

## ASX RELEASE

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# Wilcherry Hill Feasibility Study Outlines Robust Start-up for Long Life Mine.

## Highlights.

- Stage one feasibility study completed.
- Low start-up capital cost.
- Robust returns over initial years.

## Project Outline

The Project feasibility study for the start of operations at the Wilcherry Hill iron ore project in South Australia has been completed.

**Stage One** is defined as being the production and sale of **Direct Shipping Ore** (DSO) from within the current JORC compliant Resource of 69 million tonnes of coarse, crystalline, low contaminant ore at Wilcherry Hill. This currently stands at a recoverable 5.8 million tonnes from which approximately 4.1 million tonnes of high quality, saleable product will result after passing through a simple, low cost, crushing, screening and dry magnetic separation (DMS) plant.

**Additional DSO material** will be added to inventory by further conversion of existing inferred resources by detailed drilling and by ongoing exploration of the 600 – 700 million tonne crystalline magnetite target\*<sup>1</sup> outlined by the Company and confirmed by independent consultants SRK.

Exploration for DSO hematite from the adjacent Hercules project will also be undertaken to further augment the DSO inventory. All drilling will begin immediately first production commences.

**Stage Two** is defined as ore derived from the remainder of the JORC compliant resource of 69 million tonnes of coarse, crystalline, low contaminant material at Wilcherry Hill, by wet beneficiation processes. Additional resources for wet beneficiation will also be added to inventory from exploration drilling once

production is underway. The feasibility study for stage two production will re-commence early in the new year (approximately two years work has previously been undertaken).

Stage two production is planned to allow overall production to rise to between 4 and 6 million tonnes per annum.

**Stage Three** will see production initiated from the massive Hercules project about 15 km to the east of the Wilcherry Hill mining area, and approximately 30 km from the world class hematite ore body at Iron Knob.

\*1

- i. *The target potential has been calculated from a combination of analyses of all historical (previous explorers) and exploration drilling by IronClad Mining since 2008.*
- ii. *Estimation of the extent of probable in-ground resource potential of 40 km of known strike length of magnetic anomalies throughout the total tenement area of 976 km<sup>2</sup>. The current indicated and inferred resource shows that both the Wilcherry Hill and Hercules areas have the potential in-ground resource of 15 Mt skarn magnetite for every 1 km strike length of magnetic anomaly.*
- iii. *IronClad Mining acknowledges that the potential quantity and grade of the in-ground extension to the resource 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*

### **Stage One Specifications.**

Metallurgical and process test work over the past 12 months has established that a premium fines product with a specification grade of >60% Fe can be produced by simple crushing, screening and dry magnetic separation (DMS).

For >50% Fe feed material, crushing only needs to be to <6.3 mm. For material between 40% Fe and 49% Fe, crushing to <1.8 mm will be required.

In all cases contaminants, including phosphorus and sulphur, are at extremely low levels.

The product will be classified as a premium grade ore.

### **Stage One Mining and Processing**

Selective mining of high grade ore will be achieved by truck and shovel using a mining fleet optimised to the requirements of a minimum mining width of 30 metres. Initial mining will be carried out from three pits each with ore from surface. Mined high grade ore will be transported to a centralised processing plant (Figure 1). Low grade ore (<40% Fe) will be stockpiled separately to be processed in future Stage 2 operations.



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The centralised processing plant will consist of single stage crushing (to <6.3 mm and <1.8 mm) and a screening plant, with below-specification material then passing through a low intensity magnetite separating (LIMS) plant to produce a minimum +60% Fe high quality fines product.

Production will be “batched”, in that crushing will be set to <6.3 mm for input grades of 50% Fe and above. For input grades of 40% Fe to 49% Fe, crushing will be set to <1.8 mm. Batched product will then be stockpiled and blended to achieve specification iron grades. The low level of contaminants throughout the Wilcherry Hill ore means that no blending will be necessary with regard to reducing deleterious materials prior to sale.

A detailed mine plan and production schedule for years 1 -5 has been developed to meet the following objectives:-

- Minimum production of 1 Mtpa (can be upgraded to 2 Mtpa)
- Optimised stripping ratios across all three starter pits through multiple bench progressions
- A schedule that produces steady state mining operations and ore supply balanced with mining fleet requirements.
- A schedule that meets potential blending requirements i.e. ability to mine from multiple pits during the first phases of mine life.
- Pursue backfill options over the course of early mine life to allow flexibility for environmental and statutory rehabilitation requirements.
- Maximise cash flow during the initial stages of the project and ultimately maximise net present value of the project.

