



Quarterly Activities Report 30 June 2018

ASX Release

31 July 2018

Magnum Mining and
Exploration Limited
ABN 70 003 170 376

ASX Code

MGU

Non-Executive Chairman

Howard Dawson

Chief Executive Officer

Grant Button

Non-Executive Director

Scott Robertson

Company Secretaries

Grant Button
Jacqueline Barry

Issued Shares

279,578,818

Unlisted Options

9,000,000

Email

info@mmel.com.au

Website

www.mmel.com.au

Suite 2, Churchill Court
234 Churchill Avenue
SUBIACO WA 6008

PO BOX 189
SOUTH PERTH WA 6951

T +61 8 9474 2956

F +61 8 9474 2937

HIGHLIGHTS

Gravelotte Emerald Project

- Phase 1 of Trial Mining campaign at Gravelotte Emerald Project, South Africa, delivers to date:
 - 11,774.8 carats of emeralds recovered from the treatment of 256 tonnes of dump material
 - Average recovered grade of 46 carats per tonne
- Conceptual plant design completed and being evaluated
- Investigation of optical sorting solutions underway with ongoing test work

Cloncurry East Cu-Au-Co Project, North Queensland

Notlor North

- Two-metre analytical samples have confirmed previously released highly encouraging cobalt (Co), copper (Cu) and gold (Au) results from six-metre composites.
- Preliminary metallurgical test work confirms Cu-Au concentrate can be produced.

OPERATIONS

Gravelotte Project, South Africa

Magnum's 74%-owned Gravelotte Project is located in the Limpopo Province of South Africa. Emeralds were discovered in the province in 1927 and, since then, several companies have explored for and mined within the broader region for emeralds.

From 1929 to 1982 the total recorded emerald production from the Gravelotte Project, as well as the area surrounding the nearby Gravelotte township, was nearly 113 million carats.

It is reported that during the 1960's the Gravelotte Project itself was the largest mine of its type in the world, employing over 400 sorters.

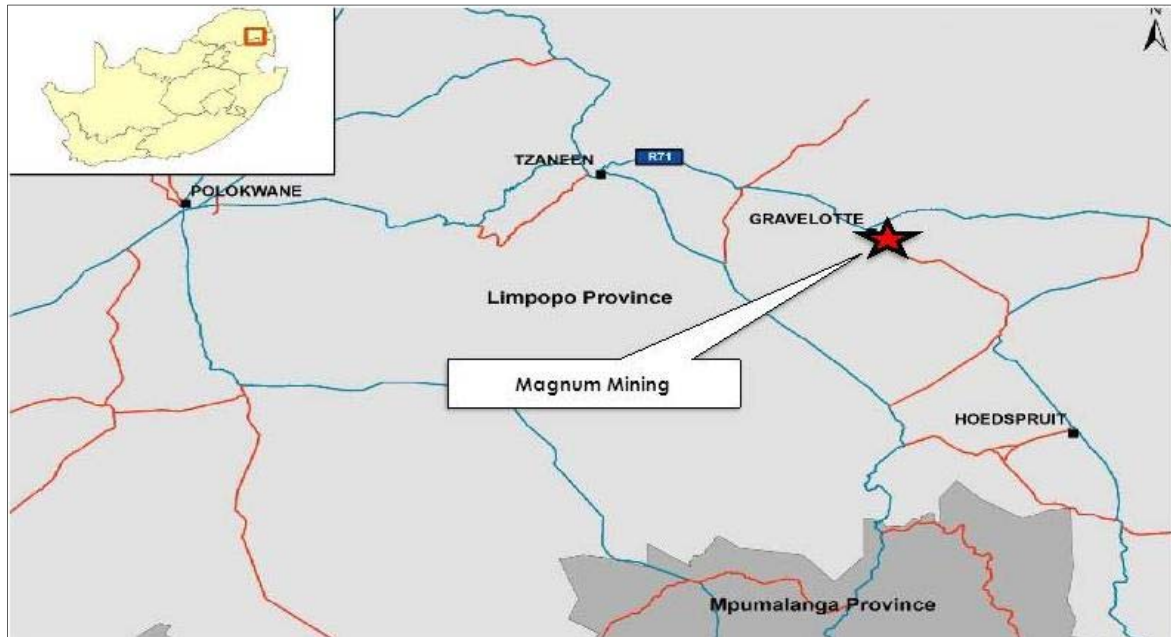


Figure 1: Gravelotte Location Map

Why is MGU at Gravelotte?

The Gravelotte project provides Magnum with a medium term production opportunity in a niche commodity such as emeralds where demand is growing.

The project offers established infrastructure, existing and accessible open cuts together with extensive low grade dumps, a large (albeit incomplete) historic data base, a nearby and available work force, local on-site technical expertise and a nearby township that can serve as a supply centre.



Photo 1: Aerial view of the Gravelotte Mine Site showing key infrastructure with Cobra and Discovery Pits in background.



