

15<sup>th</sup> March 2017

The Company Announcement Platform  
ASX Limited  
Exchange Centre  
20 Bridge Road  
SYDNEY NSW 2000

**MARY VALLEY PROJECT**  
**SAMPLING FOR METALLURGICAL TESTWORK & GRAVITY SURVEY**  
**RESULTS UPDATE**

**HIGHLIGHTS:**

- **Final gravimetric results support expanded presence of significant manganese mineralisation laterally and at depth with discrete, dense anomalies on or proximal to the known workings**
- **Multiple high priority drilling targets outlined**
- **High potential for significant extensions of known manganese Mineralisation at the Eel Creek and Amamoor prospects**
- **The Company believes that the potential to develop a Direct Shipping Ore (DSO) manganese mining operation on its tenure is further enhanced by these results**
- **While final imagery is awaited, the company has commissioned an immediate supplemental fieldwork campaign for collection of samples for metallurgical testwork and field reconnaissance**
- **Metallurgical testing and characterisation is aimed to establish potential markets for high grade manganese products from Mary Valley**

Eclipse Metals (ASX:EPM or the Company) is pleased to provide an update on initial results from geophysical surveys over known manganese deposits and commissioning of sampling for metallurgical testwork in its Mary Valley manganese project, located approximately 14 kilometres southwest of Gympie township in Queensland (Figure 1 and 5).

The Mary Valley deposits have demonstrable potential to produce manganese as Direct Shipping Ore (DSO) and metallurgical testing will evaluate other characteristics for identifying marketability and processing pathways.

**GEOPHYSICAL SURVEYS**

The geophysical surveys employing gravity measurements, combined with a passive seismic survey have been carried out in three areas, vis:-

- Amamoor No1, Amamoor East and West, and Skyring Creek
- Upper Kandanga (aka Cameron's)
- Eel Creek

Eclipse Metals Ltd is an Australian exploration company focused on exploring the Northern Territory and Queensland for multi commodity mineralisation. The company has an impressive portfolio of assets prospective for gold, manganese, iron ore, base metals and uranium mineralisation. The Company's mission is to increase Shareholder wealth through capital growth and ultimately, dividends. Eclipse plans to achieve this goal by exploring for and developing viable mineral deposits to generate mining or joint venture income.

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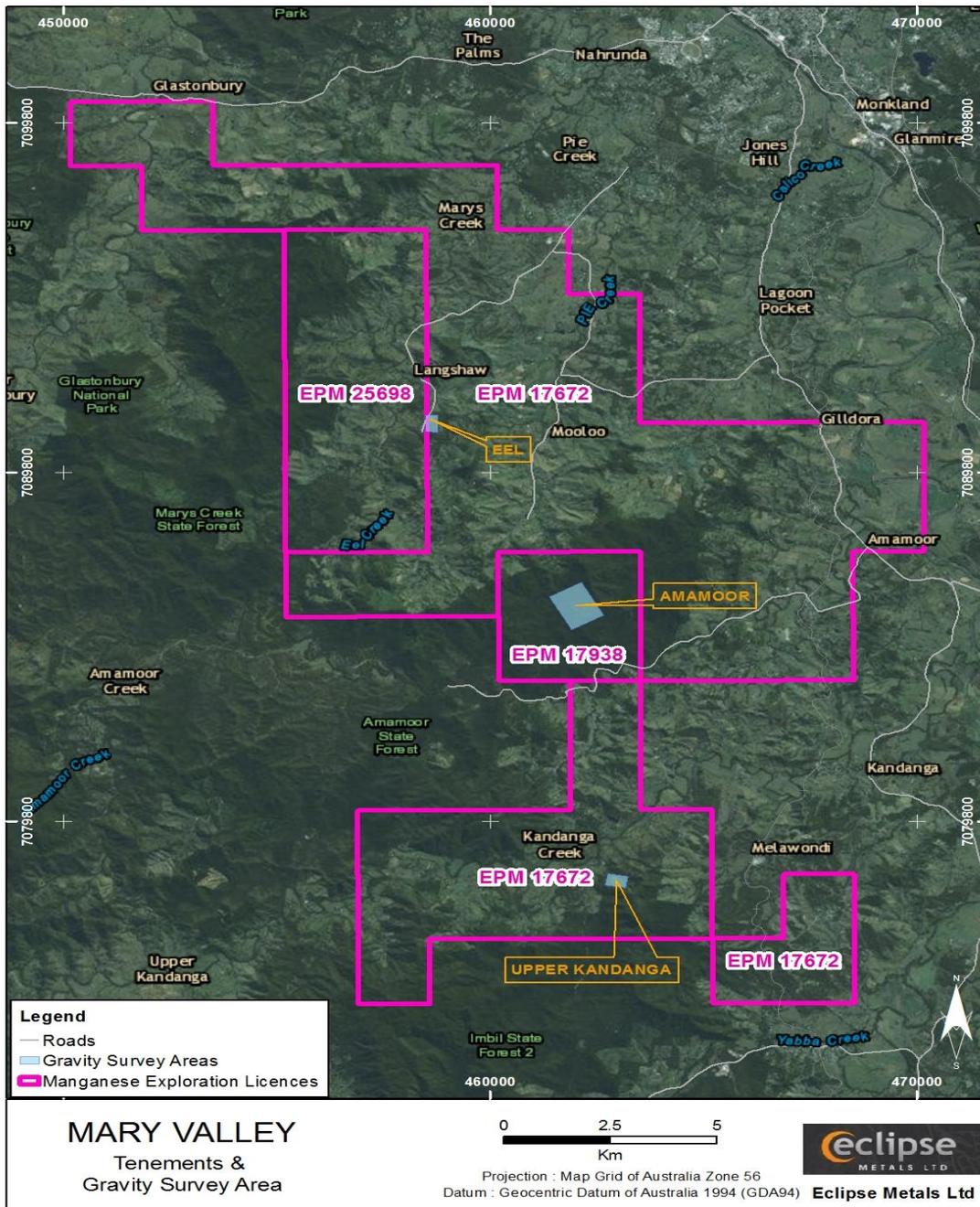
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All areas contain previous workings which can present as lower density areas in the gravity data (owing to the removal of dense manganese ore). The locations of these workings in conjunction with the gravity data can be used to vector towards new targets of unexploited material, both laterally and at depth.



