

ASX/Media Announcement

10th September 2015

# MAIDEN RESOURCE ESTIMATE COMPLETED FOR MAGIC HEAVY MINERAL SANDS DEPOSIT

Broken Hill Prospecting Limited ('BPL') today announced a maiden Mineral Resource estimate for the Magic Heavy Mineral Sands Deposit in the Murray Basin, NSW, of 15 million tonnes at an average 3.7% Heavy Minerals.

This follows from the Company's recent announcement of the nearby Copi North Deposit Mineral Resource estimate of 11.6 million tonnes at an average of 6.9% Heavy Minerals on 27<sup>th</sup> July, 2015.

Mineral	Material	In Situ HM	НМ	Clay	Heavy Mineral ('HM') Asseml			emblage
Resource Category	Tonnes (Millions)	Tonnes (Millions)	(%)	(%)	Ilmenite (%)	Zircon (%)	Rutile (%)	Leucoxene (%)
Inferred	15	0.56	3.7	4	62	14	6	10

Table 1. Magic Mineral Resource, August 2015 (2% HM cut-off grade)

# **Highlights**

- ➤ Average grade (3.7% HM) is similar to reported head grades of nearby operating heavy mineral sands (HMS) mines (~3.5% 4% HM).
- > The deposit contains a substantial proportion of high-value zircon (14%) compared with many other HMS deposits.
- ➤ The Mineral Resource occurs at shallow depths (6-18 metres; averaging 12 metres) under friable sand, silt and clay.
- ➤ Low clay (4%) and oversize (1%) contents may help maximise HM recovery, and limited groundwater could support lower capital cost, dry, open-cut mining.
- > The deposit has not been closed by drilling and may extend outside the drilled area along trend to both the NW and the SE.
- ➤ The Magic HMS Deposit could become a viable sequential mine development to contribute to the relatively high-grade Copi North HMS deposit (11.6 Mt at 6.9% HM).

# **Summary**

The Magic HMS deposit is a strandline-type, ilmenite-rutile-zircon-leucoxene (titanium, zirconium) placer deposit located approximately 110 kilometres south of Broken Hill in the Murray Basin in western NSW (Figure 1). Similar deposits are mined by Cristal (e.g. Ginkgo, Snapper) and Iluka (Woornack) in Victoria.



Drilling by BPL in early 2015 defined considerable thicknesses and good continuity of mineralisation within the Magic HMS deposit. The results of drill work and assay data were reported in recent Company ASX announcements (16<sup>th</sup> April and 22<sup>nd</sup> June) which can be accessed on BPL's website (www.bhpl.biz).

The general dimensions of the deposit are approximately 14 kilometres (along trend), 130 metres to 300 metres in width and 2 metres to 8 metres in thickness. It is located beneath 6 metres to 18 metres of sediment overburden (average of 12 metres).

Geological modelling of the deposit has resulted in an Inferred Mineral Resource estimate of 15 million tonnes of material at an average grade of 3.7% HM (using a cut-off grade 2% HM). The new resource is presented in Table 1 and details of the resource modelling is presented in Attachment 1.

Resource estimation based on existing and new infill drilling of the deposit was completed on approximately 600 metre to 1200 metre sections, using vertical holes 20 metres to 40 metres apart (across strike) and downhole samples were collected at 1 metre intervals through the mineralised zone.

Greg Jones, a Heavy Mineral Sands Consultant and Principal and Director of GNJ Consulting Pty Ltd, completed the resource estimation, classification and reporting of the Magic Heavy Mineral Sands deposit in accordance with Joint Ore Reserves Committee 2012 Edition guidelines (JORC).

# **Background**

The project is fully financed by the private mining investment group Relentless Resources Limited (RRL) which is providing \$2m of funding through a Joint Venture and has earned 40% interest in two tenements (EL8311 and EL8312). Broken Hill Minerals Pty Ltd, a fully owned subsidiary of BPL, is manager of the Joint Venture.

The Magic HMS Deposit is located within Exploration Licence 8311 (Woolcunda). The district is known to contain other HMS deposits and Magic is located approximately 90km NW of Cristal Mining's Ginkgo and Snapper Mineral Sands wet dredging operations (Figure 1) which are examples of deposits with comparable heavy mineral composition.

In March 2015, air core drilling was undertaken at both the Magic as well as the Copi North HMS deposit (EL8312) which is located about 50 kilometres south of Magic (Figure 1). Both deposits formed as placer accumulations of heavy mineral sands associated with well-defined ancient beach sand strandlines.

A maiden resource estimation for the Copi North HMS deposit, was completed in late July (refer ASX announcement 27<sup>th</sup> July). The Joint Venture intends to finalise scoping studies for the Copi North HMS deposit before commencing a prefeasibility study for the project in late September. The Magic HMS deposit will help with assessment of development options for a 'pipeline' of relatively high-grade, small tonnage mines with low capital and operating costs and minimal environmental footprint. It will provide a longer life-of project framework by



offering future opportunity to relocate plant and equipment after any future mining is completed at Copi North.

In addition, Broken Hill Prospecting is undertaking HMS exploration at three separate exploration tenements (EL 8308, EL8309 and EL8310) which are 100% owned by BPL and not included in the RRL joint venture (Figure 1). Exploration is underway at several shallow and high grade HMS deposits within these tenements (Plain Tank, Nanya1, Five Hundred and Springwood).

### **Comments**

BPL's Managing Director Dr Ian Pringle commented:

"Magic is the next heavy mineral sands 'cab off the rank'. This is a very comprehensive Maiden Resource estimate to add to Copi North which was announced a few weeks ago. Combined, the deposits have almost 27 million tonnes of resource containing 1.4 million tonnes of HM and could very well form the basis for a future pipeline of mine development."

"Like Copi North, the Magic deposit is very well located – not far from Broken Hill which provides logistical and technical support for Cristal's Ginkgo and Snapper wet dredge mines and only a few kilometres west of the Silver City Highway along which Cristal's HM concentrates are trucked to the mineral separation plant near Broken Hill."

"The shallow nature and excellent grade continuity of the Magic HMS deposit may allow for a cost effective, dry open-cut mining operation with a relatively small and mobile plant. High zircon grades (average 14% zircon) as well as low slime and oversize contents add to the value of Magic's heavy mineral assemblage."