Photo 2: Cobra Pits.

What is our Plan?

During the past 12 months Magnum has accelerated its work programme at Gravelotte to capitalise on the relatively simple mining and production pathway that the project presents.

A feature of this works programme has been to better understand the physical characteristics of the Gravelotte ore to enable plant design to commence. The key part of this process is to test how best the ore is crushed – such that the maximum number of emeralds can be liberated from the host rock with the least amount of emerald breakage.

The second part of this process is to determine the most efficient processing route to recover the emeralds from the crushed ore.

To fulfill these objectives a trial mining programme was designed and commenced earlier this year.

Trial Mining Programme

Phase 1

Subsequent to the end of the Quarter, on 9 July 2018 the Company provided an update on Phase 1 of the Trial Mining Campaign which commenced in late February 2018.

Phase 1 Programme Parameters

Phase 1 of a trial mining programme was to source, mine and crush around 2,000 tonnes of material sourced from four historic low grade and waste rock dumps (“dumps”) contained within the Gravelotte mining lease.

Dump No.	Dump (midpoint) Co-ordinates	
	Longitude	Latitude
01	30 deg 38' 53.37" E	23 deg 57' 56.70" S
25	30 deg 39' 18.31" E	23 deg 58' 05.34" S
86	30 deg 38' 50.06" E	23 deg 57' 50.51" S
100	30 deg 38' 50.54" E	23 deg 57' 56.18" S

In total 2,112 tonnes of waste and low grade material was mined.

As would be expected there is no grade information available on the various dumps.

Consequently, the dumps that were mined were selected based only on a combination of size, accessibility and appearing to being broadly representative of run-of-mine material.

Phase 1 Programme Objectives

The key objectives of phase 1 of the trial mining operation were:

- Determine the optimum crushing methodologies to maximise the liberation of emeralds from the host rock, whilst minimising damage to the emeralds.
- Determine the critical data for the design and construction of a trial mining plant capable of processing up to 10,000 tonnes or ore.

- Assess the relative viability of traditional hand sorting methods versus modern optical sorting alternatives for the recovery of emeralds from the processed ore.
- Recover a sample of emeralds of a sufficient quantity to enable a commercial appraisal and valuation of Gravelotte emeralds to be made.

How was the Crushing Testing carried out?

Phase 1 of the trial mining programme tested both jaw and SAG crushing to determine the optimum method to maximise liberation of the emeralds, minimise damage to the emeralds, and provide a uniform ore fraction size for efficient recovery of the emeralds.

The ore material from the dumps was stockpiled and then crushed using a mobile jaw crushing plant. The crusher's sizing gap was operated at different settings (25mm and 50mm) to test which aperture would produce the better particle size distribution for sorting and recovery.

In addition, Magnum also commenced an onsite small-scale crushing operation to evaluate different crush sizes and methods to re-crush the oversize material. **This test work has identified the optimum crush size in which the maximum number of stones is liberated without excess breakage is in the range 9.5mm - 12.5mm.**

This data will be used to finalise the crushing circuit for a trial plant.

How was the Crushed Ore processed?

All of the historic ore processing at Gravelotte was done by hand sorting.

To test the efficiency of this method Magnum established on-site facilities to commence processing of the mined material in tandem with the various crushing tests.

As a result, the Company has trained eight employees to recover emeralds by hand washing and sorting the crushed material.

This hand sorting commenced using sorting tables with 1mm, 2mm and 3mm screens but this has now been changed to just 3mm screens as the sub 3mm material is considered to have limited economic value.

The change to larger screens on all tables and natural improvement in methodology has led to a steady but slow increase in current daily throughput.

How many Emeralds were recovered?

As reported on 9 July 2018, the Phase 1 of the trial mining programme has treated at quarter end 256.6 tonnes of crushed dump material from four dumps and recovered 11,774.8 carats of emeralds.

This is an average recovered grade of 46 carats per tonne.

Dump No.	Material Treated to date	Recovered Emeralds	Average Grade
01	38.0 tonnes	132 carats	3.5 carats/tonne
25	46.9 tonnes	9,136 carats	194.9 carats/tonne
86	137.6 tonnes	2,337 carats	17.0 carats/tonne
100	34.1 tonnes	170 carats	5.0 carats/tonne

As would be expected from a mining exercise sourcing low grade and waste dumps, the recovered grade across the dumps is highly variable.

This means that prior to any exploitation of these dumps a detailed sampling programme will be required.

The positive however is that within these dumps there is material of high grade and as additional material is processed we will gain a more statistically robust understanding of what average grade the dumps may provide.



