# **Quarterly Report for the Period Ending 30 September 2018**

#### Emmerson Resources Limited ABN 53 117 086 745

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**ASX Code:** ERM 415.2 million ordinary shares

**Market Cap** ~A\$29.5 million (30-09-18)

Available Cash A\$4.0 million (30-09-18)

#### **Board of Directors**

Andrew McIlwain Non-executive Chairman

Rob Bills Managing Director & CEO

Allan Trench
Non-executive Director

# **Tennant Creek Project**

- Emmerson secures both a Mining and Exploration Joint Venture with TRL Tennant Creek Pty Ltd (TTY), covering the Southern Project Area (SPA) at Tennant Creek.
- TTY to subscribe for A\$2m of new Emmerson shares priced at A\$0.1035 a share, a 56.82% premium to the price at the time of completion (completed within Emmerson's placement capacity under Listing Rule 7.1).
- Emmerson has sold its Warrego Mill to TTY, with TTY committing to the construction of a modern 300,000tpa Carbon in Pulp mill on the site.
- Mining and Exploration Joint Venture over the SPA at Tennant Creek aims to accelerate the discovery of new deposits and/or extensions to the existing mines for processing at the new mill:
  - Emmerson to receive a 12% and 6% gross royalty of all gold produced for the life of the Edna Beryl and Chariot mines respectively.
  - Emmerson to receive a 25% net profit share from any other mine developed within the SPA (other than Edna Beryl and Chariot) in exchange for TTY developing, mining and processing the gold at its cost.
  - Ore from the SPA to receive priority processing by TTY at the new mill on an agreed "cost plus" basis.
  - TTY to fund A\$5m of exploration over five years across the SPA to earn a 75% interest in the SPA.
- Emmerson to retain 100% ownership of the majority of the Tennant Creek Mineral Field (circa 75% of the existing tenement package), including the recently announced Mauretania gold and Jasper Hills gold-copper-cobalt projects, plus the high-grade Edna Beryl gold Mine.



## **NSW Projects**

- Compelling copper and gold soil geochemistry at the recently announced Whatling Hill discovery within the Fifield project in NSW:
  - Rock chip values of up to 2% copper and 0.25g/t gold in quartz stockwork veins within altered monzonite intrusives.
  - Copper anomaly open to the south with potential for additional 1.5km extensions based on rock chip samples of up to 1.5% copper.
- New tenement granted to consolidate Emmerson's ground position at Fifield and Kadungle within the Lachlan Transfer Zone.
- Further geochemical and geophysical programs planned ahead of drilling.

### **Corporate Activity**

TTY had subscribed for 19,323,671 new Emmerson shares priced at A\$0.1035 a share, representing a 56.82% premium to the last traded price when the placement was completed. The investment will raise A\$2 million (in two tranches, with first A\$1 million completed) to support Emmerson's ongoing exploration activities in both the NT and NSW, provide general working capital and, importantly, align the interests of both companies.

On both tranches being completed, TTY will hold approximately 4.55% of Emmerson shares on issue. An Appendix 3B reflecting the issue of new shares under the placement was released separately.

These shares were issued within Emmerson's existing placement capacity under Listing Rule 7.1

### **Completion of Strategic Alliance with Territory Resources at Tennant Creek** (figure 1)

During the September quarter Emmerson Resources Limited ("Emmerson", ASX: ERM) completed a landmark Strategic Alliance with TRL Tennant Creek Pty Ltd (a subsidiary of Territory Resources Ltd)(TTY), including both a Mining and Exploration Joint Venture covering Emmerson's Southern Project Area (SPA) at Tennant Creek. The SPA represents approximately 25% of Emmerson's total Tennant Creek landholding.

The three components of this alliance with TTY will facilitate:

- Construction of a modern 300,000tpa Carbon in Pulp (CIP) central processing facility (to be owned and operated by TTY):
- Funding by TTY of \$5m for exploration within the SPA to earn a 75% equity interest (ERM the managers and operators) and:
- Fast-track the development of Emmerson's small mining projects (permitting, development and mining by TTY)

#### Warrego Mill Sale

Emmerson has entered into a binding agreement to sell its Warrego Mill and Mining Lease (number 30888) to TTY in exchange for TTY building a modern 300,000tpa CIP processing facility on the site (ASX: 31 May 2018). Once completed, Emmerson to receive priority processing on a cost-plus basis.

TTY expects the plant to be in operation by the end of 2018/early 2019, subject to the receipt of regulatory approvals.

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#### Exploration Earn-in and JV

As part of the Strategic Alliance, TTY has entered into an Earn-in and Joint Venture over Emmerson's SPA (Figure 1). Historically, the southern area contains the highest gold endowment of the Tennant Creek Mineral Field and hosts the notable historical deposits of Nobles Nob, Juno, Peko and Eldorado.

Under the terms of the earn-in, TTY will contribute A\$5m over five years to earn a 75% equity interest in the SPA. After the earn-in phase, a Joint Venture can be formed whereby Emmerson can elect to either maintain its equity position in the SPA by contributing 25% to the exploration programs, dilute or convert to a royalty.

During the earn-in, Emmerson will be the operator and manager and will apply its systematic, science-based exploration that has been successful in other parts of the Tennant Creek Mineral Field (Figure 2). Emmerson will be paid a management fee by TTY during the earn-in. Both parties will work collaboratively under an Exploration Management Committee that is aimed at identifying additional resources to feed the refurbished Warrego Mill.

Emmerson retains 100% control of its Tennant Creek Project outside of the SPA (collectively called the Northern Project Area (NPA)), equating to approximately 75% of the entire project area wholly owned by Emmerson. The NPA will continue to be advanced by Emmerson on a standalone basis and includes the high-grade Mauretania and Edna Beryl gold and Jasper Hills gold-copper- cobalt projects.

#### Small Mines JV

Under the Small Mines JV, Emmerson and TTY have negotiated profit share and gold royalty agreements pertaining to the development, mining and processing of Emmerson's portfolio of small mines. The terms of the agreement see Emmerson receiving a nondiluting 25% profit share from any mine within the SPA, other than Edna Beryl and Chariot (where Emmerson will receive 12% and 6% respectively of the gold produced).

TTY are currently undertaking detailed planning, optimisation and scheduling ahead of presenting them to a joint, Small Mines Management Committee for approval. It is likely that these projects will include concurrent mining from both open cut and underground.

The proposed activity schedule includes the following projects:

Table 1: Mining JV Projects

Project Area	Mining Potential	Upcoming Work
Edna Beryl Mine	Existing underground Tribute Mining Area plus extensions	Mine existing Tribute Area and establish the Exploration Drill drive
Chariot Mine	Open pit and underground	Evaluate Chariot East and develop underground mine plans
Eldorado	Open pit and underground	Further drilling required
Black Snake	Underground	Exploration approvals granted by the NT Government
Golden Kangaroo East	Open pit	Further drilling required
Malbec West	Open pit and underground	Further work required
Golden Forty	Underground	Further work required
West Gibbet	Underground/open pit	Further work required

Note: most of these projects do not have JORC compliant Resources (except Chariot) and are considered Exploration Targets. The Chariot project has a JORC (2012) Indicated and Inferred Resource of 170,000 tonnes at a grade of 17.4g/t gold for 99,000oz, as per Table 2 (Refer to ASX announced on 28 November 2013).

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**Table 2: Chariot Mineral Resource Estimation November 2013** 

Classification	Tonnes	Gold grade (g/t)	Copper grade (%)	Gold ounces	Gold equivalent grade (g/t)	Copper metal (t)	Gold equivalent ounces
С	hariot Pote	ntial Open	Pit (repor	ted above	e a 1.0 g/t gold	d cut-off)	
Indicated	10,000	11.1		11.1	5,000		5,000
Inferred	60,000	19.2		19.2	37,000		37,000
Cha	riot Potenti	ial Undergr	ound (rep	orted abo	ove a 6.0 g/t g	old cut-off	)
Indicated	50,000	16.0		16.0	27,000		27,000
Inferred	50,000	18.4		18.4	31,000		31,000
TOTAL	170,000	17.4		17.4	99,000		99,000

Emmerson confirms it is not aware of any new information or data that materially affects the information set out above or the material assumptions or technical parameters underpinning these estimates, which continue to apply and have not materially changed.

Outside of Chariot, the other projects are considered Exploration Targets<sup>1</sup> and add a further 160,000 – 180,000oz of gold at an estimated grade of 15 – 20g/t gold (based on historical reports). This excludes any additional ounces added from the planned near mine exploration programs. These Exploration Targets are conceptual in nature. TTY are undertaking further drilling, metallurgy and mine optimisation studies however these are unlikely to result in JORC resources estimates.

## Northern Project Area - Tennant Creek

A series of spectacular assay results were also returned from Emmerson's 100% owned Jasper Hills Project during the June quarter, located within the Northern Project Area(NPA) (ASX:10 April 2018).

Jasper Hills, Mauretania and the recent targets from the airborne geophysical survey will be the focus of Emmerson's exploration prior to the onset of the wet season. Heritage clearances are scheduled for these areas in late October and drilling is planned for November (Figure 3; Tables 3,4,5).

The Jasper Hills mineralisation is hosted in brecciated hematite ironstones surrounded by intensely chloritized sediments of the Warramunga Group. The ironstones are enveloped by silicified carbonates, quartz and jasper, similar in most respects to Edna Beryl and within the district, encompass high-grade gold exploration targets (North Star Deeps Gold, Jasper Hill Gold), high-grade copper exploration targets (Katherine Star, Northern Star and Hermitage) and high-grade coppercobalt exploration targets (Jasper Hills) (Figure 4).

Mineralisation at Jasper Hills is typically associated with the footwall or core of the ironstones and in the oxide zone, some 50m below the surface, consists of malachite and lessor azurite. The transition zone includes these plus bornite, chalcocite and native copper, extending down some 200m below the surface to encompass the sulphide zone of mainly chalcopyrite. The high-grade cobalt zone transgresses the copper and consists of mainly cobaltite in association with chalcopyrite and digenite (Figure 5). Interestingly, historic metallurgical testing of these ores in the 1990's produced a high-grade copper and cobalt concentrate, with a 20kg sample grading 3.6% copper and 0.16% cobalt (1990 Optimet Laboratories).

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The ironstones of the Northern Corridor are hematite dominant and, up until now, have been challenging to discover. Emmerson's success in discovery for these styles of deposits (for example Edna Beryl, Mauretania and Goanna) comes from systematic, science-based exploration utilising the application of new exploration models combined with modern geophysical detection technologies.

# **New South Wales gold-copper projects** (Figure 6)

## 1. Fifield Project

#### Whatling Hill (Figures 6 & 7)

The Whatling Hill mineralisation was identified from systematic sampling and recognition of widespread epidote-chlorite alteration typically associated with the outer zones of porphyry coppergold mineralisation.

Emmerson announced highly encouraging copper and gold geochemical results over a 600m by 500m auger program.

The copper contours of the 40m by 80m soil grid are supported by gold and molybdenum (Figure 8) and broadly coincide with sparse float of epidote-altered monzonite intrusions. Minor quartz-magnetite- chalcopyrite stockwork veins, assaying up to 2% copper and 0.25g/t gold, provide evidence of potential underlying or peripheral mineralisation.

Recent age dating and "green rock" studies of alteration suggest similarities to other metal fertile Ordovician intrusive centres (e.g. Newcrest's world class Cadia-Ridgeway copper-gold deposit that contains 8.7Mt Cu & 42Moz gold).

## 2. Other NSW Projects

The results of previously reported drilling at our nearby Kadungle project continue to be assessed with further work underway on the alteration and trace element geochemistry. Further south, regional reconnaissance has identified rock chips of up to 3.3g/t gold in quartz stockwork veins at the Kilmarnock prospect (Figure 9).

These five NSW projects were selected from the application of proprietary predictive targeting models, aimed to increase the probability of a major discovery of copper and gold. Given this early encouragement, Emmerson has extended its ground position within this highly prospective, metal fertile area.

#### **December Quarter Activities for Tennant Creek**

The following activities are planned for the December quarter:

- Finalisation of clearances for drill testing of Jasper Hills and other targets in Emmerson's 100% owned Northern Project Area.
- Further drilling (funded from the \$5m earn-in by TTY) in the Southern Project Area JV.
- Continuation of the planning, permitting and approval process for the small mines (under the small mines JV).
- Finalisation of the planning and commercial terms for the underground exploration drive and drill program at Edna Beryl.



# **December Quarter Activities for NSW Projects**

The following activities are planned for the December quarter:

- Assessment and interpretation of the recently completed larger geochemical program at Whatling Hill and if positive, IP geophysical surveys to better pinpoint drill targets;
- Continuing assessment of drill results from Kadungle and design of the next drill campaign;
- Follow up exploration at the Kiola project to assess the 19.6% copper and 0.36g/t gold rock chips, the elevated copper associated with surficial malachite veins, within the 28km<sup>2</sup> "Kiola Geochemical Zone"; and
- Continuing assessment at the Wellington project, specifically the 'Ponto East' and 'New Anomaly' areas generated from the recent auger soil sampling program.

#### **Announcements**

The Company has made the following announcements since the start of the quarter.

28/09/2018 Annual Report and Financial Statements

28/09/2018 Appendix 4G

20/09/2018 Precious Metals Summit Presentation

10/09/2018 Appendix 3B

10/09/2018 Revised Mining the Territory Presentation

06/09/2018 Mining the Territory Presentation

06/09/2018 Reinstatement to Official Quotation

06/09/2018 Placement and Strategic Alliance at Tennant Creek

05/09/2018 Voluntary Suspension

03/09/2018 Trading Halt

08/08/2018 Further Copper & Gold Geochemistry for NSW

30/07/2018 Quarterly Activities Report

30/07/2018 Quarterly Cash Flow Report

18/07/2018 Investor Update Presentation

**Emmerson Resources Limited** 

Mr. Rob Bills

**Managing Director and Chief Executive Officer** 

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# **About Emmerson Resources, Tennant Creek and New South Wales**

Emmerson recently commenced exploration on new gold-copper projects in NSW, identified (with our strategic alliance partner Kenex Limited) from the application of 2D and 3D predictive targeting models – aimed at increasing the probability of discovery. The highly prospective Macquarie Arc in NSW hosts >80Mozs gold and >13Mt copper with these resources heavily weighted to areas of outcrop or limited cover. Emmerson's five exploration projects contain many attributes of the known deposits within the Macquarie Arc but remain under explored due to historical impediments, including overlying cover (farmlands and younger rocks) and a lack of exploration focus. Kadungle is a JV with Aurelia Metals covering 43km² adjacent to Emmerson's Fifield project.

In addition, Emmerson is exploring the Tennant Creek Mineral Field (TCMF), one of Australia's highest-grade gold and copper fields producing over 5.5 Mozs of gold and 470,000 tonnes of copper from deposits including Warrego, White Devil, Orlando, Gecko, Chariot and Golden Forty. These high-grade deposits are highly valuable exploration targets, and to date discoveries include high-grade gold at Edna Beryl and Mauretania, plus copper-gold at Goanna and Monitor. These are the first discoveries in the TCMF for over a decade.

Emmerson recently announced a strategic alliance with Territory Resources Limited to build a central processing hub in Tennant Creek to support the milling and processing from Emmerson's small gold mines and other third party feed. This alliance also extends to a \$5m earn-in by Territory Resources over Emmerson's southern tenements (where ERM is the Operator and Manager) plus a Mining JV over a portfolio of Emmerson's small mines that is on a 75/25 profit share basis Emmerson is led by a board and management group of experienced Australian mining executives including former MIM and WMC mining executive Andrew McIlwain as non-executive chairman, and former senior BHP Billiton and WMC executive Rob Bills as Managing Director and CEO.

# **About Territory Resources**

Territory Resources Limited (TTY) explores, mines, rails iron ore and exports out of the Darwin Port in Northern Territory Australia. The company primarily holds an interest in the Frances Creek mine, located to the south of Darwin, Northern Territory. The Company also has interests in the Mt Bundey project and the Yarram project both located in Northern Territory. The Company was incorporated in 2002 and is based in West Perth, Australia. As of February 28, 2018, TTY operates as a subsidiary of Gold Valley Holdings Pty Ltd. TTY is currently expanding its operations into gold projects in the NT, including advancing the +300koz gold project at Nobles Nob and Juno mines in Tennant Creek. TTY is a major shareholder in Maroon Gold, which recently purchased the Black Jack gold processing facility in Charters Towers.