Within the 1 Mtpa mining scenario a total of 4.1 Mt of DSO product will be produced from 5.8 Mt of high grade reserve (processing plant input) with an average stripping ratio of 5:1 for all pits across life of mine.

At this stage only indicated resources that can readily be converted into a mining reserve have been included in the optimised pits to a maximum depth of 65 m. Significant upside to increase DSO production does exist as deeper resources (up to 120 m) are proven and known new potential resource areas (+600 Mt) are available to IronClad.



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## **Transport and Freight**

DSO from the processing plant will be loaded into containers and transported via flatbed triple road trains from the mine site to a rail siding 6 km north of Whyalla. The containers will then travel by rail to Port Adelaide where the ore will be loaded onto Panamax or small Cape Size vessels (Figure 2). Road, rail and port contracts will be finalised once the IronClad board has given final approval for the project, as outlined in the study, to proceed.



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## **Operating Costs**

<b>Mining Study Operating Cost</b>	<b>Cost</b>	<b>Notes</b>
Mining Cost (per tonne)	\$2.50	As per quote
Processing Costs	\$10.00	Including cost of power and maintenance
Transport costs (Port Adelaide)	\$44.00	Includes Trucking/ Transfer to rail/ Rail / Container lease
Port Costs (Port Adelaide)	\$11.50	Includes handling and transfer from rail to ship
Admin and Site Costs	\$4.40	Operational on site costs
Freight Costs (Adelaide)	\$22.00	Predicted average shipping cost from Port Adelaide

## **Sales**

IronClad has a 2 year contract with OMS Trading Pte Ltd (“OMS”) in Singapore to sell all the Company’s production from a Southern Chinese stockpile. OMS are contracted to supply appropriate vessels at the request and timing of IronClad and required to pay the Company 95% of the agreed price of each vessel’s contents within 30 days of the ship departing Port Adelaide.

OMS will sell to a range of end users from the stockpile and price adjustments will be made according to prices received by OMS.

Prices for 62% Fe fines are widely predicted to remain at current high levels of ~US\$150 – US\$160 per tonne C&F to China for at least two more years (end 2012) before retreating gradually to

lower levels of around US\$100 – US\$120 per tonne in the medium term.

IronClad can, therefore, look forward to margins of >AUD\$50 per tonne in its early years. However, planned cost reduction measures in the ensuing years will help maintain similar margin levels should iron ore prices retreat as anticipated.



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## **Capital Costs**

All-up capital costs to commence operations, including a \$2.4 million contingency will be \$26.3 million. This does not include working capital of between \$6 - \$8 million which will be raised closer to commencement of operations. A breakdown of the capital cost items is as follows:

<b>Capital Cost for Stage 1 Project</b>	
<b>Description</b>	<b>Cost</b>
Dry Magnetic Separation	\$3.0m
Mine Preparation	\$1.0m
Site Works	\$1.1m
Borefield and Water Storage	\$4.1m
Road Upgrade	\$1.5m
Accommodation Village	\$5.0m
Train Load-Out	\$3.0m
Environmental Bond	\$2.3m
EPCM	\$1.4m
Legals, Approvals, etc	\$1.5m
Contingency	\$2.4m
<b>Total</b>	<b>\$26.3m</b>

## Next Steps

The Mining Lease Proposal (MLP) has been carefully prepared by IronClad in conjunction with Coffey Environments and will be submitted to the South Australian Mines Department (PIRSA) once the final community consultative process is completed (first week in January 2011). There is likely to be a 5 - 6 month approval process which, if successful, will be followed by submission of the Company's Mining and Rehabilitation Programme (MARF) which is likely to require a further 2 months before final approval to mine is attained. First mining is therefore expected to commence in September or October 2011 with first shipments anticipated in December 2011.



