CASSINI
RESOURCES LIMITED

ASX Release (CZI)
29 September 2015

NICKEL-BEARING MASSIVE SULPHIDES INTERSECTED AT ESAGILA

HIGHLIGHTS

- **Massive and disseminated Ni-Cu-PGE sulphide mineralisation intersected at Esagila**
- **Elevated nickel in basal massive sulphides**
- **Broad zone of disseminated copper mineralisation over massive sulphides**
- **Assays support geological model that predicts nickel-rich mineralisation at depth**
- **Esagila Mineralisation is continuous over 1,300m, only 6 effective drill holes**
- **Follow-up drilling to target Ni-rich mineralisation**

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to provide assay and down-hole EM surveying results from diamond hole CZD0010 at the Esagila Prospect, located within its 100% owned West Musgrave Project ("Project") in Western Australia.

Massive Sulphides at Esagila

The Company is excited by the best massive nickel sulphide intersection outside of the Nebo-Babel deposits since acquiring the Project in April 2014. CZD0010 returned 1.1m @ 0.70% Ni and 0.95% Cu from 360.3m within the massive sulphide zone (Figure1).

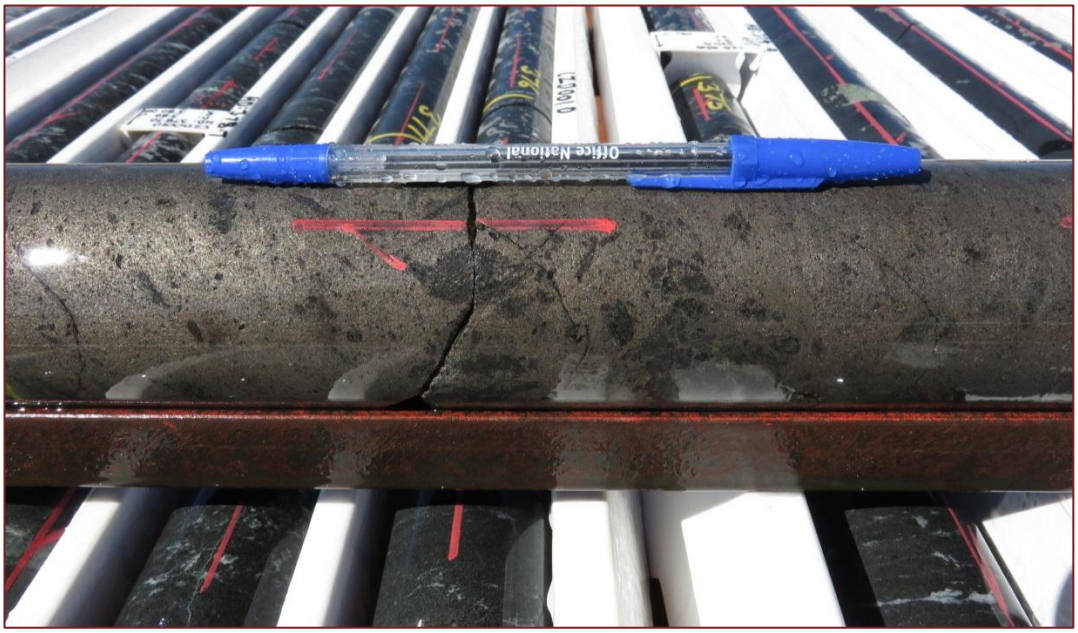

Figure 1. Nickel-bearing massive sulphides at 361.2m.

Massive sulphides occur at the base of a broad zone of disseminated and stringer chalcopyrite-pyrrhotite mineralisation that returned 15.7m @ 0.61% Cu and 0.12% Ni from 346.0m (Figure 2).

Complete hole details can be found in Table 1.