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#### Regulatory Information

The Company does not suggest that economic mineralisation is contained in the untested areas, the information contained relating to historical drilling records have been compiled, reviewed and verified as best as the Company was able. As outlined in this announcement the Company is planning further drilling programs to understand the geology, structure and potential of the untested areas. The Company cautions investors against using this announcement solely as a basis for investment decisions without regard for this disclaimer.

#### Competency Statement

The information in this report which relates to Tennant Creek Exploration Results and Exploration Targets is based on information compiled by Mr Steve Russell BSc, Applied Geology (Hons), MAIG, MSEG. Mr Russell is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Russell is a full-time employee of the Company and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report which relates to NSW Projects Exploration Results is based on information compiled by Dr Ana Liza Cuison, MAIG, MSEG. Dr Cuison is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2004 edition and the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Cuison is a full-time employee of the Company and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

#### Reserves and Resources

The information in this report which relates to the Mineral Resources at Chariot is based upon information compiled by Ian Glacken, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Ian Glacken is an employee of Optiro Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

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

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Emmerson Resources Limited's planned exploration program and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "expect," "intend," "may", "potential," "should," and similar expressions are forward-looking statements. Although Emmerson believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that further exploration will result in the estimation of a Mineral Resource.

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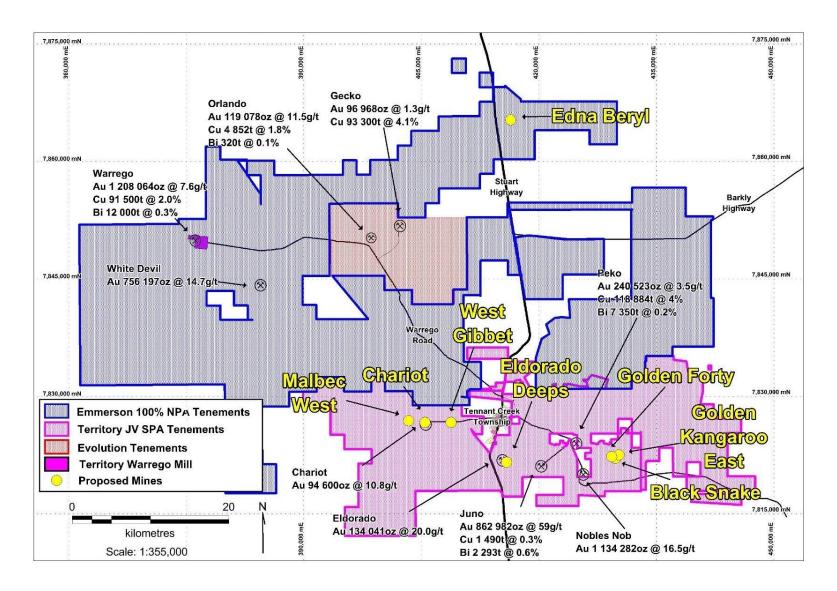
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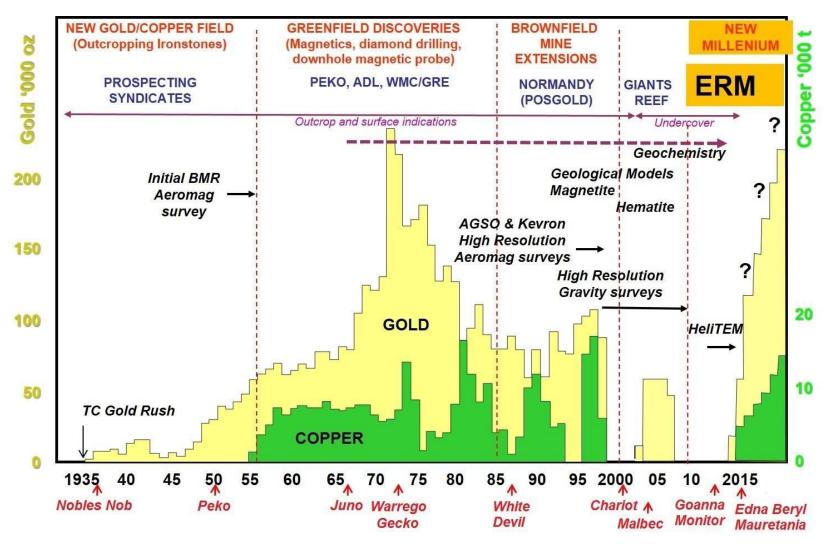




**Figure 1:** Emmerson Resources 100% owned Tennant Creek project (blue), Centralised Processing Facility (Warrego Mill), general area of JV with Territory Resources (pink) and the Small Mines in the current Mining Schedule Projects (yellow dots).

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8





**Figure 2:** Application of Technology as a Driver of Discovery in the Tennant Creek Mineral Field. Gold (yellow – in '000's of ozs) on the 'Left' 'Y' axis, copper (green – in '000's of t's) on the 'right' 'Y' axis and the year (black) on the 'X' axis, also denoted on the 'X' axis are the names of the discoveries (red). Note ERM discoveries from a multifaceted approach utilising new exploration models and technology.

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8



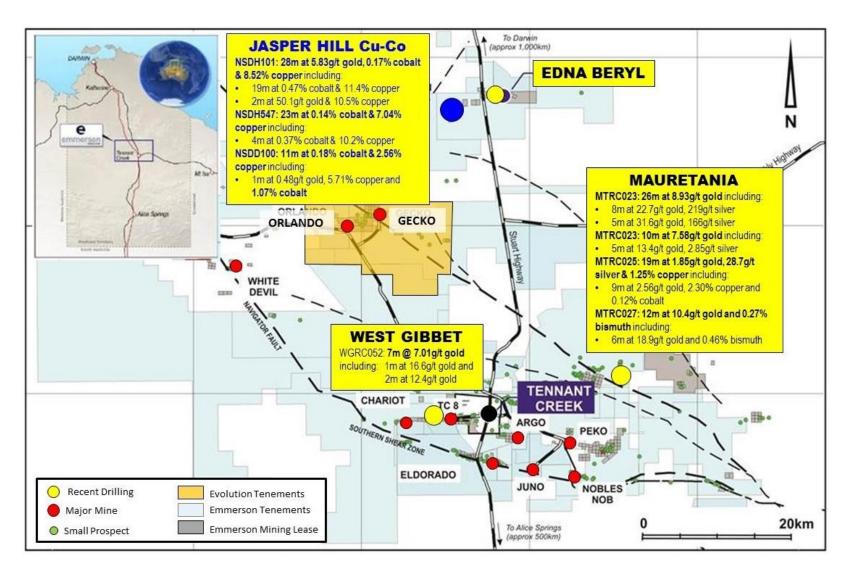
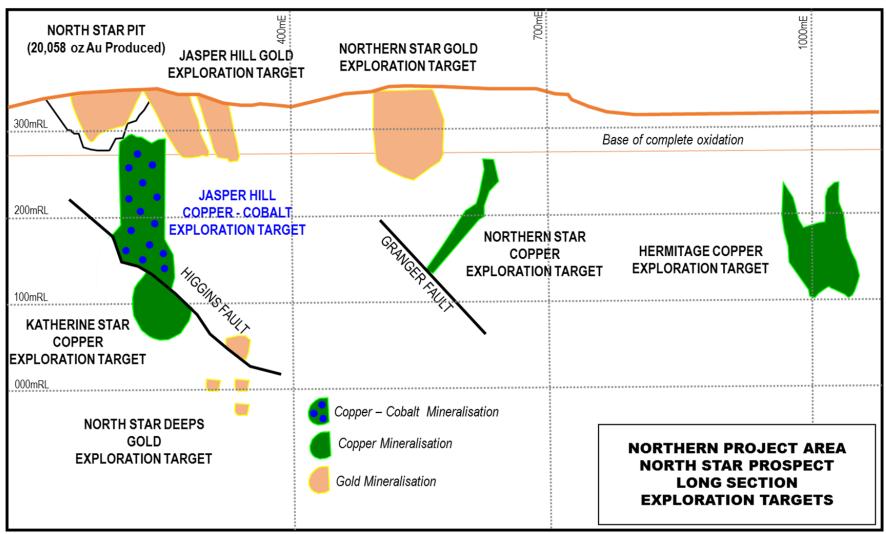


Figure 3: Location of Emmerson's tenement package (light blue) and drill targets (yellow dots).

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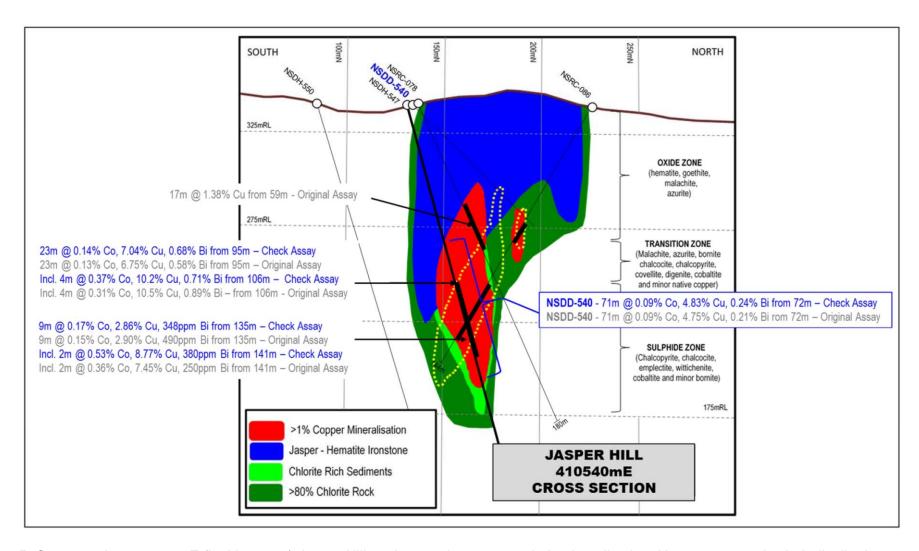




**Figure 4:** Long section highlighting Exploration Targets within the Northern Star project area. Note that these exploration targets are conceptual in nature and that there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8

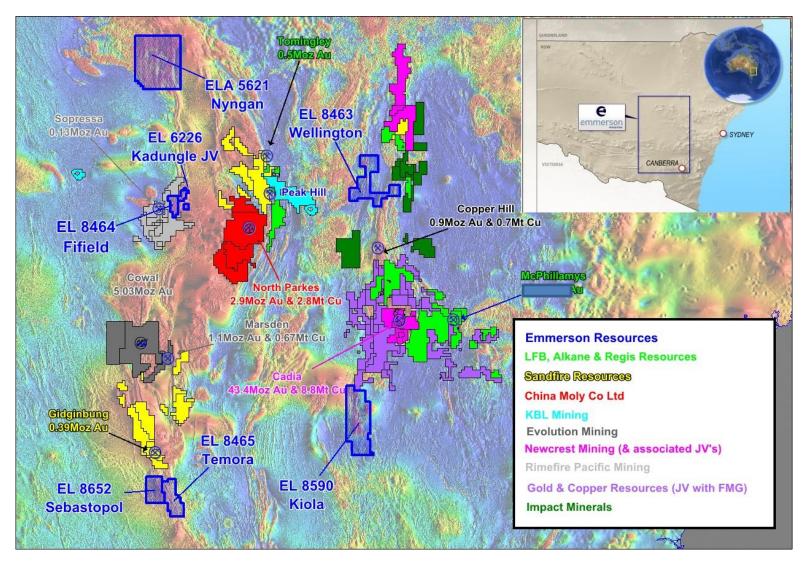




**Figure 5:** Cross section 410540mE (looking west) Jasper Hill geology and copper – cobalt mineralisation. Note copper and cobalt distribution. Note check assays (blue text) and original 1977 assays (grey text) compare well.

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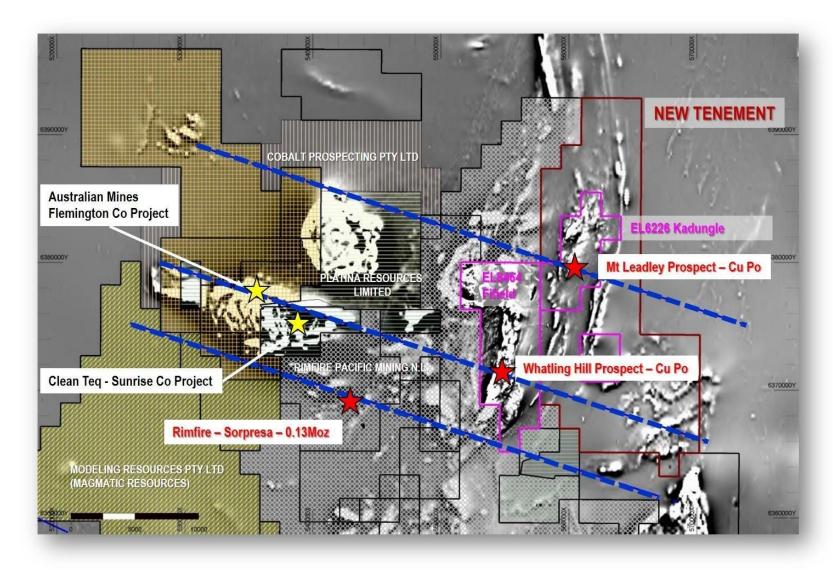




**Figure 6:** Location of Emmerson Resources NSW Projects (bold blue outlines) plus major explorers and deposits within the Macquarie Arc (muted red colour=magnetic signature of the Macquarie Arc).

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8

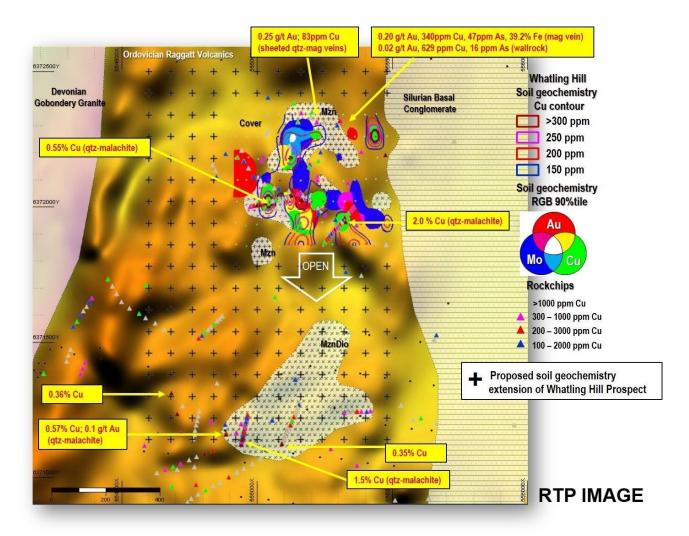




**Figure 7:** Emmerson's consolidated ground position within the highly prospective Lachlan Transfer Zone (blue dashed lines). Includes the Fifield and Kadungle tenements which host the Whatling Hill and Mt Leadley projects.

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8

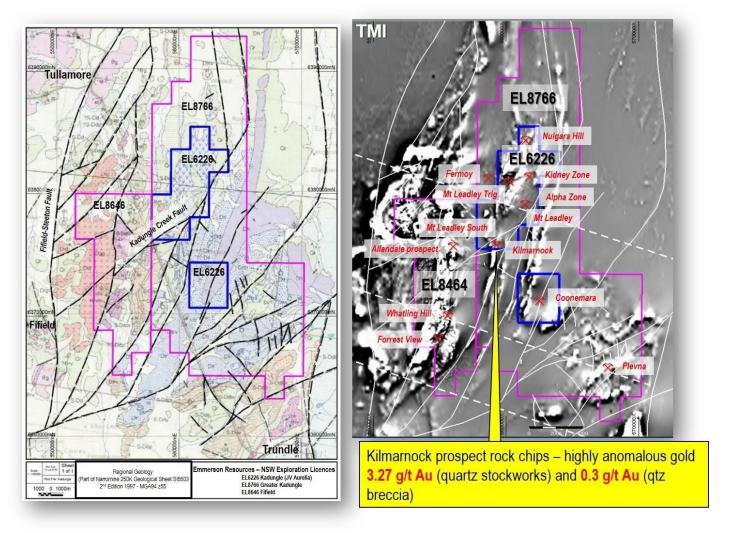




**Figure 8:** Whatling Hill soil geochemistry plus planned extensions (black crosses). The geochemistry is open to the south where reconnaissance rock chips have returned elevated copper and gold. Note the background image is the Reduced to Pole Magnetics(RTP) – showing subtle magnetic highs that appear to correspond to the monzonite intrusions.