Yours faithfully,

Ian J Pringle (Managing Director)

# **Competent Person Statement**

Exploration activities and sampling results contained in this notice are based on information compiled by Mr Ian Spence, Managing Director of Broken Hill Minerals Pty Ltd and reviewed by Dr Ian Pringle who is a Member of the Australasian Institute of Mining and Metallurgy. Dr Pringle is the Managing Director of Broken Hill Prospecting Ltd and also a Director of Ian J

Pringle & Associates Pty Ltd, a consultancy company in minerals exploration. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Dr Pringle has consented



to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Information in this ASX release that relates to Mineral Resources is based on information compiled by Mr. Greg Jones who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Jones is the Principal for GNJ Consulting and has been retained by Broken Hill Prospecting Limited to conduct Mineral Resource estimation for the Magic deposit. Mr. Jones has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the JORC Code 2012. Mr. Jones consents to the inclusion in this ASX release of the matters based on his information in the form and context in which it appears.

### About Broken Hill Prospecting Limited ("BPL")

BPL is assessing of Heavy Mineral Sand ("HMS") deposits (titanium and zirconium) located south of Broken Hill in western NSW. These deposits have been extensively explored and drill tested by other parties and provide the Company with an opportunity to progress advanced evaluation and fast-track development of several substantial high-grade heavy mineral sand deposits.

Australia has the world's largest deposits of the titanium minerals ilmenite and rutile. Australian mines extract and refine Ti, but don't process it in large quantities. It is used in many applications in light and heavy industries as well as in jewellery and 3D printing. However approximately 95% is used in an oxide form as the pure white colour crucial in products from paint to cosmetics. Titanium's strength-to-weight ratio, corrosion resistance and biocompatibility make it perfect for aerospace, medical and sport applications.

#### BPL Cobalt and Pyrite (Sulphuric acid) deposits

BPL is progressing with exploration and evaluation of cobalt-pyrite deposits in the Broken Hill area within two exploration tenements (EL6622 and EL8143) and two mining leases (ML86 and ML87).

Broken Hill Prospecting Limited is in a strong strategic position to take advantage of increasing demand for cobalt to meet growth in environmental and industrial uses including rechargeable batteries in automobiles and super alloys. Co-product sulphuric acid could address Australian reliance on imported sulphur and provide opportunities for phosphate fertiliser and mineral processing industries.

#### For further information contact;

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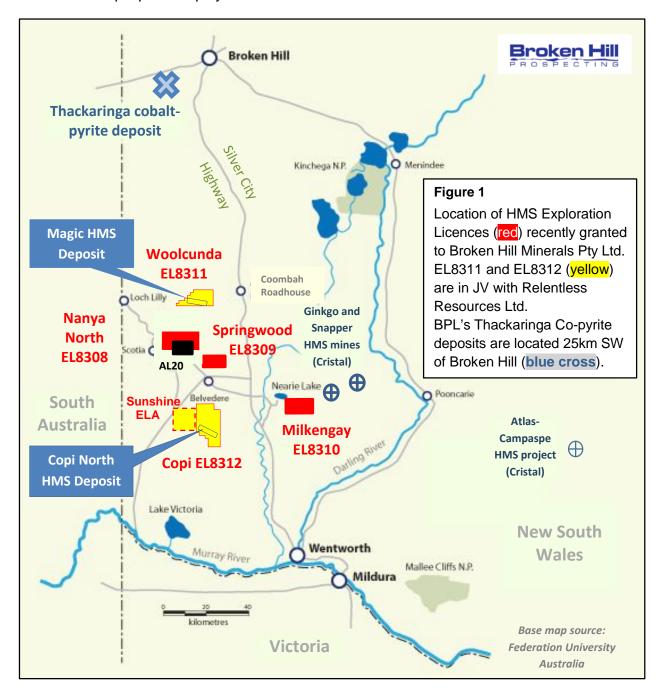
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**Broken Hill Prospecting Limited** 



Figure 1. Map of western NSW showing the location of the Magic Heavy Mineral Sands Deposit and Exploration Licences held by Broken Hill Minerals Pty Ltd. The map also shows the location of Cristal Mining's Pooncarie Mineral Sands Project (Ginkgo and Snapper Mines) and Atlas-Campaspe HMS project.



## **Attachment 1**

Prepared by Greg Jones, Principal for GNJ Consulting (9 September 2015)

#### 1. INTRODUCTION

On 5 August 2015 Broken Hill Prospecting Limited ("BPL") commissioned GNJ Consulting Pty Ltd ("GNJ Consulting") to carry out geological modelling, resource estimation and JORC technical reporting on the Magic heavy mineral sand deposit that forms part of its exploration and project portfolio.

GNJ Consulting prepared a JORC Technical Report which forms part of a study aimed at investigating whether the current Mineral Resource at Magic has potential to be economically exploited either as a standalone operation or as forming part of a scheduled series of deposits in the area. This summary represents a concise extract of that final technical report.

#### 2. LOCATION

The Magic Heavy Mineral Sands (HMS) deposit is located in south-western New South Wales approximately 110 kilometres due south of Broken Hill and 150 kilometres north north-west of Mildura. It lies approximately 20 kilometres west of the Silver City Highway which links Mildura to Broken Hill and is accessed by unsealed minor roads (Figure 1).

#### 3. GEOLOGY

The Murray Basin is a shallow, intra-cratonic Cainozoic basin covering a saucer-shaped area of 300,000 square kilometres extending across South Australia, south-western New South Wales and north-western Victoria.

Throughout the Murray Basin, longshore drift of heavy minerals (HM), and their concentration over time by elevated storm activity, formed deposits of coarse-grained HM within beach environments, or strandlines. Also formed were massive deposits of very fine grained HM in shallow marine environments within areas along the southern ancient coastline (WIM-style deposits as defined by CRA Exploration).

EL8311 is located in the central to northern Murray Basin with stratigraphy defined through geophysical survey and interpretation through drilling of the palaeo beach and marine facies. The geology of the Magic deposit is dominated by a thin layer of Blanchetown Clay (discontinuous lenses of silty clay and sandy clay averaging approximately 13 metres thick) which overly the Loxton-Parilla Sand. The contact between the Blanchetown Clay and the Loxton-Parilla Sand is discontinuous and variable.

The Loxton-Parilla Sand dunal/foreshore sands are fine to medium grained, very well sorted with low slimes (generally an average of 3 to 5 per cent) and are approximately 15 metres thick. The mineralisation of the Magic deposit hosted within the Loxton-Parilla Sand strikes at approximately 295 degrees. Underlying the deposit is a variably defined (from logging) medium to coarse grained, poorly sorted surf zone approximately 3 metres thick in turn overlying a poorly sorted transition zone grading into an offshore marine sequence, characterised by very fine silty sand.

