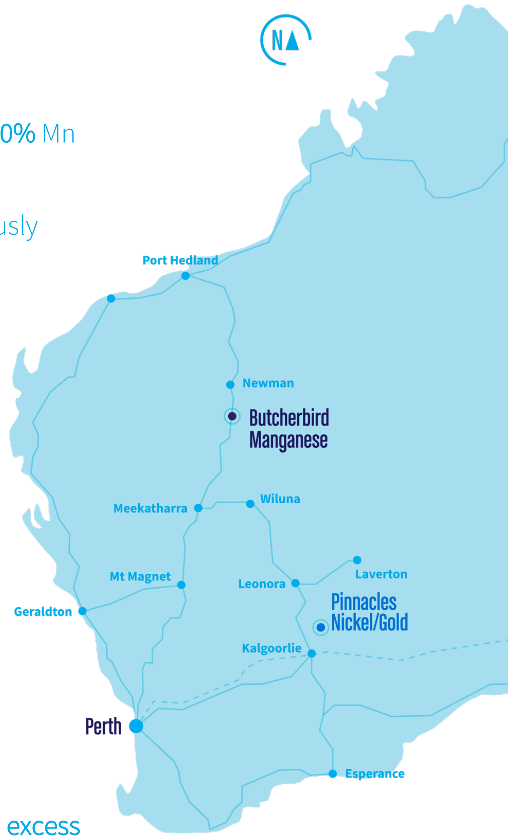
ASX ANNOUNCEMENT

16 April 2019

Substantial Resource Upgrade at Butcherbird High Purity Manganese Project

Highlights



- Butcherbird Project global resource now stands at **263 Million Tonnes at 10%** Mn containing **26.3 Million Tonnes of manganese**.
- Updated resource is a **34% increase** in contained manganese from previously reported 180.8 Million Tonnes at 10.8% Mn[1].
- Yanneri Ridge resource upgraded to 105 Million Tonnes at 10.1% Mn comprising:
  - **16 Mt @ 11.6% Mn Measured**;
  - **41 Mt @ 10.0% Mn Indicated**; and
  - 47 Mt @ 9.7% Mn Inferred.
- Measured and Indicated Mineral Resources of 57Mt at 10.4%Mn are expected to yield **18.2 Mt plant feed at 28.1% Mn** via crushing, scrubbing and wet screening[4].
- Mineral Resource upgrade completed by IHC Robbins.
- Butcherbird confirmed as a world class manganese resource.
- Updated resource will underpin maiden reserve as part of PFS.
- Material in Measured and Indicated classifications will provide feed **well in excess of the 25 year** high purity manganese PFS base case.
- PFS to confirm economics around the production of high purity electrolytic manganese metal and battery grade manganese sulphate.

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[1] Reference: Company ASX release dated 12 October 2017 (released under the Company's previous ticker MZM)

Company Snapshot

ASX Code:	E25	Board of Directors:		Element 25 Limited is developing the world class Butcherbird Manganese Project in Western Australia to produce high purity manganese sulphate for lithium ion batteries and electrolytic manganese metal.
Shares on Issue:	83.5M	Seamus Cornelius	Chairman	
Share Price:	$0.17	Justin Brown	ED	
Market Capitalisation:	$14.3M	John Ribbons	NED	

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Element 25 Limited ("E25" or "Company") is pleased to advise that a revised Mineral Resource Estimate has been prepared for four of the seven known manganese deposits at the Company's Butcherbird High Purity Manganese Project. This work follows the completion of an air-core drilling program in December 2018, and has resulted in a significant upgrade in JORC Mineral Resources for Project. The revised Mineral Resource Estimate for the updated areas is presented in Table 1, the existing resource areas which were not updated in this programme are shown in Table 2 and the revised global resource for all desposits is shown in Table 3.

Prospect	Category	Tonnes (Mt)	Mn (%)	Si (%)	Fe (%)	Al (%)
Yanneri Ridge	Measured	16	11.6	20.6	11.7	5.7
	Indicated	41	10.0	20.9	11.0	5.8
	Inferred	47	9.7	20.4	10.7	5.8
Richies Find	Inferred	39	9.3	21.5	11.2	6.1
Coodamudgi	Inferred	32	9.8	20.5	11.7	6.1
Mundawindi	Inferred	33	10.2	19.5	11.3	5.5
Total		**208**	**9.9**	**20.6**	**11.2**	**5.9**

Table 1: Butcherbird Manganese Project Mineral Resource Estimate (2019)

(1) Mineral resources reported at a cut-off grade of 7.0% Mn.
(2) Rounding of totals may result in differences in the last decimal place.

Prospect	Category	Tonnes (Mt)	Mn (%)	Si (%)	Fe (%)	Al (%)
Ilgarrarie Ridge	Inferred	35.6	9.94	21.5	12.5	5.9
Bindi Bindi Hill	Inferred	14.4	10.4	21.3	10.1	6.3
Bugdie Hill	Inferred	4.50	9.34	21.2	13.2	5.9
Cadgies Flat	Inferred	0.291	10.0	21.6	11.1	6.5
Total		**54.8**	**10.0**	**21.4**	**11.9**	**6.0**

Table 2: Butcherbird Manganese Project Mineral Resource Estimate (2017)[3]

(1) Mineral resources reported at a cut-off grade of 8.0% Mn.
(2) Rounding of totals may result in differences in the last decimal place.

Category	Tonnes (Mt)	Mn (%)	Si (%)	Fe (%)	Al (%)
Measured	16	11.6	20.6	11.7	5.7
Indicated	41	10.0	20.9	11.0	5.8
Inferred	206	9.8	20.8	11.4	5.9
Total	**263**	**10.0**	**20.8**	**11.4**	**5.9**

Table 3: Butcherbird Manganese global Mineral Resource Estimate (2017 and updated 2019)

The aircore drilling programme focussed on Yanneri Ridge. This has been coupled with an improved approach to the geological interpretation, grade interpolation and a slightly lower cut-off grade than used for the previous estimate, reflecting the increased metallurgical understanding gained since the last resource was published, with particular focus on the hydrometallurgical processing pathway developed in conjunction with CSIRO in 2017[2].This compares with the previously reported Mineral Resources for the Butcherbird Project of 181 Mt @ 10.8% Mn for total contained Mn metal of 19.5 Mt[3].

Processing of the Measured and Indicated Mineral Resource inventory of 57Mt at 10.4%Mn from Yanneri Ridge alone, by crushing and wet screening, is expected to return **18.2 Mt plant feed at 28.1% Mn** containing 5.1 Mt contained manganese[4].

[2] Reference: Company ASX release dated 22 November 2017 (released under the Company's previous ticker MZM)

[3] Reference: Company ASX release dated 17 October 2017 (released under the Company's previous ticker MZM)

[4] Reference: Report of Overall Findings of Metallurgical Processing route evaluation on samples from Butcherbird area manganese mineralisation, Ref: 1407359.2.docx, Mineral Processors Pty Ltd, dated July 2014; (Unpublished)

Updated Butcherbird Mineral Resources

Introduction

In late 2018 Element 25 Limited ('Element 25') engaged IHC Robbins Pty Ltd ('IHC Robbins') to assist with the geological modelling, resource estimation and JORC technical reporting on its Butcherbird manganese Project, encompassing four manganese deposits comprising the Coodamudgie, Mundawindi, Richies and the Yanneri Ridge deposits. The Butcherbird Manganese Project forms part of Element 25's project portfolio in Western Australia, Australia.

The Butcherbird Project area is situated approximately 1,065 km north-east from the city of Perth and 120 km south from the township of Newman, Western Australia, Australia (Figure 1).

The Butcherbird Project is 100% owned by Element 25 limited and is located wholly within Exploration Lease E52/2350. Mining Lease M 52/1074 is currently under application which encompasses the Yanneri Ridge and Coodamudgie Manganese deposits.