Photo 3: Partially cleaned emeralds ranging from 3.5 to 41.5 carats in weight and 5-25mm is size



Photo 4: Emeralds 3mm

Important Note

The average grade in carats is a measure of the quantity of emeralds per tonne but does not necessarily represent the number of carats per tonne that have economic value. Emeralds, in common with other precious stones such as diamonds, rubies and sapphires for example, exhibit a broad range of characteristics peculiar to each stone. As a consequence, the value of each stone can vary considerably. As previously reported a prime objective of the trial mining programme is to generate a sufficient parcel of emeralds that will allow the Company to market to a range of buyers to determine a ROM average value per carat for Gravelotte emeralds.



Photo 5: Hand washing and sorting

What did we learn from the Processing during Phase 1 of the Programme?

A review of operating performance has shown that hand sorting is significantly slower than anticipated, and our external consultants have recommended the evaluation of an optical sorter for emerald concentration.

Optical Sorters test work

Optical sorters are widely used in precious stone recovery with the key parameters for successful recovery being colour calibration, moisture content and consistent feed size.

The Company has undertaken test work during the quarter with optical sorting manufacturers and this work will ramp up further during the September quarter.

This work has highlighted the need for fine-tuning to clarify issues around uniformity of particle size, moisture content and washing of material in order to maximise the recovery of both liberated and host rock-attached emeralds.

The optical sorting trials to be undertaken by various optical sorting manufacturers will focus on the customisation of the sorter's various parameters to suit the Gravelotte Project requirements.

Two 250kg samples of representative material have been sent to Europe for trials with two manufacturers.

There have been unfortunate delays however in having the European Optical sorter test work commence as a result of customs protocols, a backlog of test work, and the European summer holiday season. Magnum has most recently been advised that test work with one manufacturer will commence in early August 2018 and the Company is trying to finalise scheduling of the test work with the alternate manufacturer.

The Company has been assessing a third optical sorting machine during the June quarter and significant progress has been made in understanding how best to sort Gravelotte material. The Company is endeavouring to finalise an agreement to rent this machine for a three month period to allow onsite assessment of the sorter in a practical environment.

The Company is firmly convinced that an optical sorter to concentrate the material is the best way to proceed, and that identifying a sorter to specifically sort Gravelotte material is achievable.

Phase 2

Phase 2 of the trial mining programme will involve the mining and processing of around 8,000 tonne of hard rock from the existing pits at Cobra (north and south) and Discovery.

The initial processing of this material, together with the balance of the material sourced in Phase 1 will be through the proposed trial mining plant.

Subject to successful testing the final processing of this material will be by optical sorting.

Proposed Trial Mining Processing plant design

The current treatment methodology employed on-site is for the ore to be washed over a 3mm screen to remove the minus 3mm material and clean up the ore for hand sorting and recovery.

In a positive implication for the potential commercial operation, the testing to date indicates that a significant percentage of the crushed ore reports to the minus 3mm fraction which, even when emerald bearing, has little to no commercial value.

This has highlighted the importance of a trommel to wash the ore to remove the fine material and hence the volume of ore to be sorted which in turn will maximise the utilisation and efficiency of an optical sorter.

The trial mining plant proposed under Phase 2 of the trial mining programme will be designed to recover and re-use all water used in the Trommel washing operation.

The trial mining plant will also require sizing of various ore fractions to accommodate maximum efficiency parameters of the optical sorter.

Assuming a single shift operation on a 5 day week, the trial mining plant has been designed to treat 2,000 tonnes of ROM (“Run of Mine”) per month.

In this regard plant specifications have been completed and the Company is currently assessing the design and specifications to ensure they are appropriate for a trial mining plant.

In tandem the Company is scoping various service providers for indicative pricing and timing.

Phase 2 of the trial mining programme will commence once the processing plant has been constructed. A more precise timetable will be provided once costings are available.

Looking Forward

During the September quarter Magnum will advance Gravelotte by undertaking the following:

- Both on-site and off-site testing of optical sorter units utilising Gravelotte ore,
- Finalising costings for the construction of the proposed trial mining plant
- Continue crushing tests to confirm initial testing results
- Evaluate exploration potential of Gravelotte lease utilising data from historic drill holes

Cloncurry East Project, Queensland, Australia

Magnum’s Cloncurry East project consists of two tenements groups which lie between 10-20 kilometres east of Cloncurry in North West Queensland. The project lies within the highly mineralised Mt Isa Eastern succession of rocks with nearby mining operations and advanced projects including Ernest Henry (Cu-Au), Monakoff (Cu-Au-Pb-U), Great Australia (Cu-Au), Rocklands (Cu-Au) and Dugald River (Zn-Pb-Ag).