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**Figure 9:** The Kilmarnock prospect within the now consolidated Emmerson tenements (Fifield and Kadungle projects). Note the elevated gold in rock chips at Kilmarnock are associated with quartz stockwork veins. The background grey scale image of the magnetics reflect the underlying Ordovician and Silurian volcanis and intrusives.

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 Table 3: Jasper Hill significant confirmation Cobalt drill hole intersections.

Hole ID	East (MGA94_53)	North (MGA94_53)	R L AH	Dip (deg)	AZI mag (deg)	From (m)	To (m)	Width (m)	Au (g/t)	Co (%)	Cu (%)	Bi (%)	Mn (%)	Fe (%)	As (%)	Zn (ppm)	Mo (%)	AI (%)
NCDUAGE	440520.74	7060557.44		70.0	347	146	160	14	0.17	0.20	3.45	0.02	0.70	25.7	0.26	202	0.03	3.15
NSDH105	410530.71	7863557.11	320.8	-70.0	Incl.	151	156	5	0.17	0.40	3.27	0.02	0.80	28.4	0.54	63.4	0.01	0.37
NSD75	440648.06	7064004 75	245 5	60.0	166	307	317	10	0.03	0.15	1.71	0.01	0.17	34.4	0.19	57.7	0.01	1.73
NSD/5	410648.06	7864084.75	315.5	-68.8	Incl.	307	308	1	0.04	0.35	4.57	0.01	0.13	35.1	0.47	79.0	0.01	1.75
					171	117	128	11	0.22	0.18	2.56	0.01	0.05	17.6	0.22	222	0.06	4.38
	410559.31				Incl.	122	125	3	0.34	0.55	5.80	0.01	0.07	23.2	0.34	421	0.20	3.66
NSDD100	410559.31	7863805.19	336.8	-61.0	Incl.	123	124	1	0.48	1.07	5.71	0.01	0.04	19.1	0.48	442	0.36	2.55
						138	147	9	0.68	0.15	4.05	0.63	0.04	26.4	0.17	113	0.17	2.31
					Incl.	144	146	2	2.20	0.32	5.60	1.98	0.06	19.9	0.37	160	0.43	4.33
NSDD140	410562.536	7863806.796	337.9	-55.0	173	168	172	4	0.01	0.16	0.34	0.01	0.17	10.5	0.20	382	0.01	7.72
11000140			5	30.0	Incl.	170	172	2	0.01	0.22	0.49	0.01	0.14	7.87	0.28	297	0.01	8.08
					171	88	97	9	0.05	0.10	2.65	0.01	0.17	21.6	0.14	454	0.02	5.68
NSDH101	410529.49	7863809.75	338.8	-63.0	171	108	136	28	5.83	0.17	8.52	0.33	0.09	19.2	0.27	417	0.12	3.32
NODITIO	110020.10	700000.70	000.0	00.0	Incl.	115	134	19	0.56	0.47	11.4	0.47	0.10	16.7	0.36	510	0.17	3.68
						134	136	2	50.1	0.09	10.5	0.23	0.11	9.55	0.09	348	0.03	4.42
					002	95	118	23	0.86	0.14	7.04	0.68	0.18	13.42	0.17	0.16%	0.34	5.72
NSDH547	410539.86	7863713.43	338.2	-73	Incl.	106	110	4	1.35	0.37	10.2	0.71	0.11	7.67	0.42	0.34%	0.75	3.61
						135	144	9	0.07	0.17	2.86	0.03	0.07	5.20	0.19	241	0.01	4.29
					Incl.	141	143	2	0.09	0.53	8.77	0.04	0.02	2.22	0.64	164	0.01	3.22
					175.5	119	134	15	0.14	0.17	2.03	0.05	1.45	30.2	0.18	377	0.02	3.18
					Incl.	127	132	5	0.25	0.36	2.92	1.29	0.18	24.0	0.45	426	0.03	3.95
NSDH488	410521.29	7863855.79	330.7	-48		138	146	8	0.06	0.19	1.28	0.02	0.18	18.13	0.20	329	0.01	7.23
					Incl.	143	146	3	0.10	0.29	3.21	0.06	0.18	17.6	0.32	389	0.03	7.49
						284	299	15	6.72	0.26	2.56	0.24	0.29	24.5	0.33	939	0.14	8.12
					Incl.	296	298	2	0.78	1.32	2.00	0.85	0.32	24.5	0.17	0.12%	0.48	4.38
NSDH543	410555.13	7863697.91	339.7	-56	010	83	99	17	0.13	0.14	3.70	0.01	0.16	23.14	0.07	354	0.01	2.83
						91	94	3	0.09	0.43	5.17	0.01	0.31	21.66	0.09	442	0.02	3.51
NSDD110	410619.83	7863713.62	327.9	-70	355					NSI								
NSDD112	410552.16	7863681.30	339.7	-70	360					NSI								





 Table 4: Jasper Hill significant confirmation Copper drill hole intersections.

Hole ID	East (MGA94_53)	North (MGA94_53)	RL AHD	Dip (deg)	AZI mag (deg)	From (m)	To (m)	Width (m)	Au (g/t)	Co (%)	Cu (%)	Bi (ppm)	Mn (%)	Fe (%)	As (%)	Zn (ppm)	Mo (%)	AI (%)
NSD1				-	347	147	160	13	0.17	0.21	3.69	260	0.62	25.0	0.28	211	0.03	3.39
05				70.0	Incl.	155	160	5	0.21	0.23	5.66	640	0.20	22.8	0.30	482	0.07	8.49
NSD7	410648.06	7864084.75	315.5	-	166	306	315	9	0.03	0.16	2.09	22.0	0.13	35.5	0.20	88	0.01	2.12
5	410046.00	7804064.75	313.3	68.8	Incl.	307	308	1	0.04	0.35	4.57	26.0	0.13	35.1	0.47	79	0.01	1.75
					171	117	126	9	0.26	0.22	3.03	34.1	0.06	14.0	0.27	248	0.07	5.13
NSDD 100	410559.31	7863805.19	336.8	61.0	171	138	147	9	0.68	0.15	4.05	0.63%	0.04	26.0	0.17	113	0.17	2.31
					Incl.	141	147	6	0.92	0.19	5.09	0.94%	0.24	23.0	0.21	138	0.24	3.09
						73	97	24	0.25	0.08	2.51	44.0	0.16	21.7	014	262	0.02	2.98
NSDH	410529.49	7863809.75	338.8	-	171	101	103	2	0.05	0.03	2.74	10.0	0.14	24.9	0.02	564	0.01	5.21
101	410020.40	7000003.70	330.0	63.0		108	136	28	5.83	0.17	8.52	0.33%	0.09	19.2	0.27	417	0.12	3.32
					Incl.	120	135	15	10.5	0.18	13.2	0.59%	0.10	12.8	0.34	497	0.19	3.62
					002	66	119	58	0.47	0.09	5.32	0.31%	0.45	23.1	0.12	932	0.16	2.86
NSDH	440500.00	7000740 40	000.0	70	Incl.	75	81	6	0.11	0.07	6.29	0.01	0.04	27.4	0.08	705	0.01	0.02
547	410539.86	7863713.43	338.2	-73	Incl.	85	116	31	0.69	0.12	6.83	0.42%	0.13	20.4	0.16	1162	0.20	4.18
						131	145	14	0.06	0.12	4.17	0.04	0.09	6.97	0.13	302	0.01	4.88
					Incl.	132	134	2	0.07	0.03	14.9	0.11%	0.15	11.0	0.03	408	0.01	5.06
						116	133	17	0.13	0.15	2.10	409	1.59	31.1	0.16	330	0.01	2.59
NSDH 488	410521.29	7863855.79	330.7	-48	175.5	144	148	4	0.14	0.22	3.33	635	0.18	15.7	0.24	516	0.03	7.27
400						292	299	7	3.51	0.46	4.48	0.37%	0.27	23.8	0.59	1060	0.24	6.18
					Incl.	293	299	6	0.67	0.53	4.88	0.42%	0.27	23.4	0.68	1056	0.26	5.29
NSDH	410555.13	7863697.91	339.7	-56	010	82	100	18	0.13	0.14	3.53	0.01	0.16	22.5	0.07	355	0.02	319
543	+10000.10	7.000007.01	555.7	30	Incl.	85	88	3	0.27	0.07	9.14	0.01	0.05	19.3	0.11	196	0.02	1.25
NSDD 110	410619.83	7863713.62	327.9	-70	355						NSI							
NSDD 112	410552.16	7863681.30	339.7	-70	360						NSI							

<sup>&</sup>lt;sup>1</sup> Refer to Cautionary/Forward-looking Statement on page 8





Table 5: Jasper Hill significant confirmation Gold drill hole intersections.

Hole ID	East (MGA94_53)	North (MGA94_53 )	R L A H	Dip (deg)	AZI mag (deg)	From (m)	To (m)	Width (m)	Au (g/t)	Co (%)	Cu (%)	Bi (%)	Mn (%)	Fe (%)	As (%)	Zn (ppm)	Mo (%)	AI (%)
NSDH488	410521.29	7863855.7	330.	-	175.5	284	298	14	6.72	0.28	2.17	0.26	0.29	24.4	0.34	996	0.14	8.68
110011400	410021.23	9	7	48.0	Incl.	288	293	5	16.9	0.08	0.72	0.16	0.30	24.0	0.08	999	0.07	9.21
NSDD110	410619.83	7863713.6	327.	-	355	295	310	15	7.00	0.01	0.06	0.12	0.16	50.1	0.01	71.7	0.01	0.74
NSDDTTO	410019.03	2	9	70.0	Incl.	302	308	6	14.9	0.01	0.04	0.09	0.18	58.6	0.01	73.5	0.01	1.06
NSDH547	410539.86	7863713.4	338.	-	002	106	117	11	1.47	0.19	8.70	1.22	0.13	8.28	0.18	0.21%	0.65	4.18
NSDH347	410559.60	3	2	73.0	Incl.	112	117	5	1.99	0.09	9.19	2.02	0.13	8.45	0.06	0.17%	0.73	4.27
NSDH101	410529.49	7863809.7 5	338. 8	- 63.0	171	134	136	2	50.1	0.09	10.5	0.23	0.11	9.55	0.09	348	0.03	4.42

#### Note:

- (1) All samples are sawn quarter diamond NQ or HQ size core samples.
- (2) All core is historic in nature with some holes dating back to 1975.
- (3) Gold analysis method by 25g Aqua Regia with ICP-OES finish.
- (4) Where gold analysis is greater than 2 g/t Au, repeat assay is by Fire Assay
- (5) Multi element analysis method by 4 acid digest & ICP-OES, ICP-MS finish.
- Intersections are reported as downhole lengths and not true width.

- (7) Minimum cut-off of 400 ppm Co. No maximum cut-off.
- (8) Minimum cut-off of 0.50 g/t Au. No maximum cut-off.
  (9) Minimum cut-off of 0.50% Cu. No maximum cut-off.
- (10) Minimum cut-off of 0.50 g/t Au. No maximum cut-off.
- (11) Maximum of 2m internal dilution.

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Table 6: Whatling Hill prospect soil sampling details, collar, and selected geochemical results.

