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**Capital Structure** 

Shares on Issue: 185,699,879 (TLM)

Options on Issue: 9,705,000 (Unlisted)

ASX Media Release - 31 July 2017

# Quarterly Activities Report June 2017

### **Highlights**

**Springfield Cu-Au Project** - (30% Talisman)

#### **Monty Mine Development**

- Regulatory approval received for Monty Project Mining Proposal and Mine Closure Plan in July 2017
- Commencement of box-cut development in July 2017
- Civils and earthworks contract awarded to Yagahong Alliance and commencement of on-ground development earthworks
- Mining contract for development and production awarded to Byrnecut Australia Pty Ltd
- Debt finance mandate executed with Taurus Funds Management

#### **Exploration Activities**

- Two of three planned deep diamond drill holes and associated DHEM surveys completed within the immediate vicinity of the known Monty deposit
- RC drilling within the Monty region and follow up wider regional infill aircore drilling undertaken
- Exploration budget approved for the September 2017 quarter including:
  - RC and diamond drilling to test western extension of Monty horizon fault offset position targeting potential down dip and along strike mineralisation; and
  - Assessment of recently identified exploration opportunities and interpretations including Monty North East, Monty East and Homer South Trend

#### Sinclair Nickel Project - (100% Talisman)

- Commencement of aircore drilling campaign targeting gold and nickel targets at Sturt Meadows, Delphi, Schmitz Well South:
  - o 306 metres of a planned 8,500 metres completed to the end of June (~50% complete as at end July). Assay results pending

#### New Project Generation - (100% Talisman)

 Grant of tenement application (EL8615) in the central NSW Cobar Basin (July 2017)



#### Springfield Copper-Gold Project (Joint Venture with Sandfire Resources NL)

During the June quarter, the focus of joint venture activities at the Springfield Cu-Au Project (**Springfield**) was on the commencement of mining development at the Monty Copper-Gold Project (**Monty**), ongoing exploration within the Monty region and the wider Springfield project, and the mandate of Taurus Mining Finance Fund (**Taurus**) as the debt financier for Talisman's forecast share of Monty pre-production development costs.

#### **Monty Development**

On the 4 July 2017, Talisman received advice that the Western Australian Department of Mines, Industry Regulation and Safety (**DMIRS**) (formerly Department of Mines and Petroleum) had approved the Mining Proposal and Mine Closure Plan for Monty facilitating the commencement of onground earthworks.

Civils and earthworks contractor Yagahong mobilised a portion of its fleet to the DeGrussa site in early June to commence preliminary earthworks at DeGrussa and facilitate the immediate commencement of the Monty boxcut and critical path earthworks once DMIRS approvals were received. Preliminary Monty early works included:

- relocating existing stockpiled topsoil at DeGrussa in the path of the planned Monty haul road;
- establishing the water pipeline route at DeGrussa including clearing; and
- constructing an additional access ramp to the existing DeGrussa ROM pad to allow for roadtrain access from Monty.

Following the receipt of approval for the Monty Mining Proposal, Yagahong mobilised to the Monty site to commenced initial earthworks. Works completed and underway on the Monty site include:

- the clearing of the haul-road centreline;
- stripping and stockpiling of topsoil from the Monty boxcut; and
- commencement of the Monty boxcut (approx. 2m depth as at 20 July 2017) (Figure 1).



Figure 1: Monty boxcut development

In addition, the underground mining contract for development and production activities at Monty has been awarded to Byrnecut Australia Pty Ltd (**Byrnecut**), a leading Australian specialist underground



mining contractor. The appointment of Byrnecut, who are currently the underground mining contractor at the DeGrussa mine, enables the Joint Venture to leverage off existing Byrnecut infrastructure and experience at DeGrussa.

#### **Monty Development Funding**

Following a competitive process, Talisman mandated Taurus in May 2017 to provide debt finance facilities of approximately A\$23 million to fully cover Talisman's share of forecast pre-production costs for the development of Monty.

The selection of Taurus as preferred debt provider was driven by a combination of factors including a highly competitive overall cost of debt, finance facilities covering the full forecast pre-production cost, no mandatory commodity price hedging requirement and flexibility in relation to early repayment and other key terms.

Execution of the final finance facility agreement remains conditional upon satisfactory completion of due diligence and payment of associated facility costs and fees. Due diligence was well progressed by the end of the June quarter and Talisman expects final agreements to be executed in the coming weeks.

#### **Exploration**

On-ground exploration activities completed at Springfield during the June quarter included:

- completion of two deep diamond holes and downhole electromagnetic (DHEM) surveys testing beneath the existing Monty Resource;
- completion of aircore drilling at the eastern end of the Southern Volcanics Trend; and
- Reverse circulation (RC) drill testing of a number of isolated geochemical anomalies.

A detailed review of existing data was undertaken by Talisman during the quarter which generated a number of alternate geological interpretations and subsequent drill targets that are currently under review by the Joint Venture.

Drilling at the Springfield project over the quarter ending 30 June 2017 included 10,595 metres of aircore, 1,278 metres of RC and 1,910 metres of diamond drilling as depicted in *Figure 2*. In addition to the recent drilling activities, on-ground exploration was also focused on the completion of a detailed ground-based Induced Polarisation (**IP**) orientation survey over the Monty deposit and Monty North East aircore anomaly and DHEM surveying of RC and diamond holes.



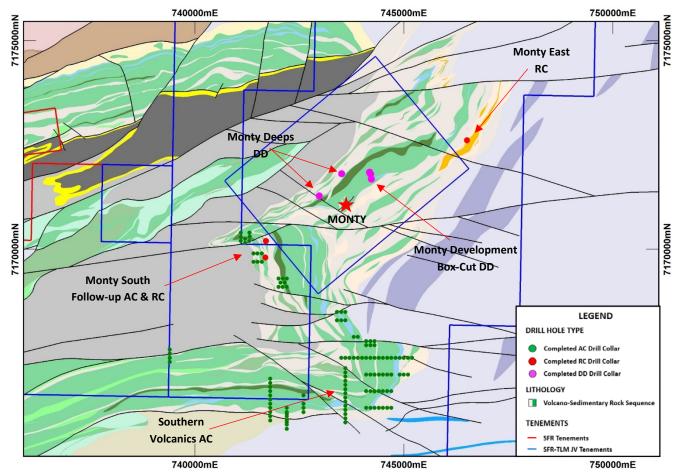


Figure 2: Springfield June 2017 quarter drilling location plan.