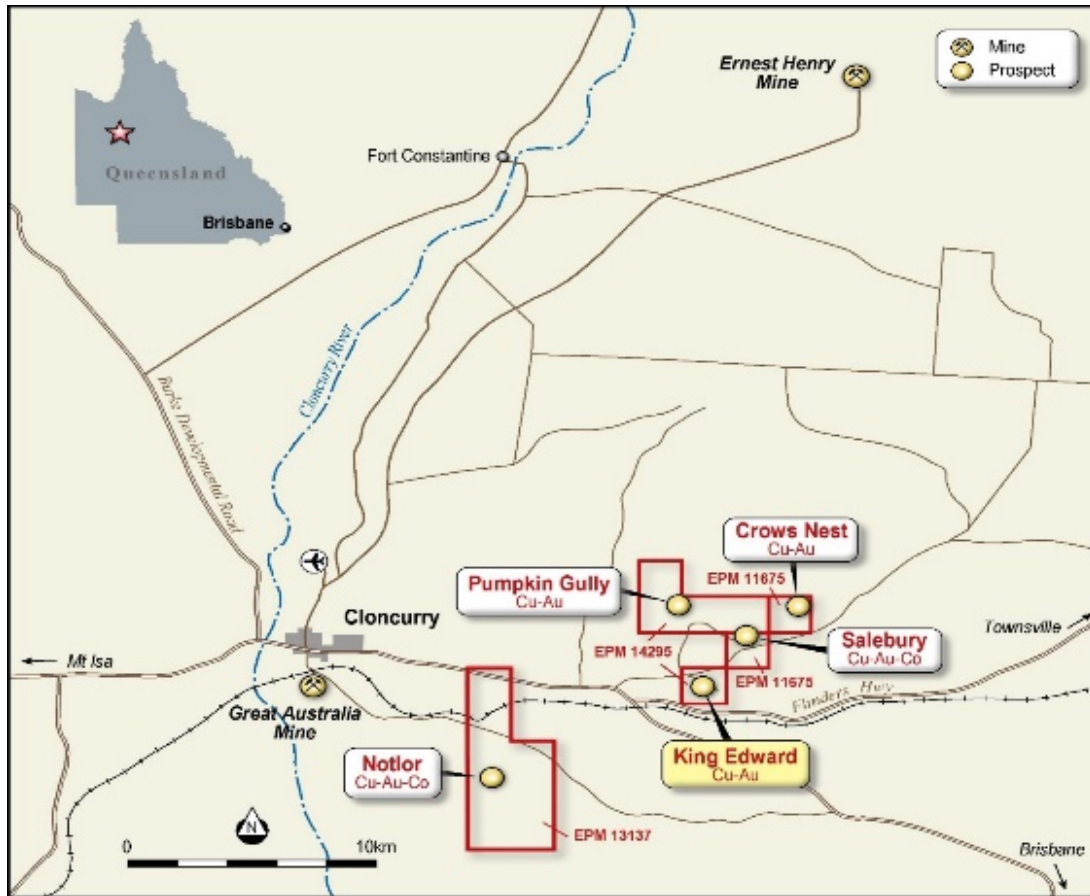


Figure 2: Cloncurry East Project: Location of EPM's

The Cloncurry East project is at an advanced stage of exploration and is considered to be highly prospective for iron oxide copper-gold ("IOCG") +/- cobalt mineralisation and variants of this style of mineralisation.

Background

The Cloncurry East Project ("CEP") is a farm in between Magnum Mining and Exploration Ltd ("Magnum"), and Exco Resources Ltd ("Exco") and Copperchem Limited ("CCL"). Together Exco and CCL form the CopperChem Group or "CCG".

The tenements are Exploration Permits for Minerals ("EPM") comprising EPM13137 containing the Notlor Prospect (held by CCL), EPM11675 containing the Salebury Deposit (held by Exco) and EPM14295 which contains the King Edward, Pumpkin Gully and Crow's Nest Prospects (held by Exco).

Pursuant to the terms of the farm-in, Magnum can earn a 50% equity stake in the CEP by expending \$2 million over a three-year period with a minimum of \$350,000 to be expended in year one. Magnum can withdraw from the farm-in at any time after its year one expenditure obligation has been fulfilled.

The Company can earn an additional 25% equity stake in the CEP through the expenditure of an additional \$2 million in year four. CCG retains the right to claw back to 50% ownership in consideration of the payment of \$2.66 million to Magnum.

Work to Date

Magnum has previously announced the results from the drilling programme completed over the Cloncurry East Project.

These results included two very encouraging intersections within the Notlor prospect:

- MNRC 009 returned **78 metres @ 1.36% Cu, 0.55g/t Au and 0.13% Co** from 22m to end of hole (100m). This intersection included **48m @ 1.78% Cu, 0.66g/t Au and 0.19% Co** from 22m.
- MNRC 010 returned **30 metres @ 0.81% Cu, 0.37g/t Au and 0.27% Co** from 60m. This intersection included **18m @ 0.92% Cu, 0.4g/t Au and 0.42% Co** from 66m, with a peak two-metre sample within this intersection assaying an outstanding **1.38% Co**.

At the King Edward prospect only two holes were drilled with MNRC 014 having the following intersection:

- **12m @ 1.92% Cu and 2.78g/t Au** from 36m, including **8m @ 2.76% Cu and 4.06g/t Au** from 36m.
- this zone had a peak interval of **2m @ 9.98% Cu and 14.8g/t Au** from 42m downhole depth.