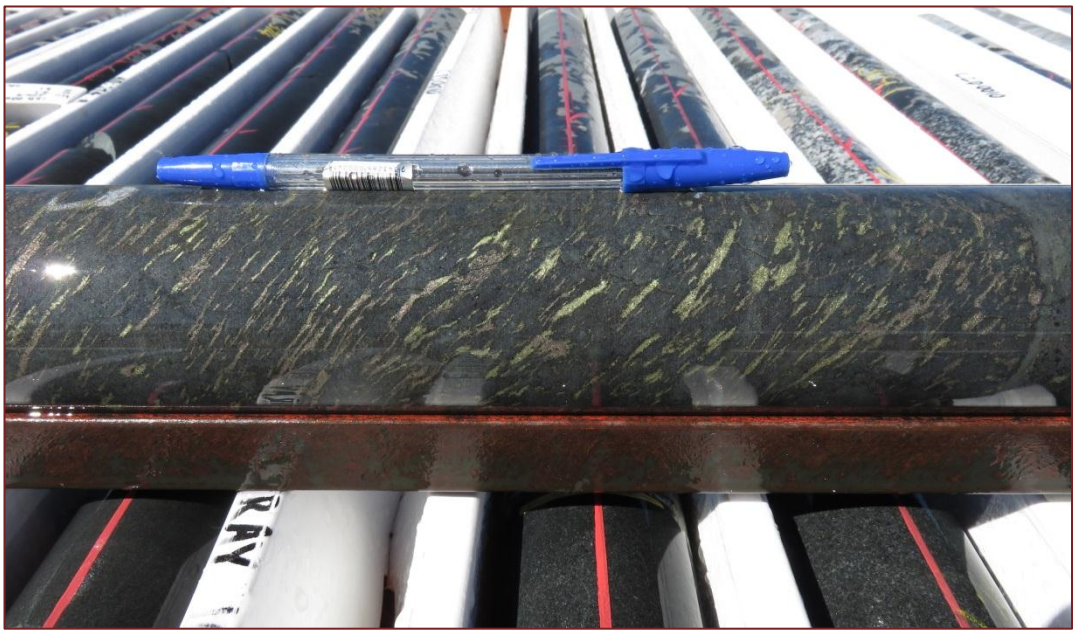

Figure 2. Chalcopyrite and pyrrhotite stringers at 359.7m

Managing Director Comment

Managing Director, Richard Bevan, said "This is a very encouraging result in light of the early stage of work at Esagila. We have successfully shown that zones of massive sulphide exist outside those already known at Nebo-Babel and these results give us encouragement that we can discover new zones of high-grade nickel and copper mineralisation across the broader Project.

The recent drill program has successfully demonstrated the quality of the exploration targets at the Project, and our exploration strategy. We're confident that our ongoing exploration activities will deliver new discoveries that will complement a future mining operation at Nebo-Babel, and provide a step-change in value for the Company"

Detailed Description of Results

The Esagila Prospect is located only 4 km from the Succoth Prospect and are both interpreted as parts of the same mineralised intrusive complex that covers approx. 65km^2. Esagila was discovered in 2009 following surface electromagnetic (EM) surveys, but remains under-explored. CZD0010 targeted an untested EM conductor approximately 200m from historical hole WMN4001 which returned 14.7m @ 1.08% Cu (Figure 3).

Mineralisation is magmatic in origin and is hosted within taxitic and gabbronorite lithologies identical to those at the Succoth intrusion. The Esagila intrusion was emplaced at the contact between felsic gneiss and View Hill Amphibolite and so far has been defined over a strike length of at least 1,300m. The prospective intrusion has only been effectively tested by 6 diamond drill holes and there is an enormous scope to discover high-grade copper and nickel-rich mineralisation between the existing drill holes and/or at the down-dip and down-plunge extensions.

The recently developed nickel sulphide exploration model for Succoth-Esagila Complex predicts nickel-rich mineralisation at depth below large halo of copper and Pd-rich mineralisation (refer to ASX release

from 15 April 2015). This model is based on observations from a number of other large Ni-Cu sulphide systems such as Norilsk-Talnakh, Russia, Jinchuan, China, and Sudbury, Canada where similar Cu-Pd-rich mineralisation occurs above, genetically related Ni-rich sulphides. The style of mineralisation at Esagila conforms to the new exploration model and is an exciting development for the Company.