С	Sample Type	Assay	MGA94_55	MGA94 55	Depth	Au	Ag	As	Cu	Fe	Mn	Мо	Pb	Zn
	' ''	Method	Easting	Northing	(m)	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
NSW 70455	Soil (-80 mesh)	AuME-TL43	555518.3	6372263.1	6	0.001	0.020	3.3	107.0	4.84	1400	0.28	7.6	108
NSW 70456	Soil (-80 mesh)	AuME-TL43	555480.3	6372261.8	5	0.003	0.010	3.1	51.9	4.15	901	0.21	6.3	146
NSW 70457	Soil (-80 mesh)	AuME-TL43	555439.1	6372259.8	5	0.001	0.040	2.7	396.0	4.59	1010	0.12	4.9	94
NSW 70458	Soil (-80 mesh)	AuME-TL43	555396.6	6372260.9	6	0.001	0.010	3.3	91.0	4.74	930	0.11	4.7	99
NSW 70459	Soil (-80 mesh)	AuME-TL43	555360.6	6372261.0	5	0.005	0.010	3.7	74.2	5.45	1420	0.29	3.2	135
NSW 70460	Soil (-80 mesh)	AuME-TL43	555318.9	6372260.3	3	0.002	0.010	2.7	87.8	4.39	796	0.22	3.1	101
NSW 70461	Soil (-80 mesh)	AuME-TL43	555282.0	6372261.8	3	0.001	0.010	4.4	54.4	6.69	1780	0.28	4.2	134
NSW 70462	Soil (-80 mesh)	AuME-TL43	555239.8	6372260.0	3	0.002	0.020	3.1	193.0	5.13	1260	0.22	11.6	143
NSW 70463	Soil (-80 mesh)	AuME-TL43	555199.1	6372258.3	3	0.003	0.040	3.8	217.0	5.64	1080	0.40	4.5	117
NSW 70464	Soil (-80 mesh)	AuME-TL43	555161.2	6372262.4	4	0.002	0.040	3.7	198.5	6.89	1220	0.39	3.1	131
NSW 70465	Soil (-80 mesh)	AuME-TL43	555117.9	6372257.1	2	0.005	0.040	3.8	217.0	5.21	1020	0.40	18.1	100
NSW 70467 NSW 70468	Soil (-80 mesh)	AuME-TL43	555078.5 555004.8	6372261.1 6372177.2	2	0.001	0.020	3.3 2.0	160.5 18.4	5.68 7.03	1310 1050	0.30	3.2 2.6	139 120
NSW 70469	Soil (-80 mesh) Soil (-80 mesh)	AuME-TL43 AuME-TL43	555043.0	6372177.2	5	0.002	0.020	2.8	80.1	4.89	1700	0.23	2.0	125
NSW 70409	Soil (-80 mesh)	AuME-TL43	555082.3	6372176.3	3	0.002	0.020	2.9	146.5	5.22	848	0.32	23.9	103
NSW 70470	Soil (-80 mesh)	AuME-TL43	555121.0	6372179.3	3	0.005	0.130	5.9	304.0	6.89	1540	0.20	26.0	170
NSW 70471	Soil (-80 mesh)	AuME-TL43	555160.3	6372177.8	4	0.001	0.030	3.5	170.5	5.46	1680	0.34	5.6	158
NSW 70473	Soil (-80 mesh)	AuME-TL43	555200.6	6372178.8	4	0.002	0.020	3.1	24.0	5.93	1020	0.28	3.7	131
NSW 70474	Soil (-80 mesh)	AuME-TL43	555243.9	6372176.3	3	0.004	0.010	4.0	25.5	6.04	1170	0.19	2.7	157
NSW 70476	Soil (-80 mesh)	AuME-TL43	555283.0	6372178.0	2	0.003	0.010	3.1	110.0	5.39	835	0.35	4.2	86
NSW 70477	Soil (-80 mesh)	AuME-TL43	555320.6	6372177.8	4	0.003	0.010	2.9	59.0	6.17	1360	0.33	2.7	134
NSW 70478	Soil (-80 mesh)	AuME-TL43	555363.5	6372177.5	6	0.002	0.010	3.4	131.5	5.50	1000	0.28	2.6	135
NSW 70479	Soil (-80 mesh)	AuME-TL43	555402.8	6372179.4	5	0.002	0.010	3.7	101.0	4.84	980	0.14	2.1	139
NSW 70480	Soil (-80 mesh)	AuME-TL43	555443.5	6372182.2	3	0.002	0.010	4.5	13.7	5.47	943	0.17	3.6	145
NSW 70481	Soil (-80 mesh)	AuME-TL43	555483.6	6372181.2	3	0.001	0.010	3.5	144.0	5.24	1340	0.15	8.3	98
NSW 70482	Soil (-80 mesh)	AuME-TL43	555518.1	6372178.1	3	0.002	0.010	1.4	24.2	3.72	877	0.15	3.2	124
NSW 70483	Soil (-80 mesh)	AuME-TL43	555518.6	6372099.3	3	0.002	0.010	2.5	93.3	3.77	571	0.20	2.5	59
NSW 70484	Soil (-80 mesh)	AuME-TL43	555478.5	6372098.6	3	0.001	0.005	2.1	9.4	5.06	669	0.17	2.2	108
NSW 70485	Soil (-80 mesh)	AuME-TL43	555439.2	6372104.4	4	0.002	0.005	5.0	64.5	5.53	1130	0.13	2.4	85
NSW 70486 NSW 70487	Soil (-80 mesh)	AuME-TL43	555401.7 555360.1	6372103.4 6372099.9	3 4	0.001	0.010	3.5 3.7	22.4 85.2	5.98 6.50	870 1070	0.28	3.2 2.1	114 123
NSW 70487	Soil (-80 mesh) Soil (-80 mesh)	AuME-TL43 AuME-TL43	555320.0	6372099.9	2	0.004	0.010	2.8	16.9	5.16	807	0.37	3.7	102
NSW 70489	Soil (-80 mesh)	AuME-TL43	555278.3	6372098.3	3	0.001	0.020	2.4	69.2	4.72	930	0.23	18.7	149
NSW 70409	Soil (-80 mesh)	AuME-TL43	555239.4	6372101.4	1.5	0.001	0.020	3.6	74.2	5.80	906	0.23	2.9	107
NSW 70491	Soil (-80 mesh)	AuME-TL43	555200.8	6372097.6	2	0.002	0.020	3.7	150.0	6.14	911	0.25	3.0	122
NSW 70492	Soil (-80 mesh)	AuME-TL43	555161.5	6372098.6	3	0.003	0.030	3.4	84.4	5.21	1500	0.51	3.9	133
NSW 70493	Soil (-80 mesh)	AuME-TL43	555122.4	6372101.9	1	0.003	0.030	3.8	155.5	5.65	1040	0.23	10.3	156
NSW 70494	Soil (-80 mesh)	AuME-TL43	555082.6	6372098.3	2	0.003	0.050	3.6	163.0	6.62	1010	0.22	4.9	124
NSW 70495	Soil (-80 mesh)	AuME-TL43	555042.7	6372101.0	3	0.002	0.040	2.5	185.0	5.34	1140	0.40	3.6	124
NSW 70496	Soil (-80 mesh)	AuME-TL43	555000.2	6372101.0	3	0.002	0.020	2.8	133.5	6.08	1200	0.27	2.6	123
NSW 70497	Soil (-80 mesh)	AuME-TL43	555003.8	6372018.1	1	0.002	0.040	2.6	121.0	4.82	939	0.24	3.7	125
NSW 70498	Soil (-80 mesh)	AuME-TL43	555045.0	6372017.8	2	0.002	0.090	2.2	405.0	5.13	1200	0.17	8.2	170
NSW 70499	Soil (-80 mesh)	AuME-TL43	555082.9	6372016.9	1	0.002	0.030	2.6	35.4	5.17	1100	0.35	4.2	101
NSW 70501	Soil (-80 mesh)	AuME-TL43	555120.5	6372018.9	2	0.005	0.030	2.7	303.0	5.65	801	0.23	2.4	107
NSW 70502	Soil (-80 mesh)	AuME-TL43	555156.8	6372014.9	1	0.003	0.050	2.9	62.3	4.12	1080	0.27	62.8	99
NSW 70503 NSW 70504	Soil (-80 mesh)	AuME-TL43	555201.2 555243.4	6372019.1 6372020.0	) )	0.004	0.070	2.6	212.0 244.0	5.65	1060	0.32	4.6 2.8	88 135
NSW 70504 NSW 70505	Soil (-80 mesh) Soil (-80 mesh)	AuME-TL43 AuME-TL43	555281.8	6372020.0	3	0.002	0.080	3.9 3.1	131.0	5.29 5.53	1120 1030	0.28	2.8	77
NSW 70506	Soil (-80 mesh)	AuME-TL43	555323.3	6372020.2	3	0.003	0.030	2.5	44.9	5.46	1080	0.39	2.9	90
NSW 70507	Soil (-80 mesh)	AuME-TL43	555362.0	6372022.1	3	0.003	0.010	2.6	27.8	5.92	1110	0.37	2.6	70
NSW 70508	Soil (-80 mesh)	AuME-TL43	555403.9	6372022.1	2	0.003	0.020	2.4	20.6	4.82	748	0.31	2.5	64
NSW 70509	Soil (-80 mesh)	AuME-TL43	555441.8	6372023.5	2	0.002	0.010	1.7	9.9	7.66	957	0.28	1.7	84
NSW 70510	Soil (-80 mesh)	AuME-TL43	555479.9	6372025.7	3	0.002	0.010	2.6	44.3	5.80	755	0.24	2.8	65
NSW 70511	Soil (-80 mesh)	AuME-TL43	555520.6	6372022.2	3	0.001	0.010	1.8	21.2	4.55	762	0.26	1.9	69
NSW 70512	Soil (-80 mesh)	AuME-TL43	555520.5	6371943.4	1	0.001	0.030	2.7	36.2	3.65	581	0.31	7.2	34
NSW 70513	Soil (-80 mesh)	AuME-TL43	555479.4	6371942.8	2	0.003	0.040	5.1	237.0	4.98	888	0.31	4.9	64
NSW 70514	Soil (-80 mesh)	AuME-TL43	555439.4	6371942.3	2	0.002	0.030	3.1	51.7	4.36	1070	0.38	6.9	62
NSW 70515	Soil (-80 mesh)	AuME-TL43	555398.7	6371944.0	2	0.004	0.020	3.8	36.0	5.26	767	0.39	4.5	53
NSW 70516	Soil (-80 mesh)	AuME-TL43	555360.8	6371940.0	2	0.004	0.010	3.5	73.2	5.19	932	0.23	2.4	57
NSW 70517	Soil (-80 mesh)	AuME-TL43	555321.4	6371944.6	1.5	0.003	0.020	3.1	307.0	5.50	976	0.30	4.0	66
NSW 70518	Soil (-80 mesh)	AuME-TL43	555278.6	6371941.6	1	0.003	0.020	2.7	64.4	4.67	796	0.21	3.7	59
NSW 70519	Soil (-80 mesh)	AuME-TL43	555240.3	6371942.6	1	0.002	0.040	2.3	41.3	4.76	978	0.25	7.5	67 201
NSW 70520 NSW 70521	Soil (-80 mesh) Soil (-80 mesh)	AuME-TL43 AuME-TL43	555200.2 555320.3	6371941.8 6371861.1	3	0.005	0.040	5.2 3.7	211.0 220.0	7.18 6.28	979 1420	0.26	6.9 10.3	144
NSW 70521	Soil (-80 mesh)	AuME-TL43	555359.7	6371863.1	3	0.002	0.050	3.7	83.0	5.38	1240	0.24	3.8	144
NSW 70522 NSW 70523	Soil (-80 mesh)	AuME-TL43	555400.5	6371864.9	1	0.001	0.010	6.4	218.0	4.57	1170	0.27	3.5	159
11011 10020	3011 ( 00 1110311)	/ WINE-1 LTU	0.00-700.0	007 1004.0	'	0.001	0.020	U.T	210.0	7.01	1170	0.20	0.0	100



NSW 70524	Soil (-80 mesh)	AuME-TL43	555438.4	6371864.1	1	0.002	0.010	3.3	44.3	5.80	1540	0.27	3.2	94
NSW 70524	Soil (-80 mesh)	AuME-TL43	555479.1	6371862.4	1	0.002	0.040	3.4	62.1	5.70	881	0.18	3.7	67
NSW 70527	Soil (-80 mesh)	AuME-TL43	555523.2	6371860.2	2	0.002	0.010	7.9	45.2	5.92	1290	0.30	5.8	108
NSW 70528	Soil (-80 mesh)	AuME-TL43	555521.7	6372341.5	3	0.002	0.010	2.0	22.6	3.32	660	0.15	5.1	72
NSW 70529	Soil (-80 mesh)	AuME-TL43	555481.7	6372343.0	6	0.001	0.010	3.9	17.9	4.40	818	0.10	1.8	107
NSW 70530	Soil (-80 mesh)	AuME-TL43	555441.0	6372344.0	9	0.001	0.010	2.3	14.6	5.87	917	0.10	4.7	138
NSW 70531	Soil (-80 mesh)	AuME-TL43	555399.0	6372342.0	3	0.001	0.010	4.2	60.9	5.32	811	0.14	3.8	133
NSW 70531	Soil (-80 mesh)	AuME-TL43	555358.0	6372341.0	3	0.002	0.010	5.6	14.1	4.87	705	0.21	3.7	116
NSW 70534	Soil (-80 mesh)	AuME-TL43	555318.0	6372341.0	4	0.002	0.010	4.1	60.2	4.86	992	0.22	13.9	91
NSW 70535	Soil (-80 mesh)	AuME-TL43	555273.9	6372341.0	3	0.002	0.010	5.7	98.8	4.94	1290	0.21	8.3	173
NSW 70536	Soil (-80 mesh)	AuME-TL43	555245.4	6372340.7	4	0.002	0.010	4.0	111.0	4.42	469	0.30	9.3	111
NSW 70537	. ,		555155.8	6372349.9	4	0.002	0.010	4.0	32.9	6.61	1580	0.13	3.4	125
NSW 70538	Soil (-80 mesh) Soil (-80 mesh)	AuME-TL43 AuME-TL43	555114.5	6372349.9	3	0.001	0.010	3.5	186.0	5.12	501	0.32	17.0	204
NSW 70539	Soil (-80 mesh)	AuME-TL43	555079.2	6372343.3	5	0.002	0.010	4.4	47.5	6.51	343	0.17	41.8	240
NSW 70540	Soil (-80 mesh)		555079.2	6372342.1	3	0.002	0.010	3.3	69.5	3.56	199	0.09	8.8	54
NSW 70540 NSW 70541	/	AuME-TL43		6372341.9		0.002	0.020	1.9	12.2	1.96	93	0.15	8.6	23
NSW 70541 NSW 70542	Soil (-80 mesh)	AuME-TL43	555000.6 554959.5	6372344.8	1.5 1	0.001	****	1.5	6.6	0.88	93 55	0.26	5.1	6
	Soil (-80 mesh)	AuME-TL43		6372338.0		0.001	0.010	0.9	8.6	1.42	74	0.28		13
NSW 70543	Soil (-80 mesh)	AuME-TL43	554920.7		2								7.1	
NSW 70544	Soil (-80 mesh)	AuME-TL43	554921.8	6372261.5	1	0.001	0.010	0.9	5.0	0.82	140	0.30	4.5	6
NSW 70545	Soil (-80 mesh)	AuME-TL43	554961.9	6372259.7	1	0.001	0.010	0.5	4.4	0.59	61	0.13	4.6	4
NSW 70546	Soil (-80 mesh)	AuME-TL43	555001.5	6372260.9	1	0.001	0.020	1.0	6.1	0.87	124	0.22	5.5	7
NSW 70547	Soil (-80 mesh)	AuME-TL43	555208.3	6372344.6	2	0.001	0.020	1.5	13.3	1.43	263	0.33	6.5	20
NSW 70548	Soil (-80 mesh)	AuME-TL43	555040.5	6372261.0	1	0.001	0.020	1.9	21.1	2.52	480	0.25	6.0	26
NSW 70549	Soil (-80 mesh)	AuME-TL43	554969.0	6372182.5	0.5	0.003	0.030	1.9	28.5	4.53	505	0.22	5.3	36
NSW 70551	Soil (-80 mesh)	AuME-TL43	554918.2	6372178.3	0.5	0.005	0.030	2.6	30.4	4.64	582	0.24	5.2	51
NSW 70552	Soil (-80 mesh)	AuME-TL43	554928.4	6372100.4	0.5	0.009	0.010	2.2	58.3	4.08	743	0.17	3.1	73
NSW 70553	Soil (-80 mesh)	AuME-TL43	554960.7	6372099.0	0.3	0.017	0.050	2.5	26.6	4.31	902	0.28	6.1	45
NSW 70554	Soil (-80 mesh)	AuME-TL43	554958.7	6372023.9	2	0.002	0.010	2.6	44.7	5.77	940	0.30	2.5	90
NSW 70555	Soil (-80 mesh)	AuME-TL43	554924.8	6372021.4	2	0.004	0.010	2.5	10.6	5.48	1350	0.16	2.7 9.6	145 34
NSW 70556	Soil (-80 mesh)	AuME-TL43	554922.0	6371943.4	0.5	0.001	0.040		40.3	4.44	491	0.32		
NSW 70557	Soil (-80 mesh)	AuME-TL43	554922.6	6371862.9	2	0.001	0.020	1.5	9.9	1.50	211	0.25	5.9	18
NSW 70558	Soil (-80 mesh)	AuME-TL43	554958.7	6371931.4	2	0.001	0.010	2.1	116.5	4.50	679	0.19	2.6	79 37
NSW 70559	Soil (-80 mesh)	AuME-TL43	554998.9	6371936.1	0.3	0.002	0.050	2.7	106.0	5.64	481	0.29	6.0	
NSW 70560 NSW 70561	Soil (-80 mesh)	AuME-TL43	555046.4 555083.8	6371943.3 6371940.2	0.2	0.003	0.080	2.8	106.5 104.5	5.15 4.84	507 521	0.21 0.16	8.0 4.8	40 79
	Soil (-80 mesh)	AuME-TL43												
NSW 70562	Soil (-80 mesh)	AuME-TL43	555123.2	6371935.7	2	0.002	0.090	3.0	100.0	4.65	864	0.15	3.6 8.3	95
NSW 70563	Soil (-80 mesh)	AuME-TL43	555161.1	6371941.3	2	0.004	0.110		299.0	5.50	1190	-		143
NSW 70564	Soil (-80 mesh)	AuME-TL43	555278.4	6371862.7	0.2	0.002	0.040	2.4	82.7	4.35	749	0.19	8.4	62
NSW 70565	Soil (-80 mesh)	AuME-TL43	554959.9	6371856.0	1	0.002	0.050	2.8	140.5	4.57	817	0.21	7.5	107
NSW 70567	Soil (-80 mesh)	AuME-TL43	555244.7	6371857.0	2	0.002	0.010	2.5	22.5	4.97	1340	0.17	3.6	170
NSW 70568	Soil (-80 mesh)	AuME-TL43	555199.2	6371857.9	3	0.002	0.070	2.9	205.0	5.22	1000	0.13	1.9	112
NSW 70569	Soil (-80 mesh)	AuME-TL43	555162.2	6371863.1	1.5	0.002	0.070	3.7	88.2	6.24	823	0.23	7.7	92
NSW 70570	Soil (-80 mesh)	AuME-TL43	555119.2	6371861.9	3	0.002	0.020	3.5	210.0	5.50	1050	0.11	3.4	287
NSW 70571	Soil (-80 mesh)	AuME-TL43	555084.4	6371854.7	2	0.002	0.040	3.0	76.7	5.29	1030	0.21	6.8	112
NSW 70572	Soil (-80 mesh)	AuME-TL43	555039.3	6371858.2	3	0.003	0.020	2.9	33.3	5.90	1700	0.17	2.8	250
NSW 70573	Soil (-80 mesh)	AuME-TL43	554995.0	6371854.6	1	0.001	0.040	2.5	45.6	4.44	819	0.29	5.5	66

Table 2: Significant rockchip sample results from Kilmarnock prospect.

Sample ID	Sample Type	MGA94_55 Easting	MGA94_55 Northing	Au ppm	As ppm	Ba ppm	i ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Pb ppm	Sr ppm	V ppm	Zn ppm	Description
KAD076	FLOAT	559051.5	6376342.7	0.01	2.5	80	1	4	0.99	234	1	5	30	8	5	Creamy, silicified, vuggy
KAD077	FLOAT	559200.6	6376387.9	0.01	71	720	2	40	3.37	88	1	16	389	87	10	Reddish matrix-hematite altered, quartz as breccia fill - hydrothermal?
KAD078	FLOAT	559202.6	6376384.5	0.07	189	620	1	16	3.46	106	8	236	168	77	81	Reddish matrix-hematite altered, quartz as breccia fill - hydrothermal?
KAD079	FLOAT	559202.2	6376389.1	0.30	384	580	1	31	6.25	409	21	1890	254	331	242	Brecciated, quartz as breccia fill, reddish hematite-clay altered groundmass
KAD080	FLOAT	559184.2	6376384.6	3.47	72	1160	1	36	3.06	135	38	407	81	42	50	Quartz stockworks, hosted in highly silicified rock unit, felsic?
KAD076	FLOAT	559051.5	6376342.7	0.01	2.5	80	1	4	0.99	234	1	5	30	8	5	Creamy, silicified, vuggy



The exploration results contained within the above company release are in accordance with the guidelines of *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code, 2012).