Notlor Metallurgical test work

During the quarter Magnum submitted two sample from the Notlor drilling for metallurgical testing.

Results from Composite sample 1 have been received.

These results are very encouraging for the production of a Cu-Au-Co concentrate but further work needs to be undertaken to ascertain how the Cobalt can be best recovered from the concentrate.

ASSAY DATA

Product	Mass (g)	Assays					
		As (%)	Au (g/t)	C-org (%)	Co (%)	Cu (%)	S2- (%)
Pre-float Con	91.6	0.15	3.10	0.36	0.17	29.3	34.4
Rougher Con 1	77.6	0.47	4.99	0.18	0.62	10.2	44.7
Rougher Con 2	101.1	0.55	4.62	0.18	0.69	10.6	43.6
Rougher Con 3	74.3	1.14	5.65	0.24	1.08	11.6	40.7
Rougher Con 4	40.8	1.31	5.75	0.27	1.21	9.70	38.2
Flotation Tail	1605.3	0.12	0.41	0.12	0.10	0.36	1.16
Calc. Head Grade	1990.7	0.22	1.23	0.14	0.21	3.21	8.78
Head Assay		0.22	1.05/1.15	0.09	0.2	3.20	8.84

CUMULATIVE RECOVERY

Product	RECOVERY TO FLOAT CON (%)						
	Mass	As	Au	C-org	Co	Cu	S2-
Pre-float con	4.6	3.1	11.6	11.5	3.7	42.0	18.0
Rougher Con 1	8.5	11.5	27.4	16.4	15.2	54.5	37.9
Rougher Con 1-2	13.6	24.2	46.4	22.7	31.9	71.2	63.1
Rougher Con 1-3	17.3	43.6	63.6	28.9	51.0	84.7	80.4
Rougher Con 1-4	19.4	55.9	73.1	32.8	62.8	90.9	89.3

Looking Forward

Magnum is reviewing the best course of action with regards the Cloncurry East project. The positives are we have confirmed the potential of Notlor and there is a significant Cu-Au intersection at King Edward which requires follow up drilling.

Whilst it is doubtful that Cloncurry East can now host a Cu-Au resource of greater than 10 million tonnes (which was the reason the joint venture was initiated) the historic exploration and the exploration by Magnum has still nevertheless outlined significant resource potential.

CORPORATE

On 18 April 2018 the Company announced that 11,450,000 ordinary Magnum shares (**Plan Shares**), originally issued pursuant to the terms of the Magnum Employee Share Plan (the **Share Plan**), have been sold on-market, in accordance with the terms of the Share Plan. The sale of the Plan Shares raised approximately \$580,195, which will be used by Magnum for general working capital purposes.

EXPLORATION INTERESTS

The following information is provided in accordance with ASX Listing Rule 5.3 for the quarter ended 30 June 2018:

1. Listing of tenements held:

Location	Project	Tenement Type	Number	Interest	Status
Limpopo Province, South Africa	Gravelotte	Mining Right	LP 153 CMR	74%	Granted
Limpopo Province, South Africa	Gravelotte	Prospecting Right	LP 30/5/1/1/3/2/1/204PR	74%	Granted
Kalgoorlie Boulder, Western Australia	Lake Rebecca	Exploration Licence	E31/1172	100%	Application pending grant



No tenements were acquired or disposed of during the quarter.

A handwritten signature in black ink that reads "G. Button". The signature is written in a cursive, flowing style.

GRANT BUTTON
Chief Executive Officer/Joint Company Secretary

Further information please contact:

Magnum Mining and Exploration Limited
Grant Button
+61 8 9474 2956
email: info@mmel.com.au

Competent Persons Statement

The information in this announcement that relates to Exploration Results and Mineral Resources complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and has been compiled and assessed under the supervision of Mr Howard Dawson, Non-Executive Director of Magnum Mining and Exploration Limited. Mr Dawson is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Dawson consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practices for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in Annexures A and B.