Modelling of new and historical down-hole and surface EM data shows multiple conductors at Esagila (Figure 4). High conductance plates are interpreted to represent massive sulphides below the disseminated Cu-rich mineralisation which is represented by medium conductance plates. The extent of high conductance plates in particular is constrained by the drill hole spacing and these may be extended both in down-dip and down-plunge directions with further drilling and down-hole EM surveying.

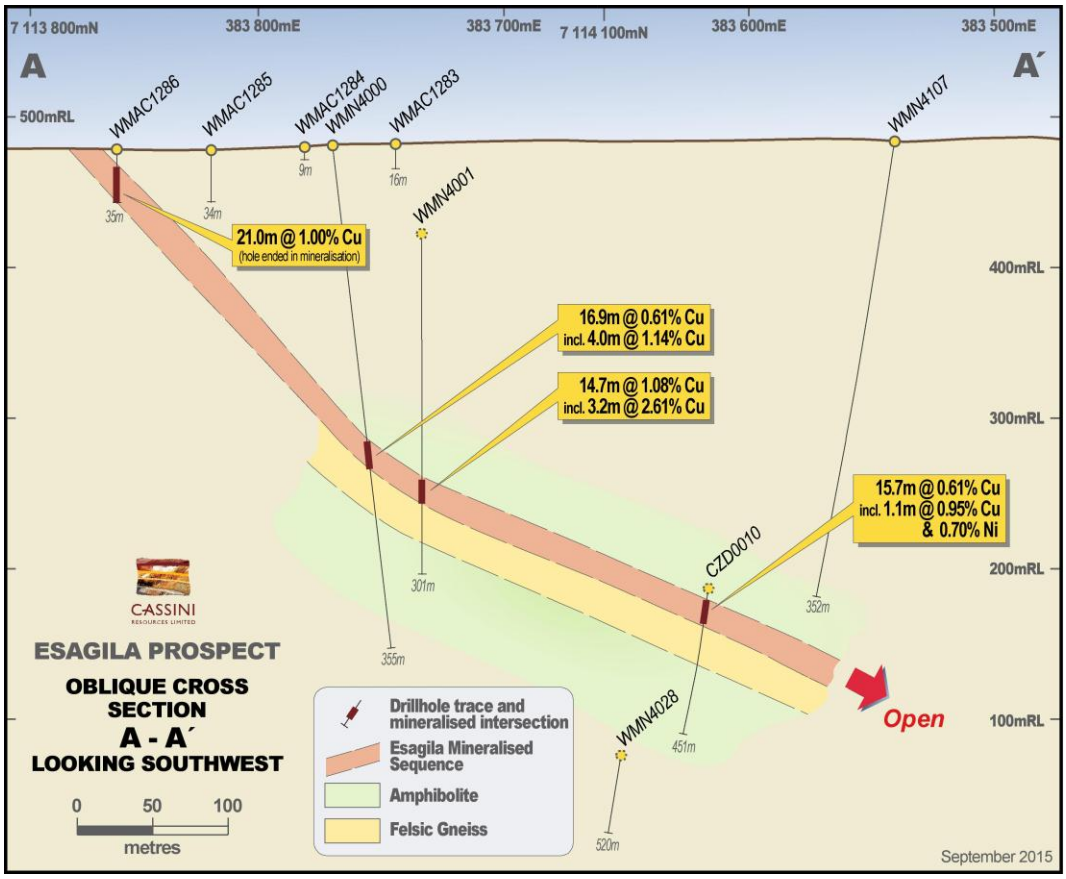

Figure 3. Long section of CZD0010 and adjacent drill holes

Table 1. Significant drill results (>0.4%Cu)