**Figure 1 Regional location of the three prospects (from top, in grey outlines): Eel, Amamoor and Upper Kandanga**

**Discussion of Geophysical Results**

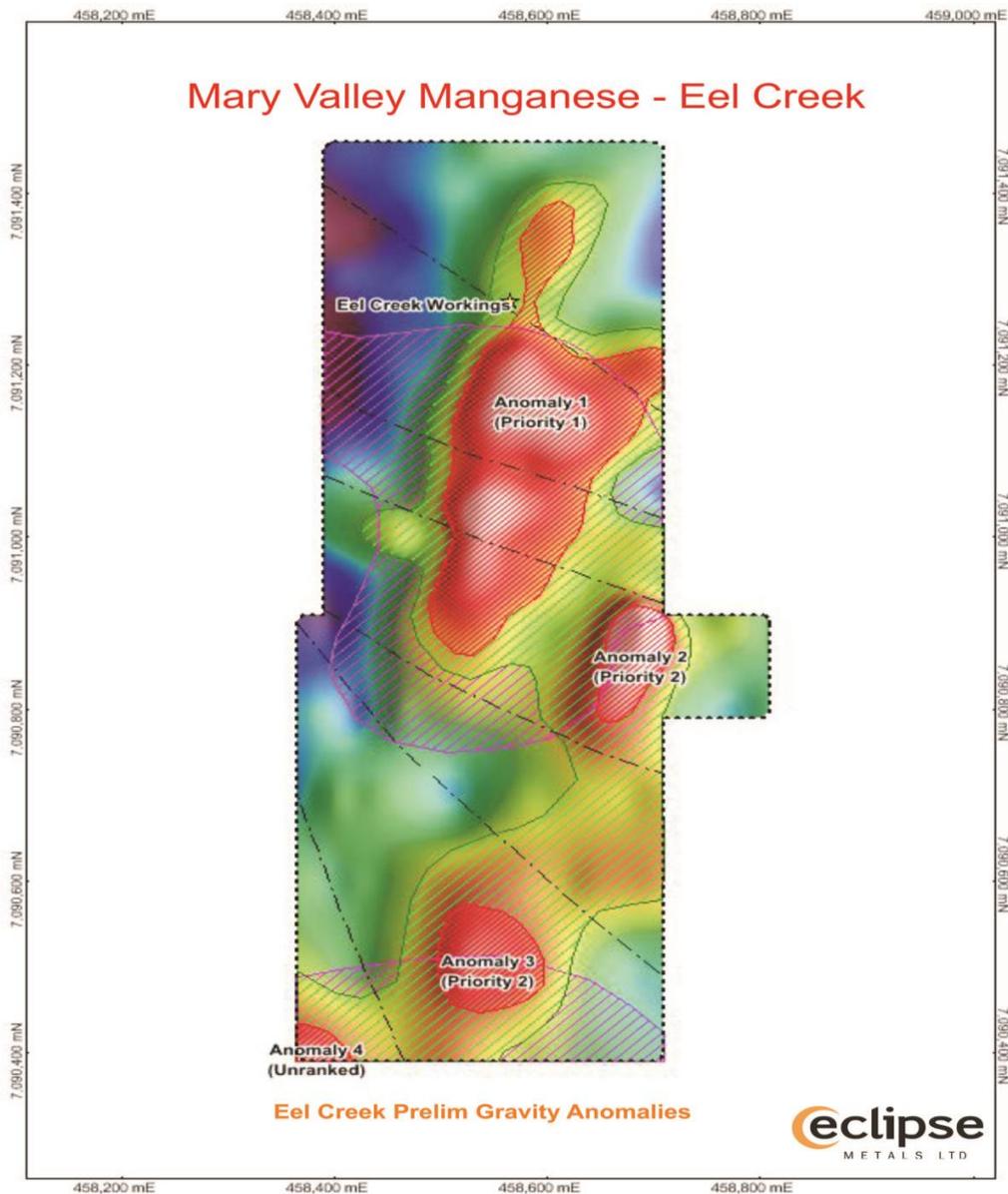
**Eel Prospect**

The area of interest is hosted in late Devonian to Carboniferous sediments with some metavolcanics.

Regional magnetics shows the prospect sitting within a locally quiet zone with a medium-intensity magnetic anomaly in the centre of the survey area. The local digital elevation model shows a large hill near the centre of the gravity survey area. The larger-scale DEM shows a general northerly trend of hills and north-westerly trend of gully’s around the gravity survey area.

The terrain-corrected Bouguer anomaly image shows a relatively dense package generally trending north to NNE. The historic Eel workings present as a reduced gravity anomaly within a local high, towards the north of the survey area.

A high density (+0.75 mGal) anomaly of approximately 300 × 100 metres size exists along strike directly to the south of the historic workings (Eel Anomaly 1) and is seen as a priority target for this area.



**Figure 2 Eel Creek Preliminary Gravity anomaly map**

This density anomaly is also coincident with a regional magnetic anomaly; the manganese ore is known to have a slightly elevated magnetic susceptibility in petrophysical testing. This target has a sharp gradient to the west and a more gradual gradient to the east, implying it is dipping towards the east with a strike approximately NNE.

ESE of Anomaly 1 is a +1 mGal gravity anomaly (Eel Anomaly 2). This seemingly does not occur along strike of the historic workings and therefore it is not known whether it could be part of the same system. The strength of this anomaly and its proximity to known mineralisation makes it worth investigation and it ranks as a priority 2 target.

In the far south of the survey area exists a third gravity anomaly of +0.65 mGal (Anomaly 3). It seems that it could be located along strike of Anomaly 2, but also possibly relates to Anomaly 1, displaced by a fault

or other structure. This anomaly is located on the edge of a regional magnetic feature and is ranked a priority 2 target.