Geology

The Butcherbird Project area is situated in the Bangemall Basin adjacent to the eastern unconformable boundary of the Savory Basin, in central Western Australia. The Bangemall Basin contains three major stratigraphic units which are outlined below from oldest to youngest;

- The Backdoor Formation consists primarily of shales, mudstone and minor siltstones, outcropping in the southern, western and northern extents of the project area.
- The Calyie Sandstone is comprised of well bedded quartzite sandstone, occurring to the north of the project area at the contact between the Ilgarari Formation and Calyie Sandstone.
- The Ilgarari Formation consists of grey/white shales which also exhibit red/brown weathering, mudstone, miner siltstone layers, and dolerite sills. The Ilgarari Formation is part of the Collier Subgroup and outcrops across the majority of the Bangemall Basin, containing the target manganiferous shales.

Structurally the Ilgarari Formation is generally flat, or gently folded with alternating synforms and antiforms with an east-west dominant axial trend. There are three primary north-east trending structures within the extents of the project area.

- The Neds Gap Fault is a sinistral strike-slip fault that delineates the Ilgarari basin western boundary.
- The Illgararie Mine shear zone consists of a set of sub–parallel shears with a predominant south western dip, which plays host to copper mineralisation.

- The Butcherbird Mine shear zone is situated along the south-eastern margin of the Illgararie area and shares similar characteristics to the Illgararie Mine shear zone.

There are five major lithologic horizons located within the Butcherbird Project area capped by a thin botryoidal duricrust. The lithological sequence within the project area is outlined below;

- Duricrust Unit: an exposed botryoidal duricrust positioned on top of the manganese mineralisation which ranges in thickness from 0.1 metres to 2 metres.
- Hard Cap Rock Unit: occurs intermittently across the project area, particularly away from the Yanneri ridgeline. The cap rock is comprised predominantly of iron-rich calcretes and soils with minor occurrences of manganiferous bands demonstrating botryoidal and cemented textures.
- Manganiferous Shale Unit: is the primary shale unit contains a supergene enriched manganiferous horizon with an average thickness of 10m to 25m. The manganese layers are predominantly 1cm to 1m thick which are confined to distinct bands of cryptomelane within geothitic friable clays. There are also very minor interbedded red/brown shales intermixed within the clay bands. Botryoidal textures are a common characteristic observed within the manganese mineralisation zone, in particular the clay rich zones.
- Upper Shale Unit: is a reddish/brown oxidised shale horizon which exhibits minor manganese along small fractures, fissures, and joints. This unit is predominantly 30 metres to 40 metres below the topographic surface and also contains clay minerals and hematite staining.
- Dolerite Unit: is a medium-grained weathered unit interbedded between the two basal shales which exhibits relatively parallel bedding that have undergone gentle folding.
- Lower Shale Unit: capped by the weathered dolerite unit. The upper boundary of the lower shale unit has been used as the basement surface for this resource estimate.

Data

An electronic data package was supplied to IHC Robbins by Element25, has been reviewed and the data handling is summarised below. QAQC data was received at a later date and was appended to the existing database for the purpose of the report.

Data received included:

- Excel datasheets for drill hole collars, lithology, assay, survey, and rock hardness;
- Datamine wireframes of geological units and mineralogical envelopes;
- Surpac string files of domain boundaries and tenement outline;

- Topographic DTM surface; and
- Reference documents including geology legend, logging codes, and a description of the topographic DTM build.

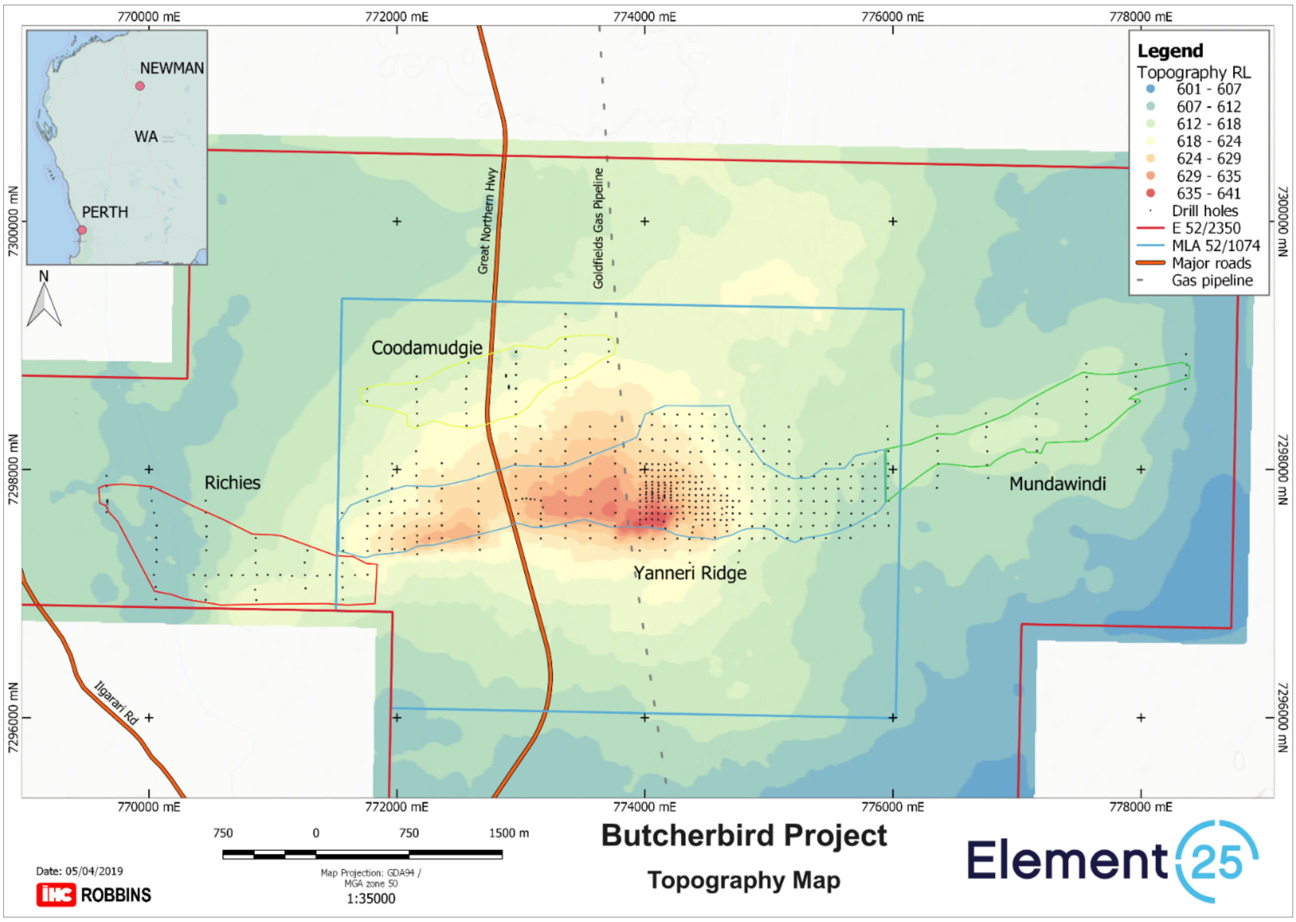

Figure 1: Topography of the Butcherbird Project

All drill collars, lithology, survey and assay files were checked prior to being imported into Datamine. All duplicate/replicate, standard and primary assays were received at a later date, checked, and amended to the existing Datamine files.

Key tables in Excel format were checked for out of range values and headers were modified prior to being imported into Datamine using standard routines.

Data collection and assaying was complete up to and including the 2018 drilling program. Drill collar positions grouped by year displayed in Figure 2.

Drilling at the Butcherbird Project has been conducted over several programs by Element 25, initially in 2010, with further programs completed in 2011, 2012, and 2018.