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	Intersection				
							From (m)	Width (m)	Cu %	Ni %	PGE g/t
CZC0010	383345	7114000	479	-60	070	450.7	346.0	15.7	0.61	0.12	0.09
						Including	360.3	1.1	0.95	0.70	0.15

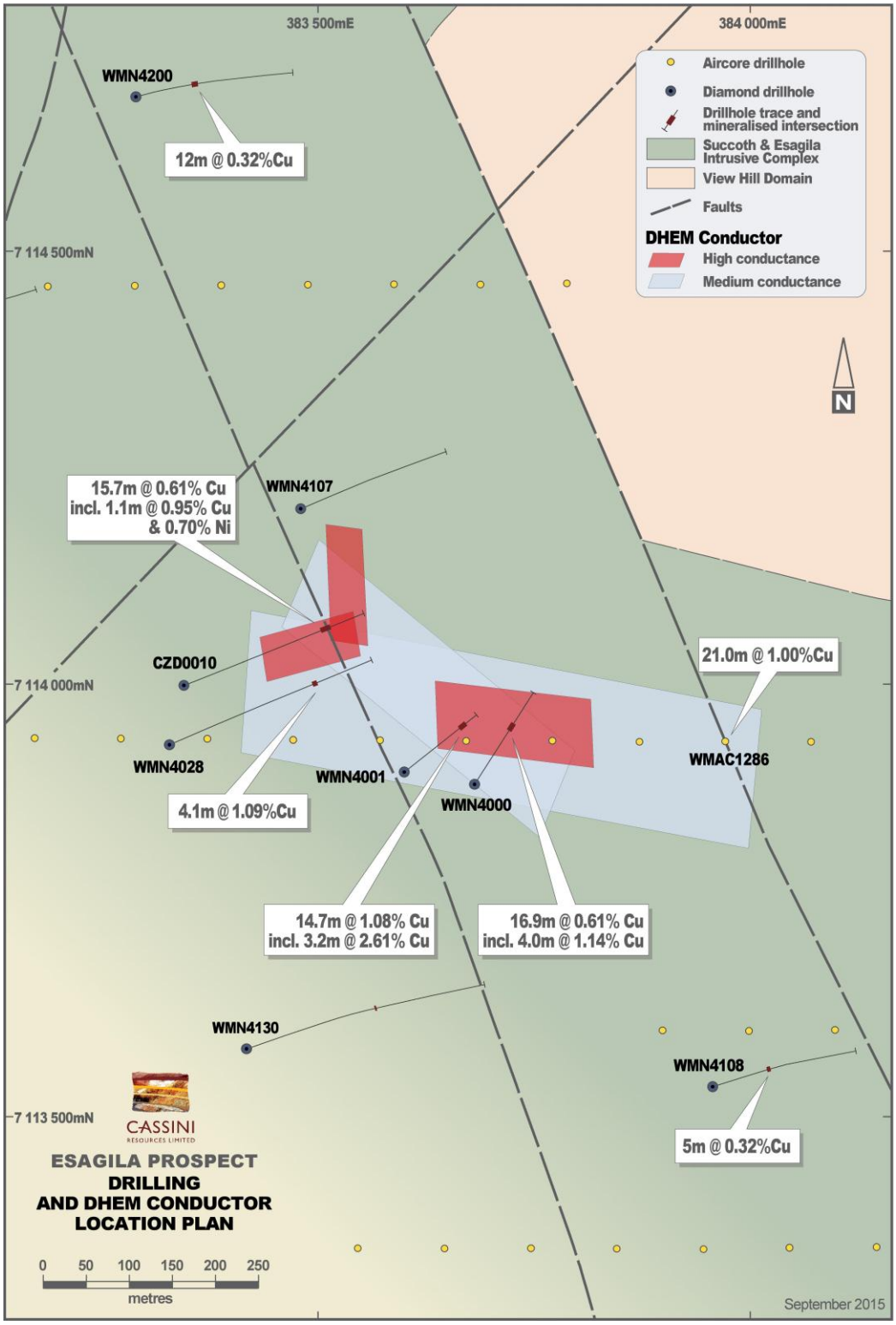

Figure 4. Plan of CZD0010 and historical drilling

Detailed microscope work confirms that nickel mineralisation is hosted in pentlandite (Ni sulphide) and not in pyrrhotite or silicates (Figure 5). The style of mineralisation found in