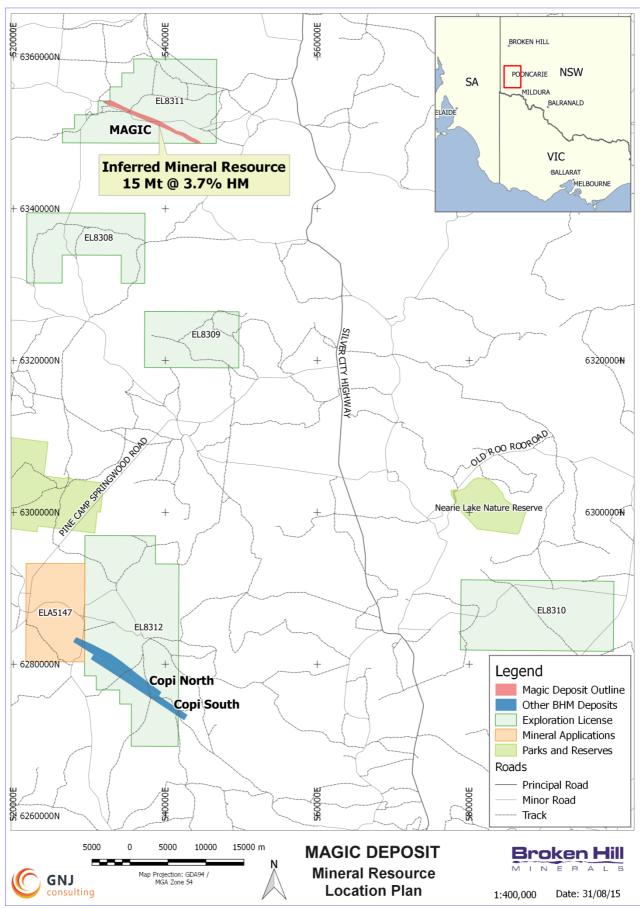


Figure 1: Location Plan - Magic Deposit

#### 4. DRILL HOLE AND ASSAY DATA

Drill hole collar and assay data for the BPL exploration activity was supplied in the form of Excel spreadsheets with a database description in a Word document. Historical drilling conducted by Iluka Resources Limited ("Iluka") and Westralian Sands ("WSL") was also supplied in the same format. Subsequent request for information to Iluka resulted in the supply of a de-surveyed Datamine drill hole file containing assay, collar and logging information.

There are a number of differences in the assay configuration and methodologies between the Iluka and BPL data however these are not considered to be a material impediment to any ensuing interpretation or resource estimation. As an example oversize classification between BPL and Iluka differ significantly i.e. +1 mm vs +2 mm. As a result estimates of oversize material are stated as +2mm, and thus are conservatively biased upwards by the proportion of 1 - 2 mm material in each sample for all BPL data.

All assaying for the Iluka drilling was conducted by in-house Iluka laboratories based in either Capel or Hamilton.

Assaying for BHM drilling was carried out by ALS Laboratories in Perth. Sample processing occurred as follows:

- ALS performed initial analysis of sizing, slimes (clay), oversize and HM content. Sizing bins were defined from preliminary sizing work to determine HM size fraction. The -1 mm heavy mineral fraction of samples was subjected to heavy liquid separation ("HLS") by tetra-bromo-methane ("TBE") and then composited for magnetic separation and mineral point counting (by Diamantina Laboratories).
- Refer to Figure 2 for a description of the ALS testwork flowsheet.
- Two composites were created from material collected from the Copi North deposit and were submitted to Diamantina Laboratories in Perth, representing high and low grade material for the preparation of sample standards. To ensure that the composites were representative of each of the mineralised zones, each composite comprised samples taken along strike and across width of the Copi North strand. These samples were then used as field standards and were implemented within the sampling regime to quantify relative accuracy and repeatability of the laboratory test work.

Drill holes were spaced on a varied grid with section lines spaced approximately 300 metres to 700 metres in the south-east of the deposit and then 1000 metres to 1500 metres over the majority of the deposit. Drill holes along section lines ranged from 20 metres to 30 metres at the closest intervals to around 60 metres to 80 metres at the widest although throughout the majority of the mineralised horizon the drill spacing was 20 metres to 30 metres across strike. This disparity in drill hole spacing was related primarily to the different drilling campaigns.

For the purpose of the geological modelling a local grid was set up along the long axis of the orebody so that the majority of drill lines were east-west and model cells were aligned north-south along that long axis. This direction was 294 degrees or a rotation of 66° west of north. This transformation also included a truncation of the MGA northing and easting coordinates with 510,000 metres subtracted from the easting coordinate and 6,300,000 metres subtracted from the northing coordinate.

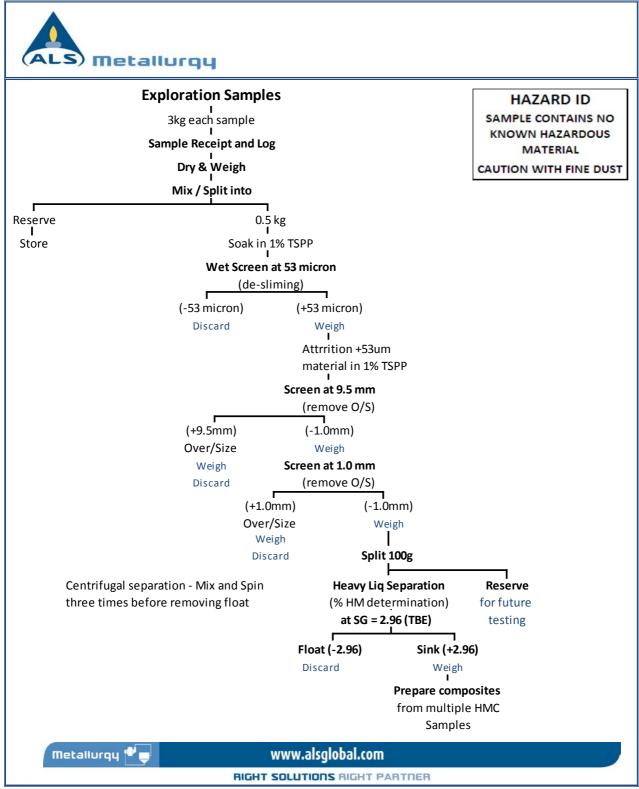


Figure 2: ALS flowsheet for HM, slimes and OS analysis for BPL assays

#### 5. DATA ANALYSIS

A total of 184 drill holes were supplied all of which were located within tenement EL8311 of which five holes were twin drill holes conducted during the BPL drill program in 2015. A total of 179 drill holes were used for resource estimation having omitted the five twin drill holes.

QA/QC has been undertaken for the Magic project only on the BPL drilling and assaying with the older WSL and Iluka drilling and assaying not subjected to due QA/QC processes. QA/QC

has been fulfilled by taking field duplicates, laboratory duplicates and laboratory repeats. Blank samples were also submitted by BPL as well as standard control samples from three different grade ranges of material. All of the submission rates for the BPL duplicates, repeats and standards are well within industry standards.