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Figure 1

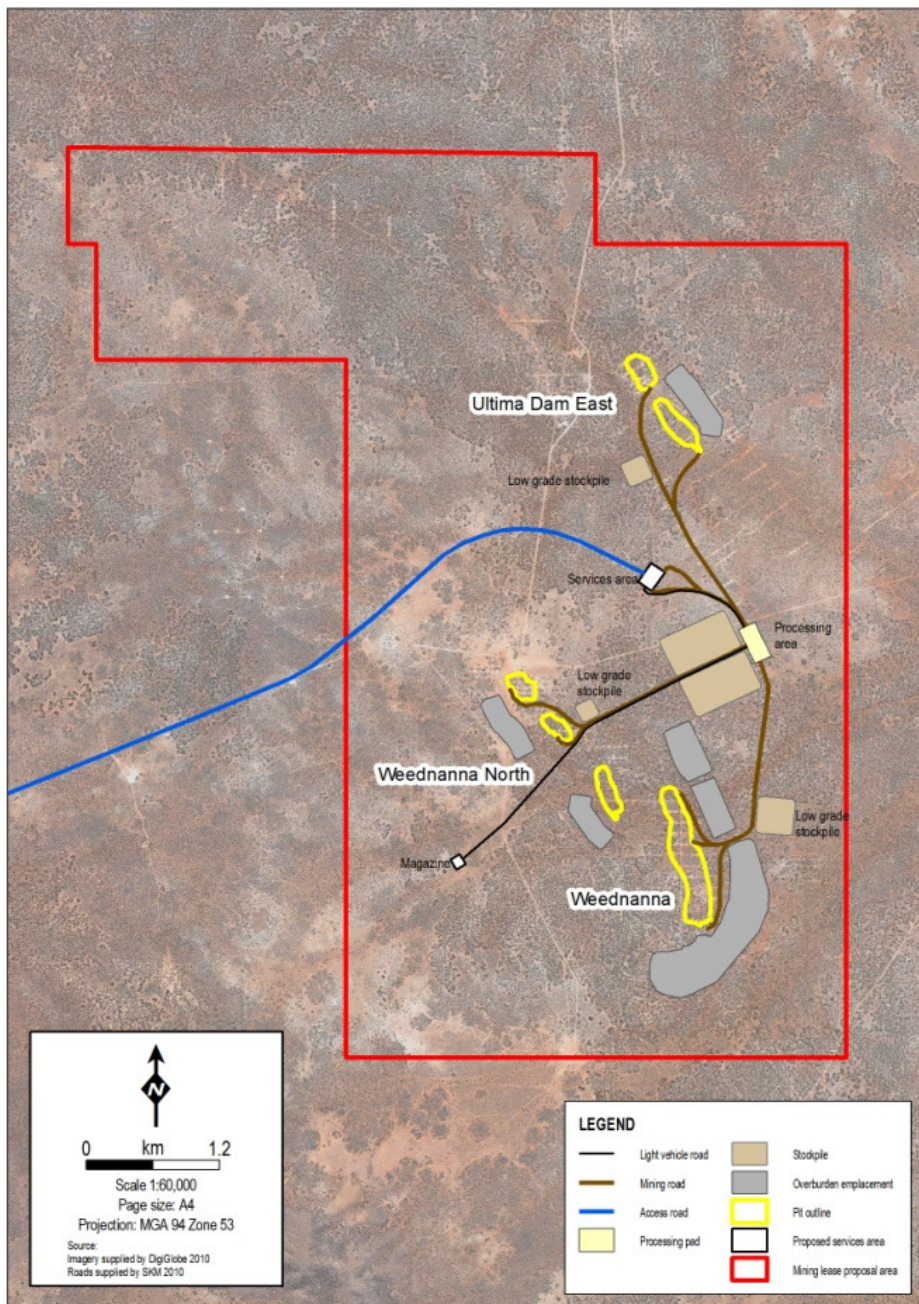
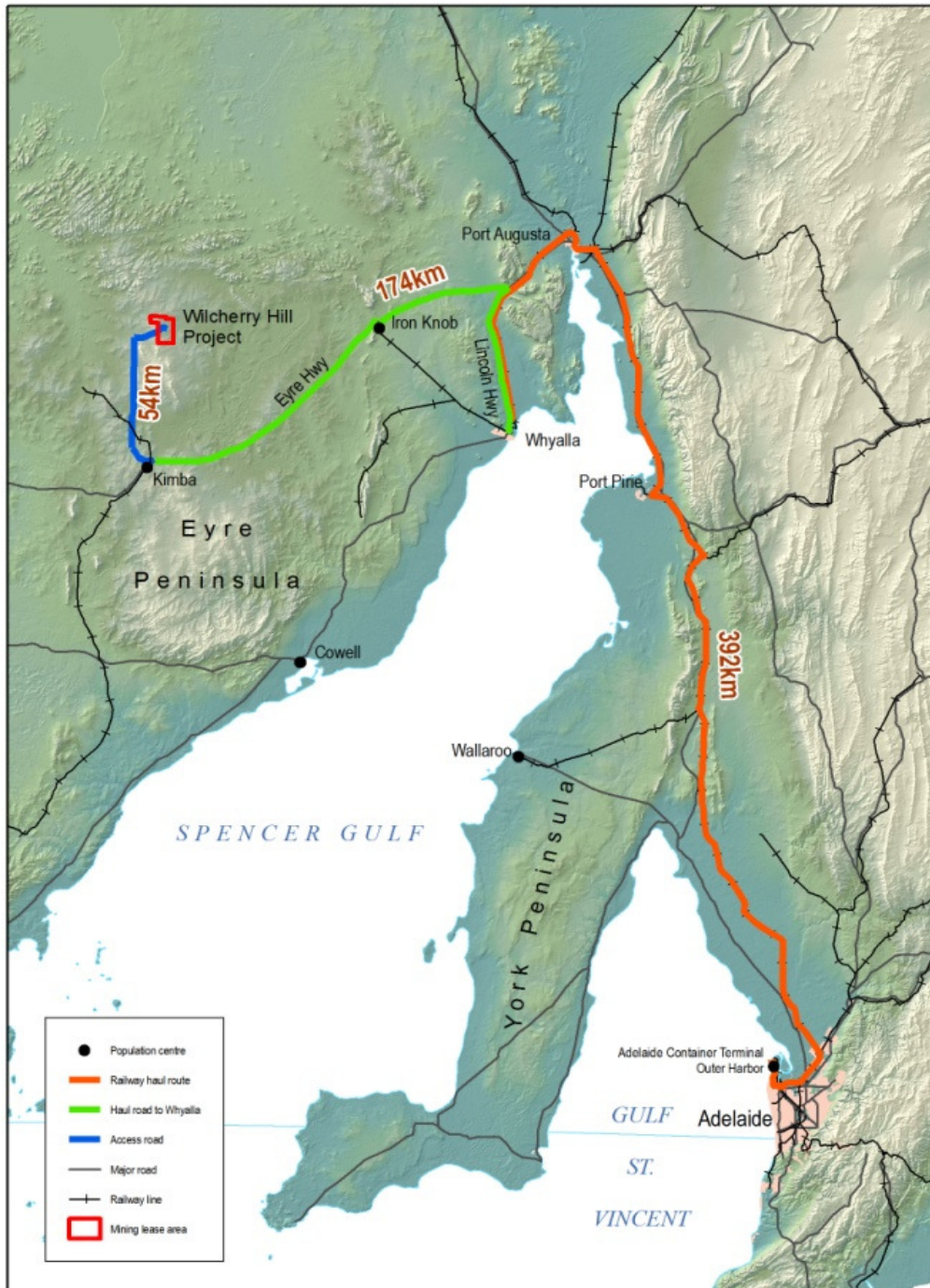