CZD0010 is representative of what sulphide liquid fractionation process may produce, albeit massive sulphides are of low Ni tenor. However, the Company believes that these intercepts can be used as a vector towards higher grade, nickel-rich, massive sulphide mineralisation along strike or at depth.

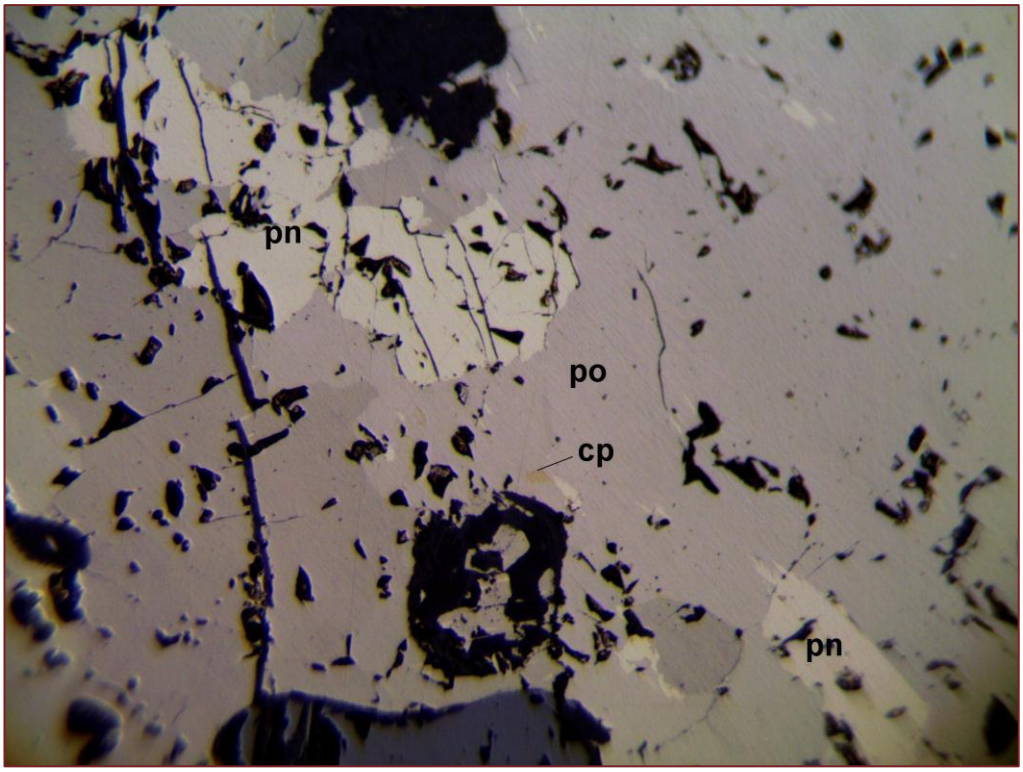

Figure 5. Photomicrograph of massive sulphide at 361.25m showing massive pentlandite (pn) and pyrrhotite (po) with trace chalcopyrite (cp). Field of view is 600µm.