# SECTION 1 SAMPLING TECHNIQUES AND DATA-JASPER HILL EXPLORATION TARGET

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 downhole 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.</li> <li>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</li> </ul>	<ul> <li>Drill holes reported in the above ASX announcement are of a historical nature and were drilled during the period from 1975 to 1997.</li> <li>Drilling targeted the Jasper Hill Exploration Target which is ironstone containing Copper, Cobalt and Gold mineralisation.</li> <li>Holes were angled to optimally test the interpreted shear zone containing the above-mentioned ironstone.</li> <li>The Jasper Hill Exploration Target has been historically sampled using Reverse Circulation (RC) and diamond drilling (DD) techniques.</li> <li>Diamond drill core was identified to contain elevated copper and cobalt assay information through research of historical reports.</li> <li>Diamond drill core was located within Emmerson's (ERM) core shed located on our Warrego site.</li> <li>Diamond drill core was found to be under cover and in excellent condition for its age.</li> <li>Selected intervals were recovered, transported back to the Tennant Creek office where the core was geologically logged, photographed and sampled.</li> <li>10 diamond drill holes were selected for confirmation Cu-Co-Au sampling.</li> <li>400 quarter NQ core samples were collected as a first stage confirmation of mineralisation project.</li> <li>The selected diamond core had been cut in half by previous companies and was sent for assay.</li> <li>The check diamond cores were cut using an automatic core saw consisting of quarter NQ core samples with one quarter retained in the tray for reference.</li> <li>The check diamond core samples dispatched were typically 2.5–3.0kg in weight. These samples were pulverised (at Genalysis Laboratories in Alice Springs) to produce a 25g charge for analysis.</li> <li>A 4 Acid digest low grade mineralisation analytical package was selected on suggestion of laboratory staff.</li> <li>Gold was analysed using Aqua Regia, 25g charge. Assays that returned greater than 1 g/t Au were reassayed using Fire Assay technique.</li> </ul>
Drilling techniques	detailed information.  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).	<ul> <li>Diamond, Reverse Circulation and Rotary Air Blast drilling has been completed at Jasper Hills Exploration Target.</li> <li>Diamond drilling consisted NQ &amp; HQ size drill bit, standard tube.</li> <li>Core does not appear to have been oriented.</li> <li>Reverse Circulation drilling utilizes a 5 3/4 inch, face sampling bit.</li> <li>RAB, RC and Diamond drilling accounts for 100% of the current drilling at the Jasper Hills Exploration</li> </ul>



Criteria	JORC Code explanation	Commentary
		Target.
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>Core recoveries are fair to good based on visual inspection and comments (data) recorded on previous company reports.</li> <li>Visual inspection of the 10 DDH holes selected for check sampling were consistent with the paper records.</li> <li>Sample recovery for the diamond core is considered good and representative, however this is based solely on the 10 drill holes inspected.</li> </ul>
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.      Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.      The total length and percentage of the relevant intersections logged.	<ul> <li>Standard operating procedures are employed by Emmerson for logging of the 10 diamond drill holes selected for sampling.</li> <li>All DDH samples have been geologically logged in one metre intervals.</li> <li>Drill hole logging data is directly entered into field tough book computers via Logchief software. Look up codes and real time validations reduce the risk of data entry errors.</li> <li>Field computer data (the drill log) are uploaded to Emmerson's relational database whereby the data undergoes a further set of validations checks prior to final upload.</li> <li>Standardised codes are used for lithology, oxidation, alteration, veining and presence of sulphide minerals.</li> <li>Structural logging of the diamond drill core was not possible.</li> <li>Magnetic susceptibility or specific gravity data were not recorded.</li> <li>Selected diamond core intervals were photographed prior to cutting of the drill core.</li> <li>All historical drill core has been geologically logged by the various companies however a detailed validation of the historical drilling data has not yet been completed.</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 subsampling 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> </ul>	<ul> <li>Standard sampling operating procedures have used by Emmerson during the selected diamond core re sampling exercise.</li> <li>The sample preparation for both diamond drill samples follows industry best practice in sample preparation involving oven drying, coarse crushing of the sample down to ~10mm followed by pulverisation of the entire sample (total prep) using LM5 grinding mills to a grind size of 85% passing 75 micron.</li> <li>Pulverised material not required by the laboratory (pulps) including duplicate samples have been returned to ERM, logged into a database and stored undercover at the Tennant Creek office.</li> <li>Coarse rejects have also been provided back to Emmerson by the Laboratory.</li> <li>Diamond duplicate samples (quarter core) were routinely submitted with duplicate assays returning acceptable comparison results.</li> </ul>



Criteria	JORC Code explanation	Commentary
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>Field QC procedures involve the use of certified reference material (CRM's) as assay standards, and ERM include blanks, duplicates.</li> <li>QAQC protocols consist of the insertion of blanks at a rate of one in every 40 samples, insertion of standards (CRM's) at a rate of approximately one in every 20 samples and duplicate field sample analysis of at a rate of approximately one in every 20 samples.</li> <li>A selection of CRM's is available to the geologists and insertion points are predetermined prior to drilling.</li> <li>Insertion of assay blanks is increased when visual mineralisation is encountered and consists of insertion above and below the mineralised zone.</li> <li>Diamond drill core duplicates were in the form of quarter core.</li> <li>Laboratory checks include CRM's and in-house controls, blanks, splits, and replicates that are analysed with each batch of samples submitted. These QC results are reported along with sample values in the final analytical report. Barren quartz washes are also routinely used in zones of mineralisation.</li> <li>QAQC data is uploaded with the sample values into ERM's database through an external database administrator (contractor).</li> <li>A QAQC database is created as a separate table in the database and includes all field and internal laboratory QC samples.</li> <li>QC data is reported through a series of control charts for analysis and interpretation by the Exploration Manager or his/her delegate.</li> <li>The sample sizes are considered appropriate to correctly represent the gold mineralisation at the Jasper Hilll Exploration Target based on the style of mineralisation (iron oxide copper gold), the thickness and mineral consistency of the intersection(s).</li> </ul>
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>Emmerson's Exploration Manager (Competent Person) has discussed sample preparation and analyses with Genalysis Intertek sample Prep and Lab Manager to confirm the integrity of the sample assay process.</li> <li>Do to the high-grade nature of the samples several repeats have been carried out and the repeatability is reasonable.</li> <li>Original data sheets and files are retained to validate the contents of the database against the original logging.</li> <li>No twin drill holes have been completed at the Jasper Hill Exploration Target.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drillholes (collar and downhole 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>Sample locations are provided within Tables 1, 2 &amp; 3 within the main text.</li> <li>Reported drill hole collar locations have been translated from local coordinated system to current GDA_94, Zone 53 co-ordinate system.</li> <li>Downhole survey measurements have been transferred from original drill logs and drilling records.</li> <li>Diamond drill holes were typically surveyed every 15m using various survey tools available at the time of drilling.</li> </ul>
Data spacing and distribution	<ul><li>Data spacing for reporting of Exploration Results.</li><li>Whether the data spacing</li></ul>	The spacing of historic diamond drill hole collars is erratic, possibly to allow for the high degree of drilling



Criteria	JORC Code explanation	Commentary
	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> <li>deviation encountered in the Tennant Creek Mineral Field.</li> <li>Emmerson considers the Jasper Hill copper – cobalt mineralisation to be a Medium to Advanced Stage Exploration Target.</li> <li>It is uncertain that following further data evaluation and/or further exploration work (drilling) that the target can advance to be able to be reported as Mineral Resources or Ore Reserves in accordance with the requirements in Appendix 5A (JORC Code).</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>Diamond and RC drilling is at a high angle to the mineralized body</li> <li>Diamond and RC drilling is perpendicular to mineralized body.</li> <li>No orientation based sampling bias has been identified in the data at this point.</li> <li>Based on review of drill data and historical reports it is considered that the drilling is representative and that no sample bias has been introduced.</li> <li>Review of available drill data and historical reports suggests that the Jasper Hill Exploration Target has been drilled at the correct orientation.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples from this round of confirmation sampling were selected, bagged and labelled by site geologist and field assistant.</li> <li>They are placed in sealed poly weave bags and then larger bulka bags for transport to the assay laboratory.</li> <li>Diamond core is cut down the centre line and same side half core is collected for assay.</li> <li>Core length minimum is 0.8m and maximum 1.0m.</li> <li>Sampling intervals are determined by lithological changes.</li> <li>The assay laboratory confirms that all samples have been received and that no damage has occurred during transport.</li> <li>Tracking is available through the internet and designed by the Laboratory for ERM to track the progress of batches of samples.</li> <li>Sample receipt is logged into ERM's sample ledger.</li> <li>While samples are being prepared in the Lab they are considered to be secure.</li> <li>While samples are being analysed in the Lab they are considered to be secure.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No formal audit has been completed on the historical samples.     An internal review of the sampling techniques, QAQC protocols and data collection has not been conducted by Emmerson.



# SECTION 2 REPORTING OF EXPLORATION RESULTS – JASPER HILL EXPLORATION TARGET

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.  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> <li>The Jasper Hill Exploration Target lies wholly within Mineral Lease 30177 (ML 30177).</li> <li>The Jasper Hill Exploration Target is located 37kms north of Tennant Creek Township and 4kms west of the Stuart Highway.</li> <li>The Jasper Hill Exploration Target is situated on map sheet SE53-14 Tennant Creek 1:250,000 and sheet 5759 Flynn 1:100,000 at GDA94_Z53 coordinate 410530mE /7863770mN.</li> <li>ML 30177 is located within Perpetual Pastoral Lease 946, known as Phillip Creek Station.</li> <li>ML 30177 is 100% held by Santexco a 100% subsidiary of Emmerson Resources Limited.</li> <li>As the Exploration Target is on Perpetual Pastoral Lease exploration is subject to terms and agreements under Emmerson's ILUA.</li> <li>The ILUA entered between Emmerson Resources and the Central Land Council on behalf of the Aboriginal landowners provides for the protection of site and the payment of compensation.</li> <li>Exclusion Zones are identified within ML30177 however does not impact on the Jasper Hill Exploration Target work at this stage. The current nature of work does not require on ground access or ground based exploration.</li> <li>As this exploration target advances then ground access will be requested through a suitable anthropological study and resultant clearance certificate coordinated through the Central Land Council and traditional owners.</li> <li>ML 30177 is in good standing and no known impediments exist.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Previous exploration of this area commenced with prospectors discovering the North Star orebody in 1933 with underground mining occurring sporadically from 1940 to 1950 when the reserves were exhausted after producing 9,600 oz of gold from 29,000 tonnes.</li> <li>Other companies exploring in the North Star Area which includes the Jasper Hill Exploration Target include Northern Mines Development NL (1950-54), Peko Mines Ltd (1957), Metals Exploration / Paringa Mining (1962-68).</li> <li>In 1964 the BMR in cooperation with the NT Mines branch, undertook a shallow drilling program and defined a geochemical anomaly over the Jasper Hill Exploration Target, which was also known as No 2 Hill.</li> <li>Australian Consolidated Minerals (1972) joint ventured the area to Australian Development Limited (ADL) in 1975 where diamond drilling commenced. Posgold Limited were the next company to explore the area.</li> <li>Open Cut mining of the North Star orebody (ADL) commenced in October 1986 and ceased in May 1987. Recorded production from this mining campaign was 70,184 tonnes at a grade of 6.18 g/t Au.</li> <li>Normandy Mining Pty Limited (NML) and its precursor companies have been actively exploring the Northern Star Leases since the prior and after the closure of the open cut. This exploration included gridding, RAB drilling (1981), RC/diamond drilling (1987-92), RAB drilling (1992) and vacuum drilling (1995).</li> <li>Normandy Gold Pty Limited (1996-1997) completed the 13 RC holes for a total of 1,831.5 meters. Four of these holes</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>were extended with diamond tails for an additional 299.3 meters.</li> <li>Normandy Gold Pty Limited (1999) completed extensive environmental rehabilitation. Rehabilitation included organising permits for clearance, soil contamination studies, earthworks, fencing, seeding and planting.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.  A surrous of all information.	<ul> <li>Gold and copper-gold deposits discovered in the Tennant Creek gold field to date, are hosted in the Lower Proterozoic Warramunga Formation; a metamorphosed (greenschist facies)</li> <li>Greywacke-siltstone-shale sedimentary sequence that usually displays a pronounced east-west cleavage. Ore occurs adjacent to steeply dipping, lenticular or pipe-like magnetite/haematite/chlorite/quartz bodies ('ironstone') that are found along east-west trending structures. It is generally thought that the magnetite / haematite was hydrothermally formed in dilation zones along the controlling structures, and that the deposition of gold, sulphides and associated alteration minerals was a later event with mineralisation possibly being derived from a different source but following the same structurally controlled path.</li> <li>In plan view, the ironstone bodies tend to be narrowest in the north-south direction and elongated east west, reflecting the regional cleavage and shearing. The Jasper Hill Exploration Target clearly follows this pattern. Their vertical dimensions may run to hundreds of metres, beyond the reach of surface drilling.</li> <li>Ore grades may occur over substantial vertical intervals of an ironstone pipe or lens, but are not expected to occur over the entire length.</li> <li>The mineralisation style is considered to be Iron Oxide Copper Gold.</li> <li>Supergene enrichment is very evident.</li> </ul>
Drillhole information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:	<ul> <li>Tables of significant results are presented in the text and in Tables 1, 2 &amp; 3.</li> <li>Plans showing location of drill holes and location of significant results and interpreted trends are provided in the figures within this report.</li> </ul>
Data aggregation methods	<ul> <li>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.</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> </ul>	<ul> <li>Mineralised diamond drill intersections are reported as down hole intervals and not weighted averages.</li> <li>The assay results discussed are exploration results only and no allowance is made for recovery losses that may occur should mining eventually result, nor metallurgical flow sheet considerations.</li> <li>The assay results discussed in the release text are confirmatory in nature and are intended to provide confidence in the historical assay results.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	
Relationship between mineralization 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 drillhole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (eg 'downhole length, true width not known').</li> </ul>	<ul> <li>The spacing of historic diamond and RC drill hole collars are erratic, possibly to allow for the high degree of drilling deviation encountered in the Tennant Creek Mineral Field.</li> <li>The drill hole spacing may also be influenced due to access and topographic conditions.</li> </ul>
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 drillhole 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.	<ul> <li>This information is provided in the results tables and comments in the report.</li> <li>Due to the age the data for the Jasper Hill Exploration Target, Emmerson are cautious and do not believe a historical Mineral Resource Estimate can be reported in accordance with the current 2012 JORC Code.</li> <li>Emmerson considers the Jasper Hill copper – cobalt mineralisation to be a Medium to Advanced Stage Exploration Target.</li> <li>It is uncertain that following evaluation and/or further exploration work that the historical assay results will be able to be reported as Mineral Resources or Ore Reserves in accordance with the requirements in Appendix 5A (2012 JORC Code).</li> </ul>
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.	<ul> <li>Normandy Gold Pty Limited completed an "in house" Resource Estimate and Geological Report for the Jasper Hill Exploration Target.</li> <li>Emmerson are cautious and do not believe a historical Resource Estimate can be reported in accordance with the current 2012 JORC Code.</li> <li>Metallurgical reports have been located on test work completed on the Jasper Hill Cu-Co-Au ore (Opimet Laboratories). Given the age of these reports caution must be exercised during data interpretation.</li> <li>Groundwater has been reported to lie 120-140m below current ground level.</li> <li>Various geophysical surveys have been conducted over the Jasper Hill Exploration Target. These include magnetic and gravity surveys.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale stepout drilling).</li> <li>Diagrams clearly highlighting the areas of possible</li> </ul>	<ul> <li>Current drill hole spacing is still considered too wide to enable an accurate Mineral Resource Estimate and additional definition drilling is anticipated.</li> <li>Geophysical survey to include the Jasper Hill Exploration Target area and focus future drilling.</li> <li>Compilation of historical geological and geophysical data.</li> <li>Compilation of historical survey and assay data.</li> </ul>



Criteria	JORC Code explanation	Commentary
	extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	<ul> <li>Revised Mineral Resource Estimation primarily for Copper, Cobalt and Gold.</li> <li>Collection of density information.</li> <li>Petrological study of selected core.</li> <li>Geological interpretation as discussed in the text.</li> </ul>

