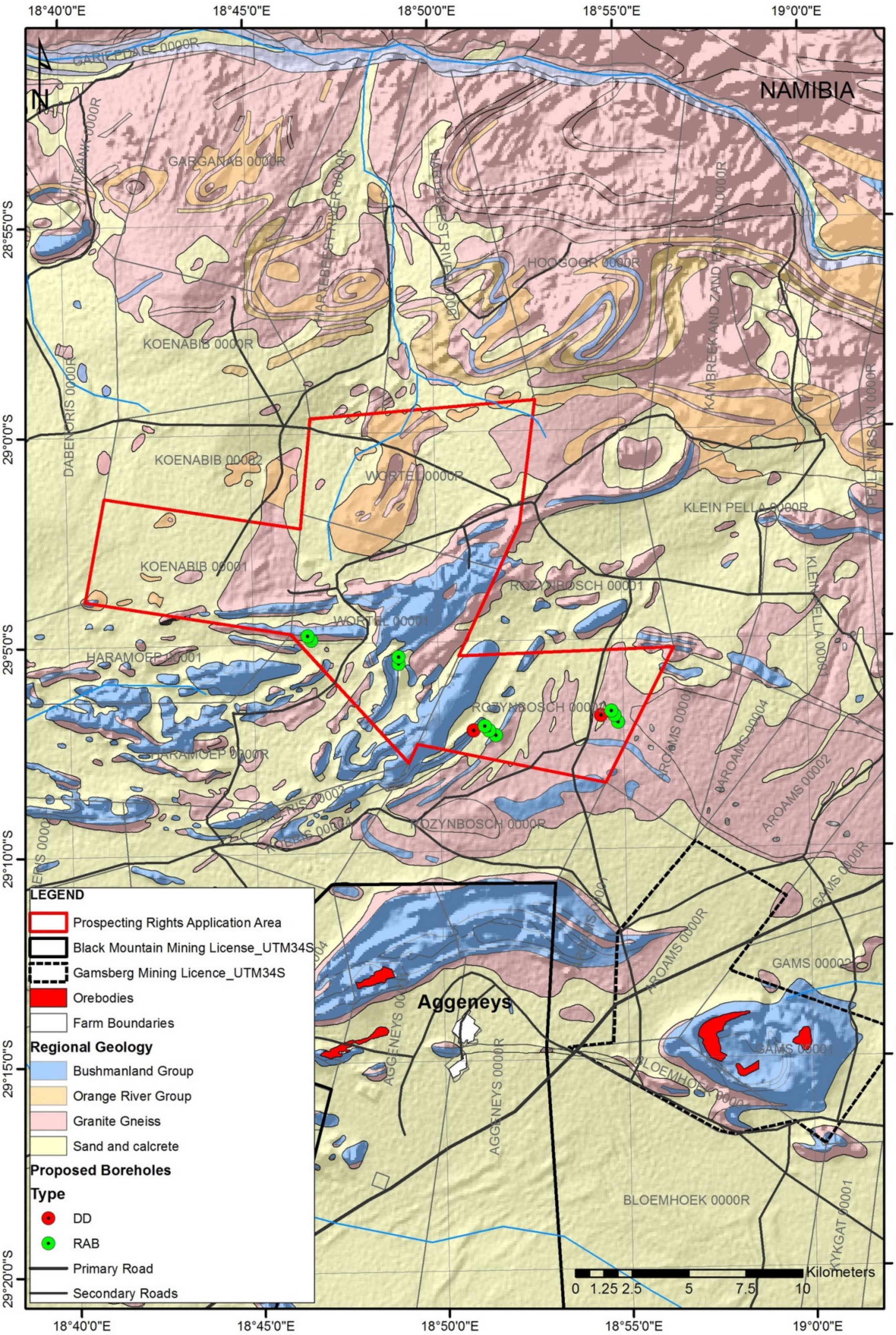
<table>
<tr><th>SEQUENCE</th><th>GROUP</th><th>SUBGROUP</th><th>FORMATION</th></tr>
<tr><td rowspan="9">BUSHMANLAND</td><td rowspan="9">AGGENEYS</td><td></td><td>KOERIES</td></tr>
<tr><td></td><td>GAMS</td></tr>
<tr><td rowspan="3">KOUBOOM</td><td>DIAMICTITE</td></tr>
<tr><td>DARK QUARTZITE</td></tr>
<tr><td>PELETIC SCHIST</td></tr>
<tr><td rowspan="3">WORTEL</td><td>WHITE QUARTZITE</td></tr>
<tr><td></td></tr>
<tr><td>ALUMINOUS SCHIST</td></tr>
<tr><td></td><td>GNEISS</td></tr>
</table>