All drill holes in the project area were surveyed by DGPS and proven to be of sufficient accuracy. All drilling from 2010 to 2012 utilised a 5.5 inch RC drill bit whilst the 2018 drilling utilised air core (AC) with a 5½ inch drill bit.

A variety of drill grid spacing have been utilised during the development of the Butcherbird Project from wide spaced drilling progressing to tighter infill drilling across the individual deposits. The most recent drill program utilised an assortment of grid spacing in the eastern extents of the Yanneri deposit. 25 x 25 metre and 50 x 50 metre spacing were utilised to increase confidence regarding mineralisation continuity in the target area. 100 x 100 metre and 200 x 100 metre spacing were also used moving away from the main body of the deposit.

Sampling of RC holes was undertaken using 1 metre intervals which were collected from the rig mounted splitter. The samples were split into 3-5 kilogram pre-numbered calico bags. At the end of each drill rod the splitter was cleaned with compressed air and inspected as a standard routine.

Composite samples were taken within non-mineralised intervals, with lengths varying depending on lithology, averaging 4 metres. Compositing of samples within non-mineralised zones was deemed satisfactory as previous assaying of the cap rock and basal shale units indicate very low potential for manganese mineralisation.

The majority of samples had 1 metre down hole intervals, in particular areas of high manganese oxide potential were not composited and sampled as 1 metre intervals.

Assaying for the Butcherbird Project has been carried out via XRF methodology, to determine the Manganese Suite of all samples by Nagrom and SGS Laboratories. The general assay process flow is described as follows:

- The sample material is initially dried in an oven at 105°C.
- A fused disk is produced for XRF analysis.
- The disk is prepared from 0.8 grams of dried sample with 8.0 grams of 12:22 lithium tetra borate and metaborate flux which contains 5% lithium nitrate.
- The flux and sample are then mixed and heated to 1000°C in a platinum crucible for a total of 15 minutes.
- The resulting borate-glass melt is then poured into a platinum mould to form a fusion disk.
- Element concentrations in the sample are then determined by analysing the disk using Panaytical Axios XRF analysis.

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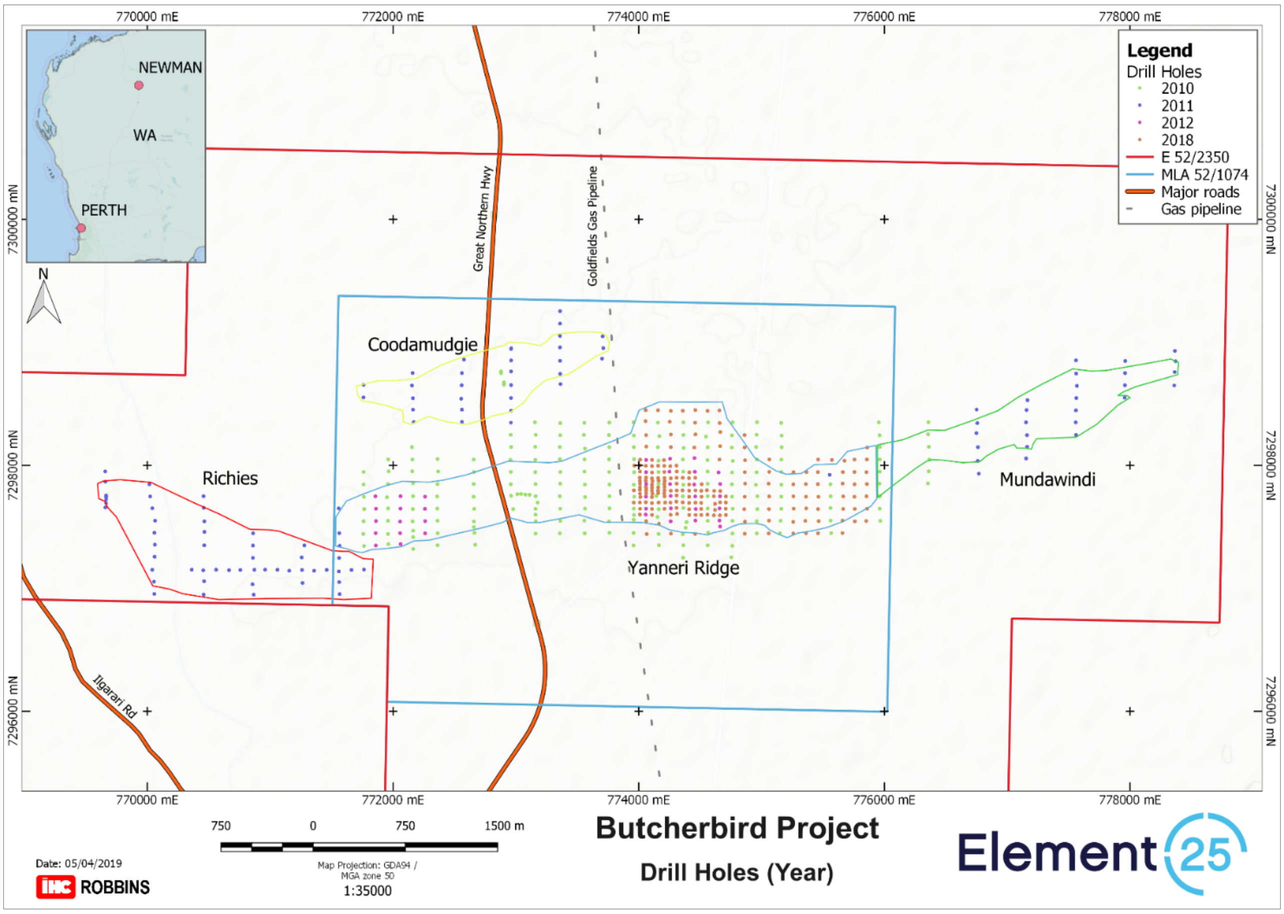

Figure 2: Location plan showing deposit extents and drilling programs by year

Loss on ignition analysis was also utilised by heating a dried sample to 1000°C for four hours. The total mass loss due to heating is determined using an electronic balance capable of weighing to +/- 0.0001 grams.

Data Analysis

A total of 531 drill holes were used for the Butcherbird Project resource estimate.

Drill hole collars were surveyed using DGPS to establish horizontal and vertical control to UTM zone 50, GDA 94. All collar positions were deemed satisfactory and fit for purpose for the geological interpretation and interpolation processes.

The drill hole file was initially de-surveyed in Datamine then loaded into the Studio RM 3D window and reviewed.

Initial review of the assay datasheet revealed numerous missing and/or overlapping down hole sample intervals and a minor occurrence of out of range assay values. Some of these issues were rectified by IHC Robbins directly, with Element 25 making the majority of corrections and re-submitting the assay datasheets. Corrections provided by IHC Robbins were also updated in the database.

Geological Interpretation

Geological interpretations were supplied in the form of digitised strings and wireframes of the geological and mineralogical domains based on recent interpretations undertaken by Element 25. These interpretations utilised the recent 2018 drill data to build upon the previous 2017 resource estimate work.

These geological and mineralogical strings and wireframes were reviewed by IHC Robbins within Datamine against the downhole drilling data.

The geological domains were deemed satisfactory and were kept largely as supplied. A basement DTM surface was developed by IHC Robbins at the upper boundary of the lower shale unit to effectively close off the base of mineralisation.

Review of the existing grade domains by IHC Robbins determined that modifications could be made to further improve grade and tonnage. Existing grade wireframes exhibited hard cut-offs at 6% Mn which limited the potential to capture high grade intervals which are interbedded with grades marginally below cut-off (eg: 5.8% - 5.9% Mn).

The existing mineralogical envelopes were intersected at each drill line then transformed into string files with subsequent changes made by altering the positions of strings at down hole intersects. An updated mineralogical wireframe was then developed for use in the grade interpolation.