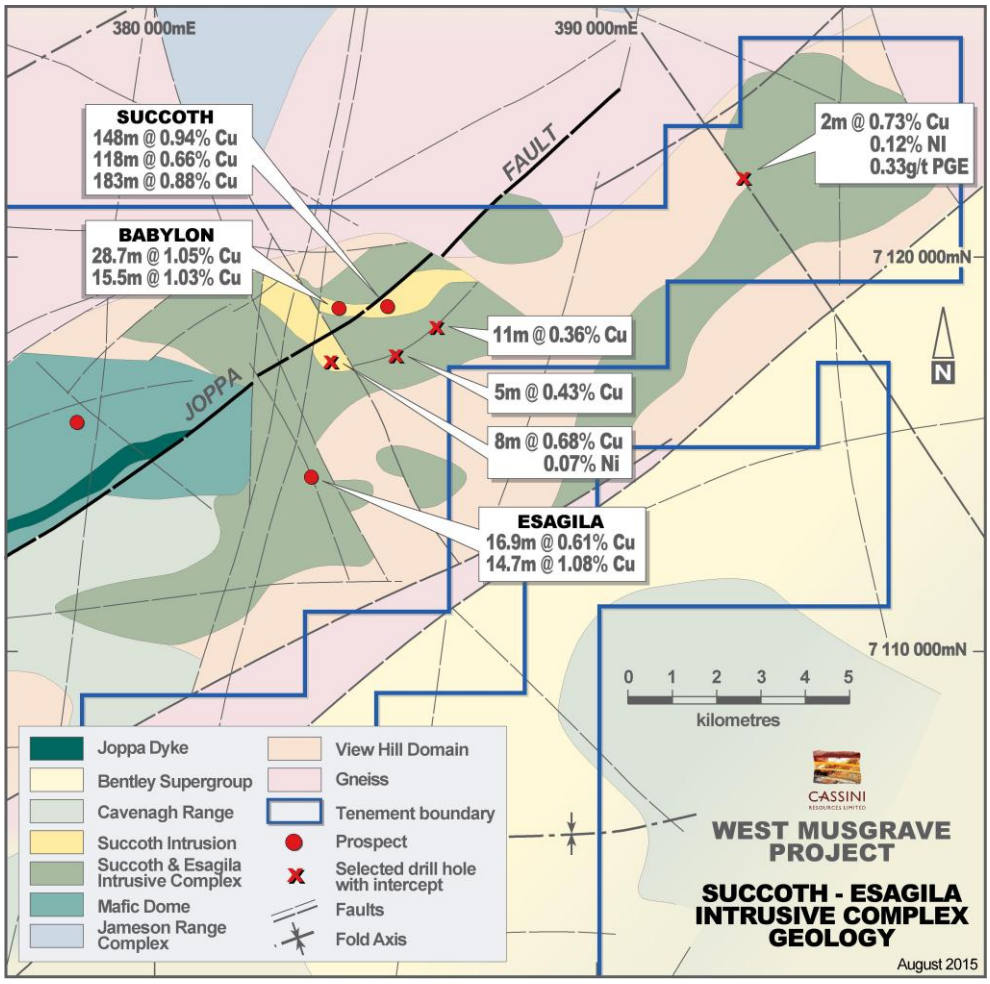

Figure 6. Regional targets and exploration highlights in the Succoth – Esagila Complex.

Final results from CZD0009 at One Tree Hill have also been received with no significant mineralisation, however the hole will assist with interpretation and follow-up targeting of CZD0008 which intersected narrow zones of massive chalcopyrite mineralisation with a strong off-hole conductor yet to be tested (refer to ASX release 15 September 2015).

For further information, please contact:

Richard Bevan
Managing Director
Cassini Resources Limited
Telephone: +61 8 6164 8900
E-mail: admin@cassiniresources.com.au

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled or reviewed by Mr Greg Miles, who is an employee of the company. Mr Miles is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Miles consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Company is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Mineral Resource Estimates and Exploration Results as reported in the market announcements dated 13 and 15 April 2015, continue to apply and have not materially changed.

ANNEXURE 1:

The following Tables are provided to ensure compliance with the JORC Code (2012) edition requirements for the reporting of the Exploration Results at the Esagila Prospect.