In the far south-west corner of the survey area another anomaly has been defined by 2-3 gravity stations (Anomaly 4). More gravity data should be collected to close out this anomaly before assigning rank, but it does occur along strike from Anomaly 1, is coincident with a regional magnetic feature and should be reviewed if Anomaly 3 is investigated and found to be mineralised.

## **Amamoor Prospect**

The regional setting of the Amamoor prospect is in late Devonian to Carboniferous sediments with some metavolcanics. The regional magnetics shows the prospect area residing in a locally quiet zone along a magnetic NW-SE trend, while the local and regional scale digital elevation data shows the prospect lying along an elevated NW-SE trending ridge.

The terrain-corrected Bouguer (gravity) anomaly data still shows some correlation with the elevation data; and efforts have been made to limit any residual terrain effects in the interpretation of gravity anomalism. In the survey area, a locally variable but relatively dense package strikes roughly NW-SE and is approximately coincident with an elevated ridge observed in the elevation data. Through integration of the gravity data with regional magnetics and geology, it is anticipated that this 'dense' package may be fault controlled with some cross-cutting structures.

Strong gravity anomalism (Figure 4) observed down-dip (towards the NE) from the central and southern workings, confirms field observations. The very strong anomalism along-strike to the SE suggests the potential for further, unmapped manganese mineralisation in the south central area, which is currently being checked on site.

In the centre of the gravity survey area, around and to the west of the Central and Northern set of Amamoor workings, is a +0.60-0.65 mGal gravity high (Anomaly 1) located along the main NW-SE trend. This is possibly indicative of mineralisation that has not yet been exploited and due to the close proximity of known mineralisation is ranked as a priority target.

Further south and along strike of this target a strong (+0.90-0.95 mGal) gravity high sits proximal to the Southern Amamoor workings and the South West Amamoor prospect (Anomaly 2- North and Anomaly 2-South). These are also ranked as priority targets currently planned for drill testing.

To the east and northeast of these targets several +0.40-0.55 mGal gravity highs associated with the strike of the Amamoor East prospect are observed (Anomaly 3); this is also considered to be a high priority target.

Lesser priority targets will be investigated at the Amamoor North West prospect (Anomaly 4) further east of the southern workings (Anomaly 5), and in the south (Anomalies 6 and 7).

Additionally, there is a slight elevation in density near the Skyring Creek prospect; occurring on the edge of the survey area, which may warrant further investigation. The company is also giving due consideration to extending the gravity survey along strike and potentially to the east at a later date, in order to close out these anomalies.