The geological domains are referred to as ZONE and the definition of these zones is as follows:

The cap rock unit is referred to as ZONE=2, Manganiferous Shale Unit as ZONE=3, Upper Shale Unit as ZONE=4, Dolerite Unit as ZONE=5, and Lower Shale Unit (or basement) is equivalent to ZONE=200.

The mineralogical domains are referred to as MZONE and the definition of these is as follows:

The main mineralised envelope is referred to as MZONE=6 which exhibits an approximate cut-off grade of 6% Mn. The lower mineralised envelope is defined as MZONE=7 which also exhibits an approximate cut-off grade of 6% Mn. All other material situated outside the constraints of the two mineralised envelopes is defined as waste, MZONE=1.

The project topographic surface was originally developed in 2017 using contour data from the aero mag survey flown by SGC in 2015. More recent survey pickups within the Butcherbird project area determined a discrepancy in positioning between the 2017 DTM surface and subsequent survey pickups.

A new topographic surface was then created in 2019 utilising the adjusted topographic contours from the 2015 aero mag survey, drill hole collar DGPS locations, and the survey point pickups from the recent 2018 drill program.

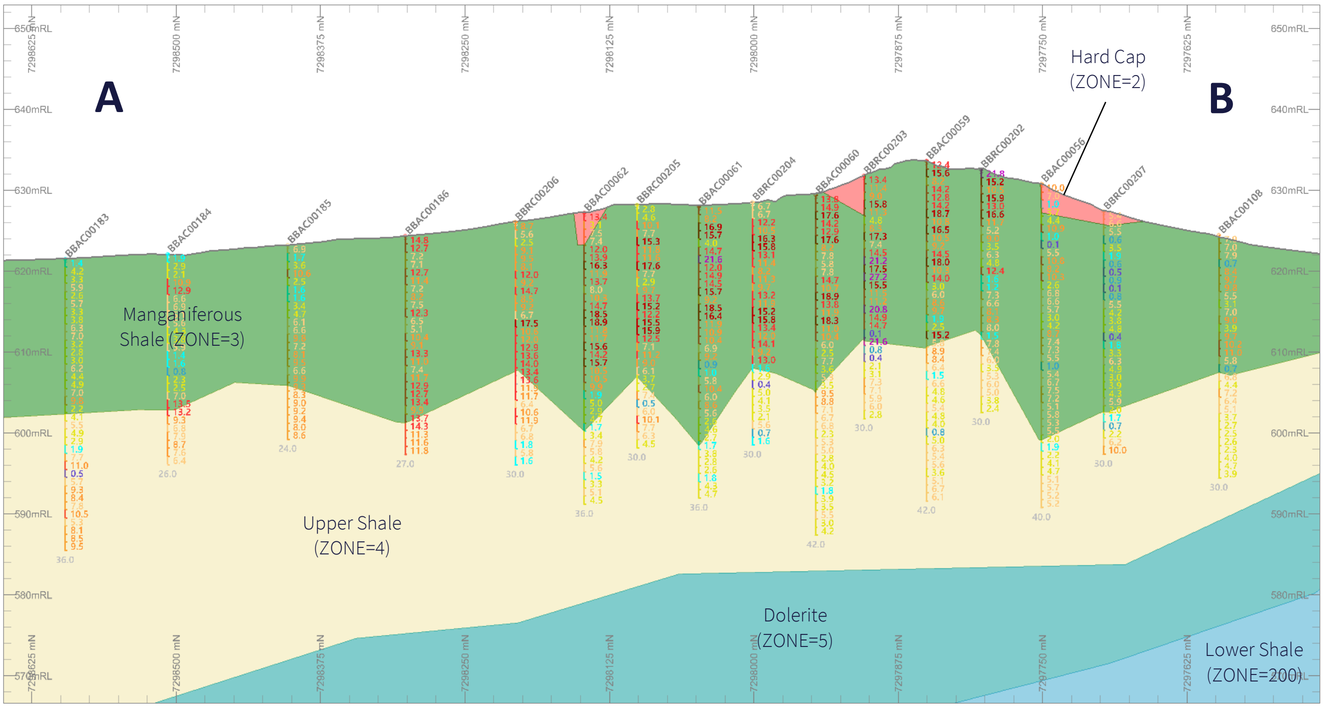

Figure 3: Type section through 774,400 mE looking East showing geological domains and drill holes with Mn grades (%) – 7 x vertical exaggeration

All obvious outliers were removed including lines of survey points that appeared inaccurate (i.e discrepancies of several metres from surrounding data). The data file was gridded in Micromine using the Minimum Curvature method with a cell size of 10 x 10. This surface was then clipped to the tenement boundary which included a 100 metre buffer and subsequently converted to a wireframe surface for use in modelling.

Geological and Grade Modelling

Construction of the geological grade model was based on a combination of coding model cells in drill holes above and below open wireframe surfaces, including topography, mineralisation and basement.

The dominant drill grid spacing for the Butcherbird Project was 100 metre east-west spaced drill lines with 100 metre drill hole spacing. This led to the selection of parent cell dimensions in XYZ of 50 metre x 50 metre x 1.0

metre in order to have a floating cell between drill holes and drill lines. This was also supported by KNA developed during variography analysis of the domained drill hole data.

Sub-cell splits of 4 x 4 in the X and Y and to the nearest 20 cm in the Z direction were used to control sub-cell splitting (as dictated by the modelling routine used in Studio RM).

Inverse distance cubed ('ID3') was chosen as the preferred method used to interpolate grades and values into the block model. Part of the rationale for using ID3 is centred around the continuity of mineralisation, drill hole and assay spacing (regular east-west and north-south and consistent down hole), and the nature of the sampling process. Ordinary kriging was also trialled on the model and measured against the ID3 method.

ID3 distributions and model comparisons showed very similar profiles to kriging method however there is already a dilution effect on any potential high grade mineralisation leading to inverse distance being less complex and a more straightforward methodology.

Bulk density values were obtained from down hole geophysical logging in the form of short spaced density ('SSD') values. The SSD down hole readings were recorded as 0.2 cm intervals which were composited to 1 m intervals within Studio RM.

These density values were incorporated into the model using the nearest neighbour method. The density values are classified as dry densities, with calibration of the logging tool providing the correction for moisture undertaken for this resource estimate.

Model Validation

The volume model and drill hole file for the Butcherbird Project were validated on-screen against the geology, mineralogical, and basement wireframes to ensure zone (both ZONE and MZONE) allocation had been correctly assigned (ZONE = geological domain and MZONE = mineralogical domain).

Enclosed mineralised wireframe envelopes defined as 'MZONE' were used to define the lower boundary of the target mineralised material at an approximate 6% MN cut-off grade. A DTM surface was constructed to delineate the lower constraints of both MZONE 6 and MZONE 7 (defined as RESIN=1). This was done to prevent the inclusion of mineralised material situated below end of hole ('EOH') depth where grades are greatly inferred during the interpolation process. The ability to model grade using both ZONE and MZONE allows for an accurate measure of mineralisation during the interpolation process for the resource estimate.

The volume model was validated to ensure that adequate resolution and correct coding was obtained with the use of sub-cells. The location of the models cells with respect to drill section spacing (as outlined above) was checked in both X and Y directions. Any miscoded drill hole values were identified and wireframes corrected to ensure the correct assignment was made.