Section 1: Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
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 diamond drill holes were selectively sampled on an average of 1m intervals (range from 0.20m to 1.5m) through visually mineralised zones and confirmed with pXRF.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	The drill hole locations will be picked up by survey contractor at the completion of the drilling program, drill holes are currently surveyed by handheld GPS units. Sampling will be carried out under Cassini protocols and QAQC procedures as per industry best practice.
	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.	Diamond drilling was used to obtain approximately 1m core samples (ranging from 0.07m to 1.7m in length) from which approximately 3 kg will be pulverised (total prep) to produce a sub sample for analysis by mixed acid digest with an ICP/AES or ICP/MS finish (0.25 gram) for base metals, a FA/AAS finish (40 gram) for Au, Pt and Pd and a fused bead XRF for all other major and trace elements of interest.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic etc) and details (e.g. core diameter, triple of standard tube, depth of diamond tails, face-sampling bit or other type, whether core is orientated and if so, by what method, etc).*	Diamond drilling accounts for 100% of the drilling completed by Cassini and comprises NQ2, HQ3 and PQ diameter core samples. Two drill holes were completed for a total of 573.9m.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Overall recoveries are >95% and there has been no significant sample recovery problems.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Samples are routinely checked for recovery.
	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.	The massive sulphide style of the mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.
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.*	All core will be geologically logged and the level of understanding of these variables increases with the maturity of the prospect.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Cassini logging consistently records lithology, mineralogy, mineralisation, weathering, colour and other relevant features of the samples. Logging of core is both qualitative (e.g. colour) and quantitative (e.g. mineral percentages).

Criteria	JORC Code Explanation	Commentary
	The total length and percentage of the relevant intersections logged.	All drill core will be logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Half core will be sampled for intervals of NQ2 and HQ3 core. Quarter core will be sampled for intervals of PQ core.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Not applicable as not non-core.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond drill core samples follows industry best practice in sample preparation involving oven drying, followed by pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 90% passing 75 micron.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field QC procedures involve use of certified reference material (CRM) as geochemical standards, along with blanks and duplicates. The insertion rate of these averaged 1:20 with an increased rate in mineralised zones.
	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.	Quarter core field duplicate samples in HQ3 and NQ2 drill core represent 1-2% of total sampling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate for the rock type, style of mineralisation (disseminated sulphides), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements in the West Musgrave Project.
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.*	The analytical techniques used included a mixed acid digest multi element suite with ICP/AES or ICP/MS finish (0.25 gram) for base metals, a FA/AAS finish (40 gram) for precious metals and a fused bead XRF for all other elements of interest. The acids used are hydrofluoric, nitric, perchloric and hydrochloric acids, suitable for silica based samples. Total sulphur is assayed by fused bead XRF. These methods approach total dissolution of most minerals.
	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.	Hand held assay devices have not been reported.
	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.	Sample preparation for fineness were carried by the laboratory as part of their internal procedures to ensure the grind size of 90% passing 75 micron was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures. Certified reference materials, having a good range of values, were inserted blindly and randomly. Results highlight that sample assay values are accurate and that contamination has been contained. Repeat or duplicate analysis for samples reveals that precision of samples is within acceptable limits.
Verification of sampling and	*The verification of significant intersections by either*	The Exploration Manager has reviewed the drill core and the Technical Director of Cassini has