The Pb, Zn, Cu & Ag deposits occur as a cluster around Aggeneys within the upper part of the Kouboom Formation and are classified as Broken Hill Type Deposits. The deposits are hosted by banded iron formation with associated magnetite and garnet rich quartzite. The magnetite rich rocks are responsible for magnetic anomalies associated with the different deposits. The mineralization of the deposits consist of disseminated to massive sulphide mineralization within the banded iron formation and in the schists and quartzites that are in contact with the banded iron formation. Broken Hill, Black Mountain, Big Syncline and Gamsberg deposits outcrop, while Broken Hill Deeps orebody is situated down plunge of Broken Hill orebody at a depth of 800m to 1350m. The deposits are associated with fold structures and follow the plunge of these structures.

Relevant base metal deposits in the region are listed below:

DEPOSIT NAME	**COMMODITY**	**TYPE CODE**	**FARM**
Broken Hill & Broken Hill Deeps	Lead, zinc, copper and silver	B	Zuurwater 62/4 Aggeneys 56/1
Swartberg	Lead, zinc, copper and silver	B	Zuurwater 62/4
Gamsberg	Zinc and lead	B	Gams 60/1 Bloemhoek 61/1

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.


NAMIBIA
GARIEPDALE 0000R
GARGANAB 0000R
HOOGOOR 0000R
KOENABIB 0000R
KOENABIB 00002
KOENABIB 00001
WORTEL 0000R
KLEIN PELLA 0000R
ROZYNBOSCH 00001
HARAMOEP 00001
HARAMOEP 0000R
ROZYNBOSCH 0000R
DABENORIS 0000R
KAMBREEK AND ZAND FONTEIN 0000R
PELLA MISSION 0000R
AROAMS 00002
AROAMS 0000R
GAMS 0000R
GAMS 00002
GAMS 00001
Aggeneys
AGGENEYS 0000R
BLOEMHOEK 0000R
KYKGAT 00001
N
18°40'0"E
18°45'0"E
18°50'0"E
18°55'0"E
19°0'0"E
28°55'0"S
29°0'0"S
29°5'0"S
29°10'0"S
29°15'0"S
29°20'0"S
LEGEND
Prospecting Rights Application Area
Black Mountain Mining License_UTM34S
Gamsberg Mining Licence_UTM34S
Orebodies
Farm Boundaries
Regional Geology
Bushmanland Group
Orange River Group
Granite Gneiss
Sand and calcrete
Proposed Boreholes
Type
DD
RAB
Primary Road
Secondary Roads
0 1.25 2.5 5 7.5 10
Kilometers

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

Determination of prospecting area:

The area to be prospected is within ore trucking distance of Black Mountain Mining's existing concentrator plant at Aggeneys. Black Mountain Mining at Aggeneys is currently the only operating mine within the district. The inferred tectono-stratigraphic setting of the prospect area is considered favourable for hosting zinc-copper-lead-silver mineralization similar to that currently being exploited at the Black Mountain Mine.

AND

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

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

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** (what are the activities that are planned to achieve optimal prospecting)	**Skill(s) required** (refers to the competent personnel that will be employed to achieve the required results)	**Timeframe** (in months) for the activity)	**Outcome** (What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.)	**Timeframe for outcome** (deadline for the expected outcome to be delivered)	**What technical expert will sign off on the outcome?** (e.g. geologist, mining engineer, surveyor, economist, etc)
1	**Non-Invasive Prospecting** Desktop Study: Literature Survey / Review	Geologist	Month 1-12	Initial geological targeting report supported by historical records and existing data	Month 12	Geologist
2	**Non-Invasive Prospecting** Geological Field Mapping	Geologist & field crew	Month 6-12	Detailed geological targeting report accompanied by maps & plans of ground truthing of initial geological targeting.	Month 12	Geologist
3	**Non-Invasive Prospecting** Semi-regional Ground Geophysical Survey	Geophysicist / Geologist / field crew	Month 12-24	Survey report detailing possible targets for further exploration, report supported by maps, plans & cross sections	Month 24	Geophysicist
4	**Invasive Prospecting** Exploration Boreholes (10 RAB holes - 150 m each, totaling 1500 m and 2 DD holes 400m each totaling 800	Geologist / drill rig team / field crew / laboratory technicians	Month 24-34	Borehole cored data & RAB data: lithological logs, geophysical down hole surveys, assay results for mineralized intercepts.	Month 34	Geologist