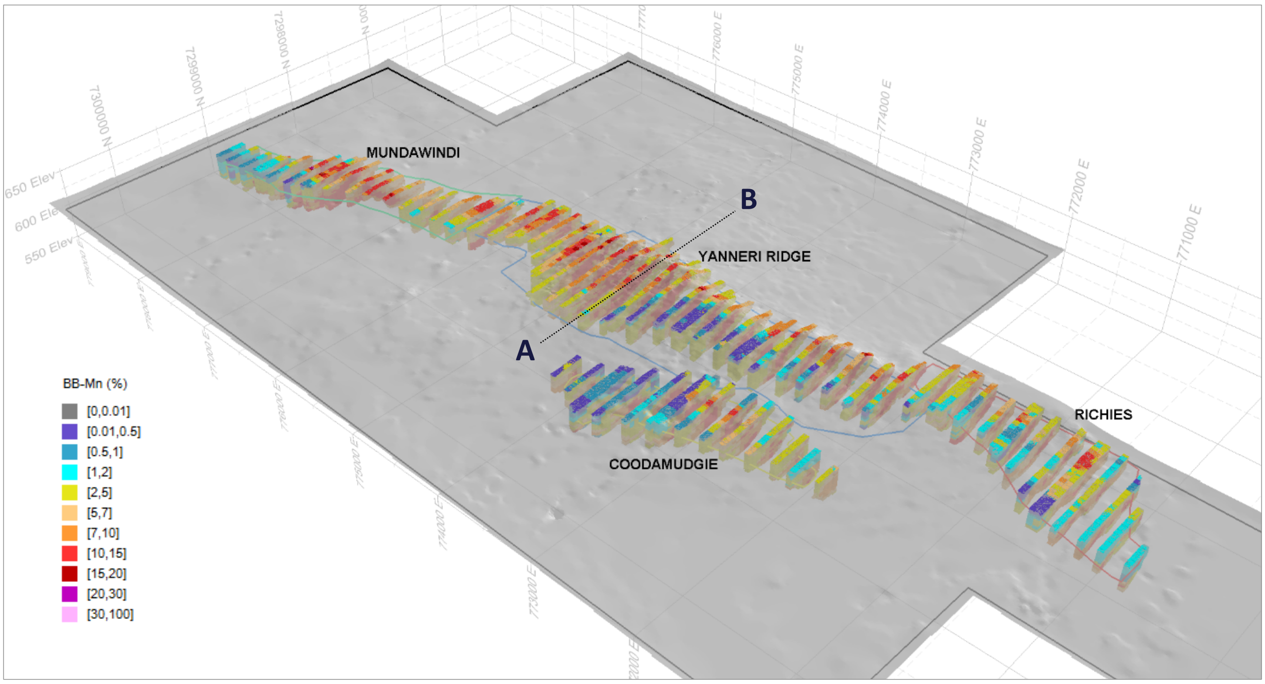

Figure 4: Orthographic view (looking south-east) of the Butcherbird Project deposits showing model slices coloured on Mn grade (%) 7x vertical exaggeration

On-screen validation of the resource estimate was conducted by viewing the coded drill holes with the estimates for each field. The model was interrogated in the east-west and north-south cross sections with the model viewed at intervals equivalent to the parent cell size.

Grade distributions and swathe plots were used as global estimators of the effectiveness of the grade interpolation, whilst local estimations were viewed on screen in Studio RM.

JORC Classification

The JORC classification for the Butcherbird Project has taken into consideration the drill hole spacing in plan view, the down hole sample spacing, and metallurgical testwork informing the extractability of manganese metal. Each of the deposits have variable drill hole spacing and are each treated individually with respect to their overall JORC classification.

Of the four deposits, Yanneri Ridge represents the single largest, with classifications of Measured, Indicated and Inferred. The other three deposits are all Inferred Mineral Resource estimates. The project JORC classification is supported by the criteria:

- regular drill hole spacing that defines the geology and Mn and other key mineralisation distribution and trends;
- variography for Mn that supports the drill spacing for each of the classifications; and
- the metallurgical testwork that underpins the extraction methodology for the manganese rich domains.

There has been industry standard QA/QC data supporting the assaying process, the use of industry standard laboratories and methods and the drilling, sampling and assaying procedures overall have fully supported the development of a Measured, Indicated and Inferred Mineral Resource estimate. The use of commercially prepared standards has supported the QA/QC for the laboratory assaying and ongoing duplicates in both the field and laboratory.

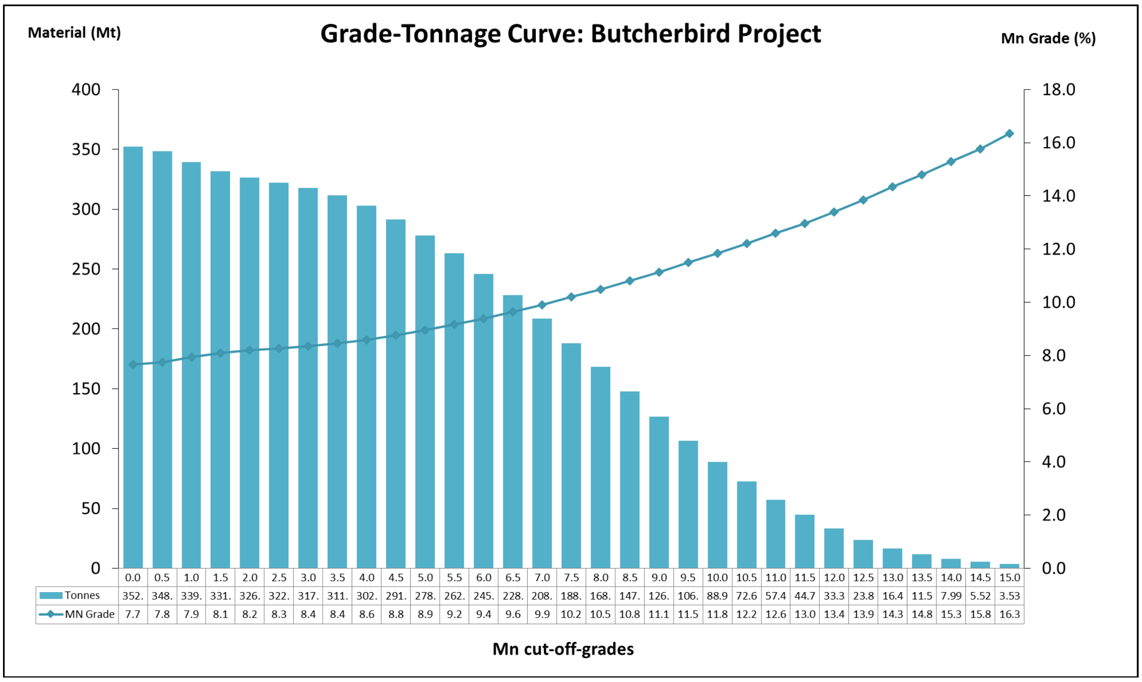

Figure 5: Grade tonnage curve for the Butcherbird Project

The sample support and distribution of assays is to an appropriate level of density for the JORC Classification. The selection of the Mn cut-off grade used for reporting was based on the experience of the Competent Person and by considering the continuity of mineralisation at that cut-off-grade as well as the inflection points on the grade tonnage curves (refer to Figure 6). Previous economic studies have also indicated that 7% Mn is very close to an economic cut over grade.

Resource Statement

The Mineral Resource reported above a cut-off grade of 7% Mn for the updated Butcherbird resource model is presented in Table 1. This table conforms to guidelines set out in the JORC Code (2012) and is formatted for internal or external public reporting.

The Mineral Resource outline for the 4 Butcherbird Project deposits is presented in Figure 4 and the JORC classification is presented in Figure 5.

The Butcherbird Project comprises a total Mineral Resource of 208 Mt @ 9.9% Mn for contained Mn metal of 20.7 Mt. The breakdown of the Project is as follows:

- a Measured Mineral Resource of 16 Mt @ 11.6% Mn for contained Mn metal of 1.9 Mt;
- an Indicated Mineral Resource of 41 Mt @ 10.0% Mn for contained Mn metal of 4.1 Mt; and
- an Inferred Mineral Resource of 151 Mt @ 9.7% Mn for contained Mn metal of 14.6 Mt.