THIS IS ANNEXURE A OF 7 PAGES

JORC CODE, 2012 EDITION – TABLE 1 REPORT TEMPLATE – GRAVELOTTE EMERALD PROJECT

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> • <i>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.</i> • <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> • <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • The dumps were sampled using a front end loader and an excavator to take a whole cut across the centre of the dump. • The excavations were supervised by a geologist to ensure that only dump material was sourced. • 100% of the material excavated was then sent to a stockpile for processing.
Drilling techniques	<ul style="list-style-type: none"> • <i>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).</i> 	<ul style="list-style-type: none"> • Not applicable
Drill sample recovery	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Not applicable
Logging	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • The samples were not logged.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged. 	
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> • If core, whether cut or sawn and whether quarter, half or all core taken. • 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. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • 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. • Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> • 100% of the excavated material was stockpiled according to dump number. • 100% of the material was then weighed and then 100% of the material was then processed by dump number. • Processing was by crushing and then washing 100% of the crushed sample and then wet screening through a 3mm mesh of 100% of the crushed sample. The remaining sample was then hand sorted for visual determination and recovery of any emeralds.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> • 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 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. 	<ul style="list-style-type: none"> • No assays were carried out. • For emerald count the sample was crushed, washed, screened and then hand sorted. • For quality control all sorters underwent at least 20 hours of training and were supervised whilst sorting.
Verification of sampling and assaying	<ul style="list-style-type: none"> • The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> • The excavations were supervised by a Geologist.
Location of data points	<ul style="list-style-type: none"> • 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. • Specification of the grid system used. • Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> • Sample locations are the midpoint of the dumps and were recorded in latitudes and longitudes by GPS and plotted on base maps at site.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> Not applicable, this programme was simply to source material to test crushing, screening and processing (hand sorting) techniques.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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. 	<ul style="list-style-type: none"> Not applicable.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> All processing was supervised by the onsite Geologist or senior site manager.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> Not applicable.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	<ul style="list-style-type: none"> Mining Right, Portion 7 of the Farm Farrell 781LT, LP30/5/1/2/2/0153MR, located 2km from Gravelotte in the Phalaborwa magisterial district of South Africa. The Company has a 74% ownership of the project with the remaining portion owned by Black Economic Empowered (“BEE”) shareholders to ensure compliance with South African BEE ownership requirements.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Much of the historic exploration and production results by previous mine owners cannot be located. Magnum has engaged consultants to assemble and digitize as much data as can be sourced.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> Hydrothermal breccia.
Drill hole Information	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> eastings and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in 	<ul style="list-style-type: none"> Magnum is not using or reliant on previous exploration as historic data base is too incomplete.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o 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. 	
Data aggregation methods	<ul style="list-style-type: none"> • 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. • 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. 	<ul style="list-style-type: none"> • Not applicable.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> • These relationships are particularly important in the reporting of Exploration Results. • 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'). 	<ul style="list-style-type: none"> • Not applicable.
Diagrams	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Not applicable.
Balanced reporting	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Not applicable.
Other substantive exploration data	<ul style="list-style-type: none"> • Other exploration data, if meaningful and material, 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. 	<ul style="list-style-type: none"> • Not applicable.

Criteria	JORC Code explanation	Commentary
Further work	<ul style="list-style-type: none"> The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	<ul style="list-style-type: none"> Not applicable.

Section 5 Estimation and Reporting of Diamonds and Other Gemstones

(Criteria listed in other relevant sections also apply to this section. Additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.)

Criteria	JORC Code explanation	Commentary
Indicator minerals	<ul style="list-style-type: none"> Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory. 	<ul style="list-style-type: none"> Not applicable.
Source of diamonds	<ul style="list-style-type: none"> Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment. 	<ul style="list-style-type: none"> Emeralds, introduction into breccia of Cr rich solutions through hydrothermal activity
Sample collection	<ul style="list-style-type: none"> Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose (eg large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution). Sample size, distribution and representivity. 	<ul style="list-style-type: none"> Historic waste and low grade ore dumps. Dumps cannot be considered representative.
Sample treatment	<ul style="list-style-type: none"> Type of facility, treatment rate, and accreditation. Sample size reduction. Bottom screen size, top screen size and re-crush. Processes (dense media separation, grease, X-ray, hand-sorting, etc). Process efficiency, tailings auditing and granulometry. Laboratory used, type of process for micro diamonds and accreditation. 	<ul style="list-style-type: none"> On site treatment facilities, supervised onsite geologist and senior management personnel. Crushing, washing, screening, hand sorting.
Carat	<ul style="list-style-type: none"> One fifth (0.2) of a gram (often defined as a metric carat or MC). 	<ul style="list-style-type: none"> 1 gram = 5 carats
Sample grade	<ul style="list-style-type: none"> Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume. The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if 	<ul style="list-style-type: none"> Determined by weight of emeralds recovered from each sample.