	m)					
5	**Non-Invasive Prospecting** Compilation, interpretation and modeling of data	Geologist / Geophysicist	Month 34-36	Modelling of data. Interpretation and 3D modeling of potential deposit. Generation & ranking of mineralised targets for further exploration work	Month 36	Geologist
6	**Non-Invasive Prospecting** Detailed Ground Geophysical Survey on individual positively mineralized targets to define possible extent	Geophysicist / Geologist / field crew	Month 36-42	Survey report detailing individual targets. Plans for drill hole intersections supported by cross sections	Month 42	Geophysicist
7	**Invasive Prospecting** Boreholes to confirm continuity of mineralization & potential deposit size (5 DD holes - 400 m, totaling 2000 m)	Geologist / drill rig team / field crew / laboratory technicians	Month 42-48	Widely spaced borehole cored data: lithological logs, geophysical down hole surveys, assay results for mineralized intercepts, metallurgical test work Risk assessment study to advance to next phase	Month 48	Geologist
8	**Invasive Prospecting** Resource definition drilling (10 DD holes - 400 m each totaling 4000 m)	Geologist / drill rig team / field crew / laboratory technicians	Month 48-60	Closely spaced borehole cored data: lithological logs, geophysical down hole surveys, assay results for mineralized intercepts, metallurgical test work Resource estimation work producing an Inferred Mineral Resource	Month 60	Geologist

9	**Non-Invasive Prospecting** Analytical Desktop Pre-Feasibility Study	Economic Geologist / Mining Geologist	Month 54-60	Geological & Pre-feasibility reports, maps & plans Risk assessment study to determine if a full feasibility is warranted	Month 60	Mine Engineer / Economic Geologist (professionally qualified persons)

It is hereby noted that the different phases and timeframes of the prospecting herein envisaged are, by their nature, dependent on the results obtained during the preceding phases of such prospecting. The proposals set out in this Prospecting Work Programme are therefore made on the basis that results obtained during the preceding phases may necessitate reasonable changes and adaptations to such proposals, which will be reported as prescribed.

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)

Phase 1: Desktop study

To include:

- Compilation of historical exploration data with the aim of developing a working plan of the prospecting area on a suitable scale (1:5,000 or 1:10,000).
- Analysis of existing data and maps to further understand prospecting area structure & geology
- Initial targeting and ranking of prospective areas

Phase 2: Geological field mapping

The field mapping will be focused on potentially prospective areas (Bushmanland Group rocks) to improve understanding of the structure & geology in order to define targets for ground based geophysics as well as to be able to interpret geophysical results. Geological mapping will be on a scale suitable for the observed geological variability and will be conducted by an in-house well-trained and highly experienced geologist.

During the geological field mapping activity soil and litho-sampling along with analysis (XRF & or assaying) may be conducted to determine prospective horizons.

Phase 3: Semi-Regional Geophysical Survey (ground based)

The primary ground-based geophysical technique that will be employed will be time-domain electromagnetics (TDEM) utilizing a new state-of-the-art SQUID electromagnetic sensor. Existing airborne EM and aeromagnetic coverage will guide the ground follow-up strategy. Additional techniques, such as controlled source audio magnetotellurics (CSAMT) and direct current resistivity / induced polarization, might be employed over prospective targets.

<u>Electrical Methods</u>

1. **Resistivity Methods**
2. **Induced Polarization (IP)**
3. **Electromagnetic Methods**

1. Resistivity methods:

The resistivity method makes use of the fact that some materials are good conductors of electricity and some are poor conductors

$$\frac{I}{A} = \sigma \frac{V}{L}$$

where I is the amount of current flowing through a body, A is the cross sectional area through which the current flows, V is the voltage, L is the distance the current flows and σ is the conductivity of the body.