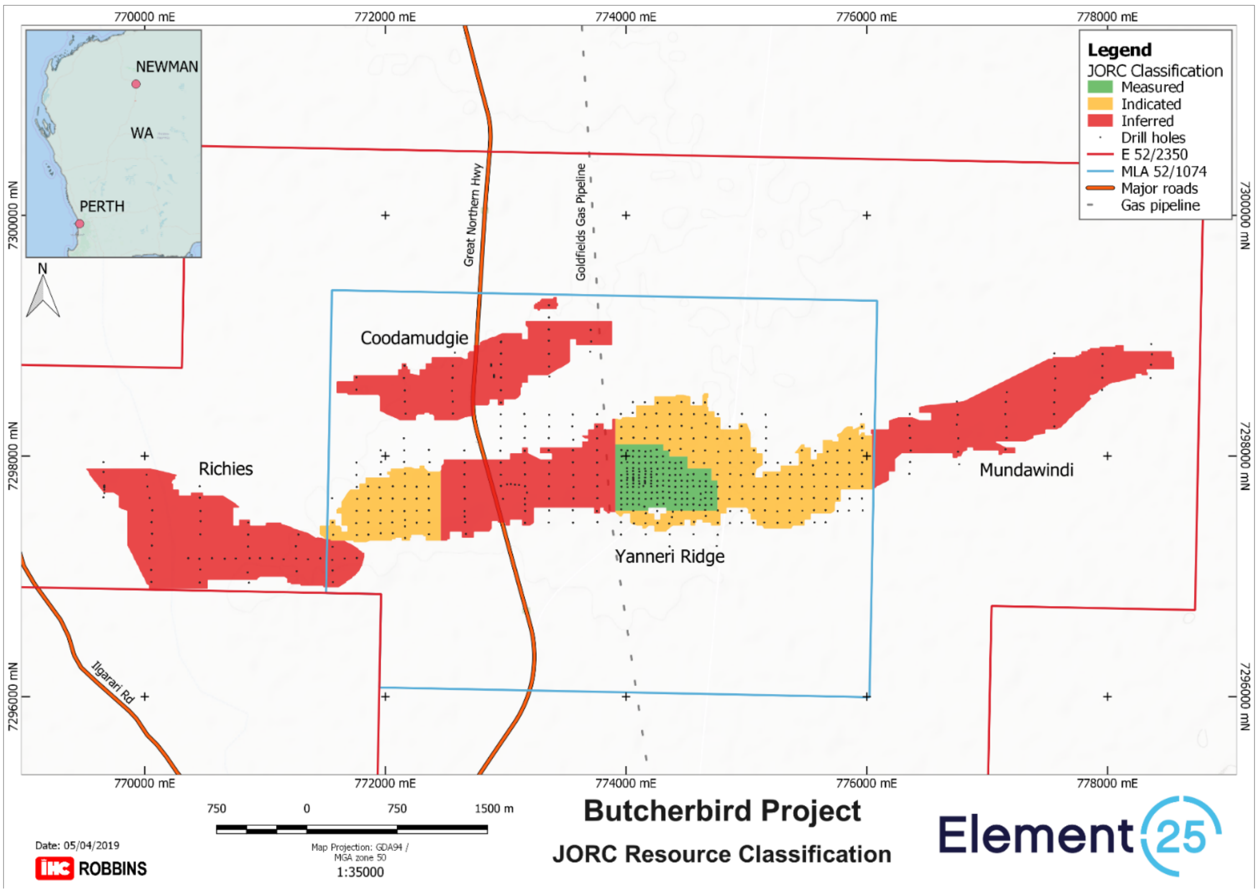

Figure 6: JORC Mineral Resource Classification

A breakdown of the categories for each deposit are presented in Table 3, however the Mineral Resource statement for Yanneri Ridge is as follows:

A total Mineral Resource of 105 Mt @ 10.1% Mn for contained Mn metal of 10.5 Mt, with a breakdown of;

- a Measured Mineral Resource of 16 Mt @ 11.6% Mn for contained Mn metal of 1.9 Mt;
- an Indicated Mineral Resource of 41 Mt @ 10.0% Mn for contained Mn metal of 4.1 Mt; and
- an Inferred Mineral Resource of 47 Mt @ 9.7% Mn for contained Mn metal of 4.5 Mt.

About the Butcherbird High Purity Manganese Project

The Butcherbird High Purity Manganese Deposit is a world class manganese resource with current JORC resources in excess of 260Mt of manganese ore. The Company has completed a positive scoping study with respect to developing the deposit to produce high purity manganese sulphate for lithium ion battery cathodes as well as Electrolytic Manganese Metal for use in certain specialty steels. A PFS is currently being completed and is expected to further confirm the commercial potential of the project.

The Butcherbird Project straddles the Great Northern Highway and the Goldfields Gas Pipeline providing turnkey logistics and energy solutions. The Company is also intending to integrate renewable energy into the power solution to minimise the carbon intensity of the project as well as further reducing energy costs.

Justin Brown

Executive Director

Company information, ASX announcements, investor presentations, corporate videos and other investor material on the Company's projects can be viewed at: http://www.element25.com.au.

Competent Persons Statement

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Justin Brown who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Exploration Results and Exploration Targets were compiled, Mr Brown was an employee of Element 25 Limited. Mr Brown is a geologist 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'. Mr Brown consents to the inclusion of this information in the form and context in which it appears in this report.

The information in this report that relates to the Yanneri Ridge, Coodamudgie, Mundawindi and Ritchies Mineral Resources is based on, and fairly represents, information and supporting documentation prepared by Mr. Greg Jones, who acts as Consultant Geologist for Element25 and is a full time employee of IHC Robbins. Mr. Jones is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type 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 (JORC Code). Mr. Jones consents to the inclusion in this report of the Mineral Resources estimates and supporting information in the form and context in which it appears.

The information in this report that relates to the Bindi Bindi, Ilgarrari, and Cadgies Mineral Resources is based on, and fairly represents, information and supporting documentation prepared by by Mr Mark Glassock who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Mineral Resources were compiled, Mr Glassock was a consultant to Element 25 Limited. Mr Glassock is a geologist 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'. Mr Glassock consents to the inclusion of this information in the form and context in which it appears in this report

Please note with regard to exploration targets, the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

Appendix 1 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Explanation	Comment
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was*	*Majority of holes were sampled as 1 metre intervals, however non mineralised zones were composited into varying lengths.* *Majority of drill holes between 2010 – 2012 was completed by a number of different drill companies using reverse circulation (RC), 5 and 6 metre rods with a 5.5 inch bit. Sampling intervals for RC holes were 1 metre from the rig mounted splitter.* *The 2018 drilling was completed using air core (AC) technique, with 3 ½ inch drill string and a combination of blade and percussion hammer bits. Drill chips are collected through a cyclone and cone splitter at 1 metre intervals.*

Criteria	Explanation	Comment
	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.	
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).*	*528 drill holes were drilled vertically whilst 3 drill holes were drilled at a 60° angle (BBRC0011, 10EM004, 10EM005)* *All RC drilling was undertaken using an air pressured reverse circulation 140mm diameter face sampling hammer* *10 metallurgical holes have also been previously drilled using PQ rods.* *All AC drilling was completed with a X350 Aircore Drill rig mounted on a VD3000 Morooka track base with a 3 ½"*

Criteria	Explanation	Comment
		drill string and a combination of blade and percussion hammer bits.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *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.*	*Diamond hole samples were compared to the 1 metre assay samples of the reverse circulation drilling with no bias observed in the results.*
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.*	*All samples were visually checked and logged on site by rig geologist and records were kept regarding drill hole identification, sampling identification, and quick log summaries of lithotype.* *A small subsample was taken for each 1 metre interval and manually sieved into chip trays.* *Further detailed and complete per metre logging was undertaken in Perth post drilling using the chip trays.*