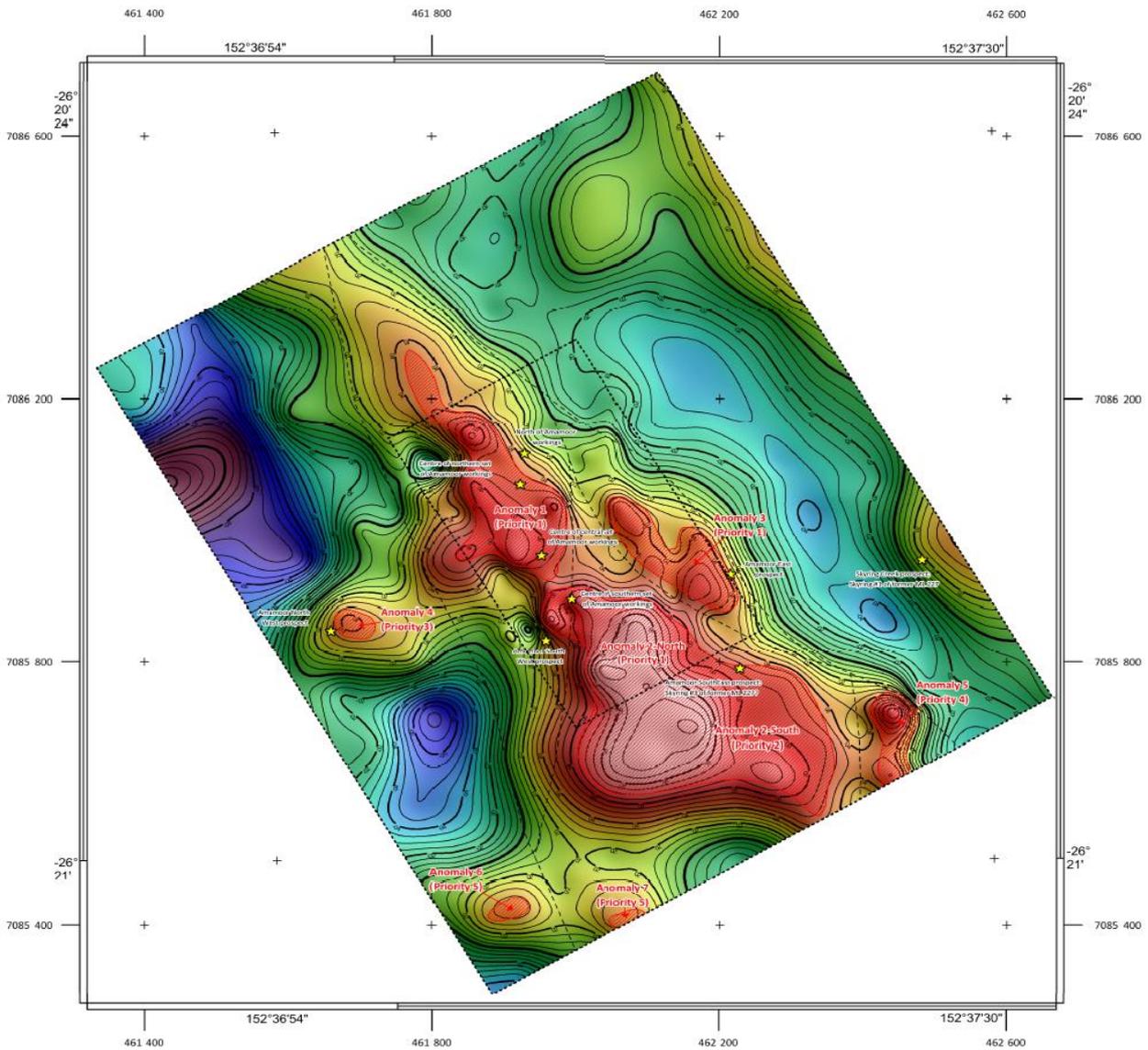
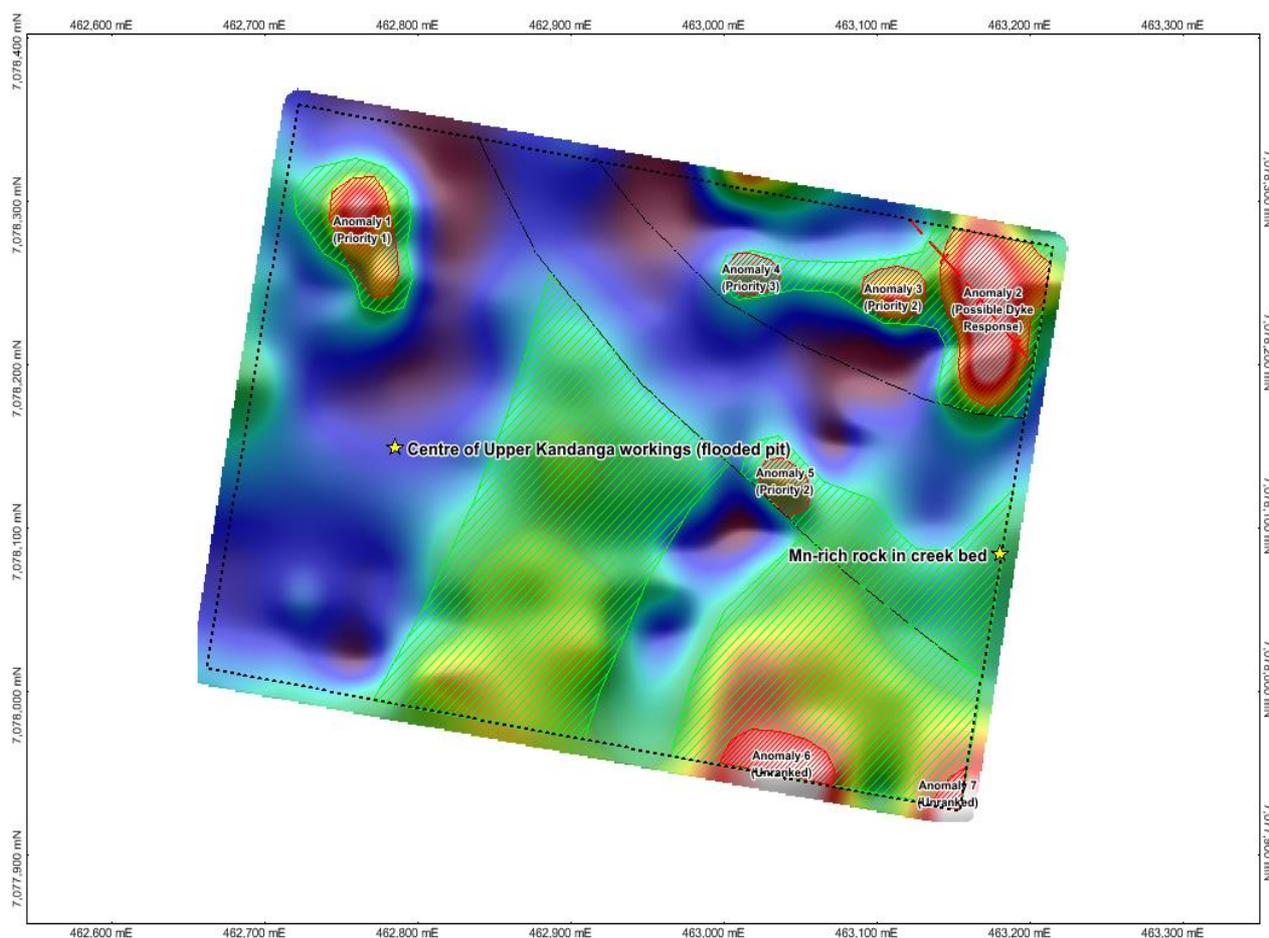


Figure 3: Amamoor Gravity anomaly map

**Upper Kandanga Prospect**

Regional magnetic data indicates a general NNW trend in magnetic features with a NW-trending dyke located in the north-east corner of the survey area. Aerial photography shows some contrast in ground colour and vegetation which are possibly related to lithology, and some linear trends which possibly represent drainage exploiting geological features.

The terrain-corrected Bouguer anomaly shows a north trending relatively dense package in the centre of the survey area that has been truncated, potentially by a fault. Despite the correction, it seems reflective of the topography; it is possible that this is because less dense units have been preferentially eroded compared with more dense units.



**Figure 4 Upper Kandanga preliminary Gravity anomaly map**

The Upper Kandanga workings (presenting as a flooded pit) do not directly associate with any gravity trends or anomalies, as can be common with mined out areas. A +0.75 mGal anomaly gravity anomaly is located to the north, in the north-west corner of the survey area, but is only defined by 4-5 gravity stations. Given the strength of this anomaly and proximity to the existing workings it is ranked as a priority target (UK Anomaly 1).

To the north-east of the survey area there is another strong (+1.05 mGal) gravity anomaly (UK Anomaly 2). According to the regional magnetics there is a possible magnetic dyke running through here and it is likely that this density anomaly could be generated by the dyke. Subsequently a ground investigation should be undertaken to determine whether or not this dyke is near surface/outcropping.

Directly west of Anomaly 2, two smaller gravity anomalies (UK Anomalies 3 and 4) have 1-2 point definitions. These could also belong to a dyke structure and should be ground-truthed in addition to Anomaly 2.

A small gravity anomaly exists along an interpreted fault line just east of the centre of the survey area (UK Anomaly 5) and warrants investigation as a lower grade target.

Relatively high gravity anomalies (Anomalies 6 & 7) in the very south-east of the survey area are only defined by 1-2 gravity stations each, and could be artefacts resulting from topographic effects. These areas should be investigated to determine if they warrant further investigation, either by extending the gravity survey or otherwise.