In general all QA/QC showed good to moderately good performance which included all field and laboratory duplicates and laboratory repeats as well as all standard control samples.

Bulk sample composites were prepared by BPL in order to characterise the mineralogical break down of the Magic deposit. These composites are generated by completing a geological and stratigraphic interpretation of the primary drill holes from down hole logging and assaying. Samples from domains with similar geological characteristics are grouped together.

A summary of the minerals identified during grain counting / modal analysis of mineral assemblage composites is presented in Table 2. Modal analysis was carried out by Diamantina Laboratories.

Table 2: Mineral species identified during modal analysis and their abbreviations used for geological modelling and reporting.

Mineral Abbreviation	Full Name / Definition		
ILM	Ilmenite		
ILM_A	Altered Ilmenite		
ZIR	Zircon		
RUT	Rutile and anatase		
LEU	Leucoxene		
CHR	Chrome spinel		
MON	Monazite		
TOU	Tourmaline		
STA	Staurolite		
KSL	Kyanite and sillimanite		
AND	Andalusite		
QZT	Quartz		
OTH	Accessory other minerals		
мотн	sum of CHR, MON, TOU and AND - magnetic trash		
NMOTH sum of KSL, QZT and OTH - non-magnetic trash			

#### 6. INTERPRETATION AND WIREFRAMING

A topographic digital terrain model ("DTM") was prepared by GNJ Consulting which was based on a drill hole collars as supplied by BPL. Shuttle Radar Topography Mission ("SRTM") data was downloaded and contours were extracted for the purpose of preparing a commercially available DTM for comparison. It was found that the variance RL for the SRTM data was greater than that for the surveyed collar file and so a decision was made to use the supplied collar information to prepare a constraining topographic surface for the geological modelling.

The basement position for Murray Basin orebodies is typically interpreted from elevated or identified very coarse grained and poorly sorted sand which is indicative of a surf zone which typically underlies the majority of the Murray Basin strandlines. In the region of the Magic

deposit as identified by Iluka geologists and as evidenced by the lack of descriptive detail in the logging provided by BPL the surf zone was either non-existent or very difficult to identify clearly. With this in mind it was decided to digitise an arbitrary basement approximately half to 1 metre below the interpreted mineralised strandline.

The Blanchetown Clay and Loxton-Parilla Sand were logged during the Broken Hill Minerals drilling however the wide spaced BPL drill lines meant that correlation from those holes to older historic holes where the logging did not identify those units was difficult. It was decided to ignore the geological contacts that those specific units made and to treat them as an amorphous background unit (that is absent of significant HM mineralisation) and to concentrate defining the mineralised strandline.

Hosted by the Loxton-Parilla Sand is the mineralised strandline of the Magic deposit. The definition of the strandline has been made by identifying the anomalous HM grade envelope that is both a combination of an interpreted marine beach placer and a low grade dunal sand sequence (Figure 3). Sampling was not always undertaken for the low grade dunal unit (likely due to the often < 1 per cent HM grades) and therefore this unit is not always identifiable on each drill line (and hence was amalgamated with the marine placer).

#### 7. GEOLOGICAL AND GRADE MODELLING

Geological modelling was carried out using CAE Mining / Datamine Studio mining software to prepare a 3D block model and grade interpolation.

Construction of the geological grade model was based on a combination of coding model cells in drill holes below open wireframes surfaces, including topography and basement and inside closed wireframes defined by the strandline domain.

Modelling convention has the largest parent cell size possible used which is generally based on half the distance between holes of the dominant drill hole spacing in the X and Y dimensions. Cell dimensions are generally used such to avoid the use of overly small cells that imply a level of refinement in the model that is not justified by the drill hole spacing.

The dominant drill grid spacing for the Magic deposit was settled on as being 1200 x 40 x 1 metres. This would indicate parent cell dimensions in XYZ of 600 x 20 x 1 metres in order to have a floating cell between drill holes and drill lines.

A model was generated and interpolated using inverse distance weighting and the preliminary estimates were compared with drill hole grades. It was found that this cell size and parameters chosen were resulting in an acceptable interpolation process. The results of this validation are discussed further in Section 8.

Variography was carried out prior to interpolation as part of developing search ellipse directions and sizes. Resulting variograms were used to test the drill spacing (and continuity of HM grade) and these supported the final selected JORC Mineral Resource category.

A bulk density (BD) was applied to the model using a standard linear formula originally described by Baxter (1977). This approach was refined in a practical application by this author using first principles calculations. The resultant graph and regression formula was then used to calculate the conversion of tonnes from each cell volume and from there the calculation of material, HM and SLIMES tonnes. The formula used was:

Bulk Density = (0.0095 \* HM) + 1.6812

#### 8. MODEL VALIDATION

The volume model and drill hole file was validated on-screen against the geology and basement wireframes to ensure zone allocation had been correctly assigned. The volume model was validated to ensure that adequate representation of the geological surfaces and wireframes was obtained with the use of sub-cells. The location of the model cells with respect to drill section spacing was checked.

The model was interrogated to see if any cells were not estimated and whether cells were estimated in the first, second or third estimation pass as expected given the surrounding sampling density. To this end the EST field was used to cross check the interpolation parameters. None of the domains remained un-estimated for drill assay primary grades.

Population distributions were calculated for the two critical assay fields; HM and SLIMES as both normal and log normal distributions. These populations were further isolated to hard coded ZONE unique values. Swathe plots along the length of the deposit were also produced for HM and SLIMES to compare the drilling vs model grades. A statistical review of the bulk composite data was undertaken to determine whether the application of those bulks was carried out in a representative manner. This was also done by the use of swathe plots as well as summary tables of HM and material tonnage allocated to each mineral assemblage composite.

#### 9. RESULTS

The Magic Mineral Resource estimate has been assigned a JORC Classification of Inferred Mineral Resource and is supported by criteria as follows:

- drill hole spacing; and
- the distribution and weighting of mineral assemblage composites.

Factors which preclude a higher confidence classification to Indicated include the lack of QA/QC in the form of duplicate and standard samples for both field and laboratory processes as well as an absence of twin or duplicate drilling for the historical drilling. The variograms for the main mineralised strandline indicate that the drilling is only adequate for Inferred Mineral Resource status (at least in the along strike direction).

The sample support and distribution of mineral assemblage composites is to an adequate level of density for the JORC Classification and no more. Consideration of the operational mining rate and production of HM needs to be undertaken in order to assess whether the mineral assemblage composites are providing enough detailed coverage of potential variability in the mineral assemblage along the length of the deposit.

At a nominal mining rate of 400 tph approximately 10 kt of HM would be the nominal cut-off for mineral assemblage composite support (representing approximately 1 months production). All of the mineral assemblage composites are assigned to more than this range of HM tonnage and represents a risk of underestimating the variability in the mineral assemblage for the deposit.