Criteria	JORC Code explanation	Commentary
	<p><i>accompanied by a volume to weight basis for calculation.</i></p> <ul style="list-style-type: none"> <i>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).</i> 	
Reporting of Exploration Results	<ul style="list-style-type: none"> <i>Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.</i> <i>Sample density determination.</i> <i>Per cent concentrate and undersize per sample.</i> <i>Sample grade with change in bottom cut-off screen size.</i> <i>Adjustments made to size distribution for sample plant performance and performance on a commercial scale.</i> <i>If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.</i> <i>The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.</i> 	<ul style="list-style-type: none"> <i>Only emeralds 3mm or greater reported.</i>
Grade estimation for reporting Mineral Resources and Ore Reserves	<ul style="list-style-type: none"> <i>Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.</i> <i>The sample crush size and its relationship to that achievable in a commercial treatment plant.</i> <i>Total number of diamonds greater than the specified and reported lower cut-off sieve size.</i> <i>Total weight of diamonds greater than the specified and reported lower cut-off sieve size.</i> <i>The sample grade above the specified lower cut-off sieve size.</i> 	<ul style="list-style-type: none"> <i>Not applicable</i>
Value estimation	<ul style="list-style-type: none"> <i>Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.</i> <i>To the extent that such information is not deemed commercially sensitive, Public Reports should include:</i> <ul style="list-style-type: none"> <i>diamonds quantities by appropriate screen size per facies or depth.</i> <i>details of parcel valued.</i> <i>number of stones, carats, lower size cut-off per facies or depth.</i> 	<ul style="list-style-type: none"> <i>Not applicable</i>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <i>The average \$/carat and \$/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.</i> <i>The basis for the price (eg dealer buying price, dealer selling price, etc).</i> <i>An assessment of diamond breakage.</i> 	
<i>Security and integrity</i>	<ul style="list-style-type: none"> <i>Accredited process audit.</i> <i>Whether samples were sealed after excavation.</i> <i>Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.</i> <i>Core samples washed prior to treatment for micro diamonds.</i> <i>Audit samples treated at alternative facility.</i> <i>Results of tailings checks.</i> <i>Recovery of tracer monitors used in sampling and treatment.</i> <i>Geophysical (logged) density and particle density.</i> <i>Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.</i> 	<ul style="list-style-type: none"> On site security provided by senior on site management.
<i>Classification</i>	<ul style="list-style-type: none"> <i>In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.</i> 	<ul style="list-style-type: none"> Not applicable.

THIS IS ANNEXURE B OF 5 PAGES

JORC CODE, 2012 EDITION – TABLE 1 REPORT – CLONCURRY EAST PROJECT

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<i>Sampling techniques</i>	<p><i>Nature and quality of sampling (e.g. 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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p> <p><i>In cases where ‘industry standard’ work has been done this would be relatively simple (e.g. ‘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 (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	<p>Reverse Circulation drilling was used to collect one metre bulk samples via a cyclone mounted on the drill Rig. A 2-3kg sample was also obtained via a splitter mounted on the rigs cyclone for each metre drilled. six metre composite samples were collected from the one metre split samples by spearing the 1m splits and were sent to Australian Laboratory Services, a reputable company with many laboratories operating worldwide. Where Cu is above 0.2% in the composite samples the intervals will be submitted for further analysis with duplicates standards and blanks inserted for each drill hole. Analysis is by fire assay using a 50 g charge for gold, and copper and cobalt will be assayed as part of a multi element suite. The multi element analysis is by mixed acid digest with HF and analysis by ICPAES. Ore grade samples are analysed by four acid digest and ICPAES finish.</p>
<i>Drilling techniques</i>	<p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</i></p>	<p>Reverse Circulation drilling was conducted by a reputable contractor (Tulla Drilling) based in Mt Isa using a shramm drill rig with on board and auxiliary compressor to keep samples dry in the case of water in the hole. The vast majority of samples have been dry. Several holes were terminated early where excess water prevented collection of representative dry samples/</p>
<i>Drill sample recovery</i>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p>RC sample recovery is good with no issues encountered due to water as holes encountering excess water were terminated. Samples were dry and recovery good with uniform sample sizes.</p> <p>Fine and coarse samples are all recovered in the bulk samples collected in large plastic bags. The fines of the sieved geological chip sampling has been collected to ascertain if there is any bias in the fine material but this is not expected to be the case as samples are dry and recovery is good.</p>
<i>Logging</i>	<p><i>Whether core and chip samples have been geologically and</i></p>	<p>RC chips are logged from a representative sample speared from the one</p>

Criteria	JORC Code explanation	Commentary
	<p><i>geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p>metre samples. Due to the small size of these geological samples the logging is qualitative and visual estimates are therefore unreliable and laboratory analysis only will be reported. The logging will include noting whether mineralization is visually present.</p>
<p><i>Sub-sampling techniques and sample preparation</i></p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>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.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>A bulk sample at one metre intervals is collected via a cyclone on the rig with an on board splitter collecting a further representative sample of approximately 2kg per metre. These samples are then speared to produce composite samples of six metres. If these samples are anomalous (generally greater than 0.1% copper or 0.05 g/t gold) then the one metre splits will be sent to the lab for further assay using approximately 2 kg for each sample.</p>
<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>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 derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>Australian Laboratory Services, a reputable company with many laboratories operating worldwide will be analyzing the samples. Where Cu is above 0.1% in the composite samples the intervals will be resampled at one and two metre intervals and submitted for further analysis with duplicates standards and blanks inserted for each drill hole. Analysis will be by fire assay using a 50 g charge for gold, and copper and cobalt will be assayed as part of a multi element suite. The multi element analysis will be by mixed acid digest with HF and analysis by ICPAES. Ore grade samples will be analysed by four acid digest and ICPAES finish.</p>
<p><i>Verification of sampling and assaying</i></p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p>Composite and one or two metre sub samples will be compared for consistency but the shorter intervals will take priority. If there is a material discrepancy the intervals will be resampled.</p> <p>Data will be collected and entered into a digital file.</p>
<p><i>Location of data points</i></p>	<p><i>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.</i></p> <p><i>Specification of the grid system used.</i></p>	<p>Holes were surveyed by GPS with sub metre accuracy</p> <p>Drill coordinates and azimuths are GDA_94 MGA zone 54</p> <p>Any Downhole surveys will have magnetic azimuths but these will be</p>