Criteria	Explanation	Comment
	The total length and percentage of the relevant intersections logged.	
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field*	*The material was split using a rig mounted splitter to produce a sample for submission of approximately 3-5 kg in a calico sample bag. The splitter was inspected at the end of each drill rod, and cleaned with compressed air as a standard routine.* *The initial two 2010 drill programs were taken with a sample spear.* *All prior drill program composite samples were taken with a sample shovel from each 1 metre sample.* *The majority of RC samples were sampled via dry riffle splitter.* *All diamond Core samples were dried prior to sampling.* *All samples were dispatched to Nagrom, and SGS Laboratories located in Perth, Western Australia.* *XRF sample material is dried in an oven at 105°C. A sample disk is then produced using 0.8 grams of dried sample with 8 grams of 12:22 lithium tetra borate and metaborate flux containing 5% lithium nitrate. The flux and sample are mixed and heated to 1000°C in platinum crucible for 15 minutes. The resulting borate-glass melt is*

Criteria	Explanation	Comment
	duplicate/second-half sampling. *Whether sample sizes are appropriate to the grain size of the material being sampled.*	*poured into a platinum mould to for a fusion disk. The disk is then analysed by a Panaytical Axios XRF to determine element concentrations in the sample* *Loss on ignition (LOI) analysis utilised a dried sample that is heated to 1000°C for four hours. The mass loss due to heating is determined using an electronic balance capable of weighing to +/- 0.0001 grams.* *Quality control was maintained by the sizing analysis of the laboratories crushing and pulverising being monitored daily. There has been no issues regarding particle sizing thus far.* *Analysis of the QA/QC data has shown relatively good correlation between the primary and duplicate samples, with no sample bias present.* *All samples were collected at 1m intervals down hole. RC samples were split down to a final sample of approximately 2-3 kg. This follows industry standard and has been deemed suitable for this resource estimation.*

Criteria	Explanation	Comment
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.*	*All samples were at Nagrom and SGS Laboratories in Perth, Western Australia utilising XRF analysis which is considered industry standard for manganese ore.* *Elements assayed using XRF analysis include:* *Mn, Fe, Al, Ca, Cr, P, Si, Ba, K, Mg, Na, S, Ti, Cu, Pb, Zn. LOI was also recorded.* *Density values were obtained from down hole geophysical logging in the form of short spaced density ('SSD') values. These density values were incorporated into the model using the nearest neighbour method. The density values are classified as dry densities, with a calibration undertaken for moisture correction for this resource estimate.* *The SSD down hole readings were recorded as 0.2 cm intervals which were composited to 1 m intervals within Studio RM.* *Quality assurance was conducted using approximately 1 duplicate collected every 40 samples. The duplicate samples and standard reference material were analysed at Nagrom and SGS Laboratories using like analysis methods.* *Duplicate samples achieved acceptable correlation with no sample bias.* *Sample analysis is routinely checked via testing carried out by other certified laboratories, with no bias or analytical issues detected to date.*

Criteria	Explanation	Comment
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	*Assay data was compared with geology logs for out of range assay produced by site geologist.* *Validation of the drill database was undertaken independently by IHC Robbins.* *Twin drilling has shown no significant bias between drill techniques where sample recovery is greater than 50%* *All data is logged digitally into Excel data entry templates. The data is then checked by a Data Manager using standard routines and input into the companies geological master database* *Assay data is supplied in csv format from the laboratory and then entered into the master database*
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	*All drill holes within the resource area were surveyed using DGPS.* *A new topographic surface was then created in 2019 utilising the adjusted topographic contours from the 2015 aero mag survey, drill hole collar DGPS locations, and the survey point pickups from the recent 2018 drill program.* *Grid system used throughout the program UTM Grid, Zone 50, GDA 94* *IHC Robbins deemed all drill collar positions within the resource area as satisfactory, matching the topographic surface RL to an acceptable accuracy.*

Criteria	Explanation	Comment
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	*The majority of drilling during the 2010 program was completed using 20 longitudinal lines and 1 latitudinal line with a primary focus on the Yanneri Ridge deposit. Drilling was completed using 200 x 100 metre grid spacing with some wider spaced drill lines completed at the eastern and western extents using 400 x 100 metre grid spacing.* *The 2011 program consisted of 19 longitudinal lines and 1 latitudinal line. The 2011 drilling focused on the Coodamudgie deposit to the north, the Richies deposit in the west, and the Mundawindi deposit to the east. Drilling was conducted using wide spaced 400 x 100 metre spacing to define the extents of the three individual deposits.* *The 2012 drilling consisted of 7 longitudinal lines at 200 x 100 metre grid spacing to further infill the 2010 drill lines within the extents of the Yanneri Ridge resource area.* *The 2018 drill program utilised an assortment of grid spacing in the eastern extents of the Yanneri Ridge deposit. 25 x 25 metre and 50 x 50 metre spacing were utilised to increase confidence regarding mineralisation continuity in the target area which then further stepped out to 100 x 100 metre and 200 x 100 metre spacing moving outward.* *Sample compositing has been applied within domains exhibiting low levels of mineralisation/importance.*
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible*	*Drill lines were drilled north-south, perpendicular to the primary east-west mineralisation trend.*

Criteria	Explanation	Comment
	structures and the extent to which this is known, considering the deposit type. *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	*The mineralisation is relatively flat lying dipping between 5 and 7 degrees to the north, north east.* *No bias to drill grid sampling has been introduced*
Sample security	*The measures taken to ensure sample security.*	*All samples were placed into pre-numbered polyweave sample bags.* *The samples were delivered to the laboratory via a courier company to the laboratory in Perth, sealed with cable ties and connote.*
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	*Audits and reviews of the sampling data and techniques have been carried out by:* • *Snowden, 2011* • *Extomine, 2017* • *IHC Robbins, 2019* *All review and audits considered the sampling and analysis to be of good quality and suitable for resource estimation.*

Section 2 Reporting of Exploration Results

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

Criteria	Explanation	Comment
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.*	*The Butcherbird Project is 100% owned by Element 25 and is located wholly within Exploration Lease E52/2350 (Figure 1).*
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• *Previous exploration has been undertaken by various parties with the corresponding reported data being captured and retained in the current active database.* • *Methods of exploration and the associated techniques have been deemed appropriate for the nature of the deposit.*
Geology	*Deposit type, geological setting and style of mineralisation.*	*The Yanneri deposit is a stratiform sedimentary manganese deposit hosted within the Ilgarari Formation which is mostly flat lying with some occurrence of gentle folding.* *The manganese mineralisation occurs within three primary ore zones;* • *High grade manganiferous cap* • *Supergene enriched manganiferous laterite* • *Basal shale*

Criteria	Explanation	Comment
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	*See drill hole location plan; Figure 1 and 2.* *Exploration Results are not being reported at this time as the announcement covers a Mineral Resource Estimate.*

Criteria	Explanation	Comment
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	*Exploration results are not being reported at this time* *No metal equivalent values were used* *No aggregation of short length samples was used as samples were consistently sampled at 1. Material outside the mineralised areas were sometimes composited > 1 metre intervals.*
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	*The deposit is relatively flat lying and intersected mostly by vertical holes with the exception of two angled holes (10EM004, 10EM005).* *The 6% Mn cut-off zone was compiled on a weighted down hole average.* *The mineralisation within the Butcherbird Project is primarily strata bound with an approximate 80 degree strike, dipping at 7 degrees to the north.*

Criteria	Explanation	Comment
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	*Plan of Mineral Resources see Figure 6* *Geological cross section see Figure 3*
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.*	*Exploration results are not being reported at this time*

Criteria	Explanation	Comment
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.*	*Exploration results are not being reported at this time*
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	*Future work will consist of in-fill drilling to further upgrade the resource classes of the ore body.* *Further metallurgical testwork is planned for the upper shale unit (ZONE=4) which will allow for classification of that domain into higher confidence JORC classifications.*