#### Monty Deeps Diamond Drilling

Two of three planned deep diamond DHEM platform holes (*Figure 2 and Figure 3*) were completed by the Joint Venture (TLDD0114 and TLDD0115) during the June quarter. Full details of the hole collar locations and intersections are provided in Table 1 and Table 2. The location of the planned third hold was dependent on the drill results and subsequent DHEM surveys of these first two holes and is discussed below. The two holes that have been drilled were designed to test a position approximately 500m below the assumed range of the existing DHEM surveys, to the east of the Mataro fault (*Figure 3*).

Talisman was advised by the Joint Venture Manager that the two deep diamond the holes were interpreted to have intersected sediment units that correlate with the prospective stratigraphy. No visual copper mineralisation was logged in the drill core. DHEM data was collected from both holes and discussions with the Joint Venture Manager confirmed that no immediate or obvious bedrock anomalism was identified. Final data and reports were received in July and Talisman will complete a detailed review of the DHEM survey report and data during the current quarter.

The effectiveness of DHEM is dependent on many factors, and estimated off-hole coverage is influenced by the size and nature of mineralisation and the continuity of any potential conductive body of mineralisation. Talisman believes the DHEM undertaken to date on the Springfield tenements to be a useful tool for searching for large orebodies within a 100 to 200 metres radius of a surveyed drill hole, but has reduced effectiveness and coverage for smaller, fractured mineralised orebodies.



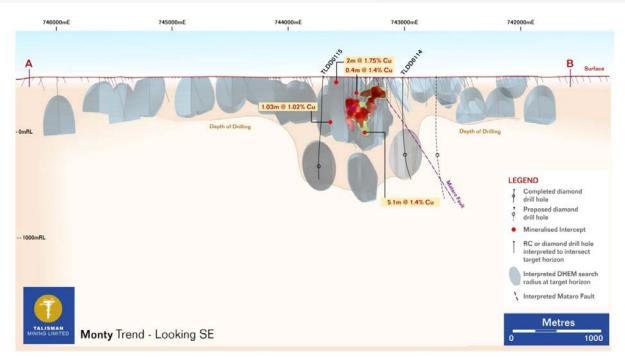


Figure 3: Monty deposit projected long section with completed and proposed diamond holes and interpreted DHEM coverage.

Importantly, results and observations in the two completed deep diamond drill holes has led to an updated geological interpretation of the fault off-set host stratigraphy to the west of Monty. A number of RC drill holes will be undertaken to test the new interpretation (*Figure 4*). The first of these RC holes is currently underway and all RC holes will be completed and subject to DHEM surveys in advance of finalising the position for the third deep diamond DHEM platform hole.

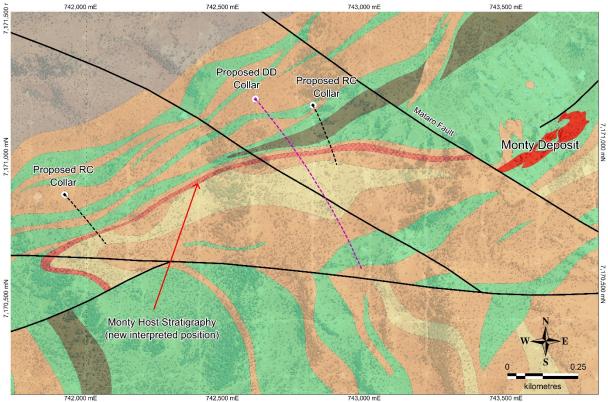


Figure 4: Monty offset geological interpretation showing new geological interpretation, and proposed drill-hole locations<sup>1</sup>

<sup>1</sup> Note: the final location of the proposed diamond drill (Proposed DD Collar) hole may change based on results of the proposed RC drilling.



#### Reverse Circulation Drilling

There was limited targeted RC drilling undertaken in the June quarter. Three RC holes were completed, selectively targeting litho-geochemical anomalies identified by the Joint Venture Manager in aircore drilling over Monty South and Monty East (*Figure 2*).

Results from these holes did not return any significant copper mineralisation. Full details of the hole collar locations and intersections are provided in Table 1 and Table 2. DHEM data has also been collected from these holes, and preliminary advice and discussions with the Joint Venture Manager has confirmed that no immediate or obvious bedrock anomalism was identified. Final reporting of the data is in progress.

#### Aircore Drilling

Aircore drilling focused on the eastern end of the Southern Volcanics and "boxing-out" isolated single point anomalies identified in previous drilling (Figure 2) to provide bottom-of-hole (**BOH**) samples for litho-geochemical analysis. Results from this analysis are still being received and compiled by the Joint Venture Manager.

An initial review by Talisman of the available aircore drilling at the Southern Volcanics has shown that a significant proportion of holes ended in dolerite, limiting the usefulness of the BOH litho-geochemical processing employed by the Joint Venture Manager as an initial vectoring tool. An alternate targeting methodology may need to be implemented along this 16km long corridor.

#### Other Activities

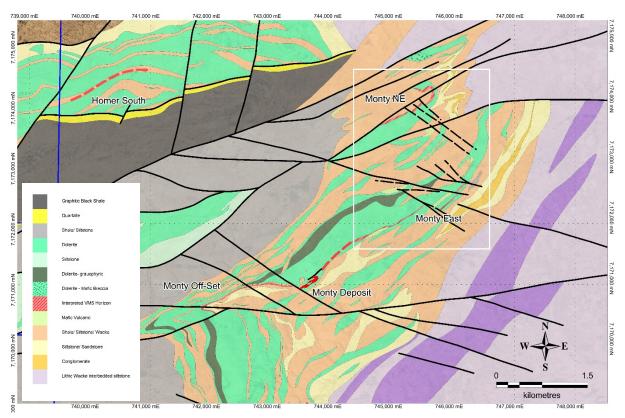
A small orientation IP survey was undertaken over the Monty deposit and Monty North East anomaly. Data was successfully collected and is being processed with results expected in the current quarter.