The reciprocal of the conductivity is the resistivity.

Resistivity is measured in Ohm metre. Resistance (Resistivity * L/A), in Ohms, is more commonly used by geophysicists. Poor conductors have high resistivities. Note: for inhomogeneous bodies, we actually measure a sort of average resistivity along the path of current flow, called the apparent resistivity.

Good conductors include metals, graphite and most sulfides. Intermediate conductors (called semi-conductors) include most oxides and porous rocks. Poor conductors (insulators) include most common rock-forming minerals.

Current in most rocks is carried by ions in fluids in the rock's pores (called electrolytic conduction). A small change in water content affects resistivity enormously. Also, the salinity of the water is highly important in determining conductivity. The shapes and arrangements of the pores can result in greater current flow in some directions than in others. Faults, joints, etc., can produce "structural" conductors.

Procedure for conducting resistivity surveys:

Current is driven through the ground using 2 electrodes. The potential distribution is mapped with a 2nd set of electrodes to determine potential difference pattern (voltage distribution) and directions of current flow. Anomalies (conducting bodies, for example) disturb regular patterns that would normally be produced

To measure variation of resistivity with depth one can exploit the fact that current penetrates to deeper depths with an increase in the separation of current electrodes. Modern multi-electrode survey techniques, such as that employed by Quantec's Titan24 system, can generate high resolution resistivity and IP pseudo-sections (Figure 2).

2. Induced polarization (IP) methods:

When a current is applied to a formation containing metallic minerals, each metallic mineral grain has a small voltage produced across it in the direction of current flow.

When the current is turned off, the separation of charge remains for a short time and the voltage can be measured. The total voltage for the formation depends on the percentage of metallic minerals it contains. Disseminated sulfides often produce a good IP anomaly (Figure 2).