# SECTION 1 SAMPLING TECHNIQUES AND DATA-EDNA BERYL EXPLORATION TARGET

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 downhole 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.</li> <li>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.</li> </ul>	<ul> <li>Drill holes (EBWRC001-004) were reported ASX: 19/05/2016.</li> <li>Drill holes (EBWRC005-030) were reported were drilled during the period from 5/06/2016 – 25/06/2016 and reported to the ASX: 02/08/2016.</li> <li>Drill holes (EBWRC033-035, EBWRC038-046, 048, 052.) and EBWDD031-32, DD036-037, DD047 (abandoned), DD049-057 and GRED42A were drilled during the period from 16/09/2016 – 21/11/2016 and reported to the ASX: 21/02/2017.</li> <li>Drill holes EBWRC058-083 (RC) and EBWDD064, EBWDD064W1, EBWDD073 and EBWDD076 were drilled during the period from 26/06/2017 – 27/07/2017 – reported in this ASX release.</li> <li>Current drilling targeted gravity anomalies interpreted to be ironstone to the east, west and to the north of the known Edna Beryl mineralisation. Three diamond holes and one wedge hole were drilled to test for extensions within the Edna Beryl Deeps area.</li> <li>Holes were angled to optimally test the interpreted shear zones.</li> <li>Drill holes have been drilled at an angle between 60 – 69 degrees with all holes are drilling towards the south.</li> <li>The Edna Beryl Exploration Target has been historically sampled using RAB, Reverse Circulation (RC) and diamond drilling (DD) techniques. 24 RAB holes for 1,140m, 67 RC/Percussion holes for 10,971m and 32 Diamond holes for 5396.9m have been completed. The drill hole spacing is nominal 10m x 10m grid spacing.</li> <li>RC chips (EBWRC058-EBRC083) were riffle split on site to obtain 3m composite samples from which 2.5–3.0kg sample was pulverised (at Intertek in Alice Springs) to produce a 25g charge for analysis by Aqua Regia digestion / ICP-MS/OES (Au, Ag, Bi, Cu, Fe, Pb, Zn, Mo, Se, Sb).</li> <li>To increase assay turnaround times samples reported in this release were collected as 1m samples through zones of interest.</li> <li>These 1m samples were pulverised to produce a 25g charge for analysis by four acid digest with an ICP/OES (Cu, Fe, Pb, Zn) ICP/MS (Ag, Bi, Mo, Sb.) &amp; Fire Assay/AS (Au) finish.</li> <li>RC samples were collected via a fix</li></ul>



Criteria	JORC Code explanation	Commentary
		Diamond holes were sawn in half and submitted to Intertek in Alice Springs) to produce a 25g charge for analysis by four acid digest with an ICP/OES (Cu, Fe, Pb, Zn) ICP/MS (Ag, Bi, Mo, Sb,) & Fire Assay/AAS (Au) finish.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>24 RC drill holes for 5,564m were drilled in this current drill program (EBWRC058-083)</li> <li>3 diamond hole pre collars (RC) for 708m were drilled in this current drill program (EBWDD064, EBWDD073, EBWDD076).</li> <li>3 diamond holes have been completed for 569.3m (EBWDD064, EBWDD073, EBWDD076).</li> <li>RC drilling utilizes a 5 <sup>3/4</sup> inch, face sampling bit.</li> <li>Diamond drilling utilizes NQ² size drill bit, standard tube.</li> <li>RAB, RC, Diamond drilling &amp; underground air leg drilling accounts for 100% of the current drilling at the Edna Beryl Exploration Target.</li> <li>RC recoveries are logged and recorded in the database and for this program were considered excellent.</li> <li>Diamond drill core were oriented in unbroken ground.</li> <li>Orientation tool was a ori-mark tool.</li> </ul>
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>RC samples are visually checked for recovery, moisture and contamination. No issues were encountered.</li> <li>If any issues or concerns are raised they are discussed at the time with the drilling contractor and also recorded in our database and drilling diary.</li> <li>Recoveries for both diamond and RC drill holes are considered good to excellent.</li> <li>Core recoveries are measured and cross checked against the drillers records.</li> <li>RC samples are collected via a fixed cone splitter that is mounted to the drill rig under a 1200cfm cyclone.</li> <li>The cyclone and splitter are routinely cleaned with more attention spent during the drilling of damp or wet samples.</li> <li>There were no "wet samples" during this program.</li> <li>Drill core is oriented and recovery recorded during geological logging.</li> <li>Emmerson consider that there is evidence for sample bias that may have occurred due to preferential loss/gain of fine/coarse material. Visible (course) gold is identified in sections of historical diamond core so caution is required.</li> <li>Sample recovery for RC and Diamond core is considered good and representative.</li> </ul>



Criteria	JORC Code explanation	Commentary
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>Standard operating procedures are employed by Emmerson for logging of RC and diamond drill samples.</li> <li>All RC and DDH samples are lithologically logged in one metre intervals.</li> <li>Drill hole logging data is directly entered into field tough book computers via Logchief software. Look up codes and real time validations reduce the risk of data entry mistakes.</li> <li>Field computer data (the drill log) are uploaded to Emmerson's relational database whereby the data undergoes a further set of validations checks prior to final upload.</li> <li>Standardised codes are used for lithology, oxidation, alteration, veining and presence of sulphide minerals.</li> <li>Structural logging of the RC drill samples was not possible however is possible within sections of the diamond core.</li> <li>Magnetic susceptibility data for all individual 1m RC samples and selected zones of diamond core are collected as per ERM procedure.</li> <li>All RC chips are stored in trays in 1m intervals.</li> <li>All diamond holes are photographed prior to cutting of the drill core.</li> <li>Representative RC chips and diamond core is available to all geologists (a physical reference set) to ensure consistency of logging.</li> <li>All historical drill core and RAB &amp; RC samples has been lithologically re logged.</li> <li>A detailed validation of all historical drilling data was completed in 2015 by a full time Emmerson Resources senior geologist.</li> <li>Structural logging of diamond drill core was completed recording orientation of veins, fractures and lithological contacts.</li> <li>Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material is stored in the structure table of Emmerson's database.</li> <li>Historical and current diamond core is stored in Tennant Creek however several historical holes (or sections of holes are missing or incomplete. Historical RC chips could not be located.</li> <li>Logging is qualitative in nature and records interpreted lithology, mi</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</li> </ul>	<ul> <li>Standard sampling operating procedures have used by Emmerson during this current drill program Edna Beryl drilling.</li> <li>The sample preparation for both diamond drill and RC samples follows industry best practice in sample preparation involving oven drying, coarse crushing of the sample down to ~10mm followed by pulverisation of the entire sample (total prep) using LM5 grinding mills to a grind size of 85% passing 75 micron.</li> <li>Pulverised material not required by the laboratory (pulps) including duplicate samples are returned to ERM, logged into a database and stored undercover at the Tennant Creek office.</li> <li>Coarse rejects are disposed of by the Laboratory.</li> <li>RC and diamond duplicate samples were routinely submitted with duplicate assays returning acceptable comparison results.</li> </ul>



Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	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.  • The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered	<ul> <li>Field QC procedures involve the use of certified reference material (CRM's) as assay standards, and ERM include blanks, duplicates.</li> <li>QAQC protocols consist of the insertion of blanks at a rate of one in every 40 samples, insertion of standards (CRM's) at a rate of sample in supply 20</li> </ul>
	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> <li>(CRM's) at a rate of approximately one in every 20 samples and duplicate field sample analysis of at a rate of approximately one in every 20 samples.</li> <li>A selection of CRM's is available to the geologists and insertion points are predetermined prior to drilling.</li> <li>The geologist has the ability to override this predetermined insertion based on visual and geological characteristics of the current drill hole.</li> <li>Insertion of assay blanks is increased when visual mineralisation is encountered and consists of insertion above and below the mineralised zone.</li> <li>Individual 1m field duplicates RC samples are collected using a riffle splitter.</li> <li>Diamond drill core duplicates were in the form of quarter core. Remaining quarter core resides in the core trays on site in Tennant Creek.</li> <li>Laboratory checks include CRM's and in-house controls, blanks, splits, and replicates that are analysed with each batch of samples submitted. These QC results are reported along with sample values in the final analytical report. Barren quartz washes are also routinely used in zones of mineralisation.</li> <li>QAQC data is uploaded with the sample values into ERM's database through an external database administrator (contractor).</li> <li>A QAQC database is created as a separate table in the database and includes all field and internal laboratory QC samples.</li> <li>QC data is reported through a series of control charts for analysis and interpretation by the Exploration Manager or his/her delegate.</li> <li>The sample sizes are considered to be appropriate to correctly represent the gold mineralisation at the Edna Beryl Exploration Target based on the style of mineralisation (iron oxide copper gold), the thickness and mineral consistency of the intersection(s).</li> <li>Emmerson's sampling methodology (SOP) is</li> </ul>
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> </ul>	<ul> <li>available at any time for peer review.</li> <li>Emmerson's Exploration Manager (Competent Person) has discussed in detail the drill and sample collection procedures with the drillers and is satisfied that best practice has been followed.</li> <li>Emmerson's Exploration Manager (Competent Person) has discussed sample preparation and analyses with Intertek sample Prep and Lab Manager to confirm the integrity of the sample assay process.</li> </ul>



Criteria	JORC Code explanation	Commentary
	Discuss any adjustment to assay data.	<ul> <li>Do to the high grade nature of the samples several repeats have been carried out and the repeatability is considered to be reasonable.</li> <li>Screen assays have been previously submitted to assist in correct reporting and particle size analysis.</li> <li>Original data sheets and files are retained to validate the contents of the database against the original logging.</li> <li>No twin drill holes have been completed at the Edna Beryl Exploration Target.</li> </ul>
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and downhole 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> <li>Sample locations are shown in Figure 6 and Table 1-3 within the main text.</li> <li>All reported drill hole collars were surveyed (set out and picked up) using a differential GPS and by a suitably qualified company employee.</li> <li>Collar survey accuracy is +/- 30 mm for easting, northing and elevation coordinates.</li> <li>Co-ordinate system GDA_94, Zone 53.</li> <li>Topographic measurements are collected from the final survey drill hole pick up.</li> <li>Downhole survey measurements were collected routinely every 6m down hole using an REFLEX EZ-Shot® electronic single shot camera for RC.</li> <li>A selection of RC holes have been surveyed using a gyroscope tool and accuracy is comparable to the REFLEX single shot too.</li> <li>Diamond drill holes are surveyed every 15m using a REFLEX single shot tool.</li> <li>This survey camera equipment is quoted by the manufacturer to have an accuracy of  <ul> <li>Azimuth 0-360° ± 0.5°</li> <li>Dip ± 90° ± 0.2°</li> </ul> </li> <li>If the measurement is considered to be affected by magnetic material (ironstone) then an average from the last non affected and the next non affected measurement is used.</li> <li>There were no down hole survey issues during this drill program and all collar positions have been validated by the Exploration Manager.</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>Drill holes are spaced 10-15 metres apart in dip and strike. This close spacing is necessary due to the style and morphology of the shear zone being drill tested.</li> <li>The spacing of historic drill hole collars is erratic, possibly to allow for the high degree of drilling deviation encountered in the Tennant Creek Mineral Field.</li> <li>Identified mineralisation within the Edna Beryl Exploration Target has been defined by drill holes on a section spacing of 10m to 20m with an average on-section spacing of 10m.</li> <li>Emmerson considers the Edna Beryl mineralisation to be an Advanced Exploration Target and that it is uncertain that following evaluation and/or further exploration work that the historical estimate will be able to be reported as Mineral Resources or Ore Reserves in accordance with the requirements in Appendix 5A (JORC Code).</li> </ul>
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,	<ul> <li>Exploration drilling is at a high angle to the mineralized bodies and/or shear zones.</li> <li>Exploration drilling is perpendicular to mineralized bodies or shear zones.</li> <li>No orientation based sampling bias has been</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>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>identified in the data at this point.</li> <li>It is considered that the recent RC and diamond drilling is representative and that no sample bias has been introduced.</li> <li>Results at this stage suggest that the geological targets being tested have been drilled at the correct orientation.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>RC samples from this round of drilling were selected, bagged and labelled by site geologist and field assistants.</li> <li>They are placed in sealed polyweave bags and then larger bulka bags for transport to the assay laboratory.</li> <li>Diamond core is cut down the core orientation line and same side half core is collected for assay.</li> <li>Core length minimum is 0.6m and maximum 1.5m.</li> <li>Sampling intervals are determined by lithological changes.</li> <li>The assay laboratory confirms that all samples have been received and that no damage has occurred during transport.</li> <li>Tracking is available through the internet and designed by the Laboratory for ERM to track the progress of batches of samples.</li> <li>Sample receipt is logged into ERM's sample ledger.</li> <li>While samples are being prepared in the Lab they are considered to be secure.</li> <li>While samples are being analysed in the Lab they are considered to be secure.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>No formal audit has been completed on the historical samples.</li> <li>An internal review of the historical sampling techniques, QAQC protocols and data collection has not been conducted by Emmerson.</li> <li>Digital Rock Services Pty Ltd (1998) and Rocksearch Australia validated historical data on two separate occasions. Minor issues were identified and remedied at the time.</li> </ul>

# SECTION 2 REPORTING OF EXPLORATION RESULTS – EDNA BERYL EXPLORATION TARGET

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>	north of Tennant Creek Township and 3kms east of the Stuart Highway.  • Edna Beryl is situated on map sheet SE53-14 Tennant Creek 1:250,000 and sheet 5759 Flynn 1:100,000 at GDA coordinate 416500mE 7864700mN.  • ML C705 is located within Aboriginal Freehold Land held by the Warumungu Aboriginal Land Trust (NT portion 1754). The tenement is 100% held by Emmerson Resources Limited.



Criteria	JORC Code explanation	Commentary
		agreement provides for the protection of sites, the payment of compensation and allows the landowners unfettered access to the lease area (other than the immediate mine site where there are restrictions).  • Emmerson Resources are in Joint Venture with Evolution Mining.  • Exclusion Zones are identified within MLC 705 however does not impact on the Edna Beryl Exploration Target area.  • Approval to drill the third phase of drilling was received from Traditional Owners prior to drilling commencement.  • MLC 705 is in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Edna Beryl was discovered in 1935 and mined in the 1940s and 1950s by excavation of vertical shafts and horizontal drives to a maximum depth of about 50 metres. Production up until 1952 was reportedly 2,700 tonnes of ore at an average grade of 53 grams gold per tonne.</li> <li>Giants Reef Mining conducted all known "modern" exploration in and around the Edna Beryl Exploration Target Area.</li> <li>Giants Reef has carried out exploration on the Edna Beryl area from 1990 to 2005 and during this time identified significant gold mineralisation below the original workings.</li> <li>An existing shaft sunk during the earlier mining was refurbished in 1996.</li> <li>In 2004 – 2005 mining was conducted by the Edna Beryl Mining Company (formally known as Craig's Mining Services) in a Tribute arrangement with Giants Reef Mining. Approximately 410 ounces was produced during this period from the upper mineralised pod from an exploration shaft and drive to current depth of 52m.</li> <li>Influx of underground water plus declining gold price ceased the operation in July 2005.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Gold and copper-gold deposits discovered in the Tennant Creek gold field to date, are hosted in the Lower Proterozoic Warramunga Formation; a metamorphosed (greenschist facies).</li> <li>Greywacke-siltstone-shale sedimentary sequence that usually displays a pronounced east-west cleavage. Ore occurs adjacent to steeply dipping, lenticular or pipe-like magnetite/haematite/chlorite/quartz bodies ('ironstone') that are found along east-west trending structures. It is generally thought that the magnetite / haematite was hydrothermally formed in dilation zones along the controlling structures, and that the deposition of gold, sulphides and associated alteration minerals was a later event with mineralisation possibly being derived from a different source but following the same structurally controlled path.</li> <li>In plan view, the ironstone bodies tend to be narrowest in the north-south direction and elongated east west, reflecting the regional cleavage and shearing. Edna Beryl clearly follows this pattern. Their vertical dimensions may run to hundreds of metres, beyond the reach of surface drilling.</li> <li>Ore grades may occur over substantial vertical intervals of an ironstone pipe or lens, but are not expected to occur over the entire length.</li> <li>The mineralisation style is considered to be Iron Oxide Copper Gold.</li> </ul>