Figure 2



Trafford Resources has a 20% free carried interest in the Wilcherry Hill Iron Ore Project.

Ian Finch  
Chairman

Tel: 08 9485 1040

*The information in this announcement that relates to results, is based on information compiled by Ian D. Finch, who is a Member of The Australasian Institute of Mining and Metallurgy and who has more than five years experience in the field of activity being reported on and is Executive Chairman of the Company.*

Mr. Finch 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Finch consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



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## Appendix

WEEDNANNA RESOURCE								
Classification	Wireframe	Tons (mt)	Fe %	Sg	Sio2 %	Al2o3 %	P %	Loi
Indicated	15%<Fe<40%	15.7	20.75	2.87	35.91	12.38	0.04	6.88
	>=40%	3.8	45.44	3.58	17.23	5.45	0.03	4.73
	Total	19.5	25.56	3.01	32.27	11.03	0.04	6.46
Inferred	15%<Fe<40%	0.2	24.52	2.94	27.68	6.37	0.03	6.58
	>=40%	0.6	47.99	3.66	13.34	3.30	0.01	2.60
	Total	0.8	41.84	3.44	17.30	4.15	0.02	3.70
Inferred + Indicated	15%<Fe<40%	15.9	20.67	2.87	35.91	12.35	0.04	6.88
	>=40%	4.4	45.36	3.57	16.93	5.23	0.03	4.46
<b>Total Weednanna Resource</b>		<b>20.3</b>	<b>26.19</b>	<b>3.03</b>	<b>31.72</b>	<b>10.78</b>	<b>0.04</b>	<b>6.36</b>
ULTIMA DAM EAST RESOURCE								
Classification	Wireframe	Tons (mt)	Fe %	Sg	Sio2 %	Al2o3 %	P %	Loi
Indicated	15%<Fe<40%	11.2	22.14	2.89	38.42	10.27	0.12	9.14
	>=40%	3.2	44.07	3.53	16.99	6.81	0.13	8.69
	Total	14.5	27.05	3.04	33.62	9.49	0.12	9.04
Inferred	15%<Fe<40%	9.3	23.57	2.94	40.32	7.50	0.10	6.78
	>=40%	0.2	43.40	3.49	13.65	5.31	0.26	12.89
	Total	9.5	24.06	2.95	39.67	7.45	0.10	6.93
Inferred + Indicated	15%<Fe<40%	20.5	22.79	2.91	39.28	9.02	0.11	8.07
	>=40%	3.5	44.02	3.52	16.77	6.71	0.14	8.97
<b>Total Ultima Dam East Resource</b>		<b>24.0</b>	<b>25.86</b>	<b>3.00</b>	<b>36.02</b>	<b>8.68</b>	<b>0.11</b>	<b>8.20</b>
WEEDNANNA NORTH								
Classification	Wireframe	Tons (mt)	Fe %	Sg	Sio2 %	Al2o3 %	P %	Loi
Indicated	15%<Fe<40%	12.2	20.53	2.87	35.02	10.79	0.05	7.48
	>=40%	1.9	44.58	3.54	16.80	6.03	0.04	5.74
	Total	14.2	23.83	2.96	32.52	10.14	0.05	7.24
Inferred	15%<Fe<40%	2.6	29.33	3.07	13.15	5.18	0.03	8.45
	>=40%	0.4	44.88	3.55	17.58	5.47	0.03	4.75
	Total	3.0	31.63	3.14	13.80	5.22	0.03	7.90
Inferred + Indicated	15%<Fe<40%	14.8	22.06	2.91	31.23	9.82	0.04	7.65
	>=40%	2.4	44.63	3.55	16.94	5.93	0.04	5.55
<b>Total Weednanna North Resource</b>		<b>17.2</b>	<b>25.19</b>	<b>3.00</b>	<b>29.25</b>	<b>9.28</b>	<b>0.04</b>	<b>7.36</b>
ULTIMA DAM WEST								
Classification	Wireframe	Tons (mt)	Fe %	Sg	Sio2 %	Al2o3 %	P %	Loi
Indicated	15%<Fe<40%	0.0	0.00	0.00	0.00	0.00	0.00	0.00
	>=40%	0.0	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.0	0.00	0.00	0.00	0.00	0.00	0.00
Inferred	15%<Fe<40%	7.9	26.54	3.00	30.96	2.92	0.05	6.64
	>=40%	0.0	0.00	0.00	0.00	0.00	0.00	0.00
	Total	7.9	26.54	3.00	30.96	2.92	0.05	6.64
Inferred + Indicated	15%<Fe<40%	7.9	26.54	3.00	30.96	2.92	0.05	6.64
	>=40%	0.0	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Ultima Dam West Resource</b>		<b>7.9</b>	<b>26.54</b>	<b>3.00</b>	<b>30.96</b>	<b>2.92</b>	<b>0.05</b>	<b>6.64</b>



## Appendix



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The Resource estimate was completed using the following parameters:

- The Resource Estimate Statement covers four deposit areas. For the four deposit areas, details are as follows:
  - Weednanna covers a 1,170m lateral extent from 6,373,390mN to 6,372,220mN (MGA94) and the vertical extent of the resource is 260m from surface at approximately 316mRL to 56mRL.
  - Ultima Dam East covers a 2,280m NW to SE lateral extent from 6,377,480mN to 6,375,200mN (MGA94) with a vertical extent of 190m from surface at approximately 290mRL to 100mRL.
  - Weednanna North covers a lateral extent of 1,280m from 6,374,600mN to 6,373,320mN (MGA94) with a vertical extent of 250m from surface at approximately 320mRL to 70mRL.
  - Ultima Dam West covers a lateral extent of 390m from 635,560mE to 635,950mE (total untested anomaly has a lateral extent of 2,400m) with a vertical extent of 150m from surface at approximately 300mRL to 150mRL.
- Drill holes used in the resource estimate included 251 holes for Weednanna (215 RC, 36 diamond core), 233 holes for Ultima Dam East (163 RC, 4 diamond core, 66 RAB & AC), 132 holes for Weednanna North (113 RC, 3 diamond core, 16 RAB) and 121 holes at Ultima Dam West (48 RC, 3 diamond core, 70 RAB) for a total of 69,740m within the resource wireframes. The full database contained records for 878 drill holes for 77,180m of drilling.
- Holes in the resource were drilled at section spacing's between 25m and 200m, but commonly at 25m.
- The majority of RC holes were sampled at 2m intervals (mid-2008 onwards). Historical RC holes and RC drilling from 2006 to mid-2008 were sampled at 1m intervals and converted to 2m composites. The sampling method involved collecting drill cuttings in pre-numbered calico bags from a rig mounted rotary cone splitter, while the remaining bulk material was collected to provide for further test work.
- Down hole geospatial surveying was conducted using both a north-seeking gyroscopic tool and a standard gyroscopic deviation tool for comparison.
- Collar surveys and topographic surveys were carried out using a differential GPS capable of 0.05m lateral and vertical accuracy using standard topographic survey techniques.
- Sample preparation and assay was carried out first by SGS Laboratories and later Amdel Laboratories in Adelaide, SA and Cardiff, NSW. Comprehensive assaying was routinely carried out using the XRF analytical method on a full suite of elements including Fe, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, CaO, MgO, K<sub>2</sub>O, Na<sub>2</sub>O, Mn, P, S, TiO<sub>2</sub>, and three stage loss on ignition (LOI) at varying temperatures.
- Drill data and Quality Control practices for the recent drilling have been reviewed by SRK Consulting and have been verified as accurate and unbiased. It is the view of SRK Consulting that the base data used in the estimates has provided a robust and accurate resource.
- Wireframes were constructed using cross sectional interpretations based on mineralised envelopes at nominal cut off grades of >15% Fe for the low grade mineralisation and >40% Fe for the high grade skarn mineralisation. Samples within the wireframes were composited to a best fit at intervals of 2.0m.
- A Surpac block model was used for the resource estimates with a block size of 12.5m x 12.5m x 4m vertical with sub-cells of 6.25m x 6.25m x 2m vertical for Weednanna and Weednanna North, and 25m x 25m x 4m with sub-blocking of 6.25m x 6.25m x 4m for Ultima Dam East and Ultima Dam West.



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- Ordinary kriging was used for Grade Interpolation for each deposit. The 15% and 40% wireframes were used as hard boundaries and each shape was estimated separately, meaning blocks within a shape were only informed by composite within the same shape. The dimension and orientation of the ellipsoid were different for each deposit but all had the same orientation as the calculated variogram anisotropy for its respective deposit.
- Specific Gravity (SG) calculated by applying the polynomial best fit equation  $SG = (0.00043*(fe\_est*fe\_est)-(0.00008*fe\_est)+2.67682)$  derived from 439 pycnometer values and assuming a 2% porosity.
- The resource was classified as an Indicated and Inferred Mineral Resource, which was based largely on the kriging quality parameters, in particular the slope of regression. The Indicated portion of the resource included areas where drill spacing was less than 50m by 50m and lode continuity was good. The Inferred portion included areas where sampling occurred on sections greater than 50m by 50m (or 100m by 50m) and where isolated, poorly understood zones of mineralisation may have occurred. Approximately 70% falls within the Indicated portion of the resource.