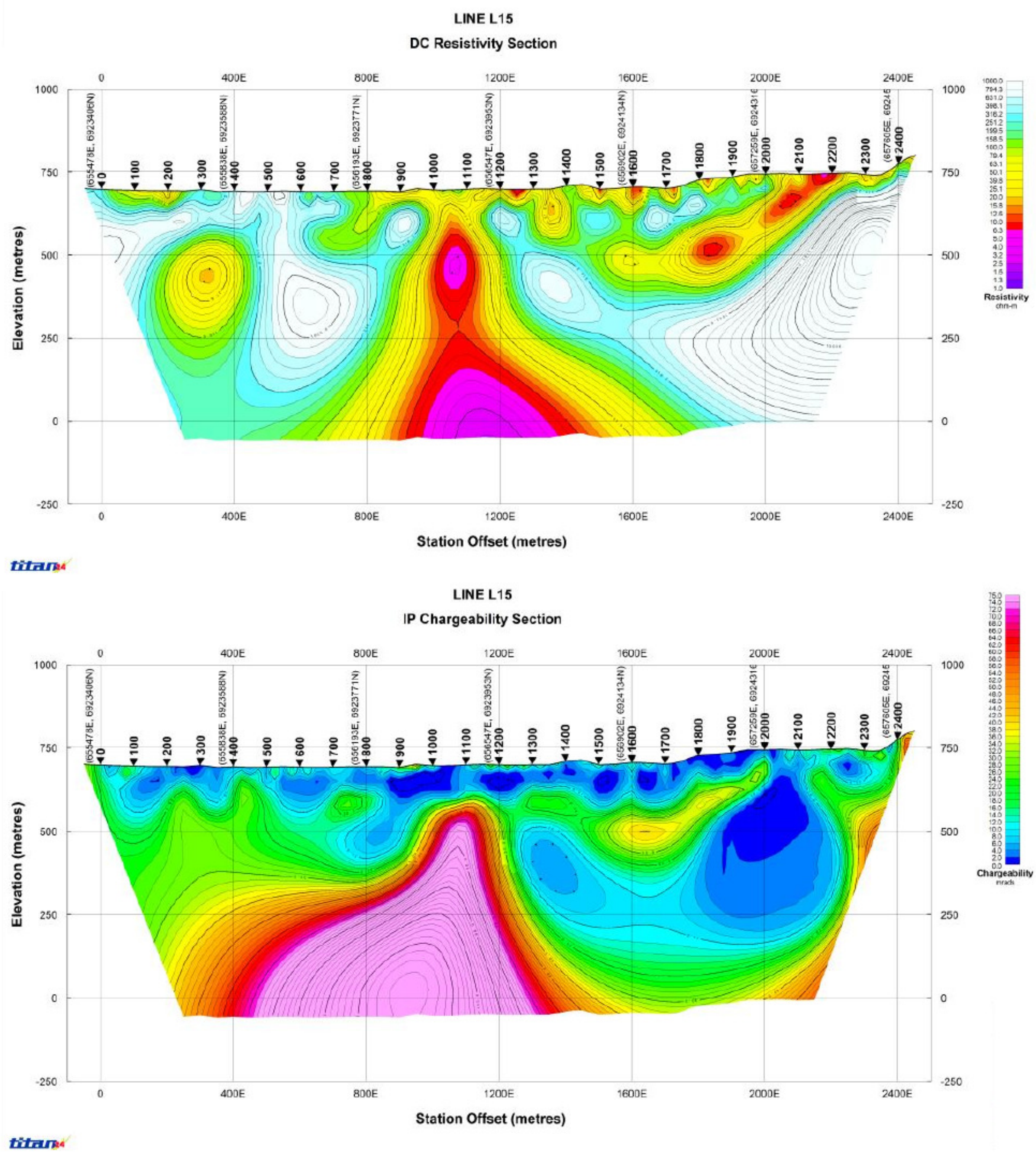


Figure 2. Example of a resistivity and IP section produced with the Titan24 system showing a good resistivity and IP anomaly at depth.

3. Electromagnetic Methods:

a. Electromagnetic Induction methods
b. Control-Source Audio Magneto-Telluric methods (CSAMT)

Electromagnetic Induction methods:

Changing magnetic fields are produced by passing alternating currents through long wires laid out on the surface. These changing magnetic fields induce electric currents in buried conductors such as ore bodies which then produce their own induced magnetic field. There are a huge variety of techniques which use either the induced electric currents or the induced magnetic field which these currents in turn produce. This method is especially important in mineral exploration and surveys are easy to conduct form airplanes.

Ground follow-up is normally done to pin-point drill locations. Vedanta uses state-of-the-art high-temperature (HT) superconducting quantum interference device (SQUID) sensors (see Figure 3) to measure the secondary currents and associated magnetic fields produced by good conductors such as massive sulfides.

Figure 3. A new state-of-the-art HT SQUID sensor produced by IPHT in Germany.

By applying geophysical inversion techniques it is possible to generate a geo-electrical cross-section of the subsurface. Figure 4 below is an example of a conductivity depth image (CDI) generated from HT SQUID data acquired over a prospect in Namibia.