Criteria	JORC Code explanation	Commentary
	<i>Quality and adequacy of topographic control.</i>	converted to grid.
<i>Data spacing and distribution</i>	<i>Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied.</i>	At Salebury previous drilling has been completed on nominal north-south sections with 50m spacing. • A total of 6 Diamond holes and 87 RC holes intersect the mineralisation. At Notlor Drill Spacing is variable but generally on lines 100m apart over a 2km strike length with approximately 20m spacing's in several zones of higher grade mineralization.
<i>Orientation of data in relation to geological structure</i>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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.</i>	Drill lines are generally at 90 degrees to the regional geological strike, and have both angled (60 degrees) and vertical holes. In areas of high grade mineralization holes have been drilled in multiple directions to confirm geometry of mineralization.
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	Reputable Labs and transport companies will be used and field sampling is being carried out by trusted and experienced contractors.
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	A high level audit of the interpretation, compositing, top cuts, estimations, modelling parameters and classifications was carried out by Cube Consulting for the Salebury Resource Estimate. No matters were noted that would impair the validity of the Mineral Resource Estimate.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<i>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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i>	The drilling and geophysical data were collected within EPM 11675 EPM13137 and EPM14295 which are 100% owned by Exco Resources Ltd. A registered native title claim exists over EPM 25389 (Mitakoodi and Mayi People #5). Native title site clearances were previously conducted at each area drilled. Conduct and Compensation Agreements are in place with the relevant landholders. The Abovementioned EPMs are secure and compliant with the Conditions of Grant. There are no known impediments to operate in the area.
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	Prior to Exco's drilling and geophysical surveys, previous exploration was carried out by a number of companies including RC and Percussion Drilling at the Notlor Prospect. This and other known drilling data is contained within ExcOs database. Open file airborne magnetic surveys also cover the area of these EPMs
<i>Geology</i>	<i>Deposit type, geological setting and style of mineralisation.</i>	Within the eastern portion of Mt Isa Block targeted mineralisation styles include: • iron oxide Cu-Au (IOCG) mineralisation and variants of this style (e.g. Ernest Henry, Eloise), as well as sediment-hosted Zn+Pb+Ag deposits e.g. Mt Isa, Cannington.
<i>Drill hole Information</i>	<i>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.</i>	Collar easting and northing plus drill hole azimuth, dip and final depth for Holes will be advised when results are released. No data deemed material to the understanding of the exploration results have been excluded from this document.
<i>Data aggregation methods</i>	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade</i>	Regarding previous drilling the weighted average of the mineralised intervals was calculated by multiplying the assay of each drill sample by the length of each sample, adding those products and dividing the product sum by the entire downhole length of the mineralised interval. No

Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>minimum or maximum cut-off has been applied to any of the assay data presented in this document.</p> <p>No short lengths of high-grade copper-gold mineralisation have been aggregated with longer lengths of low-grade copper-gold mineralisation. All assays included in the quoted weighted average for the mineralised intervals were one or two metre lengths.</p> <p>No metal equivalent values have been reported.</p>
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></p>	<p>Drill holes have been drilled as close as possible to perpendicular to the regional geological strike and particularly the strike of mineralized zones or geophysical target trends.</p> <p>The geometry of the mineralisation with respect to the drill hole angle is uncertain in some areas with further drilling done to resolve this.</p> <p>All depths and intervals referenced are downhole depths.</p>
<p><i>Diagrams</i></p>	<p><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported</i></p> <p><i>These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></p>	<p>The locations of the EPMs and prospects are shown in Figure 1 in the body of this document.</p>
<p><i>Balanced reporting</i></p>	<p><i>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.</i></p>	<p>Previously reported selective drill hole results are stated as being higher grade and some of the better results. The resource has been reported which indicates the overall grade of the mineralized zone.</p>
<p><i>Other substantive exploration data</i></p>	<p><i>Other exploration data, if meaningful and material, 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.</i></p>	<p>No other substantive data has been omitted in the context of this report. The extensive data is currently being reviewed and any material observations will be reported in due course.</p>
<p><i>Further work</i></p>	<p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<p>The Exploration program is currently in progress but has paused due to the northern monsoon season, and when resumed will probably include further geophysics, drilling and metallurgical test work after results are fully reviewed and interpreted.</p>