The aim of this survey was to assess the ability of this technique to detect Monty mineralisation from surface which, if successful, could then be applied to other areas of the Springfield project.

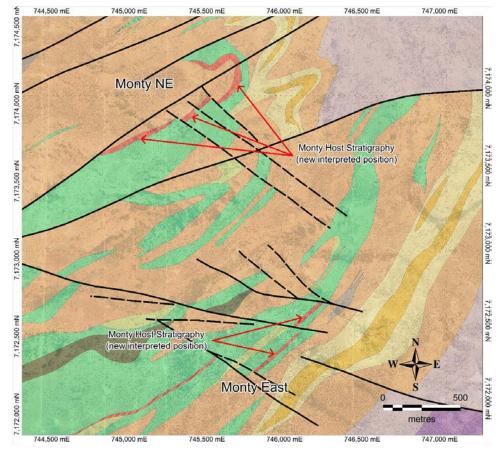
#### September 2017 Quarter Exploration

The Springfield Joint Venture partners have approved a A\$1m exploration budget for the September 2017 quarter. Proposed activities in this budget include:

- Development and testing the current interpreted fault offset of the interpreted Monty horizon to the West of the Monty deposit including RC drilling, a deep diamond drill hole and DHEM on diamond and RC drill holes (Figure 4);
- RC drilling at Monty North East to test a second and separate BOH aircore anomaly in this area;
- Consideration of new interpretations by Talisman for the position of the prospective host sequence at Monty East, Monty North East and Homer South (*Figure 5* and *Figure 6*) which have been the subject of minimal effective drill testing; and
- Reassessment and reinterpretation of the existing extensive database.



**Figure 5:** Springfield project simplified geology plan, showing prospect locations, and the Month East & Monty North East areas recently re-interpreted by Talisman (area indicated by the white box).



**Figure 6:** Monty East & Monty North East – Talisman interpretation showing new geological interpretation of the prospective host horizon.



#### Sinclair Nickel Project Exploration

A program of aircore drilling targeting the Delphi and Schmitz Well South nickel prospect areas and a gold-in-regolith anomaly identified from historic RAB drilling at Sturt Meadows commenced during the quarter. A total of 306m of the planned 8,600m was completed at the end of June.

#### Delphi Prospect

The Delphi prospect is located on the Sinclair Ultramafic Trend approximately 8km south of Sinclair and 2.5km south of recent successful drilling results at Delphi North.

A series of aircore drilling traverses are planned across an area covering approximately 500m of prospective ultramafic stratigraphy that has not been previously drilled (*Figure 7*). This area is interpreted to be highly prospective for hosting massive nickel sulphide mineralisation. Previous drilling along strike to both the north and south highlighted a fertile ultramafic sequence and diamond drill hole SND007 (completed October 2016) intersected stringer and disseminated sulphides.

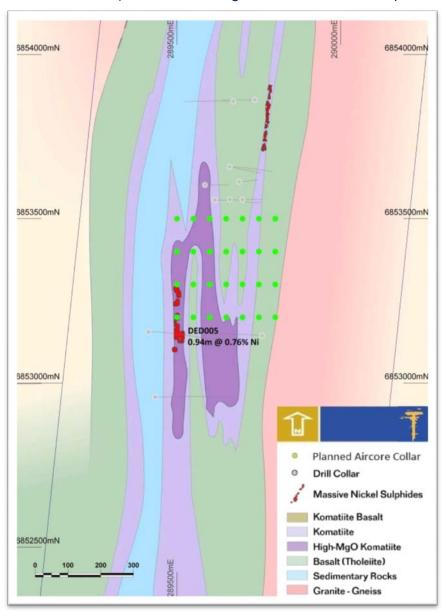
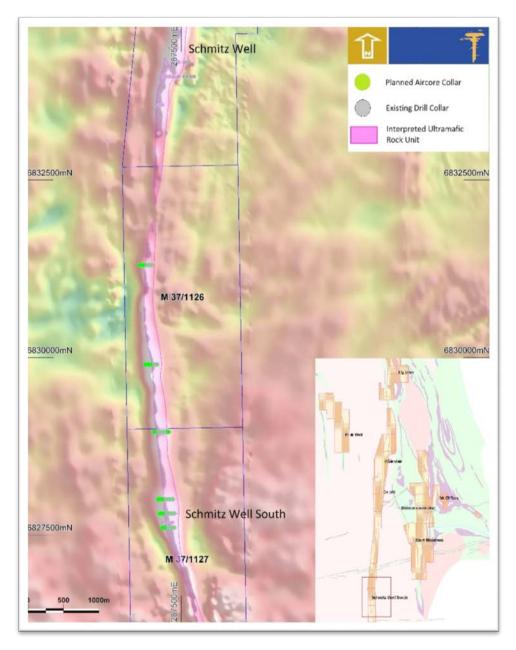


Figure 7: Delphi Prospect showing planned aircore drilling with historic drilling and nickel sulphide mineralisation intersected.



#### Schmitz Well South Prospect

A number of aircore drilling traverses are planned at Schmitz Well South to follow up fertile, high-MgO ultramafic units intersected in limited RC drilling undertaken by Talisman in 2016. Drilling will provide geological and geochemical information over the broader trend (*Figure 8*) and additional detail to drilling already completed.



**Figure 8:** Schmitz Well South Prospect showing regional magnetic image overlain by interpreted ultramafic corridor.



#### Sturt Meadows (Au)

A series of three aircore drill traverses commenced during the quarter to test a historic gold anomaly identified from wide spaced, historic RAB drilling completed in the 1990's (*Figure 9*). Full details of the hole collar locations and intersections are provided in Table 3 and Table 4. Interpretations from geophysical magnetic data shows the anomaly is in an area of structural complexity located close to a major flexure in the granite-greenstone contact. This area is considered to be a favourable geological environment for hosting significant potential gold mineralisation.