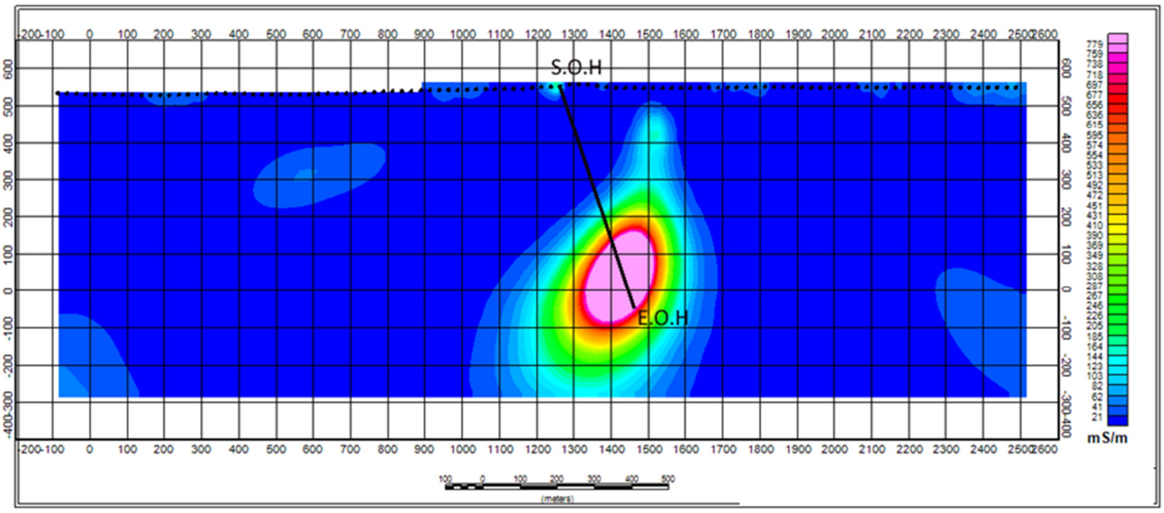


Figure 4. CDI generated from HT SQUID data over a good conductor with the planned borehole trace to test if the conductor is of economic interest.

Downhole EM (DHEM) consists of laying out a large loop on the ground around a borehole and measuring the secondary induced currents with a sensor that is lowered down the borehole. This is very useful when one needs to confirm whether a conductor identified from a ground survey was actually intersected by the borehole.

Control-Source Audio Magneto-Telluric methods (CSAMT)

Faraday's Law of Induction states that a changing magnetic fields produce alternating currents. Changes in the Earth's magnetic field produce alternating electric currents just below the Earth's surface called telluric currents. The lower the frequency of the current, the greater the depth of penetration. Telluric methods use these natural currents to detect resistivity differences in the sub-surface. The changing magnetic fields of the Earth and the telluric currents they produce have different amplitudes. The ratio of the amplitudes can be used to determine the apparent resistivity to the greatest depth in the Earth to which energy of that frequency penetrates. Lightning in the earth’s atmosphere also produce planar electromagnetic waves that penetrate the earth’s surface and enables the geophysicist to generate resistivity cross-sections of the subsurface. A man-made source (controlled source) is often added near a survey area to supplement the energies over the frequency band where the natural signals are weak.

(ii) DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

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

a) Drilling

The targeting of all drilling activities will be dependent on the results obtained during the preceding phases of prospecting, namely the geological mapping and geophysical surveying and as such it is currently not possible to include a finalized surface plan showing the intended location, extent and depth of boreholes to be completed.

Diamond drilling will be of the standard BQ or NQ size. Down hole surveys will be done every 50m in each hole. Core will be marked, logged, photographed and sampled according to the standard of the applicant's logging and sampling procedures.

Down the hole geophysical surveying will take place upon completion of the exploratory boreholes along with Ground EM surveys to determine positions of conductors.

Rehabilitation of drill sites will be done according to an approved Environmental Management Plan.

Percussion Rotary Air Blast (RAB) or Reverse Circulation (RC) drilling may be carried out for pre-collaring of diamond drill boreholes or for obtaining samples if significant depth of cover is encountered over particular targets.

b) Assaying

Rock chip / soil samples will be sent to a laboratory of the applicant's choice to be crushed, split, pulverized and assayed. Samples from core will be split using a core cutter before being sent to the laboratory for analysis.

c) Metallurgical Test Work

Metallurgical test work would start during phase 7 of the prospecting work programme. These tests will be done by and in consultation with a preferred and accredited Laboratory of the applicant's choice.

Phase 4: Boreholes

The initial planned invasive exploration activities will consist of diamond drill boreholes drilled to appropriate depths to target any anomalies identified during Phases 2 & 3 of the non-invasive portion of the prospecting work plan. The work will consist of:

- Access and drill site preparation
- Diamond core drilling
- Sampling and assaying
- Quality assurance and quality control programs
- Down hole geophysics
- Rehabilitation of drill sites
- Recording & Integration of data

Phase 7: Boreholes

This phase of boreholes would determine the continuity of mineralization & potential deposit size. The work will consist of:

- Access and drill site preparation
- Widely spaced diamond drilling and analyses to confirm grade / tonnage potential
- Sampling and assaying
- Quality assurance and quality control programs
- Metallurgical test work
- Rehabilitation of drill sites
- Recording & Integration of data

Phase 8: Boreholes

This phase of boreholes would provide enough information to be able to calculate an inferred resource. The work would consist of:

- Access and drill site preparation
- Close spaced infill diamond drilling and analyses to determine actual grade / tonnage
- Sampling and assaying
- Quality assurance and quality control programs
- Metallurgical test work
- Geotechnical drilling program
- Rehabilitation of drill sites
- Recording & Integration of data

(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)

Phase 5: Compilation, interpretation and modeling of data

This phase will focus on compiling all the data gathered to date along with 3D modeling of any mineralized intersections. Any positively mineralized targets will be ranked. Should Phase 5 confirm mineralization with economic potential then that target will advance to Phase 6.