The Mineral Resource statement for the Magic deposit is presented below and the Mineral Resource outline is presented in Figure 4. This table conforms to guidelines set out in the JORC Code (2012) and is formatted for internal or external public reporting.

The Magic deposit comprises a total Mineral Resource of 15 Mt @ 3.7 per cent HM and 4 per cent slimes containing 0.56 Mt of HM. The breakdown of the component Mineral Resource categories is as follows:

 an Inferred Mineral Resource of 15 Mt @ 3.7 per cent HM and 4 per cent slimes containing 0.56 Mt of HM with an assemblage of 62 per cent total ilmenite, 14 per cent zircon, 6 per cent rutile and 10 per cent leucoxene.

Table 3: Mineral Resource Statement for the Magic deposit at 31 August 2015

MINERAL RESOURCE SUMMARY FOR MAGIC DEPOSIT AS AT 31 AUGUST 2015

Summary of Mineral Resources <sup>(1)</sup>				HM Assemblage <sup>(2)</sup>								
Mineral Resource Category	Material (Mt)	In Situ HM (Mt)	нм (%)	SLIMES (%)	os (%)	ILM (%)	ILM_A (%)	ZIR (%)	RUT (%)	LEU (%)	МОТН (%)	NMOTH (%)
Inferred	15	0.56	3.7	4	1	4	58	14	6	10	6	2
Total	15	0.56	3.7	4	1	4	58	14	6	10	6	2

#### Notes:

- (1) Mineral resources reported at a cut-off-grade of 2% HM, <35% Slimes.
- (2) Mineral assemblage is reported as a percentage of in situ HM content.

The supporting criteria for the resource classifications are presented in Attachment 2 in alignment with the reporting requirements for Table 1 from the JORC Code (2012). The Mineral Resource figures presented in Table 3 are consistent with guidelines from the JORC Code (2012) with respect to reporting significant figures in addition to the experience of the Competent Person, Mr Greg Jones.

#### 10. CONCLUSIONS AND RECOMMENDATIONS

The Magic deposit represents a small heavy mineral sand deposit that may form a mining scenario with other neighbouring deposits to be mined in a scheduled sequence or under the right economic and financial conditions it may potentially be exploited as a standalone operation.

- The size of the Magic deposit is modest in terms of both HM tonnes and HM grade.
- The Magic deposit does have elevated zircon when compared with similar sized deposits in the northern half of the Murray Basin which should be viewed as an opportunity to drive further exploration and resource delineation.
- The elevated zircon is prevalent in the southern half of the deposit and at present the deposit does remain open to the south-east potentially opening extension opportunities for the deposit.
- At the current size and extent, it is likely that the Magic deposit represents either a small satellite project to an existing mineral sands operation or, under favourable financial and economic conditions such as low exchange rate and elevated zircon and rutile prices or where mining equipment or capital has been depreciated, a standalone operation for an existing or new producer.

There is potentially scope to extend the resource to the north-west (as evidenced by previous work undertaken by Iluka) and to the south-east. Extension of the deposit is possible to the north-west and south-east where historical drilling has indicated an extension of the deposit does exist (to the north-west) and where the deposit has yet to be closed off to the south-east. Future work should be focussed on gaining access to this ground to test the extent of the mineralisation.

In order to improve the confidence of the resource estimate to Indicated and Measured, it is estimated that drilling density would have to be closed down to a minimum of 20 metres across strike for both Indicated and Measured and at least 600 metres along strike for Indicated and 200 metres to 400 metres on average for Measured. Further variography studies after the next infill drilling stage to take the resource to Indicated would give a better indication of what final Measured drill density may be required along strike.

It is estimated that an additionally approximately 165 holes at an average depth of 22 metres for approximately 3600 metres to 3700 metres would be required to bring the Mineral Resource estimate for Magic from Inferred to Indicated. This work would need to be accompanied by an

additional 12 to 15 mineral assemblage composites in order to provide more confidence in the assemblage estimate and mineral characterisation.

It is estimated that total of 420 holes at an average depth of 22 metres for a total of approximately 9200 metres to 9300 metres would be required to bring the Mineral Resource estimate for Magic from Inferred through to Indicated and then Measured. A total of 28 to 32 additional mineral assemblage composites would be required (on top of the current 5 composites) to provide the requisite level of confidence in the mineral assemblage continuity and mineral characterisation in order to support a JORC Mineral Resource category of Measured.

The Magic deposit represents a relatively small but shallow, continuous heavy mineral strandline which, from recent drilling, has been demonstrated to be relatively high in zircon when compared to other Murray Basin deposits of similar size and geological characteristics.

The deposit forms part of a portfolio of projects in the district held by Broken Hill Minerals Pty Ltd and will most probably be part of a mining scenario with other neighbouring deposits which will be mined in a scheduled sequence.

### **Competent Person's Statement - Mineral Resources**

Information in this ASX release that relates to Mineral Resources is based on information compiled by Mr. Greg Jones who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Jones is the Principal for GNJ Consulting and has been retained by Broken Hill Prospecting Limited to conduct Mineral Resource estimation for the Magic deposit. Mr. Jones has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the JORC Code 2012. Mr. Jones consents to the inclusion in this ASX release of the matters based on his information in the form and context in which it appears.

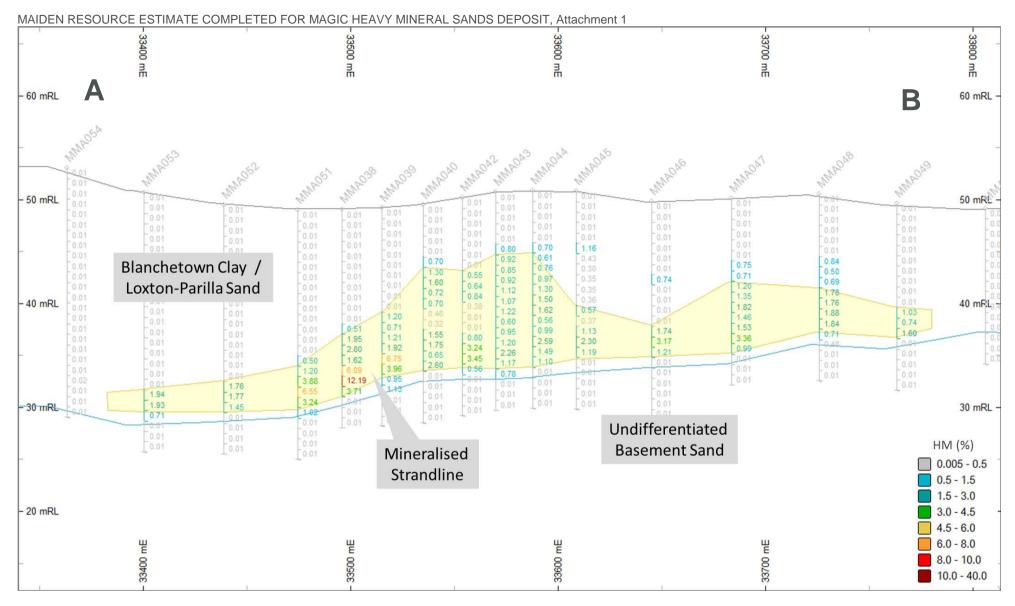


Figure 3: Cross-section at 53600 mN showing the relationship of geological units and HM grade distribution of the Magic strandline (vert x5)