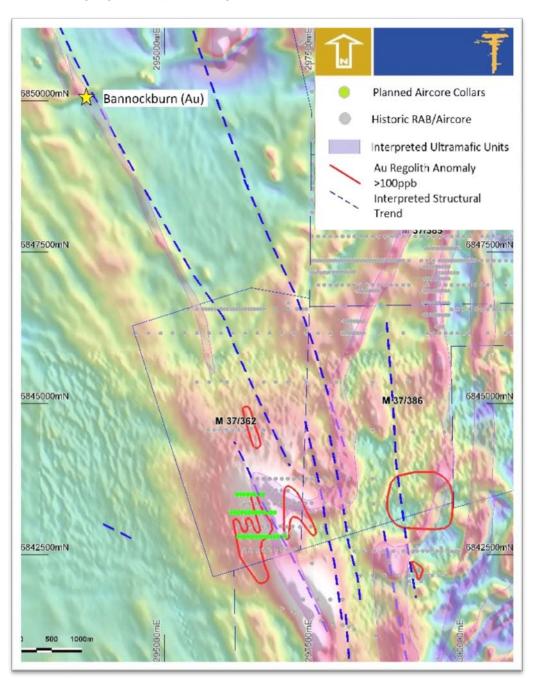


Figure 9: Sturt Meadows Prospect showing planned aircore drilling and historic Au anomaly.



#### **New Project Generation**

In conjunction with the development of Monty, exploration activities at Springfield and ongoing exploration at Sinclair, Talisman continues to examine opportunities to add new projects to its portfolio that align with its core exploration expertise.

As part of these activities, Talisman received notification in July 2017 from the New South Wales Department of Planning and Environment, Division of Resources and Energy of the grant of Exploration Licence EL8615, located approximately 70km north of the town of Condobolin within the Cobar/Mineral Hill region of Central NSW. Talisman has also submitted two exploration licence applications to the north east of Cobar (*Figure 10*).

The Cobar/Mineral Hill region is a richly mineralised district that hosts a number of base and precious metal mines including the CSA mine, Tritton, and Hera/Nymagee. This region contains highly prospective geology that has produced many long-life, high-grade mineral discoveries.

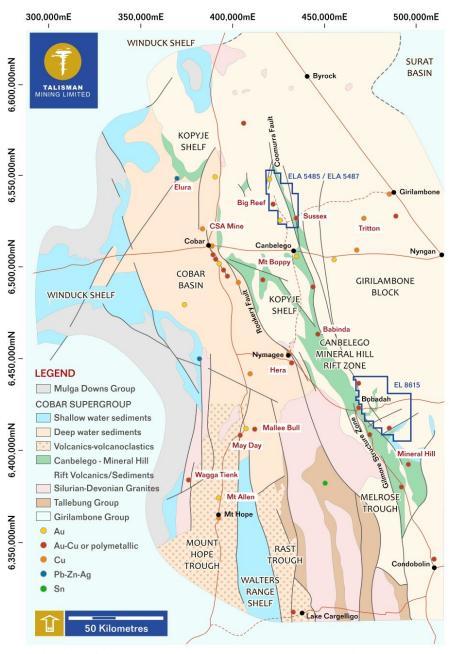


Figure 10: NSW Cobar regional geological plan, showing new TLM tenements and application locations.



Talisman has completed a review of the historical exploration undertaken within the tenements and has identified a number of areas that show evidence of base and precious metals endowment. These areas have had very little modern exploration completed to date and it is considered that there is significant potential for the discovery of substantial base metals and gold mineralisation.

Initial work by Talisman will include the validation of earlier exploration activities as part of a preliminary phase of work, prior to the commencement of on-ground exploration. It is anticipated that on-ground field work will commence during the last quarter of 2017 or the first quarter of 2018 following the finalisation of land access and other statutory agreements.

#### **ENDS**

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#### **About Talisman Mining:**

Talisman Mining Limited (ASX:TLM) is an Australian mineral development and exploration company. The Company's aim is to maximise shareholder value through exploration, discovery and development of complementary opportunities in base and precious metals.

Talisman holds a 30% interest in the Springfield Joint Venture (Springfield) with Sandfire Resources NL (70% and JV Manager). Springfield is located in a proven VMS province in Western Australia's Bryah Basin and contains multiple prospective corridors and active exploration activities. Springfield hosts the high-grade Monty Copper-Gold deposit (Monty) which is located 10 kilometres from Sandfire's DeGrussa operations. Monty is one of the highest-grade copper-gold discoveries made globally in recent decades and a Feasibility Study on its development was completed in March 2017. The Feasibility Study highlighted the strong technical and financial viability of Monty.

Talisman also holds 100% of the Sinclair Nickel Project (Sinclair) located in the world-class Agnew-Wiluna greenstone belt in WA's north-eastern Goldfields. The Sinclair nickel deposit, developed and commissioned in 2008 and operated successfully before being placed on care and maintenance in August 2013, produced approximately 38,500 tonnes of nickel at an average life-of-mine head grade of 2.44% nickel. Sinclair has extensive infrastructure and includes a substantial 290km² tenement package covering more than 80km of strike in prospective ultramafic contact within a 35km radius of existing processing plant and infrastructure.

#### **Forward-Looking Statements**

This ASX release may include forward-looking statements. These forward-looking statements are not historical facts but rather are based on Talisman Mining Ltd.'s current expectations, estimates and assumptions about the industry in which Talisman Mining Ltd operates, and beliefs and assumptions regarding Talisman Mining Ltd.'s future performance. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates", "potential" and similar expressions are intended to identify forward-looking statements. Forward-looking statements are only predictions and are not guaranteed, and they are subject to known and unknown risks, uncertainties and assumptions, some of which are outside the control of Talisman Mining Ltd. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast. Actual values, results or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements. Any forward-looking statements in this announcement speak only at the date of issue of this announcement. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Talisman Mining Ltd does not undertake any obligation to update or revise any information or any of the forward looking statements in this announcement or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

No new information relating to the Sinclair Nickel Project (Sinclair) that is considered material is included in this document. All information relating to Sinclair exploration results have been previously released to the market and are appropriately referenced in this document. As a result, JORC tables related to Sinclair are not considered necessary to accompany this document.