Phase 9: Desktop Pre-Feasibility Study

This phase is designed to utilize the inferred resource to determine and would include:

- Closely spaced diamond drilling (Phase 8)
- 3D-modelling of the mineralized ore body
- Resource estimation
- A risk assessment to calculate if a full feasibility study is warranted
- Risk assessment studies

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)
The company has a complete mine health & safety management team, practitioners and administrative support team based at Black Mountain Mine in the Northern Cape. The company has an experienced Exploration Manager who will maintain daily operational supervision of all field based operations.

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

1 x Toyota Land Cruiser, other 4x4 vehicles as required
Exploration office at Black Mountain Mine (Aggeneys) & in Johannesburg
Core cutter and sample processing and storage facilities
Full accommodation and support services at Black Mountain Mine
3 x GPS units, 2 x Geological compasses, 2 x Satellite phones, Handheld radios, 1 x Camera, 1 x Niton hand held XRF analyser
6 x Laptops with ArcMap 10.2, Geosoft, Micromine V12 and Datamine Studio 3. A0-scanner, plotter and printer. Data storage server in Johannesburg
Hand tools for excavating trenches, pits and for sampling
Soil sampling equipment including sieves of various mesh sizes
Geophysical equipment for carrying out ground electro-magnetic, magnetic and gravity surveys. Magnetic and gravity equipment is available on contract as required
Air drills for RAB drilling and Reverse circulation drilling are available on contract as budgeted for
Diamond drill rigs, water and fuel bowsers and other support equipment needed for core drilling are available on contract as budgeted for.
1 X generator per camp
Caravans to host personnel in the field and serve as a mobile office.

7.3 Technical skills provided Free of Charge

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

Black Mountain Mine technical personnel available to execute the prospecting work program;

Name	Position	Email	Telephone
Markus Schaefer	General Manager: Exploration Africa and Ireland	MSchaefer@blackmountain.co.za	+27 11 685 3964
Conrad Van Schalkwyk	Exploration Manager	CVanSchalkwyk@blackmountain.co.za	+27 82 520 3658
Dave Payne	Senior Geologist - African Projects	DPayne@blackmountain.co.za	+27 11 685 3963
Jaco Smit	Geophysicist	JSmit@blackmountain.co.za	+2711 685 3960

Tarryn-Kim Rudnick	Exploration Geologist	TRudnick@blackmountain.co.za	+27 54 983 9227
Andrew Moremi	Stakeholder Relations Manager	AMoremi@blackmountain.co.za	+27 54 983 9376
Navitha Dukkan	GIS & Data Manager	Navitha.dukkan@ blackmountain.co.za	+27 11 6853960

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)

None. Contractual agreement with a drilling contractor scheduled for Year 3 (Phase 4).

7.3.3 ALL other evidence of Technical Ability (append)

Black Mountain Mining (Pty.) Ltd. (BMM) comprises:

- The Black Mountain Mine
- The Gamsberg Project

Both zinc-lead mines are located in the Northern Cape Province, South Africa. The Gamsberg Project is currently in the pre-feasibility stage, while Black Mountain Mine has been a productive mine for over three decades. Black Mountain Mining has been a stable employer in the region for the last thirty years, with the potential to remain so for at least the next twenty years. The Aggeneys town (where mining takes place) provides accommodation to almost all employees. Most municipal services are provided and funded by the Company.

While most mining operations in the region have been declining over the past few years, Black Mountain, under management of the Vedanta Group, continues to be an efficient producer primarily of zinc, in addition to lead, copper and silver.