Manganese-rich rocks have been observed in a riverbed on the eastern boundary of the survey area. It is likely that these have originated from the south or east and the company is considering a further extension of the gravity survey in those directions.

The manganese mineralisation identified at the prospects is of a high-grade and further evaluation will be conducted in due course.

## METALLURGICAL TESTWORK

As discussed, the company currently has geologists on site checking gravity anomalism and collecting representative bulk samples from workings for preliminary metallurgical testwork, under the direction of a company consultant experienced in manganese treatment and marketing.

The company considers there is a further requirement to characterise Mary Valley manganese mineralisation as a guide to possible products, markets and processing routes. While these tests are preliminary in nature, they will point to important initial outcomes for consideration prior to drilling, analysis and the anticipated eventual establishment of resources.

### BACKGROUND

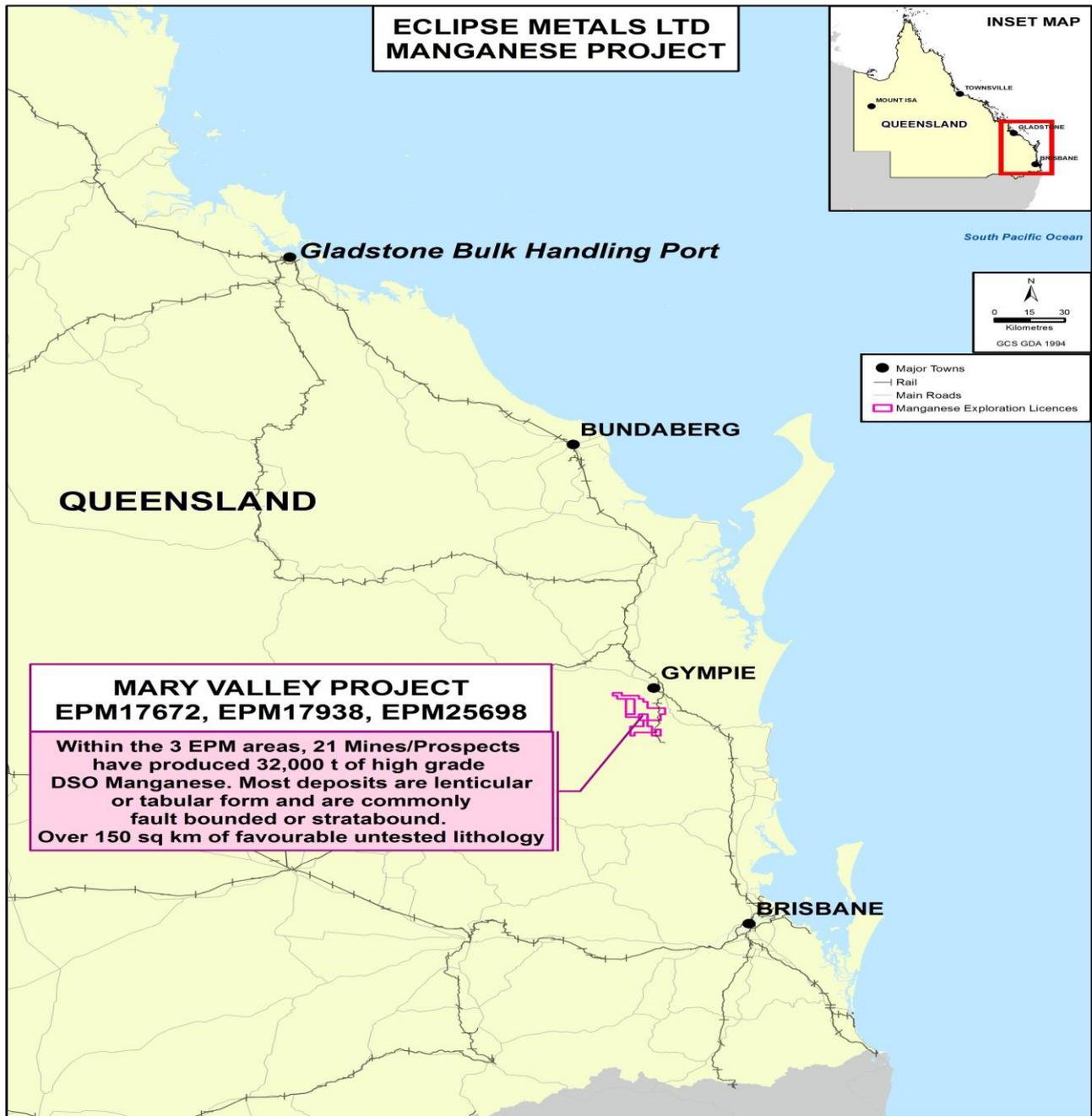


Figure 5. Location Plan for Eclipse's Mary Valley Manganese Project

## AMAMOOR MANGANESE WORKINGS

The mineralisation style at the historical Amamoor workings is best classified as belonging to the Cuban-type subclass of volcanic-exhalative manganese deposits. This type of manganese mineralisation has