#### **Competent Person's Statements**

Information in this ASX release that relates to Exploration Results and Exploration Targets is based on information completed by Mr Anthony Greenaway, who is a member of the Australasian Institute of Mining and Metallurgy. Mr Greenaway is a full-time employee of Talisman Mining Ltd and has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Mr Greenaway consents to the inclusion in this report of the matters based on information in the form and context in which it appears.



#### Table 1 - Drill-hole Information Summary, Springfield Cu-Au Project

Details and co-ordinates of drill-hole collars for RC and diamond drilling completed during the June 2017 quarter:

Hole ID	Grid ID	Dip	Azimuth	East (m)	North (m)	RL (m)	Hole Type	Max Depth	Hole Status
TLDD0114	MGA94_50	-62 <sup>0</sup>	140 <sup>0</sup>	742,974	7,171,278	593	RC/DDH	1,171.4	Complete
TLDD0115	MGA94_50	-61º	134 <sup>0</sup>	743,511	7,171,810	595	RC/DDH	1,113.6	complete
TLRC0065	MGA94_50	-61º	83 <sup>0</sup>	741,701	7,170,199	593	RC	406	Complete
TLRC0066	MGA94_50	-62 <sup>0</sup>	83 <sup>0</sup>	741,684	7,169,801	596	RC	424	Complete
TLRC0067	MGA94_50	-62 <sup>0</sup>	133 <sup>0</sup>	746,511	7,172,613	619	RC	448	Complete

#### Table 2: Drill-hole Assay Intersections for the Springfield Cu-Au Project

Details of relevant intersections received by Talisman during the June 2017 quarter are provided below.

Calculation of RC intersections for inclusion into this table are based on a 0.5% Cu cut-off, no more than 3m of internal dilution and a minimum composite grade of 1% Cu. Intersection length, Cu (%), Au (ppm), Ag (ppm) and Zn (%) are rounded to 1 decimal point.

Hole ID	Depth From	Depth To	Interval	Cu	Au	Zn	
	(m)	(m)	(m)	(%)	(ppm)	(%)	
TLDD0114		No s	ignificant Inte	ercepts			
TLDD0115		No s	ignificant Inte	ercepts			
TLRC0065		No significant Intercepts					
TLRC0066	No Significant Intercepts						
TLRC0067	No Significant Intercepts						



### Table 3 – Drill-hole Information Summary, Sinclair Nickel Project

Details and co-ordinates of drill-hole collars for aircore drilling completed during the June 2017 quarter:

Hole ID	Grid ID	Dip	Azimuth	East (m)	North (m)	RL (m)	Hole Type	Max Depth	Hole Status
SNAC0001	MGA94_50	-60	270	296,100	6,843,200		AC	29	Complete
SNAC0002	MGA94_50	-60	270	296,160	6,843,200		AC	107	Complete
SNAC0003	MGA94_50	-60	270	296,220	6,843,200		AC	99	Complete
SNAC0004	MGA94_50	-60	270	296,280	6,843,200		AC	71	Complete

#### Table 4: Drill-hole Assay Intersections for the Sinclair Nickel Project

Significant intercepts for Ni percent are calculated using a 0.5% Ni cut off, where total intercept grade is greater than 1% over a minimum interval of 1m, including 2m of internal waste.

Hole ID	Depth from (m)	Depth To (m)	Interval (m)	<b>Ni</b> (%)	<b>Cu</b> (%)	<b>Pb</b> (%)	<b>Au</b> (ppm)
SNAC0001		Results Pending					
SNAC0002			Res	ults Pending			
SNAC0003	Results Pending						
SNAC0004	Results Pending						



Appendix 1: Talisman's Tenement Holding

Project / Tenement	Location and Blocks (Area)	Interest at Beginning Quarter	Interest at End Quarter	Acquired during Quarter	Surrendered during Quarter	Joint Venture Partner / Farm-In Party
HALLOWEEN WEST	W Australia					JV - Sandfire Resources NL
E52/2275	6	18.8%	18.8%	-	-	TCSOUICCS IVE
HALLOWEEN	W Australia					JV - Sandfire Resources NL
P52/1528	(200 HA)	18.8%	18.8%	-		Resources NL
SPRINGFIELD	W Australia					
E52/2282	42	30%	30%	=	-	
E52/2313	8	30%	30%	-	-	
E52/2466	14	30%	30%	=	-	
E52/3423	1	30%	30%	-	-	JV - Sandfire
E52/3424	1	30%	30%	-	-	Resources NL
E52/3425	6	30%	30%	-	-	
E52/3466	12	30%	30%	-	-	
E52/3467	20	30%	30%	-	-	
L52/170	(246.4HA)	30%	30%	-	-	
M52/1071	(1,642HA)	30%	30%	-	-	
E51/1767	14	0%	0%	Application	-	N/A

Project / Tenement	Location and Blocks (Area)	Interest at Beginning of Quarter	Interest at End of Quarter	Acquired during Quarter	Surrendered during Quarter	Joint Venture Partner / Farm-In Party
SINCLAIR NICKEL PROJECT	W.Australia					
E36/650	16	100%	100%	-	-	
E37/903	13	100%	100%	-	-	
E37/1231	3	100%	100%	-		
L36/198	(103.1 HA)	100%	100%	-	-	
L37/175	(83.9 HA)	100%	100%	-	-	
M36/444	(568.0 HA)	100%	100%	-	-	
M36/445	(973.0 HA)	100%	100%	-	-	
M36/446	(843.0 HA)	100%	100%	-	-	
M37/362	(981.5 HA)	100%	100%	-	-	
M37/383	(841.7 HA)	100%	100%	-	-	
M37/384	(536.7 HA)	100%	100%	-	-	N/A
M37/385	(926.8 HA)	100%	100%	-	-	IN/A
M37/386	(983.8 HA)	100%	100%	-	-	
M37/424	(891.0 HA)	100%	100%	-	-	
M37/426	(505.0 HA)	100%	100%	-	-	
M37/427	(821.0 HA)	100%	100%	-	-	
M37/590	(120.0 HA)	100%	100%	-	-	
M37/692	(136.1 HA)	100%	100%	-	-	
M37/735	(959.0 HA)	100%	100%	_	-	
M37/816	(818.4 HA)	100%	100%	-	-	
M37/818	(806.5 HA)	100%	100%	_	-	
M37/819	(380.2 HA)	100%	100%	-	-	
M37/1063	(604.0 HA)	100%	100%	-	-	
M37/1089	(574 HA)	100%	100%	-	-	