Black Mountain Mine

Located 113km north-east of Springbok, Black Mountain mine boasts of an annual production of c.30kt of zinc in concentrate, c.50kt of lead in concentrate, c.3kt of copper in concentrate and c.50 tonnes of silver. Black Mountain's underground operations mine a polymetallic orebody, producing concentrates from a sequential flotation plant. With Broken Hill Deeps and Swartberg ore bodies, Black Mountain has considerable potential for mine expansion. However the expansion will only be made once project feasibility has been proved. Black Mountain mine is a trackless, mechanised underground mine of intermediate depth. The primary mining method is Cut & Fill.

Mining is an important economic sector, accounting for 21.3% of total employment (2007) in the Northern Cape. Black Mountain mine has more than 1500 employees, of whom almost 80% are local (from the Namaqualand and Bushmanland regions of the Northern Cape).

Black Mountain is also the largest private employer in this region of the Northern Cape and has been a stable employer for the last three decades, with potential to continue providing significant employment for another twenty years. The well-established infrastructure available at the dedicated mining town of

Aggeneys is a significant advantage. It is predicted that the life of Black Mountain mine will last until 2020 and beyond. Thus the mine will remain profitable and an important economic driver in the region for many years to come.

Gamsberg Project

A pre-feasibility study was conducted in 2007 at Gamsberg.

Tier 1 deposit at the site promises long life and low cost. It is likely to be in the first quartile of the cost curve. The anticipated yield of the mine is 400ktpa to 530ktpa of SHG zinc metal production. The mine's life is predicted to be longer than 20 years, and there is significant potential for further exploration at the North-East deposits, as well as upside at Gamsberg South and West.

Towards the Project's power requirements, a feasibility study for Gamsberg power was conducted by Eskom in 2009. In June 2011, a re-application for the study was submitted. The Project is currently in the feasibility stage and ramp-up is scheduled for Q1 2015.

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

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 (0-12 months)					
Prospecting Fees Year 1: 20,093 Ha x R1.00	R 20 093				
Desktop Study: Literature Survey / Review / Acquisition of Data	R 150 000				
PHASE 2 (6-12 months)					
Geological Field Mapping	R 50 000				
Phase 3 (12-24 months)					
Prospecting Fees Year 2: 20,093 Ha x R1.50		R 30 140			
Regional Ground Geophysical Surveys		R 290 000			
Phase 4 (24-34 months)					
Prospecting Fees Year 3: 20,093 Ha x R2.00			R 40 186		
Target Exploration Boreholes			R 2 188 300		
Site Rehabilitation			R 209 456		
Phase 5 (34-36 months)					
Data Compilation			R 100 000		
Phase 6 (36-42 months)					
Prospecting Fees Year 4: 20,093 Ha x R2.50				R 50 233	
Detailed Ground Geophysical Surveys				R 57 500	
Phase 7 (42-48 months)					
Widely Spaced Exploration Boreholes				R 2 603 250	
Site Rehabilitation				R 117 024	
Phase 8 (48-60 months)					
Prospecting Fees Year 5: 20,093 Ha x R3.00					R 60 279
Closely Spaced Exploration Boreholes					R 4 964 000
Site Rehabilitation					R 209 456
Phase 9 (54-60 months)					
Analytical Desktop Pre-Feasibility Study					R 250 000
Annual Total	**R 220 093**	**R 320 140**	**R 2 537 942**	**R 2 828 007**	**R 5 483 735**
				Total Budget	**R 11 389 917**

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)

R11 389 917

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.)

Financing of the proposed work plan will be sourced from the Black Mountain Mine Exploration budget, the current budget for financial year 2015 is R21,912,000. The investment strategy is to maintain this level of funding over the next five year period as Black Mountain Mine plan to undertake a large regional exploration programme in the Northern Cape to discover new deposits and increase their resource base with the long term aim of increasing the current life of mine or developing any new discoveries as stand-alone operations.

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).

Attached audited annual financial statements for the year ended 31 March 2013.

11 Confirmation of the availability of funds to implement the proposed project.

Refer to 10.2 and 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	David Edwin Payne
Identity Number	LT0073561 (Passport Number)

END

APPENDIX 1

Audited annual financial statements

APPENDIX 2

Technical Competence

APPENDIX 3

Title Deeds

APPENDIX 4

Existing Rights and past provisions of the Act