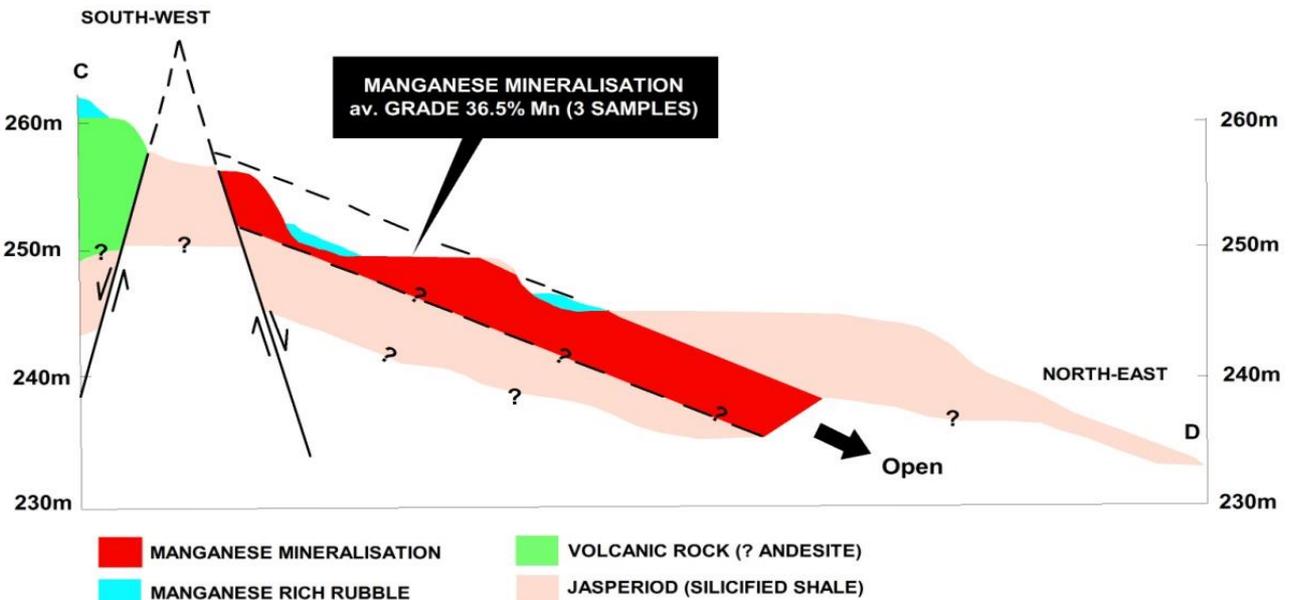
similarities to the Woodie Woodie deposit in the East Pilbara of WA, but is quite different from sedimentary-type manganese deposits such as Groote Island and deposits associated with banded iron formation.

The thickness and orientation of the lenses of manganese mineralisation in the Amamoor mine workings, along with historic evidence and likelihood that mineralisation is of the Cuban-type, supports the idea that mineralisation continues down-dip, below and beyond the present workings. In most cases, there is likely to be only 5 to 10m overburden (Figures 2. and 3.).

**Table 1: Amamoor Workings - Comparison of the eight lenses of mineralisation**

Workings	Mineralised Lens	No. of Samples	Range % Mn	Mean % Mn	Mean % SiO <sub>2</sub>	Mean % Fe <sub>2</sub> O <sub>3</sub>	Mean % Al <sub>2</sub> O <sub>3</sub>	Mean % CaO	Mean % BaO
Northern	North No. 1	2	10.75 to 26.59	18.53	33.35	7.75	9.94	12.26	0.29
Northern	North No. 2	2	16.54 to 26.14	21.34	33.96	7.75	9.1	11.81	0.24
Central	Central No. 1	3	35.86 to 36.80	36.48	22.02	6.12	6.51	7.57	0.99
Central	Central No. 2	2	6.88 to 8.86	7.87	42.72	9.91	15.22	9.51	0.57
Central	Central No. 3	2	29.32 to 52.14	40.73	14.16	3.88	7.08	8.1	1.25
Central	Central No. 4	2	19.98 to 45.07	32.52	22.19	4.88	8.46	8.12	2.76
Southern	Southern No. 1	4	17.68 to 34.68	23.53	29.16	7.48	8.5	13.01	1.19
Southern	Southern No. 2	4	13.34 to 52.49	31.00	22.82	5.11	7.21	7.91	4.16