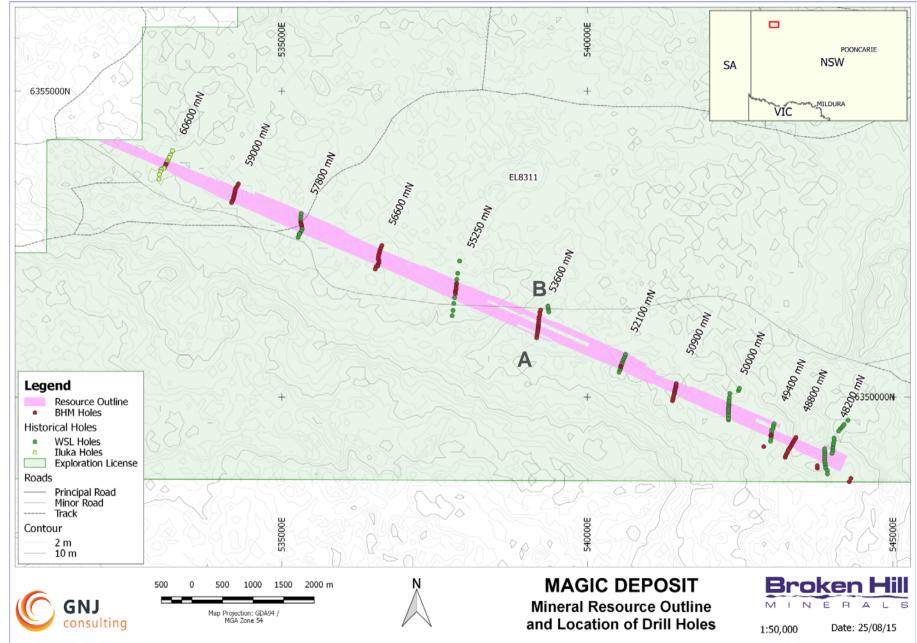


Figure 4: Magic Mineral Resource outline and drill hole location plan

# Attachment 2 - Mineral Resource Statement Supporting Commentary (after Table 1, JORC Code 2012)

	Section 1 Sampling Ted	chniques and Data
Criteria	Explanation	Comment
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	The deposit was sampled using Reverse Circulation Air-Core (RCAC) drill holes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Duplicate samples were taken from drilling programs post 2005 at a rate of 1 in 20 to 1 in 30.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	RCAC drilling was used to obtain a 1 m sample from which approximately 1.5-3kg was collected using a rotary splitter. The sample was dried, deslimed (material <53 µm removed) and then had oversize (material +9.5 and +1mm) removed. 100g of the sample then had a heavy mineral (HM) sink performed on it using TBE (SG=2.96). The resulting HM concentrate was then dried and weighed. Some of the HM concentrate samples were grouped together to form Bulk samples. These Bulk samples then underwent a point counting exercise / modal analysis.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	RCAC drilling accounts for 100 per cent of the total drilling and comprises BQ and NQ diameter air-core drilling. All holes are drilled vertical with no downhole surveying to confirm hole direction.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Review of sample weights and compared with theoretical sample weights was undertaken.

Criteria	Explanation	Comment
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Sampling on the drill rig is observed to ensure that rotary splitter remains clean and water is used to flush the cyclone after each drill string (3 m).
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Heavily indurated parts of the deposit may result in creation of lateritic fines and this can present as HM. Drilling through heavy induration and high HM grades may result in the carry down of HM grades, although this is more likely in deeper deposits and with high water inflow.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Logging is carried out on the drill site during drilling and observations of drill performance and panned estimates were captured on using industry standard electronic logging equipment for historical data and on paper logs for BPL drilling to capture observations at the drill rig. These were then entered into a proprietary database and validated on a weekly basis.  A small representative sample was retained in a plastic chip tray for future reference and logging checks.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging of RCAC samples recorded estimated slimes, washing, colour, lithology, dominant grainsize, coarsest grainsize, sorting, induration type, hardness, estimated rock and estimated HM.
	The total length and percentage of the relevant intersections logged.	All drill holes were logged in full and approximately 30-40% of samples were assayed that were used in the resource estimation exercise
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All samples were riffle split at the drill rig for BPL drilling. Historical drilling was rotary split using a cyclone mounted on the drill rig.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is consistent with industry best practice.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	Duplicates were regularly taken to evaluate representativeness at industry standard submission rates.
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	

Criteria	Explanation	Comment
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Samples submitted to ALS were dried, split, weighed, soaked, attrition and then wet screened to 9.5 mm and plus 53 µm. The 53 µm material was then discarded with the remaining fractions recombined and subject to further attritioning. The sample was wet screened at 1 mm and 53 µm using stacked screens after which fractions were dried and weighed. A riffle split was taken off the 1 mm to +53 µm fraction and processed by a heavy liquid separation at 2.96 SG using tetra bromo-methane (TBE). Percent SLIMES, percent OS and percent HM were calculated for the entire sample.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.  For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their	Assaying, separation and point counting analysis for heavy mineral content was undertaken at ALS Laboratories and Diamantina Laboratories in Perth. Point counting is considered a total assay technique.  No field non-assay analysis instruments were used in the analyses reported.
	derivation, etc.  Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	A review of standard reference material was undertaken and checked for significant analytical bias or preparation errors in the reported analyses.  Results of analyses for field sample duplicates were checked for consistency with the style of mineralisation are evaluated and considered to be representative of the geological zones which were sampled.  Internal laboratory QA/QC checks were reported by the laboratory. The reports were reviewed and the laboratory found to be performing within acceptable limits.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	During drilling, field technicians generated panned estimates of HM and these were used to cross check against laboratory assays. This method was also used to ascertain the competency and consistency of field technicians as a mentoring and guidance tool.
	The use of twinned holes.	Twinned holes were drilled by BHM along the length of the deposit (a total of five holes were twinned). These were reviewed and considered to be representative and reproducible, confirming continuity of mineralisation.