Project / Tenement	Location and Blocks (Area)	Interest at Beginning of Quarter	Interest at End of Quarter	Acquired during Quarter	Surrendered during Quarter	Joint Venture Partner / Farm-In Party
M37/1090	(478 HA)	100%	100%	-	-	
M37/1126	(603 HA)	100%	100%	-	-	
M37/1127	(603 HA)	100%	100%	-	-	
M37/1136	(986 HA)	100%	100%	-	-	
M37/1137	(850 HA)	100%	100%	-	-	
M37/1148	(44.78 HA)	100%	100%	-	-	
M37/1168	(190 HA)	100%	100%	-	-	
M37/1223	(675 HA)	100%	100%	-	-	
M37/1275	(1,961 HA)	100%	100%	-	-	
P37/7228	(61.57 HA)	100%	100%	-	-	
P37/7233	(116.01 HA)	100%	100%	-	-	

Project / Tenement	Location and Blocks (Area)	Interest at Beginning of Quarter	Interest at End of Quarter	Acquired during Quarter	Surrendered during Quarter	Joint Venture Partner / Farm-In Party
OTHER	NSW					
EL8615	(728km²)	0%	0%	Application	-	N/A
ELA5485	(372.8km <sup>2</sup> )	0%	0%	Application	-	IN/A
ELA5487	(43.9km²)	0%	0%	Application	-	



Appendix 2: JORC Tables Sections 1 & 2

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3kg 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.</li> </ul>	<ul> <li>Sampling techniques employed by Sandfire on the Doolgunna Project include half core sampling of NQ2 Diamond Drill (DD) core, Reverse Circulation (RC) drilling samples collected by a cone splitter for single metre samples or sampling spear for composite samples, and aircore (AC) sample collected using spear techniques for both composite and single metre samples.</li> <li>Sampling is guided by Sandfire DeGrussa protocols and QAQC procedures as per industry standard.</li> <li>RC sample size reduction is completed through a Boyd crusher to -10mm and pulverised via LM5 to nominal -75µm. Pulp size checks are completed.</li> <li>Diamond core size reduction is through a Jaques jaw crusher to -10mm and all samples Boyd crushed to -4mm and pulverised via LM5 to nominal 90% passing -75µm using wet sieving technique.</li> <li>Samples are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS.</li> <li>Fire Assay is completed by firing 40g portion of the sample with ICPMS finish.</li> <li>Sampling techniques employed by Talisman at the Sinclair Nickel Project include saw cut diamond drill core (DD) samples in NQ2 size sampled on geological intervals (0.2 m to 2 m), cut into half (NQ2) core to give sample weights under 3 kg, Reverse Circulation (RC) drilling samples collected by a cone splitter for single metre samples or sampling spear for composite samples, and aircore (AC) sample collected using spear techniques for composite samples or collected by a riffle splitter for single metre samples.</li> <li>Sampling is guided by Talisman protocols and QAQC procedures as per industry standard</li> <li>Samples were crushed, dried and pulverised (total prep) to produce a 30g sub sample for analysis by four acid digest with an ICP/AES finish for base metals; and a</li> </ul>
Drilling techniques	Drill type (e.g. core, reverse circulation, openhole 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).	<ul> <li>Sog Fire assay with an AAS finish for gold</li> <li>Sandfire drilling is completed using industry standard practices. RC drilling with a face sampling hammer of nominal 140mm size and diamond drilling is completed using NQ2 size coring equipment.</li> <li>All drill collars are surveyed using RTK GPS.</li> <li>All core, where possible is oriented using a Reflex ACT II RD orientation tool.</li> <li>Downhole surveying is undertaken using a gyroscopic survey instrument.</li> <li>Talisman drilling is completed using industry standard practices. AC drilling with a face sampling blade or hammer.</li> <li>AC drill collars are located using handheld GPS</li> </ul>



Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Sandfire core is meter marked and orientated to check against the driller's blocks, ensuring that all core loss is taken into account. Diamond core recovery is logged and captured into the database with weighted average core recoveries of approximately 99%.</li> <li>Surface RC sampling is good with almost no wet sampling in the project area. AC drilling recovery is good with sample quality captured in the database.</li> <li>Samples are routinely weighed and captured into a central secured database.</li> <li>No indication of sample bias with respect to recovery has been established.</li> <li>Sinclair AC drilling recovery is good with sample quality captured in the database.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>No indication of sample bias with respect to recovery has been established</li> <li>Sandfire geological logging is completed for all holes and is representative across the ore body. The lithology, alteration, and structural characteristics of drill samples are logged directly to a digital format following standard procedures and using Sandfire DeGrussa geological codes. Data is imported into the central database after validation in LogChief™.</li> <li>Logging is both qualitative and quantitative depending on field being logged.</li> <li>All drill-holes are logged in full.</li> <li>All cores are digitally photographed and stored.</li> <li>Talisman logging records lithology, mineralogy, mineralisation, alteration, structure, weathering, colour and other primary features of the rock samples and is considered to be representative across the intercepted geological units.</li> <li>Logging is both qualitative and quantitative depending on</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All drill-holes are logged in full to end of hole.</li> <li>Sandfire DD Core orientation is completed where possible and core is marked prior to sampling. Half core samples are produced using Almonte Core Saw. Samples are weighed and recorded.</li> <li>RC samples are split using a cone or riffle splitter. A majority of RC samples are dry. On occasions that wet samples are encountered they are dried prior to splitting with a riffle splitter.</li> <li>All samples are dried at 80° for up to 24 hours and weighed. DD Samples are then crushed through Jaques crusher to nominal -10mm. Second stage crushing uses Boyd crusher to nominal -4mm. Pulverising is completed using LM5 mill to 90% passing 75%µm. RC samples are Boyd crushed to -4mm.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>Sample splits are weighed at a frequency of 1:20 and entered into the job results file. Pulverising is completed using LM5 mill to 90% passing 75%µm using wet sieving technique.</li> </ul>
		<ul> <li>1:20 grind quality checks are completed for 90% passing 75%µm criteria to ensure representativeness of sub-samples.</li> </ul>
		<ul> <li>Sampling is carried out in accordance with Sandfire protocols as per industry best practice.</li> </ul>
		The sample size is appropriate for the VHMS and Gold mineralisation styles.
		Sinclair diamond core is HQ and NQ2 size, sampled on geological intervals (0.2 m to 1.2 m), cut into half (NQ2) or quarter (HQ) core to give sample weights under 3 kg Samples were selected to weigh less than 3kg to ensure total preparation at the pulverization stage.
		<ul> <li>Samples were submitted to ALS Chemex Laboratories for preparation. The sample preparation follows industry best practice where all drill samples are crushed and split to 1kg then dried, pulverized and (&gt;85%) sieved through 75 microns to produce a 30g charge for 4-acid digest with an ICP-MS or AAS finish for base metals, and a 50g fire assay with an AAS finish for gold.</li> </ul>
		QAQC protocols for all diamond drill sampling involved the use of Certified Reference Material (CRM) as assay standards. The insertion ratio of CRM standards was 1 in 25 with a minimum of 2 per batch. OREAS and Geostats standards were selected on their grade range and mineralogical properties.
		All QAQC controls and measures were routinely reviewed and reported on a sample submission, and drilling campaign basis.
		Duplicate samples were inserted at a frequency of 1 in 25, with placement determined by Ni grade and homogeneity.
		Sample size is considered appropriate for nickel sulphide mineralisation
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	Sandfire samples are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au, Pd and Pt by firing a 40g of sample with ICP AES/MS finish. Lower sample weights are employed where samples have very high S contents. This is a classical FA process and results in total separation of Au, Pt and Pd in the samples.