Criteria	JORC Code explanation	Commentary
Drillhole information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:	<ul> <li>Supergene enrichment is very evident.</li> <li>A table of significant results is presented in the text, Table 3 and on Figure 6 within this report.</li> <li>A list of the drill holes and collar detail is provided as Tables 1 and 2.</li> </ul>
Data aggregation methods	<ul> <li>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.</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>Mineralized RC and Diamond intersections are reported as down hole intervals and not weighted averages</li> <li>The results discussed are exploration results only and no allowance is made for recovery losses that may occur should mining eventually result, nor metallurgical flow sheet considerations.</li> </ul>
Relationship between mineralization 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 drillhole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (eg 'downhole length, true width not known').</li> </ul>	The holes drilled within the Edna Beryl Exploration Target area are perpendicular the east-west striking shear zones. The holes were designed and drilled perpendicular to the steep dipping mineralised zone making the intercepts approximate to true width.
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 drillhole 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	<ul> <li>Due to the age the Resource Estimation for the Edna Beryl resource, Emmerson are cautious and do not believe the historical Resource Estimate can be reported in accordance with the current 2012 JORC Code. Emmerson considers the Edna Beryl mineralisation to be an Advanced Exploration Target.</li> <li>It is uncertain that following evaluation and/or further</li> </ul>



Criteria	JORC Code explanation	Commentary
	Exploration Results.	exploration work that the historical estimate will be able to be reported as Mineral Resources or Ore Reserves in accordance with the requirements in Appendix 5A (JORC Code).
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.	<ul> <li>Geotechnical logging was carried out on all historical and current diamond drill holes for recovery, RQD and number of defects (per interval). Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material was stored in the structure table of the Micromine database.</li> <li>Density measurements were routinely collected by Giants Reef and Emmerson geologists.</li> <li>Metallurgical testing of selected mineralised Edna Beryl samples was conducted by Metcon Laboratories Pty Ltd in 1996.</li> <li>Metallurgical testing concluded that 70% of the ore could be gravity recovered with the remaining gold cyanide soluble so that total gold extraction of &gt;98% could be obtained. Screen Fire Assay of selected samples was conducted by Giants Reef Mining.</li> <li>Geophysical magnetic susceptibility logging is completed at 1m intervals on site (RC drilling) and in the core shed for selected sections of diamond core.</li> <li>Thin section and polished samples were collected by Giants Reef Mining to assist in the refinement of the geological model.</li> <li>Three component magnetic down hole surveying was completed 7 of the RC holes from this current drill program.</li> <li>Optical / Acoustic televiewer survey of selected drill holes has been completed.</li> <li>Higher gold grade intersections selected for screen fire assay.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale stepout 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>	<ul> <li>RC and diamond drilling (Phase 4) is now completed. This information will further assist in confirming the geological and grade continuity of gold mineralisation already intersected.</li> <li>Current drill hole spacing is still considered too wide to enable an accurate Mineral Resource Estimate.</li> <li>Twin hole drill program to be designed.</li> <li>Petrological study of selected core and drill chips continues</li> <li>Geological interpretation as discussed in the text.</li> </ul>



#### Section 1 Sampling Techniques and Data – Fifield Project – Whatling Hill Prospect – Auger drilling

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 downhole 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.</li> <li>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.</li> </ul>	<ul> <li>Soil sampling at Whatling Hill used ute mounted auger for the program. Auger samples were collected by auger drilling to refusal on the soil-bedrock interface.</li> <li>Soil samples were generally collected from depths 0.2m to 9m.</li> <li>The samples were sieved to -2mm or -80 mesh with sample weights typically &gt; 60g. Where soils were damp to sieve, coarser samples were collected (~500g)</li> <li>The samples are considered to effectively represent the residual soil at point of collection.</li> <li>Samples were collected on 80 x 40m grid.</li> <li>Samples were dried, pulverised and sieved at the RME yard (passing 80 micron) to produce at least 60g sub sample. The samples were then submitted to the Lab for analysis by AuME-TL43 Low Level Gold in Soils.</li> </ul>
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	Auger drilling method with 100mm diameter screw
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> </ul>	Sample recovery was assessed visually via average sample size collected in kraft bag.



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>A short geological description of each sample was taken at the time of collection. Sample description was recorded by the collecting geologist.</li> <li>The description is qualitative: Prospect/Target Name; Sample number, coordinates, coordinate system and survey control method; Sample weight, depth (from and to intervals if auger sampling), colour, Mesh size (if not sieved then it should be recorded that the sample is a bulk sample), Grain size distribution (relative percentages of different sized material), texture, Moisture content is recorded to give an indication of the effect this may have had on the soil colour and the potential where wet samples are collected for contamination between samples, lithology, alteration, Regolith regime (depositional or residual regime)</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</li> </ul>	<ul> <li>The sample preparation of soil samples followed industry best practice in sample preparation involving oven drying, coarse crushing followed by pulverisation of the entire sample (total prep) using grinding.</li> <li>Field duplicate samples were collected.</li> <li>Sample sizes were sufficiently large to sample a good representation of the local geology.</li> </ul>
	<ul> <li>duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>Samples were delivered to ALS Chemex, in Orange NSW.</li> <li>Average sample weight was ~300g.</li> <li>Standard assay procedures performed by a reputable assay lab, (ALS Group), were undertaken.</li> <li>Soil samples analysed by AuME-TL43 (112 samples)</li> <li>Internal ALS QC results are reported along with sample values in the final analytical report.</li> <li>QAQC protocols are documented and involve the use of certified reference material (CRM's) as assay standard.</li> </ul>



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>	Original sample data sheets and files have been retained and were used to validate the contents of the company's database against the original assay     The raw assay data were reviewed and verified by company's Exploration Manager – NSW.
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drillholes (collar and downhole 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>A handheld GPS was used to locate each sample. GPS         accuracy is +/- 5m for easting and northing coordinates.</li> <li>Coordinate system GDA_94, Zone 55.</li> <li>Topographic control is maintained by use of widely available government datasets</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>Auger holes were preferentially located in prospective areas. Sample spacing was typically 80 x 40m.</li> <li>No sample compositing has been applied.</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>	The orientations of structures where inferred from geophysical imagery and mapping. No sampling bias is thought to be present.



Sample security	The measures taken to ensure sample security.	<ul> <li>Samples were placed in kraft bag with unique sample numbers.</li> <li>Once delivered from the field the samples were housed in secure premises prior to laboratory submission by Emmerson's contractor. Samples were placed in sealed polyweave bags for transport to the assay laboratory.</li> <li>Digital data was emailed to the Exploration Manager - NSW.</li> <li>The assay laboratory confirms that all samples have been received and that no damage has occurred during transport.</li> <li>Results data was emailed to the Exploration Manager - NSW. While samples are being processed in the Lab they are considered to be secure.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No formal audit has been completed on the samples being reported.

#### Section 2 Reporting of Exploration Results - Fifield Project - Whatling Hill Prospect - Auger drilling

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>Whatling Hill prospect is within EL8464.</li> <li>EL8464 Fifield is located just south of Tullamore and approximately 50 NW of Northparkes Cu-Au mine.</li> <li>EL8464 is situated on map sheet SI55-3 Narromine 1:250,000</li> <li>EL8464 is consists of wheat paddocks and minor grazing paddocks.</li> <li>The tenement is 100% held by Lachlan Resources (Emmerson Resources).</li> <li>EL8464 is in good standing and no known impediments exist.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>North Broken Hill Ltd explored the area in 1978 for tungsten and skarn.</li> <li>Shell Company of Australia from 1981 - 1983 explored for tin-tungsten skarn deposits associated with the Gobondery granite; porphyry copper and base metal mineralisation associated with monzonite-diorite; tin-quartz- tourmaline mineralisation hosted by Girilambone sediments; and gold- base metal stockwork mineralisation hosted in Ordovician sediments.</li> <li>North Mining Ltd (North) explored the district for Porphyry         <ul> <li>Cu-Au deposits within the Ordovician Volcanics from 1992</li></ul></li></ul>



Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Since the 1960's, the area inside EL8464 has been actively explored for a variety of metals including Cu,Au, Pb, Zn, Pt, Ni, Sn and W. Several historical small mining operations have been conducted in the tenement, Allandale and Gobondery. The Allandale Cu mine is a vein associated copper occurrence. The Gobondery Fe Mine was described as a small high-grade hematite deposit on the eastern contact of the Devonian Gobondery Granite.EL8464 lies within an inlier of Ordovician arc interpreted to have been rifted west off the Northparkes Igneous Complex. The main Ordovician arc is dominated by the Raggatt Volcanics consists of andesitic to trachyandesitic lavas and volcaniclastic rocks. The Devonian Gobondery granite in the western part of the tenement outcrops as a prominent hill.</li> <li>The Ordovician Raggatt Volcanics have been tentatively correlated with the Womblin and Goonumbla Volcanics at Northparkes.</li> <li>The style of mineralization of the Whatling Hill prospect is considered to be Porphyry Cu-Au. Elsewhere in the tenement, other porphyry prospects are Forrest View and Allandale prospect.</li> <li>The Raggatt Volcanics are considered to be highly prospective to host Porphyry Cu Au, supported by the Late Ordovician age, and the occurrence of alteration associated with this style of mineralization. i.e. pervasive epidote and chlorite alteration, locally with disseminated magnetite, presence of magnetite veins and quartz- magnetite veins with clots of malachite.</li> <li>Field based exploration has been complemented by cutting edge science which has included analysis of the alteration (trace and rare earth elements within the outer green rock or epidote/chlorite zone) where initial findings suggests geochemical footprints of a porphyry system. Moreover, age dating of the monzonite intrusion within the Raggatt Volcanics yielded a Late Ordovician to Early Silurian age –</li> <li>all part of the University of Tasmania CODES</li> </ul>
Drillhole	A summary of all information	ARC Linkage project.  • See Table 1 for details of Auger drilling and
information	material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: o easting and northing of the drillhole collar o elevation or RL of the drillhole collar o dip and azimuth of the hole o downhole length and interception depth o hole length.	results.



Data aggregation methods	<ul> <li>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.</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>No length-weighting or cut-off grades have been applied.</li> <li>No metal equivalent values reported.</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 drillhole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (eg 'downhole length, true width not known').</li> </ul>	Not applicable.
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 drillhole 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.	See Table 1
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 meaningful and material information is reported.



Further work	<ul> <li>The nature and scale of planned further work (eg 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>	Further work on the reported exploration targets will involve:     Additional soil grid sampling to test extension of anomalism to the south and west using 80 x 40m grid.     Regional soil sampling (360 x 360m grid) to test possible occurrence of buried Porphyry Cu-Au as suggested from recent epidote study.
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# Section 1 Sampling Techniques and Data – Kadungle Project – Kilmarnock Prospect – Reconnaissance Rockchip samples

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Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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 downhole 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.</li> <li>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.</li> </ul>	<ul> <li>Rock chip samples were collected during field inspection at the Kilmarnock prospect.</li> <li>Rock chip samples were collected from surface outcrops and floats.</li> <li>Outcrop samples represent the resistant and exposed portions of the local geology. The float samples are inferred to have originated from the local area where they were found, with no evidence of substantial transport.</li> <li>Submitted samples weigh from 0.2 kg to 2 kg.</li> <li>Samples were crushed, dried and pulverised (Lab) to produce a 50g sub sample for analysis by four acid digest with an ICP-AES finish &amp; Fire Assay (Au) finish.</li> </ul>
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Not applicable – surface rock chip samples.



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>	Not applicable – surface rock chip samples.
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>A short geological description of each sample was taken at the time of collection.</li> <li>The description is qualitative: lithology, alteration, mineralisation</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> </ul>	The sample preparation of rock chip samples followed industry best practice in sample preparation involving oven drying, coarse crushing of the rocks followed by pulverisation of the entire sample (total prep) using grinding.  Where possible, samples were selected to represent different parts of the mineral system. No field duplicate samples were collected.  Sample sizes were sufficiently large to sample a good representation of the local geology
	Whether sample sizes are appropriate to the grain size of the material being sampled.	



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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>Samples were delivered to ALS Chemex, in Orange NSW.</li> <li>Average sample weight was ~0.5 kg.</li> <li>Standard assay procedures performed by a reputable assay lab, (ALS Group), were undertaken. Gold assays are initially by 50g fire assay with AAS finish (method Au-AA26). For samples with a gold value greater than 0.5ppm the entire remaining sample is screen fire assayed using wet screening to 75 microns. Ag, As, Cu, Fe, Pb, S, Zn are digested in aqua regia then analysed by ICP-AES (method ME-ICP61). Comparison with 4 acid digestion indicate that the technique is considered total for Ag, As, Cu, Pb, S, Zn. Fe may not be totally digested by aqua regia but near total digestion occurs. A final 50 gram split was then fire assayed with an AAS finish.</li> <li>Internal ALS QC results are reported along with sample values in the final analytical report.</li> <li>QAQC protocols are documented and involve the use of certified reference material (CRM's) as assay standard.</li> <li>Certified reference material or blanks are inserted at least every 40 samples. Standards are purchased from Certified Reference Material manufacture companies. Standards were purchased in foil lined packets of between 60g and 100g. Different reference materials are used to cover high grade, medium grade and low-grade</li> </ul>
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>Original sample data sheets and files have been retained and were used to validate the contents of the company's database against the original assay</li> <li>The raw assay data were reviewed and verified by company's Exploration Manager – NSW.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drillholes (collar and downhole 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>A handheld GPS was used to locate each sample. GPS accuracy is +/- 5m for easting and northing coordinates.</li> <li>Coordinate system GDA_94, Zone 55.</li> <li>Topographic control is maintained by use of widely available government datasets</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</li> </ul>	<ul> <li>Only reconnaissance sampling completed – spacing is variable and based on outcrop location and degree of exposure</li> <li>Samples were taken at non-regular intervals according to observations at the time in the field.</li> <li>No sample compositing has been applied.</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>	Samples were taken according to geological observations at the time in the field.
Sample security	The measures taken to ensure sample security.	Samples were placed in tied calico bags with unique sample numbers. Once delivered from the field the samples were housed in secure premises prior to laboratory submission by Emmerson's contractor. Samples were placed in sealed
		<ul> <li>Digital data was emailed to the Exploration</li> <li>Manager - NSW.</li> <li>The assay laboratory confirms that all samples</li> </ul>
		have been received and that no damage has occurred during transport.  Results data was emailed to the Exploration
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No formal audit has been completed on the samples being reported.

## Section 2 Reporting of Exploration Results – Kadungle Project – Kilmarnock Prospect – Reconnaissance Rockchip samples

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>	Kilmarnock prospect is within EL6226.     EL6226 is located between the towns of Tullamore and Trundle and 55kms NW of Parkes in Central Western NSW. Kadungle is situated on map sheet SI55-3     Narromine 1:250,000 and sheet 8432Tullamore 1:100,000.     EL6226 is located within regional farm land. The tenement is 80% held by Emmeron Resources and 20% held by Defiance Resources Pty Ltd.     Emmerson Resources are in Joint Venture with Aurelia Metals.     EL6226 is in good standing and no known impediments exist.



Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.   Paraoitisms and appraisal actions	<ul> <li>Union Miniere Development and Mining Corp Ltd carried out exploration in the 1970's in and around the Kadungle Exploration Target Area.</li> <li>CRA Exploration Pty Ltd carried out exploration in and around the Kadungle Exploration Target Area between 1970 and 1971 and also 1996 – 1998.</li> <li>Mines Exploration Proprietary Ltd carried out exploration in and around the Kadungle Exploration Target Area between 1979 and 1983.</li> <li>Seltrust Gold Pty Ltd – Peko Wallsend Operations Pty Ltd – Paragon Gold Pty Ltd conducted exploration between 1983 – 1993in and around the Kadungle Exploration Target Area.</li> <li>BHP Gold Mines Ltd carried out exploration in and around the Kadungle Exploration Target Area between 1991 and 1992.</li> <li>LFB carried out exploration between 1997 – 2004 in and around the Kadungle Exploration Target Area and during this time outlined very encouraging gold and copper mineralisation.</li> <li>Big Sky Holdings Pty Ltd carried out exploration Target Area between 2004 and 2006.</li> <li>YTC Resources carried out exploration in and around the Kadungle Exploration Target Area between 2004 and 2006.</li> <li>YTC Resources carried out exploration in and around the Kadungle Exploration Target Area between 2014.</li> <li>Aurelia Metals Ltd carried out exploration in and around the Kadungle Exploration Target Area between 2015 and 2016.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Targets within EL6226 are hosted in Kadungle Volcanics that contain minor historic Au ± Pb ± Ag workings and anomalous enrichment of Au ± base metals are also recorded at various other localities.</li> <li>Kilmarnock prospect is located towards the south end of EL6226. Recent sampling by Emmerson at Kilmarnock prospect returned a significant gold grade of up to 3.47 g/t Au associated with quartz stockworks (Figure 3).</li> </ul>



		<ul> <li>The dominant lithology in the area is a series of fine and medium-grained lithic tuffs, overlying a flow banded rhyolites, vitreous ignimbrites and feldspar porphyries.</li> <li>Chalcedonic quartz and stockworks occur as floats at Kilmarnock. The rhyolite and tuffaceous breccia fragments have been variably kaolinized and silicified.</li> <li>The mineralisation style is considered to be Epithermal Copper Gold.</li> <li>The Kadungle Volcanics are considered to be highly prospective for shallow marine to sub-aerial mesothermal and epithermal Au ± base metal deposits. Potential also exists for deeper level porphyry style mineralisation and possibly volcanic hosted base metal mineralisation.</li> </ul>
Drillhole information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:     o easting and northing of the drillhole collar     o elevation or RL of the drillhole collar     o dip and azimuth of the hole o downhole length and interception depth     o hole length.	Results are reported as Table 2 within the body of this report.
Data aggregation methods	<ul> <li>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.</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>No length-weighting or cut-off grades have been applied.</li> <li>No metal equivalent values reported.</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 drillhole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (eg 'downhole length, true width not known').</li> </ul>	Not applicable. Only rockchips (point data) is presented.
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 drillhole 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	Results are reported as Table 2
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 meaningful and material information is reported.
Further work	The nature and scale of planned further work (eg	Further work on the reported exploration target:
	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.	- Additional rock chip sampling to see extent of mineralization     - Petrographic and mineragraphic analysis of alteration and mineralization from collected rock samples     - Review/assess historical exploration data reported in the area to understand style of mineralization



### Mining Tenements Held at 30 September 2018 (Northern Territory, Australia)

Tenement	Name	Interest	Tenement	Name	Interest	Tenement	Name	Interest
EL10114	McDougall	100%	HLDC100	Sally No Name	100%	HLDC92	Wiso Basin	100%
EL10124	Speedway	100%	HLDC101	Sally No Name	100%	HLDC93	Wiso Basin	100%
EL10313	Kodiak	100%	HLDC37	Warrego, No 1	100%	HLDC94	Warrego, No.4	100%
EL10406	Montana	100%	HLDC39	Warrego Min,	100%	HLDC95	Warrego, No.3	100%
EL23285	Corridor 2	100%	HLDC40	Warrego, No 2	100%	HLDC96	Wiso Basin	100%
EL23286	Corridor 3	100%	HLDC41	Warrego, No 3	100%	HLDC97	Wiso Basin	100%
EL23905	Jackie	100%	HLDC42	Warrego, S7	100%	HLDC98	Wiso Basin	100%
EL26594	Bills	100%	HLDC43	Warrego, S8	100%	HLDC99	Wiso, No.3 pipe	100%
EL26595	Russell	100%	HLDC44	Warrego, No.2	100%	MA23236	Udall Road	100%
EL26787	Rising Ridge	100%	HLDC45	Warrego, No.1	100%	MA27163	Eagle	100%
EL27011	Snappy Gum	100%	HLDC46	Warrego, No.1	100%	MA30798	Little Ben	100%
EL27136	Reservoir	100%	HLDC47	Wiso Basin	100%	MCC174	Mt Samuel	100%
EL27164	Hawk	100%	HLDC48	Wiso Basin	100%	MCC203	Galway	100%
EL27408	Grizzly	100%	HLDC49	Wiso Basin	100%	MCC211	Shamrock	100%
EL27537	Chappell	100%	HLDC50	Wiso Basin	100%	MCC212	Mt Samuel	85%
EL27538	Mercury	100%	HLDC51	Wiso Basin	100%	MCC239	West Peko	100%
EL28601	Malbec	100%	HLDC52	Wiso Basin	100%	MCC240	West Peko	100%
EL28602	Red Bluff	100%	HLDC53	Wiso Basin	100%	MCC287	Mt Samuel	100%
EL28603	White Devil	100%	HLDC54	Wiso Basin	100%	MCC288	Mt Samuel	100%
EL28618	Comstock	100%	HLDC55	Warrego, No.4	100%	MCC308	Mt Samuel	85%
EL28760	Delta	100%	HLDC56	Warrego, No.5	100%	MCC316	The Trump	100%
EL28761	Quartz Hill	100%	HLDC58	Wiso Line, No.6	100%	MCC317	The Trump	100%
EL28775	Trinity	100%	HLDC59	Warrego, No.6	100%	MCC334	Estralita Group	100%
EL28776	Whippet	100%	HLDC69	Wiso Basin	100%	MCC340	The Trump	100%
EL28777	Bishops Creek	100%	HLDC70	Wiso Basin	100%	MCC341	The Trump	100%
EL28913	Amstel	100%	HLDC71	Wiso Basin	100%	MCC344	Mt Samuel	100%
EL29012	Tetley	100%	HLDC72	Wiso Basin	100%	MCC364	Estralita	100%
EL29488	Rocky	100%	HLDC73	Wiso Basin	100%	MCC365	Estralita	100%
EL30167	Dolomite	100%	HLDC74	Wiso Basin	100%	MCC366	Estralita	100%
EL30168	Caroline	100%	HLDC75	Wiso Basin	100%	MCC524	Gibbet	100%
EL30301	Grey Bluff East	100%	HLDC76	Wiso Basin	100%	MCC55	Mondeuse	100%
EL30488	Colombard	100%	HLDC77	Wiso Basin	100%	MCC56	Shiraz	100%
EL30584	Juno North	100%	HLDC78	Wiso Basin	100%	MCC57	Mondeuse	100%
EL30614	Franc	100%	HLDC79	Wiso Basin	100%	MCC66	Golden Forty	100%
EL30748	Battery Hill	100%	HLDC80	Wiso Basin	100%	MCC67	Golden Forty	100%
EL31249	Prosperity	100%	HLDC81	Wiso Basin	100%	MCC9	Eldorado	100%
EL9403	Jess	100%	HLDC82	Wiso Basin	100%	MCC925	Brolga	100%
EL9958	Running Bear	100%	HLDC83	Wiso Basin	100%	MCC926	Brolga	100%
ELA27539	Telegraph	100%	HLDC84	Wiso Basin	100%	ML22284	Billy Boy	100%
ELA27902	Lynx	100%	HLDC85	Wiso Basin	100%	ML23216	Chariot	100%
ELA30505	Golden East	100%	HLDC86	Wiso Basin	100%	ML23969	Gecko	100%
ELA30516	Barkly Highway	100%	HLDC87	Wiso Basin	100%	ML29917	Havelock	100%
ELA30746	Mule	100%	HLDC88	Wiso Basin	100%	ML29919	Orlando	100%
ELA30749	Mary Anne	100%	HLDC89	Wiso Basin	100%	ML30096	Malbec	100%
ELA31355	Mt Samuel	100%	HLDC90	Wiso Basin	100%	ML30176	Queen of Sheeba	100%
EMP31008	Warrego Gravel 1	100%	HLDC91	Wiso Basin	100%	ML30177	North Star	100%



#### Mining Tenements Held at 30 September 2018 (Northern Territory, Australia)

Tenement ML30322	<b>Name</b> Verdot	Interest 100%	Tenement ML31076	Name Jubilee	Interest 100%	111.0040		222/
						MLC219	Perserverance	30%
ML30620	Kia Ora	100%	ML31123	Gibbet1	100%	MLC220	Perserverance	30%
ML30623	Pinnacles South	100%	ML31651	White Devil	100%	MLC221	Perserverance	30%
ML30636	Jacqueline the	100%	MLA29526	Blue Moon	100%	MLC222	Perserverance	30%
ML30712	Battery Hill	100%	MLA29527	Wiso	100%	MLC223	Perserverance	30%
ML30713	The Pup	100%	MLA29528	Wiso	100%	MLC224	Perserverance	30%
ML30714	Pedro	100%	MLA29529	Wiso	100%	MLC253	Mulga 1	100%
ML30715	Red Bluff North	100%	MLA29530	Wiso	100%	MLC254	Mulga 1	100%
ML30716	Comstock	100%	MLA29531	Wiso	100%	MLC255	Mulga 1	100%
ML30742	Black Cat	100%	MLA29532	Wiso	100%	MLC256	Mulga 2	100%
ML30743	True Blue	100%	MLC120	Cabernet / Nav 7	100%	MLC257	Mulga 2	100%
ML30744	Scheurber	100%	MLC121	Cabernet / Nav 7	100%	MLC258	Mulga 2	100%
ML30745	Bomber	100%	MLC122	Cabernet / Nav 7	100%	MLC259	Mulga 2	100%
ML30781	Smelter	100%	MLC123	Cabernet / Nav 7	100%	MLC260	Mulga 2	100%
ML30782	Dark	100%	MLC127	Peko East Ext 4	100%	MLC261	Mulga 2	100%
ML30783	Semillon	100%	MLC129	Peko Sth- East	100%	MLC32	Golden Forty	100%
ML30784	Noir	100%	MLC130	Golden Forty	100%	MLC323	Gecko	100%
ML30815	Blue Moon	100%	MLC131	Golden Forty	100%	MLC324	Gecko	100%
ML30864	Verdelho	100%	MLC132	Golden Forty	100%	MLC325	Gecko	100%
ML30865	Dong Dui	100%	MLC133	Golden Forty	100%	MLC326	Gecko	100%
ML30867	Thurgau	100%	MLC134	Golden Forty	100%	MLC327	Gecko	100%
ML30870	Rising Star	100%	MLC135	Golden Forty	100%	MLC342	Tinto	100%
ML30871	Colombard	100%	MLC136	Golden Forty	100%	MLC343	Rocky Range	100%
ML30872	The Extension	100%	MLC137	Golden Forty	100%	MLC344	Rocky Range	100%
ML30873	Pinot	100%	MLC138	Golden Forty	100%	MLC345	Rocky Range	100%
ML30874	Merlot	100%	MLC139	Golden Forty	100%	MLC346	Rocky Range	100%
ML30875	Grenache	100%	MLC140	Golden Forty	100%	MLC347	Golden Forty	100%
ML30885	Zinfandel	100%	MLC141	Golden Forty	100%	MLC348	Brolga	100%
ML30886	EXP212	100%	MLC142	Golden Forty	100%	MLC349	Brolga	100%
ML30888	Warrego	100%	MLC143	Golden Forty	100%	MLC35	Golden Forty	100%
ML30893	Troy	100%	MLC144	Golden Forty	100%	MLC350	Brolga	100%
ML30909	Archimedes	100%	MLC146	Golden Forty	100%	MLC351	Brolga	100%
ML30910	Marsanne	100%	MLC147	Golden Forty	100%	MLC352	Golden Forty	100%



ML30911	Wolseley	100%	MLC148	Golden Forty	100%	MLC353	Golden Forty	100%
ML30912	Ivanhoe	100%	MLC149	Golden Forty	100%	MLC354	Golden Forty	100%
ML30937	Gris	100%	MLC15	Eldorado 4	100%	MLC355	Golden Forty	100%
ML30938	EXP195	100%	MLC16	Eldorado 5	100%	MLC36	Golden Forty	100%
ML30945	Metallic Hill	100%	MLC176	Chariot	100%	MLC362	Lone Star	100%
ML30946	Sauvignon	100%	MLC177	Chariot	100%	MLC363	Lone Star	100%
ML30947	Warrego East	100%	MLC18	West Gibbet	100%	MLC364	Lone Star	100%
ML31021	Gecko 3	100%	MLC182	Riesling	100%	MLC365	Lone Star	100%
ML31023	Gecko 1	100%	MLC183	Riesling	100%	MLC366	Lone Star	100%
ML31055	EXP 80	100%	MLC184	Riesling	100%	MLC367	Lone Star	100%
ML31057	Durif	100%	MLC21	Gecko	100%	MLC368	Lone Star	100%
ML31074	Rocky Range	100%	MLC217	Perserverance	30%	MLC369	Lone Star	100%
ML31075	Franc	100%	MLC218	Perserverance	30%	MLC37	Golden Forty	100%

### Mining Tenements Held at 30 September 2018 (Northern Territory, Australia)

Tenement	Name	Interest	Tenement	Name	Interest	Tenement	Name	Interest
MLC370	Lone Star	100%	MLC529	Cats Whiskers	100%	MLC645	Estralita	100%
MLC371	Lone Star	100%	MLC53	Golden Forty	100%	MLC654	TC8 Lease	100%
MLC372	Lone Star	100%	MLC530	Lone Star	100%	MLC66	Traminer	100%
MLC373	Lone Star	100%	MLC535	Eldorado No 5	100%	MLC67	Traminer	100%
MLC374	Lone Star	100%	MLC54	Golden Forty	100%	MLC683	Eldorado	100%
MLC375	Lone Star	100%	MLC546	The Mount	100%	MLC69	Gecko	100%
MLC376	Mulga 1	100%	MLC55	Golden Forty	100%	MLC692	Warrego Mine	100%
MLC377	Mulga 1	100%	MLC558	New Hope	100%	MLC70	Gecko	100%
MLC378	Mulga 1	100%	MLC56	Golden Forty	100%	MLC705	Apollo 1	100%
MLC379	Mulga 1	100%	MLC57	Perserverence	30%	MLC78	Gecko	100%
MLC38	Memsahib East	100%	MLC576	Golden Forty	100%	MLC85	Gecko	100%
MLC380	Mulga 1	100%	MLC577	Golden Forty	100%	MLC86	Gecko	100%
MLC381	Mulga 1	100%	MLC581	Eldorado ABC	100%	MLC87	Gecko	100%
MLC382	Mulga 1	100%	MLC582	Eldorado ABC	100%	MLC88	Gecko	100%
MLC383	Mulga 1	100%	MLC583	Eldorado ABC	100%	MLC89	Gecko	100%
MLC384	Mulga 2	100%	MLC584	Golden Forty	100%	MLC90	Gecko	100%
MLC385	Mulga 2	100%	MLC585	Golden Forty	100%	MLC91	Carraman/Klond	100%
MLC386	Mulga 2	100%	MLC586	Golden Forty	100%	MLC92	Carraman/Klond	100%
MLC387	Mulga 2	100%	MLC591	TC8 Lease	100%	MLC93	Carraman/Klond	100%
MLC4	Peko Extended	100%	MLC592	TC8 Lease	100%	MLC94	Carraman/Klond	100%
MLC406	Comet	100%	MLC593	TC8 Lease	100%	MLC95	Carraman/Klond	100%
MLC407	Comet	100%	MLC594	TC8 Lease	100%	MLC96	Osprey	100%
MLC408	Comet	100%	MLC595	TC8 Lease	100%	MLC97	Osprey	100%
MLC409	Comet	100%	MLC596	TC8 Lease	100%			
MLC432	Mulga 1	100%	MLC597	TC8 Lease	100%			
MLC48	Tinto	100%	MLC598	Golden Forty	100%			



MLC49	Mt Samual	100%	MLC599	Mt Samuel	85%
MLC498	Eldorado	100%	MLC601	TC8 Lease	100%
MLC499	Eldorado	100%	MLC602	TC8 Lease	100%
MLC5	Peko Extended	100%	MLC603	TC8 Lease	100%
MLC50	Eldorado Anom	100%	MLC604	TC8 Lease	100%
MLC500	Eldorado	100%	MLC605	TC8 Lease	100%
MLC501	Eldorado	100%	MLC606	Lone Star	100%
MLC502	Eldorado	100%	MLC607	Lone Star	100%
MLC503	Eldorado	100%	MLC608	Lone Star	100%
MLC504	Eldorado	100%	MLC609	Lone Star	100%
MLC505	Eldorado	100%	MLC610	Lone Star	100%
MLC506	Marion Ross	100%	MLC611	Lone Star	100%
MLC51	Eldorado Anom	100%	MLC612	Lone Star	100%
MLC518	Ellen, Eldorado	100%	MLC613	Lone Star	100%
MLC52	Muscadel	100%	MLC614	Lone Star	100%
MLC520	Great Northern	100%	MLC615	Lone Star	100%
MLC522	Aga Khan	100%	MLC616	Lone Star	100%
MLC523	Eldorado	100%	MLC617	Mt Samuel	50%
MLC524	Susan	100%	MLC619	True Blue	85%
MLC527	Mt Samual	100%	MLC626	Caroline	100%
MLC528	Dingo, Eldorado	100%	MLC644	Enterprise	100%

#### Mining Tenements Held at 30 September 2018 (New South Wales, Australia)

Tenement	Name	Interes t
EL6226	Kadungle	
EL8463	Wellington	90%
EL8464	Fifield	90%
EL8465	Temora	90%
EL8519	Kiola	90%
EL8652	Sebastopol	90%