Criteria	Explanation	Comment
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Drill hole logging was carried out by drillers and offsiders on paper logs to capture observations at the drill rig and were entered into a proprietary database and validated on a weekly basis.
		Reported drill results were compiled by the Company's geologists and verified by the Company's database administrator and Managing Director.
	Discuss any adjustment to assay data.	No adjustments to assay data were made
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drill hole collars were positioned using hand held GPS. MGA94 coordinates and the Relative Level from the Australian Height Datum were measured. All measurements were made with a GPS using differential correction. The instrument used was an SF3040 hired from GlobalPOS.
		Historical drill hole collar coordinates were located using GPS and DGPS survey equipment.
	Specification of the grid system used.	The instrument was set to MGA94, Zone 54, with an accuracy tolerance of 0.3m. Before using the instrument the accuracy was checked on state survey mark SSM 3908 located north of Coombah at the eastern edge of the Silver City Highway.
	Quality and adequacy of topographic control.	Collar elevations used were taken from a digital elevation model. Where required, coordinates were transformed to MGA94, Zone 54.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Air core holes are spaced at a nominal 20 to 40 m along lines spaced at 300 to 1200 m (predominantly 1200 m)
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Based on the experience of GNJ Consulting the data spacing and distribution through the drill hole programs Is considered adequate for an Inferred Mineral Resource located in the Murray Basin.
	Whether sample compositing has been applied.	No sample compositing or de-compositing of primary drill hole assays has been applied. All drill hole sample lengths were the same (1 m).

Criteria	Explanation	Comment
Orientation of data in	Whether the orientation of sampling achieves	Sample orientation is vertical and approximately perpendicular to the dip
relation to geological	unbiased sampling of possible structures and the	and strike of the mineralisation resulting in true thickness estimates. Drilling
structure	extent to which this is known, considering the deposit type.	and sampling is carried out on a roughly rectangular grid that is aligned and in a ratio consistent with the anisotropy of the orebody.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	There is no apparent bias arising from the orientation of the drill holes with respect to the strike and dip of the deposit.
Sample security	The measures taken to ensure sample security.	All samples are numbered, with samples split and residues stored along with HM sinks.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No known audits or reviews have been undertaken on these drilling and sampling techniques. Although Geos Mining undertook a Mineral Resource estimate for the BPL Copi North deposit.

	Section 2 Reporting of Exploration Results						
Criteria	Explanation	Comment					
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The drill holes reported in this report are all contained within the recently granted Copi exploration licence (EL8312) are held 100% by Broken Hill Prospecting Limited's wholly owned subsidiary company Broken Hill Minerals Pty Ltd.  Private mining investment group Relentless Resources Limited (RRL) under Joint Venture with Broken Hill Prospecting is earning a 50% interest by expenditure of \$2m  Broken Hill Prospecting is the Joint Venture and Project Manager. RRL's participation in the Joint Venture is purely as a passive investor level. RRL is not undertaking or involved with any of the fieldwork or associated future					
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	resource estimation activities.  The Magic Exploration Licence is in good standing.  The lease is held over privately held goat and sheep grazing terrain consisting of poor quality arid soils sustaining sparse shrubs and spinifex with limited tree cover. No naturally occurring surface freshwater is present.					

Criteria	Explanation	Comment
		No native title interests, historical sites, wilderness or national park and environmental settings are located within the drill program area.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	All historical exploration was conducted by WSL and Iluka Resources.  Techniques and methods for drilling, logging, sampling and HMS determination used have been appraised and are comparable to current work in standard. Where historical holes were twinned by current drilling, the results confirm previous exploration.
Geology	Deposit type, geological setting and style of mineralisation.	The deposit style targeted for exploration is a Heavy Mineral Sand concentration formed within an ancient Miocene sea shore strandline
		This style of mineralisation typically occurs as fine dark sand horizons within a beach sand sequence.
		This style of deposit is often found in close proximity to geological features associated with ancient coastlines.
		The deposits being targeted are all located within 50 metres of surface and located well above the current water table.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:  - easting and northing of the drill hole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar - dip and azimuth of the hole - down hole length and interception depth - hole length.  If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	There are no drill hole results that are considered material to the understanding of the exploration and resource drill out. Identification of the wide and thick zone of mineralisation is made via multiple intersections of drill holes and to list them all would not give the reader any further clarification of the distribution of mineralisation throughout the deposit.

Criteria	Explanation	Comment
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.	No grade cutting was undertaken, nor compositing or aggregation of grades made prior or post the grade interpolation into the block model. A cut-offgrade was used post modelling for the reporting of Mineral Resource estimates.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents were used for the resource estimation or reporting.
Relationship between mineralisation widths and	These relationships are particularly important in the reporting of Exploration Results.	Drilling was undertaken to intersect perpendicular to the strike and dip of mineral sands strandlines.
intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Refer to Figures 3 and 4 for type sections and location of type sections and all drill holes used in the preparation of the Mineral Resource estimate.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	No other exploration data that is considered meaningful and material has been omitted from this report

Criteria	Explanation	Comment
Other substantive	Other exploration data, if meaningful and material,	No metal equivalents were used for reporting of Mineral Resources.
exploration data	should be reported including (but not limited to):	
	geological observations; geophysical survey results;	
	geochemical survey results; bulk samples – size and	
	method of treatment; metallurgical test results; bulk	
	density, groundwater, geotechnical and rock	
	characteristics; potential deleterious or	
	contaminating substances.	
Further work	The nature and scale of planned further work (eg	All drill holes are vertical and perpendicular to the dip and strike of
	tests for lateral extensions or depth extensions or	mineralisation and therefore all interceptions are approximately true
	large-scale step-out drilling).	thickness.
	Diagrams clearly highlighting the areas of possible	Refer to Figures 3 and 4 for type sections and location of type sections and
	extensions, including the main geological	all drill holes used in the preparation of the Mineral Resource estimate.
	interpretations and future drilling areas, provided	
	this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources		
Criteria	Explanation	Comment
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Original laboratory files used to populate exploration database assay tables via an automatic software assay importer where available.
		Checks of data by visually inspecting on screen (to identify translation of samples), duplicate and twin drilling was visually examined to check the reproducibility of assays.
		Database assay values have been subjected to random reconciliation with laboratory certified value is to ensure agreement.
		Historical assay results were acquired and incorporated into the database.  Attribution of the data was derived from reports.
	Data validation procedures used.	Visual and statistical comparison was undertaken to check the validity of results.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	

Criteria	Explanation	Comment
	If no site visits have been undertaken indicate why this is the case.	No site visit was undertaken by the GNJ Consulting during the modelling exercise as they are familiar with the deposit and have previously visited the site and have viewed the drilling and sampling conditions undertaken for the majority of the exploration work.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	The geological interpretation was undertaken by GNJ Consulting and then validated using all logging and sampling data and observations.
		Current data spacing and quality is sufficient to imply but not verify grade continuity. The possibility of narrow washouts between drill lines exists but they are not considered likely.
	Nature of the data used and of any assumptions made.	Interpretation of geological surfaces was restricted to the main mineralised envelope utilising HM sinks and geology logging.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	
	The use of geology in guiding and controlling Mineral Resource estimation.	The Mineral Resource estimate was controlled to an extent by the geological envelope and basement surfaces.
	The factors affecting continuity both of grade and geology.	
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The mineral resource is approximately 14 km long and 130 to 300 m wide at its widest point. The deposit ranges in thickness from approximately 2 to 8 m on average. The average deposit depth ranges from 6 to 18 m with an average range of between 12m.