Criteria	JORC Code explanation	Commentary
Criteria	JORC Code explanation	<ul> <li>No geophysical tools are used in the analysis.</li> <li>Sandfire DeGrussa QAQC protocol is considered industry standard with standard reference material (SRM) submitted on regular basis with routine samples. SRMs and blanks are inserted at a minimum of 5% frequency rate.</li> <li>Sinclair drill samples were submitted to ALS Chemex Laboratories in Perth for multi-element analysis using a 1g charge with a multi-acid digest and ICP-MS or AAS finish (OG62). Analytes include AI, Fe, Mg, Mn, S, Ti, Ag, As, Co, Cr, Cu, Ni, Pb, V, Zn, Zr.</li> <li>Samples are analysed for Au, by firing a 50g of sample with AAS finish</li> <li>QAQC protocols for all drill sampling involved the use of Certified Reference Material (CRM) as assay standards. The insertion ratio of CRM standards was 1 in 33 with a minimum of two per batch. OREAS and Geostats standards are selected on their grade range and mineralogical properties.</li> <li>All drill assays are required to conform to the procedural QAQC guidelines as well as routine laboratory QAQC guidelines.</li> <li>All QAQC controls and measures were routinely reviewed and reported on a monthly, quarterly and annual basis. Historic results for all standards and</li> </ul>
		All QAQC controls and measures were routinely reviewed and reported on a monthly, quarterly and
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Significant intersections have been verified by alternate Talisman personnel.</li> <li>Sandfire primary data is captured on field tough book laptops using Logchief™ Software. The software has validation routines and data is then imported into a secure central database.</li> <li>The primary data is always kept and is never replaced by adjusted or interpreted data.</li> <li>Sinclair significant intercepts have been verified by alternate company personnel</li> <li>No twinned holes are being drilled as part of this program.</li> <li>Logging and sampling data is captured and imported using Expedio Ocris software.</li> <li>All Sinclair drill-hole, sampling and assay data is stored in a SQL server (Datashed) database. Assay data is reviewed via DataShed, QAQCR and other customised software and databases. Datashed software has numerous validation checks which are completed at</li> </ul>



Criteria	JORC Code explanation	Commentary
		Primary assay data is always kept and is not replaced by any adjusted or interpreted data.
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Sandfire DeGrussa Survey team undertakes survey works under the guidelines of best industry practice. All surface drilling is located using RTK-GPS.</li> <li>All drill collars are accurately surveyed using RTK GPS system within +/-50mm of accuracy (X, Y, Z).</li> <li>For the Springfield project MGA94 Zone 50 grid coordinate system is used.</li> <li>Topographic control was established using LiDar laser imagery technology.</li> <li>Historic drill collars locations were picked up by Sinclair Mine Surveyors, with an independent survey contract group to locate completed DD and RC drill collars, working under the guidelines of best industry practice.</li> <li>AC drill collars are located using handheld GPS</li> <li>The coordinate system used is the Geocentric Datum of Australia (GDA) 1994. Coordinates are in the Map Grid of Australia zone 51 (MGA).</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Infill drilling at Monty is based on a nominal 30m x 40m grid.</li> <li>Resource definition drill spacing and distribution of exploration results is sufficient to support Mineral Resource Estimation procedures. Refer ASX:SFR 13/04/2016 Maiden High Grade Mineral Resource for Monty VMS Deposit</li> <li>Exploration drill spacing outside of the Monty Mineral Resource is not sufficient to estimate Mineral Resources.</li> <li>No sample compositing has been applied to the exploration results.</li> <li>Drill spacing at Sinclair was nominally 200m x 25m.</li> <li>No mineral resource is being reported for the Sinclair Nickel Project.</li> <li>AC drill samples are collected in the field as 4 metre</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>At Monty, no significant orientation based sampling bias is known at this time.</li> <li>The drill holes may not necessarily be perpendicular to the orientation of the intersected mineralisation.</li> <li>The orientation of drilling at Sinclair is designed to intersect either geophysical targets or geological targets at high angle in order to best represent stratigraphy.</li> <li>No significant orientation based sampling bias at Sinclair is known at this time. Drill-holes may not necessarily be oriented perpendicular to intersected stratigraphy or mineralisation. All reported intervals are down-hole intervals, not true widths.</li> </ul>
Sample security	The measures taken to ensure sample security.	Appropriate security measures are taken to dispatch samples to the laboratory. Chain of custody of samples is being managed by Sandfire Resources NL. Samples



Criteria	JORC Code explanation	Commentary
		are stored onsite and transported to laboratory by a licenced transport company in sealed bulker bags. The laboratory receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch.
		Samples were stored at the Sinclair Nickel Mine Site prior to submission under the supervision of the Senior Project Geologist. Samples were transported to ALS Perth by an accredited courier service.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No external audits or reviews of the sampling techniques and data have been completed.