**AMAMOOR MANGANESE MINE; CENTRAL WORKINGS  
CROSS SECTION C-D 1:500 scale**



**Figure 6. Amamoor cross section of Central Workings**

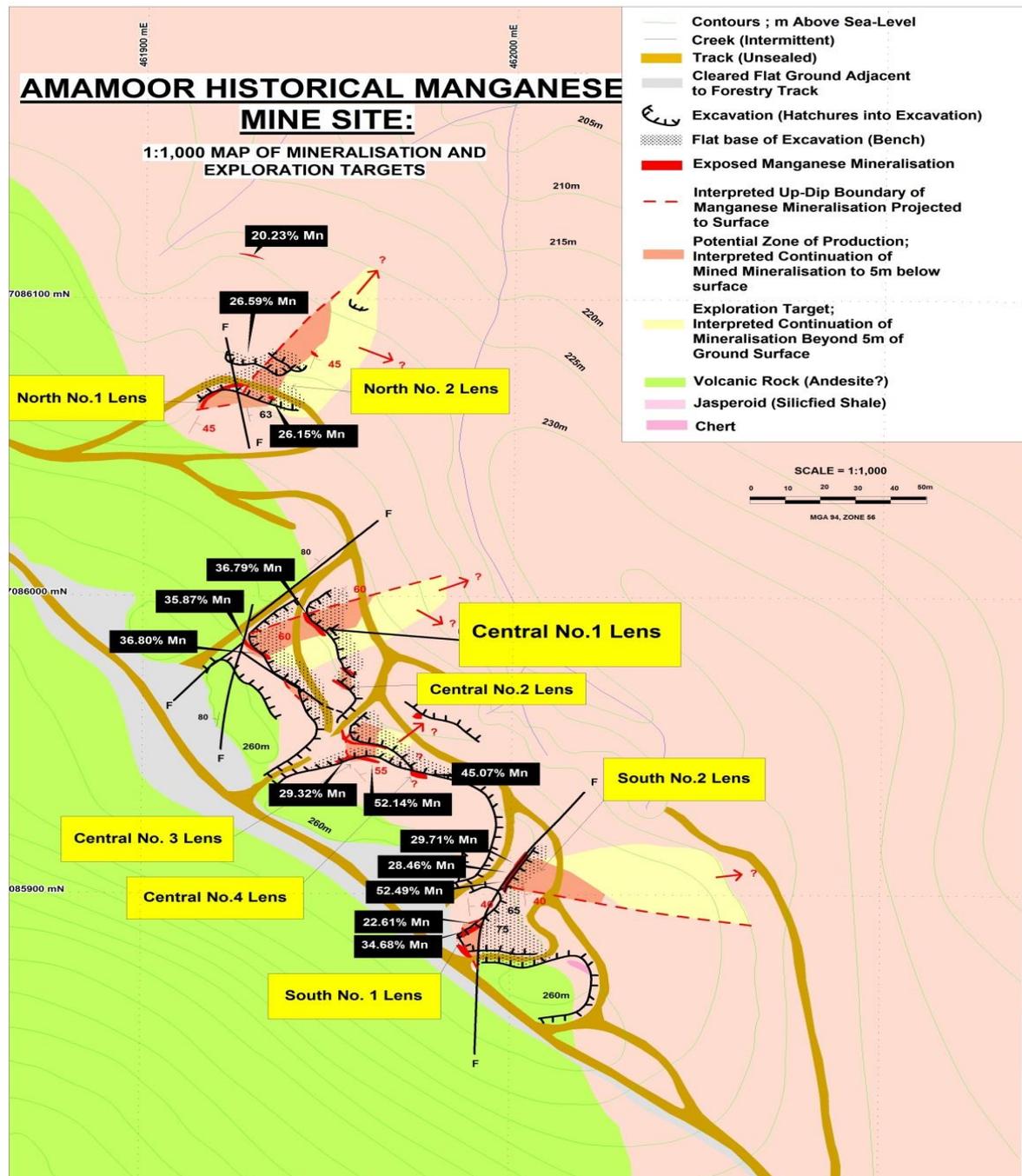


Figure 7. Amamoor Manganese workings

**UPPER KANDANGA (AKA CAMERON) MANGANESE WORKINGS**

The Upper Kandanga (aka Cameron) historical manganese mine is located about 6km west-southwest of the village of Kandanga. The mineralisation is in a distinct bed two to three metres thick and appears to be different from other historical operations being associated with shale and sandstone, rather than jasperoidal chert and andesite, and with shallow dip angles.

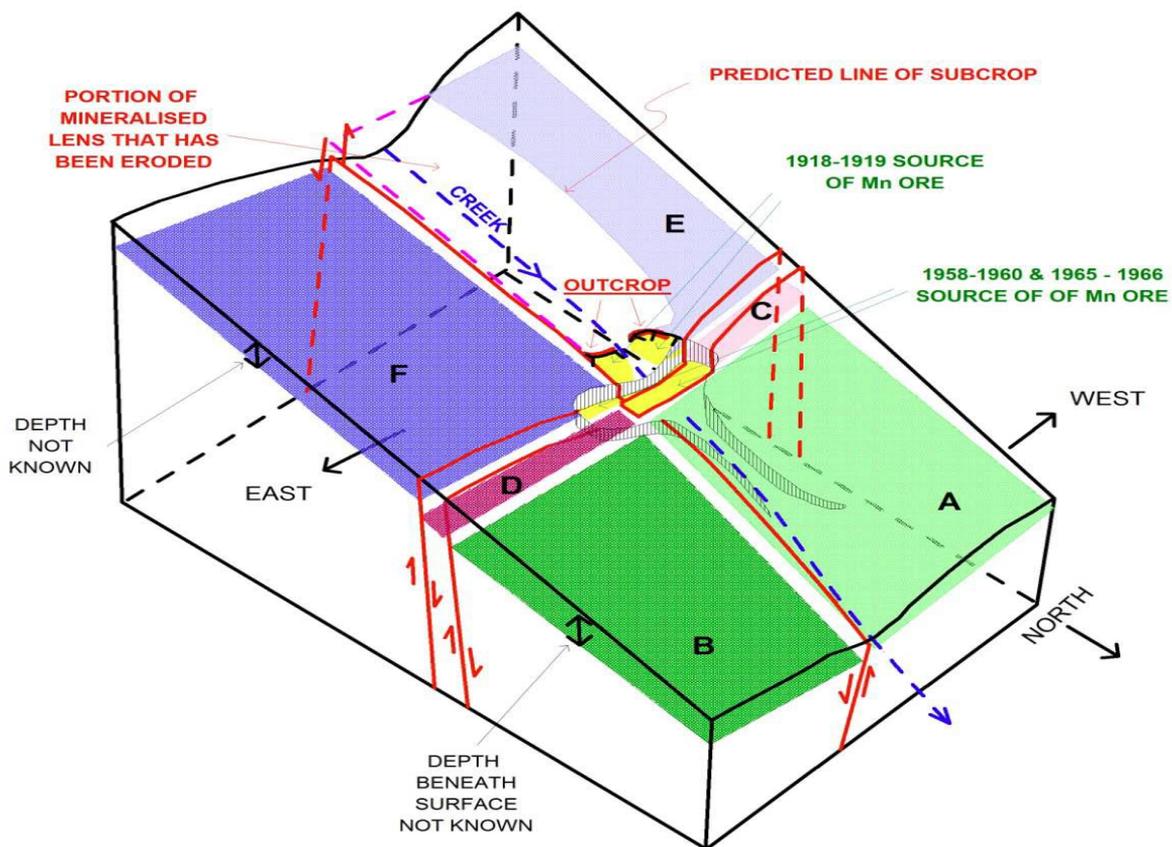
The manganese mineralisation has a strike of about 100° and dips about 35° towards the north. The layer of manganese mineralisation east of a fault is displaced a few metres lower than the layer west of the fault.

Continuity of mineralisation along strike west of the workings is unknown but the thickness of the layer exposed in the western wall of the workings suggests that it is likely to extend a considerable distance westwards into the wall of the gully.

The ore is known to continue along strike from the pit towards the east; Brooks (1962) describes an adit that was excavated into the eastern face of the workings in 1960 and extended at least 12m into the eastern slope of the gully. (Refer Figure 4 – Theoretical block model of mineralisation)

**Table 1: Sample Assay results of Upper Kandanga Mn Mine samples**

Sample	Year	Mn	SiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	CaO	BaO
PS039	2014	40.9	34.48	1.44	2.06	1.52	0.32
PS040	2014	41.8	33.1	0.77	1.34	1.28	0.12
PS041	2014	34.4	36.94	1.84	3.83	1.36	0.76
PS042	2014	42.8	25.55	2.24	2.59	1.23	0.14
PS114	2015	39.5	34.42	1.09	2.67	1.95	0.13
PS115	2015	15.4	68.97	1.47	2.96	0.75	0.15
PS116	2015	18.1	63.36	1.68	3.72	0.89	0.29
PS117	2015	40.6	28.17	0.98	2.01	0.41	0.16
PS118	2015	34.7	38.67	1.31	2.53	0.88	0.46
PS119	2015	35.2	36.88	2.03	0.28	1.6	0.28



**Figure 7: Theoretical 3-D Block model of mineralisation, Upper Kandanga Mn Mine**

**EEL CREEK MANGANESE WORKINGS**

The Eel Creek workings are located in a mostly cleared paddock east of Eel Creek Road from which the overgrown workings are visible. The mine consists of an excavation about 50m long, up to 10m wide and about 2m deep. The workings are elongated in a north-northeast direction following the contour of a hill. Strike direction of the mineralisation is similar to the orientation of the workings and remnant ore is visible in the eastern wall.