Criteria	Explanation	Comment
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	The mineral resource estimate was conducted using CAE mining software (also known as Datamine Studio). Inverse distance weighting techniques were used to interpolate assay grades from drill hole samples into the block model and nearest neighbour techniques were used to interpolate index values and nonnumeric sample identification into the block model. The mostly regular dimensions of the drill grid and the anisotropy of the drilling and sampling grid allowed for the use of inverse distance methodologies as no de-clustering of samples was required. Appropriate and industry standard search ellipses were used to search for data for the interpolation and suitable limitations on the number of samples and the impact of those samples was maintained. An inverse distance weighting of three was used so as not to over smooth the grade interpolations. Hard domain boundaries were used and these were defined by the geological surfaces that were interpreted.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The resource estimate was checked against previous resource estimates and these were detailed in the report. The final resource estimate for the Magic deposit was a similar tenor of tonnage and grade as previous resource estimates.
	The assumptions made regarding recovery of by-products.	No assumptions were made during the resource estimation as to the recovery of byproducts.
	Estimation of deleterious elements or other non- grade variables of economic significance (eg sulphur for acid mine drainage characterisation).	
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The average parent cell size used for the interpolation was approximately half the standard drill hole width and a half the standard drill hole section line spacing. Given that the average drill hole spacing was 40 m east-west and 1200 m north south and with 1 m samples the parent cell size was 20 x 600 x 1 m (where the Z or vertical direction of the cell was nominated as the same distance as the sample length).
	Any assumptions behind modelling of selective mining units.	No assumptions were made regarding the modelling of selective mining units however it is assumed that a form of dry mining will be undertaken and the cell size and the sub cell splitting will allow for an appropriate dry mining preliminary reserve to be prepared. Any other mining methodology will be

Criteria	Explanation	Comment
		more than adequately catered for with the parent cell size that was selected for the modelling exercise.
	Any assumptions about correlation between variables.	No assumptions were made about correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	The Mineral Resource estimate was controlled to an extent by the geological / mineralisation and basement surfaces.
	Discussion of basis for using or not using grade cutting or capping.	Grade cutting or capping was not used during the interpolation because of the regular nature of sample spacing and the fact that samples were not clustered nor wide spaced to an extent where elevated samples could have a deleterious impact on the resource estimation.
		Sample distributions were reviewed and no extreme outliers were identified either high or low that necessitated any grade cutting or capping.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of grade interpolations were done visually In CAE Studio (Datamine) software by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations.
		Statistical distributions were prepared for model zones from drill hole and model files to compare the effectiveness of the interpolation. Along strike distributions of section line averages (swath plots) for drill holes and models were also prepared for comparison purposes.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages were estimated an assumed dry basis. A bulk density algorithm was prepared using first principles techniques coupled with industry experience that is exclusive to GNJ Consulting. We believe the bulk density formula to be appropriate and fit for purpose at this level of confidence for the Mineral Resource estimate.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	Cut-off grades for HM and SLIMES as well as hardness were used to prepare the reported resource estimate. These cut-off grades were defined by GNJ Consulting as being based soundly on experience, the percentage of VHM and the grade tonnage curves taken in consideration with the grade distribution along the length of the orebody.

Criteria	Explanation	Comment
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	No specific mining method is assumed other than potentially the use of dry mining scrapers and excavators into trucks. This allows for quite a selective mining process while still maintaining bulk economies of scale as the dark HM at the base of the orebody allows for excellent visual acuity and therefore grade control. To this end no minimum thickness was assumed for the reporting of the mineral resource although a ratio of waste or sub cut-off grade material to above cut-off grade material was used to omit model cells that were deeply buried or of a discontinuous nature.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Metallurgical assumptions were used based on mineral bulks composites which at this stage only allow for observation commentary with little hard empirical analysis.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should	No assumptions have been made regarding possible waste and process residue however disposal of byproducts such as SLIMES, sand and oversize are normally part of capture and disposal back into the mining void for eventual rehabilitation. This also applies to mineral products recovered and waste products recovered from metallurgical processing of heavy mineral.

Criteria	Explanation	Comment
	be reported with an explanation of the environmental assumptions made.	
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	The bulk density used for the Magic deposit is one that has been developed by GNJ Consulting from experience of working with these styles of ore bodies. A bulk density algorithm was prepared using first principles techniques coupled with industry experience that is exclusive to GNJ Consulting. We believe the bulk density formula to be appropriate and fit for purpose at this level of confidence for the Mineral Resource estimate.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	The bulk density is calculated as an in situ dry bulk density and once material has been dug up invariably this bulk density cannot be used. The bulk density is however used on wet poured HMC (heavy mineral concentrate) from mining and concentrating and is successful at estimating density and therefore tonnages for stockpiles.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The resource classification for the Magic deposit was based on the following criteria: drill hole spacing; the age of the drilling and assay methodologies used; and the distribution of bulk samples.
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	The classification of the Inferred Resource was supported by all of the supporting criteria as noted above.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	As a Competent Person, GNJ Consulting Principal Greg Jones considers that the result appropriately reflects a reasonable view of the deposit categorisation.
Audits or reviews.	The results of any audits or reviews of Mineral Resource estimates.	No audits or reviews of the mineral resource estimate has been undertaken at this point in time.

Criteria	Explanation	Comment
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	There was no geostatistical process undertaken (such as variography or conditional simulation) during the resource estimation of the Magic deposit. Qualitative assessment of the mineral resource estimate along with comparison with previous resource estimates by other workers (within a tolerance of +/- 5 per cent) points to the robustness of this particular resource estimation exercise.  Validation of the model vs drill hole grades by observation, swathe plot and population distribution analysis was favourable.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.  These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The statement refers to global estimates for the entire known extent of the Magic deposit.  No production data is available for comparison with the Magic deposit.