## **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> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Sandfire Resources NL and Talisman Mining Limited have formed a Joint Venture which covers Talisman's Doolgunna Project tenements (E52/2282, E52/2313, E52/2466, E52/2275).</li> <li>Sandfire and Talisman hold a 70%:30% interest respectively in the Joint Venture, with the exception of tenement E52/2275 where interests of approximately 81%:19% respectively are held.</li> <li>Both parties are contributing proportionately to expenditure.</li> <li>Sandfire Resources NL has been appointed as the Joint Venture Manager.</li> <li>All tenements are current and in good standing.</li> <li>The Talisman tenements are currently subject to a Native Title Claim by the Yungunga-Nya People (WAD6132/98). Sandfire currently has a Land Access Agreement in place with the Yungunga-Nya Native Title Claimants and have assumed management of Heritage Agreements which were executed by Talisman. These agreements allow Sandfire to carry out mining and exploration activities on their traditional land.</li> <li>The Sinclair Nickel Project is held 100% by Talisman Nickel Pty Ltd, a wholly owned subsidiary of Talisman Mining Ltd.</li> <li>There are no known Native Title Claims over the Sinclair Nickel Project.</li> <li>All tenements are in good standing and there are no existing known impediments to exploration or mining.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Exploration work at Springfield completed prior to Talisman's tenure included geochemical soil and rock chip sampling combined with geological mapping. Some targeted RC drilling was completed over gold and diamond targets.</li> <li>The Sinclair Nickel Deposit was discovered in 2005 by Jubilee Mines NL drill testing a ground EM anomaly.</li> <li>M37/1275 hosts the Sinclair Nickel Mine which was operated by XNAO from 2007-2013 and produced approximately 38,500 tonnes of contained nickel metal.</li> <li>Exploration work on has included diamond, RC and aircore drilling, ground and downhole EM surveys, soil sampling, geological interpretation and other geophysics (magnetics, gravity).</li> </ul>



Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Doolgunna Project lies within the Proterozoic-aged Bryah rift basin enclosed between the Archaean Marymia Inlier to the north and the Proterozoic Yerrida basin to the south.</li> <li>The principal exploration targets at the Doolgunna Projects are Volcanogenic Massive Sulphide (VMS) deposits located with the Proterozoic Bryah Basin of Western Australia.</li> <li>The Sinclair project lies within the Archean aged Norseman-Wiluna Greenstone Belt.</li> <li>The Sinclair Nickel Deposit is an example of an Archaean-aged komatiite-hosted nickel deposit, with massive nickel- iron sulphides hosted at or near the basal contact of high-MgO ultramafic lava channels with footwall basaltic volcanic and sedimentary rocks.</li> </ul>
Drill-hole Information	understanding of the exploration results	Drill hole information relating to the Doolgunna Project is included In Table 1: Drill-hole Information Summary, Springfield Cu-Au Project.
		Drill hole information relating to the Sinclair Nickel Project is included in Table 3: Drill-hole Information Summary, Sinclair Nickel Project.
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Significant intersections reported from the Springfield Project are based on greater than 0.5% Cu and may include up to a maximum of 3.0m of internal dilution, with a minimum composite grade of 1.0% Cu.</li> <li>Cu grades used for calculating significant intersections are uncut.</li> <li>Minimum and maximum DD sample intervals used for intersection calculation are 0.3m and 1.2m respectively.</li> <li>RC reported intersections are based on regular 1m sample intervals.</li> <li>No metal equivalents are used in the intersection calculation.</li> <li>Where core loss occurs; the average length-weighted grade of the two adjacent samples are attributed to the interval for the purpose of calculating the intersection. The maximum interval of missing core which can be incorporated with the reported intersection is 1m.</li> <li>Significant intersections reported from the Sinclair Nickel Project are based on greater than 0.5% Ni and may include up to 1m of internal dilution, with a minimum composite grade of 1% Ni.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>Ni grades used for calculating significant intersections are uncut.</li> <li>A minimum diamond core sample interval of 0.15m and a maximum interval of 1m is used for intersection calculations subject to the location of geological boundaries.</li> <li>Length weighted intercepts are reported for mineralised intersections.</li> <li>No metal equivalents are used in the intersection calculations.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>Drill-hole intercepts relating to the Doolgunna Project in this release are reported as both down-hole intersection widths and estimated true width intersections (refer Table 2: Drill hole assay intersections for the Springfield Cu-Au Project).</li> <li>The geometry of the mineralisation has been interpreted using top of mineralisation surfaces that link mineralised zones, thought to be continuous, between neighbouring drill-holes. Given the variable, and often steeply dipping orientation of the mineralisation, the angle between mineralisation and drill-holes is not consistent. Downhole intercepts for each drill-hole are converted to estimated true widths using a trigonometric function that utilises the dip and dip direction of the interpreted top of mineralisation surface (at the intersection point of that drill-hole) as well as the dip and azimuth of the drill-hole at that position.</li> <li>Drill holes relating to the Sinclair Nickel Project are</li> </ul>
Diagrams	Appropriate maps and sections (with scales)	reported as down hole intersections (refer to Table 4).  True widths of reported mineralisation are not known at this time.
Diagramo	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.	Appropriate maps with scale are included within the body of the accompanying document.
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.	The accompanying document is considered to represent a balanced report.
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.	Other exploration data collected is not considered as material to this document at this stage. Other data collection will be reviewed and reported when considered material.



Criteria	JORC Code explanation	Commentary
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Planned exploration across the Springfield Joint Venture Project area includes both surface and downhole geophysical techniques and reconnaissance and exploration drilling with diamond, RC and aircore drilling techniques.  Planned future work at the Sinclair Nickel Project includes geophysical surveys, re-logging of historic diamond drill core and RC and diamond drilling.