Section 3 - Estimation and Reporting of Mineral Resources

Criteria	Explanation	Comment
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	*The original drill data derived by Element 25 drill data have been independently reviewed and validated by IHC Robbins. Data review included:* • *Checks of data by visually inspecting on screen (to identify translation of samples)* • *Validation of reported assay data against field value estimates* • *Cross checking lithology log interpretation with target mineralisation species* • *Visual and statistical comparison was undertaken to check the validity of results* *An Access database is updated and maintained by Element 25, which has not been reviewed by IHC Robbins although all of the outputs have been forensically examined for correlation and correctness.* *Validation checks of the drill database include:* • *Assay comparison for out of range values* • *Sample gaps* • *Overlapping sample intervals* *Collar coordinate verification to the topographic digital terrain model*
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	*A site visit was undertaken in 2019 by Greg Jones, the Competent Person for IHC Robbins. The 2019 site visit included inspection of drill rig, drill samples, core trays, and core rejects. All other accompanying exploration methodologies and tasks were checked for their validity* *The site visit carried out by Greg Jones deemed the exploration program to be satisfactory*

Criteria	Explanation	Comment
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	*The previous geological interpretation for the Yanneri deposit was undertaken by Element 25 and the data was used by IHC Robbins which was validated using all logging data, sampling data, and observations. The geological domaining undertaken by Element 25 was deemed satisfactory. Updates to the mineralisation envelopes were undertaken by IHC Robbins to improve volume, grade, and tonnage.* *Current data spacing and quality is sufficient to indicate grade continuity for the target mineralisation envelopes.* *Interpretation of modelling domains was restricted to the use of Mn %, and lithological logging (including colour changes)* *There is a high degree of confidence in the geological interpretation and of the enclosed mineralised envelopes.* *Grade trends have been used with cross-sectional data and variography analysis to define search ellipsoid orientation and size in populating the resource model.*
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and*	*The extent of the Butcherbird Project area encompassing the four deposits (Coodamudgie, Mundawindi, Richies, and Yanneri) extends from approximately 769500E to 778800E , and 729700N to 7299500N*

Criteria	Explanation	Comment
	lower limits of the Mineral Resource.	*The average thickness of mineralisation is approximately 5 metres with an average width of 18 metres* *A type section of mineralogy by drill line is displayed in Figure 3*
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	*CAE mining software Datamine Studio RM was used to estimate the mineral resource.* *Inverse distance weighting techniques were used to interpolate assay grades from drill hole samples into the block model and nearest neighbour techniques were used to interpolate density values into the block model.* *The mostly regular dimensions of the drill grid and the anisotropy of the drilling and sampling grid allowed for the use of inverse distance methodologies as no de-clustering of samples was required. Inverse distance was compared to ordinary kriging estimates, however the results of the inverse distance estimates were deemed superior.* *Appropriate and industry standard search ellipses were used to search for data for the interpolation and suitable limitations on the number of samples and the impact of those samples was maintained. An inverse distance weighting of three was used so as not to over smooth the grade interpolations.* *Hard domain boundaries were used and these were defined by the geological wireframes that were interpreted. DTM surfaces were used for the geological*

Criteria	Explanation	Comment
	The assumptions made regarding recovery of by-products. *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.*	*zones (ZONE) whilst enclosed wireframes were developed for the mineralogical zones (MZONE)* *A topographic surface was created from aero mag survey in 2015 with adjustments and corrections made in 2019* *Resource was modelled to key geological and mineralogical boundaries and then reported at cut-off grades of 6% Mn (no minimum thickness* *The average parent cell size used for the interpolation was approximately half the standard drill hole width and a half of the standard drill hole section line spacing* *The average drill hole spacing for the Yanneri deposit was 100 m east-west and 100 m north-south and with a 1 m samples and so the selected parent cell size was 50 x 50 x 1 m (where the Z or vertical direction of the cell was nominated as the same distance as the sample length)* *Two Mineral Resource Estimates have been undertaken previously; Snowden 2011, and Extomine 2017. The current resource model has been reviewed against these previous estimates* *No assumptions have been made regarding recovery of by-products* *No deleterious elements or non-grade variables are present.*

Criteria	Explanation	Comment
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	*Grade cutting or capping was not used for assays during the interpolation because of the regular nature of sample spacing.* *Density values were top and bottom capped at 3.7 and 1.4 gcm^{-3} respectively.* *Sample distributions were reviewed and no extreme outliers were identified either high or low that necessitated any grade cutting or capping.* *Validation of grade interpolations were carried out visually in CAE Studio (Datamine) software by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations.* *Statistical distributions were prepared for model zones from drill hole and model files to compare the effectiveness of the interpolation.* *Along strike distributions of section line averages (swath plots) for drill holes and models were also prepared for comparison purposes.*
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	*Tonnages were estimated an assumed dry basis. No account or current test work has been completed to determine moisture.*
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	*Cut-off grade of 7% Mn was used for reporting the Mineral Resource estimate. No top or bottom cuts were used for grade interpolation.*

Criteria	Explanation	Comment
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	*Element 25 is reviewing the potential of mining using conventional hydraulic excavator and diesel truck systems. The majority of the manganese mineralisation is expected to be mined as free dig material that may require local ripping in areas that are tight.* *The mineralised deposit is strata bound oxide material approximately 20 metres thick.*
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic*	*Detailed metallurgical test work previously has demonstrated that the manganese mineralisation is easily upgradable to a low-grade product with the following typical process;* • *Scrubbing* • *Wet screening* • *Two stage gravity separation*

Criteria	Explanation	Comment
	extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	*Scrubber energy requirement and whole ore scrubbing testwork was completed on nominally 64 mm diameter diamond drill core pieces, crushed to minus 50 mm.* *Scrubbing test work was performed in a 950 mm diameter (inside liners), 165 mm long laboratory rotary drum scrubber. The initial ore charge was of approximately 10 kg and the solids concentration of 27% by volume. The scrubbing was performed at 65 % of critical speed.* *Scrubbing time required at nominally 65 % of scrubber critical speed and at 27% solids concentration by volume was determined by running the scrubber for durations of 30, 60, 120, 180 and 240 seconds and removing the minus 0.5 mm size fraction at each interval. The test work confirmed that a scrubbing duration of 150 seconds is optimal* *The lower grade produced from this process would be sold at a discounted price dictated by the manganese product grade.* *Studies have indicated that the lower grade product can be upgraded to a premium saleable product with hydro-metallurgical processing. Testwork is ongoing.*
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the*	*Environmental studies for both Terrestrial Fauna and Flora have been completed for Prefeasibility studies.* *No environmental concerns or issues were identified during this study.*

Criteria	Explanation	Comment
	process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	

Criteria	Explanation	Comment
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	*Specific gravity (SG) was determined by completing down hole gamma logs of 165 drill holes at 2cm intervals.* *The density recorded is a dry density down hole, with a calibration for moisture.*

Criteria	Explanation	Comment
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	*The resource classification for the Butcherbird Project was based on the following criteria: drill hole spacing and the metallurgical testwork carried out on the manganiferous shale.* *The classification of the Measured, Indicated, and Inferred Resources was supported by the geological understanding, continuity of mineralisation, confidence in the drill hole data and the variography analysis for each domain.* *As a Competent Person, IHC Robbins Geological Services Manager Greg Jones considers that the result appropriately reflects a reasonable view of the deposit categorisation.*
Audits or reviews.	*The results of any audits or reviews of Mineral Resource estimates.*	*There has been no audits or reviews on this mineral resource. This is an updated resource from the resource estimate carried out by Extomine 2017, which upgraded the Snowden 2011 resource estimate from JORC 2004 to JORC 2012.*

Criteria	Explanation	Comment
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions*	*No statistical or geo-statistical review of the accuracy of the resource estimate has been undertaken.* *Variography was undertaken to determine the drill hole support of the selected JORC classification.* *Validation of the model vs drill hole grades by direct observation and comparison of the results on screen, swathe plot and population distribution analysis was favourable.* *The resource statement is a global estimate for the entire known extent of the Yanneri deposit within the Exploration Permit.* *There has been no production to date.*

Criteria	Explanation	Comment
	made and the procedures used. *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	