Criteria	JORC Code Explanation	Commentary
assaying	*independent or alternative company personnel.*	viewed photographs of core samples.
	The use of twinned holes.	To date Cassini has not twinned any drill holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data was collected using a set of standard Field Marshal templates on laptop computers using lookup codes. The information was sent to Geobase Australia Pty Ltd for validation and compilation into a SQL database server.
	Discuss any adjustment to assay data.	No adjustments or calibrations were made to any assay data.
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.*	Holes drilled to date by Cassini have been located with a Garmin hand-held GPS and are assumed to be accurate to ±5m. This is considered appropriate for the drill hole spacing. At the completion of the drill program, survey contractor will be employed to complete differential GPS surveying. Downhole surveys were completed approximately every 15m using a REFLEX EZ-TRAC gyroscopes. Stated accuracy is ± 0.35° in azimuth and ± 0.25° in inclination.
Data spacing and distribution	*Specification of the grid system used.*	The grid system for West Musgrave Project is MGA_GDA95, Zone 52.
	Quality and adequacy of topographic control.	The tenement package exhibits subdued relief with undulating hills and topographic representation is sufficiently controlled.
	Data spacing for reporting of Exploration Results.	Drill holes at Esagila target individual EM conductors and are not designed on a regular grid.
	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.	Not applicable as no Mineral Resource and Ore Reserve estimation procedure(s) and/or classifications have been applied.
	Whether sample compositing has been applied.	No.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	The drill holes are designed to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the conductor and associated mineralised zones.
	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.	To date, mineralisation orientation has been favourable for perpendicular drilling and sample widths are not considered to have added a sampling bias.
Sample security	*The measures taken to ensure sample security.*	Sample chain of custody is managed by Cassini. Samples for the West Musgrave Project are stored on site and delivered to Perth by recognised freight service and then to the assay laboratory by a Perth-based courier service. Whilst in storage the samples are kept in a locked yard. Tracking sheets tracks the progress of batches of samples.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No reviews to date.

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	*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.*	Esagila is located wholly within Exploration Lease E69/2201. Cassini entered into an agreement to acquire 100% of the leases comprising the West Musgrave Project (M69/0072, M69/0073, M69/0074, M69/0075, E69/1505, E69/1530, E69/2201, E69/2069, E69/2070, E69/2313, E69/2338), over which the previous operator retains a 2% NSR. The tenement sits within Crown Reserve 17614.
	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.	All tenements are in good standing and have existing Aboriginal Heritage Access Agreements in place. No Mining Agreement has been negotiated.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Previous exploration has been conducted by BHP Billiton, WMC Resources and Cassini Resources. The work completed by BHP Billiton and WMC is considered by Cassini to be of a high standard.
Geology	*Deposit type, geological setting and style of mineralisation.*	The project lies within the West Musgrave Province of Western Australia, which is part of an extensive Mesoproterozoic orogenic belt. The geology of Esagila appears broadly analogous to the Succoth Prospect, that is hosted in mafic intrusions of the Giles Complex (ca. 1080Ma) that has intruded into amphibolite facies mafic and felsic country rocks. Mineralisation is hosted within chonolithic gabbronorite intrusion and is expressed primarily as a broad zones of disseminated, chalcopyrite-rich sulphides and locally accumulations of matrix to massive sulphides along the basal contact.
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.*	Refer to the body of this report for significant intercepts pertaining to this announcement.
	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.	This information is not excluded. Refer to the body of this report for significant intercepts pertaining to this announcement.
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.*	Weighted averages for Esagila mineralisation were calculated using parameters of a 0.4% Cu lower cut-off, no minimum reporting length, no maximum length of consecutive internal waste and the minimum grade for the final composite of 0.4% Cu.
	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.	Short lengths of high grade results use a nominal 1% Cu lower cut-off, no minimum reporting length and 2m maximum interval dilution and the minimum grade of the final composite of 1% Cu.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable as no metal equivalent values are being stated.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	*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').*	Due to a lack of data points, mineralisation orientation at Esagila is poorly understood but core observations indicate mineralisation has been intersected obliquely and is gently dipping, hosted in amphibole altered gabbronorite. Mineralisation is generally intersected obliquely to true-width and approximations have been made based on geological interpretations.
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 in body of text.
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.*	All results are reported.
Other substantive exploration data	*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.*	All relevant exploration data is shown on figures, in text and Annexure 1.
Further work	*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.*	Cassini aims to test extensions to mineralisation intersected to date aswell as review other EM conductors for potential drilling. The scale of future programs has not been decided. All relevant diagrams and inferences have been illustrated in this report.