The host rock of mineralisation is a manganeseiferous jasperoid which also outcrops up-slope to the east and along strike from the workings as well as adjacent to the workings. Structural evidence suggests that the mineralisation is folded and faulted, providing a setting for extensions and enrichment of the mineralised

formation. Surrounding the workings, manganiferous rocks having bedding-parallel layers of manganese mineralisation several centimetres thick occur within an area at least 1000m long and 250m wide. This large area may contain zones of high-grade mineralisation that does not outcrop.

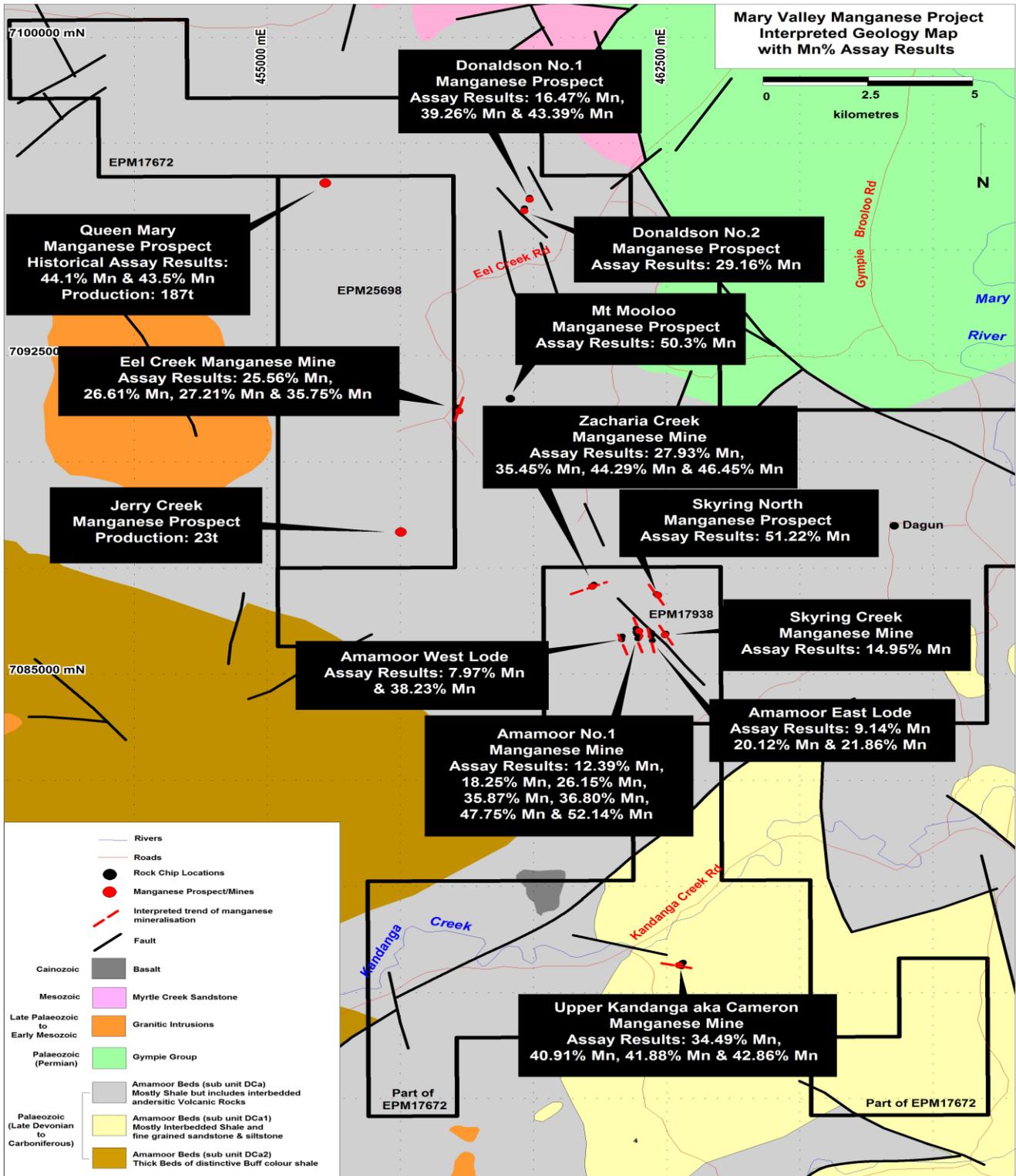


Figure 11. Mary Valley geological interpretation map with tenements and main prospects

Historically, it appears that mining concentrated on selectively extracting high grade manganese mineralisation. Now, with development of more efficient ore beneficiation technologies, there is potential to develop much larger manganese resources consisting of higher and lower grade mineralisation, amenable to lower cost mining to produce a high grade product.

Manganese is a critical ingredient for the booming battery market. Demand is increasing for Lithium batteries and the Company believes it is important to further develop the Mary Valley Manganese project in parallel with Uranium projects in the Northern Territory.

**For and of behalf of the board.**

**Carl Popal**  
**Executive Chairman**

*The information in this report that relates to Exploration Results together with any related assessments and interpretations is based on information compiled by Mr Rodney Dale, a Non-Executive Director of Eclipse Metals Limited. Mr Dale is a Fellow of the Australasian Institute of Mining and Metallurgy and has sufficient experience relevant to the styles of mineralisation under consideration and to the activity being reported 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.*

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